

**PROFIT MAXIMIZING HEDGING STRATEGIES  
FOR  
MANAGERS AND MEMBERS OF VERTICAL BEEF ALLIANCES**

Lora H. Claus

Thesis submitted to the Faculty of the Virginia Polytechnic Institute and State University in  
partial fulfillment of the requirements for the degree of

Master of Science  
In  
Agricultural and Applied Economics

Wayne Purcell, Chair  
David Kenyon  
Dixie Watts Reaves

February 14, 2003  
Blacksburg, Virginia

Keywords: Alliance, Risk, Hedging, Moving Average, Cattle

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Wayne D. Purcell, Chairman

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(ABSTRACT)

Vertical alliances are an increasingly common form of organization for participants in the beef industry. The implications of combining feeding and packing margins into one alliance are investigated. Moving average based selective hedging strategies are used to hedge the major inputs and outputs for cattle owners and packers to improve the level of mean revenue to the alliance. The success of the hedging program is evaluated from mean-variance and cash-flow perspectives.

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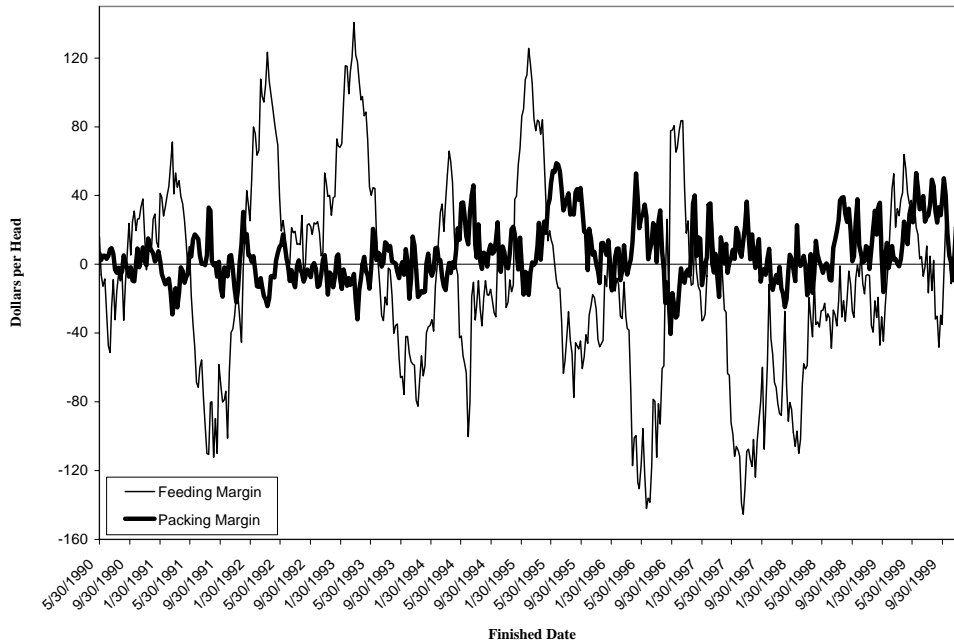
# **1 Introduction**

## ***1.1 Introduction***

Participants in the beef industry have historically faced volatile market prices and variable revenues. Adding to these obstacles, beef lost market share year over year to other proteins, a demand decline that continued into the late 1990's (Schroeder, Marsh, and Mintert.) The deterioration in beef demand has been attributed to many factors; changes in consumer tastes and preferences, and stiff competition in the form of value-added products and lower prices for pork and poultry. Some beef packers have responded with new product lines that are designed to appeal directly to consumers. Branded beef products, with goals such as guaranteed tenderness, have initiated coordinated efforts all the way from the decision on genetics to the retail case. The importance of supplying the right kind of cattle for this type of quality assured program requires collaboration beyond the limited exchange of information that occurs within a price-driven marketing system. A new type of organization, the alliance, is changing the face of the beef industry by uniting packers, feedlot operators, cow-calf producers, and even retailers with the common goal of meeting consumer needs.

Research into the motivations for joining an alliance has resulted in management guidelines for risk sharing and compensation among members (Purcell and Hudson.) The implications to price risk and revenue from combining historically unique profit centers into one management portfolio have not been investigated. This research effort seeks to uncover the financial picture faced by the total alliance, and to empirically test risk management strategies that will improve returns and mitigate variability for the alliance revenue stream.

The two major sources of revenue to an alliance are the feeding margin<sup>1</sup> and the packing margin.<sup>2</sup>



**Figure 1.1: Weekly Feeding and Packing Margins from May 30, 1990 to December 29, 1999.**

Revenue to cattle owners is noticeably more volatile than revenue to packers during the 1990's. The feeding margin averaged -\$10.14/head, with a range of -\$145.35/head to \$140.58/head. The packing margin averaged \$6.04/head, with a range of -\$40.46/head to \$58.75/head. The standard deviation of the feeding margin, \$56.38/head, was more than three times the standard deviation of the packing margin, \$16.98/head.

<sup>1</sup>The feeding margin is defined as the per head profit from the sale of fed cattle less all costs of buying and feeding calves. The feeding margins shown in Figure 1.1 were created with the help of Rodney Jones, Associate Professor of Agricultural Economics at Kansas State University. Sources of data are explained in greater detail in Chapter 4: Methodology.

<sup>2</sup>The packing margin is defined as the per head profit from the sale of boxed beef, hides, and by products less the cost of the slaughter animal and all operating costs. The packing margins shown in Figure 1.1 were obtained from *HedgersEdge.com*. Sources of data are explained in greater detail in Chapter 4: Methodology.



The revenue characteristics of the feeding margin and packing margin are quite different due to their unique exposures to price risk over time. Cattle owners face changing feed prices and fed cattle prices for as long as they have steers on feed, an average of 132 days/head,<sup>3</sup> while packers may own cattle only a week before they are killed. Packers also have the flexibility of slowing the numbers they slaughter during periods of negative margins, while cattle owners must continue to feed their animals or bring them to market in order to protect the investment already made in each steer. In addition, the two businesses differ in the ability of new participants to enter the market place. The costs of starting a cattle feeding business are a fraction of the fixed investment involved in establishing a packing operation. As the feeding margin grows more and more profitable, new participants will enter the cattle feeding business until enough cattle are fed to dissipate any economic rents that were present. These factors explain how the feeding margin could be negative across a ten-year period of time.

The success of the alliance as a whole will ultimately depend on the success and contributions of the economic functions performed by each alliance member. The disparity in mean returns between the cattle owner and packer immediately suggests margin sharing as one form of compensation to cattle owners in the alliance. Cattle owners will want to share the packing margin and will wish to give up a part of their highly volatile feeding margin to packers. While packers will naturally resist sharing this negative and highly variable feeding margin (Purcell and Hudson,) recall that they are seeking relationships with cattle owners who can provide them with the “right kind of cattle” for the product being made. Securing these customized supplies is crucial to the success of the product line and makes collaboration with cattle owners and their volatile feeding margin a necessity. This does not mean that nothing can be done about the characteristics of the feeding margin. Risk management strategies that can

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<sup>3</sup> Average days on feed for 700-799 pound steers (Mark, Jones, and Mintert.)

improve the mean level of the feeding margin and the packing margin will help ensure the financial viability of the alliance as a whole.

## **1.2 Problem Statement**

Members of vertical beef alliances are exposed to price risk, which contributes to low levels of revenue and high variability of the combined feeding and packing margins. Alliance members lack information about the implications of combining margins and would benefit from risk management strategies that have been shown to increase the base revenue stream to enhance the profitability of the alliance as a whole.

## **1.3 Hypothesis**

**A moving average based selective hedging program for cattle owners and packers will improve the mean and reduce the variance of the combined feeding and packing margins.**

## **1.4 Objectives**

The primary research objective is to conceptualize and examine price risk management strategies that will increase mean revenue of the combined feeding and packing margins in a vertical beef alliance. This general objective can be broken down into three components:

1. Investigate the impact on risk and returns of combining revenues from the feeding and packing margins into an alliance;

2. Simulate the use of moving averages to selectively hedge<sup>4</sup> inputs and outputs with exchange traded futures contracts for cattle owners and packers; and
3. Evaluate the contribution of the risk management program from mean-variance and cash-flow perspectives.

## ***1.5 Overview of Thesis***

Chapter 1 described the factors in the beef industry that have led to the formation of vertical alliances. Some general characteristics of the individual feeding and packing margins were explored. The feeding margin was historically negative and more variable than the positive packing margin. The need for investigating the implications of combining the feeding margin and the packing margin into one alliance has been established. It has been proposed that risk management, using moving averages in a selective hedging program, will improve revenue level and variability to members of the alliance and to the alliance as a whole.

Chapter 2 will review literature concerning vertical alliances, portfolio theory, hedging with technical strategies and evaluating the success of hedging strategies.

Chapter 3 will present the conceptual framework in which vertical alliances can be viewed, evaluate the historical performance of feeding, packing, and total margins, and explore the use of moving average strategies to manage risk in selective hedging programs.

Chapter 4 will describe the procedures used to develop the risk management program.

Chapter 5 will present and analyze the in-sample results of the risk management program for the feeding margin, packing margin, and total margin.

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<sup>4</sup> A selective hedger chooses when to have a hedge in place and when to be exposed to the cash market. Futures positions are placed in anticipation of adverse price moves in the cash market, and lifted to take advantage of beneficial price moves in the cash market (Purcell and Koontz.)

Chapter 6 will present and analyze the out-of-sample results of the risk management program for the feeding margin, packing margin, and total margin.

Chapter 7 will present conclusions about the success of the risk management program in improving revenue to an alliance. Ideas for further research will be suggested.

## **2 Review of Literature**

### **2.1 Introduction**

This chapter explores the literature on risk and compensation guidelines for alliance members. Portfolio theory is introduced as a framework to evaluate the effects of combining the feeding margin and the packing margin into one portfolio. Hedging with futures contracts as part of a risk management program is reviewed, with a focus on technical strategies to time the placement and removal of hedges. Portfolio evaluation techniques are presented and chosen to analyze the contribution of the risk management program.

### **2.2 Vertical Alliances**

Few pieces of literature investigate the motivations for initiating alternative forms of vertical coordination in agriculture (Sporleder; Barry, Sonka, and Lajili.) Purcell and Hudson identified the motivations for joining a vertical beef alliance and explored compensation arrangements for participants. They cited transactions cost and principal agent literature to suggest that price alone is inadequate to achieve the coordination needed in producing a branded beef product line. Building on work by Williamson, the authors addressed the investments in use-specific technologies common to alliances, such as new genetics by cattle owners and in-plant technology to improve beef tenderness by packers. These highly specific investments are not adequately encouraged or rewarded by the average prices paid across all qualities of cattle in the commodity beef market. Building on work by Eisenhardt, Purcell and Hudson explained the necessity of measuring and controlling the actions of alliance participants. As an alternative to

monitoring the behavior of alliance members, monetary incentives, such as premiums generated for high quality cattle, could encourage the cooperation and performance of alliance participants.

Purcell and Hudson empirically tested the potential of margin sharing and premium pools to compensate alliance participants. They found that cattle owners always benefited from sharing the feeding margin with packers, whether or not they received a portion of the packing margin in return. While sharing arrangements divided the same net revenue, it was emphasized that premiums for quality and consistency could increase net revenue outright. The authors stated "... the new revenues from the premiums can be multiples of the benefits coming from sharing feeding and packing margins across cattle owners and packers."<sup>5</sup>

While Purcell and Hudson emphasized the capturing of premiums to add dollars above and beyond the baseline revenue of an alliance, increasing mean levels and stabilizing the feeding and packing margins would improve the baseline revenue itself.

### ***2.3 Hedging with Technical Strategies***

Cattle owners and packers face volatile market prices and uncertain revenue. It has been proposed that increasing and stabilizing the revenue to an alliance could be achieved through a risk management program. Hedging with futures contracts is a common approach to managing the price risk of commodity inputs and outputs. The timing of establishing a futures position within a hedging program is a key issue that has received significant attention in the literature. Historically extreme prices, targeted profit margins, econometric models, and technical

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<sup>5</sup> Purcell and Hudson, p.23.

indicators have all been used in market timing strategies. Technical strategies that guide the timing of hedges can have significant advantages over routine hedging programs.<sup>6</sup>

Purcell and Riffe evaluated the performance of moving averages and point-and-figure charts to selectively hedge fed cattle prices for cattle owners. The set of moving averages was selected based on several criteria, including mean and variance statistics. The authors concluded that either the point-and-figure or moving average approaches merited consideration in managing the price risk inherent to fed cattle prices, especially when markets were highly volatile.

Schupp and Withead performed a historic simulation of technical trading systems on feeder cattle and live beef cattle futures from 1974-1980. Four moving average strategies (which included stop rules and penetration requirements) were tested. The authors concluded that careful selection of parameters (moving averages, stop rules, penetration requirements) and the use of the chosen strategy over a substantial period of time could significantly improve hedging revenues.

Gorman, et al. compared a variety of strategies to historically simulate the selective hedging of fed cattle prices for cattle owners. The technical strategies tested included profit targets, moving averages, and tolerance intervals. The moving average strategy earned a higher average futures profit than all other approaches.

An empirical study by Bennett found that a ten-year moving average could be profitably applied to the selection of entry dates into the cotton futures market. While net revenues increased on average over the ten year time period tested, Bennett found that the variability in net price received by the producer was unaffected in a statistical context.

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<sup>6</sup> Users of a routine hedging program establish a futures position to hedge a cash transaction that will occur on a date in the future. The initial position is left in place for the duration of the time until the cash transaction is completed. Then the position is offset.

Critics of technical trading systems commonly cite the efficient market hypothesis as evidence that technical systems cannot be profitable. The efficient markets hypothesis proposes that markets experience instantaneous dissemination of new information, which results in immediate trading reactions and a new equilibrium price level. In an inefficient market, information is disseminated over a period of time, with price trending towards the new equilibrium as market participants become better informed. To determine if futures prices exhibit trends or random behavior, efficiency research has focused on livestock contracts individually (McKenzie and Holt; Hayenga et al.; Kastens and Schroeder; Kolb and Gray; Martin and Garcia,) in addition to multiple-commodity studies (Lukac and Brorsen; Lukac, Brorsen, and Irwin (1986, 1988.)) Results are mixed and there is yet to be an academic consensus on the validity of the efficient market hypothesis.

Many times in the literature, moving averages are shown to increase mean revenues in a risk management program. In the conceptual framework provided in Chapter 3, a discussion of the positive characteristics that moving averages bring to a hedging program will demonstrate that they are highly suited to manage the multiple commodity risks faced by an alliance.

## **2.4 Portfolio Theory**

Portfolio theory was developed by Markowitz in the 1950's to evaluate assets combined into a single portfolio. His research provides a framework to evaluate the implications of combining the feeding and packing margins into one portfolio, and to evaluate the effectiveness of an alliance risk management program.

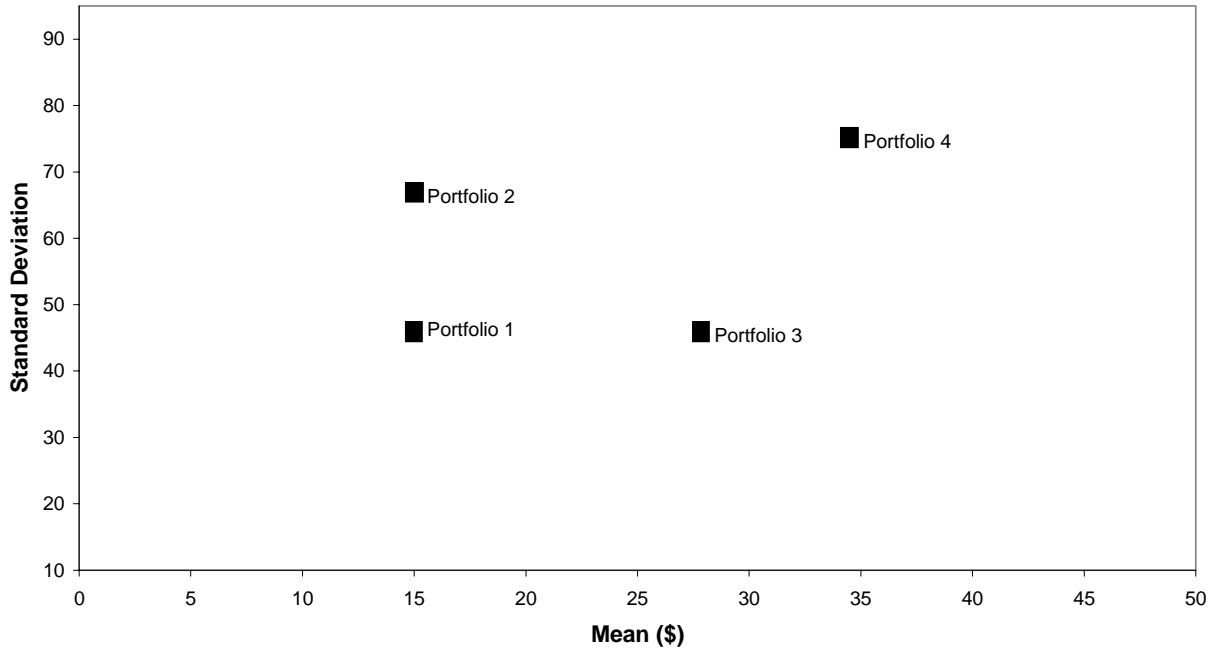
Markowitz's work is based on two assumptions about investors; (1) they prefer more return to less return, and (2) they would like return to be certain and stable. He applied these assumptions to evaluate portfolios of large numbers of liquid securities that had normal



distributions of returns. Past performance (mean and variance statistics) and beliefs about future performance were used to forecast future performance of those securities. A graphical presentation of portfolios illustrates the use of mean and variance as criteria for portfolio selection. Observe the position (level of mean and standard deviation) of Portfolio 1 in Figure 2.1. For a given level of mean, the portfolio with the lowest standard deviation is preferred. Portfolio 1 would therefore be preferred to Portfolio 2. For a given level of standard deviation, the portfolio with the highest mean revenue is preferred. Portfolio 3 would be preferred to Portfolio 1. The final choice between Portfolios 3 and 4 lies with the investor and is based on the investor's degree of risk aversion.<sup>7</sup> In other words, the investor must determine if a positive increase in mean revenue outweighs the risk associated with the increased variability in revenue. Markowitz, however, does not address the source of that variability. If it were known that the increased variability was coming from larger, more frequent occurrences of positive returns, the investor might be inclined to accept the increased variability and higher mean of Portfolio 4.

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<sup>7</sup> Mathematically, the choice depends on the utility function assigned to the investor. A quadratic utility function (as wealth increases, investments in risky assets decrease) is typically used.



**Figure 2.1: Example of Mean-Variance Portfolio Selection.**

Markowitz's insights into determining why a given portfolio has a certain mean and variance are of primary importance. He proposed that the performance of the portfolio would be determined by the interaction, or correlation, between assets in the portfolio. Ideally, when one asset generated low returns, the other asset would generate high returns, so that mean return would remain stable. These two negatively correlated assets would also reduce the variance of the entire portfolio. Two assets that moved together perfectly,<sup>8</sup> or were positively correlated, would together produce a portfolio with a variance greater than the sum of each asset's individual variance. The correlation between the feeding margin and the packing margin will be analyzed to predict the impact of combining these two margins into one profit center.

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<sup>8</sup> Two assets that moved together perfectly would produce high returns at the same time and produce low returns at the same time, thereby increasing the variance of revenue.

## 2.5 *Evaluating the Success of Hedging Strategies*

Markowitz's mean-variance framework has been frequently used in the evaluation of hedging strategies (Bennett; Noussinov and Leuthold; Gorman et al.; Holland, Purcell, and Hague; Shafer, Griffin, and Johnston; Bobst, Grunewald, and Davis.) Criticisms of the mean-variance method address the assumption of normal distribution of returns, the choice of a quadratic utility function of the investor, and the assumption of large numbers of securities (Helms and Martell; Cornew, Crowson, and Town.)

Stochastic dominance has been used as an alternative to the mean-variance framework in the selection of a hedging strategy (Harrison; Kenyon and Beckman; Schroeder and Hayenga.) This method does not require normal distribution of returns or a quadratic utility function in selecting the preferred portfolio.

A study by Porter and Gaumnitz did not find any significant difference between using stochastic dominance and mean-variance analysis when portfolios consisted of exogenous assets<sup>9</sup> and returns from futures trading. Cheung, et al. found that the mean-variance approach performed well with respect to distribution requirements, when compared to the mean-Gini framework,<sup>10</sup> for portfolios containing futures and options. As a simple extension of the mean-variance framework, Purcell and Riffe presented the 30-day average cash-flow for cash, futures, and combined cash-futures positions to look at the intermediate risk and return that are crucial to the sustained financial well-being of cattle owners during the feeding period.

Some empirical studies have used the ratio of the variance of the hedged portfolio to the variance of the unhedged portfolio as a measure of hedging success (Ederington; Figlewski

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<sup>9</sup> Markowitz defined exogenous assets as income streams outside a portfolio, such as a salary.

<sup>10</sup> The mean-Gini uses two summary statistics, consistent with stochastic dominance rules, to establish the distribution of an asset's returns.

(1984, 1985); Hill and Schneeweis (1981, 1982).) However, Cheung, et al. found that such a measure can be misleading because it ignores any improvement in mean returns.

Mean-variance analysis is historically employed to analyze the performance of hedging programs. Porter and Gaumnitz did not find any critical differences between the stochastic dominance and mean-variance approaches when portfolios consisted of income streams and returns from futures trading. Therefore, mean-variance analysis will be used to evaluate the alliance portfolio. As a supplement, annual cash flow will also be presented.

## **3 Conceptual Framework**

### ***3.1 The Beef Supply System***

The traditional beef system is made up of three major participants: cow-calf producers, feedlot operators, and packers. The cow-calf producer may receive revenue from: (1) the sale of weaned calves directly to the feedlot, or (2) the sale of weaned calves to a backgrounder, who will in turn sell larger calves to the feedlot. Alternatively, the cow-calf producer may retain ownership of the cattle and pay the feedlot on a per day and/or a per head basis to bring the calves to slaughter weight. In this case, the cow-calf producer, as the ultimate slaughter cattle owner, receives the final feeding margin (Purcell and Hudson.) Feedlot operators with no ownership interests in the cattle are paid a fee for their services. Feedlot operators who have an ownership interest in the cattle will receive some part of the feeding margin (Purcell and Hudson.) Individuals receiving the feeding margin will be referred to as cattle owners. The packer purchases the slaughter cattle from cattle owners and receives revenue from the sale of boxed beef, hides, and all other byproducts.

A vertical beef alliance involves coordinated activity between combinations of cow-calf producers, backgrounders, feedlots, a packer, and a retail chain, with each entity earning its respective margin or fee. Every alliance will include returns from a feeding margin and a packing margin for each steer slaughtered.

The feeding margin is defined as the profit received from the sale of fed cattle less all costs of purchasing and feeding calves. The packing margin is defined as the profit received from the sale of boxed beef, hides and all other byproducts after cattle procurement, operating, and overhead costs are taken into account.

Historically, the price paid and received for cattle is the only interaction and source of communication between cattle owners and packers. When prices for fed cattle are high, it could be assumed that cattle owners benefit from larger feeding margins and packers suffer from smaller packing margins. Conversely, when fed cattle prices are low, it could be assumed that cattle owners suffer and packers benefit. This relationship would fit Markowitz's definition of negatively correlated assets. Revenue from beef production might be viewed as one relatively constant value over time, divided in proportions between the cattle owner and packer. The proportions change as the price of fed cattle changes.

### **3.2 Historical Performance of Feeding, Packing, and Total Margins**

Markowitz's portfolio theory was used to investigate the correlation between the feeding and packing margins and to evaluate their combined behavior. For ease of discussion, the combination of the feeding margin and the packing margin will now be referred to as the total margin. If the feeding and packing margins are negatively correlated, the standard deviation of the total margin should be improved compared to either of the individual margins. Correlation coefficients of the feeding, packing, and total margins can be found in Table 3.1.<sup>11</sup>

**Table 3.1: Correlation Coefficients of Weekly Feeding, Packing, and Total Margins from May 30, 1990 to December 29, 1999.**

Combination	Correlation Coefficient
Feeding & Packing Margins	-0.2572
Feeding & Total Margins	0.9537
Packing & Total Margins	0.0455

It appears that the feeding and packing margins have a slightly negative relationship, which is desirable. To further investigate the correlation of the feeding and packing margin and

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<sup>11</sup> A perfectly negative correlation is indicated by a correlation coefficient of  $-1$ . A perfectly positive correlation is indicated by a correlation coefficient of  $+1$ . A correlation coefficient of  $0$  indicates that the two series have no relationship whatsoever.

to remove the influence of any trends that may be present over time, first differences were taken of both margins, and new correlation coefficients were calculated. First differences of the two series will also facilitate analysis of the implicit hypothesis that the two margins are composed of varying combinations of a relatively stable total margin. If the total margin is relatively constant, then the two margin components should be negatively correlated. The results of the analysis shown in Table 3.2 indicate that the behavior of the feeding and packing margins is actually not mitigating: the statistical relationship is slightly positive. The total revenue from beef production is apparently not a relatively constant value over time, divided between owner and packer, as previously suggested.

**Table 3.2: Correlation Coefficients of Differenced Weekly, Feeding, Packing, and Total Margins from May 30, 1990 to December 29, 1999.**

Margin	Correlation Coefficient
Feeding & Packing Margins	0.2066
Feeding & Total Margins	0.8827
Packing & Total Margins	0.6422

The positive statistical relationship between the feeding and packing margins can be confirmed with a closer look at the descriptive statistics of the three margins, found in Tables 3.3 and 3.4.

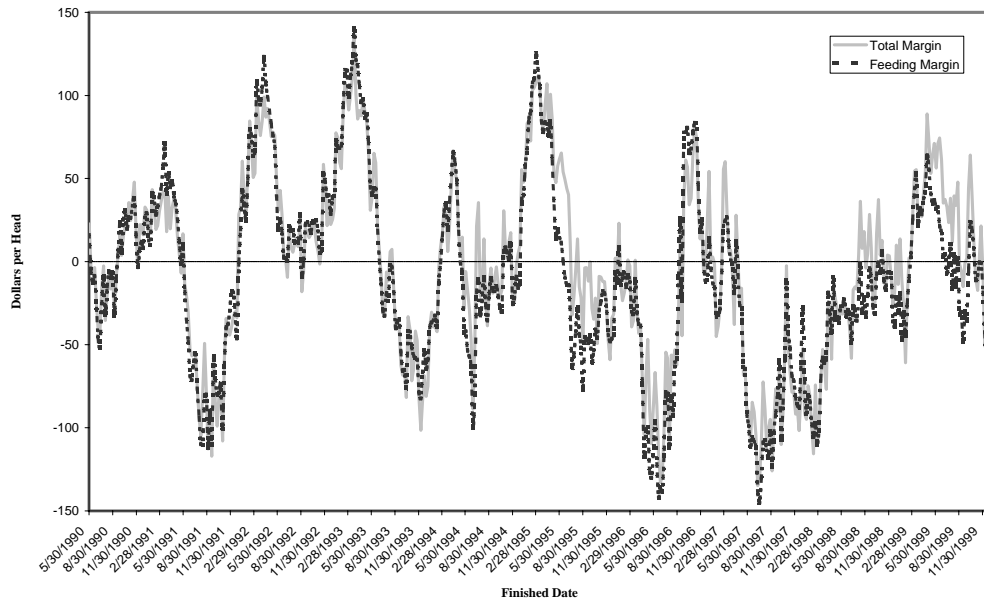
**Table 3.3: Descriptive Statistics of Weekly Feeding, Packing, and Total Margins (\$/head) from May 30, 1990 to December 29, 1999.**

Margin	Mean	Standard Deviation	High	Low
Feeding Margin	-10.14	56.38	140.58	-145.35
Packing Margin	6.04	16.98	58.75	-40.46
Total Margin	-4.10	54.53	134.94	-134.82

**Table 3.4: Descriptive Statistics of Differenced Weekly Feeding, Packing, and Total Margins (\$/head) from May 30, 1990 to December 29, 1999.**

Margin	Mean	Standard Deviation	High	Low
Feeding Margin	-0.12	17.77	100.42	-48.98
Packing Margin	0.03	10.89	34.67	-35.33
Total Margin	-0.09	22.68	81.83	-60.31

The total margin averaged -\$4.10/head, with a range of -\$134.82/head to \$134.94/head. The standard deviation of the total margin, \$54.53/head, is similar to that of the feeding margin, \$56.38/head. An F-test for equal variances indicates that the standard deviations of the two margins are not statistically different. This finding reinforces what appears to be true from a plot of the feeding margin versus the total margin (Figure 3.1.)

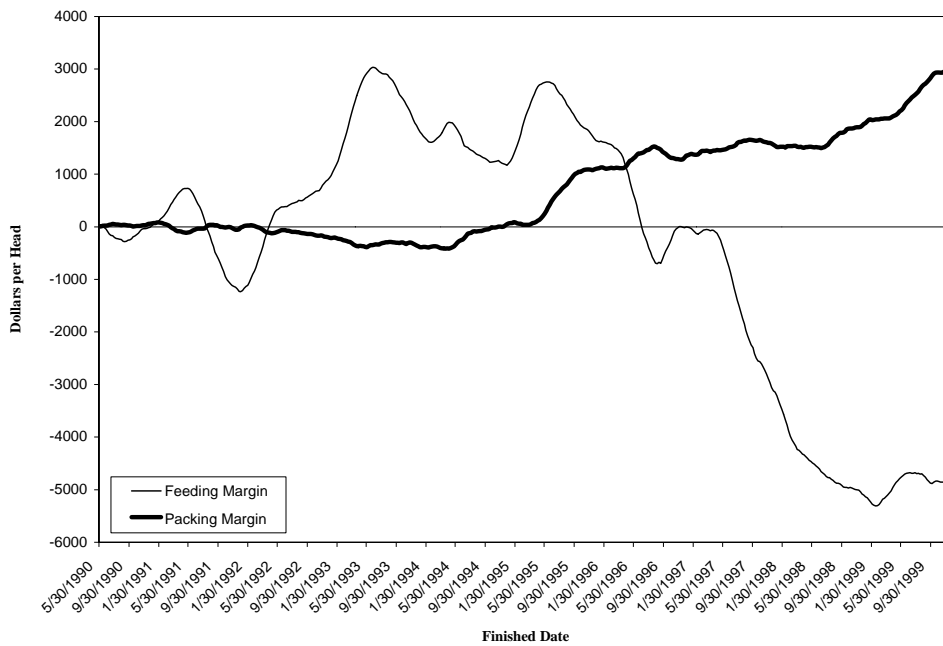


**Figure 3.1: Weekly Feeding and Total Margins from May 30, 1990 to December 29, 1999.**

The behavior of the feeding margin is driving the behavior of the total margin. The differenced descriptive statistics reveal that the standard deviation of the total margin's changes from one week to the next is statistically higher than that of the feeding margin or the packing



margin.<sup>12</sup> From a risk perspective, this indicates that either holding the feeding margin or the packing margin alone would be preferred to holding them in combination. When the feeding and packing margins are plotted cumulatively<sup>13</sup> in Figure 3.2, the need for risk management strategies is immediately clear.



**Figure 3.2: Cumulative Weekly Feeding and Packing Margins from May 30, 1990 to December 29, 1999.**

If one steer were fed each week over this ten-year time period, losses for cattle owners would cumulatively approach \$6000. Multiplying this figure by the average number of cattle placed on feed each week illustrates the long-run financial difficulty for cattle owners.

Given this history of negative total margins, focus should be placed on increasing mean revenue to the alliance, even if this means accepting exposure to more variable margins over

<sup>12</sup> This was confirmed by an F-test for equal variances.

<sup>13</sup> Cumulative margins are defined as each new weekly margin successively added to the previous margins.

time. This is especially the case if added variability to the total margin comes from larger or more frequent occurrences of positive revenue.

### **3.3 Risk Management**

The establishment of a risk management program for an alliance consisting of a feeding margin and a packing margin can be a complicated task. Technical indicators, like moving averages, are an ideal choice in a hedging program for alliances that need to manage multiple price risks.

#### **3.3.1 Moving Average Trading Systems**

Moving averages are indicators of price trends. They use mathematical rules to determine the trend in the market and then generate trading signals to initiate a futures position that follows the trend. A 3-day moving average is calculated by adding the three most recent closing prices and dividing by three. Each day the value of the moving average will change to include the new day's closing price. The oldest closing price is dropped and the newest closing price is added. In this way the average moves through time.

A single moving average can be plotted against daily closing prices to generate trading signals. When the moving average crosses down through closing prices, a turn down in price trend is indicated and a sell signal is generated. When the moving average crosses back up through closing prices, a turn up in trend is indicated and a buy signal is generated. The speed at which the moving average registers changes in price trend is referred to as sensitivity. The shorter the moving average, the more sensitive it will be to changes in trend, and the quicker trading signals will be generated. However, moving averages will never generate signals that

enable the trader to sell at the highest price or buy at the lowest price. Trading signals will appear only after a price reversal has been established.

A set of two moving averages can be used in combination to generate trading signals. This type of strategy is called a crossover moving average system. When the shorter moving average crosses down through the longer moving average, a sell signal is given. When the shorter moving average crosses back up through the longer moving average, a buy signal is given.

Moving average signals are not always “correct.” Moving averages work best in markets with sustained price moves. Markets that are congested, volatile, and trade up and down within a small price range will cause the moving averages to incorrectly register changes in trend.<sup>14</sup> The more sensitive a moving average is, the more likely it will be to register false market tops and bottoms. Frequent trading based on incorrect signals can result in small losses that can become cumulatively significant over time. One method to protect the hedging program from frequent losses and mounting commissions is the addition of a penetration rule to confirm the signal generated by the moving averages. A penetration rule requires that the shorter moving average cross the longer moving average by a minimum amount to validate a trading signal.

### **3.3.2 Moving Averages in a Selective Hedging Program**

Selective hedging protects the trader with positions in the futures market during adverse price moves, but allows the trader to be unhedged and exposed to the risk of cash market prices when the market is trending favorably. Consider the example of using selective hedging to protect against rising costs. One would like to have a long futures position in place when the market is moving higher. When futures markets are trending lower, it is an ideal time to be

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<sup>14</sup> Examples of moving average success in markets with sustained price moves, and poor performance in sideways markets, can be found in Chapter 5: In-Sample Results and Analysis.

unhedged and open to the possibility of falling cash prices. This flexible method of selecting when to take coverage in the futures market can avoid margin calls and capture beneficial cash market prices. Moving averages comply with this approach.

### **3.4 Summary**

Combining the feeding and packing margins into one alliance will produce a standard deviation greater than either margin alone. It is proposed that the added returns from a risk management program will increase the alliance revenue and mitigate its variability. A moving average based selective hedging program is an ideal choice for an alliance. It is an objective, rule-based system that generates clear trading signals. Such a system can be justified and explained to others in the complex management arrangements typical of vertical alliances.

## 4 Methodology

### 4.1 Introduction

Empirical analysis will be used to examine the contribution of a moving average based selective hedging program to revenue mean and variance received by a vertical beef alliance. The alliance analyzed will be comprised of cow-calf producers who retain ownership of their cattle, feedlots who are paid on a per head basis for their services to cattle owners, and a packer. Revenue to the alliance will therefore consist of the feeding margin and the packing margin, with the feedlots receiving a constant fee for their services.

The major inputs and outputs that have corresponding futures markets will be hedged for the cattle owner and packer.<sup>15</sup> Long positions in corn, soybean meal, and feeder cattle futures will protect the cattle owner from rising costs, and a short position in live cattle futures will protect the cattle owner from falling fed cattle prices.<sup>16</sup> A long position in live cattle futures will protect the packer from the rising cost of fed cattle.

A crossover moving average system with a penetration rule will generate trading signals for the appropriate futures contracts. To determine the most profitable combination of moving averages, optimization of a matrix of moving averages and penetration rules will be performed on futures data<sup>17</sup> from 1990 to 1999, for each futures contract month, for each commodity.

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<sup>15</sup> Risk management strategies developed for the alliance as a whole could also be used by individual cattle owners and packers not involved in an alliance since the results for the feeding margin and packing margin are separable.

<sup>16</sup> Corn and soybean meal futures are traded at the Chicago Board of Trade. Feeder cattle and live cattle futures are traded on the Chicago Mercantile Exchange.

<sup>17</sup> The optimization was performed on futures closing prices. If a trading signal was generated, then the trade was executed at that same closing price. In the “real world”, once the system has generated a signal on the close, one would have to execute the trade at the opening price on the next trading day. There is some slippage between using closing prices (which generate the trading signals) and the prices that can actually be hedged when the market opens on the following day.

The ideal planning period over which to let the moving average system generate trading signals for each futures contract is unknown. The amount of time preferred by alliance managers to hedge inputs and outputs is also unknown. In response, four different planning periods will be tested: 3, 6, 9, and 12 months.<sup>18</sup> Using the chosen combinations of moving averages and penetration rules for each futures contract, an in-sample test will be performed over the data from 1990 to 1999. To evaluate potential performance outside of the sample period, the system will also be tested on data from 2000 to 2002. Because a technical trading system relies on patterns of market behavior, the market structure in 2000 to 2002 needs to remain similar to that of the sample period for the greatest chance of out-of-sample success.

The mean-variance framework and annual cash flow measures will be utilized to judge the contribution of the moving average based selective hedging program. The feeding margin is normally distributed, but the packing margin does not fit the normal distribution very well.<sup>19</sup> The combination of both margins, the total margin, appears to be normally distributed.

## **4.2 Feeding Margin**

The feeding margin was created with the assistance of Rodney Jones, Associate Professor in the Department of Agricultural Economics at Kansas State University. It approximates the feeding margin for cattle being fed in Kansas.<sup>20</sup> Placement and finish dates for each steer were used to start and stop the moving average strategy. Bushels of corn and tons of soybean meal fed to each steer, and the weight of the feeder steer and fed steer, were used to calculate the per head profits from the hedging program.

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<sup>18</sup> In order to consistently place and lift hedges on a weekly basis, approximations of 3, 6, 9, and 12 month time periods were used. 3 months was actually equal to 13 weeks, 6 months equaled 26 weeks, 9 months equaled 39 weeks, and 12 months equaled 52 weeks.

<sup>19</sup> Normality plots of the feeding, packing, and total margins can be found in Appendix B.

<sup>20</sup> Formulas, variables, and constants used to calculate the feeding margin are explained in detail in Appendix B.

Several simplifying assumptions were made in the creation of the feeding margin. The weight of calves entering the feedlot was kept constant at 750 pounds.<sup>21</sup> Feed costs were estimated using a ration of corn (85%), alfalfa hay (12%), and soybean meal (3%). The number of days on feed was kept constant at 147 days.<sup>22</sup> The weights of finished cattle were varied according to seasonal fluctuations of average daily gain and feed conversion. Since no one figure is universally accepted for pencil shrink, the full weights of the cattle were used to calculate per head revenue from the sale of each fed steer.<sup>23</sup>

Corn, soybean meal, feeder cattle, and fed cattle price series were obtained from the Livestock Marketing Information Center. The alfalfa hay price series was created with data from the National Agricultural Statistics Service and data provided by Steve Hessman of the Kansas Department of Agriculture.<sup>24</sup>

### **4.3 Packing Margin**

Weekly packing margins were obtained from *HedgersEdge*, a national beef consulting and risk management firm.<sup>25</sup> The per head packing margin includes revenue from the sale of boxed beef, hides, and byproducts less the cost of the slaughter steer and all slaughtering and fabrication costs. It is representative of the margin received by large packers from Texas to Nebraska.

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<sup>21</sup> Kansas State University reported the average placement weight for steers from January 1985 to August 1999 as 751 pounds (*Seasonal Trends in Steer Feeding Profits, Prices, and Performance*.)

<sup>22</sup> Average days on feed for steers from 1999-2000 was 146.6 days, according to *The Livestock Marketing Information Center*.

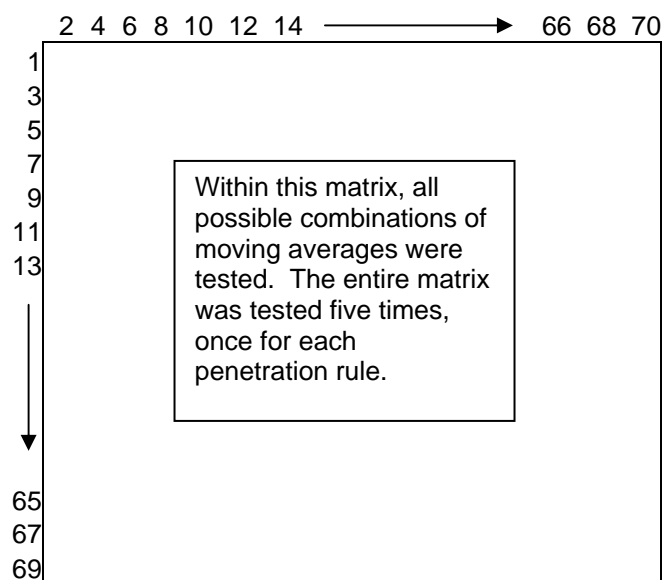
<sup>23</sup> The feeding margin can easily be adjusted to take pencil shrink on finished animals into account. To calculate a feeding margin with 4% shrink, one would simply take 96% of the feeding margin presented.

<sup>24</sup> More detailed information on all data series is located in Appendix B.

<sup>25</sup> Andrew Gottschalk, principal owner in HedgersEdge LLC, provided the packing margin data (<http://www.hedgersedge.com> or 888-220-3344.)

## 4.4 Moving Average Optimization

Moving averages were optimized on closing prices of all monthly futures contracts of corn, soybean meal, feeder cattle, and live cattle<sup>26</sup> traded from 1990 to 1999, by Chris Purcell, Research Assistant, using the software program *Metastock*.<sup>27</sup> Trading profits, less commissions, were simulated for a matrix of moving average combinations from 1 to 69 and 2 to 70, using 5 different penetration rules, for each commodity (Figure 4.1 and Table 4.2.)



**Figure 4.1: Matrix of Moving Average Combinations Tested for Each Commodity.**

**Table 4.1: Penetration Rules Tested and Commission Charged by Commodity.**

Commodity	Pen 1	Pen 2	Pen 3	Pen 4	Pen 5	Commission per round turn
Corn (cents/bu)	0.00	0.25	0.50	1.00	2.00	1.00
Soybean Meal (dollars/ton)	0.00	0.10	0.25	0.50	1.00	0.50
Feeder Cattle (dollars/cwt)	0.00	0.05	0.10	0.20	0.35	0.10
Live Cattle (Short) (dollars/cwt)	0.00	0.05	0.10	0.20	0.35	0.10
Live Cattle (Long) (dollars/cwt)	0.00	0.05	0.10	0.20	0.35	0.10

<sup>26</sup> Moving average optimization was performed twice for live cattle futures: once for long hedging for the packer and once for short hedging for the cattle owner.

<sup>27</sup> *MetaStock* is a software program designed for the technical analysis of stocks and commodities. It is available from Equis International.



Commissions were deducted for each round turn trade.<sup>28</sup> Interest on margin money was not taken into account. Since profits were often being generated in the hedging programs, balances above margin requirements could be transferred to an interest bearing account with the brokerage firm. Thus, interest costs on margin deposits were not considered to be appropriate. The number of contracts needed to hedge each input and output, and the amount of margin money required, would depend upon the size of the operation.

The range of moving averages and penetration rules were inclusive such that profits were not increasing at the edge of the matrix, making it highly unlikely that a more profitable combination existed beyond those tested. From a practical standpoint, to calculate moving averages greater than 70 days long would require so many daily prices that a significant amount of potential trading time would be lost while waiting for the system to start.

The moving averages were optimized over the life of each futures contract for soybean meal, feeder cattle, and live cattle. Corn futures contracts were optimized over the 15 month time period leading up to contract expiration.<sup>29</sup> Average profit and number of round turns were reported for each moving average and penetration rule tested.

A set of moving averages with a corresponding penetration rule was selected for each futures contract on the basis of highest mean revenue over the optimization period, with a minimum number of 15 round turns. Because four planning periods were going to be tested in the in-sample and out-of-sample tests, 15 round turns was believed to be the minimum trading frequency that would generally ensure that signals were generated in the shortest time period (3 months.) A rough idea of the maximum number of trades was also considered. Moving

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<sup>28</sup> A round turn is defined as the completion of a 'sell and then buy' or of a 'buy and then sell' set of transactions (Purcell and Koontz, p.396.)

<sup>29</sup> Though corn contracts can trade for two years or more, fifteen months prior to expiration was determined a sufficient period of time to cover even the longest planning periods for hedgers.

averages that traded “too much” could be a significant burden on the manager following the trading signals. In the case of January Feeder Cattle Futures, a 2 and 3 day moving average set with a 20 cent penetration requirement was selected, even though it did not have the highest mean revenue. By giving up approximately \$0.40/cwt annual average profit, the number of round turns dropped from 206 (an average of over 20 per year) for a 2 and 5 day moving average set with a 5 cent penetration rule, to 80 round turns (an average of 8 per year) for the 2 and 3 day set with a 20 cent penetration rule. The moving averages selected for each futures contract for each commodity can be found in Tables 4.2 to 4.6.

**Table 4.2: Selected Moving Averages and Expected Contribution for Corn Futures Contracts.**

Contract	Moving Averages		(cents/bu)	(cents/bu)	Round Turns
			Penetration	Annual Average Net Profit	
March	28	53	0.25	18.60	28
May	8	35	2.00	19.53	33
July	36	45	1.00	27.85	23
September	34	51	1.00	12.95	20
December	10	11	0.50	7.83	62

**Table 4.3: Selected Moving Averages and Expected Contribution for Soybean Meal Futures Contracts.**

Contract	Moving Averages		(dollars/ton)	(dollars/ton)	Round Turns
			Penetration	Annual Average Net Profit	
January*	26	37	1.00	-0.15	21
March	38	39	0.10	3.77	27
May	22	59	0.00	5.15	19
July	38	39	0.10	8.68	32
August	34	41	0.50	3.83	22
September	34	43	0.50	12.40	18
October	28	37	1.00	6.32	17
December	36	39	0.25	4.07	35

\*There was no profitable moving average combination for January Soybean Meal Futures. The March contract was used in lieu of the January contract.

**Table 4.4: Selected Moving Averages and Expected Contribution for Feeder Cattle Futures Contracts.**

Contract	Moving Averages		(dollars/cwt)	(dollars/cwt)	Round Turns
			Penetration	Annual Average Net Profit	
January	2	3	0.20	2.61	80
March	22	29	0.05	1.39	40
April	22	25	0.05	0.71	39
May	48	63	0.00	1.48	19
August	14	25	0.35	3.09	19
September	14	17	0.20	3.77	16
October	20	31	0.10	2.62	28
November	24	29	0.05	2.00	37

**Table 4.5: Selected Moving Averages and Expected Contribution for Live Cattle (Short) Futures Contracts.**

Contract	Moving Averages		(dollars/cwt)	(dollars/cwt)	Round Turns
			Penetration	Annual Average Net Profit	
February	26	43	0.10	1.76	23
April	34	39	0.05	2.03	27
June	12	13	0.10	2.11	16
August	44	51	0.10	0.55	15
October	38	51	0.10	0.06	16
December	28	51	0.20	1.21	15

**Table 4.6: Selected Moving Averages and Expected Contributions for Live Cattle (Long) Futures Contracts.**

Contract	Moving Averages		(dollars/cwt)	(dollars/cwt)	Round Turns
			Penetration	Annual Average Net Profit	
February	26	43	0.10	3.88	18
April	20	47	0.20	2.39	15
June	18	25	0.20	0.52	23
August	4	63	0.10	1.52	24
October	44	51	0.00	3.11	39
December	44	47	0.05	1.60	15

The variation in profitable sets of moving averages and penetration rules might be surprising. Differences in price patterns, especially between bear markets and bull markets, require different levels of sensitivity to achieve the highest profits. The most profitable combinations are chosen based on the behavior of the 1990's. For these optimal sets of moving averages to be effective outside of that period of time, market price patterns must be similar to that of the 1990's.

## 4.5 Applying Moving Averages to Futures Data

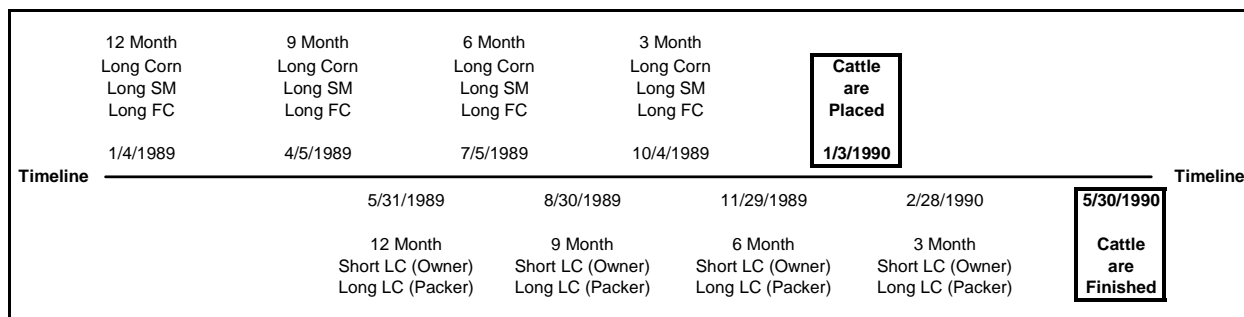
The largest volume of fed cattle is usually marketed in the middle of the week. The moving average system was used with the assumption that all fed cattle were sold by the cattle owner to the packer on Wednesdays.<sup>30</sup> Any live cattle hedges in place in the month of expiration were lifted by Wednesday in the week prior to contract expiration to avoid the price volatility that often occurs in the last days of trading.<sup>31</sup> All hedges were placed in the nearby contract corresponding to placement dates (for corn, soybean meal, and feeder cattle) and finished dates (for live cattle,) except in the case of soybean meal. The optimization process did not identify a set of moving averages that generated positive returns after commissions for the thinly traded January Soybean Meal Futures. The March contract was used instead to hedge soybean meal for all placement dates that corresponded with January as the nearby contract.

Start and stop dates for the moving average system depended on the planning periods and the commodity being hedged (Figure 4.1.) The starting dates to hedge corn, soybean meal, and feeder cattle were determined by subtracting the length of the planning period (3, 6, 9, or 12 months) from the *placement date*. The starting date to hedge live cattle for both the cattle owner and packer was determined by subtracting the length of the planning period from the *finished date*. The various starting dates for hedging each commodity are shown for cattle placed on feed on January 3, 1990, and sold on May 30, 1990.

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<sup>30</sup> When a holiday fell on Wednesday, hedges were lifted on the following trading day.

<sup>31</sup> Positions that were still open were lifted on Wednesday at the closing price without waiting for a sell (buy) signal from the moving average system.



SM = Soybean Meal  
 FC = Feeder Cattle  
 Short LC (Owner) = Cattle Owners Sell Live Cattle Futures  
 Long LC (Packer) = Packers Buy Live Cattle Futures

**Figure 4.2: Moving Average System Starting Dates in Relation to Placement and Finish Dates.**

When the moving average system was activated for a particular planning period for corn, soybean meal, feeder cattle, and long hedging live cattle for the packer, a futures position was taken immediately if the corresponding market was in an up trend and the penetration requirement was met.<sup>32</sup> When the system was activated for a particular planning period for short hedging live cattle for the cattle owner, a futures position was taken immediately if the corresponding market was in a downtrend and the penetration requirement was met.<sup>33</sup>

To calculate the hedged feeding margin, futures profits from long positions in corn, soybean meal, feeder cattle, and short positions in live cattle were added to the cash market based feeding margin that corresponded with the finish date of the steer. To calculate the hedged packing margin, futures profits from long positions in live cattle were added to the cash market based packing margin that corresponded with the finish date of the steer.

<sup>32</sup> A futures position was taken if the shorter moving average was above the longer moving average by an amount greater than or equal to the penetration requirement.

<sup>33</sup> A futures position was taken if the shorter moving average was below the longer moving average by an amount greater than or equal to the penetration requirement.

Simulated profits (less commission) from futures contracts were calculated in the units of the contract,<sup>34</sup> and then converted to a per head basis to directly combine them with the feeding and packing margins.

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<sup>34</sup> Units for each futures contract: Corn Futures in cents per bushel. Soybean Meal Futures in dollars per ton. Feeder Cattle Futures and Live Cattle Futures in dollars per hundred pounds (cwt.)

## 5 In-Sample Results and Analysis

### 5.1 Calculating Hedged Margins

Results from the moving average hedge strategy were calculated for the period from May 30, 1990 to December 29, 1999. Original, unhedged margins are referred to as baseline margins. Hedged margins combine the revenue from the baseline margin with the hedging returns from the most profitable planning periods.<sup>35</sup>

The results of all four planning periods were analyzed for each commodity as a whole. The planning period with the highest average revenue across *all contract months* for that specific commodity was the chosen planning period, even though some contract months were more profitable under different time horizons (see Appendix A, Tables A1-A5.) It was decided that the complications in keeping track of different planning periods for different contract months across multiple commodities (e.g., 6 months planning for March corn versus 12 months planning for May corn) outweighed any potential increase in profits. For the feeding margin, the time periods with the highest average profit were 12 months for corn, 12 months for soybean meal, 12 months for feeder cattle, and 12 months for live cattle. For the packing margin, the most profitable time period was 12 months for live cattle. It is logical that the most profitable planning periods come closest to the time over which each contract was optimized.<sup>36</sup>

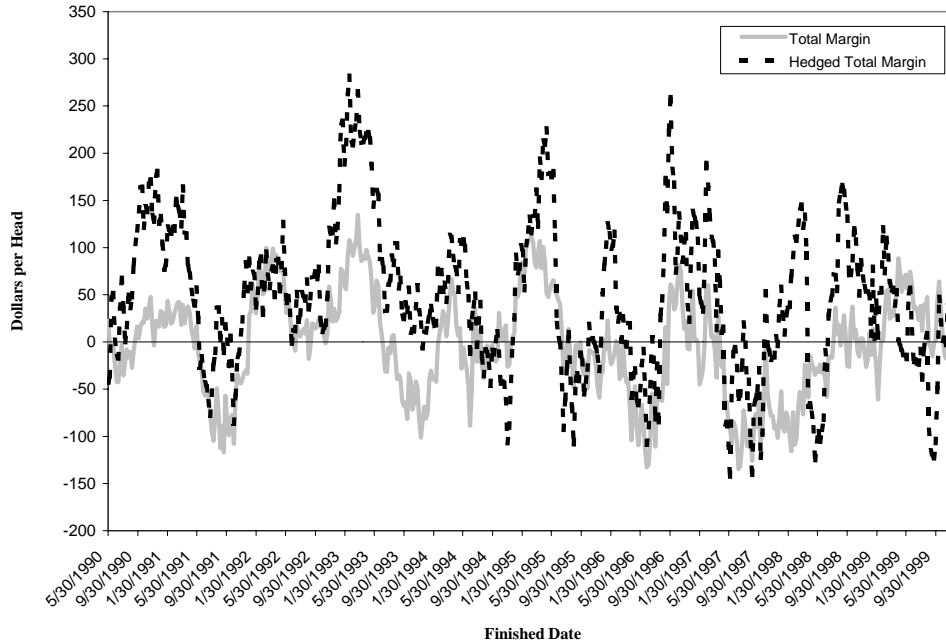
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<sup>35</sup> In addition to profitability, risk managers could choose their optimum planning period based on the amount of time in advance that they could feasibly hedge placing and finishing cattle. Tables of returns from futures trading for all commodities and planning periods are located in Appendix A.

<sup>36</sup> Recall that the optimization performed for each commodity was done over the life of the contract, which for corn and soybeans was greater than a year, and for feeder cattle and live cattle was just under a year.

## 5.2 Total Margin Results

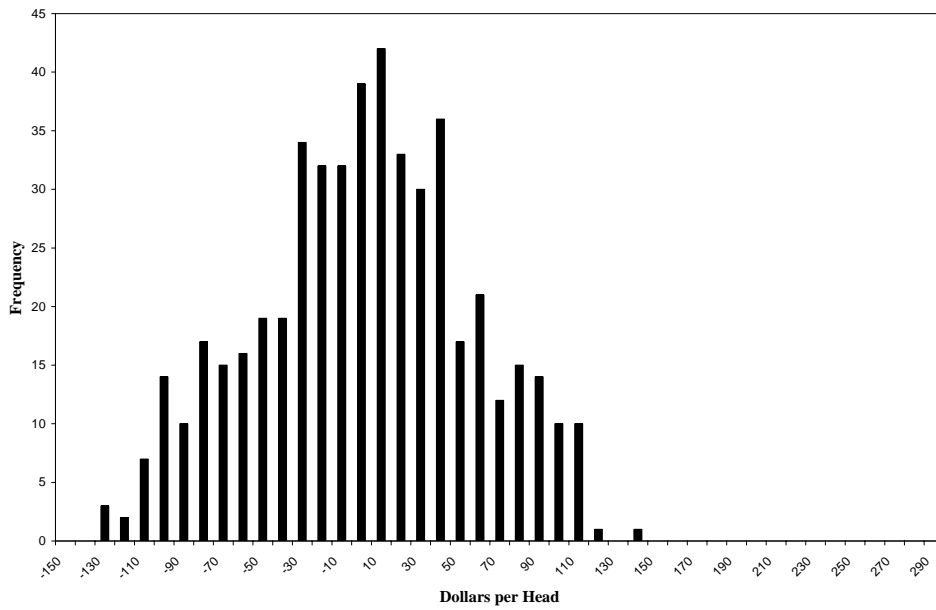
The newly hedged total margin is plotted against the baseline total margin in Figure 5.1.



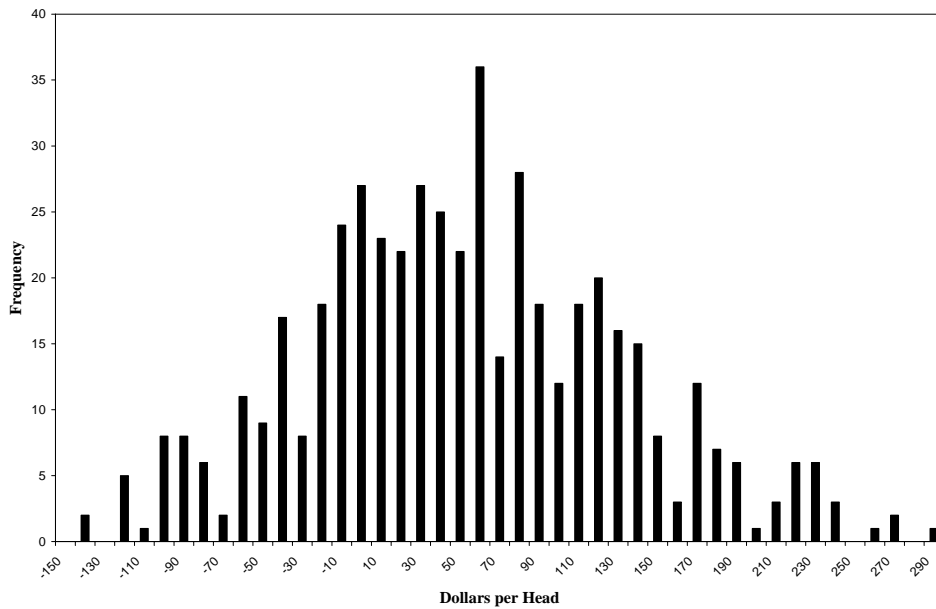
**Figure 5.1: Weekly Hedged and Baseline Total Margins from May 30, 1990 to December 29, 1999.**

The mean of the total margin improved from  $-\$4.10/\text{head}$  to  $\$46.94/\text{head}$ . The total hedged margin ranges from  $-\$142.98/\text{head}$  to  $\$282.17/\text{head}$ . Standard deviation increased from  $\$54.53/\text{head}$  to  $\$79.92/\text{head}$ . This preliminary look at the descriptive statistics of the hedged total margin shows that mean revenue improved by  $\$51.04/\text{head}$  by accepting additional risk of  $\$25.39/\text{head}$ , as measured by the increase in standard deviation. Figure 5.1 suggests that the increased standard deviation is coming largely from the positive spikes that on occasion exceed  $\$200/\text{head}$ . In fact, the baseline total margin had 281 occurrences of positive revenue, while the hedged total margin had 382 occurrences of positive revenue. These 100 additional weeks are certainly the source of improved mean and may make the increase in variability acceptable. Histograms of the baseline and hedged total margins appear in Figures 5.5 and 5.6.





**Figure 5.2: Weekly Baseline Total Margin from May 30, 1990 to December 29, 1999.**



**Figure 5.3: Weekly Hedged Total Margin from May 30, 1990 to December 29, 1999.**

A cumulative plot of the hedged and baseline total margins (Figure 5.2) shows the significant buildup in the contributions from hedging over this ten-year period of time.

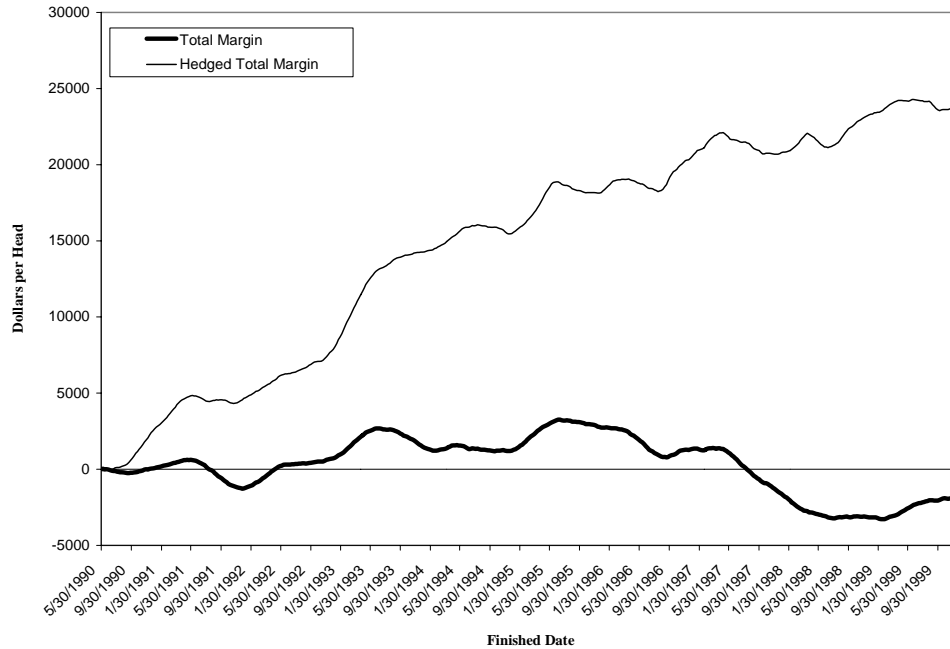
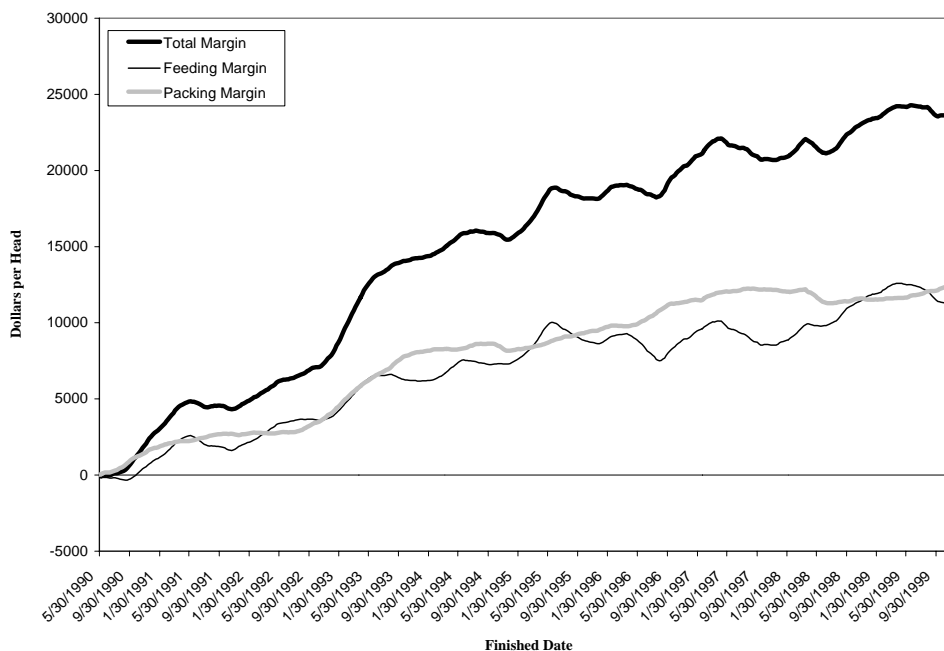


Figure 5.4: Cumulative Weekly Hedged and Baseline Total Margins from May 30, 1990 to December 29, 1999.

### 5.3 Feeding Margin and Packing Margin Results

#### 5.3.1 Analysis Across the Entire In-Sample Time Period

The individual contributions from hedging the feeding and packing margins are displayed in Figure 5.3. The strong positive trends from hedging each of the margins indicate significant improvement in feeding and packing margins due to hedging.



**Figure 5.5: Cumulative Weekly Hedged Feeding, Packing, and Total Margins from May 30, 1990 to December 29, 1999.**

All three margins show statistically significant positive trends and strong performance over time. Mean, standard deviations, and changes in range for the margins can be found in Table 5.1.

**Table 5.1: Descriptive Statistics of Weekly Hedged and Baseline Feeding, Packing, and Total Margins (\$/head) from May 30, 1990 to December 29, 1999.**

Statistic	Feeding Margin	Hedged Feeding Margin	Packing Margin	Hedged Packing Margin	Total Margin	Hedged Total Margin
Mean	-10.14	21.64	6.04	25.30	-4.1	46.94
Standard Deviation	56.38	67.41	16.98	37.48	54.53	79.92
High	140.58	205.63	58.75	147.11	134.94	282.17
Low	-145.35	-176.60	-40.46	-135.66	-134.82	-142.98

The mean of the feeding margin improved by \$31.78/head, while the mean of the packing margin improved by \$19.26/head. The increases in the levels of both margins were accompanied by increases in range, especially to the positive extremes, and therefore by increases in standard deviation.

### 5.3.2 Analysis by Year

Tables 5.2 and 5.3 document the yearly financial picture for the cattle owner, packer, and alliance as a whole. The very weak performances in the feeding margin in 1991 and 1996-1998 and in the packing margin in 1990-1993 were offset by profitable hedges.

**Table 5.2: Annual Average Weekly Baseline Feeding, Packing, and Total Margins (\$/head) from May 30, 1990 to December 29, 1999.**

Year	Feeding Margin	Packing Margin	Total Margin
1990 Average	-0.29	1.98	1.69
1991 Average	-23.50	-2.06	-25.56
1992 Average	40.85	-3.09	37.76
1993 Average	17.82	-3.11	14.71
1994 Average	-13.25	8.05	-5.20
1995 Average	8.96	20.26	29.22
1996 Average	-31.86	4.11	-27.75
1997 Average	-58.97	4.24	-54.73
1998 Average	-37.67	7.94	-29.73
1999 Average	0.45	20.61	21.06
1990 - 1999 Average	-10.14	6.04	-4.10

Year 1990 is averaged from May 30, 1990 through December 26, 1990.

All other averages cover the entire calendar year.

**Table 5.3: Annual Average Weekly Hedged Feeding, Packing, and Total Margins (\$/head) from May 30, 1990 to December 29, 1999.**

Year	Hedged Feeding Margin	Hedged Packing Margin	Hedged Total Margin
1990 Average	26.33	53.40	79.73
1991 Average	21.18	19.86	41.03
1992 Average	35.97	29.78	65.75
1993 Average	45.15	80.60	125.75
1994 Average	22.00	-6.51	15.50
1995 Average	25.46	6.10	31.57
1996 Average	6.74	32.16	38.91
1997 Average	-5.67	8.56	2.89
1998 Average	59.49	-18.93	40.56
1999 Average	-18.10	1.37	-16.74
1990 - 1999 Average	21.64	19.26	40.90

Year 1990 is averaged from May 30, 1990 through December 26, 1990.

All other averages cover the entire calendar year.

Compared to five years of negative returns for the baseline total margin, the hedged total margin is in the red only in 1999. In 1999, there were losses relative to the baseline in both the hedged feeding and packing margins.

### 5.3.3 Analysis by Commodity

The cause of positive and negative returns from hedging can be identified by examining a breakdown of the contribution from each commodity (Tables 5.4 – 5.5.)

**Table 5.4: Annual Average Weekly Hedged Feeding Margin by Component (\$/head) from May 30, 1990 to December 29, 1999.**

Year	Hedged Feeding Margin	Total Hedge	Corn	Soybean Meal	Feeder Cattle	Live Cattle
1990 Average	26.33	26.62	6.02	-0.56	22.54	-1.39
1991 Average	21.18	44.67	1.66	-0.57	30.15	13.43
1992 Average	35.97	-4.87	-6.00	-0.07	2.99	-1.79
1993 Average	45.15	27.33	-15.70	0.01	47.46	-4.44
1994 Average	22.00	35.25	9.44	0.52	6.71	18.58
1995 Average	25.46	16.50	-8.83	-0.79	-9.64	35.76
1996 Average	6.74	38.61	62.35	1.77	-22.85	-2.67
1997 Average	-5.67	53.30	24.43	1.41	36.43	-8.97
1998 Average	59.49	97.16	4.10	1.16	11.42	80.48
1999 Average	-18.10	-18.55	-12.14	-0.73	-14.52	8.85
1990 - 1999 Average	21.64	31.78	6.57	0.25	10.62	14.34

\*Year 1990 is averaged from May 30, 1990 through December 26, 1990.

All other averages cover the entire calendar year.

**Table 5.5: Annual Average Weekly Hedged Packing Margin by Component (\$/head) from May 30, 1990 to December 29, 1999.**

Year	Hedged Packing Margin	Live Cattle
1990 Average	55.37	53.40
1991 Average	17.79	19.86
1992 Average	26.69	29.78
1993 Average	77.49	80.60
1994 Average	1.54	-6.51
1995 Average	26.36	6.10
1996 Average	36.28	32.16
1997 Average	12.80	8.56
1998 Average	-10.99	-18.93
1999 Average	21.98	1.37
1990 - 1999 Average	25.30	19.26

\*Year 1990 is averaged from May 30, 1990 through December 26, 1990.  
All other averages cover the entire calendar year.

Huge contributions to the feeding margin were recorded in feeder cattle in 1993 (\$47.46/head.) Corn's contribution of \$62.35/head was associated with the positive spike in the feeding margin in 1996. The largest hedging contributions occurred in 1997 and 1998. Corn and feeder cattle, combined, generated over \$60/head in 1997. In 1998, live cattle hedges soared to over \$80/head, contributing 83% of the average gains from hedging that year. The packing margin recorded the highest average gains from live cattle hedges in 1990 (\$53.40/head) and 1993 (\$80.60/head.) Table 5.6 shows the contribution of each individual commodity to the hedged feeding margin over the entire ten-year period.

**Table 5.6: Descriptive Statistics of Weekly Hedged Feeding Margin (\$/head) by Component from May 30, 1990 to December 29, 1999.**

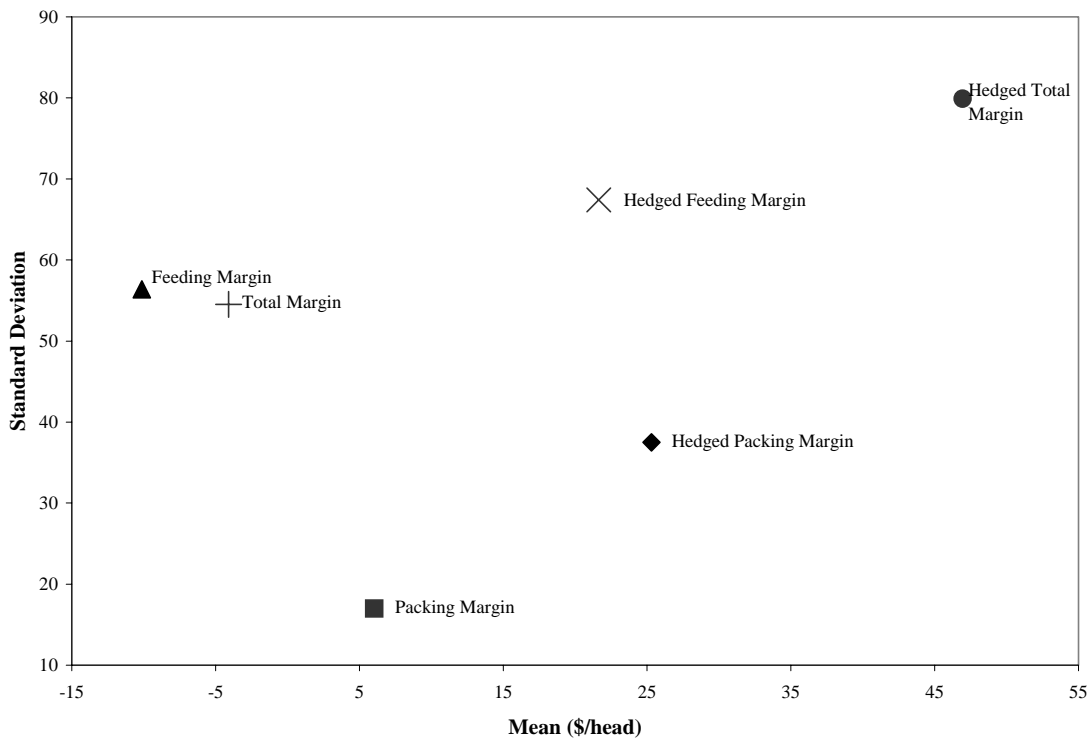
Statistic	Hedged Feeding Margin	(12 month) Corn	(12 month) Soybean Meal	(12 month) Feeder Cattle	(12 month) Live Cattle
Mean	21.64	6.57	0.25	10.62	14.34
Standard Deviation	67.41	29.43	1.24	33.09	43.76
High	205.63	138.68	4.59	97.5	167.09
Low	-176.60	-34.26	-2.07	-93.23	-74.29

The largest contributions to the feeding margin were made in live cattle (\$14.34/head) followed by feeder cattle (\$10.62/head) and then corn (\$6.57/head.) The per head contribution

of soybean meal (\$0.25/head) was too small to justify the trouble of hedging it and taking on any additional price volatility. Producers who use a feeding ration that consists of a larger percentage of soybean meal would likely find soybean meal hedging a more valuable part of the risk management program.

### 5.4 Portfolio Analysis

Figure 5.6 depicts the hedged and baseline feeding, packing, and total margins in a mean-variance perspective. The significant improvements in mean revenue from the hedged margins were accompanied by small increases in standard deviation, which are the result of larger and more frequent occurrences of positive revenue.



**Figure 5.6: Mean-Variance Analysis of Hedged and Baseline Feeding, Packing, and Total Margins from May 30, 1990 to December 29, 1999.**

## 5.5 Examination of Moving Average Performance

The performance of the optimal moving averages for each commodity varied widely. The overall mean returns were always positive, but within the ten-year time period, some years were more profitable than others. This was especially true for corn. Examples of moving average success and failure in corn hedging are provided as an illustration of how the moving average system works. The trading signals generated for the 12 month planning period for July 1996 Corn Futures in Figure 5.7 show how well moving averages perform in markets that exhibit sustained price trends.

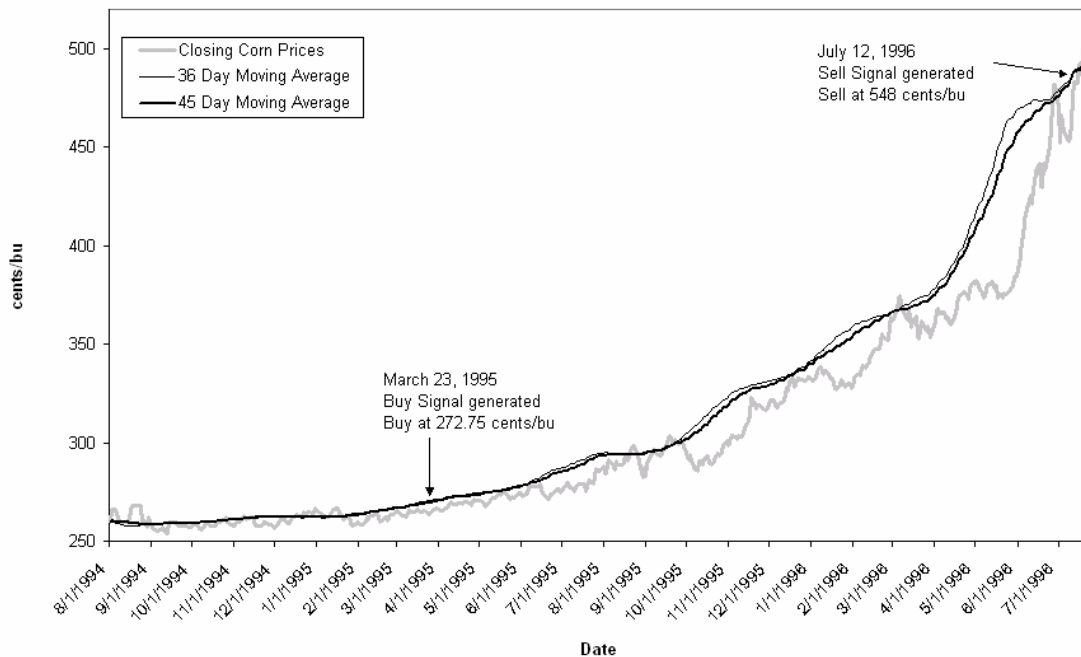
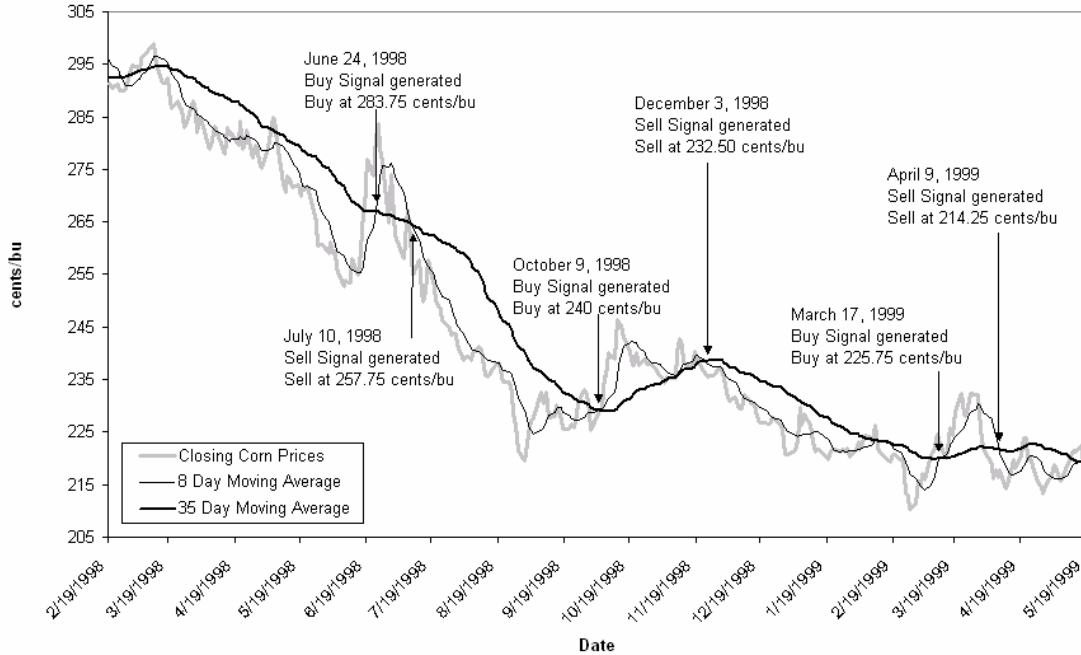


Figure 5.7: Example of Excellent Moving Average Performance, Profit \$114.54/head, July 1996 Corn.



The one round turn made \$114.54/head in hedging profit for the feeding margin. The May 1999 Corn Futures in Figure 5.8 is an ideal example of poor moving average performance in a congested, sideways moving market that is largely trending down.



**Figure 5.8: Example of Poor Moving Average Performance, Profit -\$27.18/head, May 1999 Corn.**

Long hedges in May 1999 Corn Futures within the 12 month planning period lost \$27.18/head. In Appendix A, Tables A.1 – A.5 show average annual payoff for each futures contract.

## 5.6 Summary

The in-sample test results suggest that a moving average based selective hedging program can significantly contribute to the revenue of an alliance. The total margin improved from

–4.10/head to \$46.94/head over the ten year period. The standard deviation also increased by \$25.39/head. The increase in standard deviation was driven by larger and more frequent occurrences of positive revenue from the moving average program, and was the source of the improvement in mean revenue.

Cash flow analysis of the results showed that the hedged total margin was negative in only one year, compared to the baseline total margin, which lost money in five out of ten years. The hedging of each commodity generated revenue on average, though soybean meal's insignificant returns would not make risk management of that commodity worthwhile unless a larger portion of the feeding ration was comprised of soybean meal.

To examine the effectiveness of the risk management program for real alliances in hedging today's commodity prices, the program must now be tested out of sample.

## 6 Out-of-Sample Results & Analysis

### 6.1 Calculating Hedged Margins

Results from the moving average hedging strategy were calculated for the period from January 5, 2000 to June 26, 2002. The same planning periods (12 months for all commodities) identified as optimum in the in-sample test were used in the out-of-sample test to calculate the hedged margins.

### 6.2 Total Margin Results

The hedged and baseline total margins for the out-of-sample period are plotted in Figure 6.1.

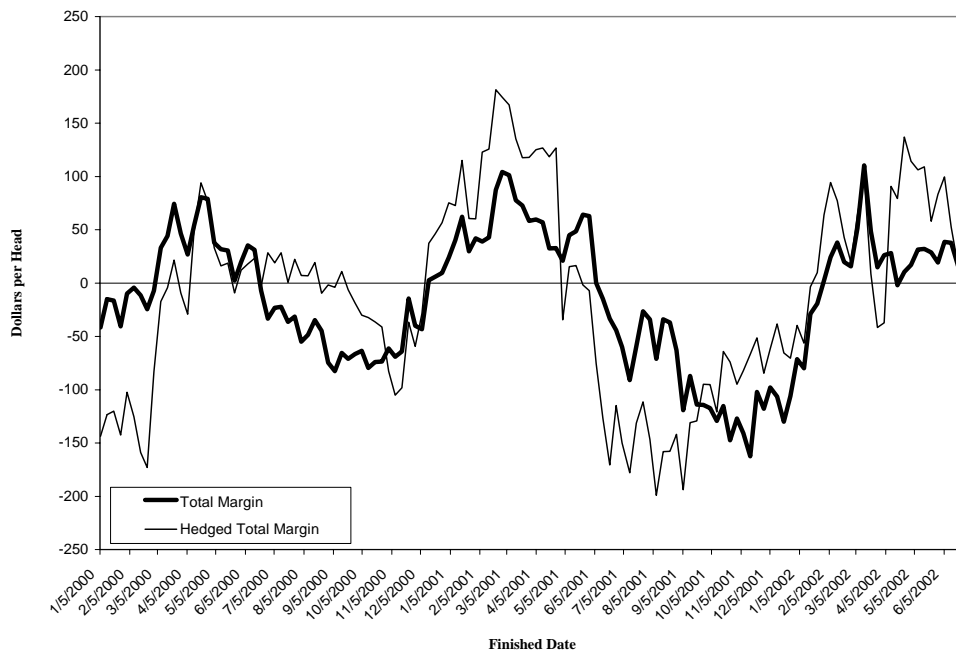
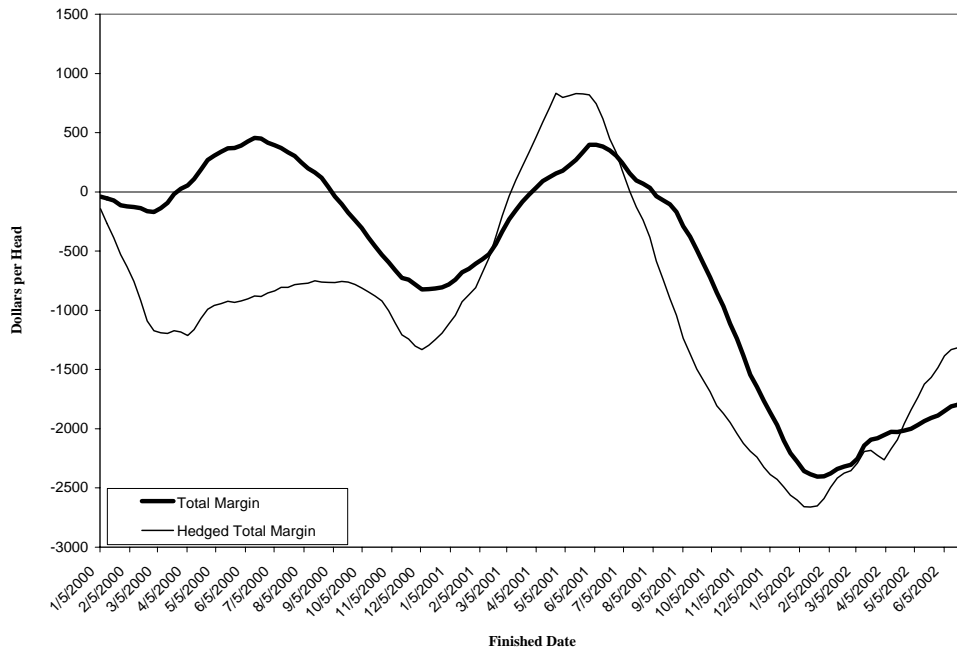


Figure 6.1: Weekly Hedged and Baseline Total Margins from January 5, 2000 to June 26, 2002.

The baseline total margin was negative and volatile during this time period, with an average loss of \$13.83/head. The hedged total margin had a mean of -\$10.02/head, an improvement of only \$3.71/head.

The cumulative plot of the total margins (Figure 6.2) shows two large periods of accumulating losses from hedging and two small periods of accumulating profits from hedging.



**Figure 6.2: Cumulative Weekly Hedged and Baseline Total Margins from January 5, 2000 to June 26, 2002.**

### **6.3 Feeding Margin and Packing Margin Results**

#### **6.3.1 Analysis Across the Entire Out-of-Sample Time Period**

The descriptive statistics of the hedged and baseline feeding, packing, and total margins are shown in Table 6.1.

**Table 6.1: Descriptive Statistics of Weekly Hedged and Baseline Feeding, Packing, and Total Margins (\$/head) from January 5, 2000 to June 26, 2002.**

Statistic	Feeding Margin	Hedged Feeding Margin	Packing Margin	Hedged Packing Margin	Total Margin	Hedged Total Margin
Mean	-32.79	-23.97	18.96	13.85	-13.83	-10.12
Standard Deviation	60.48	74.91	19.78	34.81	61.61	90.31
High	96.09	144.71	73.00	92.28	110.34	181.36
Low	-160.70	-208.07	-34.47	54.87	-162.45	-199.11

The baseline feeding margin was negative over the out-of-sample time period (-\$32.79/head.) All gains from hedging to the total margin were made in the risk management of the feeding margin, with an improvement of \$8.82 per head from -\$32.79 to -\$23.97. The baseline packing margin performed extremely well during the out-of-sample time period (\$18.96/head.) Very few added profits would be expected from the long hedging of live cattle during this time period when the trend in cattle prices was largely negative.<sup>37</sup> Hedging the packing margin resulted in losses of \$5.11/head.

### 6.3.2 Analysis by Year

Annual profits from feeding, packing, and total margins can be found in Table 6.2. The feeding margin was negative in each year, while the packing margin was positive in each year. The total margin was negative in two out of three years, and negative overall.

**Table 6.2: Annual Average Weekly Feeding, Packing, and Total Margins (\$/head) from January 5, 2000 to June 26, 2002.**

Year	Feeding Margin	Packing Margin	Total Margin
2000 Average	-41.24	25.74	-15.50
2001 Average	-37.76	10.86	-26.90
2002 Average	-5.96	21.62	15.66
2000 - 2002 Average	-32.79	18.96	-13.83

Years 2000 and 2001 are averaged over the entire calendar year.

Year 2002 is averaged from January 2, 2002 through June 26, 2002.

<sup>37</sup> In downward trending live cattle markets, ideally the moving average system should avoid a long futures position to let the packer benefit from falling fed cattle prices.

Hedged annual profits are shown in Table 6.3.

**Table 6.3: Annual Average Hedged Weekly Feeding, Packing, and Total Margins (\$/head) from January 5, 2000 to June 26, 2002.**

Year	Hedged Feeding Margin	Hedged Packing Margin	Hedged Total Margin
2000 Average	-37.24	14.32	-11.50
2001 Average	-37.59	11.24	-26.73
2002 Average	29.78	18.12	51.40
2000 - 2002 Average	-23.97	13.85	-5.01

Years 2000 and 2001 are averaged over the entire calendar year.

Year 2002 is averaged from January 2, 2002 through June 26, 2002.

Comparing Table 6.2 to Table 6.3, the hedged feeding margin achieves small gains in 2000 and significant positive returns in 2002. The large losses in the hedging of live cattle for the packer came in 2000. The 2002 hedged total margin (\$51.40/head) averaged \$35.74/head more than the baseline total margin (\$15.66/head.)

### 6.3.3 Analysis by Commodity

Table 6.4 shows the contribution of each individual commodity to the hedged feeding margin.

**Table 6.4: Annual Average Weekly Hedged Feeding Margin by Component (\$/head) from January 5, 2000 to June 26, 2002.**

Year	Hedged Feeding Margin	Total Hedge	Corn	Soybean Meal	Feeder Cattle	Live Cattle
2000 Average	-37.24	4.00	-14.82	0.10	24.24	-5.51
2001 Average	-37.59	0.17	-7.89	-1.31	-3.20	12.57
2002 Average	29.78	35.74	-7.49	0.07	-4.61	47.77
2000 - 2002 Average	-23.97	8.82	-10.58	-0.47	7.49	12.38

Years 2000 and 2001 are averaged over the entire calendar year.

Year 2002 is averaged from January 2, 2002 through June 26, 2002.

The losses from hedging corn are apparent throughout the out-of-sample period. Feeder cattle hedges and live cattle short hedges were profitable. Table 6.5 shows large losses of \$11.42/head in 2000 on the long hedging of live cattle for the packer.

**Table 6.5: Annual Average Weekly Hedged Packing Margin by Component (\$/head) from January 5, 2000 to June 26, 2002.**

Year	Hedged Packing Margin	Live Cattle
2000 Average	14.32	-11.42
2001 Average	11.24	0.38
2002 Average	18.12	-3.49
2000 - 2002 Average	13.85	-5.11

Years 2000 and 2001 are averaged over the entire calendar year.

Year 2002 is averaged from January 2, 2002 through June 26, 2002.

The overall contribution to the feeding margin from each commodity can be found in

Table 6.6.

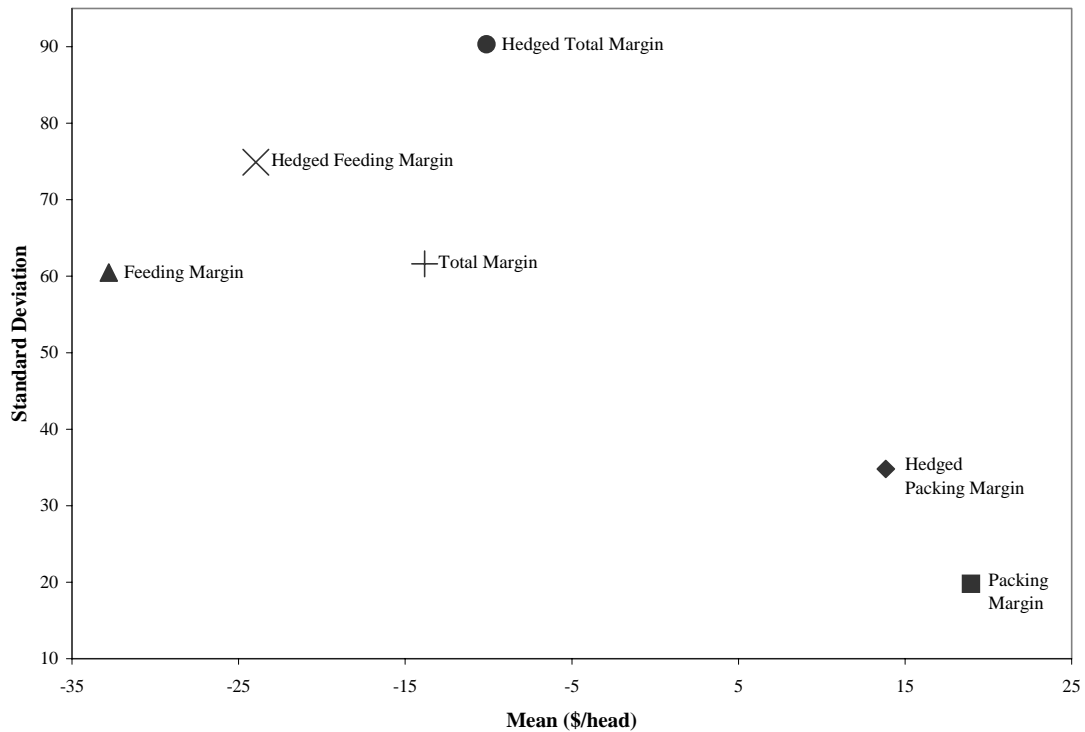
**Table 6.6: Descriptive Statistics of Hedged Feeding Margin by Component (\$/head) from January 5, 2000 to June 26, 2002.**

Statistic	Hedged Feeding Margin	(12 month) Corn	(12 month) Soybean Meal	(12 month) Feeder Cattle	(12 month) Live Cattle
Mean	-23.97	-10.58	-0.47	7.49	12.38
Standard Deviation	74.91	7.88	0.96	23.41	48.18
High	144.71	5.48	1.27	52.13	131.48
Low	-208.07	-27.60	-2.79	-66.45	-72.26

The largest average futures profits were again made in live cattle (\$12.38/head,) followed by feeder cattle (\$7.49/head.) Serious losses occurred in the long hedging of corn (-\$10.58/head.) Recall from the in-sample results that long hedges in corn contributed only \$6.57/head of the total hedging profits (\$31.78/head) (Table 5.4.)

## 6.4 Portfolio Analysis

Figure 6.3 depicts the out-of-sample portfolio performance.

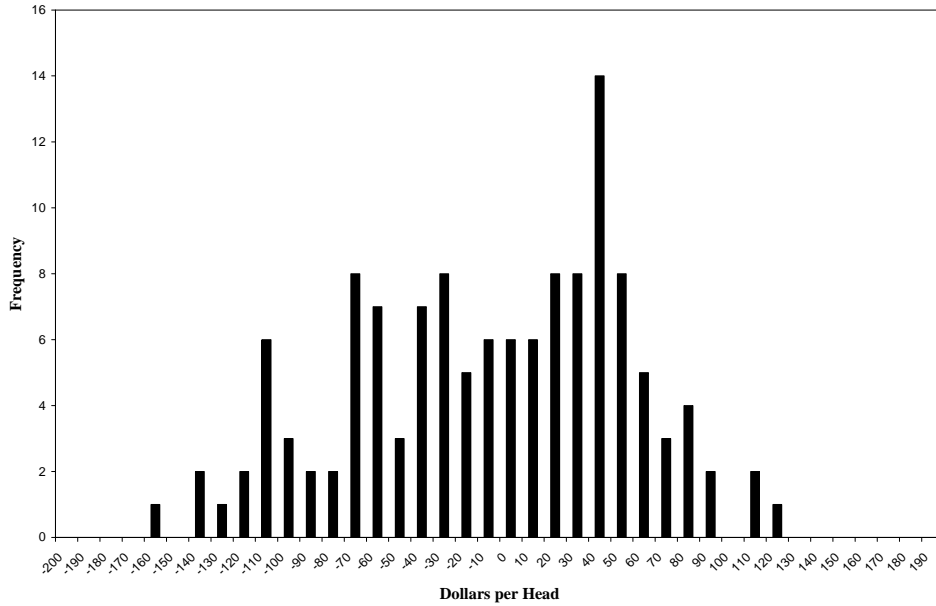


**Figure 6.3: Mean-Variance of Hedged and Baseline Feeding, Packing, and Total Margins from January 5, 2000 to June 26, 2002.**

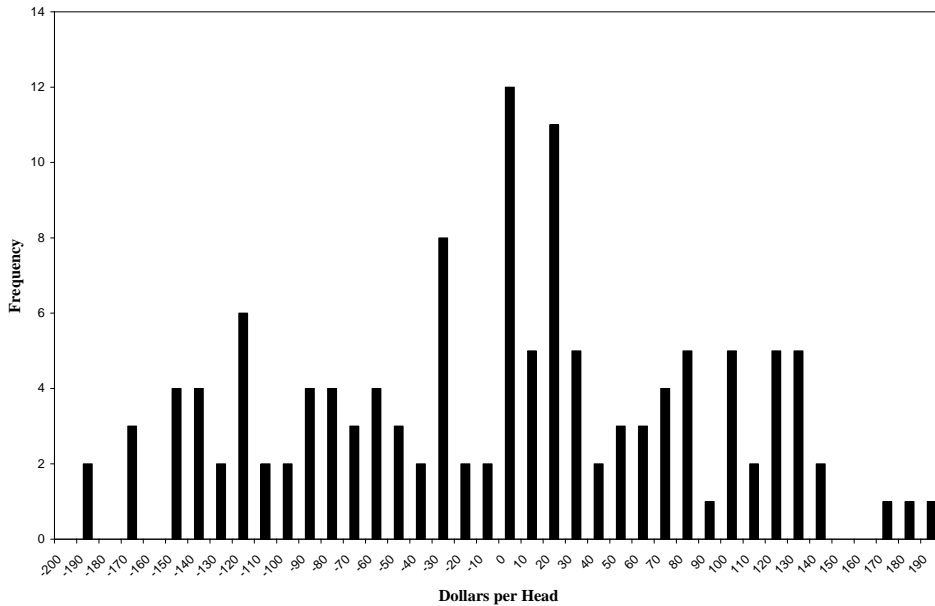
A comparison of the hedged and baseline packing margins revealed that the baseline packing margin was preferred over the hedged packing margin for the out-of-sample period. Improvements in mean level for the feeding and total margins came at the cost of increased standard deviation. This time, however, the higher variability of the hedged total margin was due to only a small increase in occurrences of positive revenue. The baseline total margin had 67



occurrences of positive revenue; while the hedged total margin had 73 occurrences of positive revenue (see histograms in Figures 6.4 and 6.5.) The mean of the hedged total margin was 27% higher than the baseline total margin, while the standard deviation of the hedged total margin was 49% above the baseline total margin.



**Figure 6.4: Weekly Total Margin from January 5, 2000 to June 26, 2002.**



**Figure 6.5: Weekly Hedged Total Margin from January 5, 2000 to June 26, 2002.**

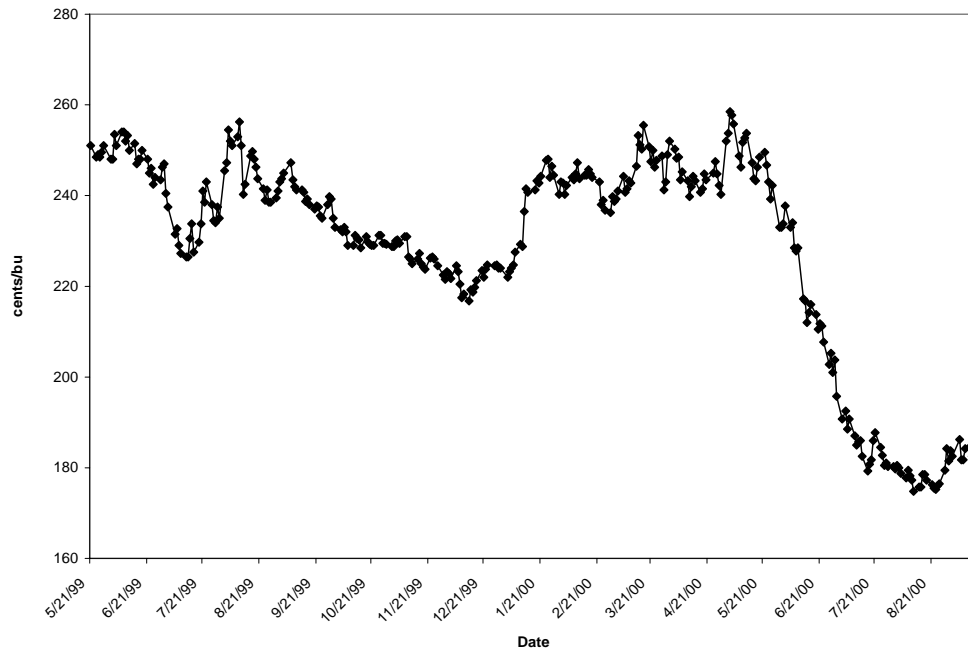
## **6.5 Examination of Moving Average Performance**

The moving average system did not generate as much revenue in the out-of-sample test (additional \$3.71 total margin) compared to the in-sample test (additional \$51.04 total margin,) especially for long positions on corn and live cattle contracts. Tables A.6 – A.10 in Appendix A document average annual payoff for each futures contract. Average payoff from corn was negative across all contracts for the 12 month planning period (Table A.6.) Soybean meal also contributed losses for each contract for the 12 month planning period (Table A.7.) The majority of contracts were profitable for long positions in feeder cattle (Table A.8) and short positions on live cattle (Table A.9) for the 12 month period. Long positions in live cattle generated losses for three of the six contract months for the 12 month period (Table A.10.)

The out-of-sample time period may not have allowed sufficient time for a rigorous test of moving average performance. Will the poor performance by moving averages for long positions on corn and live cattle, which generated the largest hedging losses, continue into the future? Or were the losses to be expected because of market conditions? During the in-sample test, both corn and live cattle long hedges had multiple losing years. Corn accumulated average losses of \$6/head in 1992 and \$15.70/head in 1993. Large losses of \$18.93/head occurred in live cattle long hedges in 1998. It would be useful to identify which monthly contracts were causing the losses during the in-sample years and compare them to the losing monthly contracts out-of-sample.

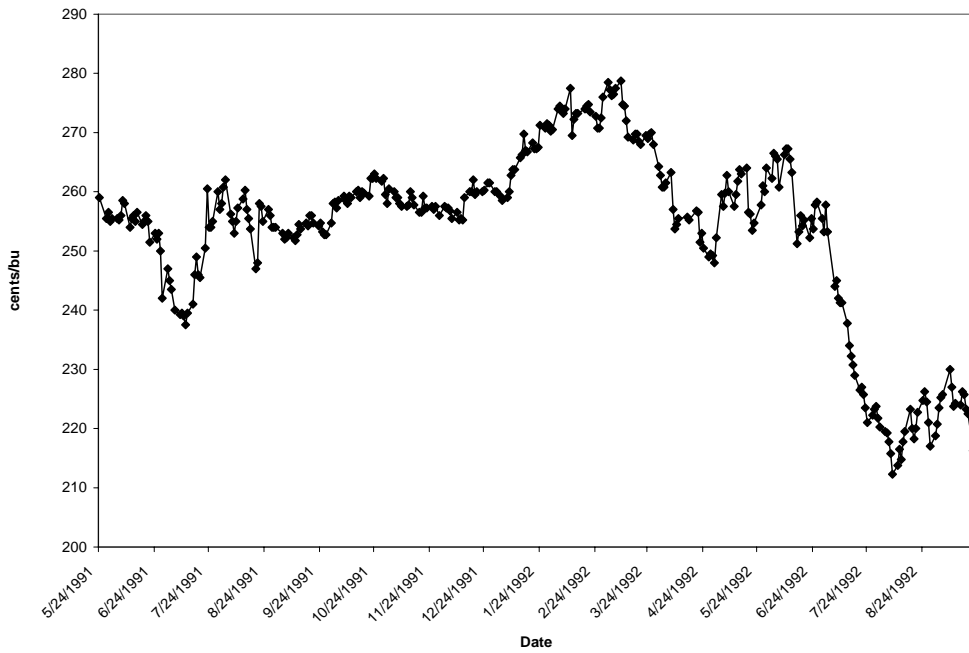
### **6.5.1 Analysis of Corn Losses**

Out-of-sample, Table A.6 shows consistent losses in all corn contracts, with the most negative payoffs in September Corn Futures. From May 1992 to December 1993, the in-sample years of poor performance, all the corn contracts lost money, similar to the out-of-sample time period. March 1993 (-\$24.57/head) and December 1993 (-\$22.52/head) lost the most, but September recorded consistent losses of \$15.35/head in 1992 and \$15.36/head in 1993. In the out-of-sample period, the largest September contract loss of \$26.18/head was in 2000. What were the market conditions like in 1992 and 1993, and were they similar to the market conditions during the out-of-sample time period? Figure 6.6 shows that market conditions for corn in 2000 would be unfavorable to most any set of moving averages and penetration rules.

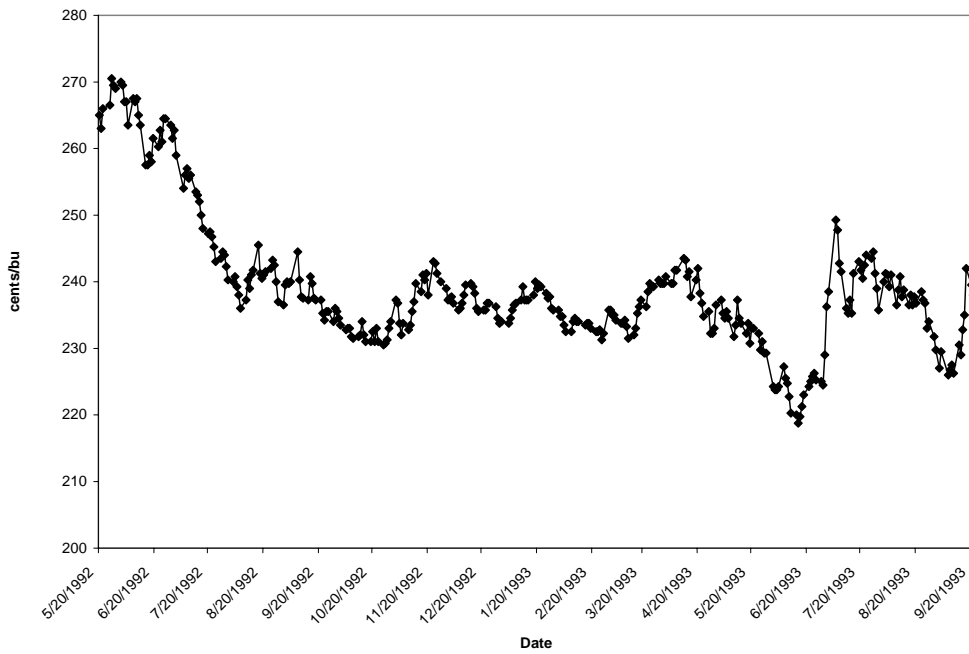


**Figure 6.6: 2000 September Corn Futures Closing Prices.**

The three periods of declining prices and the one period with sporadic up and down price movement, with little overall change in price level, made long hedging corn with moving averages unprofitable. Figures 6.7 and 6.8 reveal similar difficulty in September 1992 and 1993.



**Figure 6.7: 1992 September Corn Futures Closing Prices.**



**Figure 6.8: 1993 September Corn Futures Closing Prices.**

## 6.5.2 Analysis of Live Cattle Losses

Table A.10 shows specifically that out-of-sample June and December Live Cattle Futures did not perform well for long hedges, with losses of \$14.02/head and \$32.89/head on average. Within the out-of-sample time period, June's performance was the worst in 2000 and 2001, with consistent losses of \$27.60/head and \$27.36/head. December's losses occurred largely in 2001, with futures payoffs of -\$48.26/head. Were the June and December contracts in 1998 performing poorly? In 1998 June Live Cattle Futures recorded the largest loss (-\$81.95/head) of any live cattle contract over the in-sample period. 1998 December Live Cattle Futures lost \$0.21/head. 1998 June Live Cattle Futures, pictured in Figure 6.9, shows the price swings over a relatively small trading range that caused the huge losses from long hedging.

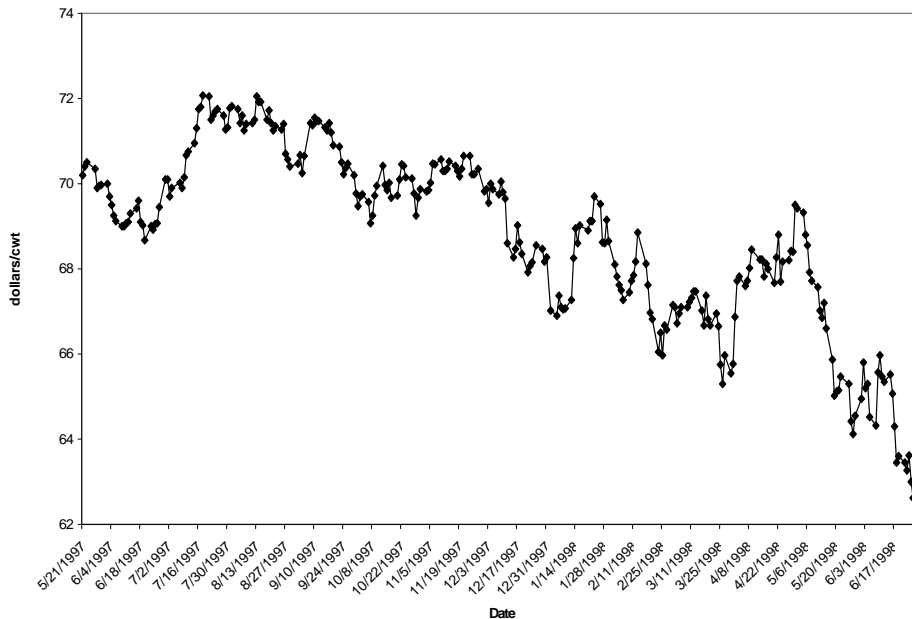
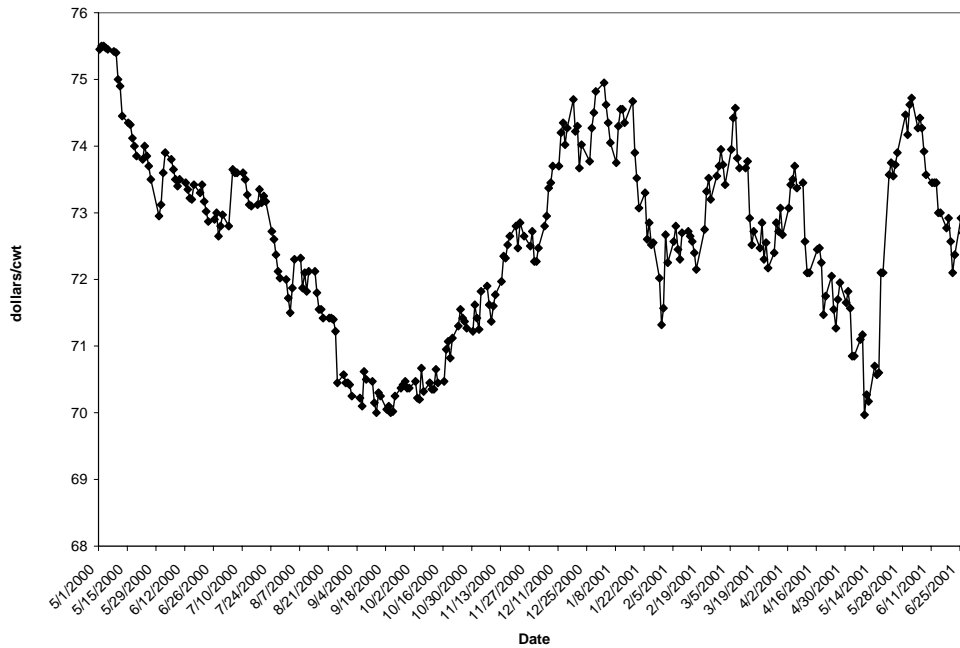


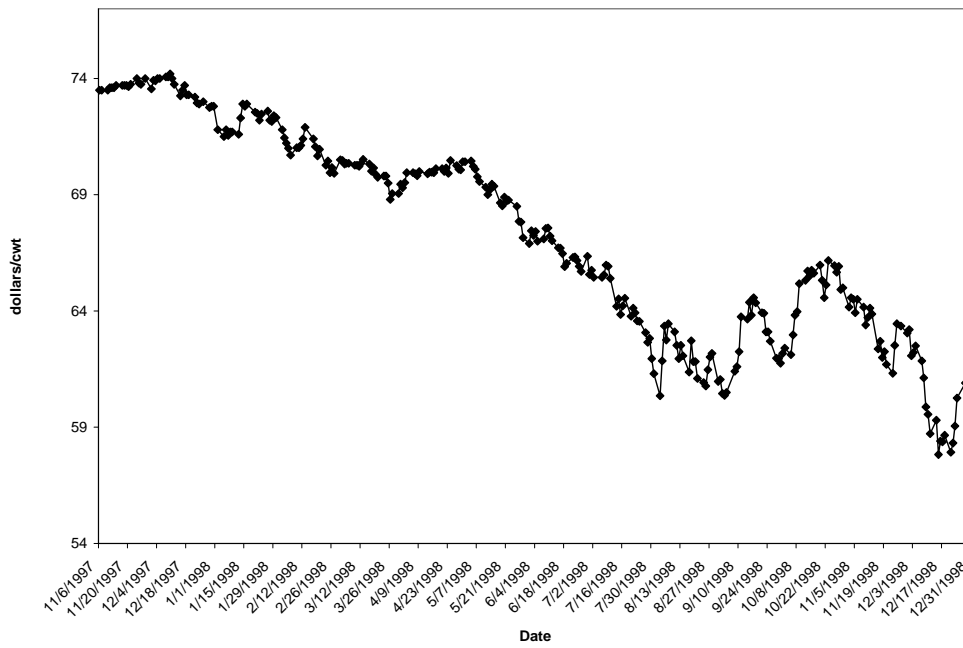
Figure 6.9: 1998 June Live Cattle Futures Closing Prices.

In 2001 June Live Cattle Futures (Figure 6.10.) profits that were made over a steep up trend (over the middle of the contract) were quickly eliminated by losses from sharp up and down swings (over the second half of the contract.)



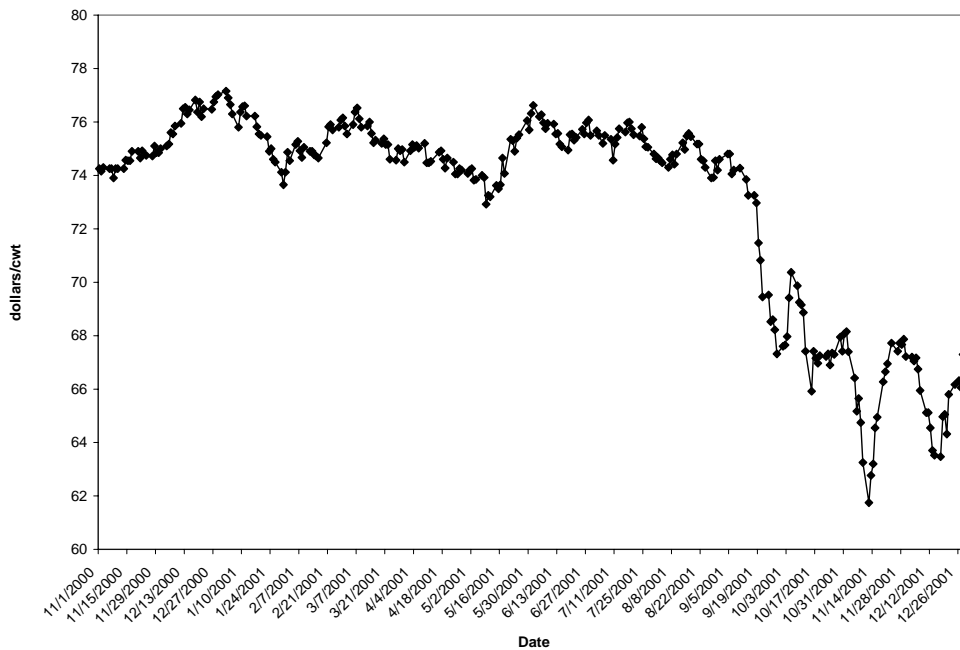
**Figure 6.10: 2001 June Live Cattle Futures Closing Prices.**

1998 December Live Cattle Futures, in Figure 6.11, also shows the lack of smooth upward price trends that make long hedging with moving averages profitable.



**Figure 6.11: 1998 December Live Cattle Futures Closing Prices.**

2001 December Live Cattle Futures exhibit the sideways and very abrupt price movements that renders moving averages ineffective (Figure 6.12.)



**Figure 6.12: 2001 December Live Cattle Futures Closing Prices.**



## **6.6 Summary**

Out-of-sample, the total margin showed only \$3.71/head improvement from the risk management program. Long hedging feeder cattle and short hedging live cattle were the two profitable components. Large losses occurred from long hedging corn and live cattle, primarily due to market conditions. Those markets experienced long down trends and sideways price movements, patterns for which long hedging would typically not be profitable. Though long hedging lost money in years of declining prices, the alliance benefited from lower cash prices for corn and live cattle during that time. And the crucial protection was still in place in the form of trading signals that would be generated if a significant upward price move was detected. The importance of evaluating the moving average system over a substantial time period, so that significant program benefits are not overshadowed by a few money losing years, cannot be overstated.

## **7 Conclusions & Implications**

### **7.1 Moving Average Performance**

Moving average based selective hedging strategies successfully improve the level of revenue to an alliance when evaluated from mean-variance and cash-flow perspectives. An increase in standard deviation clearly contributes to the overall mean improvement from hedging returns. As shown in the in-sample test, the increase in standard deviation is primarily due to larger and more frequent occurrences of positive revenue. The short hedging of live cattle and long hedging of feeder cattle consistently generated profits in both the in-sample and out-of-sample tests. Soybean meal hedges were largely insignificant due to the small percentage (3%) of use in the feeding ration. Moving averages used to long hedge corn and live cattle switched from generating profits during the in-sample test to generating losses during the out-of-sample test. This was a result of market conditions and the short length of time over which the moving averages could perform out-of-sample. The moving averages identified in this research will not earn profits in choppy, sideways trending markets. However, they *will provide significant risk protection* against the major price moves that can put cattlemen out of business, *all of the time* that the system is in place.

### **7.2 Future Research Needs**

#### **7.2.1 Moving Averages and Testing**

Several changes could be made to the optimization process to improve the use of crossover moving averages as trading tools. The moving averages should be optimized over a period of time equal to the intended planning period, and should not include the week of

expiration due to market volatility. Choosing moving averages based on average performance over the entire time period tested ignores the results of the system in individual years. Mean statistics can hide years that may record huge swings in revenue from the positive to the negative. After optimizing moving averages, the selection of a set based on a minimum average profit earned every year, the highest average profit with the lowest standard deviation, or combinations between the two could lead to the discovery of parameters that could increase mean revenue *and* decrease standard deviation. The optimization process might also benefit from the removal of years in which extraordinary profits were made, such as 1996 for corn and soybean meal, but any decision to exclude data should be made on objective grounds and with care. The limited length of the out-of-sample test makes it difficult to conclusively attribute the source of futures losses to normal down trending years versus a permanent structural change in the markets.

The benefits of moving averages come primarily in years in which there are sustained moves in either a positive or negative direction. Choppy price patterns like the weather-induced price moves in corn can prompt losses over short time periods. At their best, selective long hedges in corn or live cattle futures will keep losses in the futures account to a minimum during down trending markets. Testing over an out-of-sample period of comparable length to the in-sample development period would clearly be preferred in future work.

## **7.2.2 Alliance Risk Management**

Further investigation from an alliance perspective into the correlations between the returns from hedging corn, soybean meal, feeder cattle, and live cattle would be helpful. A comparison of hedging returns from other technical and fundamental trading strategies would aid

in judging the effectiveness of hedging with moving averages and determining the risk management strategy that is best for a vertical beef alliance.

A more rigorous conceptual framework with which to conduct mean-variance analyses would be useful. Markowitz's work portrays increases in mean revenue as positive, while increases in variance are viewed as negative. But when the increase in variance is coming predominantly from positive extremes in revenue, the traditional interpretation may not be appropriate. A risk averse decision maker may choose to accept increases in variance in exchange for large positive spikes in revenue. In other words, what is the nature of the "increased risk exposure" when all of the added risk is in the form of extensions of positive revenue? How would the risk averse decision maker react if continued exposure to risk brought continued increases in mean revenue? Both conceptualization and empirical testing of such possibilities would be helpful in evaluating risk management strategies such as those employed in this research.

Schupp and Withead stated in their 1988 article "Successful farm managers are increasingly being identified as those who can compensate for unfavorable price movements in the commodities they produce and market." As the industry becomes more competitive and concentrated on a domestic and global stage, ultimately the success for an alliance will depend upon success at managing risk. Any means by which beef alliances can increase their revenue and longevity in the marketplace will bring the industry closer to the goal of regaining beef's share of the protein market.

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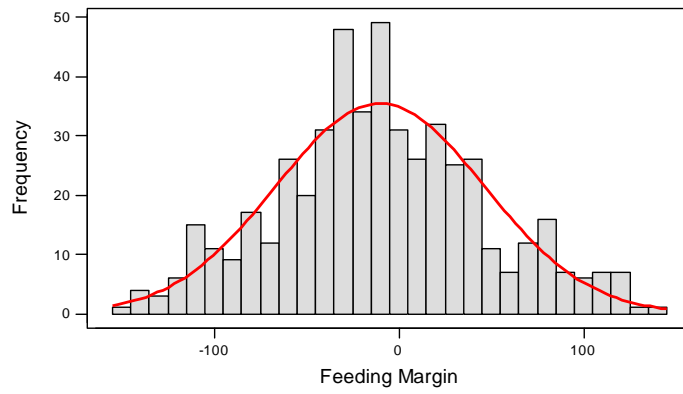
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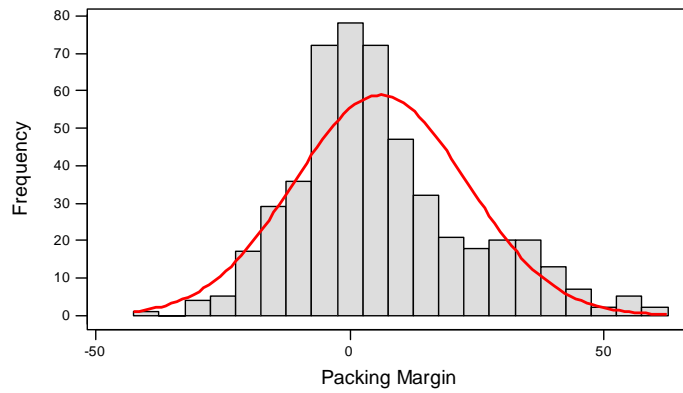
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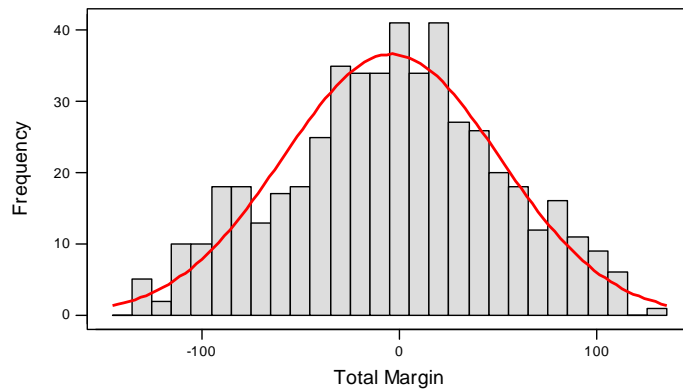
## APPENDIX A



**Figure A.1: Histogram of In-Sample Feeding Margin, with Normal Curve.**



**Figure A.2: Histogram of In-Sample Packing Margin, with Normal Curve.**



**Figure A.3: Histogram of In-Sample Total Margin, with Normal Curve.**

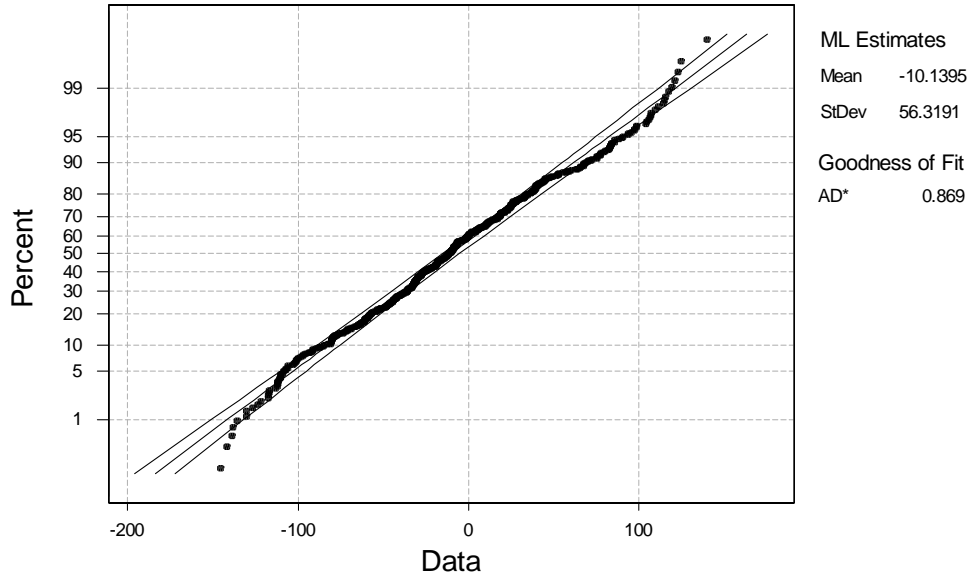


Figure A.4: Normal Probability Plot of In-Sample Feeding Margin (95% Confidence.)

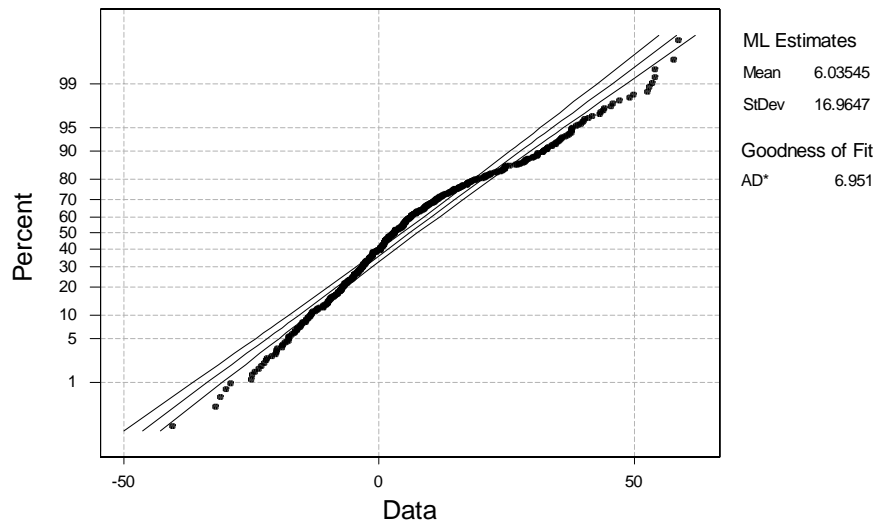
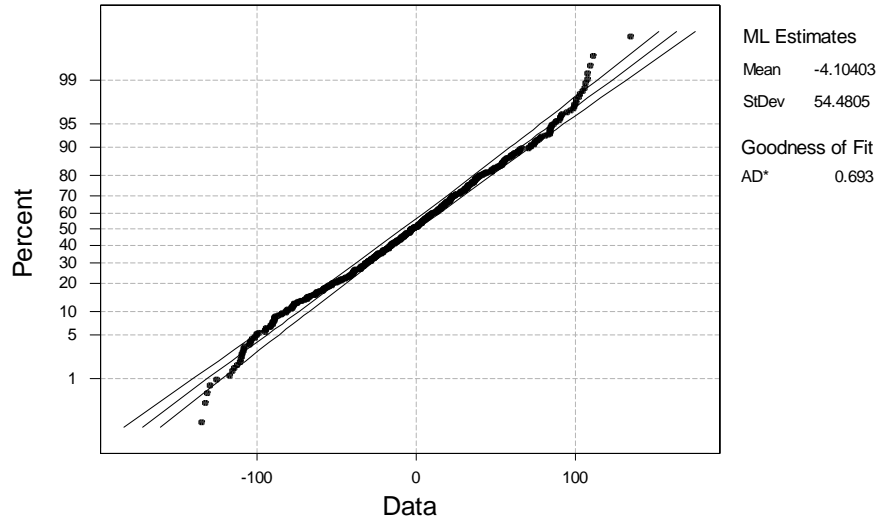


Figure A.5: Normal Probability Plot of In-Sample Packing Margin (95% Confidence.)



**Figure A.6: Normal Probability Plot of In-Sample Total Margin (95% Confidence.)**

**Table A.1: In-Sample Corn Futures Contracts Average Annual Payoff (\$/head) by Planning Period.**

Contract	3 Month	6 Month	9 Month	12 Month
March (1990-1999)	3.65	4.30	0.64	4.07
May (1990-1999)	6.63	8.79	6.68	5.67
July (1990-1999)	3.82	6.43	10.25	9.14
September (1990-1999)	(1.42)	1.48	3.40	6.92
December (1990-1998)	0.49	2.53	5.83	6.23
Average	2.63	4.71	5.36	6.41

**Table A.2: In-Sample Soybean Meal Futures Contracts Average Annual Payoff (\$/head) by Planning Period.**

Contract	3 Month	6 Month	9 Month	12 Month
March (1990-1999)	0.07	(0.03)	(0.09)	0.04
May (1990-1999)	0.28	0.25	0.31	0.19
July (1990-1999)	0.07	0.34	0.27	0.28
August (1990-1999)	(0.26)	0.21	0.30	0.18
September (1990-1998)	(0.10)	0.27	0.56	0.71
October (1990-1998)	0.06	0.11	0.34	0.48
December (1990-1998)	(0.05)	(0.29)	0.08	0.26
Average	0.01	0.12	0.25	0.31

**Table A.3: In-Sample Feeder Cattle Futures Contracts Average Annual Payoff (\$/head) by Planning Period.**

Contract	3 Month	6 Month	9 Month	12 Month
January (1990-1999)	1.69	(3.13)	(0.29)	(3.78)
March (1990-1999)	0.15	(1.72)	7.34	8.93
April (1990-1999)	2.75	0.84	(3.11)	(0.03)
May (1990-1999)	4.89	5.30	5.20	5.33
August (1990-1999)	11.88	15.47	14.65	14.58
September (1990-1998)	7.73	14.70	25.49	26.50
October (1990-1998)	2.78	14.96	20.19	23.03
November (1990-1998)	(3.19)	10.47	13.99	18.30
Average	3.59	7.11	10.43	11.61

**Table A. 4: In-Sample Live Cattle Futures Contracts (Short Hedging) Average Annual Payoff (\$/head) by Planning Period.**

Contract	3 Month	6 Month	9 Month	12 Month
February (1991-2000)	4.69	6.88	9.91	14.09
April (1991-1999)	3.83	3.96	12.52	20.72
June (1990-1999)	14.85	9.40	10.44	18.81
August (1990-1999)	1.08	5.89	2.27	5.40
October (1990-1999)	2.33	10.72	9.77	10.66
December (1990-1999)	(0.49)	0.23	7.41	7.87
Average	4.38	6.18	8.72	12.93

**Table A. 5: In-Sample Live Cattle Futures Contracts (Long Hedging) Average Annual Payoff (\$/head) by Planning Period.**

Contract	3 Month	6 Month	9 Month	12 Month
February (1991-2000)	15.10	11.25	19.32	16.70
April (1991-1999)	22.41	24.84	21.97	29.78
June (1990-1999)	(5.28)	6.01	3.95	4.17
August (1990-1999)	9.79	10.57	15.42	13.72
October (1990-1999)	15.29	19.12	30.30	31.38
December (1990-1999)	1.80	10.99	13.58	17.89
Average	9.85	13.80	17.42	18.94

**Table A. 6: Out-of-Sample Corn Futures Contracts Average Annual Payoff (\$/head) by Planning Period.**

Contract	3 Month	6 Month	9 Month	12 Month
March (2000, 2001, 2002)	(0.50)	(4.09)	(7.51)	(9.23)
May(2000, 2001)	(4.68)	(3.90)	(3.66)	(11.89)
July (2000, 2001)	(6.04)	(10.55)	(10.26)	(10.46)
September (1999,2000,2001)	(2.43)	(8.03)	(11.46)	(12.56)
December (1999, 2000, 2001)	0.19	(6.23)	(9.09)	(10.41)
Average	(2.69)	(6.56)	(8.39)	(10.91)

**Table A. 7: Out-of-Sample Soybean Meal Futures Contracts Average Annual Payoff (\$/head) by Planning Period.**

Contract	3 Month	6 Month	9 Month	12 Month
March (2000, 2001, 2002)	(0.18)	(0.06)	(0.30)	(0.32)
May (2000, 2001)	0.01	(0.42)	(0.49)	(0.85)
July (2000, 2001)	0.38	0.08	(0.18)	(0.34)
August (1999, 2000, 2001)	(0.01)	0.16	(0.51)	(0.39)
September (1999, 2000, 2001)	(0.11)	0.05	(0.42)	(0.53)
October (1999, 2000, 2001)	0.22	0.19	(0.12)	(0.64)
December (1999, 2000, 2001)	0.09	(0.10)	0.09	(0.15)
Average	0.06	(0.02)	(0.27)	(0.46)

**Table A. 8: Out-of-Sample Feeder Cattle Futures Contracts Average Annual Payoff (\$/head) by Planning Period.**

Contract	3 Month	6 Month	9 Month	12 Month
January (2000, 2001, 2002)	16.09	19.29	24.32	24.13
March (2000, 2001, 2002)	1.39	4.42	2.88	2.79
April (2000, 2001)	(25.11)	(6.80)	(1.92)	0.32
May (2000, 2001)	(9.59)	0.86	12.20	6.57
August (1999, 2000, 2001)	3.51	2.00	10.11	13.30
September (1999, 2000, 2001)	7.92	9.92	4.84	0.97
October (1999, 2000, 2001)	(5.36)	(2.41)	(8.95)	(8.73)
November (1999, 2000, 2001)	(3.54)	(9.67)	(15.50)	(19.04)
Average	(1.84)	2.20	3.50	2.54

**Table A. 9: Out-of-Sample Live Cattle Futures Contracts (Short Hedging) Average Annual Payoff (\$/head) by Planning Period.**

Contract	3 Month	6 Month	9 Month	12 Month
February (2000, 2001, 2002)	(5.94)	11.80	(0.72)	(1.03)
April (2000, 2001, 2002)	10.34	15.76	32.93	28.03
June (2000, 2001, 2002)	1.50	(15.89)	(7.61)	(7.61)
August (2000, 2001, 2002)	(2.78)	5.79	2.20	(4.66)
October (2000, 2001)	31.44	29.29	25.58	25.58
December (2000, 2001)	37.34	50.33	53.26	51.55
Average	11.98	16.18	17.61	15.31

**Table A. 10: Out-of-Sample Live Cattle Futures Contracts (Long Hedging) Average Annual Payoff (\$/head) by Planning Period.**

Contract	3 Month	6 Month	9 Month	12 Month
February (2000, 2001, 2002)	26.38	32.34	22.46	5.41
April (2000, 2001, 2002)	(19.36)	6.59	3.43	(0.79)
June (2000, 2001, 2002)	(14.57)	(20.53)	(6.89)	(14.02)
August (2000, 2001, 2002)	(3.98)	(20.67)	(3.11)	0.20
October (2000, 2001)	(8.57)	(9.16)	(15.78)	1.80
December (2000, 2001)	7.78	(3.67)	(18.13)	(32.89)
Average	(2.05)	(2.52)	(3.00)	(6.71)



**Table A.11: Weekly Margins and Payoffs from Hedging (\$/head.)**

Finished Date	Feeding Margin	(12	(12 Month)	(12 Month) Long Feeder Cattle	(12 Month) Short Live Cattle	Hedged Feeding Margin	Packing Margin	(12 Month)	Hedge Packing Margin	Total Margin	Hedged Total Margin
		Month)	Long Soybean Meal					Long Live Cattle			
05/30/90	16.21	-13.24	-0.60	-27.45	-43.32	-68.40	6.44	18.71	25.15	22.65	-43.25
06/06/90	-5.95	-11.41	-0.71	-28.95	-26.37	-73.39	2.66	34.41	37.07	-3.29	-36.32
06/13/90	-12.75	-10.04	-0.74	38.10	-26.37	-11.80	4.92	53.87	58.79	-7.83	46.99
06/20/90	-8.57	-8.67	-0.74	38.85	-26.37	-5.50	4.97	52.36	57.33	-3.60	51.83
06/27/90	-28.13	-12.02	-0.74	39.98	0.00	-0.92	3.15	0.00	3.15	-24.98	2.23
07/04/90	-47.43	-7.24	-0.75	39.98	0.00	-15.45	4.95	-4.77	0.18	-42.48	-15.27
07/11/90	-51.34	-8.78	-0.75	39.98	0.00	-20.90	8.84	-5.40	3.44	-42.50	-17.46
07/18/90	-25.51	-8.63	-0.75	39.98	0.00	5.09	9.41	20.59	30.00	-16.10	35.09
07/25/90	-8.78	-6.63	-0.75	39.98	0.00	23.82	6.10	38.17	44.27	-2.68	68.09
08/01/90	-32.21	-9.07	-0.75	39.98	0.00	-2.05	-3.24	41.94	38.70	-35.45	36.65
08/08/90	-15.25	-17.52	-0.30	-4.73	0.00	-37.79	-4.90	42.32	37.42	-20.15	-0.38
08/15/90	-5.77	-21.21	-0.30	-4.73	0.00	-32.00	-2.01	49.47	47.46	-7.78	15.47
08/22/90	-9.75	-12.29	-0.30	-4.50	0.00	-26.84	-6.67	83.50	76.83	-16.42	49.99
08/29/90	-6.56	-6.76	-0.30	-3.23	0.00	-16.84	-3.95	56.51	52.56	-10.51	35.71
09/05/90	-32.49	-4.85	-0.45	8.25	0.00	-29.54	5.21	71.57	76.78	-27.28	47.25
09/12/90	-10.33	-3.33	-0.49	4.35	0.00	-9.80	1.02	91.41	92.43	-9.31	82.63
09/19/90	6.18	-0.30	-0.41	-0.53	0.00	4.94	-2.88	101.71	98.83	3.30	103.77
09/26/90	23.72	5.15	0.40	9.23	0.00	38.50	-7.14	86.64	79.50	16.58	118.00
10/03/90	5.46	6.44	0.47	22.73	0.00	35.09	-1.70	104.85	103.15	3.76	138.24
10/10/90	24.94	30.70	-0.49	21.23	0.00	76.38	-9.37	96.44	87.07	15.57	163.45
10/17/90	31.01	27.11	-0.45	22.50	0.00	80.17	-9.90	94.18	84.28	21.11	164.44
10/24/90	19.70	29.06	-0.46	20.25	9.27	77.81	0.56	42.44	43.00	20.26	120.82
10/31/90	26.40	29.17	-0.80	34.35	9.30	98.43	9.14	35.91	45.05	35.54	143.48
11/07/90	26.45	35.46	-0.66	30.75	9.30	101.30	-1.65	37.80	36.15	24.80	137.44
11/14/90	33.46	32.46	-0.77	33.23	9.30	107.68	3.09	56.88	59.97	36.55	167.65
11/21/90	37.98	33.51	-0.77	24.98	9.30	104.99	9.84	57.26	67.10	47.82	172.09
11/28/90	16.17	37.85	-0.77	17.85	9.30	80.40	1.95	52.24	54.19	18.12	134.58
12/05/90	-3.25	32.24	-0.76	34.13	9.31	71.67	-0.65	56.25	55.60	-3.90	127.28
12/12/90	7.32	17.88	-0.79	48.60	9.31	82.33	14.94	78.61	93.55	22.26	175.87
12/19/90	12.11	17.29	-0.79	59.25	9.31	97.18	10.02	74.21	84.23	22.13	181.41
12/26/90	8.08	14.22	-0.79	64.50	-4.30	81.71	8.11	35.28	43.39	16.19	125.10
01/02/91	26.28	8.65	-0.79	68.10	-4.41	97.83	6.49	29.01	35.50	32.77	133.33
01/09/91	29.25	8.65	-0.37	44.25	-4.41	77.37	1.64	24.36	26.00	30.89	103.37
01/16/91	12.96	8.65	-0.37	42.00	-4.41	58.84	3.11	14.57	17.68	16.07	76.52
01/23/91	9.88	8.65	-0.37	30.53	-4.41	44.28	7.59	29.63	37.22	17.47	81.50
01/30/91	41.32	8.75	-0.37	30.53	-4.47	75.76	2.03	44.45	46.48	43.35	122.24
02/06/91	38.88	8.75	-0.37	30.53	-4.47	73.32	-5.58	50.98	45.40	33.30	118.72
02/13/91	28.05	8.01	-0.55	42.90	-4.47	73.93	-8.71	49.47	40.76	19.34	114.70
02/20/91	33.38	8.01	-0.76	36.38	-4.47	72.53	-11.69	61.03	49.34	21.69	121.86
02/27/91	39.99	8.09	-0.36	48.00	9.99	105.71	-9.51	21.72	12.21	30.48	117.92
03/06/91	45.16	8.09	-0.10	47.63	9.99	110.76	-8.39	49.35	40.96	36.77	151.72
03/13/91	57.86	7.94	-0.68	36.90	9.99	112.00	-15.88	46.84	30.96	41.98	142.96
03/20/91	71.21	10.48	-0.71	40.50	9.99	131.47	-29.13	35.79	6.66	42.08	138.13
03/27/91	40.99	10.48	-1.07	40.50	9.99	100.89	-22.96	44.33	21.37	18.03	122.25
04/03/91	53.18	10.46	-0.95	44.40	10.00	117.09	-13.86	61.53	47.67	39.32	164.76
04/10/91	44.73	10.46	-0.95	26.25	10.00	90.50	-25.02	50.86	25.84	19.71	116.33
04/17/91	48.75	10.46	-0.95	28.50	10.00	96.77	-16.46	34.53	18.07	32.29	114.84
04/24/91	39.58	10.46	-0.95	25.35	0.00	74.44	-1.89	7.79	5.90	37.69	80.34

**Table A.11: Weekly Margins and Payoffs from Hedging (\$/head.)**

Finished Date	Feeding Margin	(12	(12 Month)	(12 Month) Long Feeder Cattle	(12 Month) Short Live Cattle	Hedged Feeding Margin	Packing Margin	(12 Month)	Hedge Packing Margin	Total Margin	Hedged Total Margin
		Month)	Long Soybean Meal					Long Live Cattle			
05/01/91	35.01	10.36	-1.12	25.35	0.00	69.60	-4.00	6.91	2.91	31.01	72.51
05/08/91	25.53	6.37	-1.20	28.35	0.00	59.05	-10.78	6.91	-3.87	14.75	55.17
05/15/91	12.13	4.15	-0.67	28.58	0.00	44.18	-7.38	6.91	-0.47	4.75	43.70
05/22/91	-1.16	4.89	-0.67	34.20	0.00	37.26	-5.78	6.91	1.13	-6.94	38.39
05/29/91	10.36	3.55	-0.67	31.20	0.00	44.44	6.39	6.91	13.30	16.75	57.74
06/05/91	-17.98	3.65	-0.69	28.95	0.00	13.93	4.55	6.91	11.46	-13.43	25.39
06/12/91	-34.64	3.04	-0.69	-15.60	0.00	-47.88	14.28	6.91	21.19	-20.36	-26.70
06/19/91	-48.14	3.50	-0.69	-7.58	13.44	-39.47	17.42	6.91	24.33	-30.72	-15.14
06/26/91	-68.85	4.41	-0.69	-7.58	-1.26	-73.95	16.25	25.99	42.24	-52.60	-31.71
07/03/91	-71.47	4.01	-0.69	-7.58	-7.81	-83.55	14.72	25.99	40.71	-56.75	-42.84
07/10/91	-60.04	0.00	-0.69	-5.33	-11.97	-78.03	5.18	25.99	31.17	-54.86	-46.86
07/17/91	-55.55	-1.54	-0.69	-4.20	-26.08	-88.07	0.26	24.99	25.25	-55.29	-62.82
07/24/91	-76.86	-1.23	-0.69	1.05	-17.26	-95.00	0.40	16.20	16.60	-76.46	-78.41
07/31/91	-93.67	2.77	-0.69	5.03	17.46	-69.12	-0.50	13.44	12.94	-94.17	-56.18
08/07/91	-110.04	1.17	-0.32	8.03	59.85	-41.32	5.24	13.44	18.68	-104.80	-22.64
08/14/91	-110.51	5.22	-0.53	5.25	42.39	-58.17	32.99	13.44	46.43	-77.52	-11.75
08/21/91	-80.33	6.91	-0.53	9.15	49.25	-15.55	31.09	20.84	51.93	-49.24	36.38
08/28/91	-79.89	4.76	-0.53	19.28	70.07	13.69	1.99	20.84	22.83	-77.90	36.52
09/04/91	-112.30	4.24	-0.53	24.15	65.63	-18.81	-0.43	20.84	20.41	-112.73	1.61
09/11/91	-89.69	0.76	-0.53	41.78	50.22	2.53	0.72	20.84	21.56	-88.97	24.09
09/18/91	-109.95	-0.45	-0.22	45.75	39.38	-25.50	-7.20	20.84	13.64	-117.15	-11.85
09/25/91	-58.30	-8.64	-0.43	50.03	13.49	-3.86	1.38	20.84	22.22	-56.92	18.37
10/02/91	-70.41	-9.74	-0.67	54.75	21.39	-4.68	-13.78	20.84	7.06	-84.19	2.38
10/09/91	-80.15	-15.73	-0.22	30.00	38.61	-27.48	-18.80	20.84	2.04	-98.95	-25.44
10/16/91	-78.75	-13.18	-0.12	34.13	38.61	-19.31	-1.83	27.75	25.92	-80.58	6.61
10/23/91	-73.82	-12.28	-0.20	47.48	-6.30	-45.12	-3.30	13.18	9.88	-77.12	-35.23
10/30/91	-101.03	-12.12	-0.09	43.13	-6.32	-76.44	-6.92	-3.39	-10.31	-107.95	-86.75
11/06/91	-62.56	-18.70	-0.14	40.13	-6.32	-47.59	4.65	-13.44	-8.79	-57.91	-56.38
11/13/91	-39.60	-16.76	-0.52	37.50	-6.32	-25.70	5.37	4.14	9.51	-34.23	-16.18
11/20/91	-37.75	-21.69	-0.52	38.63	12.40	-8.94	-2.97	-0.88	-3.85	-40.72	-12.79
11/27/91	-29.89	-8.53	-0.52	44.85	24.68	30.60	-14.26	-8.41	-22.67	-44.15	7.93
12/04/91	-17.89	-8.35	-0.51	50.25	28.54	52.03	-22.02	-8.41	-30.43	-39.91	21.60
12/11/91	-18.25	2.20	-0.44	52.73	45.01	81.24	-14.82	-8.41	-23.23	-33.07	58.01
12/18/91	-31.40	2.20	-0.44	54.75	66.50	91.61	1.13	-8.41	-7.28	-30.27	84.33
12/25/91	-45.45	2.20	-0.44	38.25	46.44	41.00	11.65	1.13	12.78	-33.80	53.78
01/01/92	-2.13	2.20	-0.44	27.75	29.27	56.65	30.51	1.13	31.64	28.38	88.29
01/08/92	19.07	2.20	0.01	3.90	17.39	42.57	13.34	1.13	14.47	32.41	57.04
01/15/92	42.89	5.13	1.38	3.90	2.33	55.63	17.56	1.13	18.69	60.45	74.32
01/22/92	34.02	8.95	0.52	22.05	0.24	65.79	5.17	1.13	6.30	39.19	72.09
01/29/92	25.26	8.21	0.81	1.28	-24.86	10.69	5.01	20.59	25.60	30.27	36.29
02/05/92	49.66	7.86	0.86	8.18	-25.22	41.34	1.50	9.04	10.54	51.16	51.88
02/12/92	79.97	-2.82	1.64	4.95	-25.22	58.51	4.69	23.48	28.17	84.66	86.68
02/19/92	76.07	-2.82	1.10	17.93	-25.22	67.06	-3.65	26.87	23.22	72.42	90.28
02/26/92	63.51	-2.82	1.15	15.83	-27.58	50.08	-12.86	-8.66	-21.52	50.65	28.55
03/04/92	66.32	-2.85	0.86	17.55	-27.71	54.18	-13.17	17.08	3.91	53.15	58.09
03/11/92	107.83	-10.03	0.21	26.25	-27.71	96.54	-8.02	7.28	-0.74	99.81	95.80
03/18/92	97.71	-10.03	0.24	23.10	-27.71	83.30	-13.23	1.38	-11.85	84.48	71.45
03/25/92	94.39	-10.63	0.40	14.85	-27.71	71.30	-18.47	4.14	-14.33	75.92	56.97

**Table A.11: Weekly Margins and Payoffs from Hedging (\$/head.)**

Finished Date	Feeding Margin	(12	(12 Month)	(12 Month) Long Feeder Cattle	(12 Month) Short Live Cattle	Hedged Feeding Margin	Packing Margin	(12 Month)	Hedge Packing Margin	Total Margin	Hedged Total Margin
		Month)	Long Soybean Meal					Long Live Cattle			
04/01/92	104.57	-13.45	0.52	11.25	-27.75	75.15	-20.30	22.35	2.05	84.27	77.20
04/08/92	123.40	-13.75	0.52	-1.28	-27.75	81.15	-24.34	22.98	-1.36	99.06	79.79
04/15/92	106.91	-17.49	0.52	-1.88	-27.75	60.32	-19.93	7.03	-12.90	86.98	47.42
04/22/92	99.01	-17.49	0.52	-1.88	13.75	93.91	-6.92	-0.75	-7.67	92.09	86.24
04/29/92	91.19	-17.32	0.51	-1.88	16.11	88.62	-6.74	6.15	-0.59	84.45	88.03
05/06/92	82.81	-17.32	0.51	-16.50	5.58	55.09	-7.65	6.15	-1.50	75.16	53.59
05/13/92	75.95	3.26	-0.58	-16.50	8.68	70.81	2.08	6.15	8.23	78.03	79.04
05/20/92	69.31	3.11	-0.58	15.90	26.65	114.39	6.67	6.15	12.82	75.98	127.22
05/27/92	39.45	4.74	-0.58	-11.25	28.14	60.50	10.12	6.15	16.27	49.57	76.77
06/03/92	19.34	5.33	-0.60	-23.03	22.60	23.65	11.41	6.15	17.56	30.75	41.21
06/10/92	25.41	0.61	-0.60	-15.38	15.07	25.12	17.44	6.15	23.59	42.85	48.71
06/17/92	17.26	1.83	-0.60	-15.38	12.81	15.92	11.11	6.15	17.26	28.37	33.18
06/24/92	2.11	-0.15	-0.60	-7.50	23.48	17.34	3.10	-22.48	-19.38	5.21	-2.03
07/01/92	2.22	4.01	-0.69	-12.53	23.56	16.57	-1.14	-2.76	-3.90	1.08	12.67
07/08/92	0.23	1.69	-0.99	-2.03	23.56	22.47	-9.65	-1.51	-11.16	-9.42	11.31
07/15/92	21.35	0.92	-0.95	-8.25	23.56	36.63	-3.45	19.59	16.14	17.90	52.77
07/22/92	18.35	-2.47	-0.97	-17.78	23.56	20.70	-9.83	10.42	0.59	8.52	21.30
07/29/92	19.08	-4.93	-0.71	-6.38	23.56	30.63	-13.40	11.68	-1.72	5.68	28.91
08/05/92	11.50	-1.69	-0.85	-4.50	23.32	27.77	-1.07	26.12	25.05	10.43	52.82
08/12/92	11.98	-5.22	0.05	-13.73	23.32	16.40	2.35	29.63	31.98	14.33	48.38
08/19/92	11.44	-5.99	0.04	-6.83	23.32	21.98	-2.51	24.23	21.72	8.93	43.70
08/26/92	28.32	-9.68	-0.15	0.15	6.23	24.87	-5.19	46.46	41.27	23.13	66.14
09/02/92	-8.07	-9.55	-0.26	-0.60	6.02	-12.46	-9.99	56.88	46.89	-18.06	34.43
09/09/92	1.03	-3.48	-0.26	-17.25	6.02	-13.95	-6.90	67.18	60.28	-5.87	46.33
09/16/92	22.80	-3.48	-0.26	-21.15	6.02	3.92	-3.08	67.18	64.10	19.72	68.02
09/23/92	23.64	-3.48	-0.26	-15.38	6.02	10.54	-4.94	64.04	59.10	18.70	69.64
09/30/92	21.89	-3.44	-0.26	-7.50	5.94	16.63	-7.48	65.67	58.19	14.41	74.82
10/07/92	17.34	-13.48	-0.10	-9.83	5.94	-0.13	-1.15	67.56	66.41	16.19	66.28
10/14/92	24.16	-13.48	-0.21	-14.70	5.94	1.71	0.76	77.22	77.98	24.92	79.70
10/21/92	23.38	-13.48	-0.21	-14.33	-21.39	-26.02	-2.60	51.11	48.51	20.78	22.49
10/28/92	24.84	-13.48	-0.21	-7.35	-21.39	-17.59	-13.16	41.06	27.90	11.68	10.32
11/04/92	18.58	-13.46	-0.19	-3.45	-21.46	-19.99	-12.35	46.96	34.61	6.23	14.62
11/11/92	4.91	-13.46	-0.38	7.43	-21.46	-22.98	-6.34	47.34	41.00	-1.43	18.02
11/18/92	6.86	-13.46	-0.43	9.68	-21.46	-18.82	2.54	63.91	66.45	9.40	47.63
11/25/92	53.10	-13.46	-0.47	16.43	-21.46	34.13	5.40	81.24	86.64	58.50	120.77
12/02/92	48.08	-13.19	-0.72	23.93	-21.49	36.61	-2.93	80.87	77.94	45.15	114.55
12/09/92	39.34	-16.12	-0.53	37.43	-21.49	38.63	-17.69	94.43	76.74	21.65	115.36
12/16/92	40.03	-16.12	-0.53	37.43	-21.49	39.31	-4.78	115.40	110.62	35.25	149.93
12/23/92	28.41	-16.12	-0.53	46.80	-18.51	40.05	-6.03	71.57	65.54	22.38	105.60
12/30/92	38.72	-16.13	-0.53	60.30	-18.98	63.38	-13.36	70.57	57.21	25.36	120.59
01/06/93	39.44	-16.13	-0.31	61.65	-18.98	65.66	-7.39	102.34	94.95	32.05	160.61
01/13/93	72.88	-16.13	-0.31	70.13	-18.98	107.57	4.68	119.54	124.22	77.56	231.80
01/20/93	68.74	-14.37	-0.31	69.00	-18.98	104.07	5.80	124.31	130.11	74.54	234.18
01/27/93	68.16	-13.20	-0.31	68.63	-18.98	104.29	-8.26	91.92	83.66	59.90	187.95
02/03/93	70.22	-13.80	-0.32	68.63	-19.26	105.47	-14.30	118.29	103.99	55.92	209.46
02/10/93	94.20	-3.12	-0.15	52.65	-19.26	124.33	-3.11	141.26	138.15	91.09	262.48
02/17/93	115.40	-6.68	-0.15	45.75	-19.26	135.06	-7.59	154.70	147.11	107.81	282.17
02/24/93	115.18	-6.68	-0.15	48.90	-29.20	128.06	-12.52	95.43	82.91	102.66	210.97

**Table A.11: Weekly Margins and Payoffs from Hedging (\$/head.)**

Finished Date	Feeding Margin	(12	(12 Month)	(12 Month) Long Feeder Cattle	(12 Month) Short Live Cattle	Hedged Feeding Margin	Packing Margin	(12 Month)	Hedge Packing Margin	Total Margin	Hedged Total Margin
		Month)	Long Soybean Meal					Long Live Cattle			
03/03/93	99.24	-6.74	-0.15	53.63	-29.34	116.63	-7.94	99.83	91.89	91.30	208.52
03/10/93	111.76	-6.74	0.11	38.40	-29.34	114.19	-12.04	122.81	110.77	99.72	224.96
03/17/93	120.07	-6.74	0.11	38.40	-29.34	122.50	-10.23	123.43	113.20	109.84	235.70
03/24/93	140.58	-6.74	0.11	38.40	-29.34	143.01	-5.64	128.08	122.44	134.94	265.45
03/31/93	121.67	-6.73	0.11	40.65	-29.37	126.33	-20.96	117.15	96.19	100.71	222.53
04/07/93	117.79	-6.73	0.11	48.68	-29.37	130.48	-32.00	112.13	80.13	85.79	210.61
04/14/93	106.08	-6.73	0.11	35.25	-29.37	105.34	-15.22	121.80	106.58	90.86	211.93
04/21/93	95.76	-8.52	0.11	45.60	0.00	132.95	-7.92	91.04	83.12	87.84	216.07
04/28/93	97.62	-11.51	0.11	43.88	0.00	130.09	-0.28	91.04	90.76	97.34	220.85
05/05/93	86.29	-11.70	0.11	52.50	0.00	127.20	4.29	91.04	95.33	90.58	222.53
05/12/93	88.46	-19.99	-0.04	60.23	0.00	128.67	-3.92	91.04	87.12	84.54	215.78
05/19/93	72.23	-21.17	-0.04	62.63	0.00	113.64	-6.65	81.37	74.72	65.58	188.36
05/26/93	45.11	-23.24	-0.04	60.38	0.00	82.21	-14.18	75.09	60.91	30.93	143.12
06/02/93	40.16	-22.98	-0.22	74.10	0.00	91.07	-1.81	71.32	69.51	38.35	160.58
06/09/93	44.53	-24.50	-0.17	49.13	0.00	68.98	20.66	71.32	91.98	65.19	160.96
06/16/93	44.14	-22.83	-0.08	47.78	0.00	69.01	15.39	71.32	86.71	59.53	155.72
06/23/93	18.91	-25.11	-0.16	39.90	0.00	33.55	2.54	51.99	54.53	21.45	88.07
06/30/93	0.91	-26.50	-0.35	39.90	0.00	13.96	6.77	66.80	73.57	7.68	87.53
07/07/93	-12.92	-26.19	-0.52	47.78	0.00	8.13	5.71	65.17	70.88	-7.21	79.01
07/14/93	-29.76	-27.27	-0.55	47.78	0.00	-9.81	-1.25	43.57	42.32	-31.01	32.51
07/21/93	-32.71	-25.42	-0.55	47.78	0.00	-10.91	0.87	43.57	44.44	-31.84	33.53
07/28/93	-18.97	-28.04	-0.55	47.78	0.00	0.21	12.77	47.72	60.49	-6.20	60.69
08/04/93	-23.68	-26.12	-0.55	50.18	0.00	-0.18	11.98	53.62	65.60	-11.70	65.42
08/11/93	-2.13	-10.91	-0.41	41.18	0.00	27.73	8.05	55.50	63.55	5.92	91.28
08/18/93	-3.32	-10.76	-0.41	44.93	-4.99	25.46	10.74	45.20	55.94	7.42	81.40
08/25/93	-18.13	-9.83	-0.42	45.90	9.60	27.12	1.64	75.84	77.48	-16.49	104.60
09/01/93	-40.16	-8.94	-0.45	41.93	3.25	-4.38	1.03	107.61	108.64	-39.13	104.27
09/08/93	-35.71	-9.24	-0.47	8.78	-16.26	-52.90	0.64	108.87	109.51	-35.07	56.60
09/15/93	-34.71	-11.06	-0.55	14.40	-4.58	-36.49	-4.31	108.87	104.56	-39.02	68.07
09/22/93	-54.32	-13.94	-0.49	14.18	-4.58	-59.15	-8.07	94.68	86.61	-62.39	27.46
09/29/93	-65.96	-10.93	-0.28	17.40	-4.51	-64.29	-2.34	90.91	88.57	-68.30	24.28
10/06/93	-65.27	-10.93	-0.05	21.30	13.66	-41.29	1.31	82.12	83.43	-63.96	42.14
10/13/93	-75.67	-28.46	-0.21	37.65	22.22	-44.46	-6.04	82.12	76.08	-81.71	31.62
10/20/93	-42.04	-28.61	-0.09	41.78	-4.75	-33.71	8.91	82.12	91.03	-33.13	57.32
10/27/93	-42.03	-29.50	-0.44	41.03	-0.95	-31.90	1.03	40.43	41.46	-41.00	9.56
11/03/93	-51.72	-29.47	-0.33	59.63	14.91	-7.00	-20.04	40.43	20.39	-71.76	13.40
11/10/93	-56.58	-23.19	-0.56	57.38	2.38	-20.57	-8.52	40.43	31.91	-65.10	11.34
11/17/93	-58.03	-22.29	0.19	52.28	6.80	-21.06	16.15	40.43	56.58	-41.88	35.52
11/24/93	-58.69	-9.42	0.54	60.38	15.14	7.95	11.06	40.43	51.49	-47.63	59.44
12/01/93	-79.04	-9.23	1.59	51.00	31.88	-3.80	-2.94	40.43	37.49	-81.98	33.69
12/08/93	-82.51	-11.58	1.95	53.63	37.61	-0.91	-18.95	40.43	21.48	-101.46	20.57
12/15/93	-66.90	-11.58	2.40	45.38	1.19	-29.50	-17.59	40.43	22.84	-84.49	-6.66
12/22/93	-53.19	-14.07	2.09	58.50	6.57	-0.11	-15.49	27.00	11.51	-68.68	11.40
12/29/93	-64.78	-14.22	2.11	63.15	13.13	-0.61	-16.34	27.00	10.66	-81.12	10.05
01/05/94	-59.09	-14.37	1.69	68.03	14.09	10.34	-15.93	27.00	11.07	-75.02	21.41
01/12/94	-39.76	-16.87	1.38	57.75	-1.59	0.91	0.43	27.00	27.43	-39.33	28.34
01/19/94	-36.57	-16.72	1.41	55.50	6.37	10.00	6.21	21.97	28.18	-30.36	38.18
01/26/94	-35.56	-15.99	0.61	54.15	6.37	9.59	-3.81	18.46	14.65	-39.37	24.23

**Table A.11: Weekly Margins and Payoffs from Hedging (\$/head.)**

Finished Date	Feeding Margin	(12	(12 Month)	(12 Month) Long Feeder Cattle	(12 Month) Short Live Cattle	Hedged Feeding Margin	Packing Margin	(12 Month)	Hedge Packing Margin	Total Margin	Hedged Total Margin
		Month)	Long Soybean Meal					Long Live Cattle			
02/02/94	-32.23	-22.85	1.08	58.50	6.46	10.96	-6.65	12.18	5.53	-38.88	16.49
02/09/94	-38.85	2.67	1.23	34.35	6.46	5.86	-3.29	15.32	12.03	-42.14	17.89
02/16/94	-12.50	4.01	1.23	26.85	6.46	26.05	9.26	42.07	51.33	-3.24	77.37
02/23/94	-0.81	0.89	1.23	26.63	4.72	32.66	9.70	10.67	20.37	8.89	53.04
03/02/94	15.40	-0.60	1.24	26.63	20.60	63.27	2.34	10.67	13.01	17.74	76.28
03/09/94	30.26	1.35	1.22	18.90	4.99	56.72	2.53	-6.28	-3.75	32.79	52.98
03/16/94	35.09	0.45	1.22	18.90	6.62	62.27	-7.24	7.79	0.55	27.85	62.82
03/23/94	19.11	1.80	1.22	18.90	5.37	46.40	-13.03	9.04	-3.99	6.08	42.41
03/30/94	36.78	5.98	1.22	18.90	8.12	71.00	-15.10	8.16	-6.94	21.68	64.06
04/06/94	52.27	13.00	1.22	18.90	8.12	93.51	-4.90	24.74	19.84	47.37	113.35
04/13/94	65.92	18.98	1.22	3.75	8.12	97.99	0.82	12.56	13.38	66.74	111.37
04/20/94	59.42	23.16	0.93	3.75	8.12	95.39	-5.14	0.88	-4.26	54.28	91.13
04/27/94	47.59	23.61	0.84	3.75	17.50	93.29	1.14	-15.44	-14.30	48.73	78.99
05/04/94	18.22	29.46	0.94	-1.13	46.23	93.72	-2.03	-15.44	-17.47	16.19	76.25
05/11/94	-1.04	9.33	1.10	7.13	44.62	61.13	7.54	-15.44	-7.90	6.50	53.23
05/18/94	-6.36	13.47	1.03	4.88	89.00	102.01	21.05	-15.44	5.61	14.69	107.62
05/25/94	-42.69	17.47	1.17	4.13	124.94	105.02	14.33	-15.44	-1.11	-28.36	103.90
06/01/94	-41.73	18.26	1.05	13.13	97.69	88.40	35.69	-15.44	20.25	-6.04	108.64
06/08/94	-53.28	17.50	1.06	9.60	106.10	80.98	36.00	-15.44	20.56	-17.28	101.54
06/15/94	-57.24	11.87	1.06	7.13	87.02	49.83	28.72	-16.32	12.40	-28.52	62.23
06/22/94	-63.07	14.30	1.06	7.13	66.17	25.59	16.37	6.53	22.90	-46.70	48.49
06/29/94	-100.30	10.01	1.07	0.53	57.96	-30.72	11.50	6.53	18.03	-88.80	-12.69
07/06/94	-80.30	12.02	1.07	-3.38	59.85	-10.73	30.29	6.53	36.82	-50.01	26.09
07/13/94	-18.69	11.25	1.07	1.65	-9.20	-13.92	40.04	11.55	51.59	21.35	37.67
07/20/94	-10.43	10.63	1.07	1.65	-7.56	-4.64	45.94	9.92	55.86	35.51	51.22
07/27/94	-32.31	10.63	1.07	1.65	-3.78	-22.74	11.44	6.15	17.59	-20.87	-5.15
08/03/94	-23.98	10.60	1.07	1.65	-9.10	-19.76	3.90	36.29	40.19	-20.08	20.43
08/10/94	-9.48	11.68	-0.84	-7.28	-9.10	-15.03	23.23	34.15	57.38	13.75	42.36
08/17/94	-26.20	11.68	-0.84	-6.75	-9.10	-31.22	1.92	11.80	13.72	-24.28	-17.49
08/24/94	-35.78	12.29	-0.84	-9.53	-1.87	-35.73	-2.75	2.13	-0.62	-38.53	-36.35
08/31/94	-19.50	10.00	-0.83	-5.40	-1.81	-17.54	6.77	2.76	9.53	-12.73	-8.01
09/07/94	-9.58	10.76	-0.83	-4.58	-1.81	-6.03	5.75	-10.17	-4.42	-3.83	-10.46
09/14/94	-17.75	12.42	-0.83	-8.70	-1.81	-16.66	-1.26	-5.15	-6.41	-19.01	-23.07
09/21/94	-18.05	16.97	-0.83	-44.70	-1.81	-48.42	7.80	-5.15	2.65	-10.25	-45.77
09/28/94	-14.55	16.97	-0.83	-32.70	16.50	-14.62	11.32	-5.15	6.17	-3.23	-8.45
10/05/94	-20.98	16.77	-0.82	-36.08	26.97	-14.13	6.18	-5.15	1.03	-14.80	-13.10
10/12/94	-28.17	21.87	0.44	-18.60	23.17	-1.29	7.25	-5.15	2.10	-20.92	0.81
10/19/94	-30.53	21.87	0.44	-18.60	29.94	3.12	13.38	-5.15	8.23	-17.15	11.35
10/26/94	6.27	21.87	0.89	-18.60	8.91	19.34	24.37	-53.74	-29.37	30.64	-10.04
11/02/94	8.71	21.84	0.35	-18.60	-0.95	11.34	-1.77	-53.74	-55.51	6.94	-44.17
11/09/94	5.75	21.84	1.09	-18.60	6.20	16.29	-4.46	-53.74	-58.20	1.29	-41.92
11/16/94	1.82	21.84	0.31	-18.60	-5.13	0.25	10.43	-53.74	-43.31	12.25	-43.07
11/23/94	10.30	21.84	0.36	-18.60	-5.13	8.78	7.13	-76.60	-69.47	17.43	-60.69
11/30/94	-25.20	13.19	-0.15	-1.95	-5.13	-19.25	-1.13	-87.02	-88.15	-26.33	-107.39
12/07/94	-22.07	0.73	-0.81	15.15	-5.13	-12.14	-2.40	-76.35	-78.75	-24.47	-90.88
12/14/94	-9.09	-0.29	-1.14	15.30	-5.13	-0.35	6.40	-47.46	-41.06	-2.69	-41.41
12/21/94	-15.97	-0.29	-1.14	13.43	10.75	6.77	20.33	-28.50	-8.17	4.36	-1.40
12/28/94	-12.14	-0.29	-1.14	23.18	10.75	20.35	21.88	-18.46	3.42	9.74	23.77

**Table A.11: Weekly Margins and Payoffs from Hedging (\$/head.)**

Finished Date	Feeding Margin	(12	(12 Month)	(12 Month) Long Feeder Cattle	(12 Month) Short Live Cattle	Hedged Feeding Margin	Packing Margin	(12 Month)	Hedge Packing Margin	Total Margin	Hedged Total Margin
		Month)	Long Soybean Meal					Long Live Cattle			
01/04/95	37.81	-2.20	-1.14	22.05	11.02	67.54	17.63	7.28	24.91	55.44	92.46
01/11/95	39.76	-0.59	-1.36	11.10	11.02	59.93	8.03	4.77	12.80	47.79	72.74
01/18/95	57.91	-7.33	-1.36	-4.13	11.02	56.11	-2.96	24.23	21.27	54.95	77.39
01/25/95	67.66	-7.33	-1.36	-4.13	11.02	65.87	15.50	21.10	36.60	83.16	102.46
02/01/95	86.08	-7.42	-1.38	-4.13	11.18	84.34	-1.32	13.18	11.86	84.76	96.21
02/08/95	90.30	-20.33	-1.12	-17.55	11.18	62.48	-17.64	9.79	-7.85	72.66	54.64
02/15/95	107.53	-20.33	-1.12	-17.55	11.18	79.72	-4.34	27.00	22.66	103.19	102.38
02/22/95	110.10	-20.33	-1.12	-17.55	23.36	94.46	-5.22	27.37	22.15	104.88	116.61
03/01/95	125.54	-20.52	-1.13	-17.55	23.47	109.80	-17.71	40.56	22.85	107.83	132.65
03/08/95	116.28	-20.52	-1.13	-17.55	23.47	100.55	-4.75	19.21	14.46	111.53	115.01
03/15/95	105.25	-20.52	-1.16	-6.98	36.95	113.55	1.14	18.33	19.47	106.39	133.02
03/22/95	84.57	-25.46	-1.16	-6.98	65.04	116.01	-0.26	18.33	18.07	84.31	134.09
03/29/95	77.73	-25.46	-1.16	-6.98	97.49	141.63	1.27	18.33	19.60	79.00	161.24
04/05/95	83.96	-25.41	-1.16	-13.35	48.87	92.92	10.77	18.33	29.10	94.73	122.02
04/12/95	82.95	-23.16	-1.16	11.18	81.99	151.79	24.13	18.33	42.46	107.08	194.25
04/19/95	75.64	-23.16	-1.16	11.18	90.36	152.86	2.60	18.33	20.93	78.24	173.79
04/26/95	84.12	-23.16	-1.16	11.18	123.48	194.45	16.53	2.51	19.04	100.65	213.49
05/03/95	60.60	-22.95	-1.15	11.18	133.99	181.68	24.84	2.51	27.35	85.44	209.03
05/10/95	33.53	-18.06	-0.70	23.78	167.09	205.63	18.25	2.51	20.76	51.78	226.39
05/17/95	13.60	-19.10	-0.70	14.40	133.00	141.20	34.04	2.51	36.55	47.64	177.75
05/24/95	19.64	-17.77	-0.70	19.65	117.88	138.71	37.91	2.51	40.42	57.55	179.13
05/31/95	14.51	-21.46	-0.72	25.05	107.49	124.88	47.25	2.51	49.76	61.76	174.64
06/07/95	11.09	-17.35	-0.72	24.30	101.21	118.54	54.26	8.41	62.67	65.35	181.21
06/14/95	0.36	-16.13	-0.72	-24.00	101.21	60.72	53.62	-1.00	52.62	53.98	113.34
06/21/95	-9.18	-18.11	-0.72	-22.65	47.46	-3.19	58.75	-35.54	23.21	49.57	20.02
06/28/95	-13.90	-16.59	-0.72	-34.65	24.23	-41.62	57.90	-12.31	45.59	44.00	3.98
07/05/95	-13.92	-19.11	-0.72	-33.75	26.21	-41.29	54.24	-14.19	40.05	40.32	-1.24
07/12/95	-33.36	-19.72	-0.72	-33.75	11.09	-76.47	43.33	-12.56	30.77	9.97	-45.69
07/19/95	-63.50	-18.80	-0.72	-33.75	11.09	-105.68	31.28	-18.84	12.44	-32.22	-93.23
07/26/95	-56.26	-16.49	-0.72	-33.75	11.09	-96.13	34.40	1.26	35.66	-21.86	-60.47
08/02/95	-42.49	-14.91	-0.72	-33.75	10.97	-80.90	37.85	16.95	54.80	-4.64	-26.10
08/09/95	-27.52	-3.69	-1.08	-9.90	10.97	-31.22	41.20	0.63	41.83	13.68	10.61
08/16/95	-44.03	-5.38	-1.09	-9.90	10.97	-49.42	28.89	-18.58	10.31	-15.14	-39.11
08/23/95	-51.87	-3.53	-1.18	-9.90	-7.11	-73.59	30.02	-25.49	4.53	-21.85	-69.06
08/30/95	-77.36	-2.27	-0.83	-9.90	-6.86	-97.22	28.92	-40.31	-11.39	-48.44	-108.61
09/06/95	-45.69	-2.58	-0.87	-9.90	-6.86	-65.90	41.92	-17.08	24.84	-3.77	-41.05
09/13/95	-47.20	-6.21	-1.32	-6.75	-6.86	-68.34	43.61	-8.29	35.32	-3.59	-33.02
09/20/95	-49.16	-3.18	-1.38	-6.75	-6.86	-67.34	37.43	-11.68	25.75	-11.73	-41.59
09/27/95	-44.54	-2.12	-1.28	-6.75	-4.21	-58.91	44.31	3.01	47.32	-0.23	-11.59
10/04/95	-60.79	-1.35	-1.24	-6.75	15.21	-54.93	32.57	3.01	35.58	-28.22	-19.34
10/11/95	-53.62	-4.94	-0.63	-11.25	-7.13	-77.57	18.91	3.01	21.92	-34.71	-55.65
10/18/95	-40.90	-0.30	-0.17	-11.25	-9.74	-62.36	18.94	1.13	20.07	-21.96	-42.29
10/25/95	-45.92	-1.05	-0.14	-11.25	15.68	-42.67	-3.39	16.57	13.18	-49.31	-29.49
11/01/95	-29.62	-1.35	-0.14	-11.25	15.74	-26.61	20.76	25.11	45.87	-8.86	19.26
11/08/95	-24.28	5.09	-1.03	-25.50	15.74	-29.98	15.02	17.20	32.22	-9.26	2.24
11/15/95	-17.60	8.53	-0.21	-34.65	15.74	-28.20	5.53	26.62	32.15	-12.07	3.95
11/22/95	-19.33	6.88	-0.50	-22.13	15.74	-19.33	7.26	11.55	18.81	-12.07	-0.52
11/29/95	-26.14	15.83	0.10	-22.65	15.76	-17.10	0.31	11.30	11.61	-25.83	-5.49

**Table A.11: Weekly Margins and Payoffs from Hedging (\$/head.)**

Finished Date	Feeding Margin	(12	(12 Month)	(12 Month)	(12 Month)	Hedged	Packing Margin	(12 Month)	Hedge	Total Margin	Hedged
		Month)	Long Soybean Meal	Long Feeder Cattle	Short Live Cattle	Feeding Margin		Long Live Cattle	Packing Margin		Total Margin
12/06/95	-43.75	23.16	0.55	-22.65	15.76	-26.94	-3.67	15.07	11.40	-47.42	-15.54
12/13/95	-48.09	24.48	1.19	-23.93	15.76	-30.59	-10.94	10.67	-0.27	-59.03	-30.86
12/20/95	-46.25	26.82	0.54	-17.93	15.76	-21.06	12.22	7.79	20.01	-34.03	-1.06
12/27/95	-44.21	17.73	0.50	-10.80	40.12	3.33	12.50	34.28	46.78	-31.71	50.11
01/03/96	-6.63	17.31	0.40	-16.65	41.15	35.58	8.71	39.05	47.76	2.08	83.34
01/10/96	-12.92	19.07	0.31	-6.23	56.22	56.46	5.31	39.05	44.36	-7.61	100.82
01/17/96	9.15	20.97	0.49	-9.60	51.56	72.58	13.90	39.05	52.95	23.05	125.53
01/24/96	-13.98	25.23	0.63	-16.35	80.35	75.88	0.27	39.05	39.32	-13.71	115.20
01/31/96	-8.23	24.18	0.95	-16.35	74.42	74.98	-15.23	39.05	23.82	-23.46	98.80
02/07/96	-6.67	11.42	0.37	-10.50	80.26	74.89	-11.93	39.05	27.12	-18.60	102.01
02/14/96	-15.57	17.51	0.69	-10.50	81.88	74.01	3.90	39.05	42.95	-11.67	116.96
02/21/96	-7.95	16.17	0.02	-10.50	35.53	33.27	8.99	-6.03	2.96	1.04	36.23
02/28/96	-11.81	17.37	-0.02	-12.00	24.72	18.25	9.23	-6.03	3.20	-2.58	21.46
03/06/96	-30.10	25.46	0.29	-7.13	56.30	44.82	-9.14	-6.03	-15.17	-39.24	29.66
03/13/96	-31.54	27.26	0.75	-22.80	36.95	10.62	-4.12	-6.03	-10.15	-35.66	0.48
03/20/96	-10.21	28.90	1.09	-22.80	25.09	22.07	11.07	-6.03	5.04	0.86	27.12
03/27/96	-30.17	33.70	1.30	-22.80	25.34	7.37	-1.50	-6.03	-7.53	-31.67	-0.16
04/03/96	-37.33	30.34	1.25	-22.80	35.37	6.83	-5.90	-6.03	-11.93	-43.23	-5.10
04/10/96	-38.20	24.21	1.04	-25.95	65.99	27.09	-1.17	-6.03	-7.20	-39.37	19.89
04/17/96	-72.91	24.21	1.21	-27.68	98.11	22.95	2.90	-6.03	-3.13	-70.01	19.82
04/24/96	-117.10	24.21	1.21	-29.55	61.87	-59.37	12.99	-12.31	0.68	-104.11	-58.69
05/01/96	-100.81	25.76	2.25	-21.68	37.19	-57.29	32.13	-12.31	19.82	-68.68	-37.47
05/08/96	-99.55	43.52	2.47	-34.95	20.20	-68.30	52.72	-12.31	40.41	-46.83	-27.89
05/15/96	-126.77	47.37	2.69	-37.05	24.79	-88.97	37.81	-12.31	25.50	-88.96	-63.47
05/22/96	-130.53	51.08	2.45	-37.05	24.79	-89.27	21.00	1.51	22.51	-109.53	-66.76
05/29/96	-116.67	58.92	3.09	-37.05	11.78	-79.93	27.16	1.51	28.67	-89.51	-51.26
06/05/96	-95.62	53.41	2.83	-37.05	-7.53	-83.96	28.89	30.39	59.28	-66.73	-24.68
06/12/96	-121.70	47.48	2.72	-12.15	-7.53	-91.19	34.83	48.85	83.68	-86.87	-7.51
06/19/96	-142.04	51.13	2.71	-12.15	-7.53	-107.89	27.65	28.76	56.41	-114.39	-51.48
06/26/96	-135.89	57.06	2.72	-12.15	-55.00	-143.26	2.93	31.27	34.20	-132.96	-109.06
07/03/96	-138.37	51.61	2.29	-12.15	-55.19	-151.81	8.68	52.61	61.29	-129.69	-90.52
07/10/96	-117.25	61.48	2.18	-12.15	-55.19	-120.94	12.70	61.15	73.85	-104.55	-47.08
07/17/96	-78.49	60.40	2.18	-12.15	-55.19	-83.25	23.91	64.29	88.20	-54.58	4.95
07/24/96	-79.63	69.49	2.18	-12.15	-55.19	-75.31	21.39	37.29	58.68	-58.24	-16.62
07/31/96	-112.23	63.15	2.17	-13.28	-54.61	-114.79	1.28	31.27	32.55	-110.95	-82.24
08/07/96	-80.94	60.70	2.59	-39.00	-54.61	-111.26	24.70	63.66	88.36	-56.24	-22.90
08/14/96	-92.82	61.46	2.59	-93.23	-54.61	-176.60	31.26	60.15	91.41	-61.56	-85.19
08/21/96	-60.61	65.00	2.59	-46.73	-14.09	-53.83	7.51	75.97	83.48	-53.10	29.65
08/28/96	-58.93	83.75	2.59	-46.73	-14.09	-33.41	-3.49	80.74	77.25	-62.42	43.84
09/04/96	-8.69	92.27	2.56	-46.73	-13.61	25.80	-22.48	83.50	61.02	-31.17	86.83
09/11/96	26.25	93.18	2.49	-20.10	-13.61	88.22	-10.54	96.06	85.52	15.71	173.73
09/18/96	-22.72	116.51	2.88	-20.10	-13.61	62.96	-21.87	97.32	75.45	-44.59	138.41
09/25/96	77.70	117.12	2.46	-20.10	-13.61	163.56	-40.46	101.71	61.25	37.24	224.81
10/02/96	78.02	123.41	2.51	-20.10	-13.43	170.41	-16.85	105.85	89.00	61.17	259.42
10/09/96	80.54	118.32	2.56	-60.75	-13.43	127.24	-23.58	79.74	56.16	56.96	183.40
10/16/96	65.22	117.72	2.13	-45.15	-13.43	126.49	-31.04	73.46	42.42	34.18	168.91
10/23/96	67.91	105.74	1.57	-33.15	-52.04	90.03	-29.89	13.18	-16.71	38.02	73.33
10/30/96	77.90	86.77	1.60	-19.13	-62.96	84.18	-14.36	24.49	10.13	63.54	94.30

**Table A.11: Weekly Margins and Payoffs from Hedging (\$/head.)**

Finished Date	Feeding Margin	(12	(12 Month)	(12 Month)	(12 Month)	Hedged Feeding Margin	Packing Margin	(12 Month)	Hedge Packing Margin	Total Margin	Hedged Total Margin
		Month)	Long Soybean Meal					Long Feeder Cattle			
11/06/96	83.55	109.81	1.58	-12.90	-65.71	116.33	-2.34	22.23	19.89	81.21	136.21
11/13/96	83.48	104.12	1.58	-16.88	-74.29	98.01	-8.80	22.23	13.43	74.68	111.44
11/20/96	45.31	113.10	1.58	-18.75	-67.97	73.26	-10.78	22.23	11.45	34.53	84.71
11/27/96	18.03	138.68	1.58	-8.40	-62.37	87.52	-4.33	22.23	17.90	13.70	105.41
12/04/96	25.24	136.59	1.55	-3.38	-65.07	94.93	-3.06	22.23	19.17	22.18	114.10
12/11/96	-0.05	89.55	2.24	-3.38	-65.07	23.29	-6.62	22.23	15.61	-6.67	38.90
12/18/96	-12.05	89.55	2.05	-14.25	-65.07	0.22	4.17	16.95	21.12	-7.88	21.35
12/25/96	-11.37	89.55	1.99	-6.00	-22.92	51.24	35.31	7.66	42.97	23.94	94.21
01/01/97	14.16	89.76	1.96	9.00	-23.76	91.12	40.15	7.66	47.81	54.31	138.93
01/08/97	-3.83	89.76	2.93	45.75	-15.19	119.42	4.82	7.66	12.48	0.99	131.90
01/15/97	-12.87	88.44	3.06	53.10	-31.11	100.61	15.69	9.92	25.61	2.82	126.22
01/22/97	-15.69	86.53	3.43	47.63	-31.11	90.79	14.76	3.89	18.65	-0.93	109.44
01/29/97	-32.93	85.21	3.46	47.63	-31.11	72.25	-12.15	-13.69	-25.84	-45.08	46.42
02/05/97	-32.23	77.01	4.13	47.63	-31.56	64.98	-6.63	-16.45	-23.08	-38.86	41.90
02/12/97	-28.92	65.28	3.51	31.65	-31.56	39.96	0.36	-8.29	-7.93	-28.56	32.04
02/19/97	-6.80	58.16	3.61	27.00	-31.56	50.42	4.10	21.22	25.32	-2.70	75.74
02/26/97	21.04	58.16	2.65	31.65	-25.22	88.28	34.62	66.80	101.42	55.66	189.70
03/05/97	24.79	58.71	2.48	24.15	-25.34	84.79	35.39	46.46	81.85	60.18	166.64
03/12/97	26.71	58.71	1.60	22.58	-25.34	84.25	0.80	49.22	50.02	27.51	134.27
03/19/97	10.07	58.71	0.87	24.23	-25.34	68.53	-4.74	47.72	42.98	5.33	111.51
03/26/97	0.97	58.71	0.95	24.23	-25.34	59.52	6.00	41.06	47.06	6.97	106.58
04/02/97	-1.51	58.58	0.90	24.23	-25.37	56.83	-7.15	36.67	29.52	-8.66	86.34
04/09/97	-18.92	58.58	0.90	-29.40	-25.37	-14.21	-18.93	45.46	26.53	-37.85	12.31
04/16/97	12.14	60.83	0.88	-35.03	-7.87	30.95	15.74	48.97	64.71	27.88	95.66
04/23/97	-7.91	62.02	0.74	-16.65	-0.25	37.96	9.47	16.57	26.04	1.56	64.00
04/30/97	-26.44	57.89	0.45	-39.00	-0.25	-7.35	0.40	16.57	16.97	-26.04	9.63
05/07/97	-27.88	57.44	0.26	-41.78	-0.25	-12.20	11.89	16.57	28.46	-15.99	16.26
05/14/97	-63.42	17.62	-1.84	-51.15	-0.25	-99.04	-4.89	16.57	11.68	-68.31	-87.35
05/21/97	-64.46	16.73	-1.84	-52.50	-0.25	-102.32	1.09	16.20	17.29	-63.37	-85.03
05/28/97	-92.12	13.92	-2.07	-49.13	-0.25	-129.65	3.33	18.46	21.79	-88.79	-107.86
06/04/97	-98.57	17.50	-1.98	-50.40	-0.25	-133.70	8.43	-17.71	-9.28	-90.14	-142.98
06/11/97	-111.66	21.91	-1.10	55.05	-0.25	-36.05	3.23	-9.54	-6.31	-108.43	-42.36
06/18/97	-105.83	19.48	-1.01	62.40	-0.25	-25.21	21.17	-4.52	16.65	-84.66	-8.56
06/25/97	-108.38	14.30	-0.76	61.28	15.32	-18.25	17.91	-5.27	12.64	-90.47	-5.61
07/02/97	-111.78	12.79	-0.60	56.78	15.37	-27.45	7.31	-5.27	2.04	-104.47	-25.41
07/09/97	-139.15	11.56	-1.05	53.78	15.37	-59.49	4.33	-5.27	-0.94	-134.82	-60.43
07/16/97	-145.35	13.56	-0.36	50.03	2.77	-79.36	13.69	8.92	22.61	-131.66	-56.75
07/23/97	-130.15	16.79	0.02	55.80	2.14	-55.40	21.73	9.54	31.27	-108.42	-24.12
07/30/97	-108.88	25.35	0.19	55.80	-8.10	-35.64	36.46	19.84	56.30	-72.42	20.66
08/06/97	-107.37	20.59	0.46	55.80	3.74	-26.79	18.13	7.91	26.04	-89.24	-0.75
08/13/97	-113.45	10.91	0.87	32.10	5.86	-63.71	3.03	1.26	4.29	-110.42	-59.42
08/20/97	-117.55	12.14	3.18	32.10	5.86	-64.27	17.35	6.91	24.26	-100.20	-40.02
08/27/97	-101.77	14.14	4.28	32.10	-46.51	-97.75	6.77	-15.19	-8.42	-95.00	-106.18
09/03/97	-123.73	8.18	3.31	34.73	-44.92	-122.44	-2.20	-16.45	-18.65	-125.93	-141.09
09/10/97	-102.83	7.12	2.93	54.60	-44.92	-83.10	8.62	8.04	16.66	-94.21	-66.44
09/17/97	-91.05	9.55	2.87	54.60	-44.92	-68.94	14.60	-6.03	8.57	-76.45	-60.37
09/24/97	-79.93	9.55	4.08	78.04	-41.55	-29.81	-10.06	-11.68	-21.74	-89.99	-51.55
10/01/97	-59.95	9.44	4.59	63.38	-29.70	-12.26	-3.94	-11.68	-15.62	-63.89	-27.88



**Table A.11: Weekly Margins and Payoffs from Hedging (\$/head.)**

Finished Date	Feeding Margin	(12	(12 Month)	(12 Month) Long Feeder Cattle	(12 Month) Short Live Cattle	Hedged Feeding Margin	Packing Margin	(12 Month)	Hedge Packing Margin	Total Margin	Hedged Total Margin
		Month)	Long Soybean Meal					Long Live Cattle			
10/08/97	-107.37	-29.65	2.06	56.10	-29.70	-108.57	-2.63	-11.68	-14.31	-110.00	-122.88
10/15/97	-85.21	-21.72	2.37	59.85	-36.00	-80.71	-6.06	-11.68	-17.74	-91.27	-98.44
10/22/97	-57.73	-27.26	2.43	65.85	4.51	-12.20	3.12	5.02	8.14	-54.61	-4.06
10/29/97	-11.41	-20.82	1.81	57.23	13.07	39.87	8.94	5.02	13.96	-2.47	53.84
11/05/97	-43.10	-28.27	1.86	57.00	13.12	0.60	-9.97	5.02	-4.95	-53.07	-4.34
11/12/97	-52.29	-24.98	1.72	63.98	12.52	0.94	-14.90	5.02	-9.88	-67.19	-8.93
11/19/97	-68.70	-28.12	1.79	66.98	13.71	-14.34	-9.86	5.02	-4.84	-78.56	-19.18
11/26/97	-71.75	-34.26	1.79	82.13	6.56	-15.53	-6.30	5.02	-1.28	-78.05	-16.81
12/03/97	-81.01	-21.69	1.76	78.23	12.30	-10.42	-10.80	5.02	-5.78	-91.81	-16.20
12/10/97	-86.82	-13.48	1.01	93.23	8.72	2.65	-1.56	5.02	3.46	-88.38	6.11
12/17/97	-87.82	-13.48	1.01	97.50	7.16	4.37	-13.86	5.02	-8.84	-101.68	-4.47
12/24/97	-61.12	-16.56	1.01	87.60	53.73	64.66	-17.26	-8.54	-25.80	-78.38	38.86
12/31/97	-27.47	-16.57	1.01	81.38	53.52	91.87	-24.85	-8.54	-33.39	-52.32	58.48
01/07/98	-71.22	-16.57	2.18	62.18	80.84	57.40	-20.03	-8.54	-28.57	-91.25	28.83
01/14/98	-91.37	-21.12	3.78	62.18	66.38	19.85	-3.59	-8.54	-12.13	-94.96	7.72
01/21/98	-80.24	-13.49	3.00	62.18	59.65	31.09	5.54	-8.54	-3.00	-74.70	28.09
01/28/98	-84.32	-12.61	4.18	62.18	71.90	41.32	3.36	-8.54	-5.18	-80.96	36.14
02/04/98	-97.63	-12.91	4.39	62.18	92.19	48.22	-2.52	-8.54	-11.06	-100.15	37.16
02/11/98	-105.86	8.16	1.52	81.53	103.37	88.72	-9.78	-8.54	-18.32	-115.64	70.40
02/18/98	-97.01	8.16	0.95	81.53	82.00	75.63	22.72	-8.54	14.18	-74.29	89.81
02/25/98	-110.10	8.16	0.10	76.80	112.81	87.78	1.15	22.35	23.50	-108.95	111.28
03/04/98	-102.02	8.24	0.84	69.15	109.73	85.94	-0.98	22.35	21.37	-103.00	107.31
03/11/98	-70.28	11.38	1.49	59.93	98.49	101.01	0.73	22.35	23.08	-69.55	124.09
03/18/98	-57.77	13.63	1.12	59.93	97.62	114.53	4.88	22.35	27.23	-52.89	141.76
03/25/98	-60.89	6.14	1.17	59.93	117.84	124.19	-1.36	22.35	20.99	-62.25	145.18
04/01/98	-58.90	4.48	1.49	59.93	109.61	116.60	-17.95	22.35	4.40	-76.85	121.01
04/08/98	-19.33	4.48	1.35	58.43	72.36	117.29	-4.81	22.35	17.54	-24.14	134.83
04/15/98	-31.35	4.48	1.17	12.68	78.61	65.59	5.89	22.35	28.24	-25.46	93.84
04/22/98	-42.12	4.48	1.41	16.05	87.11	66.93	-16.62	-119.04	-135.66	-58.74	-68.73
04/29/98	-9.38	4.44	1.01	16.05	-20.70	-8.57	-5.43	-50.86	-56.29	-14.81	-64.86
05/06/98	-35.06	4.44	0.92	10.80	-20.70	-39.60	13.69	-48.97	-35.28	-21.37	-74.88
05/13/98	-33.34	15.99	1.39	11.40	-20.70	-25.26	5.33	-70.32	-64.99	-28.01	-90.25
05/20/98	-36.54	15.99	1.39	-3.23	-12.64	-35.03	1.59	-92.04	-90.45	-34.95	-125.48
05/27/98	-26.96	15.99	1.39	-3.23	-3.97	-16.77	-1.16	-87.65	-88.81	-28.12	-105.58
06/03/98	-26.79	16.43	1.43	20.78	-13.81	-1.96	-4.88	-87.65	-92.53	-31.67	-94.48
06/10/98	-22.69	16.43	1.43	11.25	-23.48	-17.05	-1.17	-87.65	-88.82	-23.86	-105.87
06/17/98	-32.87	16.43	1.43	11.25	-2.51	-6.26	0.51	-87.65	-87.14	-32.36	-93.40
06/24/98	-28.80	16.43	1.43	11.25	6.03	6.34	-1.21	-87.65	-88.86	-30.01	-82.51
07/01/98	-31.23	16.64	1.45	3.15	33.39	23.40	-8.81	-23.23	-32.04	-40.04	-8.64
07/08/98	-48.83	15.87	1.45	3.15	31.50	3.14	-9.37	-23.23	-32.60	-58.20	-29.46
07/15/98	-26.63	5.70	1.45	3.15	58.59	42.26	9.64	-23.23	-13.59	-16.99	28.67
07/22/98	-29.34	7.24	1.45	9.53	64.26	53.14	14.14	-23.23	-9.09	-15.20	44.05
07/29/98	-35.85	6.16	1.45	9.53	72.83	54.12	19.19	-23.23	-4.04	-16.66	50.08
08/05/98	-21.74	11.37	1.45	9.53	68.95	69.55	25.61	-23.23	2.38	3.87	71.93
08/12/98	-0.91	-8.14	0.22	-17.25	82.67	56.58	37.24	-23.23	14.01	36.33	70.59
08/19/98	-30.67	-8.76	0.22	-17.25	94.76	38.30	38.72	-23.23	15.49	8.05	53.79
08/26/98	-20.99	-7.22	0.22	-9.75	155.86	118.11	39.04	-8.16	30.88	18.05	148.99
09/02/98	-33.22	-2.73	0.22	9.15	164.98	138.39	29.31	-8.16	21.15	-3.91	159.54

**Table A.11: Weekly Margins and Payoffs from Hedging (\$/head.)**

Finished Date	Feeding Margin	(12 Month)	(12 Month)	(12 Month)	(12 Month)	Hedged Feeding Margin	Packing Margin	(12 Month)	Hedge	Total Margin	Hedged
		Long Corn	Long Soybean Meal	Long Feeder Cattle	Short Live Cattle			Long Live Cattle	Packing Margin		Total Margin
09/09/98	-20.13	-2.73	0.22	15.38	157.15	149.89	24.59	-8.16	16.43	4.46	166.32
09/16/98	-3.93	-2.73	0.22	15.38	127.05	135.98	32.33	-8.16	24.17	28.40	160.15
09/23/98	-11.48	-2.73	0.22	15.38	132.83	134.21	19.70	-8.16	11.54	8.22	145.75
09/30/98	-27.31	-2.70	0.21	15.38	153.62	139.20	1.78	-8.16	-6.38	-25.53	132.81
10/07/98	-30.93	4.04	0.91	-27.45	127.72	74.29	4.58	-8.16	-3.58	-26.35	70.71
10/14/98	-8.28	4.04	0.91	-36.45	94.21	54.43	24.74	-8.16	16.58	16.46	71.01
10/21/98	-0.41	4.04	0.91	-39.98	88.27	52.84	37.83	-4.14	33.69	37.42	86.52
10/28/98	-7.18	4.04	0.91	-39.98	105.14	62.94	10.98	46.46	57.44	3.80	120.38
11/04/98	6.56	4.04	0.90	-39.98	102.31	73.84	6.20	28.63	34.83	12.76	108.67
11/11/98	-11.12	4.04	0.90	-39.98	102.31	56.17	1.18	18.84	20.02	-9.94	76.18
11/18/98	-17.23	4.04	0.90	-39.98	102.31	50.06	1.92	-2.76	-0.84	-15.31	49.21
11/25/98	-6.54	4.04	0.90	-39.98	102.31	60.75	10.47	15.44	25.91	3.93	86.66
12/02/98	-6.07	3.96	1.23	-39.98	102.44	61.58	9.61	-1.88	7.73	3.54	69.31
12/09/98	-6.40	6.01	-0.66	-39.98	132.65	91.62	-2.62	-29.51	-32.13	-9.02	59.49
12/16/98	-35.70	6.01	0.62	-39.98	150.20	81.15	8.99	-36.67	-27.68	-26.71	53.47
12/23/98	-39.37	6.01	0.04	-39.98	142.44	69.14	20.74	-36.67	-15.93	-18.63	53.22
12/30/98	-21.22	6.01	-0.57	-39.98	105.95	50.20	31.12	-30.51	0.61	9.90	50.81
01/06/99	-30.98	6.01	-0.49	-39.98	85.12	19.69	17.29	-30.51	-13.22	-13.69	6.47
01/13/99	-19.13	6.01	-0.94	-30.75	122.11	77.31	32.81	-30.51	2.30	13.68	79.60
01/20/99	-46.92	3.52	-0.94	-30.75	73.12	-1.97	35.71	-30.51	5.20	-11.21	3.23
01/27/99	-30.48	1.61	-0.94	-26.40	87.57	31.36	4.85	7.53	12.38	-25.63	43.74
02/03/99	-44.82	2.37	-0.96	-26.40	88.84	19.03	-16.02	1.63	-14.39	-60.84	4.65
02/10/99	-24.83	-6.08	-0.40	-21.83	88.84	35.70	4.06	11.93	15.99	-20.77	51.69
02/17/99	-10.18	-8.01	-0.40	-21.83	88.84	48.42	12.38	-8.16	4.22	2.20	52.63
02/24/99	4.36	-6.23	-0.40	35.18	88.84	121.74	-2.09	1.88	-0.21	2.27	121.54
03/03/99	25.55	-6.29	-0.91	-21.83	54.05	50.59	3.25	18.84	22.09	28.80	72.67
03/10/99	43.84	-19.77	-0.91	0.38	54.05	77.59	10.66	21.97	32.63	54.50	110.22
03/17/99	52.60	-14.08	-0.91	-4.13	54.05	87.55	2.70	1.51	4.21	55.30	91.75
03/24/99	21.50	-14.08	-0.77	1.13	54.05	61.83	3.23	-1.63	1.60	24.73	63.42
03/31/99	32.33	-14.05	-1.10	-10.13	54.12	61.17	0.42	-6.91	-6.49	32.75	54.68
04/07/99	28.21	-14.05	-0.47	-20.10	54.12	47.71	-1.18	10.67	9.49	27.03	57.21
04/14/99	37.72	-14.05	-0.43	-43.20	54.12	34.16	2.99	1.26	4.25	40.71	38.40
04/21/99	41.66	-14.05	-0.64	-27.98	42.24	41.24	12.50	1.26	13.76	54.16	54.99
04/28/99	63.98	-14.05	0.12	-45.45	-10.25	-5.65	24.82	-16.57	8.25	88.80	2.60
05/05/99	55.54	-13.92	-0.19	-56.48	10.54	-4.51	17.19	-16.57	0.62	72.73	-3.89
05/12/99	41.39	-9.03	-0.40	-56.48	20.45	-4.07	11.71	-16.57	-4.86	53.10	-8.93
05/19/99	34.86	-9.03	-0.50	-52.88	0.99	-26.56	29.16	-16.57	12.59	64.02	-13.97
05/26/99	37.11	-9.03	-0.52	-48.00	-11.40	-31.84	34.02	-16.57	17.45	71.13	-14.40
06/02/99	31.90	-9.28	-0.55	-36.53	-11.55	-26.01	24.43	-16.57	7.86	56.33	-18.15
06/09/99	33.02	-9.28	-0.55	1.88	-11.55	13.51	37.96	0.00	37.96	70.98	51.47
06/16/99	21.29	-9.28	-0.55	-2.10	-11.55	-2.20	53.13	6.66	59.79	74.42	57.59
06/23/99	17.27	-9.28	-0.55	-11.63	-11.55	-15.74	44.11	-15.07	29.04	61.38	13.30
06/30/99	3.14	-9.40	-0.56	-3.00	-24.19	-34.02	32.09	-19.21	12.88	35.23	-21.14
07/07/99	4.52	-9.40	-0.56	0.38	-24.19	-29.26	32.96	-22.35	10.61	37.48	-18.65
07/14/99	-6.97	-9.40	-0.56	-4.35	-24.19	-45.48	39.75	-16.95	22.80	32.78	-22.68
07/21/99	-1.31	-8.47	-0.56	-4.73	-24.19	-39.27	24.88	-9.79	15.09	23.57	-24.18
07/28/99	10.66	-11.25	-0.56	-11.70	-24.19	-37.04	27.47	2.13	29.60	38.13	-7.44
08/04/99	-16.53	-13.52	-0.56	-5.70	-23.94	-60.25	28.35	-8.16	20.19	11.82	-40.06

**Table A.11: Weekly Margins and Payoffs from Hedging (\$/head.)**

Finished Date	Feeding Margin	(12	(12 Month)	(12 Month) Long Feeder Cattle	(12 Month) Short Live Cattle	Hedged Feeding Margin	Packing Margin	(12 Month)	Hedge Packing Margin	Total Margin	Hedged Total Margin
		Month)	Long Soybean Meal					Long Live Cattle			
08/11/99	4.77	-29.20	-0.79	-2.25	-23.94	-51.40	34.79	9.04	43.83	39.56	-7.57
08/18/99	-15.30	-21.05	-0.79	-2.25	-23.94	-63.33	49.17	18.84	68.01	33.87	4.68
08/25/99	2.30	-22.59	-0.72	-2.25	-23.94	-47.20	45.53	10.92	56.45	47.83	9.25
09/01/99	-31.89	-26.97	-0.93	-2.25	-29.50	-91.55	30.96	-32.52	-1.56	-0.93	-93.11
09/08/99	-30.15	-29.09	-0.86	-29.48	-29.50	-119.08	24.24	-19.97	4.27	-5.91	-114.80
09/15/99	-48.22	-29.09	-0.95	-29.48	-29.50	-137.23	33.15	-16.20	16.95	-15.07	-120.28
09/22/99	-29.65	-29.09	-1.11	-29.48	-29.50	-118.83	28.52	-32.77	-4.25	-1.13	-123.08
09/29/99	-34.95	-28.76	-1.13	-29.48	-29.11	-123.42	36.97	-20.84	16.13	2.02	-107.30
10/06/99	-5.73	-28.76	-1.01	-29.48	-29.11	-94.08	50.01	-4.52	45.49	44.28	-48.59
10/13/99	23.69	-9.29	-0.82	-5.25	-29.11	-20.77	40.47	28.13	68.60	64.16	47.83
10/20/99	18.66	-9.29	-0.82	-5.25	-29.11	-25.80	18.58	30.26	48.84	37.24	23.04
10/27/99	4.57	-9.29	-0.82	-4.88	-15.33	-25.74	5.11	21.97	27.08	9.68	1.35
11/03/99	-11.28	-9.28	-0.82	7.13	-15.38	-29.63	1.18	32.65	33.83	-10.10	4.19
11/10/99	-8.24	-9.28	-0.82	11.10	-15.38	-22.61	-9.17	28.25	19.08	-17.41	-3.53
11/17/99	-0.35	-9.28	-0.82	9.23	-15.38	-16.60	3.71	51.73	55.44	3.36	38.85
11/24/99	-0.53	-9.28	-0.82	-13.28	-15.38	-39.28	21.96	48.97	70.93	21.43	31.66
12/01/99	-18.48	-9.09	-1.30	3.75	-15.40	-40.51	12.14	42.94	55.08	-6.34	14.57
12/08/99	-43.45	-12.02	-1.12	6.00	-15.40	-66.00	-7.34	52.99	45.65	-50.79	-20.35
12/15/99	-57.21	-12.02	-1.12	6.00	-15.40	-79.75	16.45	36.41	52.86	-40.76	-26.89
12/22/99	-61.58	-12.02	-1.11	6.00	-15.40	-84.10	26.74	38.55	65.29	-34.84	-18.81
12/29/99	-43.92	-12.02	-0.75	6.00	-58.50	-109.19	23.04	-41.81	-18.77	-20.88	-127.96
01/05/00	-55.60	-12.03	-0.79	6.00	-54.50	-26.75	14.04	-40.79	-26.75	-41.56	-143.66
01/12/00	-34.25	-12.03	-0.80	17.55	-72.26	-21.52	19.27	-40.79	-21.52	-14.98	-123.31
01/19/00	-36.01	-12.03	-0.94	19.28	-68.96	-21.39	19.40	-40.79	-21.39	-16.61	-120.05
01/26/00	-46.74	-11.29	-0.69	22.05	-67.12	-38.80	6.27	-45.07	-38.80	-40.47	-142.59
02/02/00	-21.61	-11.28	-0.29	25.65	-68.09	-26.83	11.87	-38.70	-26.83	-9.74	-102.45
02/09/00	-16.04	-18.10	-0.21	-0.08	-68.09	-22.72	11.70	-34.42	-22.72	-4.34	-125.22
02/16/00	-10.42	-25.07	-0.20	-4.95	-68.09	-50.16	-1.05	-49.11	-50.16	-11.47	-158.90
02/23/00	-13.63	-25.07	-0.06	-0.60	-68.09	-65.66	-10.79	-54.87	-65.66	-24.42	-173.11
03/01/00	-18.37	-25.31	-0.02	6.30	-51.18	5.36	11.24	-5.88	5.36	-7.13	-83.21
03/08/00	6.36	-25.31	0.66	7.20	-27.09	20.82	26.70	-5.88	20.82	33.06	-17.37
03/15/00	-3.16	-10.78	0.09	0.83	-32.71	41.45	47.33	-5.88	41.45	44.17	-4.28
03/22/00	27.69	-10.78	-0.08	-11.55	-37.08	53.34	46.60	6.74	53.34	74.29	21.54
03/29/00	14.03	-10.78	-0.12	-1.05	-18.97	7.58	32.44	-24.86	7.58	46.47	-9.33
04/05/00	7.23	-10.76	-0.61	0.08	-24.62	-0.63	19.58	-20.21	-0.63	26.81	-29.32
04/12/00	23.25	-10.76	-0.45	37.28	-24.62	24.08	30.57	-6.49	24.08	53.82	48.76
04/19/00	33.21	-10.76	-0.29	43.80	-24.62	52.80	47.29	5.51	52.80	80.50	94.14
04/26/00	29.33	-10.76	-0.22	36.15	-16.50	38.55	49.70	-11.15	38.55	79.03	76.55
05/03/00	3.23	-10.66	-0.20	33.53	-6.20	13.44	34.63	-21.19	13.44	37.86	33.14
05/10/00	-3.94	-14.51	-0.22	26.55	-0.25	8.70	35.77	-27.07	8.70	31.83	16.33
05/17/00	-9.76	-14.51	-0.22	30.15	2.48	10.59	40.35	-29.76	10.59	30.59	18.72
05/24/00	-30.20	-14.51	-0.22	28.65	9.05	-1.99	32.43	-34.42	-1.99	2.23	-9.22
05/31/00	-19.54	-14.91	-0.23	34.05	7.91	4.89	39.31	-34.42	4.89	19.77	12.17
06/07/00	-10.19	-14.91	-0.23	37.43	-5.27	11.13	45.55	-34.42	11.13	35.36	17.95
06/14/00	-25.44	-14.91	-0.21	46.88	-8.41	25.26	56.62	-31.36	25.26	31.18	23.17
06/21/00	-60.31	-15.37	0.04	52.13	-8.41	28.70	53.32	-24.62	28.70	-6.99	-3.22
06/28/00	-69.78	-16.74	-0.04	45.53	33.90	35.44	36.30	-0.86	35.44	-33.48	28.31
07/05/00	-50.64	-15.87	-0.02	41.63	17.26	26.72	27.58	-0.86	26.72	-23.06	19.07

**Table A.11: Weekly Margins and Payoffs from Hedging (\$/head.)**

Finished Date	Feeding Margin	(12	(12 Month)	(12 Month) Long Feeder Cattle	(12 Month) Short Live Cattle	Hedged Feeding Margin	Packing Margin	(12 Month)	Hedge Packing Margin	Total Margin	Hedged Total Margin
		Month)	Long Soybean Meal					Long Live Cattle			
07/12/00	-58.42	-15.56	0.13	41.63	25.45	35.12	35.98	-0.86	35.12	-22.44	28.35
07/19/00	-71.10	-20.34	-0.05	41.63	16.63	33.87	34.73	-0.86	33.87	-36.37	0.64
07/26/00	-56.15	-20.65	-0.02	41.63	33.39	23.97	24.83	-0.86	23.97	-31.32	22.17
08/02/00	-82.04	-17.82	0.26	41.63	38.65	26.27	27.13	-0.86	26.27	-54.91	6.94
08/09/00	-87.56	-7.22	0.06	31.35	32.04	37.99	38.85	-0.86	37.99	-48.71	6.67
08/16/00	-71.82	-7.84	0.09	30.00	32.67	36.20	37.06	-0.86	36.20	-34.76	19.30
08/23/00	-79.63	-10.91	-0.08	27.23	19.58	34.12	34.98	-0.86	34.12	-44.65	-9.69
08/30/00	-95.60	-3.03	0.10	24.00	36.37	36.47	20.91	15.56	36.47	-74.69	-1.70
09/06/00	-105.84	-6.97	0.11	24.00	46.00	38.79	23.23	15.56	38.79	-82.61	-3.91
09/13/00	-97.17	-6.51	-0.02	29.40	38.17	47.21	31.65	15.56	47.21	-65.52	11.07
09/20/00	-103.11	-6.51	0.37	29.40	25.89	47.72	32.16	15.56	47.72	-70.95	-6.26
09/27/00	-92.03	-6.51	0.90	23.55	14.45	40.93	25.37	15.56	40.93	-66.66	-18.72
10/04/00	-85.41	-10.33	1.23	14.55	12.47	37.32	21.76	15.56	37.32	-63.65	-30.18
10/11/00	-94.70	-5.24	1.27	23.03	12.71	30.66	15.10	15.56	30.66	-79.60	-32.28
10/18/00	-83.00	-5.54	1.24	23.03	3.56	24.35	8.79	15.56	24.35	-74.21	-36.37
10/25/00	-85.52	-11.53	1.10	23.03	-11.64	43.53	12.05	31.48	43.53	-73.47	-41.05
11/01/00	-72.79	-14.66	1.19	23.03	9.54	-28.90	11.52	-40.42	-28.90	-61.27	-82.60
11/08/00	-66.58	-24.53	0.96	20.55	9.54	-44.96	-2.46	-42.50	-44.96	-69.04	-105.02
11/15/00	-69.46	-23.19	0.76	19.80	9.54	-35.73	5.30	-41.03	-35.73	-64.16	-98.28
11/22/00	-43.30	-23.19	0.72	17.03	9.54	2.53	28.86	-26.33	2.53	-14.44	-36.67
11/29/00	-60.88	-22.72	0.71	33.68	9.55	-19.83	20.83	-40.66	-19.83	-40.05	-59.50
12/06/00	-35.93	-22.72	0.71	31.80	9.55	-12.22	-7.32	-4.90	-12.22	-43.25	-28.81
12/13/00	-12.40	-25.79	0.02	31.80	9.55	34.03	15.05	18.98	34.03	2.65	37.21
12/20/00	-22.58	-25.79	0.02	19.65	9.55	65.20	28.46	36.74	65.20	5.88	46.06
12/27/00	-20.01	-25.79	0.02	13.43	11.10	77.84	29.70	48.14	77.84	9.69	56.58
01/03/01	-6.54	-25.81	0.02	21.15	11.39	75.09	30.38	44.71	75.09	23.84	75.30
01/10/01	30.07	-25.81	-0.07	-12.38	11.39	69.57	10.17	59.40	69.57	40.24	72.77
01/17/01	58.07	-25.81	-0.20	-12.38	11.39	84.08	4.10	79.98	84.08	62.17	115.15
01/24/01	46.34	-26.99	-0.50	-12.38	11.39	42.60	-16.56	59.16	42.60	29.78	60.47
01/31/01	75.39	-27.60	-0.67	-12.38	11.55	14.02	-33.50	47.52	14.02	41.89	60.32
02/07/01	73.42	-4.45	-1.50	1.65	11.55	42.08	-34.47	76.55	42.08	38.95	122.75
02/14/01	56.82	-6.97	-1.48	1.65	11.55	64.10	-14.04	78.14	64.10	42.78	125.67
02/21/01	86.04	-6.97	-1.30	1.65	11.55	90.39	1.22	89.17	90.39	87.26	181.36
02/28/01	92.69	-7.19	-1.26	9.15	19.35	61.55	11.70	49.85	61.55	104.39	174.29
03/07/01	96.09	-7.04	-1.93	3.00	20.60	56.55	5.11	51.44	56.55	101.20	167.27
03/14/01	79.59	-5.99	-1.36	-7.88	54.93	15.91	-1.85	17.76	15.91	77.74	135.20
03/21/01	70.01	-7.79	-0.64	-2.40	54.93	3.56	2.70	0.86	3.56	72.71	117.67
03/28/01	58.08	-6.14	-0.68	-1.65	54.93	13.38	0.27	13.11	13.38	58.35	117.91
04/04/01	62.29	-0.15	-0.54	-7.65	54.99	16.04	-2.58	18.62	16.04	59.71	124.97
04/11/01	42.84	-5.23	-0.58	1.88	54.99	32.79	14.17	18.62	32.79	57.01	126.68
04/18/01	19.33	-3.59	-0.08	1.88	68.99	31.84	13.22	18.62	31.84	32.55	118.36
04/25/01	21.44	-6.73	0.56	1.88	79.61	29.88	11.26	18.62	29.88	32.70	126.64
05/02/01	-14.95	-4.29	0.46	5.25	-35.33	14.47	35.90	-21.43	14.47	20.95	-34.39
05/09/01	2.64	-2.07	-1.09	10.65	-15.49	20.86	42.29	-21.43	20.86	44.93	15.49
05/16/01	2.99	2.37	-0.92	11.40	-23.30	24.07	45.50	-21.43	24.07	48.49	16.61
05/23/01	23.16	4.29	-0.94	12.15	-59.87	19.55	40.98	-21.43	19.55	64.14	-1.67
05/30/01	37.88	5.48	-1.09	12.15	-65.04	3.53	24.96	-21.43	3.53	62.84	-7.11
06/06/01	-11.01	5.17	-1.18	12.15	-65.04	-15.71	11.24	-26.95	-15.71	0.23	-75.62

**Table A.11: Weekly Margins and Payoffs from Hedging (\$/head.)**

Finished Date	Feeding Margin	(12	(12 Month)	(12 Month) Long Feeder Cattle	(12 Month) Short Live Cattle	Hedged Feeding Margin	Packing Margin	(12 Month)	Hedge Packing Margin	Total Margin	Hedged Total Margin
		Month)	Long Soybean Meal					Long Live Cattle			
06/13/01	-21.31	-2.13	-1.76	-5.85	-65.04	-30.62	6.37	-36.99	-30.62	-14.94	-126.71
06/20/01	-39.72	-3.50	-1.96	-18.98	-65.04	-41.36	6.41	-47.77	-41.36	-33.31	-170.56
06/27/01	-63.17	-7.15	-2.21	-21.23	-65.67	44.67	18.95	25.72	44.67	-44.22	-114.76
07/03/01	-72.36	-6.32	-2.24	-21.23	-65.90	17.93	12.42	5.51	17.93	-59.94	-150.12
07/11/01	-86.12	-7.24	-2.24	-21.23	-65.90	4.81	-4.99	9.80	4.81	-91.11	-177.92
07/18/01	-59.35	-2.47	-2.24	-21.23	-65.90	19.65	-0.19	19.84	19.65	-59.54	-131.53
07/25/01	-45.93	-3.85	-2.24	-21.23	-65.90	27.64	19.43	8.21	27.64	-26.50	-111.51
08/01/01	-54.44	-4.76	-2.24	-29.85	-65.21	9.80	20.21	-10.41	9.80	-34.23	-146.70
08/08/01	-90.48	-22.90	-2.03	-27.45	-65.21	8.96	19.37	-10.41	8.96	-71.11	-199.11
08/15/01	-72.17	-20.13	-2.03	-26.48	-65.21	27.91	38.32	-10.41	27.91	-33.85	-158.11
08/22/01	-79.29	-16.60	-2.03	-26.48	-65.21	31.89	42.30	-10.41	31.89	-36.99	-157.72
08/29/01	-88.05	-19.67	-2.03	-26.48	-17.08	11.24	24.96	-13.72	11.24	-63.09	-142.07
09/05/01	-125.37	-14.39	-2.01	-26.48	-18.06	-7.48	6.24	-13.72	-7.48	-119.13	-193.79
09/12/01	-94.61	-14.39	-2.01	-10.50	-3.25	-6.24	7.48	-13.72	-6.24	-87.13	-131.00
09/19/01	-126.68	-14.39	-2.01	-11.48	26.49	-1.05	12.67	-13.72	-1.05	-114.01	-129.11
09/26/01	-116.45	-14.39	-2.01	-9.38	58.77	-11.45	2.27	-13.72	-11.45	-114.18	-94.91
10/03/01	-120.19	-11.23	-1.96	-12.98	62.14	-10.98	2.74	-13.72	-10.98	-117.45	-95.20
10/10/01	-143.99	-3.89	-1.61	-9.75	37.42	0.97	14.69	-13.72	0.97	-129.30	-120.85
10/17/01	-134.99	-3.89	-2.66	12.23	59.40	5.77	19.49	-13.72	5.77	-115.50	-64.15
10/24/01	-160.70	-3.89	-2.79	17.10	76.63	-0.41	13.31	-13.72	-0.41	-147.39	-74.06
10/31/01	-129.53	-3.89	-2.26	17.25	69.28	-45.86	2.40	-48.26	-45.86	-127.13	-95.00
11/07/01	-132.87	-3.89	-1.37	14.25	98.14	-56.29	-8.03	-48.26	-56.29	-140.90	-82.03
11/14/01	-158.58	-3.89	-1.36	21.60	127.36	-52.13	-3.87	-48.26	-52.13	-162.45	-67.00
11/21/01	-136.20	-3.89	-1.41	21.60	82.64	-14.23	34.03	-48.26	-14.23	-102.17	-51.49
11/28/01	-143.06	-3.89	-0.83	12.00	74.05	-23.01	25.25	-48.26	-23.01	-117.81	-84.73
12/05/01	-99.62	-3.81	-0.53	8.63	80.11	-46.52	1.74	-48.26	-46.52	-97.88	-61.73
12/12/01	-117.98	-0.59	-0.53	6.23	111.39	-36.93	11.33	-48.26	-36.93	-106.65	-38.40
12/19/01	-140.98	1.32	-0.28	6.23	105.42	-37.29	10.97	-48.26	-37.29	-130.01	-65.57
12/26/01	-112.15	-1.03	-0.34	6.23	51.94	-15.23	6.20	-21.43	-15.23	-105.95	-70.59
01/02/02	-64.97	0.29	-0.43	6.23	52.05	-32.96	-6.26	-26.70	-32.96	-71.23	-39.80
01/09/02	-72.20	1.47	-0.16	-5.85	52.05	-31.67	-7.79	-23.88	-31.67	-79.99	-56.36
01/16/02	-33.31	-0.88	-0.61	-5.85	52.05	-14.92	4.43	-19.35	-14.92	-28.88	-3.52
01/23/02	-22.34	0.59	-0.75	-5.85	52.05	-13.93	3.22	-17.15	-13.93	-19.12	9.77
01/30/02	8.03	0.15	-0.62	-5.85	52.80	9.21	-5.73	14.94	9.21	2.30	63.72
02/06/02	12.41	0.59	-0.66	-5.85	52.80	35.02	11.75	23.27	35.02	24.16	94.33
02/13/02	11.62	-5.49	-0.11	-20.10	52.80	38.47	26.59	11.88	38.47	38.21	77.20
02/20/02	7.78	-5.49	-0.54	-33.00	52.80	21.38	11.95	9.43	21.38	19.73	42.93
02/27/02	19.03	-6.14	-0.47	-33.00	43.69	-3.72	-3.35	-0.37	-3.72	15.68	19.40
03/06/02	37.99	-6.14	-0.12	-33.00	43.69	21.50	13.29	8.21	21.50	51.28	63.92
03/13/02	77.64	-11.53	-0.11	-43.35	43.69	32.70	32.70	0.00	32.70	110.34	99.04
03/20/02	36.63	-11.53	0.09	-43.35	43.69	-16.80	11.98	-28.78	-16.80	48.61	8.73
03/27/02	21.03	-11.53	0.09	-66.45	50.18	-35.09	-6.31	-28.78	-35.09	14.72	-41.77
04/03/02	35.16	-11.51	0.09	-52.20	28.75	-37.65	-8.87	-28.78	-37.65	26.29	-37.37
04/10/02	35.59	-8.37	0.09	18.68	81.24	-36.37	-7.59	-28.78	-36.37	28.00	90.86
04/17/02	-8.45	-12.70	0.09	24.68	98.11	-22.39	6.39	-28.78	-22.39	-2.06	79.33
04/24/02	-10.61	-12.70	0.09	36.45	131.48	-7.83	20.95	-28.78	-7.83	10.34	136.87
05/01/02	-8.88	-12.58	-0.12	36.08	52.43	47.27	25.84	21.43	47.27	16.96	114.20
05/08/02	4.20	-12.73	0.04	25.43	40.66	48.77	27.34	21.43	48.77	31.54	106.36

**Table A.11: Weekly Margins and Payoffs from Hedging (\$/head.)**

Finished Date	Feeding Margin	(12	(12 Month)	(12 Month) Long Feeder Cattle	(12 Month) Short Live Cattle	Hedged Feeding Margin	Packing Margin	(12 Month)	Hedge	Total Margin	Hedged
		Month) Long Corn	Month) Long Soybean Meal					Month) Long Live Cattle	Month) Packing Margin		Month) Total Margin
05/15/02	-6.79	-9.62	0.83	23.55	40.66	60.30	38.87	21.43	60.30	32.08	108.93
05/22/02	-21.67	-9.62	0.83	39.30	-1.24	50.45	50.21	0.24	50.45	28.54	58.05
05/29/02	-46.56	-9.62	0.83	33.68	12.77	92.28	65.70	26.58	92.28	19.14	83.36
06/05/02	-32.92	-9.89	0.85	36.68	28.63	76.14	71.61	4.53	76.14	38.69	99.48
06/12/02	-35.27	-9.89	0.85	-16.50	30.14	83.04	73.00	10.04	83.04	37.73	52.37
06/19/02	-40.90	-9.89	0.85	-18.75	30.14	54.52	56.97	-2.45	54.52	16.07	15.97
06/26/02	-57.15	-9.89	0.85	-11.63	23.86	53.51	55.10	-1.59	53.51	-2.05	-0.45

## **APPENDIX B**

**Table B.1 Feeding Margin Variables and Constants.**

Explanation of Variables

Average Daily Gain (lbs/day)

- DEFINITION: Average Daily Gain for 700- to 799-lb. placements, averaged for each month from January 1985 to August 1999.
- NOTES: Average Daily Gain varies by month of the year, and was held constant for each week of the month.
- SOURCE: Kansas State University. *Seasonal Trends in Steer Feeding Profits, Prices, and Performance*, Kansas State University Agricultural Experiment Station and Cooperative Extension Service, C-734 Revised, June 1997, page 7, Table 3. *Average Monthly Values of Steer Feeding Factors for 700- to 799-lb Placements (January 1985 to August 1999.)*

Feed Conversion (lbs feed/lbs gain)\*

- DEFINITION: Feed Conversion for 700- to 799-lb. placements, averaged for each month from January 1985 to August 1999.
- NOTES: \*as fed basis; Feed Conversion varies by month of the year, and was held constant for each week of the month.
- SOURCE: Kansas State University. *Seasonal Trends in Steer Feeding Profits, Prices, and Performance*, Kansas State University Agricultural Experiment Station and Cooperative Extension Service, C-734 Revised, June 1997, page 7, Table 3. *Average Monthly Values of Steer Feeding Factors for 700- to 799-lb Placements (January 1985 to August 1999.)*

Feeder Cattle Loan Rate (APR)

- DEFINITION: Average loan rates from surveyed banks to cattle owners\*
- NOTES:
  - This rate varies by quarter, and is held constant for each week in the quarter.
  - “The survey panel consists of approximately one-third (360) of the District's agricultural banks selected according to geographic distribution and size. Agricultural banks are those with a greater percentage of agricultural loans in their loan portfolios than the national average of approximately 15 percent.”  
--Federal Reserve Bank of Kansas City
- SOURCE: Federal Reserve Bank of Kansas City, *Survey of Agricultural Credit Conditions*, First Quarter 2000 through Second Quarter 2002 from website <http://www.kc.frb.org/agcrsurv/agcrpast.htm>; From 1990 through 1999 rates for all quarters from *Survey of Agricultural Credit Conditions* were recorded and provided by Rodney Jones, Kansas State University. \*2<sup>nd</sup> quarter of 2002 used intermediate loan rate (cattle feeding loan rates no longer surveyed and reported.)

Corn Price (\$/bu)

- DEFINITION: #2 Yellow Corn Dodge City Price Per Bushel
- NOTES: Missing data points on 11/26/92, 09/08/94, 11/27/97, 03/19/98, 12/31/98 were interpolated.
- SOURCE: Prepared on special request by Susan Jones, Database Management, Livestock Marketing Information Center, <http://www.lmic.info>.



**Table B.1 Feeding Margin Variables and Constants.**

Alfalfa Hay Price (\$/ton)

- DEFINITION: Southwest Kansas Alfalfa Hay Prices \$ per ton
- NOTES: Data in 1990 was transformed from monthly NASS Kansas Alfalfa Hay Price to Southwest Kansas series, and then interpolated to produce weekly values.
- SOURCES:
  - 1991-2002 Weekly Southwest Kansas Alfalfa Hay Prices, Kansas Hay Market Report, Steve Hessman, Kansas Department of Agriculture.
  - 1990 Monthly Kansas Alfalfa Hay Prices. Agricultural Statistics Database, National Agricultural Statistics Service, <http://www.nass.usda.gov:81/ipedb/>.

Soybean Meal Price (\$/ton)

- DEFINITION: Soybean Meal 44% Solvent \$ per ton Kansas City
- NOTES: Missing data point on 09/14/01 was interpolated. Data from 01/08/02 to 06/26/02 was transformed from Soybean Meal 48% Solvent \$ per ton Decatur IL to Kansas City series.
- SOURCE: Worksheet A, *WKGRAIN.xls*, *Weekly and Monthly Cash Soybean Meal, Etc. Prices*, Livestock Marketing Information Center, <http://www.lmic.info>.

Feeder Cattle Price (\$/lb)

- DEFINITION: Feeder Cattle Price for 700- 800-lb Steers Western Kansas
- NOTES: Missing data points on 07/06/90, 12/28/90, 12/27/91, 01/03/92, 12/27/96, 01/03/97, 07/04/97, 12/29/00, 07/06/01, 11/09/01, 11/23/01, 12/28/01 were interpolated.
- SOURCE: Worksheet C, *WKANCATL.xls*, *Weekly Western Kansas Cattle Prices*, Livestock Marketing Information Center, <http://www.lmic.info>.

Fed Cattle Price (\$/cwt)

- DEFINITION: Fed Cattle Price for 1100- 1300-lb Steers Western Kansas
- NOTES: Missing data on 06/22/01 and 07/20/01 were interpolated.
- SOURCE: Worksheet C, *WKANCATL.xls*, *Weekly Western Kansas Cattle Prices*, Livestock Marketing Information Center, <http://www.lmic.info>.

Explanation of Constants

- Alfalfa Hay Adjustment (\$0/ton) – The Alfalfa Hay Price (\$/ton) series reflects prices for hay delivered directly to feed lots. Therefore no adjustment is needed.
- Corn Adjustment (\$0.15/bu) – The Corn Price (\$/bu) series reflects the selling price in the market. An additional \$0.15/bu is added to adequately represent the feedlot's purchasing price.
- Feeder Cattle Weight (750 lbs) – Average placement weight for steers is 751 lbs as recorded by Kansas State University. *Seasonal Trends in Steer Feeding Profits, Prices, and Performance*, Kansas State University Agricultural Experiment Station and Cooperative Extension Service, C-734 Revised, June 1997, page 4, Table 1. *Average and Standard Deviations of Selected Steer Feeding Factors, January 1985 to August 1999*. This number was rounded to 750 lbs.
- Days on Feed (147 days) – Average Days on Feed from 1999 – 2002 was 146.6 days according to worksheet B, *KSU feedlot.xls*, *Monthly Kansas Feedlot data*, Livestock Marketing Information Center, <http://www.lmic.info>. This number was rounded to 147 days, or 21 weeks.

**Table B.1 Feeding Margin Variables and Constants.**

- Ration Breakdown - Kansas State University uses a ration of 51% corn, 34% milo, 12% alfalfa hay, and 3% soybean meal as a supplement, to develop an estimate of feeding costs. This ration was simplified by removing milo completely and replacing it with corn.
  - Corn Percentage (85%)
  - Alfalfa Percentage (12%)
  - Soybean Meal Percentage (3%)
- Ration Adjustment (\$20/ton) – The feedlot needs to make about \$0.30 per head per day to cover costs. A \$20/ton feed markup (in addition to Yardage Charge (\$.05/head/day)) is commonly charged.
- Yardage Charge (\$0.05/day) – The feedlot needs to make about \$0.30 per head per day to cover costs. A direct charge of \$.05/head/day (in addition to Ration Adjustment (\$20/ton)) is commonly charged.
- Soybean Meal Adjustment (\$25/ton) – A \$25 adjustment is made to Soybean Meal Price (\$/ton) to account for feed additives.
- Processing Cost (\$7)
- Vet, Drugs, Supplies Cost (\$7) – The cost of veterinary help, drugs, and supplies is estimated at \$7.

**Table B.2: Feeding Margin Formulas.**

Variables

Average Daily Gain (lbs/day)  
Feed Conversion (lbs feed/lbs gain)  
Feeder Cattle Loan Rate (APR)  
Corn Price (\$/bu)  
Alfalfa Price (\$/ton)  
Soybean Meal Price (\$/ton)  
Feeder Cattle Price (\$/lb)  
Fed Cattle Price (\$/cwt)

Constants

Feeder Cattle Weight (750 lbs)  
Days on Feed (147 days)  
Corn Percentage (85%)  
Alfalfa Percentage (12%)  
Soybean Meal Percentage (3%)  
Ration Adjustment (\$20/ton)  
Yardage Charge (\$0.05/day)  
Soybean Meal Adjustment (\$25/ton)  
Processing Cost (\$7)  
Vet, Drugs, Supplies Cost (\$7)

Calculating Feeding Margin (\$/head)

- Feeding Margin (\$/head) = Feeding Margin (\$/cwt) \* Sale Weight (cwt)
- Feeding Margin (\$/cwt) = Fed Cattle Price (\$/cwt) – Total Cost (\$/cwt)
- Total Cost (\$/cwt) = Total Cost (\$) / Sale Weight (cwt)
- Total Cost (\$) = Total Feeder Cattle Cost (\$) + Total Feed Cost (\$) + Total Other Cost (\$)

Calculating Sale Weight (lbs)

- Sale Weight (lbs) = Feeder Cattle Weight (750 lbs) + [Days on Feed (147 days) \* Average Daily Gain (lbs/day)]

Calculating Total Feeder Cattle Cost (\$)

- Total Feeder Cattle Cost (\$) = Feeder Cattle Cost (\$) + Interest on Feeder Cattle (\$)
- Feeder Cattle Cost (\$) = Feeder Cattle Price (\$/lb) \* Feeder Cattle Weight (750 lbs)
- Interest on Feeder Cattle (\$) = Feeder Cattle Cost (\$) \* Feeder Cattle Loan Rate (APR) \* Days on Feed (147 days) / 365 (days/year)

Calculating Total Feed Cost (\$)

- Total Feed Cost (\$) = Feed Cost (\$) + Interest on Feed (\$)
- Feed Cost (\$) = [Total Gain (lbs) \* Feed Conversion (lbs feed/lbs gain)]/2000 \* Total Ration Charge (\$/ton)
- Total Gain (lbs) = Sale Weight (lbs) – Feeder Cattle Weight (750 lbs)
- Interest on Feed (\$) = Feed Cost (\$) \* Feeder Cattle Loan Rate (APR) \* Days on Feed (147 days) / 365 (days/year) \* 0.5

**Table B.2: Feeding Margin Formulas.**

Calculating Total Ration Charge (\$/ton)

- Total Ration Charge (\$/ton) = Ration Charge (\$/ton) + Ration Adjustment (\$20/ton)
- Ration Charge (\$/ton) = [Corn Cost (\$/ton) \* Corn Percentage (85%)] + [Alfalfa Cost (\$/ton) \* Alfalfa Percentage (12%)] + [Soybean Meal Cost (\$/ton) \* Soybean Meal Percentage (3%)]
- Corn Cost (\$/ton) = Adjusted Corn Price (\$/bu) / 56 \* 2000
- Adjusted Corn Price (\$/bu) = Corn Price (\$/bu) + Corn Adjustment (\$.15/bu)
- Alfalfa Cost (\$/ton) = Alfalfa Price (\$/ton)
- Soybean Meal Cost (\$/ton) = Adjusted Soybean Meal Price (\$/ton)
- Adjusted Soybean Meal Price (\$/ton) = Soybean Meal Price (\$/ton) + Soybean Meal Adjustment (\$25/ton)

Calculating Total Other Cost (\$)

- Total Other Cost (\$) = Other Cost (\$) + Interest on Other Cost (\$)
- Other Cost (\$) = Yardage Cost (\$) + Processing Cost (\$7) + Vet, Drugs, Supplies Cost (\$7)
- Yardage Cost (\$) = Yardage Charge (\$.05/day) \* Days on Feed (147 days)
- Interest on Other Cost (\$) = Other Cost \* Feeder Cattle Loan Rate (APR) \* Days on Feed (147 days) / 365 (days/year) \* 0.5

**Table B.3: Feeding Margin Data.**

	(\$/head)	(\$/cwt)	(\$/cwt)	(\$)	(cwt)	(\$)	(\$)	(\$)	(\$)	(\$)	(lbs)	(\$)
Finished Date	Feeding Margin	Feeding Margin	Total Cost	Total Cost	Sale Weight	Total Feeder Cattle Cost	Feeder Cattle Cost	Interest on Feeder Cattle	Total Feed Cost	Feed Cost	Total Gain	Interest on Feed
05/30/90	16.21	1.29	76.02	954.56	12.56	689.17	657.23	31.95	243.52	237.74	505.68	5.78
06/06/90	-5.95	-0.47	77.45	972.57	12.56	704.90	672.23	32.68	245.80	239.97	505.68	5.83
06/13/90	-12.75	-1.02	78.25	982.51	12.56	713.71	680.63	33.09	246.93	241.07	505.68	5.86
06/20/90	-8.57	-0.68	78.08	980.46	12.56	711.74	678.75	32.99	246.85	240.99	505.68	5.86
06/27/90	-28.13	-2.24	77.57	974.04	12.56	699.95	667.50	32.45	252.22	246.24	505.68	5.98
07/03/90	-47.43	-3.76	77.92	981.92	12.60	706.41	673.69	32.72	253.64	247.62	510.09	6.01
07/11/90	-51.34	-4.07	78.13	984.57	12.60	712.90	679.88	33.02	249.80	243.88	510.09	5.92
07/18/90	-25.51	-2.02	77.75	979.78	12.60	711.72	678.75	32.97	246.19	240.35	510.09	5.84
07/25/90	-8.78	-0.70	77.85	980.94	12.60	707.79	675.00	32.79	251.29	245.33	510.09	5.96
08/01/90	-32.21	-2.58	79.96	997.03	12.47	730.43	696.60	33.83	244.73	238.93	496.86	5.80
08/08/90	-15.25	-1.22	78.85	983.19	12.47	717.62	684.38	33.24	243.71	237.93	496.86	5.78
08/15/90	-5.77	-0.46	79.26	988.29	12.47	723.51	690.00	33.51	242.91	237.15	496.86	5.76
08/22/90	-9.75	-0.78	78.68	981.06	12.47	711.72	678.75	32.97	247.47	241.61	496.86	5.87
08/29/90	-6.56	-0.53	77.08	961.03	12.47	705.43	672.75	32.68	233.74	228.19	496.86	5.54
09/05/90	-32.49	-2.70	78.64	946.98	12.04	706.21	673.50	32.71	218.90	213.71	454.23	5.19
09/12/90	-10.33	-0.86	78.81	949.03	12.04	715.65	682.50	33.15	211.51	206.50	454.23	5.01
09/19/90	6.18	0.51	78.82	949.14	12.04	717.22	684.00	33.22	210.05	205.06	454.23	4.98
09/26/90	23.72	1.97	77.53	933.64	12.04	700.94	668.48	32.47	210.83	205.83	454.23	5.00
10/03/90	5.46	0.46	79.79	947.96	11.88	716.29	683.48	32.81	209.81	204.89	438.06	4.92
10/10/90	24.94	2.10	77.34	918.86	11.88	686.18	654.75	31.43	210.81	205.87	438.06	4.94
10/17/90	31.01	2.61	76.94	914.09	11.88	684.22	652.88	31.34	208.01	203.14	438.06	4.88
10/24/90	19.70	1.66	78.79	936.09	11.88	704.50	672.23	32.27	209.73	204.82	438.06	4.92
10/31/90	26.40	2.21	79.04	942.48	11.92	711.33	678.75	32.58	209.28	204.37	442.47	4.91
11/07/90	26.45	2.22	78.76	939.22	11.92	705.44	673.13	32.31	211.91	206.95	442.47	4.97
11/14/90	33.46	2.81	78.69	938.40	11.92	707.40	675.00	32.40	209.14	204.23	442.47	4.90
11/21/90	37.98	3.18	79.04	942.47	11.92	711.33	678.75	32.58	209.27	204.37	442.47	4.91
11/28/90	16.17	1.36	80.59	961.06	11.92	723.12	690.00	33.12	216.07	211.00	442.47	5.06
12/05/90	-3.25	-0.27	81.02	967.36	11.94	734.91	701.25	33.66	210.58	205.64	443.94	4.94
12/12/90	7.32	0.61	81.24	969.92	11.94	737.90	704.10	33.80	210.16	205.23	443.94	4.93
12/19/90	12.11	1.01	80.34	959.16	11.94	727.05	693.75	33.30	210.24	205.32	443.94	4.93
12/26/90	8.08	0.68	80.48	960.92	11.94	729.02	695.63	33.39	210.04	205.12	443.94	4.92
01/02/91	26.28	2.15	78.60	962.76	12.25	729.89	697.50	32.39	211.02	206.23	474.81	4.79
01/09/91	29.25	2.39	77.86	953.66	12.25	720.08	688.13	31.95	211.74	206.94	474.81	4.80
01/16/91	12.96	1.06	77.29	946.68	12.25	708.31	676.88	31.43	216.52	211.61	474.81	4.91
01/23/91	9.88	0.81	78.14	957.11	12.25	718.12	686.25	31.87	217.15	212.22	474.81	4.93
01/30/91	41.32	3.33	76.27	947.67	12.42	704.38	673.13	31.26	221.44	216.41	492.45	5.02
02/06/91	38.88	3.13	76.60	951.72	12.42	711.29	679.73	31.56	218.59	213.63	492.45	4.96
02/13/91	28.05	2.26	77.24	959.70	12.42	719.14	687.23	31.91	218.72	213.76	492.45	4.96
02/20/91	33.38	2.69	77.11	958.10	12.42	717.17	685.35	31.82	219.08	214.11	492.45	4.97
02/27/91	39.99	3.20	77.20	963.67	12.48	718.12	686.25	31.87	223.70	218.63	498.33	5.08
03/06/91	45.16	3.62	77.83	971.60	12.48	723.06	690.98	32.09	226.70	221.55	498.33	5.14
03/13/91	57.86	4.63	77.62	968.89	12.48	718.12	686.25	31.87	228.93	223.73	498.33	5.19
03/20/91	71.21	5.70	75.85	946.80	12.48	697.55	666.60	30.95	227.40	222.24	498.33	5.16
03/27/91	40.99	3.28	77.12	962.67	12.48	712.23	680.63	31.61	228.59	223.40	498.33	5.19
04/03/91	53.18	4.25	77.80	972.28	12.50	717.45	686.25	31.20	233.00	227.82	499.80	5.18
04/10/91	44.73	3.58	78.30	978.60	12.50	723.33	691.88	31.46	233.44	228.25	499.80	5.19
04/17/91	48.75	3.90	76.88	960.83	12.50	705.69	675.00	30.69	233.31	228.12	499.80	5.19
04/24/91	39.58	3.17	77.08	963.39	12.50	705.69	675.00	30.69	235.86	230.62	499.80	5.24

**Table B.3: Feeding Margin Data.**

	(\$/head)	(\$/cwt)	(\$/cwt)	(\$)	(cwt)	(\$)	(\$)	(\$)	(\$)	(\$)	(lbs)	(\$)
Finished Date	Feeding Margin	Feeding Margin	Total Cost	Total Cost	Sale Weight	Total Feeder Cattle Cost	Feeder Cattle Cost	Interest on Feeder Cattle	Total Feed Cost	Feed Cost	Total Gain	Interest on Feed
05/01/91	35.01	2.82	77.51	960.68	12.40	709.61	678.75	30.86	229.24	224.14	489.51	5.10
05/08/91	25.53	2.06	77.47	960.25	12.40	709.61	678.75	30.86	228.81	223.72	489.51	5.09
05/15/91	12.13	0.98	77.52	960.89	12.40	708.67	677.85	30.82	230.38	225.26	489.51	5.12
05/22/91	-1.16	-0.09	77.34	958.68	12.40	702.79	672.23	30.57	234.05	228.85	489.51	5.20
05/29/91	10.36	0.84	76.91	953.36	12.40	701.77	671.25	30.52	229.76	224.65	489.51	5.11
06/05/91	-17.98	-1.43	78.03	979.83	12.56	721.37	690.00	31.37	236.62	231.36	505.68	5.26
06/12/91	-34.64	-2.76	77.81	977.03	12.56	719.41	688.13	31.29	235.78	230.54	505.68	5.24
06/19/91	-48.14	-3.83	77.91	978.35	12.56	720.43	689.10	31.33	236.08	230.83	505.68	5.25
06/26/91	-68.85	-5.48	77.86	977.71	12.56	720.98	689.63	31.36	234.89	229.67	505.68	5.22
07/03/91	-71.47	-5.67	78.23	985.79	12.60	726.78	696.00	30.78	237.19	232.06	510.09	5.13
07/10/91	-60.04	-4.77	77.82	980.54	12.60	725.45	694.73	30.72	233.27	228.22	510.09	5.05
07/17/91	-55.55	-4.41	77.41	975.41	12.60	715.03	684.75	30.28	238.56	233.40	510.09	5.16
07/24/91	-76.86	-6.10	78.80	992.95	12.60	727.01	696.23	30.79	244.11	238.83	510.09	5.28
07/31/91	-93.67	-7.51	77.44	965.60	12.47	697.02	667.50	29.52	246.76	241.42	496.86	5.34
08/07/91	-110.04	-8.83	74.48	928.60	12.47	669.61	641.25	28.36	237.18	232.05	496.86	5.13
08/14/91	-110.51	-8.86	74.61	930.32	12.47	677.44	648.75	28.69	231.06	226.06	496.86	5.00
08/21/91	-80.33	-6.44	75.99	947.52	12.47	690.20	660.98	29.23	235.50	230.40	496.86	5.09
08/28/91	-79.89	-6.41	74.81	932.74	12.47	679.40	650.63	28.77	231.52	226.51	496.86	5.01
09/04/91	-112.30	-9.33	76.39	919.86	12.04	669.61	641.25	28.36	228.43	223.49	454.23	4.94
09/11/91	-89.69	-7.45	76.15	917.00	12.04	665.69	637.50	28.19	229.49	224.52	454.23	4.96
09/18/91	-109.95	-9.13	77.88	937.86	12.04	685.66	656.63	29.04	230.37	225.39	454.23	4.98
09/25/91	-58.30	-4.84	77.04	927.75	12.04	680.41	651.60	28.81	225.52	220.64	454.23	4.88
10/02/91	-70.41	-5.93	78.23	929.38	11.88	681.31	654.38	26.93	226.28	221.72	438.06	4.56
10/09/91	-80.15	-6.75	77.00	914.76	11.88	668.27	641.85	26.42	224.70	220.17	438.06	4.53
10/16/91	-78.75	-6.63	77.88	925.24	11.88	679.98	653.10	26.88	223.47	218.96	438.06	4.51
10/23/91	-73.82	-6.21	77.81	924.47	11.88	675.45	648.75	26.70	227.23	222.64	438.06	4.58
10/30/91	-101.03	-8.47	77.72	926.82	11.92	674.52	647.85	26.67	230.51	225.86	442.47	4.65
11/06/91	-62.56	-5.25	74.90	893.12	11.92	648.12	622.50	25.62	223.21	218.70	442.47	4.50
11/13/91	-39.60	-3.32	76.12	907.72	11.92	661.79	635.63	26.16	224.14	219.62	442.47	4.52
11/20/91	-37.75	-3.17	76.87	916.60	11.92	671.55	645.00	26.55	223.27	218.76	442.47	4.50
11/27/91	-29.89	-2.51	75.32	898.12	11.92	653.98	628.13	25.85	222.36	217.87	442.47	4.48
12/04/91	-17.89	-1.50	73.33	875.50	11.94	634.46	609.38	25.08	219.25	214.83	443.94	4.42
12/11/91	-18.25	-1.53	72.68	867.74	11.94	625.71	600.98	24.74	220.24	215.80	443.94	4.44
12/18/91	-31.40	-2.63	71.98	859.40	11.94	614.94	590.63	24.31	222.67	218.18	443.94	4.49
12/24/91	-45.45	-3.81	72.44	864.85	11.94	619.02	594.55	24.47	224.04	219.52	443.94	4.52
12/31/91	-2.13	-0.17	70.67	865.63	12.25	622.39	598.48	23.91	221.46	217.13	474.81	4.34
01/08/92	19.07	1.56	71.14	871.37	12.25	626.47	602.40	24.07	223.12	218.75	474.81	4.37
01/15/92	42.89	3.50	71.40	874.49	12.25	625.92	601.88	24.05	226.80	222.35	474.81	4.44
01/22/92	34.02	2.78	71.67	877.85	12.25	627.40	603.30	24.10	228.67	224.19	474.81	4.48
01/29/92	25.26	2.06	72.74	890.90	12.25	637.70	613.20	24.50	231.42	226.89	474.81	4.53
02/05/92	49.66	4.00	72.30	898.33	12.42	641.52	616.88	24.65	235.03	230.43	492.45	4.60
02/12/92	79.97	6.44	71.91	893.49	12.42	639.10	614.55	24.55	232.62	228.06	492.45	4.56
02/19/92	76.07	6.12	71.48	888.07	12.42	633.25	608.93	24.33	233.04	228.48	492.45	4.56
02/26/92	63.51	5.11	71.24	885.10	12.42	629.35	605.18	24.18	233.98	229.39	492.45	4.58
03/04/92	66.32	5.31	71.69	894.89	12.48	633.25	608.93	24.33	239.86	235.17	498.33	4.70
03/11/92	107.83	8.64	70.71	882.72	12.48	621.09	597.23	23.86	239.86	235.16	498.33	4.70
03/18/92	97.71	7.83	70.67	882.23	12.48	621.55	597.68	23.88	238.90	234.22	498.33	4.68
03/25/92	94.39	7.56	70.54	880.55	12.48	616.72	593.03	23.69	242.06	237.32	498.33	4.74

**Table B.3: Feeding Margin Data.**

	(\$/head)	(\$/cwt)	(\$/cwt)	(\$)	(cwt)	(\$)	(\$)	(\$)	(\$)	(\$)	(lbs)	(\$)
Finished Date	Feeding Margin	Feeding Margin	Total Cost	Total Cost	Sale Weight	Total Feeder Cattle Cost	Feeder Cattle Cost	Interest on Feeder Cattle	Total Feed Cost	Feed Cost	Total Gain	Interest on Feed
04/01/92	104.57	8.37	70.63	882.77	12.50	626.03	602.40	23.63	234.97	230.45	499.80	4.52
04/08/92	123.40	9.87	69.63	870.19	12.50	615.27	592.05	23.22	233.15	228.66	499.80	4.48
04/15/92	106.91	8.55	69.40	867.31	12.50	610.44	587.40	23.04	235.10	230.58	499.80	4.52
04/22/92	99.01	7.92	68.68	858.34	12.50	601.17	578.48	22.69	235.40	230.88	499.80	4.53
04/29/92	91.19	7.36	69.44	860.76	12.40	608.49	585.53	22.97	230.49	226.06	489.51	4.43
05/06/92	82.81	6.68	70.47	873.47	12.40	613.33	590.18	23.15	238.37	233.79	489.51	4.59
05/13/92	75.95	6.13	71.02	880.33	12.40	619.17	595.80	23.37	239.39	234.78	489.51	4.60
05/20/92	69.31	5.59	69.64	863.17	12.40	607.95	585.00	22.95	233.45	228.96	489.51	4.49
05/27/92	39.45	3.18	70.57	874.69	12.40	616.76	593.48	23.28	236.16	231.62	489.51	4.54
06/03/92	19.34	1.54	72.11	905.47	12.56	637.25	613.20	24.05	246.44	241.70	505.68	4.74
06/10/92	25.41	2.02	72.18	906.30	12.56	638.66	614.55	24.11	245.88	241.15	505.68	4.73
06/17/92	17.26	1.37	72.58	911.32	12.56	649.57	625.05	24.52	239.98	235.36	505.68	4.62
06/24/92	2.11	0.17	72.26	907.38	12.56	640.14	615.98	24.16	245.47	240.75	505.68	4.72
07/01/92	2.22	0.18	72.66	915.63	12.60	647.99	624.45	23.54	245.89	241.34	510.09	4.55
07/08/92	0.23	0.02	72.63	915.23	12.60	653.28	629.55	23.73	240.20	235.75	510.09	4.44
07/15/92	21.35	1.69	72.26	910.49	12.60	652.81	629.10	23.71	235.92	231.56	510.09	4.36
07/22/92	18.35	1.46	71.42	900.01	12.60	647.91	624.38	23.54	230.34	226.08	510.09	4.26
07/29/92	19.08	1.51	70.59	889.44	12.60	639.20	615.98	23.22	228.49	224.27	510.09	4.23
08/05/92	11.50	0.92	72.63	905.57	12.47	659.66	635.70	23.96	224.15	220.01	496.86	4.15
08/12/92	11.98	0.96	73.69	918.80	12.47	671.42	647.03	24.39	225.63	221.46	496.86	4.17
08/19/92	11.44	0.92	73.43	915.60	12.47	666.90	642.68	24.23	226.95	222.75	496.86	4.20
08/26/92	28.32	2.27	72.26	900.96	12.47	652.58	628.88	23.71	226.63	222.44	496.86	4.19
09/02/92	-8.07	-0.67	74.32	894.99	12.04	649.86	626.25	23.61	223.38	219.25	454.23	4.13
09/09/92	1.03	0.09	74.47	896.84	12.04	659.59	635.63	23.96	215.50	211.52	454.23	3.99
09/16/92	22.80	1.89	73.81	888.80	12.04	660.52	636.53	23.99	206.53	202.71	454.23	3.82
09/23/92	23.64	1.96	73.59	886.15	12.04	658.65	634.73	23.93	205.75	201.94	454.23	3.81
09/30/92	21.89	1.84	73.54	873.66	11.88	649.71	626.48	23.24	202.21	198.52	438.06	3.68
10/07/92	17.34	1.46	73.99	879.06	11.88	658.27	634.73	23.54	199.04	195.42	438.06	3.62
10/14/92	24.16	2.03	74.57	885.89	11.88	664.57	640.80	23.77	199.58	195.94	438.06	3.63
10/21/92	23.38	1.97	74.51	885.25	11.88	663.64	639.90	23.74	199.87	196.23	438.06	3.64
10/28/92	24.84	2.09	73.71	875.71	11.88	654.61	631.20	23.41	199.35	195.72	438.06	3.63
11/04/92	18.58	1.56	73.49	876.37	11.92	654.85	631.43	23.42	199.78	196.14	442.47	3.64
11/11/92	4.91	0.41	74.34	886.47	11.92	662.00	638.33	23.68	202.72	199.03	442.47	3.69
11/18/92	6.86	0.58	75.17	896.44	11.92	665.58	641.78	23.80	209.11	205.31	442.47	3.81
11/25/92	53.10	4.45	72.30	862.12	11.92	630.03	607.50	22.53	210.34	206.51	442.47	3.83
12/02/92	48.08	4.03	73.30	875.19	11.94	645.67	622.58	23.09	207.78	203.99	443.94	3.78
12/09/92	39.34	3.30	74.35	887.75	11.94	656.79	633.30	23.49	209.22	205.41	443.94	3.81
12/16/92	40.03	3.35	75.33	899.36	11.94	666.05	642.23	23.82	211.57	207.72	443.94	3.85
12/23/92	28.41	2.38	75.56	902.15	11.94	669.16	645.23	23.93	211.25	207.40	443.94	3.85
12/30/92	38.72	3.16	74.03	906.71	12.25	676.26	652.50	23.76	208.71	204.98	474.81	3.73
01/06/93	39.44	3.22	74.73	915.30	12.25	682.63	658.65	23.98	210.93	207.16	474.81	3.77
01/13/93	72.88	5.95	74.50	912.48	12.25	680.53	656.63	23.91	210.21	206.45	474.81	3.76
01/20/93	68.74	5.61	75.09	919.68	12.25	685.51	661.43	24.08	212.44	208.64	474.81	3.80
01/27/93	68.16	5.57	73.59	901.40	12.25	668.56	645.08	23.49	211.10	207.32	474.81	3.77
02/03/93	70.22	5.65	72.75	903.86	12.42	669.96	646.43	23.53	212.16	208.37	492.45	3.79
02/10/93	94.20	7.58	72.86	905.22	12.42	670.43	646.88	23.55	213.06	209.25	492.45	3.81
02/17/93	115.40	9.29	72.02	894.84	12.42	658.84	635.70	23.14	214.26	210.43	492.45	3.83
02/24/93	115.18	9.27	71.08	883.12	12.42	647.65	624.90	22.75	213.73	209.91	492.45	3.82

**Table B.3: Feeding Margin Data.**

	(\$/head)	(\$/cwt)	(\$/cwt)	(\$)	(cwt)	(\$)	(\$)	(\$)	(\$)	(\$)	(lbs)	(\$)
<b>Finished Date</b>	<b>Feeding Margin</b>	<b>Feeding Margin</b>	<b>Total Cost</b>	<b>Total Cost</b>	<b>Sale Weight</b>	<b>Total Feeder Cattle Cost</b>	<b>Feeder Cattle Cost</b>	<b>Interest on Feeder Cattle</b>	<b>Total Feed Cost</b>	<b>Feed Cost</b>	<b>Total Gain</b>	<b>Interest on Feed</b>
03/03/93	99.24	7.95	71.90	897.55	12.48	657.37	634.28	23.09	218.45	214.54	498.33	3.91
03/10/93	111.76	8.95	72.00	898.77	12.48	658.77	635.63	23.14	218.26	214.36	498.33	3.90
03/17/93	120.07	9.62	73.48	917.30	12.48	674.70	651.00	23.70	220.86	216.91	498.33	3.95
03/24/93	140.58	11.26	74.09	924.87	12.48	679.52	655.65	23.87	223.61	219.61	498.33	4.00
03/31/93	121.67	9.74	73.56	919.41	12.50	673.12	649.73	23.39	224.56	220.59	499.80	3.97
04/07/93	117.79	9.43	72.32	903.92	12.50	657.58	634.73	22.85	224.60	220.63	499.80	3.97
04/14/93	106.08	8.49	73.96	924.38	12.50	678.01	654.45	23.56	224.63	220.66	499.80	3.97
04/21/93	95.76	7.66	74.09	925.95	12.50	683.30	659.55	23.75	220.92	217.01	499.80	3.91
04/28/93	97.62	7.81	74.37	929.46	12.50	688.19	664.28	23.92	219.54	215.66	499.80	3.88
05/05/93	86.29	6.96	75.44	935.07	12.40	694.02	669.90	24.12	219.31	215.43	489.51	3.88
05/12/93	88.46	7.14	75.11	931.03	12.40	691.07	667.05	24.02	218.23	214.37	489.51	3.86
05/19/93	72.23	5.83	74.80	927.19	12.40	688.43	664.50	23.93	217.03	213.19	489.51	3.84
05/26/93	45.11	3.64	74.61	924.81	12.40	688.81	664.88	23.94	214.26	210.47	489.51	3.79
06/02/93	40.16	3.20	73.30	920.44	12.56	683.84	660.08	23.77	214.86	211.06	505.68	3.80
06/09/93	44.53	3.55	74.80	939.30	12.56	703.27	678.83	24.44	214.30	210.51	505.68	3.79
06/16/93	44.14	3.52	74.38	934.04	12.56	699.38	675.08	24.31	212.92	209.16	505.68	3.77
06/23/93	18.91	1.51	74.49	935.41	12.56	696.51	672.30	24.21	217.17	213.33	505.68	3.84
06/30/93	0.91	0.07	75.71	953.99	12.60	703.09	679.05	24.04	229.17	225.18	510.09	3.99
07/07/93	-12.92	-1.03	76.69	966.31	12.60	710.54	686.25	24.29	234.04	229.97	510.09	4.07
07/14/93	-29.76	-2.36	76.01	957.82	12.60	706.20	682.05	24.15	229.89	225.90	510.09	4.00
07/21/93	-32.71	-2.60	75.15	946.91	12.60	687.79	664.28	23.52	237.39	233.26	510.09	4.13
07/28/93	-18.97	-1.51	75.86	955.85	12.60	696.49	672.68	23.81	237.63	233.50	510.09	4.13
08/04/93	-23.68	-1.90	77.70	968.80	12.47	711.17	686.85	24.32	235.91	231.80	496.86	4.10
08/11/93	-2.13	-0.17	76.55	954.48	12.47	697.96	674.10	23.86	234.79	230.70	496.86	4.08
08/18/93	-3.32	-0.27	75.32	939.09	12.47	683.68	660.30	23.38	233.68	229.62	496.86	4.06
08/25/93	-18.13	-1.45	75.05	935.82	12.47	683.44	660.08	23.37	230.65	226.64	496.86	4.01
09/01/93	-40.16	-3.34	77.34	931.29	12.04	687.79	664.28	23.52	221.77	217.92	454.23	3.86
09/08/93	-35.71	-2.96	78.09	940.44	12.04	696.49	672.68	23.81	222.23	218.36	454.23	3.87
09/15/93	-34.71	-2.88	77.28	930.65	12.04	685.38	661.95	23.43	223.54	219.65	454.23	3.89
09/22/93	-54.32	-4.51	77.01	927.39	12.04	675.60	652.50	23.10	230.06	226.06	454.23	4.00
09/29/93	-65.96	-5.55	76.70	911.27	11.88	662.68	640.35	22.33	226.86	222.97	438.06	3.89
10/06/93	-65.27	-5.49	76.72	911.53	11.88	663.62	641.25	22.37	226.19	222.31	438.06	3.88
10/13/93	-75.67	-6.37	76.27	906.12	11.88	653.45	631.43	22.02	230.95	226.99	438.06	3.96
10/20/93	-42.04	-3.54	76.39	907.54	11.88	649.57	627.68	21.89	236.25	232.20	438.06	4.05
10/27/93	-42.03	-3.54	77.79	924.16	11.88	667.03	644.55	22.48	235.41	231.37	438.06	4.03
11/03/93	-51.72	-4.34	77.49	924.02	11.92	658.34	636.15	22.19	243.96	239.77	442.47	4.18
11/10/93	-56.58	-4.74	77.64	925.89	11.92	651.04	629.10	21.94	253.13	248.79	442.47	4.34
11/17/93	-58.03	-4.87	78.62	937.48	11.92	656.86	634.73	22.14	258.89	254.45	442.47	4.44
11/24/93	-58.69	-4.92	77.67	926.21	11.92	648.09	626.25	21.84	256.40	252.00	442.47	4.39
12/01/93	-79.04	-6.62	78.32	935.10	11.94	658.34	636.15	22.19	255.04	250.67	443.94	4.37
12/08/93	-82.51	-6.91	78.14	932.96	11.94	653.45	631.43	22.02	257.79	253.37	443.94	4.42
12/15/93	-66.90	-5.60	78.25	934.29	11.94	653.45	631.43	22.02	259.12	254.68	443.94	4.44
12/22/93	-53.19	-4.46	78.09	932.29	11.94	646.69	624.90	21.79	263.87	259.35	443.94	4.52
12/29/93	-64.78	-5.43	77.56	925.97	11.94	635.98	614.55	21.43	268.27	263.67	443.94	4.60
01/05/94	-59.09	-4.82	76.60	938.26	12.25	646.25	624.45	21.80	270.28	265.64	474.81	4.64
01/12/94	-39.76	-3.25	76.60	938.16	12.25	646.02	624.23	21.80	270.41	265.77	474.81	4.64
01/19/94	-36.57	-2.99	76.52	937.17	12.25	652.08	630.08	22.00	263.37	258.85	474.81	4.52
01/26/94	-35.56	-2.90	75.25	921.71	12.25	638.49	616.95	21.54	261.50	257.01	474.81	4.49



**Table B.3: Feeding Margin Data.**

	(\$/head)	(\$/cwt)	(\$/cwt)	(\$)	(cwt)	(\$)	(\$)	(\$)	(\$)	(\$)	(lbs)	(\$)
Finished Date	Feeding Margin	Feeding Margin	Total Cost	Total Cost	Sale Weight	Total Feeder Cattle Cost	Feeder Cattle Cost	Interest on Feeder Cattle	Total Feed Cost	Feed Cost	Total Gain	Interest on Feed
02/02/94	-32.23	-2.59	74.54	926.17	12.42	642.37	620.70	21.67	262.07	257.58	492.45	4.50
02/09/94	-38.85	-3.13	74.48	925.34	12.42	638.96	617.40	21.56	264.66	260.11	492.45	4.54
02/16/94	-12.50	-1.01	74.81	929.43	12.42	647.19	625.35	21.84	260.52	256.05	492.45	4.47
02/23/94	-0.81	-0.06	74.31	923.33	12.42	641.83	620.18	21.65	259.77	255.32	492.45	4.46
03/02/94	15.40	1.23	74.37	928.33	12.48	650.06	628.13	21.93	256.55	252.15	498.33	4.40
03/09/94	30.26	2.42	73.18	913.47	12.48	637.95	616.43	21.52	253.80	249.45	498.33	4.36
03/16/94	35.09	2.81	72.79	908.65	12.48	630.73	609.45	21.28	256.20	251.80	498.33	4.40
03/23/94	19.11	1.53	73.62	919.01	12.48	641.83	620.18	21.65	255.46	251.07	498.33	4.38
03/30/94	36.78	2.94	72.51	906.19	12.50	636.48	614.10	22.38	247.97	243.53	499.80	4.44
04/06/94	52.27	4.18	72.57	906.95	12.50	637.96	615.53	22.43	247.25	242.83	499.80	4.43
04/13/94	65.92	5.27	71.33	891.43	12.50	627.23	605.18	22.06	242.45	238.11	499.80	4.34
04/20/94	59.42	4.75	70.00	874.81	12.50	623.35	601.43	21.92	229.73	225.61	499.80	4.11
04/27/94	47.59	3.81	70.24	877.89	12.50	611.69	590.18	21.51	244.47	240.09	499.80	4.38
05/04/94	18.22	1.47	69.88	866.17	12.40	605.39	584.10	21.29	239.05	234.77	489.51	4.28
05/11/94	-1.04	-0.08	69.88	866.22	12.40	603.91	582.68	21.24	240.57	236.26	489.51	4.31
05/18/94	-6.36	-0.51	68.09	844.02	12.40	575.23	555.00	20.23	247.05	242.63	489.51	4.42
05/25/94	-42.69	-3.44	67.99	842.80	12.40	574.76	554.55	20.21	246.29	241.89	489.51	4.41
06/01/94	-41.73	-3.32	69.57	873.61	12.56	590.31	569.55	20.76	261.57	256.89	505.68	4.68
06/08/94	-53.28	-4.24	68.44	859.43	12.56	583.08	562.58	20.50	254.61	250.05	505.68	4.56
06/15/94	-57.24	-4.56	69.06	867.15	12.56	581.60	561.15	20.45	263.81	259.09	505.68	4.72
06/22/94	-63.07	-5.02	68.12	855.41	12.56	584.95	564.38	20.57	248.72	244.27	505.68	4.45
06/29/94	-100.30	-7.96	68.41	862.02	12.60	591.73	570.08	21.65	248.54	243.91	510.09	4.63
07/06/94	-80.30	-6.37	67.56	851.35	12.60	587.76	566.25	21.51	241.84	237.33	510.09	4.51
07/13/94	-18.69	-1.48	68.78	866.73	12.60	605.43	583.28	22.15	239.55	235.08	510.09	4.46
07/20/94	-10.43	-0.83	69.93	881.15	12.60	626.52	603.60	22.92	232.87	228.53	510.09	4.34
07/27/94	-32.31	-2.56	69.41	874.68	12.60	619.44	596.78	22.66	233.49	229.14	510.09	4.35
08/03/94	-23.98	-1.92	71.37	889.92	12.47	635.01	611.78	23.23	233.16	228.81	496.86	4.34
08/10/94	-9.48	-0.76	70.76	882.28	12.47	625.75	602.85	22.90	234.78	230.41	496.86	4.38
08/17/94	-26.20	-2.10	70.27	876.18	12.47	618.66	596.03	22.64	235.77	231.37	496.86	4.39
08/24/94	-35.78	-2.87	68.47	853.72	12.47	594.61	572.85	21.76	237.36	232.94	496.86	4.42
08/31/94	-19.50	-1.62	68.27	822.12	12.04	579.04	557.85	21.19	221.33	217.21	454.23	4.12
09/07/94	-9.58	-0.80	68.36	823.16	12.04	581.45	560.18	21.27	219.95	215.85	454.23	4.10
09/14/94	-17.75	-1.47	68.32	822.78	12.04	583.86	562.50	21.36	217.16	213.11	454.23	4.05
09/21/94	-18.05	-1.50	67.80	816.45	12.04	578.57	557.40	21.17	216.13	212.10	454.23	4.03
09/28/94	-14.55	-1.21	67.71	815.36	12.04	576.62	555.53	21.10	216.99	212.94	454.23	4.04
10/05/94	-20.98	-1.77	67.22	798.56	11.88	562.19	540.53	21.66	214.60	210.38	438.06	4.22
10/12/94	-28.17	-2.37	67.52	802.19	11.88	565.54	543.75	21.79	214.87	210.65	438.06	4.22
10/19/94	-30.53	-2.57	68.27	811.09	11.88	572.95	550.88	22.07	216.36	212.11	438.06	4.25
10/26/94	6.27	0.53	68.87	818.25	11.88	577.79	555.53	22.26	218.68	214.39	438.06	4.30
11/02/94	8.71	0.73	68.65	818.63	11.92	580.20	557.85	22.35	216.65	212.39	442.47	4.26
11/09/94	5.75	0.48	69.22	825.40	11.92	583.17	560.70	22.47	220.46	216.12	442.47	4.33
11/16/94	1.82	0.15	69.60	829.92	11.92	588.94	566.25	22.69	219.20	214.90	442.47	4.31
11/23/94	10.30	0.86	68.89	821.44	11.92	582.62	560.18	22.45	217.04	212.78	442.47	4.26
11/30/94	-25.20	-2.11	69.67	831.83	11.94	595.34	572.40	22.94	214.71	210.49	443.94	4.22
12/07/94	-22.07	-1.85	69.68	831.92	11.94	591.91	569.10	22.81	218.24	213.95	443.94	4.29
12/14/94	-9.09	-0.76	70.51	841.86	11.94	604.07	580.80	23.27	216.01	211.77	443.94	4.24
12/21/94	-15.97	-1.34	71.09	848.74	11.94	608.99	585.53	23.46	217.97	213.69	443.94	4.28
12/28/94	-12.14	-1.02	71.02	847.90	11.94	606.34	582.98	23.36	219.79	215.47	443.94	4.32

**Table B.3: Feeding Margin Data.**

	(\$/head)	(\$/cwt)	(\$/cwt)	(\$)	(cwt)	(\$)	(\$)	(\$)	(\$)	(\$)	(lbs)	(\$)
Finished Date	Feeding Margin	Feeding Margin	Total Cost	Total Cost	Sale Weight	Total Feeder Cattle Cost	Feeder Cattle Cost	Interest on Feeder Cattle	Total Feed Cost	Feed Cost	Total Gain	Interest on Feed
01/04/95	37.81	3.09	69.54	851.77	12.25	610.71	586.28	24.44	219.26	214.79	474.81	4.48
01/11/95	39.76	3.25	69.50	851.29	12.25	608.29	583.95	24.34	221.20	216.69	474.81	4.52
01/18/95	57.91	4.73	68.67	841.10	12.25	599.23	575.25	23.98	220.08	215.59	474.81	4.49
01/25/95	67.66	5.52	68.78	842.37	12.25	601.73	577.65	24.08	218.85	214.38	474.81	4.47
02/01/95	86.08	6.93	66.67	828.36	12.42	585.95	562.50	23.45	220.62	216.12	492.45	4.50
02/08/95	90.30	7.27	65.73	816.69	12.42	573.21	550.28	22.94	221.68	217.16	492.45	4.53
02/15/95	107.53	8.66	65.74	816.85	12.42	574.07	551.10	22.97	220.98	216.47	492.45	4.51
02/22/95	110.10	8.86	64.54	801.86	12.42	557.90	535.58	22.32	222.16	217.63	492.45	4.54
03/01/95	125.54	10.06	63.39	791.36	12.48	545.87	524.03	21.84	223.70	219.13	498.33	4.57
03/08/95	116.28	9.31	63.94	798.12	12.48	550.56	528.53	22.03	225.77	221.16	498.33	4.61
03/15/95	105.25	8.43	62.57	781.07	12.48	532.90	511.58	21.32	226.37	221.75	498.33	4.62
03/22/95	84.57	6.77	61.98	773.66	12.48	525.16	504.15	21.01	226.70	222.07	498.33	4.63
03/29/95	77.73	6.23	60.17	751.16	12.48	501.34	481.28	20.06	228.03	223.37	498.33	4.66
04/05/95	83.96	6.72	62.61	782.52	12.50	532.29	511.05	21.24	228.44	223.79	499.80	4.65
04/12/95	82.95	6.64	61.11	763.79	12.50	515.26	494.70	20.56	226.74	222.12	499.80	4.62
04/19/95	75.64	6.05	59.80	747.35	12.50	499.09	479.18	19.92	226.46	221.85	499.80	4.61
04/26/95	84.12	6.73	60.67	758.25	12.50	505.11	484.95	20.16	231.35	226.64	499.80	4.71
05/03/95	60.60	4.89	61.86	766.77	12.40	513.39	492.90	20.49	231.59	226.87	489.51	4.71
05/10/95	33.53	2.71	60.79	753.56	12.40	498.31	478.43	19.88	233.46	228.70	489.51	4.75
05/17/95	13.60	1.10	61.65	764.20	12.40	504.56	484.43	20.13	237.84	233.00	489.51	4.84
05/24/95	19.64	1.58	62.27	771.78	12.40	507.76	487.50	20.26	242.23	237.30	489.51	4.93
05/31/95	14.51	1.16	61.84	776.57	12.56	505.89	485.70	20.19	248.88	243.82	505.68	5.07
06/07/95	11.09	0.88	63.67	799.45	12.56	524.87	503.93	20.94	252.79	247.64	505.68	5.15
06/14/95	0.36	0.03	64.47	809.55	12.56	530.18	509.03	21.16	257.58	252.33	505.68	5.24
06/21/95	-9.18	-0.73	63.90	802.40	12.56	519.64	498.90	20.74	260.97	255.65	505.68	5.31
06/28/95	-13.90	-1.11	64.11	804.98	12.56	526.98	505.95	21.03	256.21	250.99	505.68	5.22
07/05/95	-13.92	-1.10	64.10	807.78	12.60	518.73	498.23	20.51	267.26	261.87	510.09	5.39
07/12/95	-33.36	-2.65	64.50	812.72	12.60	520.14	499.58	20.56	270.80	265.34	510.09	5.46
07/19/95	-63.50	-5.04	65.34	823.33	12.60	524.67	503.93	20.74	276.87	271.29	510.09	5.58
07/26/95	-56.26	-4.46	65.56	826.17	12.60	526.38	505.58	20.81	278.00	272.39	510.09	5.61
08/02/95	-42.49	-3.41	66.76	832.38	12.47	540.91	519.53	21.38	269.68	264.24	496.86	5.44
08/09/95	-27.52	-2.21	65.56	817.41	12.47	527.01	506.18	20.83	268.61	263.20	496.86	5.42
08/16/95	-44.03	-3.53	65.22	813.21	12.47	518.58	498.08	20.50	272.85	267.35	496.86	5.50
08/23/95	-51.87	-4.16	64.69	806.59	12.47	508.74	488.63	20.11	276.07	270.50	496.86	5.57
08/30/95	-77.36	-6.42	66.37	799.30	12.04	500.46	480.68	19.78	277.05	271.46	454.23	5.59
09/06/95	-45.69	-3.79	67.29	810.37	12.04	518.03	497.55	20.48	270.56	265.10	454.23	5.46
09/13/95	-47.20	-3.92	67.67	814.89	12.04	518.97	498.45	20.52	274.14	268.61	454.23	5.53
09/20/95	-49.16	-4.08	68.08	819.87	12.04	516.23	495.83	20.41	281.85	276.16	454.23	5.68
09/27/95	-44.54	-3.70	68.10	820.07	12.04	520.22	499.65	20.57	278.06	272.46	454.23	5.61
10/04/95	-60.79	-5.12	68.12	809.27	11.88	513.94	493.88	20.07	273.54	268.09	438.06	5.45
10/11/95	-53.62	-4.51	69.01	819.92	11.88	519.49	499.20	20.29	278.65	273.10	438.06	5.55
10/18/95	-40.90	-3.44	69.04	820.27	11.88	512.31	492.30	20.01	286.18	280.48	438.06	5.70
10/25/95	-45.92	-3.86	69.86	830.04	11.88	520.89	500.55	20.34	287.36	281.64	438.06	5.72
11/01/95	-29.62	-2.48	69.63	830.36	11.92	516.44	496.28	20.17	292.13	286.32	442.47	5.82
11/08/95	-24.28	-2.04	70.04	835.16	11.92	527.29	506.70	20.59	286.08	280.39	442.47	5.70
11/15/95	-17.60	-1.48	70.23	837.43	11.92	531.51	510.75	20.76	284.14	278.48	442.47	5.66
11/22/95	-19.33	-1.62	69.37	827.23	11.92	518.86	498.60	20.26	286.59	280.88	442.47	5.71
11/29/95	-26.14	-2.19	69.79	833.24	11.94	525.81	505.28	20.53	285.65	279.96	443.94	5.69

**Table B.3: Feeding Margin Data.**

	(\$/head)	(\$/cwt)	(\$/cwt)	(\$)	(cwt)	(\$)	(\$)	(\$)	(\$)	(\$)	(lbs)	(\$)
Finished Date	Feeding Margin	Feeding Margin	Total Cost	Total Cost	Sale Weight	Total Feeder Cattle Cost	Feeder Cattle Cost	Interest on Feeder Cattle	Total Feed Cost	Feed Cost	Total Gain	Interest on Feed
12/06/95	-43.75	-3.66	70.96	847.27	11.94	536.42	515.48	20.95	289.07	283.31	443.94	5.76
12/13/95	-48.09	-4.03	70.23	838.48	11.94	523.00	502.58	20.42	293.70	287.85	443.94	5.85
12/20/95	-46.25	-3.87	69.87	834.26	11.94	514.57	494.48	20.09	297.90	291.97	443.94	5.93
12/27/95	-44.21	-3.70	68.45	817.29	11.94	491.15	471.98	19.18	304.35	298.29	443.94	6.06
01/03/96	-6.63	-0.54	65.54	802.75	12.25	472.37	454.35	18.02	308.61	302.60	474.81	6.00
01/10/96	-12.92	-1.05	65.15	798.02	12.25	474.25	456.15	18.10	302.00	296.13	474.81	5.87
01/17/96	9.15	0.75	64.25	786.98	12.25	464.34	446.63	17.72	300.86	295.01	474.81	5.85
01/24/96	-13.98	-1.14	64.14	785.61	12.25	462.16	444.53	17.63	301.67	295.81	474.81	5.87
01/31/96	-8.23	-0.66	63.06	783.52	12.42	448.20	431.10	17.10	313.54	307.44	492.45	6.10
02/07/96	-6.67	-0.54	63.54	789.41	12.42	458.65	441.15	17.50	308.99	302.98	492.45	6.01
02/14/96	-15.57	-1.25	64.25	798.31	12.42	454.83	437.48	17.35	321.71	315.45	492.45	6.26
02/21/96	-7.95	-0.64	63.64	790.70	12.42	448.83	431.70	17.13	320.10	313.87	492.45	6.23
02/28/96	-11.81	-0.95	63.75	795.76	12.48	442.04	425.18	16.87	331.95	325.49	498.33	6.46
03/06/96	-30.10	-2.41	63.31	790.33	12.48	437.60	420.90	16.70	330.96	324.53	498.33	6.44
03/13/96	-31.54	-2.53	63.93	798.01	12.48	443.21	426.30	16.91	333.03	326.55	498.33	6.48
03/20/96	-10.21	-0.82	63.82	796.66	12.48	443.29	426.38	16.91	331.60	325.15	498.33	6.45
03/27/96	-30.17	-2.42	64.42	804.13	12.48	443.52	426.60	16.92	338.84	332.25	498.33	6.59
04/03/96	-37.33	-2.99	64.99	812.21	12.50	434.20	417.60	16.60	356.24	349.29	499.80	6.94
04/10/96	-38.20	-3.06	63.76	796.83	12.50	407.06	391.50	15.56	368.00	360.83	499.80	7.17
04/17/96	-72.91	-5.83	64.38	804.66	12.50	406.91	391.35	15.56	375.98	368.66	499.80	7.33
04/24/96	-117.10	-9.37	64.77	809.49	12.50	389.05	374.18	14.87	398.67	390.90	499.80	7.77
05/01/96	-100.81	-8.13	65.38	810.43	12.40	410.65	394.95	15.70	378.00	370.64	489.51	7.37
05/08/96	-99.55	-8.03	69.03	855.65	12.40	439.50	422.70	16.80	394.38	386.69	489.51	7.69
05/15/96	-126.77	-10.23	70.23	870.48	12.40	444.73	427.73	17.00	403.97	396.10	489.51	7.87
05/22/96	-130.53	-10.53	69.53	861.84	12.40	438.96	422.18	16.78	401.11	393.29	489.51	7.82
05/29/96	-116.67	-9.41	68.85	853.43	12.40	443.17	426.23	16.94	388.49	380.92	489.51	7.57
06/05/96	-95.62	-7.61	69.36	871.00	12.56	465.55	447.75	17.80	383.67	376.20	505.68	7.48
06/12/96	-121.70	-9.69	72.49	910.27	12.56	485.82	467.25	18.57	402.67	394.82	505.68	7.85
06/19/96	-142.04	-11.31	72.46	909.89	12.56	488.01	469.35	18.66	400.11	392.31	505.68	7.80
06/26/96	-135.89	-10.82	71.02	891.81	12.56	474.52	456.38	18.14	395.52	387.81	505.68	7.71
07/03/96	-138.37	-10.98	73.48	925.93	12.60	497.13	478.13	19.01	407.03	399.09	510.09	7.93
07/10/96	-117.25	-9.30	73.70	928.75	12.60	492.84	474.00	18.84	414.13	406.06	510.09	8.07
07/17/96	-78.49	-6.23	71.23	897.55	12.60	490.89	472.13	18.77	384.88	377.38	510.09	7.50
07/24/96	-79.63	-6.32	69.97	881.68	12.60	489.57	470.85	18.72	370.34	363.12	510.09	7.22
07/31/96	-112.23	-9.00	71.50	891.52	12.47	494.64	475.73	18.91	375.11	367.80	496.86	7.31
08/07/96	-80.94	-6.49	72.19	900.13	12.47	507.35	487.95	19.40	371.01	363.78	496.86	7.23
08/14/96	-92.82	-7.44	73.44	915.75	12.47	507.19	487.80	19.39	386.78	379.25	496.86	7.54
08/21/96	-60.61	-4.86	72.74	906.98	12.47	503.21	483.98	19.24	381.99	374.55	496.86	7.44
08/28/96	-58.93	-4.73	73.13	911.79	12.47	505.79	486.45	19.34	384.23	376.74	496.86	7.49
09/04/96	-8.69	-0.72	70.12	844.42	12.04	508.05	488.63	19.42	314.60	308.47	454.23	6.13
09/11/96	26.25	2.18	68.82	828.75	12.04	504.54	485.25	19.29	302.44	296.54	454.23	5.89
09/18/96	-22.72	-1.89	73.89	889.77	12.04	501.81	482.63	19.18	366.18	359.05	454.23	7.14
09/25/96	77.70	6.45	65.55	789.35	12.04	488.01	469.35	18.66	279.56	274.12	454.23	5.45
10/02/96	78.02	6.57	65.88	782.73	11.88	499.39	480.38	19.02	261.57	256.49	438.06	5.08
10/09/96	80.54	6.78	64.62	767.73	11.88	486.14	467.63	18.51	259.82	254.78	438.06	5.04
10/16/96	65.22	5.49	64.51	766.42	11.88	489.96	471.30	18.66	254.69	249.75	438.06	4.94
10/23/96	67.91	5.72	64.28	763.73	11.88	491.13	472.43	18.70	250.83	245.96	438.06	4.87
10/30/96	77.90	6.53	64.27	766.37	11.92	500.95	481.88	19.08	243.65	238.92	442.47	4.73

**Table B.3: Feeding Margin Data.**

	(\$/head)	(\$/cwt)	(\$/cwt)	(\$)	(cwt)	(\$)	(\$)	(\$)	(\$)	(\$)	(lbs)	(\$)
<b>Finished Date</b>	<b>Feeding Margin</b>	<b>Feeding Margin</b>	<b>Total Cost</b>	<b>Total Cost</b>	<b>Sale Weight</b>	<b>Total Feeder Cattle Cost</b>	<b>Feeder Cattle Cost</b>	<b>Interest on Feeder Cattle</b>	<b>Total Feed Cost</b>	<b>Feed Cost</b>	<b>Total Gain</b>	<b>Interest on Feed</b>
11/06/96	83.55	7.01	64.59	770.26	11.92	505.71	486.45	19.26	242.78	238.07	442.47	4.71
11/13/96	83.48	7.00	65.15	776.89	11.92	507.19	487.88	19.31	247.93	243.11	442.47	4.81
11/20/96	45.31	3.80	66.28	790.38	11.92	518.65	498.90	19.75	249.95	245.10	442.47	4.85
11/27/96	18.03	1.51	66.37	791.42	11.92	520.44	500.63	19.82	249.20	244.37	442.47	4.84
12/04/96	25.24	2.11	65.59	783.06	11.94	520.52	500.70	19.82	240.77	236.09	443.94	4.67
12/11/96	-0.05	0.00	65.33	780.05	11.94	519.98	500.18	19.80	238.30	233.67	443.94	4.63
12/18/96	-12.05	-1.01	66.01	788.11	11.94	526.84	506.78	20.06	239.50	234.85	443.94	4.65
12/24/96	-11.37	-0.95	66.45	793.40	11.94	531.65	511.40	20.25	239.98	235.32	443.94	4.66
12/31/96	14.16	1.16	64.84	794.21	12.25	536.60	516.03	20.57	235.84	231.23	474.81	4.61
01/08/97	-3.83	-0.31	65.21	798.73	12.25	541.41	520.65	20.76	235.54	230.94	474.81	4.60
01/15/97	-12.87	-1.05	66.85	818.79	12.25	553.03	531.83	21.20	243.99	239.22	474.81	4.77
01/22/97	-15.69	-1.28	66.23	811.20	12.25	549.05	528.00	21.05	240.37	235.67	474.81	4.70
01/29/97	-32.93	-2.69	66.84	818.64	12.25	553.58	532.35	21.23	243.29	238.54	474.81	4.76
02/05/97	-32.23	-2.59	65.59	814.97	12.42	550.07	528.98	21.09	243.13	238.38	492.45	4.75
02/12/97	-28.92	-2.33	65.93	819.12	12.42	550.38	529.28	21.10	246.96	242.14	492.45	4.83
02/19/97	-6.80	-0.55	66.22	822.71	12.42	546.40	525.45	20.95	254.54	249.56	492.45	4.98
02/26/97	21.04	1.69	67.06	833.14	12.42	551.55	530.40	21.15	259.82	254.74	492.45	5.08
03/05/97	24.79	1.99	66.01	824.07	12.48	535.33	514.80	20.53	266.97	261.75	498.33	5.22
03/12/97	26.71	2.14	65.46	817.16	12.48	531.58	511.20	20.38	263.80	258.65	498.33	5.16
03/19/97	10.07	0.81	66.52	830.43	12.48	541.33	520.58	20.76	267.32	262.10	498.33	5.23
03/26/97	0.97	0.08	66.92	835.41	12.48	543.83	522.98	20.85	269.81	264.53	498.33	5.27
04/02/97	-1.51	-0.12	67.12	838.87	12.50	550.05	528.90	21.15	267.05	261.81	499.80	5.24
04/09/97	-18.92	-1.51	68.01	850.04	12.50	560.58	539.03	21.56	267.68	262.43	499.80	5.25
04/16/97	12.14	0.97	67.70	846.09	12.50	561.13	539.55	21.58	263.19	258.03	499.80	5.16
04/23/97	-7.91	-0.63	68.23	852.77	12.50	570.41	548.48	21.93	260.58	255.48	499.80	5.11
04/30/97	-26.44	-2.13	70.13	869.30	12.40	581.17	558.83	22.35	266.35	261.13	489.51	5.22
05/07/97	-27.88	-2.25	71.05	880.66	12.40	597.55	574.58	22.98	261.33	256.21	489.51	5.12
05/14/97	-63.42	-5.12	72.68	900.83	12.40	617.37	593.63	23.74	261.69	256.56	489.51	5.13
05/21/97	-64.46	-5.20	71.75	889.36	12.40	609.64	586.20	23.44	257.94	252.88	489.51	5.06
05/28/97	-92.12	-7.43	72.83	902.76	12.40	622.12	598.20	23.92	258.86	253.79	489.51	5.07
06/04/97	-98.57	-7.85	71.60	899.07	12.56	608.79	585.38	23.41	268.51	263.24	505.68	5.26
06/11/97	-111.66	-8.89	71.89	902.74	12.56	615.57	591.90	23.67	265.39	260.19	505.68	5.20
06/18/97	-105.83	-8.43	72.43	909.46	12.56	625.48	601.43	24.05	262.21	257.07	505.68	5.14
06/25/97	-108.38	-8.63	71.63	899.46	12.56	626.65	602.55	24.10	251.04	246.11	505.68	4.92
07/02/97	-111.78	-8.87	71.87	905.64	12.60	635.41	611.03	24.39	248.45	243.59	510.09	4.86
07/09/97	-139.15	-11.04	72.74	916.62	12.60	644.23	619.50	24.73	250.62	245.72	510.09	4.90
07/16/97	-145.35	-11.54	75.29	948.66	12.60	666.22	640.65	25.57	260.66	255.56	510.09	5.10
07/23/97	-130.15	-10.33	74.08	933.46	12.60	653.66	628.58	25.09	258.02	252.97	510.09	5.05
07/30/97	-108.88	-8.73	74.73	931.80	12.47	638.22	613.73	24.49	271.81	266.49	496.86	5.32
08/06/97	-107.37	-8.61	73.21	912.85	12.47	632.14	607.88	24.26	258.93	253.87	496.86	5.07
08/13/97	-113.45	-9.10	73.70	918.93	12.47	631.75	607.50	24.25	265.40	260.21	496.86	5.19
08/20/97	-117.55	-9.43	75.43	940.48	12.47	649.92	624.98	24.94	268.78	263.52	496.86	5.26
08/27/97	-101.77	-8.16	72.49	903.87	12.47	618.41	594.68	23.73	263.68	258.53	496.86	5.16
09/03/97	-123.73	-10.27	74.77	900.46	12.04	617.94	594.23	23.72	260.74	255.64	454.23	5.10
09/10/97	-102.83	-8.54	75.54	909.67	12.04	630.58	606.38	24.20	257.31	252.28	454.23	5.03
09/17/97	-91.05	-7.56	74.26	894.27	12.04	626.29	602.25	24.04	246.21	241.39	454.23	4.82
09/24/97	-79.93	-6.64	72.64	874.72	12.04	614.04	590.48	23.57	238.91	234.23	454.23	4.67
10/01/97	-59.95	-5.05	70.85	841.70	11.88	589.07	566.55	22.52	230.85	226.35	438.06	4.50

**Table B.3: Feeding Margin Data.**

	(\$/head)	(\$/cwt)	(\$/cwt)	(\$)	(cwt)	(\$)	(\$)	(\$)	(\$)	(\$)	(lbs)	(\$)
<b>Finished Date</b>	<b>Feeding Margin</b>	<b>Feeding Margin</b>	<b>Total Cost</b>	<b>Total Cost</b>	<b>Sale Weight</b>	<b>Total Feeder Cattle Cost</b>	<b>Feeder Cattle Cost</b>	<b>Interest on Feeder Cattle</b>	<b>Total Feed Cost</b>	<b>Feed Cost</b>	<b>Total Gain</b>	<b>Interest on Feed</b>
10/08/97	-107.37	-9.04	74.04	879.61	11.88	612.46	589.05	23.41	245.37	240.59	438.06	4.78
10/15/97	-85.21	-7.17	72.92	866.36	11.88	595.23	572.48	22.76	249.36	244.50	438.06	4.86
10/22/97	-57.73	-4.86	73.11	868.58	11.88	597.73	574.88	22.85	249.08	244.23	438.06	4.85
10/29/97	-11.41	-0.96	70.96	843.05	11.88	574.18	552.23	21.95	247.10	242.28	438.06	4.82
11/05/97	-43.10	-3.61	72.28	861.97	11.92	589.23	566.70	22.53	250.97	246.08	442.47	4.89
11/12/97	-52.29	-4.39	71.89	857.21	11.92	586.50	564.08	22.42	248.94	244.08	442.47	4.85
11/19/97	-68.70	-5.76	72.64	866.22	11.92	595.31	572.55	22.76	249.14	244.28	442.47	4.86
11/26/97	-71.75	-6.02	73.02	870.70	11.92	600.46	577.50	22.96	248.47	243.63	442.47	4.84
12/03/97	-81.01	-6.78	73.03	871.99	11.94	607.47	584.25	23.22	242.74	238.01	443.94	4.73
12/10/97	-86.82	-7.27	73.27	874.82	11.94	610.91	587.55	23.36	242.14	237.42	443.94	4.72
12/17/97	-87.82	-7.36	72.36	863.88	11.94	606.62	583.43	23.19	235.49	230.90	443.94	4.59
12/24/97	-61.12	-5.12	71.12	849.12	11.94	592.81	570.15	22.66	234.54	229.96	443.94	4.57
12/31/97	-27.47	-2.24	68.24	835.84	12.25	578.83	556.88	21.96	235.24	230.69	474.81	4.55
01/07/98	-71.22	-5.81	70.37	861.95	12.25	608.46	585.38	23.08	231.73	227.25	474.81	4.48
01/14/98	-91.37	-7.46	71.41	874.64	12.25	609.86	586.73	23.13	243.01	238.31	474.81	4.70
01/21/98	-80.24	-6.55	71.52	876.00	12.25	611.73	588.53	23.20	242.50	237.81	474.81	4.69
01/28/98	-84.32	-6.88	70.03	857.79	12.25	593.49	570.98	22.51	242.53	237.84	474.81	4.69
02/04/98	-97.63	-7.86	69.09	858.39	12.42	593.80	571.28	22.52	242.82	238.12	492.45	4.69
02/11/98	-105.86	-8.52	68.56	851.83	12.42	587.10	564.83	22.27	242.96	238.26	492.45	4.70
02/18/98	-97.01	-7.81	69.76	866.70	12.42	603.54	580.65	22.89	241.39	236.72	492.45	4.67
02/25/98	-110.10	-8.86	68.27	848.23	12.42	588.42	566.10	22.32	238.04	233.44	492.45	4.60
03/04/98	-102.02	-8.17	69.11	862.75	12.48	600.35	577.58	22.77	240.63	235.98	498.33	4.65
03/11/98	-70.28	-5.63	68.57	855.98	12.48	588.42	566.10	22.32	245.79	241.04	498.33	4.75
03/18/98	-57.77	-4.63	67.63	844.22	12.48	583.66	561.53	22.14	238.78	234.16	498.33	4.62
03/25/98	-60.89	-4.88	66.68	832.35	12.48	577.90	555.98	21.92	232.69	228.19	498.33	4.50
04/01/98	-58.90	-4.71	66.63	832.78	12.50	581.46	559.43	22.03	229.55	225.11	499.80	4.43
04/08/98	-19.33	-1.55	67.42	842.58	12.50	595.10	572.55	22.55	225.70	221.34	499.80	4.36
04/15/98	-31.35	-2.51	68.43	855.21	12.50	605.31	582.38	22.94	228.13	223.72	499.80	4.41
04/22/98	-42.12	-3.37	67.43	842.74	12.50	594.56	572.03	22.53	226.41	222.04	499.80	4.37
04/29/98	-9.38	-0.76	66.70	826.71	12.40	583.33	561.23	22.11	221.61	217.33	489.51	4.28
05/06/98	-35.06	-2.83	68.83	853.14	12.40	603.99	581.10	22.89	227.38	222.99	489.51	4.39
05/13/98	-33.34	-2.69	67.82	840.63	12.40	598.92	576.23	22.70	219.94	215.69	489.51	4.25
05/20/98	-36.54	-2.95	66.94	829.71	12.40	589.49	567.15	22.34	218.45	214.23	489.51	4.22
05/27/98	-26.96	-2.18	65.21	808.23	12.40	571.01	549.38	21.64	215.44	211.28	489.51	4.16
06/03/98	-26.79	-2.13	66.02	829.04	12.56	580.84	558.83	22.01	226.43	222.06	505.68	4.37
06/10/98	-22.69	-1.81	66.77	838.38	12.56	594.17	571.65	22.52	222.44	218.15	505.68	4.30
06/17/98	-32.87	-2.62	66.61	836.38	12.56	583.41	561.30	22.11	231.20	226.73	505.68	4.47
06/24/98	-28.80	-2.29	65.20	818.75	12.56	556.05	534.98	21.07	240.93	236.28	505.68	4.65
07/01/98	-31.23	-2.48	64.52	812.99	12.60	562.29	541.13	21.16	228.94	224.55	510.09	4.39
07/08/98	-48.83	-3.87	64.86	817.36	12.60	563.53	542.33	21.21	232.06	227.61	510.09	4.45
07/15/98	-26.63	-2.11	62.08	782.31	12.60	538.83	518.55	20.28	221.71	217.46	510.09	4.25
07/22/98	-29.34	-2.33	61.68	777.20	12.60	535.09	514.95	20.14	220.35	216.12	510.09	4.23
07/29/98	-35.85	-2.85	61.86	779.43	12.60	543.27	522.83	20.45	214.40	210.28	510.09	4.11
08/05/98	-21.74	-1.74	61.49	766.74	12.47	539.53	519.23	20.30	205.44	201.50	496.86	3.94
08/12/98	-0.91	-0.07	60.05	748.78	12.47	525.27	505.50	19.77	201.74	197.87	496.86	3.87
08/19/98	-30.67	-2.46	61.47	766.44	12.47	542.34	521.93	20.41	202.34	198.46	496.86	3.88
08/26/98	-20.99	-1.68	58.86	733.94	12.47	518.33	498.83	19.51	193.84	190.13	496.86	3.72
09/02/98	-33.22	-2.76	59.12	711.93	12.04	500.56	481.73	18.84	189.60	185.96	454.23	3.64

**Table B.3: Feeding Margin Data.**

	(\$/head)	(\$/cwt)	(\$/cwt)	(\$)	(cwt)	(\$)	(\$)	(\$)	(\$)	(\$)	(lbs)	(\$)
Finished Date	Feeding Margin	Feeding Margin	Total Cost	Total Cost	Sale Weight	Total Feeder Cattle Cost	Feeder Cattle Cost	Interest on Feeder Cattle	Total Feed Cost	Feed Cost	Total Gain	Interest on Feed
09/09/98	-20.13	-1.67	59.58	717.50	12.04	505.32	486.30	19.02	190.41	186.76	454.23	3.65
09/16/98	-3.93	-0.33	60.32	726.34	12.04	521.22	501.60	19.62	183.36	179.84	454.23	3.52
09/23/98	-11.48	-0.95	60.02	722.82	12.04	516.70	497.25	19.45	184.35	180.82	454.23	3.54
09/30/98	-27.31	-2.30	59.55	707.48	11.88	506.17	487.65	18.52	179.55	176.21	438.06	3.35
10/07/98	-30.93	-2.60	61.49	730.58	11.88	521.51	502.43	19.08	187.31	183.82	438.06	3.49
10/14/98	-8.28	-0.70	63.02	748.68	11.88	530.77	511.35	19.42	196.16	192.50	438.06	3.66
10/21/98	-0.41	-0.03	63.05	749.13	11.88	532.87	513.38	19.50	194.50	190.87	438.06	3.62
10/28/98	-7.18	-0.60	64.55	766.94	11.88	548.68	528.60	20.08	196.51	192.85	438.06	3.66
11/04/98	6.56	0.55	62.75	748.27	11.92	530.77	511.35	19.42	195.75	192.10	442.47	3.65
11/11/98	-11.12	-0.93	63.93	762.37	11.92	536.38	516.75	19.63	204.24	200.44	442.47	3.81
11/18/98	-17.23	-1.44	62.42	744.39	11.92	521.19	502.13	19.07	201.44	197.69	442.47	3.75
11/25/98	-6.54	-0.55	62.22	741.93	11.92	520.96	501.90	19.06	199.22	195.50	442.47	3.71
12/02/98	-6.07	-0.51	62.24	743.09	11.94	525.87	506.63	19.24	195.47	191.83	443.94	3.64
12/09/98	-6.40	-0.54	61.58	735.18	11.94	519.79	500.78	19.02	193.63	190.02	443.94	3.61
12/16/98	-35.70	-2.99	60.91	727.23	11.94	512.01	493.28	18.73	193.47	189.86	443.94	3.61
12/23/98	-39.37	-3.30	61.26	731.38	11.94	516.99	498.08	18.92	192.63	189.04	443.94	3.59
12/30/98	-21.22	-1.73	61.59	754.39	12.25	538.95	519.38	19.58	193.68	190.10	474.81	3.58
01/06/99	-30.98	-2.53	63.52	777.99	12.25	561.60	541.20	20.40	194.64	191.04	474.81	3.60
01/13/99	-19.13	-1.56	63.52	778.02	12.25	564.25	543.75	20.50	192.02	188.47	474.81	3.55
01/20/99	-46.92	-3.83	64.65	791.84	12.25	577.56	556.58	20.98	192.54	188.97	474.81	3.56
01/27/99	-30.48	-2.49	63.84	781.90	12.25	568.22	547.58	20.64	191.93	188.38	474.81	3.55
02/03/99	-44.82	-3.61	63.65	790.79	12.42	573.98	553.13	20.85	195.06	191.45	492.45	3.61
02/10/99	-24.83	-2.00	64.02	795.40	12.42	580.20	559.13	21.08	193.44	189.87	492.45	3.58
02/17/99	-10.18	-0.82	64.23	798.02	12.42	583.63	562.43	21.20	192.64	189.08	492.45	3.56
02/24/99	4.36	0.35	62.69	778.88	12.42	569.62	548.93	20.69	187.51	184.04	492.45	3.47
03/03/99	25.55	2.05	62.93	785.61	12.48	571.56	550.80	20.76	192.29	188.74	498.33	3.56
03/10/99	43.84	3.51	62.45	779.56	12.48	560.98	540.60	20.38	196.83	193.19	498.33	3.64
03/17/99	52.60	4.21	60.96	760.93	12.48	542.38	522.68	19.70	196.80	193.16	498.33	3.64
03/24/99	21.50	1.72	62.65	782.05	12.48	559.66	539.33	20.33	200.65	196.93	498.33	3.71
03/31/99	32.33	2.59	62.38	779.67	12.50	562.30	541.58	20.72	195.61	191.94	499.80	3.67
04/07/99	28.21	2.26	62.74	784.16	12.50	569.93	548.93	21.00	192.47	188.86	499.80	3.61
04/14/99	37.72	3.02	62.66	783.15	12.50	567.67	546.75	20.92	193.72	190.08	499.80	3.64
04/21/99	41.66	3.33	61.75	771.71	12.50	556.14	535.65	20.49	193.81	190.17	499.80	3.64
04/28/99	63.98	5.12	60.88	760.89	12.50	550.46	530.18	20.28	188.67	185.13	499.80	3.54
05/05/99	55.54	4.48	60.57	750.76	12.40	540.80	520.88	19.93	188.20	184.67	489.51	3.53
05/12/99	41.39	3.34	60.59	751.03	12.40	538.62	518.78	19.85	190.65	187.07	489.51	3.58
05/19/99	34.86	2.81	62.18	770.70	12.40	561.13	540.45	20.68	187.81	184.29	489.51	3.53
05/26/99	37.11	2.99	62.87	779.23	12.40	571.17	550.13	21.05	186.30	182.80	489.51	3.50
06/02/99	31.90	2.54	63.47	796.97	12.56	580.13	558.75	21.38	195.08	191.42	505.68	3.66
06/09/99	33.02	2.63	64.34	807.91	12.56	592.51	570.68	21.83	193.64	190.00	505.68	3.63
06/16/99	21.29	1.70	65.31	820.14	12.56	605.67	583.35	22.32	192.71	189.10	505.68	3.62
06/23/99	17.27	1.38	64.53	810.35	12.56	592.43	570.60	21.83	196.16	192.48	505.68	3.68
06/30/99	3.14	0.25	63.76	803.45	12.60	588.03	566.10	21.93	193.65	189.97	510.09	3.68
07/07/99	4.52	0.36	62.92	792.87	12.60	586.09	564.23	21.86	185.02	181.50	510.09	3.52
07/14/99	-6.97	-0.55	64.56	813.56	12.60	602.21	579.75	22.46	189.58	185.98	510.09	3.60
07/21/99	-1.31	-0.10	64.66	814.83	12.60	598.55	576.23	22.33	194.52	190.82	510.09	3.70
07/28/99	10.66	0.85	64.19	808.90	12.60	597.77	575.48	22.30	189.37	185.77	510.09	3.60
08/04/99	-16.53	-1.33	66.30	826.61	12.47	603.38	580.88	22.51	201.47	197.64	496.86	3.83

**Table B.3: Feeding Margin Data.**

	(\$/head)	(\$/cwt)	(\$/cwt)	(\$)	(cwt)	(\$)	(\$)	(\$)	(\$)	(\$)	(lbs)	(\$)
Finished Date	Feeding Margin	Feeding Margin	Total Cost	Total Cost	Sale Weight	Total Feeder Cattle Cost	Feeder Cattle Cost	Interest on Feeder Cattle	Total Feed Cost	Feed Cost	Total Gain	Interest on Feed
08/11/99	4.77	0.38	64.62	805.69	12.47	594.65	572.48	22.18	189.27	185.67	496.86	3.60
08/18/99	-15.30	-1.23	66.23	825.76	12.47	609.69	586.95	22.74	194.30	190.61	496.86	3.69
08/25/99	2.30	0.18	65.34	814.64	12.47	606.26	583.65	22.61	186.62	183.07	496.86	3.55
09/01/99	-31.89	-2.65	68.62	826.32	12.04	614.75	591.83	22.93	189.81	186.20	454.23	3.61
09/08/99	-30.15	-2.50	68.49	824.83	12.04	613.35	590.48	22.88	189.71	186.11	454.23	3.61
09/15/99	-48.22	-4.00	69.75	840.00	12.04	632.67	609.08	23.60	185.56	182.03	454.23	3.53
09/22/99	-29.65	-2.46	67.97	818.55	12.04	614.83	591.90	22.93	181.95	178.49	454.23	3.46
09/29/99	-34.95	-2.94	69.76	828.82	11.88	627.04	603.38	23.67	180.00	176.54	438.06	3.46
10/06/99	-5.73	-0.48	68.79	817.29	11.88	616.68	593.40	23.28	178.85	175.41	438.06	3.44
10/13/99	23.69	1.99	68.71	816.27	11.88	617.61	594.30	23.31	176.89	173.49	438.06	3.40
10/20/99	18.66	1.57	68.75	816.79	11.88	618.70	595.35	23.35	176.31	172.92	438.06	3.39
10/27/99	4.57	0.38	68.83	817.69	11.88	618.00	594.68	23.33	177.92	174.50	438.06	3.42
11/03/99	-11.28	-0.95	70.24	837.55	11.92	634.29	610.35	23.94	181.49	177.99	442.47	3.49
11/10/99	-8.24	-0.69	70.50	840.70	11.92	637.72	613.65	24.07	181.21	177.73	442.47	3.49
11/17/99	-0.35	-0.03	70.82	844.50	11.92	641.07	616.88	24.20	181.65	178.16	442.47	3.49
11/24/99	-0.53	-0.04	70.97	846.35	11.92	642.63	618.38	24.26	181.94	178.44	442.47	3.50
12/01/99	-18.48	-1.55	71.43	852.80	11.94	654.71	630.00	24.71	176.32	172.93	443.94	3.39
12/08/99	-43.45	-3.64	73.58	878.50	11.94	683.63	657.83	25.80	173.10	169.77	443.94	3.33
12/15/99	-57.21	-4.79	73.53	877.92	11.94	680.59	654.90	25.69	175.57	172.19	443.94	3.38
12/22/99	-61.58	-5.16	73.16	873.46	11.94	672.41	647.03	25.38	179.28	175.83	443.94	3.45
12/29/99	-43.92	-3.68	71.68	855.80	11.94	654.17	629.48	24.69	179.86	176.40	443.94	3.46
01/05/00	-55.60	-4.54	72.67	890.06	12.25	688.38	661.65	26.73	179.90	176.34	474.81	3.56
01/12/00	-34.25	-2.80	72.68	890.15	12.25	679.17	652.80	26.37	189.20	185.45	474.81	3.75
01/19/00	-36.01	-2.94	71.89	880.51	12.25	669.03	643.05	25.98	189.71	185.95	474.81	3.76
01/26/00	-46.74	-3.82	71.81	879.49	12.25	664.89	639.08	25.82	192.81	189.00	474.81	3.82
02/02/00	-21.61	-1.74	71.07	883.00	12.42	669.96	643.95	26.01	191.26	187.47	492.45	3.79
02/09/00	-16.04	-1.29	71.21	884.76	12.42	666.22	640.35	25.87	196.76	192.87	492.45	3.90
02/16/00	-10.42	-0.84	69.65	865.35	12.42	648.35	623.18	25.17	195.22	191.36	492.45	3.86
02/23/00	-13.63	-1.10	69.36	861.72	12.42	646.63	621.53	25.11	193.31	189.48	492.45	3.83
03/01/00	-18.37	-1.47	71.62	894.07	12.48	676.20	649.95	26.25	196.08	192.20	498.33	3.88
03/08/00	6.36	0.51	71.46	892.07	12.48	671.91	645.83	26.09	198.37	194.45	498.33	3.93
03/15/00	-3.16	-0.25	70.25	876.99	12.48	651.55	626.25	25.30	203.66	199.63	498.33	4.03
03/22/00	27.69	2.22	70.43	879.22	12.48	657.17	631.65	25.52	200.27	196.31	498.33	3.96
03/29/00	14.03	1.12	70.87	884.65	12.48	660.91	635.25	25.66	201.96	197.96	498.33	4.00
04/05/00	7.23	0.58	71.36	891.87	12.50	672.12	645.23	26.90	197.96	193.92	499.80	4.04
04/12/00	23.25	1.86	71.16	889.36	12.50	668.68	641.93	26.76	198.88	194.82	499.80	4.06
04/19/00	33.21	2.66	71.48	893.39	12.50	672.35	645.45	26.90	199.24	195.18	499.80	4.07
04/26/00	29.33	2.35	71.67	895.77	12.50	672.82	645.90	26.92	201.15	197.05	499.80	4.11
05/03/00	3.23	0.26	72.66	900.62	12.40	667.59	640.88	26.71	211.24	206.93	489.51	4.31
05/10/00	-3.94	-0.32	72.15	894.28	12.40	663.68	637.13	26.56	208.80	204.54	489.51	4.26
05/17/00	-9.76	-0.79	71.82	890.19	12.40	662.90	636.38	26.53	205.49	201.30	489.51	4.20
05/24/00	-30.20	-2.44	71.55	886.82	12.40	663.06	636.53	26.53	201.97	197.85	489.51	4.12
05/31/00	-19.54	-1.56	70.59	886.34	12.56	658.29	631.95	26.34	206.25	202.04	505.68	4.21
06/07/00	-10.19	-0.81	70.78	888.79	12.56	660.09	633.68	26.41	206.91	202.68	505.68	4.22
06/14/00	-25.44	-2.03	72.13	905.67	12.56	681.73	654.45	27.28	202.14	198.02	505.68	4.13
06/21/00	-60.31	-4.80	73.80	926.73	12.56	702.43	674.33	28.11	202.50	198.37	505.68	4.13
06/28/00	-69.78	-5.56	72.97	916.24	12.56	695.87	668.03	27.85	198.57	194.52	505.68	4.05
07/05/00	-50.64	-4.02	72.00	907.25	12.60	691.52	663.83	27.70	193.93	189.97	510.09	3.96

**Table B.3: Feeding Margin Data.**

	(\$/head)	(\$/cwt)	(\$/cwt)	(\$)	(cwt)	(\$)	(\$)	(\$)	(\$)	(\$)	(lbs)	(\$)
<b>Finished Date</b>	<b>Feeding Margin</b>	<b>Feeding Margin</b>	<b>Total Cost</b>	<b>Total Cost</b>	<b>Sale Weight</b>	<b>Total Feeder Cattle Cost</b>	<b>Feeder Cattle Cost</b>	<b>Interest on Feeder Cattle</b>	<b>Total Feed Cost</b>	<b>Feed Cost</b>	<b>Total Gain</b>	<b>Interest on Feed</b>
07/12/00	-58.42	-4.64	72.36	911.75	12.60	695.51	667.65	27.86	194.45	190.47	510.09	3.97
07/19/00	-71.10	-5.64	73.44	925.44	12.60	709.34	680.93	28.41	194.31	190.34	510.09	3.97
07/26/00	-56.15	-4.46	70.96	894.11	12.60	683.08	655.73	27.36	189.23	185.37	510.09	3.87
08/02/00	-82.04	-6.58	70.89	883.89	12.47	673.94	646.95	26.99	188.16	184.31	496.86	3.85
08/09/00	-87.56	-7.02	71.06	886.05	12.47	677.46	650.33	27.13	186.79	182.98	496.86	3.82
08/16/00	-71.82	-5.76	71.66	893.50	12.47	683.16	655.80	27.36	188.54	184.69	496.86	3.85
08/23/00	-79.63	-6.39	71.39	890.09	12.47	681.52	654.23	27.30	186.77	182.95	496.86	3.82
08/30/00	-95.60	-7.94	73.50	885.09	12.04	674.80	647.78	27.03	188.49	184.64	454.23	3.85
09/06/00	-105.84	-8.79	72.76	876.19	12.04	667.69	640.95	26.74	186.70	182.89	454.23	3.82
09/13/00	-97.17	-8.07	72.80	876.67	12.04	667.69	640.95	26.74	187.18	183.36	454.23	3.83
09/20/00	-103.11	-8.56	73.59	886.22	12.04	677.15	650.03	27.12	187.28	183.45	454.23	3.83
09/27/00	-92.03	-7.64	73.74	888.03	12.04	672.85	645.90	26.95	193.38	189.43	454.23	3.95
10/04/00	-85.41	-7.19	74.26	882.25	11.88	661.05	634.73	26.33	199.40	195.35	438.06	4.05
10/11/00	-94.70	-7.97	75.89	901.63	11.88	675.27	648.38	26.90	204.57	200.41	438.06	4.16
10/18/00	-83.00	-6.99	74.99	890.88	11.88	661.60	635.25	26.35	207.49	203.27	438.06	4.22
10/25/00	-85.52	-7.20	76.17	904.93	11.88	676.05	649.13	26.93	207.08	202.88	438.06	4.21
11/01/00	-72.79	-6.10	76.16	908.17	11.92	672.62	645.83	26.79	213.77	209.42	442.47	4.34
11/08/00	-66.58	-5.58	76.72	914.90	11.92	676.13	649.20	26.93	216.98	212.57	442.47	4.41
11/15/00	-69.46	-5.82	77.79	927.68	11.92	692.22	664.65	27.57	213.67	209.33	442.47	4.34
11/22/00	-43.30	-3.63	76.49	912.13	11.92	675.66	648.75	26.91	214.68	210.31	442.47	4.36
11/29/00	-60.88	-5.10	78.18	933.41	11.94	699.88	672.00	27.88	211.74	207.44	443.94	4.30
12/06/00	-35.93	-3.01	77.81	928.99	11.94	697.45	669.68	27.78	209.75	205.49	443.94	4.26
12/13/00	-12.40	-1.04	78.01	931.38	11.94	696.13	668.40	27.73	213.46	209.12	443.94	4.34
12/20/00	-22.58	-1.89	78.89	941.91	11.94	702.14	674.18	27.97	217.98	213.55	443.94	4.43
12/27/00	-20.01	-1.68	79.65	950.93	11.94	708.43	680.21	28.22	220.70	216.22	443.94	4.48
01/03/01	-6.54	-0.53	77.96	954.91	12.25	712.78	686.25	26.53	220.36	216.18	474.81	4.18
01/10/01	30.07	2.45	76.30	934.47	12.25	696.81	670.88	25.94	215.90	211.80	474.81	4.09
01/17/01	58.07	4.74	75.27	921.90	12.25	687.78	662.18	25.60	212.36	208.34	474.81	4.03
01/24/01	46.34	3.78	74.30	909.99	12.25	678.51	653.25	25.26	209.72	205.74	474.81	3.98
01/31/01	75.39	6.07	71.92	893.60	12.42	660.59	636.00	24.59	211.24	207.24	492.45	4.01
02/07/01	73.42	5.91	72.16	896.56	12.42	664.41	639.68	24.73	210.39	206.40	492.45	3.99
02/14/01	56.82	4.57	73.50	913.16	12.42	678.58	653.33	25.26	212.81	208.78	492.45	4.04
02/21/01	86.04	6.93	73.02	907.29	12.42	672.20	647.18	25.02	213.34	209.29	492.45	4.05
02/28/01	92.69	7.42	74.47	929.57	12.48	685.52	660.00	25.52	222.29	218.08	498.33	4.22
03/07/01	96.09	7.70	73.36	915.81	12.48	673.52	648.45	25.07	220.52	216.34	498.33	4.18
03/14/01	79.59	6.38	73.57	918.45	12.48	677.10	651.90	25.20	219.59	215.42	498.33	4.16
03/21/01	70.01	5.61	72.47	904.68	12.48	670.79	645.83	24.97	212.13	208.10	498.33	4.02
03/28/01	58.08	4.65	74.27	927.10	12.48	691.05	665.33	25.72	214.29	210.22	498.33	4.06
04/04/01	62.29	4.98	74.59	932.18	12.50	692.11	667.95	24.16	218.33	214.46	499.80	3.88
04/11/01	42.84	3.43	75.82	947.62	12.50	707.65	682.95	24.70	218.24	214.36	499.80	3.88
04/18/01	19.33	1.55	75.47	943.27	12.50	707.65	682.95	24.70	213.88	210.08	499.80	3.80
04/25/01	21.44	1.72	73.40	917.41	12.50	683.87	660.00	23.87	211.80	208.04	499.80	3.76
05/02/01	-14.95	-1.21	76.28	945.45	12.40	714.49	689.55	24.94	209.23	205.51	489.51	3.72
05/09/01	2.64	0.21	73.91	916.08	12.40	692.11	667.95	24.16	202.24	198.65	489.51	3.59
05/16/01	2.99	0.24	74.49	923.29	12.40	697.86	673.50	24.36	203.70	200.08	489.51	3.62
05/23/01	23.16	1.87	74.29	920.86	12.40	697.86	673.50	24.36	201.26	197.69	489.51	3.57
05/30/01	37.88	3.02	74.04	929.75	12.56	701.67	677.18	24.49	206.35	202.68	505.68	3.67
06/06/01	-11.01	-0.88	76.68	962.82	12.56	731.97	706.43	25.55	209.11	205.39	505.68	3.71



**Table B.3: Feeding Margin Data.**

	(\$/head)	(\$/cwt)	(\$/cwt)	(\$)	(cwt)	(\$)	(\$)	(\$)	(\$)	(\$)	(lbs)	(\$)
Finished Date	Feeding Margin	Feeding Margin	Total Cost	Total Cost	Sale Weight	Total Feeder Cattle Cost	Feeder Cattle Cost	Interest on Feeder Cattle	Total Feed Cost	Feed Cost	Total Gain	Interest on Feed
06/13/01	-21.31	-1.70	75.48	947.75	12.56	718.68	693.60	25.08	207.33	203.65	505.68	3.68
06/20/01	-39.72	-3.16	75.60	949.33	12.56	724.28	699.00	25.28	203.32	199.71	505.68	3.61
06/27/01	-63.17	-5.03	76.13	955.95	12.56	729.68	704.21	25.47	204.54	200.90	505.68	3.63
07/03/01	-72.36	-5.74	75.98	957.45	12.60	722.25	698.53	23.72	213.49	209.93	510.09	3.56
07/11/01	-86.12	-6.83	77.05	970.84	12.60	716.37	692.85	23.52	232.75	228.87	510.09	3.89
07/18/01	-59.35	-4.71	75.65	953.30	12.60	709.04	685.76	23.28	222.54	218.83	510.09	3.71
07/25/01	-45.93	-3.64	75.32	949.11	12.60	704.08	680.96	23.12	223.32	219.59	510.09	3.73
08/01/01	-54.44	-4.37	74.19	925.00	12.47	683.11	660.68	22.43	220.18	216.51	496.86	3.68
08/08/01	-90.48	-7.26	76.16	949.67	12.47	705.28	682.13	23.16	222.67	218.95	496.86	3.72
08/15/01	-72.17	-5.79	75.74	944.39	12.47	700.59	677.59	23.00	222.08	218.37	496.86	3.71
08/22/01	-79.29	-6.36	76.46	953.39	12.47	707.65	684.41	23.24	224.03	220.29	496.86	3.74
08/29/01	-88.05	-7.06	76.98	959.80	12.47	712.96	689.55	23.41	225.13	221.37	496.86	3.76
09/05/01	-125.37	-10.41	80.43	968.56	12.04	725.06	701.25	23.81	221.79	218.09	454.23	3.70
09/12/01	-94.61	-7.86	77.89	937.98	12.04	690.16	667.50	22.66	226.11	222.33	454.23	3.77
09/19/01	-126.68	-10.52	79.24	954.22	12.04	710.40	687.08	23.33	222.10	218.40	454.23	3.71
09/26/01	-116.45	-9.67	75.77	912.41	12.04	666.01	644.14	21.87	224.69	220.94	454.23	3.75
10/03/01	-120.19	-10.12	77.80	924.31	11.88	683.20	662.29	20.91	219.42	216.01	438.06	3.41
10/10/01	-143.99	-12.12	80.02	950.67	11.88	706.22	684.60	21.62	222.77	219.31	438.06	3.46
10/17/01	-134.99	-11.36	77.51	920.87	11.88	681.38	660.53	20.86	217.81	214.42	438.06	3.39
10/24/01	-160.70	-13.53	78.62	934.03	11.88	693.41	672.19	21.22	218.93	215.53	438.06	3.40
10/31/01	-129.53	-10.86	75.84	904.37	11.92	665.37	645.00	20.37	217.32	213.94	442.47	3.38
11/07/01	-132.87	-11.14	75.17	896.38	11.92	657.63	637.50	20.13	217.06	213.69	442.47	3.37
11/14/01	-158.58	-13.30	74.05	883.01	11.92	641.92	622.28	19.65	219.40	215.99	442.47	3.41
11/21/01	-136.20	-11.42	75.84	904.38	11.92	661.54	641.29	20.25	221.16	217.72	442.47	3.44
11/28/01	-143.06	-12.00	77.03	918.53	11.92	681.15	660.30	20.85	215.69	212.34	442.47	3.35
12/05/01	-99.62	-8.34	73.84	881.64	11.94	643.16	623.48	19.69	216.79	213.43	443.94	3.37
12/12/01	-117.98	-9.88	72.63	867.20	11.94	630.59	611.29	19.30	214.92	211.58	443.94	3.34
12/19/01	-140.98	-11.81	73.76	880.64	11.94	645.83	626.06	19.77	213.12	209.81	443.94	3.31
12/26/01	-112.15	-9.39	73.34	875.68	11.94	642.10	622.44	19.65	211.90	208.61	443.94	3.29
01/02/02	-64.97	-5.30	71.21	872.20	12.25	638.02	618.83	19.19	212.50	209.26	474.81	3.24
01/09/02	-72.20	-5.89	71.91	880.75	12.25	646.79	627.34	19.45	212.28	209.04	474.81	3.24
01/16/02	-33.31	-2.72	70.69	865.82	12.25	628.74	609.83	18.91	215.40	212.11	474.81	3.29
01/23/02	-22.34	-1.82	70.75	866.59	12.25	632.99	613.95	19.04	211.92	208.68	474.81	3.24
01/30/02	8.03	0.65	70.26	872.91	12.42	639.79	620.55	19.24	211.43	208.21	492.45	3.23
02/06/02	12.41	1.00	70.88	880.69	12.42	649.65	630.11	19.54	209.36	206.16	492.45	3.20
02/13/02	11.62	0.94	71.02	882.42	12.42	651.78	632.18	19.60	208.96	205.77	492.45	3.19
02/20/02	7.78	0.63	70.37	874.36	12.42	643.85	624.49	19.37	208.83	205.64	492.45	3.19
02/27/02	19.03	1.52	69.24	864.28	12.48	635.04	615.94	19.10	207.56	204.39	498.33	3.17
03/06/02	37.99	3.04	70.19	876.17	12.48	647.10	627.64	19.46	207.38	204.22	498.33	3.17
03/13/02	77.64	6.22	68.00	848.88	12.48	619.53	600.90	18.63	207.66	204.49	498.33	3.17
03/20/02	36.63	2.93	68.11	850.18	12.48	622.09	603.38	18.71	206.42	203.26	498.33	3.15
03/27/02	21.03	1.68	68.53	855.42	12.48	628.89	609.98	18.92	204.85	201.72	498.33	3.13
04/03/02	35.16	2.81	69.55	869.20	12.50	643.37	622.31	21.05	204.12	200.73	499.80	3.40
04/10/02	35.59	2.85	65.22	815.14	12.50	591.53	572.18	19.36	201.90	198.54	499.80	3.36
04/17/02	-8.45	-0.68	66.53	831.45	12.50	607.58	587.70	19.88	202.15	198.79	499.80	3.36
04/24/02	-10.61	-0.85	64.47	805.74	12.50	581.65	562.61	19.03	202.38	199.01	499.80	3.37
05/01/02	-8.88	-0.72	65.64	813.57	12.40	592.58	573.19	19.39	199.28	195.97	489.51	3.31
05/08/02	4.20	0.34	67.54	837.18	12.40	613.36	593.29	20.07	202.11	198.75	489.51	3.36

**Table B.3: Feeding Margin Data.**

	(\$/head)	(\$/cwt)	(\$/cwt)	(\$)	(cwt)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(lbs)	(\$)
<b>Finished Date</b>	<b>Feeding Margin</b>	<b>Feeding Margin</b>	<b>Total Cost</b>	<b>Total Cost</b>	<b>Sale Weight</b>	<b>Total Feeder Cattle Cost</b>	<b>Feeder Cattle Cost</b>	<b>Interest on Feeder Cattle</b>	<b>Total Feed Cost</b>	<b>Feed Cost</b>	<b>Total Gain</b>	<b>Interest on Feed</b>	
05/15/02	-6.79	-0.55	67.25	833.54	12.40	604.13	584.36	19.77	207.70	204.24	489.51	3.45	
05/22/02	-21.67	-1.75	65.45	811.24	12.40	585.95	566.78	19.17	203.58	200.19	489.51	3.39	
05/29/02	-46.56	-3.76	67.32	834.40	12.40	606.26	586.43	19.84	206.42	202.99	489.51	3.43	
06/05/02	-32.92	-2.62	65.58	823.50	12.56	590.64	571.31	19.33	211.15	207.64	505.68	3.51	
06/12/02	-35.27	-2.81	66.74	838.03	12.56	603.24	583.50	19.74	213.08	209.54	505.68	3.54	
06/19/02	-40.90	-3.26	67.84	851.82	12.56	616.81	596.63	20.18	213.30	209.75	505.68	3.55	
06/26/02	-57.15	-4.55	68.41	859.03	12.56	610.53	590.55	19.98	226.79	223.02	505.68	3.77	

**Table B.3: Feeding Margin Data.**

Finished Date	(\$/ton) Total Ration Charge	(\$/ton) Ration Charge	(\$/ton) Corn Cost	(\$/bu) Adjusted Corn Price	(\$/ton) Alfalfa Cost	(\$/ton) Soybean Meal Cost	(\$/ton) Adjusted Soybean Meal Price	(\$) Total Other Cost	(\$) Other Cost	(\$) Yardage Cost	(\$) Interest on Other Cost	(lbs/day) Average Daily Gain
05/30/90	118.57	98.57	97.86	2.74	76.00	209.10	209.10	21.87	21.35	7.35	0.52	3.44
06/06/90	119.68	99.68	100.36	2.81	71.00	195.30	195.30	21.87	21.35	7.35	0.52	3.44
06/13/90	120.23	100.23	101.43	2.84	67.00	199.30	199.30	21.87	21.35	7.35	0.52	3.44
06/20/90	120.19	100.19	101.79	2.85	64.00	199.90	199.90	21.87	21.35	7.35	0.52	3.44
06/27/90	122.81	102.81	104.64	2.93	64.00	206.10	206.10	21.87	21.35	7.35	0.52	3.44
07/03/90	121.97	101.97	103.21	2.89	64.00	218.70	218.70	21.87	21.35	7.35	0.52	3.47
07/11/90	120.13	100.13	101.43	2.84	64.00	207.80	207.80	21.87	21.35	7.35	0.52	3.47
07/18/90	118.39	98.39	99.64	2.79	64.00	200.50	200.50	21.87	21.35	7.35	0.52	3.47
07/25/90	120.84	100.84	102.14	2.86	66.50	201.40	201.40	21.87	21.35	7.35	0.52	3.47
08/01/90	118.01	98.01	98.57	2.76	68.50	200.00	200.00	21.87	21.35	7.35	0.52	3.38
08/08/90	117.51	97.51	97.50	2.73	71.00	203.90	203.90	21.87	21.35	7.35	0.52	3.38
08/15/90	117.13	97.13	96.79	2.71	73.00	203.40	203.40	21.87	21.35	7.35	0.52	3.38
08/22/90	119.33	99.33	99.46	2.79	73.00	200.80	200.80	21.87	21.35	7.35	0.52	3.38
08/29/90	112.71	92.71	91.43	2.56	73.00	207.70	207.70	21.87	21.35	7.35	0.52	3.38
09/05/90	107.05	87.05	85.00	2.38	73.00	201.40	201.40	21.87	21.35	7.35	0.52	3.09
09/12/90	103.44	83.44	80.36	2.25	73.00	212.50	212.50	21.87	21.35	7.35	0.52	3.09
09/19/90	102.72	82.72	79.64	2.23	73.00	208.80	208.80	21.87	21.35	7.35	0.52	3.09
09/26/90	103.10	83.10	80.36	2.25	72.50	203.30	203.30	21.87	21.35	7.35	0.52	3.09
10/03/90	103.82	83.82	81.43	2.28	72.00	199.00	199.00	21.86	21.35	7.35	0.51	2.98
10/10/90	104.32	84.32	81.43	2.28	72.00	215.50	215.50	21.86	21.35	7.35	0.51	2.98
10/17/90	102.93	82.93	80.36	2.25	71.00	203.70	203.70	21.86	21.35	7.35	0.51	2.98
10/24/90	103.79	83.79	81.43	2.28	71.50	199.70	199.70	21.86	21.35	7.35	0.51	2.98
10/31/90	103.68	83.68	81.43	2.28	72.00	194.20	194.20	21.86	21.35	7.35	0.51	3.01
11/07/90	104.99	84.99	83.21	2.33	72.00	187.10	187.10	21.86	21.35	7.35	0.51	3.01
11/14/90	103.61	83.61	81.43	2.28	72.50	189.80	189.80	21.86	21.35	7.35	0.51	3.01
11/21/90	103.68	83.68	81.43	2.28	72.50	192.10	192.10	21.86	21.35	7.35	0.51	3.01
11/28/90	107.04	87.04	85.36	2.39	72.50	193.00	193.00	21.86	21.35	7.35	0.51	3.01
12/05/90	106.49	86.49	84.46	2.37	72.50	199.80	199.80	21.86	21.35	7.35	0.51	3.02
12/12/90	106.27	86.27	84.29	2.36	73.00	195.70	195.70	21.86	21.35	7.35	0.51	3.02
12/19/90	106.32	86.32	84.29	2.36	73.00	197.20	197.20	21.86	21.35	7.35	0.51	3.02
12/26/90	106.22	86.22	83.93	2.35	77.00	187.90	187.90	21.86	21.35	7.35	0.51	3.02
01/02/91	106.72	86.72	83.57	2.34	85.00	182.80	182.80	21.85	21.35	7.35	0.50	3.23
01/09/91	107.08	87.08	83.93	2.35	85.50	182.80	182.80	21.85	21.35	7.35	0.50	3.23
01/16/91	109.50	89.50	86.79	2.43	86.00	180.50	180.50	21.85	21.35	7.35	0.50	3.23
01/23/91	109.82	89.82	86.79	2.43	86.50	189.00	189.00	21.85	21.35	7.35	0.50	3.23
01/30/91	110.70	90.70	87.86	2.46	87.00	185.90	185.90	21.85	21.35	7.35	0.50	3.35
02/06/91	109.27	89.27	86.07	2.41	87.00	189.00	189.00	21.85	21.35	7.35	0.50	3.35
02/13/91	109.34	89.34	86.07	2.41	87.00	191.20	191.20	21.85	21.35	7.35	0.50	3.35
02/20/91	109.52	89.52	86.07	2.41	86.50	199.20	199.20	21.85	21.35	7.35	0.50	3.35
02/27/91	110.79	90.79	87.50	2.45	86.50	201.10	201.10	21.85	21.35	7.35	0.50	3.39
03/06/91	112.27	92.27	89.29	2.50	86.00	201.90	201.90	21.85	21.35	7.35	0.50	3.39
03/13/91	113.38	93.38	90.71	2.54	86.00	198.30	198.30	21.85	21.35	7.35	0.50	3.39
03/20/91	112.62	92.62	90.00	2.52	86.00	193.30	193.30	21.85	21.35	7.35	0.50	3.39
03/27/91	113.21	93.21	90.71	2.54	86.00	192.70	192.70	21.85	21.35	7.35	0.50	3.39
04/03/91	115.69	95.69	93.39	2.62	86.00	199.50	199.50	21.84	21.35	7.35	0.49	3.40
04/10/91	115.91	95.91	93.93	2.63	86.00	191.60	191.60	21.84	21.35	7.35	0.49	3.40
04/17/91	115.84	95.84	93.57	2.62	86.00	199.60	199.60	21.84	21.35	7.35	0.49	3.40
04/24/91	117.11	97.11	95.00	2.66	86.00	201.40	201.40	21.84	21.35	7.35	0.49	3.40

**Table B.3: Feeding Margin Data.**

Finished Date	(\$/ton) Total Ration Charge	(\$/ton) Ration Charge	(\$/ton) Corn Cost	(\$/bu) Adjusted Corn Price	(\$/ton) Alfalfa Cost	(\$/ton) Soybean Meal Cost	(\$/ton) Adjusted Soybean Meal Price	(\$) Total Other Cost	(\$) Other Cost	(\$) Yardage Cost	(\$) Interest on Other Cost	(lbs/day) Average Daily Gain
05/01/91	114.90	94.90	92.50	2.59	86.00	198.60	198.60	21.84	21.35	7.35	0.49	3.33
05/08/91	114.69	94.69	92.50	2.59	85.00	195.40	195.40	21.84	21.35	7.35	0.49	3.33
05/15/91	115.48	95.48	93.57	2.62	84.00	195.40	195.40	21.84	21.35	7.35	0.49	3.33
05/22/91	117.32	97.32	95.71	2.68	83.00	200.00	200.00	21.84	21.35	7.35	0.49	3.33
05/29/91	115.16	95.16	93.93	2.63	78.00	198.80	198.80	21.84	21.35	7.35	0.49	3.33
06/05/91	115.39	95.39	94.29	2.64	77.00	200.30	200.30	21.84	21.35	7.35	0.49	3.44
06/12/91	114.98	94.98	93.93	2.63	76.00	200.70	200.70	21.84	21.35	7.35	0.49	3.44
06/19/91	115.13	95.13	94.29	2.64	75.00	199.50	199.50	21.84	21.35	7.35	0.49	3.44
06/26/91	114.55	94.55	93.57	2.62	75.00	200.40	200.40	21.84	21.35	7.35	0.49	3.44
07/03/91	114.31	94.31	93.57	2.62	75.00	192.40	192.40	21.82	21.35	7.35	0.47	3.47
07/10/91	112.42	92.42	91.43	2.56	74.50	192.10	192.10	21.82	21.35	7.35	0.47	3.47
07/17/91	114.97	94.97	94.11	2.64	75.00	199.20	199.20	21.82	21.35	7.35	0.47	3.47
07/24/91	117.64	97.64	96.79	2.71	75.50	210.50	210.50	21.82	21.35	7.35	0.47	3.47
07/31/91	119.24	99.24	98.57	2.76	76.00	211.10	211.10	21.82	21.35	7.35	0.47	3.38
08/07/91	114.61	94.61	93.21	2.61	76.00	208.50	208.50	21.82	21.35	7.35	0.47	3.38
08/14/91	111.65	91.65	90.00	2.52	75.50	203.00	203.00	21.82	21.35	7.35	0.47	3.38
08/21/91	113.80	93.80	92.86	2.60	75.00	195.60	195.60	21.82	21.35	7.35	0.47	3.38
08/28/91	111.88	91.88	90.00	2.52	75.00	212.50	212.50	21.82	21.35	7.35	0.47	3.38
09/04/91	111.95	91.95	90.00	2.52	75.00	215.00	215.00	21.82	21.35	7.35	0.47	3.09
09/11/91	112.47	92.47	90.71	2.54	75.00	212.00	212.00	21.82	21.35	7.35	0.47	3.09
09/18/91	112.90	92.90	90.71	2.54	75.00	226.50	226.50	21.82	21.35	7.35	0.47	3.09
09/25/91	110.52	90.52	88.21	2.47	75.00	218.00	218.00	21.82	21.35	7.35	0.47	3.09
10/02/91	112.35	92.35	90.36	2.53	74.50	220.20	220.20	21.79	21.35	7.35	0.44	2.98
10/09/91	111.57	91.57	89.64	2.51	74.50	214.30	214.30	21.79	21.35	7.35	0.44	2.98
10/16/91	110.95	90.95	89.29	2.50	74.50	204.00	204.00	21.79	21.35	7.35	0.44	2.98
10/23/91	112.82	92.82	91.43	2.56	74.50	205.50	205.50	21.79	21.35	7.35	0.44	2.98
10/30/91	114.58	94.58	93.57	2.62	74.50	203.50	203.50	21.79	21.35	7.35	0.44	3.01
11/06/91	110.95	90.95	89.29	2.50	74.50	203.90	203.90	21.79	21.35	7.35	0.44	3.01
11/13/91	111.42	91.42	90.00	2.52	74.50	199.20	199.20	21.79	21.35	7.35	0.44	3.01
11/20/91	110.98	90.98	89.29	2.50	74.50	204.90	204.90	21.79	21.35	7.35	0.44	3.01
11/27/91	110.53	90.53	88.75	2.49	74.50	205.00	205.00	21.79	21.35	7.35	0.44	3.01
12/04/91	111.24	91.24	89.64	2.51	75.00	201.60	201.60	21.79	21.35	7.35	0.44	3.02
12/11/91	111.75	91.75	90.36	2.53	75.00	198.10	198.10	21.79	21.35	7.35	0.44	3.02
12/18/91	112.98	92.98	91.79	2.57	75.00	198.80	198.80	21.79	21.35	7.35	0.44	3.02
12/24/91	113.68	93.68	92.50	2.59	75.00	201.70	201.70	21.79	21.35	7.35	0.44	3.02
12/31/91	112.36	92.36	91.07	2.55	75.00	198.20	198.20	21.78	21.35	7.35	0.43	3.23
01/08/92	113.20	93.20	92.14	2.58	75.00	195.90	195.90	21.78	21.35	7.35	0.43	3.23
01/15/92	115.06	95.06	94.29	2.64	75.00	197.30	197.30	21.78	21.35	7.35	0.43	3.23
01/22/92	116.01	96.01	95.36	2.67	74.00	202.60	202.60	21.78	21.35	7.35	0.43	3.23
01/29/92	117.41	97.41	97.14	2.72	73.00	202.60	202.60	21.78	21.35	7.35	0.43	3.23
02/05/92	117.86	97.86	97.86	2.74	72.00	201.50	201.50	21.78	21.35	7.35	0.43	3.35
02/12/92	116.65	96.65	96.79	2.71	70.00	199.50	199.50	21.78	21.35	7.35	0.43	3.35
02/19/92	116.87	96.87	97.14	2.72	70.00	196.50	196.50	21.78	21.35	7.35	0.43	3.35
02/26/92	117.34	97.34	97.50	2.73	70.00	202.00	202.00	21.78	21.35	7.35	0.43	3.35
03/04/92	119.17	99.17	99.64	2.79	70.00	202.40	202.40	21.78	21.35	7.35	0.43	3.39
03/11/92	119.17	99.17	99.64	2.79	70.00	202.30	202.30	21.78	21.35	7.35	0.43	3.39
03/18/92	118.69	98.69	99.29	2.78	69.00	200.60	200.60	21.78	21.35	7.35	0.43	3.39
03/25/92	120.26	100.26	101.25	2.84	68.00	201.20	201.20	21.78	21.35	7.35	0.43	3.39

**Table B.3: Feeding Margin Data.**

Finished Date	(\$/ton) Total Ration Charge	(\$/ton) Ration Charge	(\$/ton) Corn Cost	(\$/bu) Adjusted Corn Price	(\$/ton) Alfalfa Cost	(\$/ton) Soybean Meal Cost	(\$/ton) Adjusted Soybean Meal Price	(\$) Total Other Cost	(\$) Other Cost	(\$) Yardage Cost	(\$) Interest on Other Cost	(lbs/day) Average Daily Gain
04/01/92	117.03	97.03	97.50	2.73	67.50	201.70	201.70	21.77	21.35	7.35	0.42	3.40
04/08/92	116.12	96.12	96.79	2.71	66.00	197.70	197.70	21.77	21.35	7.35	0.42	3.40
04/15/92	117.09	97.09	97.86	2.74	66.00	199.80	199.80	21.77	21.35	7.35	0.42	3.40
04/22/92	117.24	97.24	97.86	2.74	66.00	204.80	204.80	21.77	21.35	7.35	0.42	3.40
04/29/92	115.89	95.89	96.43	2.70	65.50	202.10	202.10	21.77	21.35	7.35	0.42	3.33
05/06/92	119.85	99.85	101.07	2.83	65.00	204.60	204.60	21.77	21.35	7.35	0.42	3.33
05/13/92	120.36	100.36	101.43	2.84	65.00	211.50	211.50	21.77	21.35	7.35	0.42	3.33
05/20/92	117.37	97.37	97.86	2.74	65.00	213.20	213.20	21.77	21.35	7.35	0.42	3.33
05/27/92	118.74	98.74	99.64	2.79	65.00	208.00	208.00	21.77	21.35	7.35	0.42	3.33
06/03/92	120.55	100.55	101.79	2.85	64.00	211.70	211.70	21.77	21.35	7.35	0.42	3.44
06/10/92	120.27	100.27	101.43	2.84	64.00	212.55	212.55	21.77	21.35	7.35	0.42	3.44
06/17/92	117.39	97.39	98.21	2.75	64.00	207.50	207.50	21.77	21.35	7.35	0.42	3.44
06/24/92	120.07	100.07	101.43	2.84	63.00	210.00	210.00	21.77	21.35	7.35	0.42	3.44
07/01/92	118.88	98.88	100.00	2.80	64.00	206.60	206.60	21.75	21.35	7.35	0.40	3.47
07/08/92	116.12	96.12	96.79	2.71	65.00	201.90	201.90	21.75	21.35	7.35	0.40	3.47
07/15/92	114.06	94.06	94.29	2.64	65.00	203.90	203.90	21.75	21.35	7.35	0.40	3.47
07/22/92	111.36	91.36	91.07	2.55	65.00	205.00	205.00	21.75	21.35	7.35	0.40	3.47
07/29/92	110.47	90.47	90.00	2.52	65.00	205.60	205.60	21.75	21.35	7.35	0.40	3.47
08/05/92	108.66	88.66	87.86	2.46	65.50	204.10	204.10	21.75	21.35	7.35	0.40	3.38
08/12/92	109.38	89.38	88.57	2.48	66.50	203.70	203.70	21.75	21.35	7.35	0.40	3.38
08/19/92	110.02	90.02	89.29	2.50	66.50	204.80	204.80	21.75	21.35	7.35	0.40	3.38
08/26/92	109.86	89.86	88.93	2.49	67.00	207.75	207.75	21.75	21.35	7.35	0.40	3.38
09/02/92	109.82	89.82	88.93	2.49	67.00	206.50	206.50	21.75	21.35	7.35	0.40	3.09
09/09/92	105.95	85.95	84.29	2.36	67.00	209.00	209.00	21.75	21.35	7.35	0.40	3.09
09/16/92	101.54	81.54	79.29	2.22	67.50	201.60	201.60	21.75	21.35	7.35	0.40	3.09
09/23/92	101.16	81.16	78.93	2.21	67.50	198.90	198.90	21.75	21.35	7.35	0.40	3.09
09/30/92	100.60	80.60	78.21	2.19	68.00	198.50	198.50	21.75	21.35	7.35	0.40	2.98
10/07/92	99.02	79.02	76.43	2.14	68.00	196.60	196.60	21.75	21.35	7.35	0.40	2.98
10/14/92	99.29	79.29	76.79	2.15	68.00	195.40	195.40	21.75	21.35	7.35	0.40	2.98
10/21/92	99.43	79.43	76.79	2.15	68.00	200.20	200.20	21.75	21.35	7.35	0.40	2.98
10/28/92	99.18	79.18	76.43	2.14	69.00	197.80	197.80	21.75	21.35	7.35	0.40	2.98
11/04/92	99.50	79.50	76.79	2.15	69.00	198.50	198.50	21.75	21.35	7.35	0.40	3.01
11/11/92	100.97	80.97	78.57	2.20	70.00	192.70	192.70	21.75	21.35	7.35	0.40	3.01
11/18/92	104.15	84.15	82.14	2.30	70.00	197.70	197.70	21.75	21.35	7.35	0.40	3.01
11/25/92	104.76	84.76	82.68	2.32	71.00	198.90	198.90	21.75	21.35	7.35	0.40	3.01
12/02/92	105.63	85.63	83.21	2.33	75.00	196.70	196.70	21.75	21.35	7.35	0.40	3.02
12/09/92	106.37	86.37	83.57	2.34	77.50	201.00	201.00	21.75	21.35	7.35	0.40	3.02
12/16/92	107.56	87.56	83.93	2.35	82.50	210.80	210.80	21.75	21.35	7.35	0.40	3.02
12/23/92	107.40	87.40	83.57	2.34	82.50	215.40	215.40	21.75	21.35	7.35	0.40	3.02
12/30/92	106.07	86.07	82.14	2.30	82.50	211.70	211.70	21.74	21.35	7.35	0.39	3.23
01/06/93	107.20	87.20	83.21	2.33	85.00	208.90	208.90	21.74	21.35	7.35	0.39	3.23
01/13/93	106.83	86.83	82.86	2.32	85.00	206.80	206.80	21.74	21.35	7.35	0.39	3.23
01/20/93	107.97	87.97	84.29	2.36	85.00	204.10	204.10	21.74	21.35	7.35	0.39	3.23
01/27/93	107.28	87.28	83.57	2.34	85.00	201.60	201.60	21.74	21.35	7.35	0.39	3.23
02/03/93	106.58	86.58	82.86	2.32	86.00	194.40	194.40	21.74	21.35	7.35	0.39	3.35
02/10/93	107.03	87.03	83.57	2.34	85.00	193.20	193.20	21.74	21.35	7.35	0.39	3.35
02/17/93	107.63	87.63	84.29	2.36	85.00	193.00	193.00	21.74	21.35	7.35	0.39	3.35
02/24/93	107.37	87.37	83.93	2.35	85.00	194.40	194.40	21.74	21.35	7.35	0.39	3.35

**Table B.3: Feeding Margin Data.**

Finished Date	(\$/ton) Total Ration Charge	(\$/ton) Ration Charge	(\$/ton) Corn Cost	(\$/bu) Adjusted Corn Price	(\$/ton) Alfalfa Cost	(\$/ton) Soybean Meal Cost	(\$/ton) Adjusted Soybean Meal Price	(\$) Total Other Cost	(\$) Other Cost	(\$) Yardage Cost	(\$) Interest on Other Cost	(lbs/day) Average Daily Gain
03/03/93	108.72	88.72	85.36	2.39	85.00	198.80	198.80	21.74	21.35	7.35	0.39	3.39
03/10/93	108.62	88.62	85.36	2.39	85.00	195.70	195.70	21.74	21.35	7.35	0.39	3.39
03/17/93	109.92	89.92	86.79	2.43	85.00	198.30	198.30	21.74	21.35	7.35	0.39	3.39
03/24/93	111.29	91.29	88.21	2.47	85.00	203.50	203.50	21.74	21.35	7.35	0.39	3.39
03/31/93	112.02	92.02	88.93	2.49	86.00	203.60	203.60	21.73	21.35	7.35	0.38	3.40
04/07/93	112.04	92.04	88.93	2.49	86.00	204.40	204.40	21.73	21.35	7.35	0.38	3.40
04/14/93	112.05	92.05	88.93	2.49	86.00	204.80	204.80	21.73	21.35	7.35	0.38	3.40
04/21/93	110.20	90.20	86.79	2.43	86.00	203.80	203.80	21.73	21.35	7.35	0.38	3.40
04/28/93	109.51	89.51	86.07	2.41	85.00	205.10	205.10	21.73	21.35	7.35	0.38	3.40
05/05/93	110.44	90.44	87.14	2.44	85.00	205.60	205.60	21.73	21.35	7.35	0.38	3.33
05/12/93	109.90	89.90	86.43	2.42	84.00	211.70	211.70	21.73	21.35	7.35	0.38	3.33
05/19/93	109.29	89.29	85.71	2.40	84.00	211.80	211.80	21.73	21.35	7.35	0.38	3.33
05/26/93	107.89	87.89	84.64	2.37	80.00	211.60	211.60	21.73	21.35	7.35	0.38	3.33
06/02/93	105.27	85.27	82.50	2.31	75.00	204.70	204.70	21.73	21.35	7.35	0.38	3.44
06/09/93	104.99	84.99	82.14	2.30	75.00	205.60	205.60	21.73	21.35	7.35	0.38	3.44
06/16/93	104.32	84.32	81.43	2.28	75.00	203.40	203.40	21.73	21.35	7.35	0.38	3.44
06/23/93	106.40	86.40	83.57	2.34	75.00	212.00	212.00	21.73	21.35	7.35	0.38	3.44
06/30/93	110.92	90.92	88.93	2.49	74.00	215.00	215.00	21.73	21.35	7.35	0.38	3.47
07/07/93	113.27	93.27	91.07	2.55	73.00	236.80	236.80	21.73	21.35	7.35	0.38	3.47
07/14/93	111.27	91.27	88.57	2.48	73.00	240.80	240.80	21.73	21.35	7.35	0.38	3.47
07/21/93	114.90	94.90	92.14	2.58	73.00	260.50	260.50	21.73	21.35	7.35	0.38	3.47
07/28/93	115.02	95.02	92.14	2.58	75.00	256.50	256.50	21.73	21.35	7.35	0.38	3.47
08/04/93	114.49	94.49	91.79	2.57	75.00	249.00	249.00	21.73	21.35	7.35	0.38	3.38
08/11/93	113.94	93.94	91.43	2.56	77.50	231.00	231.00	21.73	21.35	7.35	0.38	3.38
08/18/93	113.41	93.41	90.36	2.53	80.00	233.50	233.50	21.73	21.35	7.35	0.38	3.38
08/25/93	111.94	91.94	88.57	2.48	81.00	231.00	231.00	21.73	21.35	7.35	0.38	3.38
09/01/93	109.16	89.16	85.36	2.39	82.50	223.50	223.50	21.73	21.35	7.35	0.38	3.09
09/08/93	109.38	89.38	85.71	2.40	83.00	218.80	218.80	21.73	21.35	7.35	0.38	3.09
09/15/93	110.03	90.03	86.79	2.43	83.00	210.00	210.00	21.73	21.35	7.35	0.38	3.09
09/22/93	113.24	93.24	90.36	2.53	84.00	211.80	211.80	21.73	21.35	7.35	0.38	3.09
09/29/93	112.99	92.99	90.00	2.52	85.00	209.50	209.50	21.72	21.35	7.35	0.37	2.98
10/06/93	112.65	92.65	89.29	2.50	88.00	206.60	206.60	21.72	21.35	7.35	0.37	2.98
10/13/93	115.02	95.02	91.79	2.57	89.00	210.80	210.80	21.72	21.35	7.35	0.37	2.98
10/20/93	117.66	97.66	94.64	2.65	90.00	213.90	213.90	21.72	21.35	7.35	0.37	2.98
10/27/93	117.24	97.24	93.93	2.63	92.00	212.10	212.10	21.72	21.35	7.35	0.37	2.98
11/03/93	121.64	101.64	98.57	2.76	95.00	215.10	215.10	21.72	21.35	7.35	0.37	3.01
11/10/93	126.21	106.21	103.57	2.90	96.00	221.90	221.90	21.72	21.35	7.35	0.37	3.01
11/17/93	129.09	109.09	106.43	2.98	97.00	232.70	232.70	21.72	21.35	7.35	0.37	3.01
11/24/93	127.84	107.84	105.00	2.94	97.00	231.70	231.70	21.72	21.35	7.35	0.37	3.01
12/01/93	129.80	109.80	107.32	3.01	98.00	227.30	227.30	21.72	21.35	7.35	0.37	3.02
12/08/93	131.20	111.20	108.75	3.05	100.00	225.50	225.50	21.72	21.35	7.35	0.37	3.02
12/15/93	131.88	111.88	109.64	3.07	101.00	218.85	218.85	21.72	21.35	7.35	0.37	3.02
12/22/93	134.30	114.30	112.50	3.15	102.00	214.50	214.50	21.72	21.35	7.35	0.37	3.02
12/29/93	136.54	116.54	114.64	3.21	104.00	220.30	220.30	21.72	21.35	7.35	0.37	3.02
01/05/94	137.46	117.46	115.71	3.24	105.00	216.80	216.80	21.72	21.35	7.35	0.37	3.23
01/12/94	137.53	117.53	116.07	3.25	105.00	208.95	208.95	21.72	21.35	7.35	0.37	3.23
01/19/94	133.95	113.95	111.79	3.13	105.00	211.00	211.00	21.72	21.35	7.35	0.37	3.23
01/26/94	133.00	113.00	110.71	3.10	105.00	209.60	209.60	21.72	21.35	7.35	0.37	3.23

**Table B.3: Feeding Margin Data.**

Finished Date	(\$/ton) Total Ration Charge	(\$/ton) Ration Charge	(\$/ton) Corn Cost	(\$/bu) Adjusted Corn Price	(\$/ton) Alfalfa Cost	(\$/ton) Soybean Meal Cost	(\$/ton) Adjusted Soybean Meal Price	(\$) Total Other Cost	(\$) Other Cost	(\$) Yardage Cost	(\$) Interest on Other Cost	(lbs/day) Average Daily Gain
02/02/94	131.75	111.75	109.29	3.06	105.00	208.60	208.60	21.72	21.35	7.35	0.37	3.35
02/09/94	133.05	113.05	110.71	3.10	105.00	211.40	211.40	21.72	21.35	7.35	0.37	3.35
02/16/94	130.97	110.97	108.21	3.03	105.00	212.90	212.90	21.72	21.35	7.35	0.37	3.35
02/23/94	130.59	110.59	108.21	3.03	102.50	210.40	210.40	21.72	21.35	7.35	0.37	3.35
03/02/94	127.78	107.78	105.36	2.95	100.00	207.40	207.40	21.72	21.35	7.35	0.37	3.39
03/09/94	126.41	106.41	103.93	2.91	99.00	206.20	206.20	21.72	21.35	7.35	0.37	3.39
03/16/94	127.60	107.60	105.36	2.95	97.00	213.50	213.50	21.72	21.35	7.35	0.37	3.39
03/23/94	127.23	107.23	105.36	2.95	95.00	209.20	209.20	21.72	21.35	7.35	0.37	3.39
03/30/94	123.67	103.67	101.43	2.84	93.00	209.90	209.90	21.74	21.35	7.35	0.39	3.40
04/06/94	123.31	103.31	101.43	2.84	92.00	201.90	201.90	21.74	21.35	7.35	0.39	3.40
04/13/94	120.92	100.92	98.57	2.76	92.00	203.10	203.10	21.74	21.35	7.35	0.39	3.40
04/20/94	114.57	94.57	91.07	2.55	92.00	204.00	204.00	21.74	21.35	7.35	0.39	3.40
04/27/94	121.92	101.92	99.64	2.79	92.00	206.20	206.20	21.74	21.35	7.35	0.39	3.40
05/04/94	120.35	100.35	97.86	2.74	92.00	204.40	204.40	21.74	21.35	7.35	0.39	3.33
05/11/94	121.12	101.12	98.93	2.77	91.00	203.60	203.60	21.74	21.35	7.35	0.39	3.33
05/18/94	124.38	104.38	102.86	2.88	90.00	205.10	205.10	21.74	21.35	7.35	0.39	3.33
05/25/94	124.00	104.00	102.50	2.87	87.50	212.50	212.50	21.74	21.35	7.35	0.39	3.33
06/01/94	128.12	108.12	107.50	3.01	85.00	218.20	218.20	21.74	21.35	7.35	0.39	3.44
06/08/94	124.71	104.71	103.93	2.91	85.00	205.80	205.80	21.74	21.35	7.35	0.39	3.44
06/15/94	129.22	109.22	108.57	3.04	87.50	214.50	214.50	21.74	21.35	7.35	0.39	3.44
06/22/94	121.83	101.83	100.00	2.80	88.00	209.00	209.00	21.74	21.35	7.35	0.39	3.44
06/29/94	120.14	100.14	97.86	2.74	88.00	213.50	213.50	21.76	21.35	7.35	0.41	3.47
07/06/94	116.90	96.90	94.64	2.65	88.00	196.60	196.60	21.76	21.35	7.35	0.41	3.47
07/13/94	115.80	95.80	93.21	2.61	88.00	200.10	200.10	21.76	21.35	7.35	0.41	3.47
07/20/94	112.57	92.57	89.29	2.50	90.00	195.90	195.90	21.76	21.35	7.35	0.41	3.47
07/27/94	112.87	92.87	89.29	2.50	92.50	195.80	195.80	21.76	21.35	7.35	0.41	3.47
08/03/94	113.01	93.01	89.29	2.50	94.00	194.60	194.60	21.76	21.35	7.35	0.41	3.38
08/10/94	113.80	93.80	90.36	2.53	94.00	190.50	190.50	21.76	21.35	7.35	0.41	3.38
08/17/94	114.27	94.27	90.71	2.54	95.00	192.25	192.25	21.76	21.35	7.35	0.41	3.38
08/24/94	115.05	95.05	91.43	2.56	95.00	197.80	197.80	21.76	21.35	7.35	0.41	3.38
08/31/94	108.80	88.80	84.29	2.36	95.00	192.00	192.00	21.76	21.35	7.35	0.41	3.09
09/07/94	108.12	88.12	82.95	2.32	96.00	203.30	203.30	21.76	21.35	7.35	0.41	3.09
09/14/94	106.75	86.75	81.61	2.29	97.00	191.50	191.50	21.76	21.35	7.35	0.41	3.09
09/21/94	106.24	86.24	81.07	2.27	97.00	189.80	189.80	21.76	21.35	7.35	0.41	3.09
09/28/94	106.67	86.67	81.25	2.28	97.00	198.80	198.80	21.76	21.35	7.35	0.41	3.09
10/05/94	106.61	86.61	81.61	2.29	97.00	186.70	186.70	21.78	21.35	7.35	0.43	2.98
10/12/94	106.74	86.74	81.61	2.29	98.00	187.20	187.20	21.78	21.35	7.35	0.43	2.98
10/19/94	107.48	87.48	82.32	2.31	99.00	187.60	187.60	21.78	21.35	7.35	0.43	2.98
10/26/94	108.64	88.64	83.75	2.35	99.00	185.60	185.60	21.78	21.35	7.35	0.43	2.98
11/02/94	107.75	87.75	82.86	2.32	99.00	181.30	181.30	21.78	21.35	7.35	0.43	3.01
11/09/94	109.64	89.64	85.00	2.38	100.00	179.70	179.70	21.78	21.35	7.35	0.43	3.01
11/16/94	109.02	89.02	84.29	2.36	101.00	175.20	175.20	21.78	21.35	7.35	0.43	3.01
11/23/94	107.94	87.94	82.86	2.32	102.00	175.85	175.85	21.78	21.35	7.35	0.43	3.01
11/30/94	109.00	89.00	83.93	2.35	104.00	172.70	172.70	21.78	21.35	7.35	0.43	3.02
12/07/94	110.79	90.79	86.07	2.41	105.00	167.70	167.70	21.78	21.35	7.35	0.43	3.02
12/14/94	109.66	89.66	84.64	2.37	105.00	170.40	170.40	21.78	21.35	7.35	0.43	3.02
12/21/94	110.66	90.66	85.71	2.40	105.00	173.30	173.30	21.78	21.35	7.35	0.43	3.02
12/28/94	111.58	91.58	86.79	2.43	105.00	173.60	173.60	21.78	21.35	7.35	0.43	3.02

**Table B.3: Feeding Margin Data.**

Finished Date	(\$/ton) Total Ration Charge	(\$/ton) Ration Charge	(\$/ton) Corn Cost	(\$/bu) Adjusted Corn Price	(\$/ton) Alfalfa Cost	(\$/ton) Soybean Meal Cost	(\$/ton) Adjusted Soybean Meal Price	(\$) Total Other Cost	(\$) Other Cost	(\$) Yardage Cost	(\$) Interest on Other Cost	(lbs/day) Average Daily Gain
01/04/95	111.15	91.15	86.43	2.42	105.00	169.40	169.40	21.79	21.35	7.35	0.44	3.23
01/11/95	112.13	92.13	87.50	2.45	105.00	171.80	171.80	21.79	21.35	7.35	0.44	3.23
01/18/95	111.56	91.56	87.50	2.45	100.00	172.80	172.80	21.79	21.35	7.35	0.44	3.23
01/25/95	110.93	90.93	87.14	2.44	97.50	172.10	172.10	21.79	21.35	7.35	0.44	3.23
02/01/95	110.54	90.54	86.79	2.43	97.50	169.20	169.20	21.79	21.35	7.35	0.44	3.35
02/08/95	111.08	91.08	87.50	2.45	97.50	166.70	166.70	21.79	21.35	7.35	0.44	3.35
02/15/95	110.73	90.73	87.50	2.45	95.00	165.00	165.00	21.79	21.35	7.35	0.44	3.35
02/22/95	111.32	91.32	88.21	2.47	95.00	164.50	164.50	21.79	21.35	7.35	0.44	3.35
03/01/95	111.04	91.04	88.21	2.47	92.50	165.40	165.40	21.79	21.35	7.35	0.44	3.39
03/08/95	112.07	92.07	89.29	2.50	92.50	169.30	169.30	21.79	21.35	7.35	0.44	3.39
03/15/95	112.37	92.37	90.00	2.52	90.00	169.00	169.00	21.79	21.35	7.35	0.44	3.39
03/22/95	112.53	92.53	90.00	2.52	90.00	174.40	174.40	21.79	21.35	7.35	0.44	3.39
03/29/95	113.19	93.19	90.71	2.54	90.00	176.15	176.15	21.79	21.35	7.35	0.44	3.39
04/05/95	113.64	93.64	91.07	2.55	90.00	181.10	181.10	21.79	21.35	7.35	0.44	3.40
04/12/95	112.80	92.80	90.18	2.53	90.00	178.20	178.20	21.79	21.35	7.35	0.44	3.40
04/19/95	112.66	92.66	90.36	2.53	90.00	168.60	168.60	21.79	21.35	7.35	0.44	3.40
04/26/95	115.09	95.09	93.21	2.61	90.00	168.60	168.60	21.79	21.35	7.35	0.44	3.40
05/03/95	116.30	96.30	94.64	2.65	90.00	168.60	168.60	21.79	21.35	7.35	0.44	3.33
05/10/95	117.24	97.24	95.71	2.68	90.00	169.50	169.50	21.79	21.35	7.35	0.44	3.33
05/17/95	119.45	99.45	98.21	2.75	90.00	172.10	172.10	21.79	21.35	7.35	0.44	3.33
05/24/95	121.65	101.65	100.36	2.81	90.00	184.80	184.80	21.79	21.35	7.35	0.44	3.33
05/31/95	121.60	101.60	101.07	2.83	87.50	173.10	173.10	21.79	21.35	7.35	0.44	3.44
06/07/95	123.51	103.51	103.57	2.90	85.00	175.80	175.80	21.79	21.35	7.35	0.44	3.44
06/14/95	125.85	105.85	106.43	2.98	85.00	172.90	172.90	21.79	21.35	7.35	0.44	3.44
06/21/95	127.51	107.51	108.21	3.03	85.00	177.50	177.50	21.79	21.35	7.35	0.44	3.44
06/28/95	125.18	105.18	105.71	2.96	85.00	170.80	170.80	21.79	21.35	7.35	0.44	3.44
07/05/95	128.99	108.99	110.00	3.08	85.00	176.30	176.30	21.79	21.35	7.35	0.44	3.47
07/12/95	130.70	110.70	111.96	3.14	85.00	177.60	177.60	21.79	21.35	7.35	0.44	3.47
07/19/95	133.63	113.63	114.82	3.22	85.00	194.40	194.40	21.79	21.35	7.35	0.44	3.47
07/26/95	134.17	114.17	115.36	3.23	85.00	197.30	197.30	21.79	21.35	7.35	0.44	3.47
08/02/95	130.51	110.51	111.43	3.12	85.00	186.50	186.50	21.79	21.35	7.35	0.44	3.38
08/09/95	129.99	109.99	110.71	3.10	86.00	185.50	185.50	21.79	21.35	7.35	0.44	3.38
08/16/95	132.04	112.04	113.21	3.17	86.00	183.00	183.00	21.79	21.35	7.35	0.44	3.38
08/23/95	133.60	113.60	115.00	3.22	86.00	184.30	184.30	21.79	21.35	7.35	0.44	3.38
08/30/95	135.98	115.98	117.86	3.30	85.00	186.70	186.70	21.79	21.35	7.35	0.44	3.09
09/06/95	132.79	112.79	113.93	3.19	85.00	191.80	191.80	21.79	21.35	7.35	0.44	3.09
09/13/95	134.55	114.55	116.07	3.25	85.00	189.70	189.70	21.79	21.35	7.35	0.44	3.09
09/20/95	138.34	118.34	120.00	3.36	85.00	204.50	204.50	21.79	21.35	7.35	0.44	3.09
09/27/95	136.48	116.48	117.86	3.30	85.00	203.30	203.30	21.79	21.35	7.35	0.44	3.09
10/04/95	135.85	115.85	117.14	3.28	85.00	202.60	202.60	21.78	21.35	7.35	0.43	2.98
10/11/95	138.39	118.39	120.00	3.36	85.00	206.20	206.20	21.78	21.35	7.35	0.43	2.98
10/18/95	142.13	122.13	124.29	3.48	85.00	209.50	209.50	21.78	21.35	7.35	0.43	2.98
10/25/95	142.71	122.71	124.64	3.49	85.00	218.90	218.90	21.78	21.35	7.35	0.43	2.98
11/01/95	145.25	125.25	127.50	3.57	85.00	222.50	222.50	21.78	21.35	7.35	0.43	3.01
11/08/95	142.24	122.24	123.93	3.47	85.00	223.40	223.40	21.78	21.35	7.35	0.43	3.01
11/15/95	141.27	121.27	122.86	3.44	85.00	221.50	221.50	21.78	21.35	7.35	0.43	3.01
11/22/95	142.49	122.49	124.29	3.48	85.00	221.60	221.60	21.78	21.35	7.35	0.43	3.01
11/29/95	144.97	124.97	127.14	3.56	85.00	223.40	223.40	21.78	21.35	7.35	0.43	3.02



**Table B.3: Feeding Margin Data.**

Finished Date	(\$/ton) Total Ration Charge	(\$/ton) Ration Charge	(\$/ton) Corn Cost	(\$/bu) Adjusted Corn Price	(\$/ton) Alfalfa Cost	(\$/ton) Soybean Meal Cost	(\$/ton) Adjusted Soybean Meal Price	(\$) Total Other Cost	(\$) Other Cost	(\$) Yardage Cost	(\$) Interest on Other Cost	(lbs/day) Average Daily Gain
12/06/95	146.71	126.71	128.93	3.61	85.00	230.60	230.60	21.78	21.35	7.35	0.43	3.02
12/13/95	149.06	129.06	131.43	3.68	85.00	238.10	238.10	21.78	21.35	7.35	0.43	3.02
12/20/95	151.19	131.19	133.57	3.74	86.00	244.50	244.50	21.78	21.35	7.35	0.43	3.02
12/27/95	154.46	134.46	137.50	3.85	86.00	242.30	242.30	21.78	21.35	7.35	0.43	3.02
01/03/96	156.59	136.59	139.64	3.91	86.00	252.40	252.40	21.77	21.35	7.35	0.42	3.23
01/10/96	153.24	133.24	135.71	3.80	87.00	248.00	248.00	21.77	21.35	7.35	0.42	3.23
01/17/96	152.66	132.66	135.00	3.78	88.00	245.00	245.00	21.77	21.35	7.35	0.42	3.23
01/24/96	153.07	133.07	135.36	3.79	89.00	244.60	244.60	21.77	21.35	7.35	0.42	3.23
01/31/96	157.26	137.26	140.36	3.93	89.00	242.50	242.50	21.77	21.35	7.35	0.42	3.35
02/07/96	154.97	134.97	137.86	3.86	89.00	237.20	237.20	21.77	21.35	7.35	0.42	3.35
02/14/96	161.36	141.36	145.36	4.07	89.00	237.40	237.40	21.77	21.35	7.35	0.42	3.35
02/21/96	160.55	140.55	144.29	4.04	89.00	240.80	240.80	21.77	21.35	7.35	0.42	3.35
02/28/96	164.94	144.94	149.29	4.18	89.00	245.60	245.60	21.77	21.35	7.35	0.42	3.39
03/06/96	164.45	144.45	148.93	4.17	89.00	239.40	239.40	21.77	21.35	7.35	0.42	3.39
03/13/96	165.48	145.48	150.00	4.20	89.00	243.20	243.20	21.77	21.35	7.35	0.42	3.39
03/20/96	164.77	144.77	149.29	4.18	89.00	239.80	239.80	21.77	21.35	7.35	0.42	3.39
03/27/96	168.36	148.36	153.21	4.29	90.00	244.40	244.40	21.77	21.35	7.35	0.42	3.39
04/03/96	177.38	157.38	163.21	4.57	91.00	257.50	257.50	21.77	21.35	7.35	0.42	3.40
04/10/96	183.23	163.23	169.82	4.76	91.00	265.50	265.50	21.77	21.35	7.35	0.42	3.40
04/17/96	187.21	167.21	174.46	4.89	92.00	262.50	262.50	21.77	21.35	7.35	0.42	3.40
04/24/96	198.51	178.51	186.25	5.22	100.00	273.10	273.10	21.77	21.35	7.35	0.42	3.40
05/01/96	190.00	170.00	176.79	4.95	100.00	257.80	257.80	21.77	21.35	7.35	0.42	3.33
05/08/96	198.23	178.23	186.25	5.22	100.00	264.00	264.00	21.77	21.35	7.35	0.42	3.33
05/15/96	203.06	183.06	191.96	5.38	100.00	262.90	262.90	21.77	21.35	7.35	0.42	3.33
05/22/96	201.62	181.62	190.18	5.33	102.00	257.50	257.50	21.77	21.35	7.35	0.42	3.33
05/29/96	195.27	175.27	183.04	5.13	100.00	256.40	256.40	21.77	21.35	7.35	0.42	3.33
06/05/96	187.63	167.63	174.29	4.88	100.00	249.50	249.50	21.77	21.35	7.35	0.42	3.44
06/12/96	196.92	176.92	185.18	5.19	100.00	250.50	250.50	21.77	21.35	7.35	0.42	3.44
06/19/96	195.67	175.67	183.39	5.14	100.00	259.40	259.40	21.77	21.35	7.35	0.42	3.44
06/26/96	193.42	173.42	180.71	5.06	100.00	260.40	260.40	21.77	21.35	7.35	0.42	3.44
07/03/96	196.58	176.58	184.46	5.17	100.00	259.60	259.60	21.77	21.35	7.35	0.42	3.47
07/10/96	200.01	180.01	188.39	5.28	100.00	262.70	262.70	21.77	21.35	7.35	0.42	3.47
07/17/96	185.89	165.89	171.43	4.80	100.00	272.40	272.40	21.77	21.35	7.35	0.42	3.47
07/24/96	178.86	158.86	163.39	4.58	100.00	266.00	266.00	21.77	21.35	7.35	0.42	3.47
07/31/96	181.65	161.65	166.79	4.67	100.00	262.90	262.90	21.77	21.35	7.35	0.42	3.38
08/07/96	179.67	159.67	164.46	4.61	100.00	262.50	262.50	21.77	21.35	7.35	0.42	3.38
08/14/96	187.31	167.31	173.04	4.85	100.00	274.30	274.30	21.77	21.35	7.35	0.42	3.38
08/21/96	184.99	164.99	170.18	4.77	100.00	277.90	277.90	21.77	21.35	7.35	0.42	3.38
08/28/96	186.07	166.07	171.25	4.80	100.00	283.60	283.60	21.77	21.35	7.35	0.42	3.38
09/04/96	154.52	134.52	133.93	3.75	100.00	289.30	289.30	21.77	21.35	7.35	0.42	3.09
09/11/96	148.54	128.54	126.79	3.55	100.00	292.50	292.50	21.77	21.35	7.35	0.42	3.09
09/18/96	179.85	159.85	163.57	4.58	100.00	293.90	293.90	21.77	21.35	7.35	0.42	3.09
09/25/96	137.31	117.31	113.75	3.19	100.00	287.40	287.40	21.77	21.35	7.35	0.42	3.09
10/02/96	129.97	109.97	105.54	2.96	100.00	275.50	275.50	21.77	21.35	7.35	0.42	2.98
10/09/96	129.10	109.10	104.82	2.94	100.00	266.80	266.80	21.77	21.35	7.35	0.42	2.98
10/16/96	126.55	106.55	102.32	2.87	100.00	252.70	252.70	21.77	21.35	7.35	0.42	2.98
10/23/96	124.64	104.64	99.82	2.80	102.00	251.60	251.60	21.77	21.35	7.35	0.42	2.98
10/30/96	121.20	101.20	95.36	2.67	103.00	259.70	259.70	21.77	21.35	7.35	0.42	3.01

**Table B.3: Feeding Margin Data.**

Finished Date	(\$/ton) Total Ration Charge	(\$/ton) Ration Charge	(\$/ton) Corn Cost	(\$/bu) Adjusted Corn Price	(\$/ton) Alfalfa Cost	(\$/ton) Soybean Meal Cost	(\$/ton) Adjusted Soybean Meal Price	(\$) Total Other Cost	(\$) Other Cost	(\$) Yardage Cost	(\$) Interest on Other Cost	(lbs/day) Average Daily Gain
11/06/96	120.77	100.77	95.00	2.66	104.00	251.40	251.40	21.77	21.35	7.35	0.42	3.01
11/13/96	123.33	103.33	97.32	2.73	105.00	267.00	267.00	21.77	21.35	7.35	0.42	3.01
11/20/96	124.34	104.34	98.21	2.75	105.00	275.30	275.30	21.77	21.35	7.35	0.42	3.01
11/27/96	123.97	103.97	97.86	2.74	105.00	273.00	273.00	21.77	21.35	7.35	0.42	3.01
12/04/96	122.26	102.26	96.07	2.69	105.00	266.50	266.50	21.77	21.35	7.35	0.42	3.02
12/11/96	121.00	101.00	95.00	2.66	105.00	255.10	255.10	21.77	21.35	7.35	0.42	3.02
12/18/96	121.61	101.61	95.36	2.67	105.00	265.30	265.30	21.77	21.35	7.35	0.42	3.02
12/24/96	121.86	101.86	95.71	2.68	105.00	263.30	263.30	21.77	21.35	7.35	0.42	3.02
12/31/96	119.65	99.65	92.86	2.60	107.50	260.80	260.80	21.78	21.35	7.35	0.43	3.23
01/08/97	119.51	99.51	92.50	2.59	110.00	256.00	256.00	21.78	21.35	7.35	0.43	3.23
01/15/97	123.79	103.79	97.32	2.73	110.00	262.20	262.20	21.78	21.35	7.35	0.43	3.23
01/22/97	121.95	101.95	95.00	2.66	110.00	266.80	266.80	21.78	21.35	7.35	0.43	3.23
01/29/97	123.44	103.44	96.43	2.70	112.50	265.70	265.70	21.78	21.35	7.35	0.43	3.23
02/05/97	121.93	101.93	94.64	2.65	112.50	266.20	266.20	21.78	21.35	7.35	0.43	3.35
02/12/97	123.85	103.85	96.79	2.71	112.50	269.50	269.50	21.78	21.35	7.35	0.43	3.35
02/19/97	127.65	107.65	100.71	2.82	112.50	284.80	284.80	21.78	21.35	7.35	0.43	3.35
02/26/97	130.30	110.30	103.75	2.91	112.50	287.10	287.10	21.78	21.35	7.35	0.43	3.35
03/05/97	132.64	112.64	106.61	2.99	112.50	284.20	284.20	21.78	21.35	7.35	0.43	3.39
03/12/97	131.07	111.07	104.29	2.92	112.50	297.50	297.50	21.78	21.35	7.35	0.43	3.39
03/19/97	132.82	112.82	106.61	2.99	112.50	290.00	290.00	21.78	21.35	7.35	0.43	3.39
03/26/97	134.05	114.05	107.68	3.02	112.50	300.80	300.80	21.78	21.35	7.35	0.43	3.39
04/02/97	132.95	112.95	105.18	2.95	115.00	325.00	325.00	21.78	21.35	7.35	0.43	3.40
04/09/97	133.27	113.27	106.25	2.98	115.00	305.20	305.20	21.78	21.35	7.35	0.43	3.40
04/16/97	131.03	111.03	104.29	2.92	112.50	296.30	296.30	21.78	21.35	7.35	0.43	3.40
04/23/97	129.74	109.74	103.04	2.89	111.00	294.50	294.50	21.78	21.35	7.35	0.43	3.40
04/30/97	133.87	113.87	107.50	3.01	111.00	305.70	305.70	21.78	21.35	7.35	0.43	3.33
05/07/97	131.34	111.34	103.93	2.91	111.00	322.70	322.70	21.78	21.35	7.35	0.43	3.33
05/14/97	131.52	111.52	104.11	2.92	110.00	327.70	327.70	21.78	21.35	7.35	0.43	3.33
05/21/97	129.64	109.64	102.14	2.86	110.00	320.50	320.50	21.78	21.35	7.35	0.43	3.33
05/28/97	130.10	110.10	103.57	2.90	105.00	315.50	315.50	21.78	21.35	7.35	0.43	3.33
06/04/97	131.29	111.29	105.36	2.95	102.00	316.60	316.60	21.78	21.35	7.35	0.43	3.44
06/11/97	129.77	109.77	104.29	2.92	101.00	300.20	300.20	21.78	21.35	7.35	0.43	3.44
06/18/97	128.21	108.21	102.14	2.86	101.00	309.00	309.00	21.78	21.35	7.35	0.43	3.44
06/25/97	122.75	102.75	95.89	2.69	101.00	304.00	304.00	21.78	21.35	7.35	0.43	3.44
07/02/97	119.99	99.99	94.11	2.64	99.00	270.50	270.50	21.78	21.35	7.35	0.43	3.47
07/09/97	121.03	101.03	95.36	2.67	98.00	274.00	274.00	21.78	21.35	7.35	0.43	3.47
07/16/97	125.88	105.88	100.36	2.81	97.50	296.00	296.00	21.78	21.35	7.35	0.43	3.47
07/23/97	124.61	104.61	98.75	2.77	97.50	299.00	299.00	21.78	21.35	7.35	0.43	3.47
07/30/97	131.62	111.62	106.96	3.00	96.50	304.00	304.00	21.78	21.35	7.35	0.43	3.38
08/06/97	125.39	105.39	100.00	2.80	96.00	295.50	295.50	21.78	21.35	7.35	0.43	3.38
08/13/97	128.52	108.52	104.29	2.92	95.00	282.50	282.50	21.78	21.35	7.35	0.43	3.38
08/20/97	130.15	110.15	106.43	2.98	91.00	292.35	292.35	21.78	21.35	7.35	0.43	3.38
08/27/97	127.69	107.69	103.57	2.90	92.00	287.00	287.00	21.78	21.35	7.35	0.43	3.38
09/03/97	128.05	108.05	103.57	2.90	92.00	299.30	299.30	21.78	21.35	7.35	0.43	3.09
09/10/97	126.37	106.37	101.07	2.83	92.00	314.00	314.00	21.78	21.35	7.35	0.43	3.09
09/17/97	120.92	100.92	94.64	2.65	92.50	312.30	312.30	21.78	21.35	7.35	0.43	3.09
09/24/97	117.33	97.33	91.61	2.57	93.00	276.80	276.80	21.78	21.35	7.35	0.43	3.09
10/01/97	114.70	94.70	89.82	2.52	93.00	239.70	239.70	21.77	21.35	7.35	0.42	2.98

**Table B.3: Feeding Margin Data.**

Finished Date	(\$/ton) Total Ration Charge	(\$/ton) Ration Charge	(\$/ton) Corn Cost	(\$/bu) Adjusted Corn Price	(\$/ton) Alfalfa Cost	(\$/ton) Soybean Meal Cost	(\$/ton) Adjusted Soybean Meal Price	(\$) Total Other Cost	(\$) Other Cost	(\$) Yardage Cost	(\$) Interest on Other Cost	(lbs/day) Average Daily Gain
10/08/97	121.91	101.91	98.39	2.76	93.00	237.30	237.30	21.77	21.35	7.35	0.42	2.98
10/15/97	123.89	103.89	99.64	2.79	95.00	259.90	259.90	21.77	21.35	7.35	0.42	2.98
10/22/97	123.76	103.76	100.00	2.80	95.00	245.20	245.20	21.77	21.35	7.35	0.42	2.98
10/29/97	122.77	102.77	98.93	2.77	95.00	242.70	242.70	21.77	21.35	7.35	0.42	2.98
11/05/97	124.84	104.84	100.71	2.82	95.00	261.00	261.00	21.77	21.35	7.35	0.42	3.01
11/12/97	123.83	103.83	99.11	2.78	96.00	268.80	268.80	21.77	21.35	7.35	0.42	3.01
11/19/97	123.93	103.93	99.29	2.78	97.50	261.10	261.10	21.77	21.35	7.35	0.42	3.01
11/26/97	123.60	103.60	98.93	2.77	97.50	260.20	260.20	21.77	21.35	7.35	0.42	3.01
12/03/97	123.25	103.25	98.57	2.76	97.50	258.80	258.80	21.77	21.35	7.35	0.42	3.02
12/10/97	122.94	102.94	98.39	2.76	97.50	253.70	253.70	21.77	21.35	7.35	0.42	3.02
12/17/97	119.57	99.57	95.00	2.66	97.50	237.30	237.30	21.77	21.35	7.35	0.42	3.02
12/24/97	119.08	99.08	94.64	2.65	97.50	231.20	231.20	21.77	21.35	7.35	0.42	3.02
12/31/97	119.38	99.38	94.64	2.65	100.00	231.00	231.00	21.77	21.35	7.35	0.42	3.23
01/07/98	117.59	97.59	92.86	2.60	100.00	222.20	222.20	21.77	21.35	7.35	0.42	3.23
01/14/98	123.32	103.32	99.64	2.79	100.00	220.70	220.70	21.77	21.35	7.35	0.42	3.23
01/21/98	123.06	103.06	99.29	2.78	100.00	222.30	222.30	21.77	21.35	7.35	0.42	3.23
01/28/98	123.08	103.08	99.29	2.78	100.00	222.80	222.80	21.77	21.35	7.35	0.42	3.23
02/04/98	121.80	101.80	97.86	2.74	100.00	220.70	220.70	21.77	21.35	7.35	0.42	3.35
02/11/98	121.87	101.87	98.21	2.75	97.50	223.00	223.00	21.77	21.35	7.35	0.42	3.35
02/18/98	121.08	101.08	97.68	2.74	97.50	211.90	211.90	21.77	21.35	7.35	0.42	3.35
02/25/98	119.41	99.41	96.07	2.69	97.50	201.50	201.50	21.77	21.35	7.35	0.42	3.35
03/04/98	119.58	99.58	96.79	2.71	95.00	197.10	197.10	21.77	21.35	7.35	0.42	3.39
03/11/98	122.14	102.14	99.64	2.79	95.00	201.60	201.60	21.77	21.35	7.35	0.42	3.39
03/18/98	118.66	98.66	96.25	2.70	92.50	191.60	191.60	21.77	21.35	7.35	0.42	3.39
03/25/98	115.63	95.63	92.86	2.60	92.50	186.80	186.80	21.77	21.35	7.35	0.42	3.39
04/01/98	114.32	94.32	91.43	2.56	92.50	183.40	183.40	21.77	21.35	7.35	0.42	3.40
04/08/98	112.40	92.40	89.64	2.51	90.00	180.20	180.20	21.77	21.35	7.35	0.42	3.40
04/15/98	113.61	93.61	91.43	2.56	88.00	177.90	177.90	21.77	21.35	7.35	0.42	3.40
04/22/98	112.76	92.76	91.07	2.55	82.50	181.50	181.50	21.77	21.35	7.35	0.42	3.40
04/29/98	111.41	91.41	89.82	2.52	80.00	182.10	182.10	21.77	21.35	7.35	0.42	3.33
05/06/98	114.31	94.31	93.39	2.62	80.00	177.60	177.60	21.77	21.35	7.35	0.42	3.33
05/13/98	110.57	90.57	89.11	2.50	80.00	174.40	174.40	21.77	21.35	7.35	0.42	3.33
05/20/98	109.82	89.82	88.93	2.49	75.00	174.40	174.40	21.77	21.35	7.35	0.42	3.33
05/27/98	108.31	88.31	87.50	2.45	72.50	174.50	174.50	21.77	21.35	7.35	0.42	3.33
06/03/98	110.75	90.75	90.18	2.53	72.50	180.00	180.00	21.77	21.35	7.35	0.42	3.44
06/10/98	108.80	88.80	87.86	2.46	72.50	180.70	180.70	21.77	21.35	7.35	0.42	3.44
06/17/98	113.08	93.08	92.86	2.60	72.50	181.80	181.80	21.77	21.35	7.35	0.42	3.44
06/24/98	117.84	97.84	97.86	2.74	72.50	198.80	198.80	21.77	21.35	7.35	0.42	3.44
07/01/98	110.61	90.61	89.64	2.51	72.50	190.30	190.30	21.77	21.35	7.35	0.42	3.47
07/08/98	112.11	92.11	91.25	2.56	72.50	195.00	195.00	21.77	21.35	7.35	0.42	3.47
07/15/98	107.11	87.11	85.54	2.40	70.00	200.30	200.30	21.77	21.35	7.35	0.42	3.47
07/22/98	106.46	86.46	84.11	2.36	70.00	218.80	218.80	21.77	21.35	7.35	0.42	3.47
07/29/98	103.58	83.58	81.61	2.29	70.00	193.80	193.80	21.77	21.35	7.35	0.42	3.47
08/05/98	99.52	79.52	77.50	2.17	70.00	174.90	174.90	21.77	21.35	7.35	0.42	3.38
08/12/98	97.73	77.73	75.71	2.12	70.00	165.70	165.70	21.77	21.35	7.35	0.42	3.38
08/19/98	98.02	78.02	76.25	2.14	70.00	160.20	160.20	21.77	21.35	7.35	0.42	3.38
08/26/98	93.90	73.90	71.25	2.00	70.00	164.70	164.70	21.77	21.35	7.35	0.42	3.38
09/02/98	93.15	73.15	70.36	1.97	70.00	164.90	164.90	21.77	21.35	7.35	0.42	3.09

**Table B.3: Feeding Margin Data.**

Finished Date	(\$/ton) Total Ration Charge	(\$/ton) Ration Charge	(\$/ton) Corn Cost	(\$/bu) Adjusted Corn Price	(\$/ton) Alfalfa Cost	(\$/ton) Soybean Meal Cost	(\$/ton) Adjusted Soybean Meal Price	(\$) Total Other Cost	(\$) Other Cost	(\$) Yardage Cost	(\$) Interest on Other Cost	(lbs/day) Average Daily Gain
09/09/98	93.55	73.55	70.89	1.99	70.00	163.10	163.10	21.77	21.35	7.35	0.42	3.09
09/16/98	90.09	70.09	66.96	1.88	70.00	158.90	158.90	21.77	21.35	7.35	0.42	3.09
09/23/98	90.58	70.58	67.50	1.89	70.00	160.00	160.00	21.77	21.35	7.35	0.42	3.09
09/30/98	89.29	69.29	66.25	1.86	70.00	152.50	152.50	21.76	21.35	7.35	0.41	2.98
10/07/98	93.15	73.15	71.25	2.00	67.50	149.50	149.50	21.76	21.35	7.35	0.41	2.98
10/14/98	97.55	77.55	75.71	2.12	67.50	169.60	169.60	21.76	21.35	7.35	0.41	2.98
10/21/98	96.72	76.72	74.82	2.10	70.00	157.40	157.40	21.76	21.35	7.35	0.41	2.98
10/28/98	97.72	77.72	75.89	2.13	70.00	160.40	160.40	21.76	21.35	7.35	0.41	2.98
11/04/98	97.45	77.45	75.54	2.12	70.00	161.60	161.60	21.76	21.35	7.35	0.41	3.01
11/11/98	101.68	81.68	80.18	2.25	70.00	171.00	171.00	21.76	21.35	7.35	0.41	3.01
11/18/98	100.29	80.29	78.57	2.20	70.00	170.10	170.10	21.76	21.35	7.35	0.41	3.01
11/25/98	99.18	79.18	77.50	2.17	70.00	163.50	163.50	21.76	21.35	7.35	0.41	3.01
12/02/98	99.33	79.33	77.50	2.17	70.00	168.60	168.60	21.76	21.35	7.35	0.41	3.02
12/09/98	98.40	78.40	76.43	2.14	70.00	167.80	167.80	21.76	21.35	7.35	0.41	3.02
12/16/98	98.32	78.32	76.43	2.14	70.00	165.10	165.10	21.76	21.35	7.35	0.41	3.02
12/23/98	97.89	77.89	75.71	2.12	70.00	171.10	171.10	21.76	21.35	7.35	0.41	3.02
12/30/98	98.37	78.37	76.34	2.14	70.00	169.40	169.40	21.75	21.35	7.35	0.40	3.23
01/06/99	98.86	78.86	76.96	2.16	70.00	167.90	167.90	21.75	21.35	7.35	0.40	3.23
01/13/99	97.53	77.53	75.54	2.12	70.00	164.00	164.00	21.75	21.35	7.35	0.40	3.23
01/20/99	97.79	77.79	76.07	2.13	70.00	157.60	157.60	21.75	21.35	7.35	0.40	3.23
01/27/99	97.48	77.48	76.07	2.13	67.50	157.40	157.40	21.75	21.35	7.35	0.40	3.23
02/03/99	97.93	77.93	76.43	2.14	67.50	162.10	162.10	21.75	21.35	7.35	0.40	3.35
02/10/99	97.12	77.12	76.07	2.13	65.00	155.20	155.20	21.75	21.35	7.35	0.40	3.35
02/17/99	96.71	76.71	75.71	2.12	65.00	151.90	151.90	21.75	21.35	7.35	0.40	3.35
02/24/99	94.14	74.14	72.86	2.04	65.00	146.90	146.90	21.75	21.35	7.35	0.40	3.35
03/03/99	95.64	75.64	74.64	2.09	65.00	146.50	146.50	21.75	21.35	7.35	0.40	3.39
03/10/99	97.90	77.90	77.32	2.17	65.00	145.80	145.80	21.75	21.35	7.35	0.40	3.39
03/17/99	97.88	77.88	77.14	2.16	65.00	150.40	150.40	21.75	21.35	7.35	0.40	3.39
03/24/99	99.79	79.79	79.29	2.22	65.00	153.40	153.40	21.75	21.35	7.35	0.40	3.39
03/31/99	97.47	77.47	76.43	2.14	65.00	156.90	156.90	21.76	21.35	7.35	0.41	3.40
04/07/99	95.91	75.91	75.00	2.10	62.50	155.20	155.20	21.76	21.35	7.35	0.41	3.40
04/14/99	96.53	76.53	75.71	2.12	62.50	155.70	155.70	21.76	21.35	7.35	0.41	3.40
04/21/99	96.57	76.57	75.71	2.12	62.50	157.20	157.20	21.76	21.35	7.35	0.41	3.40
04/28/99	94.01	74.01	73.21	2.05	60.00	152.70	152.70	21.76	21.35	7.35	0.41	3.40
05/05/99	94.67	74.67	73.93	2.07	60.00	154.30	154.30	21.76	21.35	7.35	0.41	3.33
05/12/99	95.90	75.90	75.36	2.11	60.00	154.90	154.90	21.76	21.35	7.35	0.41	3.33
05/19/99	94.47	74.47	73.57	2.06	60.00	157.90	157.90	21.76	21.35	7.35	0.41	3.33
05/26/99	93.71	73.71	72.86	2.04	60.00	152.70	152.70	21.76	21.35	7.35	0.41	3.33
06/02/99	95.47	75.47	75.00	2.10	60.00	150.70	150.70	21.76	21.35	7.35	0.41	3.44
06/09/99	94.76	74.76	73.93	2.07	60.00	157.50	157.50	21.76	21.35	7.35	0.41	3.44
06/16/99	94.31	74.31	73.39	2.06	60.00	157.60	157.60	21.76	21.35	7.35	0.41	3.44
06/23/99	96.00	76.00	75.18	2.11	60.00	163.20	163.20	21.76	21.35	7.35	0.41	3.44
06/30/99	93.57	73.57	72.50	2.03	60.00	158.30	158.30	21.76	21.35	7.35	0.41	3.47
07/07/99	89.40	69.40	67.86	1.90	60.00	150.80	150.80	21.76	21.35	7.35	0.41	3.47
07/14/99	91.61	71.61	70.36	1.97	60.00	153.50	153.50	21.76	21.35	7.35	0.41	3.47
07/21/99	93.99	73.99	73.21	2.05	60.00	152.00	152.00	21.76	21.35	7.35	0.41	3.47
07/28/99	91.50	71.50	70.18	1.97	60.00	155.10	155.10	21.76	21.35	7.35	0.41	3.47
08/04/99	97.61	77.61	76.96	2.16	60.00	166.50	166.50	21.76	21.35	7.35	0.41	3.38

**Table B.3: Feeding Margin Data.**

Finished Date	(\$/ton) Total Ration Charge	(\$/ton) Ration Charge	(\$/ton) Corn Cost	(\$/bu) Adjusted Corn Price	(\$/ton) Alfalfa Cost	(\$/ton) Soybean Meal Cost	(\$/ton) Adjusted Soybean Meal Price	(\$) Total Other Cost	(\$) Other Cost	(\$) Yardage Cost	(\$) Interest on Other Cost	(lbs/day) Average Daily Gain
08/11/99	91.70	71.70	70.00	1.96	60.00	166.80	166.80	21.76	21.35	7.35	0.41	3.38
08/18/99	94.14	74.14	73.21	2.05	60.00	157.00	157.00	21.76	21.35	7.35	0.41	3.38
08/25/99	90.42	70.42	68.93	1.93	60.00	154.30	154.30	21.76	21.35	7.35	0.41	3.38
09/01/99	93.27	73.27	72.14	2.02	60.00	158.30	158.30	21.76	21.35	7.35	0.41	3.09
09/08/99	93.22	73.22	71.61	2.01	60.00	171.90	171.90	21.76	21.35	7.35	0.41	3.09
09/15/99	91.18	71.18	69.46	1.95	60.00	164.65	164.65	21.76	21.35	7.35	0.41	3.09
09/22/99	89.41	69.41	67.68	1.90	58.00	164.10	164.10	21.76	21.35	7.35	0.41	3.09
09/29/99	89.46	69.46	67.68	1.90	58.00	165.70	165.70	21.77	21.35	7.35	0.42	2.98
10/06/99	88.88	68.88	66.96	1.88	58.00	166.80	166.80	21.77	21.35	7.35	0.42	2.98
10/13/99	87.91	67.91	65.54	1.84	58.00	174.80	174.80	21.77	21.35	7.35	0.42	2.98
10/20/99	87.62	67.62	65.18	1.83	58.00	175.40	175.40	21.77	21.35	7.35	0.42	2.98
10/27/99	88.42	68.42	66.07	1.85	60.00	168.70	168.70	21.77	21.35	7.35	0.42	2.98
11/03/99	90.30	70.30	68.21	1.91	60.00	170.50	170.50	21.77	21.35	7.35	0.42	3.01
11/10/99	90.16	70.16	67.86	1.90	60.00	176.10	176.10	21.77	21.35	7.35	0.42	3.01
11/17/99	90.38	70.38	68.21	1.91	60.00	173.30	173.30	21.77	21.35	7.35	0.42	3.01
11/24/99	90.53	70.53	68.57	1.92	60.00	168.00	168.00	21.77	21.35	7.35	0.42	3.01
12/01/99	89.55	69.55	67.68	1.90	58.00	168.70	168.70	21.77	21.35	7.35	0.42	3.02
12/08/99	87.91	67.91	65.71	1.84	58.00	169.80	169.80	21.77	21.35	7.35	0.42	3.02
12/15/99	89.16	69.16	67.14	1.88	60.00	163.10	163.10	21.77	21.35	7.35	0.42	3.02
12/22/99	91.05	71.05	69.29	1.94	60.00	165.30	165.30	21.77	21.35	7.35	0.42	3.02
12/29/99	91.35	71.35	69.64	1.95	60.00	165.00	165.00	21.77	21.35	7.35	0.42	3.02
01/05/00	91.25	71.25	69.46	1.95	60.00	166.90	166.90	21.78	21.35	7.35	0.43	3.23
01/12/00	95.97	75.97	75.00	2.10	60.00	167.20	167.20	21.78	21.35	7.35	0.43	3.23
01/19/00	96.22	76.22	75.00	2.10	60.00	175.80	175.80	21.78	21.35	7.35	0.43	3.23
01/26/00	97.80	77.80	76.79	2.15	60.00	177.75	177.75	21.78	21.35	7.35	0.43	3.23
02/02/00	95.89	75.89	74.29	2.08	62.50	175.00	175.00	21.78	21.35	7.35	0.43	3.35
02/09/00	98.65	78.65	77.14	2.16	65.00	176.00	176.00	21.78	21.35	7.35	0.43	3.35
02/16/00	97.88	77.88	75.54	2.12	67.50	185.80	185.80	21.78	21.35	7.35	0.43	3.35
02/23/00	96.92	76.92	73.93	2.07	70.00	189.40	189.40	21.78	21.35	7.35	0.43	3.35
03/01/00	97.40	77.40	74.64	2.09	70.00	185.00	185.00	21.78	21.35	7.35	0.43	3.39
03/08/00	98.53	78.53	75.89	2.13	70.00	187.50	187.50	21.78	21.35	7.35	0.43	3.39
03/15/00	101.16	81.16	78.75	2.21	70.00	194.10	194.10	21.78	21.35	7.35	0.43	3.39
03/22/00	99.48	79.48	76.96	2.16	70.00	188.60	188.60	21.78	21.35	7.35	0.43	3.39
03/29/00	100.31	80.31	78.04	2.19	70.00	186.10	186.10	21.78	21.35	7.35	0.43	3.39
04/05/00	98.47	78.47	75.89	2.13	70.00	185.50	185.50	21.79	21.35	7.35	0.44	3.40
04/12/00	98.93	78.93	76.43	2.14	70.00	185.60	185.60	21.79	21.35	7.35	0.44	3.40
04/19/00	99.11	79.11	76.61	2.15	70.00	186.60	186.60	21.79	21.35	7.35	0.44	3.40
04/26/00	100.06	80.06	77.14	2.16	72.50	193.10	193.10	21.79	21.35	7.35	0.44	3.40
05/03/00	106.08	86.08	83.93	2.35	72.50	201.30	201.30	21.79	21.35	7.35	0.44	3.33
05/10/00	104.86	84.86	82.50	2.31	72.50	201.00	201.00	21.79	21.35	7.35	0.44	3.33
05/17/00	103.19	83.19	80.54	2.26	72.50	201.20	201.20	21.79	21.35	7.35	0.44	3.33
05/24/00	101.42	81.42	78.39	2.20	72.50	203.00	203.00	21.79	21.35	7.35	0.44	3.33
05/31/00	100.77	80.77	77.86	2.18	72.50	196.30	196.30	21.79	21.35	7.35	0.44	3.44
06/07/00	101.09	81.09	78.04	2.19	72.50	201.90	201.90	21.79	21.35	7.35	0.44	3.44
06/14/00	98.76	78.76	75.18	2.11	72.50	205.30	205.30	21.79	21.35	7.35	0.44	3.44
06/21/00	98.94	78.94	75.36	2.11	75.00	196.05	196.05	21.79	21.35	7.35	0.44	3.44
06/28/00	97.01	77.01	73.04	2.05	75.00	197.80	197.80	21.79	21.35	7.35	0.44	3.44
07/05/00	93.57	73.57	69.29	1.94	75.00	189.40	189.40	21.80	21.35	7.35	0.45	3.47

**Table B.3: Feeding Margin Data.**

Finished Date	(\$/ton) Total Ration Charge	(\$/ton) Ration Charge	(\$/ton) Corn Cost	(\$/bu) Adjusted Corn Price	(\$/ton) Alfalfa Cost	(\$/ton) Soybean Meal Cost	(\$/ton) Adjusted Soybean Meal Price	(\$) Total Other Cost	(\$) Other Cost	(\$) Yardage Cost	(\$) Interest on Other Cost	(lbs/day) Average Daily Gain
07/12/00	93.82	73.82	69.64	1.95	75.00	187.50	187.50	21.80	21.35	7.35	0.45	3.47
07/19/00	93.76	73.76	69.82	1.96	75.00	180.30	180.30	21.80	21.35	7.35	0.45	3.47
07/26/00	91.31	71.31	67.14	1.88	75.00	174.50	174.50	21.80	21.35	7.35	0.45	3.47
08/02/00	91.03	71.03	66.61	1.87	77.50	170.50	170.50	21.80	21.35	7.35	0.45	3.38
08/09/00	90.37	70.37	65.54	1.84	80.00	168.90	168.90	21.80	21.35	7.35	0.45	3.38
08/16/00	91.22	71.22	66.25	1.86	80.00	176.80	176.80	21.80	21.35	7.35	0.45	3.38
08/23/00	90.36	70.36	65.18	1.83	80.00	178.60	178.60	21.80	21.35	7.35	0.45	3.38
08/30/00	92.49	72.49	67.14	1.88	80.00	193.90	193.90	21.80	21.35	7.35	0.45	3.09
09/06/00	91.61	71.61	66.07	1.85	80.00	195.00	195.00	21.80	21.35	7.35	0.45	3.09
09/13/00	91.85	71.85	65.71	1.84	85.00	193.00	193.00	21.80	21.35	7.35	0.45	3.09
09/20/00	91.90	71.90	65.71	1.84	85.00	194.60	194.60	21.80	21.35	7.35	0.45	3.09
09/27/00	94.89	74.89	68.39	1.92	90.00	198.50	198.50	21.80	21.35	7.35	0.45	3.09
10/04/00	98.99	78.99	73.21	2.05	90.00	198.50	198.50	21.79	21.35	7.35	0.44	2.98
10/11/00	101.55	81.55	75.71	2.12	95.00	193.20	193.20	21.79	21.35	7.35	0.44	2.98
10/18/00	103.00	83.00	76.79	2.15	100.00	191.20	191.20	21.79	21.35	7.35	0.44	2.98
10/25/00	102.80	82.80	76.07	2.13	102.50	194.70	194.70	21.79	21.35	7.35	0.44	2.98
11/01/00	106.24	86.24	79.82	2.24	105.00	193.10	193.10	21.79	21.35	7.35	0.44	3.01
11/08/00	107.84	87.84	80.89	2.27	110.00	195.90	195.90	21.79	21.35	7.35	0.44	3.01
11/15/00	106.19	86.19	79.11	2.22	110.00	191.70	191.70	21.79	21.35	7.35	0.44	3.01
11/22/00	106.69	86.69	79.46	2.23	110.00	198.30	198.30	21.79	21.35	7.35	0.44	3.01
11/29/00	107.42	87.42	79.64	2.23	112.50	207.40	207.40	21.79	21.35	7.35	0.44	3.02
12/06/00	106.41	86.41	78.04	2.19	115.00	209.20	209.20	21.79	21.35	7.35	0.44	3.02
12/13/00	108.29	88.29	80.00	2.24	116.00	212.30	212.30	21.79	21.35	7.35	0.44	3.02
12/20/00	110.58	90.58	82.50	2.31	117.00	213.90	213.90	21.79	21.35	7.35	0.44	3.02
12/27/00	111.96	91.96	83.93	2.35	117.00	219.50	219.50	21.79	21.35	7.35	0.44	3.02
01/03/01	111.87	91.87	83.93	2.35	117.00	216.30	216.30	21.76	21.35	7.35	0.41	3.23
01/10/01	109.60	89.60	81.43	2.28	117.00	211.55	211.55	21.76	21.35	7.35	0.41	3.23
01/17/01	107.81	87.81	79.64	2.23	117.00	202.40	202.40	21.76	21.35	7.35	0.41	3.23
01/24/01	106.47	86.47	78.21	2.19	117.00	198.10	198.10	21.76	21.35	7.35	0.41	3.23
01/31/01	106.00	86.00	77.86	2.18	117.50	190.80	190.80	21.76	21.35	7.35	0.41	3.35
02/07/01	105.58	85.58	77.50	2.17	117.50	186.70	186.70	21.76	21.35	7.35	0.41	3.35
02/14/01	106.79	86.79	78.93	2.21	117.50	186.70	186.70	21.76	21.35	7.35	0.41	3.35
02/21/01	107.05	87.05	79.29	2.22	117.50	185.30	185.30	21.76	21.35	7.35	0.41	3.35
02/28/01	110.51	90.51	83.21	2.33	120.00	179.20	179.20	21.76	21.35	7.35	0.41	3.39
03/07/01	109.63	89.63	81.79	2.29	122.50	180.40	180.40	21.76	21.35	7.35	0.41	3.39
03/14/01	109.16	89.16	81.07	2.27	125.00	175.10	175.10	21.76	21.35	7.35	0.41	3.39
03/21/01	105.45	85.45	76.43	2.14	127.50	173.00	173.00	21.76	21.35	7.35	0.41	3.39
03/28/01	106.53	86.53	77.14	2.16	130.00	178.60	178.60	21.76	21.35	7.35	0.41	3.39
04/04/01	108.90	88.90	80.00	2.24	130.00	176.80	176.80	21.74	21.35	7.35	0.39	3.40
04/11/01	108.86	88.86	79.82	2.24	130.00	180.30	180.30	21.74	21.35	7.35	0.39	3.40
04/18/01	106.68	86.68	77.32	2.17	130.00	178.70	178.70	21.74	21.35	7.35	0.39	3.40
04/25/01	105.65	85.65	76.07	2.13	130.00	179.50	179.50	21.74	21.35	7.35	0.39	3.40
05/02/01	105.35	85.35	76.43	2.14	125.00	179.60	179.60	21.74	21.35	7.35	0.39	3.33
05/09/01	101.83	81.83	72.68	2.04	122.50	178.60	178.60	21.74	21.35	7.35	0.39	3.33
05/16/01	102.57	82.57	73.75	2.07	120.00	182.70	182.70	21.74	21.35	7.35	0.39	3.33
05/23/01	101.34	81.34	72.86	2.04	115.00	187.10	187.10	21.74	21.35	7.35	0.39	3.33
05/30/01	101.09	81.09	73.21	2.05	110.00	188.50	188.50	21.74	21.35	7.35	0.39	3.44
06/06/01	102.44	82.44	76.07	2.13	100.00	192.60	192.60	21.74	21.35	7.35	0.39	3.44

**Table B.3: Feeding Margin Data.**

Finished Date	(\$/ton) Total Ration Charge	(\$/ton) Ration Charge	(\$/ton) Corn Cost	(\$/bu) Adjusted Corn Price	(\$/ton) Alfalfa Cost	(\$/ton) Soybean Meal Cost	(\$/ton) Adjusted Soybean Meal Price	(\$) Total Other Cost	(\$) Other Cost	(\$) Yardage Cost	(\$) Interest on Other Cost	(lbs/day) Average Daily Gain
06/13/01	101.57	81.57	75.18	2.11	97.50	198.90	198.90	21.74	21.35	7.35	0.39	3.44
06/20/01	99.60	79.60	73.04	2.05	97.50	194.10	194.10	21.74	21.35	7.35	0.39	3.44
06/27/01	100.20	80.20	73.93	2.07	97.50	188.70	188.70	21.74	21.35	7.35	0.39	3.44
07/03/01	103.41	83.41	77.32	2.17	97.50	199.40	199.40	21.71	21.35	7.35	0.36	3.47
07/11/01	112.73	92.73	88.21	2.47	97.50	201.70	201.70	21.71	21.35	7.35	0.36	3.47
07/18/01	107.79	87.79	82.14	2.30	100.00	198.90	198.90	21.71	21.35	7.35	0.36	3.47
07/25/01	108.16	88.16	82.68	2.32	100.00	196.20	196.20	21.71	21.35	7.35	0.36	3.47
08/01/01	106.93	86.93	80.36	2.25	105.00	201.00	201.00	21.71	21.35	7.35	0.36	3.38
08/08/01	108.14	88.14	81.96	2.30	105.00	195.70	195.70	21.71	21.35	7.35	0.36	3.38
08/15/01	107.85	87.85	81.25	2.28	107.50	196.40	196.40	21.71	21.35	7.35	0.36	3.38
08/22/01	108.80	88.80	82.50	2.31	107.50	192.50	192.50	21.71	21.35	7.35	0.36	3.38
08/29/01	109.33	89.33	83.39	2.34	107.50	185.00	185.00	21.71	21.35	7.35	0.36	3.38
09/05/01	109.24	89.24	82.68	2.32	110.00	192.20	192.20	21.71	21.35	7.35	0.36	3.09
09/12/01	111.37	91.37	84.64	2.37	112.50	197.45	197.45	21.71	21.35	7.35	0.36	3.09
09/19/01	109.40	89.40	81.79	2.29	115.00	202.70	202.70	21.71	21.35	7.35	0.36	3.09
09/26/01	110.67	90.67	83.39	2.34	115.00	199.60	199.60	21.71	21.35	7.35	0.36	3.09
10/03/01	109.46	89.46	82.32	2.31	115.00	189.50	189.50	21.69	21.35	7.35	0.34	2.98
10/10/01	111.13	91.13	83.93	2.35	117.50	189.60	189.60	21.69	21.35	7.35	0.34	2.98
10/17/01	108.65	88.65	81.25	2.28	117.50	183.00	183.00	21.69	21.35	7.35	0.34	2.98
10/24/01	109.21	89.21	81.96	2.30	117.50	181.50	181.50	21.69	21.35	7.35	0.34	2.98
10/31/01	108.53	88.53	80.89	2.27	117.50	189.20	189.20	21.69	21.35	7.35	0.34	3.01
11/07/01	108.41	88.41	80.54	2.26	119.00	189.00	189.00	21.69	21.35	7.35	0.34	3.01
11/14/01	109.57	89.57	81.96	2.30	119.00	187.50	187.50	21.69	21.35	7.35	0.34	3.01
11/21/01	110.45	90.45	83.04	2.33	119.00	186.40	186.40	21.69	21.35	7.35	0.34	3.01
11/28/01	107.72	87.72	79.82	2.24	120.00	182.40	182.40	21.69	21.35	7.35	0.34	3.01
12/05/01	110.52	90.52	83.57	2.34	117.50	179.40	179.40	21.69	21.35	7.35	0.34	3.02
12/12/01	109.56	89.56	82.86	2.32	116.50	171.80	171.80	21.69	21.35	7.35	0.34	3.02
12/19/01	108.65	88.65	81.79	2.29	116.50	171.60	171.60	21.69	21.35	7.35	0.34	3.02
12/26/01	108.02	88.02	81.25	2.28	115.00	172.00	172.00	21.69	21.35	7.35	0.34	3.02
01/02/02	108.28	88.28	81.61	2.29	115.00	170.60	170.60	21.68	21.35	7.35	0.33	3.23
01/09/02	108.17	88.17	81.25	2.28	115.00	176.96	176.96	21.68	21.35	7.35	0.33	3.23
01/16/02	109.76	89.76	82.68	2.32	114.00	193.55	193.55	21.68	21.35	7.35	0.33	3.23
01/23/02	107.99	87.99	81.25	2.28	112.50	180.78	180.78	21.68	21.35	7.35	0.33	3.23
01/30/02	106.50	86.50	79.82	2.24	110.00	181.64	181.64	21.68	21.35	7.35	0.33	3.35
02/06/02	105.45	85.45	79.46	2.23	105.00	176.94	176.94	21.68	21.35	7.35	0.33	3.35
02/13/02	105.25	85.25	80.18	2.25	100.00	169.96	169.96	21.68	21.35	7.35	0.33	3.35
02/20/02	105.19	85.19	80.18	2.25	97.50	177.80	177.80	21.68	21.35	7.35	0.33	3.35
02/27/02	103.58	83.58	78.39	2.20	97.50	174.71	174.71	21.68	21.35	7.35	0.33	3.39
03/06/02	103.49	83.49	78.21	2.19	97.50	176.78	176.78	21.68	21.35	7.35	0.33	3.39
03/13/02	103.62	83.62	78.21	2.19	97.50	181.38	181.38	21.68	21.35	7.35	0.33	3.39
03/20/02	103.00	83.00	77.50	2.17	97.50	180.93	180.93	21.68	21.35	7.35	0.33	3.39
03/27/02	102.22	82.22	76.43	2.14	97.50	185.25	185.25	21.68	21.35	7.35	0.33	3.39
04/03/02	101.93	81.93	76.61	2.15	95.00	180.57	180.57	21.71	21.35	7.35	0.36	3.40
04/10/02	100.82	80.82	75.54	2.12	95.00	173.94	173.94	21.71	21.35	7.35	0.36	3.40
04/17/02	100.95	80.95	75.36	2.11	95.00	183.21	183.21	21.71	21.35	7.35	0.36	3.40
04/24/02	101.06	81.06	75.36	2.11	95.00	186.94	186.94	21.71	21.35	7.35	0.36	3.40
05/01/02	100.46	80.46	75.18	2.11	92.50	181.94	181.94	21.71	21.35	7.35	0.36	3.33
05/08/02	101.89	81.89	76.96	2.16	92.50	178.89	178.89	21.71	21.35	7.35	0.36	3.33

**Table B.3: Feeding Margin Data.**

	(\$/ton)	(\$/ton)	(\$/ton)	(\$/bu)	(\$/ton)	(\$/ton)	(\$/ton)	(\$)	(\$)	(\$)	(\$)	(lbs/day)
<b>Finished</b>	<b>Total</b>	<b>Ration</b>	<b>Corn</b>	<b>Adjusted</b>	<b>Alfalfa</b>	<b>Soybean</b>	<b>Adjusted</b>	<b>Total</b>	<b>Other</b>	<b>Yardage</b>	<b>Interest on</b>	<b>Average</b>
<b>Date</b>	<b>Charge</b>	<b>Charge</b>	<b>Cost</b>	<b>Corn Price</b>	<b>Cost</b>	<b>Meal Cost</b>	<b>Soybean Meal Price</b>	<b>Other Cost</b>	<b>Cost</b>	<b>Cost</b>	<b>Other Cost</b>	<b>Daily Gain</b>
05/15/02	104.70	84.70	80.36	2.25	90.00	186.61	186.61	21.71	21.35	7.35	0.36	3.33
05/22/02	102.63	82.63	78.57	2.20	87.50	178.03	178.03	21.71	21.35	7.35	0.36	3.33
05/29/02	104.06	84.06	80.36	2.25	85.00	185.20	185.20	21.71	21.35	7.35	0.36	3.33
06/05/02	103.56	83.56	78.93	2.21	90.00	188.98	188.98	21.71	21.35	7.35	0.36	3.44
06/12/02	104.51	84.51	80.00	2.24	90.00	190.19	190.19	21.71	21.35	7.35	0.36	3.44
06/19/02	104.61	84.61	79.64	2.23	92.50	193.83	193.83	21.71	21.35	7.35	0.36	3.44
06/26/02	111.23	91.23	86.79	2.43	95.00	202.08	202.08	21.71	21.35	7.35	0.36	3.44



**Table B.3: Feeding Margin Data.**

Finished Date	(lbs gain/lbs feed)	(APR)	(\$/bu)	(\$/ton)	(\$/ton)	(\$/lb)	(\$/cwt)
	Feed Conversion	Feeder Cattle Loan Rate	Corn Price	Alfalfa Price	Soybean Meal Price	Feeder Cattle Price	Fed Cattle Price
05/30/90	7.93	0.1207	2.59	76.00	184.10	0.8763	77.31
06/06/90	7.93	0.1207	2.66	71.00	170.30	0.8963	76.98
06/13/90	7.93	0.1207	2.69	67.00	174.30	0.9075	77.23
06/20/90	7.93	0.1207	2.70	64.00	174.90	0.9050	77.40
06/27/90	7.93	0.1207	2.78	64.00	181.10	0.8900	75.33
07/03/90	7.96	0.1206	2.74	64.00	193.70	0.8983	74.16
07/11/90	7.96	0.1206	2.69	64.00	182.80	0.9065	74.06
07/18/90	7.96	0.1206	2.64	64.00	175.50	0.9050	75.73
07/25/90	7.96	0.1206	2.71	66.50	176.40	0.9000	77.15
08/01/90	8.15	0.1206	2.61	68.50	175.00	0.9288	77.38
08/08/90	8.15	0.1206	2.58	71.00	178.90	0.9125	77.63
08/15/90	8.15	0.1206	2.56	73.00	178.40	0.9200	78.80
08/22/90	8.15	0.1206	2.64	73.00	175.80	0.9050	77.90
08/29/90	8.15	0.1206	2.41	73.00	182.70	0.8970	76.55
09/05/90	8.79	0.1206	2.23	73.00	176.40	0.8980	75.94
09/12/90	8.79	0.1206	2.10	73.00	187.50	0.9100	77.95
09/19/90	8.79	0.1206	2.08	73.00	183.80	0.9120	79.33
09/26/90	8.79	0.1206	2.10	72.50	178.30	0.8913	79.50
10/03/90	9.01	0.1192	2.13	72.00	174.00	0.9113	80.25
10/10/90	9.01	0.1192	2.13	72.00	190.50	0.8730	79.44
10/17/90	9.01	0.1192	2.10	71.00	178.70	0.8705	79.55
10/24/90	9.01	0.1192	2.13	71.50	174.70	0.8963	80.45
10/31/90	8.91	0.1192	2.13	72.00	169.20	0.9050	81.25
11/07/90	8.91	0.1192	2.18	72.00	162.10	0.8975	80.98
11/14/90	8.91	0.1192	2.13	72.50	164.80	0.9000	81.50
11/21/90	8.91	0.1192	2.13	72.50	167.10	0.9050	82.22
11/28/90	8.91	0.1192	2.24	72.50	168.00	0.9200	81.95
12/05/90	8.70	0.1192	2.22	72.50	174.80	0.9350	80.75
12/12/90	8.70	0.1192	2.21	73.00	170.70	0.9388	81.85
12/19/90	8.70	0.1192	2.21	73.00	172.20	0.9250	81.35
12/26/90	8.70	0.1192	2.20	77.00	162.90	0.9275	81.16
01/02/91	8.14	0.1153	2.19	85.00	157.80	0.9300	80.75
01/09/91	8.14	0.1153	2.20	85.50	157.80	0.9175	80.25
01/16/91	8.14	0.1153	2.28	86.00	155.50	0.9025	78.35
01/23/91	8.14	0.1153	2.28	86.50	164.00	0.9150	78.95
01/30/91	7.94	0.1153	2.31	87.00	160.90	0.8975	79.60
02/06/91	7.94	0.1153	2.26	87.00	164.00	0.9063	79.73
02/13/91	7.94	0.1153	2.26	87.00	166.20	0.9163	79.50
02/20/91	7.94	0.1153	2.26	86.50	174.20	0.9138	79.80
02/27/91	7.92	0.1153	2.30	86.50	176.10	0.9150	80.40
03/06/91	7.92	0.1153	2.35	86.00	176.90	0.9213	81.45
03/13/91	7.92	0.1153	2.39	86.00	173.30	0.9150	82.25
03/20/91	7.92	0.1153	2.37	86.00	168.30	0.8888	81.55
03/27/91	7.92	0.1153	2.39	86.00	167.70	0.9075	80.40
04/03/91	7.88	0.1129	2.47	86.00	174.50	0.9150	82.05
04/10/91	7.88	0.1129	2.48	86.00	166.60	0.9225	81.88
04/17/91	7.88	0.1129	2.47	86.00	174.60	0.9000	80.78
04/24/91	7.88	0.1129	2.51	86.00	176.40	0.9000	80.25

**Table B.3: Feeding Margin Data.**

Finished Date	(lbs gain/lbs feed)	(APR)	(\$/bu)	(\$/ton)	(\$/ton)	(\$/lb)	(\$/cwt)
	Feed Conversion	Feeder Cattle Loan Rate	Corn Price	Alfalfa Price	Soybean Meal Price	Feeder Cattle Price	Fed Cattle Price
05/01/91	7.97	0.1129	2.44	86.00	173.60	0.9050	80.33
05/08/91	7.97	0.1129	2.44	85.00	170.40	0.9050	79.53
05/15/91	7.97	0.1129	2.47	84.00	170.40	0.9038	78.50
05/22/91	7.97	0.1129	2.53	83.00	175.00	0.8963	77.25
05/29/91	7.97	0.1129	2.48	78.00	173.80	0.8950	77.75
06/05/91	7.93	0.1129	2.49	77.00	175.30	0.9200	76.60
06/12/91	7.93	0.1129	2.48	76.00	175.70	0.9175	75.05
06/19/91	7.93	0.1129	2.49	75.00	174.50	0.9188	74.08
06/26/91	7.93	0.1129	2.47	75.00	175.40	0.9195	72.38
07/03/91	7.96	0.1098	2.47	75.00	167.40	0.9280	72.56
07/10/91	7.96	0.1098	2.41	74.50	167.10	0.9263	73.05
07/17/91	7.96	0.1098	2.49	75.00	174.20	0.9130	73.00
07/24/91	7.96	0.1098	2.56	75.50	185.50	0.9283	72.70
07/31/91	8.15	0.1098	2.61	76.00	186.10	0.8900	69.93
08/07/91	8.15	0.1098	2.46	76.00	183.50	0.8550	65.65
08/14/91	8.15	0.1098	2.37	75.50	178.00	0.8650	65.75
08/21/91	8.15	0.1098	2.45	75.00	170.60	0.8813	69.55
08/28/91	8.15	0.1098	2.37	75.00	187.50	0.8675	68.40
09/04/91	8.79	0.1098	2.37	75.00	190.00	0.8550	67.06
09/11/91	8.79	0.1098	2.39	75.00	187.00	0.8500	68.70
09/18/91	8.79	0.1098	2.39	75.00	201.50	0.8755	68.75
09/25/91	8.79	0.1098	2.32	75.00	193.00	0.8688	72.20
10/02/91	9.01	0.1022	2.38	74.50	195.20	0.8725	72.30
10/09/91	9.01	0.1022	2.36	74.50	189.30	0.8558	70.25
10/16/91	9.01	0.1022	2.35	74.50	179.00	0.8708	71.25
10/23/91	9.01	0.1022	2.41	74.50	180.50	0.8650	71.60
10/30/91	8.91	0.1022	2.47	74.50	178.50	0.8638	69.25
11/06/91	8.91	0.1022	2.35	74.50	178.90	0.8300	69.65
11/13/91	8.91	0.1022	2.37	74.50	174.20	0.8475	72.80
11/20/91	8.91	0.1022	2.35	74.50	179.90	0.8600	73.70
11/27/91	8.91	0.1022	2.34	74.50	180.00	0.8375	72.81
12/04/91	8.70	0.1022	2.36	75.00	176.60	0.8125	71.83
12/11/91	8.70	0.1022	2.38	75.00	173.10	0.8013	71.15
12/18/91	8.70	0.1022	2.42	75.00	173.80	0.7875	69.35
12/24/91	8.70	0.1022	2.44	75.00	176.70	0.7927	68.63
12/31/91	8.14	0.0992	2.40	75.00	173.20	0.7980	70.50
01/08/92	8.14	0.0992	2.43	75.00	170.90	0.8032	72.70
01/15/92	8.14	0.0992	2.49	75.00	172.30	0.8025	74.90
01/22/92	8.14	0.0992	2.52	74.00	177.60	0.8044	74.45
01/29/92	8.14	0.0992	2.57	73.00	177.60	0.8176	74.80
02/05/92	7.94	0.0992	2.59	72.00	176.50	0.8225	76.30
02/12/92	7.94	0.0992	2.56	70.00	174.50	0.8194	78.35
02/19/92	7.94	0.0992	2.57	70.00	171.50	0.8119	77.60
02/26/92	7.94	0.0992	2.58	70.00	177.00	0.8069	76.35
03/04/92	7.92	0.0992	2.64	70.00	177.40	0.8119	77.00
03/11/92	7.92	0.0992	2.64	70.00	177.30	0.7963	79.35
03/18/92	7.92	0.0992	2.63	69.00	175.60	0.7969	78.50
03/25/92	7.92	0.0992	2.69	68.00	176.20	0.7907	78.10

**Table B.3: Feeding Margin Data.**

Finished Date	(lbs gain/lbs feed)	(APR)	(\$/bu)	(\$/ton)	(\$/ton)	(\$/lb)	(\$/cwt)
	Feed Conversion	Feeder Cattle Loan Rate	Corn Price	Alfalfa Price	Soybean Meal Price	Feeder Cattle Price	Fed Cattle Price
04/01/92	7.88	0.0974	2.58	67.50	176.70	0.8032	79.00
04/08/92	7.88	0.0974	2.56	66.00	172.70	0.7894	79.50
04/15/92	7.88	0.0974	2.59	66.00	174.80	0.7832	77.95
04/22/92	7.88	0.0974	2.59	66.00	179.80	0.7713	76.60
04/29/92	7.97	0.0974	2.55	65.50	177.10	0.7807	76.80
05/06/92	7.97	0.0974	2.68	65.00	179.60	0.7869	77.15
05/13/92	7.97	0.0974	2.69	65.00	186.50	0.7944	77.15
05/20/92	7.97	0.0974	2.59	65.00	188.20	0.7800	75.23
05/27/92	7.97	0.0974	2.64	65.00	183.00	0.7913	73.75
06/03/92	7.93	0.0974	2.70	64.00	186.70	0.8176	73.65
06/10/92	7.93	0.0974	2.69	64.00	187.55	0.8194	74.20
06/17/92	7.93	0.0974	2.60	64.00	182.50	0.8334	73.95
06/24/92	7.93	0.0974	2.69	63.00	185.00	0.8213	72.43
07/01/92	7.96	0.0936	2.65	64.00	181.60	0.8326	72.84
07/08/92	7.96	0.0936	2.56	65.00	176.90	0.8394	72.65
07/15/92	7.96	0.0936	2.49	65.00	178.90	0.8388	73.95
07/22/92	7.96	0.0936	2.40	65.00	180.00	0.8325	72.88
07/29/92	7.96	0.0936	2.37	65.00	180.60	0.8213	72.10
08/05/92	8.15	0.0936	2.31	65.50	179.10	0.8476	73.55
08/12/92	8.15	0.0936	2.33	66.50	178.70	0.8627	74.65
08/19/92	8.15	0.0936	2.35	66.50	179.80	0.8569	74.35
08/26/92	8.15	0.0936	2.34	67.00	182.75	0.8385	74.53
09/02/92	8.79	0.0936	2.34	67.00	181.50	0.8350	73.65
09/09/92	8.79	0.0936	2.21	67.00	184.00	0.8475	74.56
09/16/92	8.79	0.0936	2.07	67.50	176.60	0.8487	75.70
09/23/92	8.79	0.0936	2.06	67.50	173.90	0.8463	75.55
09/30/92	9.01	0.0921	2.04	68.00	173.50	0.8353	75.38
10/07/92	9.01	0.0921	1.99	68.00	171.60	0.8463	75.45
10/14/92	9.01	0.0921	2.00	68.00	170.40	0.8544	76.60
10/21/92	9.01	0.0921	2.00	68.00	175.20	0.8532	76.48
10/28/92	9.01	0.0921	1.99	69.00	172.80	0.8416	75.80
11/04/92	8.91	0.0921	2.00	69.00	173.50	0.8419	75.05
11/11/92	8.91	0.0921	2.05	70.00	167.70	0.8511	74.75
11/18/92	8.91	0.0921	2.15	70.00	172.70	0.8557	75.75
11/25/92	8.91	0.0921	2.17	71.00	173.90	0.8100	76.75
12/02/92	8.70	0.0921	2.18	75.00	171.70	0.8301	77.33
12/09/92	8.70	0.0921	2.19	77.50	176.00	0.8444	77.65
12/16/92	8.70	0.0921	2.20	82.50	185.80	0.8563	78.68
12/23/92	8.70	0.0921	2.19	82.50	190.40	0.8603	77.94
12/30/92	8.14	0.0904	2.15	82.50	186.70	0.8700	77.19
01/06/93	8.14	0.0904	2.18	85.00	183.90	0.8782	77.95
01/13/93	8.14	0.0904	2.17	85.00	181.80	0.8755	80.45
01/20/93	8.14	0.0904	2.21	85.00	179.10	0.8819	80.70
01/27/93	8.14	0.0904	2.19	85.00	176.60	0.8601	79.16
02/03/93	7.94	0.0904	2.17	86.00	169.40	0.8619	78.40
02/10/93	7.94	0.0904	2.19	85.00	168.20	0.8625	80.44
02/17/93	7.94	0.0904	2.21	85.00	168.00	0.8476	81.31
02/24/93	7.94	0.0904	2.20	85.00	169.40	0.8332	80.35

**Table B.3: Feeding Margin Data.**

	(lbs gain/lbs feed)	(APR)	(\$/bu)	(\$/ton)	(\$/ton)	(\$/lb)	(\$/cwt)
Finished	Feed	Feeder	Corn	Alfalfa	Soybean	Feeder	Fed
Date	Conversion	Cattle Loan Rate	Price	Price	Meal Price	Cattle Price	Cattle Price
03/03/93	7.92	0.0904	2.24	85.00	173.80	0.8457	79.85
03/10/93	7.92	0.0904	2.24	85.00	170.70	0.8475	80.95
03/17/93	7.92	0.0904	2.28	85.00	173.30	0.8680	83.10
03/24/93	7.92	0.0904	2.32	85.00	178.50	0.8742	85.35
03/31/93	7.88	0.0894	2.34	86.00	178.60	0.8663	83.30
04/07/93	7.88	0.0894	2.34	86.00	179.40	0.8463	81.75
04/14/93	7.88	0.0894	2.34	86.00	179.80	0.8726	82.45
04/21/93	7.88	0.0894	2.28	86.00	178.80	0.8794	81.75
04/28/93	7.88	0.0894	2.26	85.00	180.10	0.8857	82.18
05/05/93	7.97	0.0894	2.29	85.00	180.60	0.8932	82.40
05/12/93	7.97	0.0894	2.27	84.00	186.70	0.8894	82.25
05/19/93	7.97	0.0894	2.25	84.00	186.80	0.8860	80.63
05/26/93	7.97	0.0894	2.22	80.00	186.60	0.8865	78.25
06/02/93	7.93	0.0894	2.16	75.00	179.70	0.8801	76.50
06/09/93	7.93	0.0894	2.15	75.00	180.60	0.9051	78.35
06/16/93	7.93	0.0894	2.13	75.00	178.40	0.9001	77.90
06/23/93	7.93	0.0894	2.19	75.00	187.00	0.8964	76.00
06/30/93	7.96	0.0879	2.34	74.00	190.00	0.9054	75.78
07/07/93	7.96	0.0879	2.40	73.00	211.80	0.9150	75.66
07/14/93	7.96	0.0879	2.33	73.00	215.80	0.9094	73.65
07/21/93	7.96	0.0879	2.43	73.00	235.50	0.8857	72.55
07/28/93	7.96	0.0879	2.43	75.00	231.50	0.8969	74.35
08/04/93	8.15	0.0879	2.42	75.00	224.00	0.9158	75.80
08/11/93	8.15	0.0879	2.41	77.50	206.00	0.8988	76.38
08/18/93	8.15	0.0879	2.38	80.00	208.50	0.8804	75.05
08/25/93	8.15	0.0879	2.33	81.00	206.00	0.8801	73.60
09/01/93	8.79	0.0879	2.24	82.50	198.50	0.8857	74.00
09/08/93	8.79	0.0879	2.25	83.00	193.80	0.8969	75.13
09/15/93	8.79	0.0879	2.28	83.00	185.00	0.8826	74.40
09/22/93	8.79	0.0879	2.38	84.00	186.80	0.8700	72.50
09/29/93	9.01	0.0866	2.37	85.00	184.50	0.8538	71.15
10/06/93	9.01	0.0866	2.35	88.00	181.60	0.8550	71.23
10/13/93	9.01	0.0866	2.42	89.00	185.80	0.8419	69.90
10/20/93	9.01	0.0866	2.50	90.00	188.90	0.8369	72.85
10/27/93	9.01	0.0866	2.48	92.00	187.10	0.8594	74.25
11/03/93	8.91	0.0866	2.61	95.00	190.10	0.8482	73.15
11/10/93	8.91	0.0866	2.75	96.00	196.90	0.8388	72.90
11/17/93	8.91	0.0866	2.83	97.00	207.70	0.8463	73.75
11/24/93	8.91	0.0866	2.79	97.00	206.70	0.8350	72.75
12/01/93	8.70	0.0866	2.86	98.00	202.30	0.8482	71.70
12/08/93	8.70	0.0866	2.90	100.00	200.50	0.8419	71.23
12/15/93	8.70	0.0866	2.92	101.00	193.85	0.8419	72.65
12/22/93	8.70	0.0866	3.00	102.00	189.50	0.8332	73.63
12/29/93	8.70	0.0866	3.06	104.00	195.30	0.8194	72.13
01/05/94	8.14	0.0867	3.09	105.00	191.80	0.8326	71.78
01/12/94	8.14	0.0867	3.10	105.00	183.95	0.8323	73.35
01/19/94	8.14	0.0867	2.98	105.00	186.00	0.8401	73.53
01/26/94	8.14	0.0867	2.95	105.00	184.60	0.8226	72.35

**Table B.3: Feeding Margin Data.**

Finished Date	(lbs gain/lbs feed)	(APR)	(\$/bu)	(\$/ton)	(\$/ton)	(\$/lb)	(\$/cwt)
	Feed Conversion	Feeder Cattle Loan Rate	Corn Price	Alfalfa Price	Soybean Meal Price	Feeder Cattle Price	Fed Cattle Price
02/02/94	7.94	0.0867	2.91	105.00	183.60	0.8276	71.95
02/09/94	7.94	0.0867	2.95	105.00	186.40	0.8232	71.35
02/16/94	7.94	0.0867	2.88	105.00	187.90	0.8338	73.80
02/23/94	7.94	0.0867	2.88	102.50	185.40	0.8269	74.25
03/02/94	7.92	0.0867	2.80	100.00	182.40	0.8375	75.60
03/09/94	7.92	0.0867	2.76	99.00	181.20	0.8219	75.60
03/16/94	7.92	0.0867	2.80	97.00	188.50	0.8126	75.60
03/23/94	7.92	0.0867	2.80	95.00	184.20	0.8269	75.15
03/30/94	7.88	0.0905	2.69	93.00	184.90	0.8188	75.45
04/06/94	7.88	0.0905	2.69	92.00	176.90	0.8207	76.75
04/13/94	7.88	0.0905	2.61	92.00	178.10	0.8069	76.60
04/20/94	7.88	0.0905	2.40	92.00	179.00	0.8019	74.75
04/27/94	7.88	0.0905	2.64	92.00	181.20	0.7869	74.05
05/04/94	7.97	0.0905	2.59	92.00	179.40	0.7788	71.35
05/11/94	7.97	0.0905	2.62	91.00	178.60	0.7769	69.80
05/18/94	7.97	0.0905	2.73	90.00	180.10	0.7400	67.58
05/25/94	7.97	0.0905	2.72	87.50	187.50	0.7394	64.55
06/01/94	7.93	0.0905	2.86	85.00	193.20	0.7594	66.25
06/08/94	7.93	0.0905	2.76	85.00	180.80	0.7501	64.20
06/15/94	7.93	0.0905	2.89	87.50	189.50	0.7482	64.50
06/22/94	7.93	0.0905	2.65	88.00	184.00	0.7525	63.10
06/29/94	7.96	0.0943	2.59	88.00	188.50	0.7601	60.45
07/06/94	7.96	0.0943	2.50	88.00	171.60	0.7550	61.19
07/13/94	7.96	0.0943	2.46	88.00	175.10	0.7777	67.30
07/20/94	7.96	0.0943	2.35	90.00	170.90	0.8048	69.10
07/27/94	7.96	0.0943	2.35	92.50	170.80	0.7957	66.85
08/03/94	8.15	0.0943	2.35	94.00	169.60	0.8157	69.45
08/10/94	8.15	0.0943	2.38	94.00	165.50	0.8038	70.00
08/17/94	8.15	0.0943	2.39	95.00	167.25	0.7947	68.17
08/24/94	8.15	0.0943	2.41	95.00	172.80	0.7638	65.60
08/31/94	8.79	0.0943	2.21	95.00	167.00	0.7438	66.65
09/07/94	8.79	0.0943	2.17	96.00	178.30	0.7469	67.56
09/14/94	8.79	0.0943	2.14	97.00	166.50	0.7500	66.85
09/21/94	8.79	0.0943	2.12	97.00	164.80	0.7432	66.30
09/28/94	8.79	0.0943	2.13	97.00	173.80	0.7407	66.50
10/05/94	9.01	0.0995	2.14	97.00	161.70	0.7207	65.45
10/12/94	9.01	0.0995	2.14	98.00	162.20	0.7250	65.15
10/19/94	9.01	0.0995	2.16	99.00	162.60	0.7345	65.70
10/26/94	9.01	0.0995	2.20	99.00	160.60	0.7407	69.40
11/02/94	8.91	0.0995	2.17	99.00	156.30	0.7438	69.38
11/09/94	8.91	0.0995	2.23	100.00	154.70	0.7476	69.70
11/16/94	8.91	0.0995	2.21	101.00	150.20	0.7550	69.75
11/23/94	8.91	0.0995	2.17	102.00	150.85	0.7469	69.75
11/30/94	8.70	0.0995	2.20	104.00	147.70	0.7632	67.56
12/07/94	8.70	0.0995	2.26	105.00	142.70	0.7588	67.83
12/14/94	8.70	0.0995	2.22	105.00	145.40	0.7744	69.75
12/21/94	8.70	0.0995	2.25	105.00	148.30	0.7807	69.75
12/28/94	8.70	0.0995	2.28	105.00	148.60	0.7773	70.00

**Table B.3: Feeding Margin Data.**

Finished Date	(lbs gain/lbs feed)	(APR)	(\$/bu)	(\$/ton)	(\$/ton)	(\$/lb)	(\$/cwt)
	Feed Conversion	Feeder Cattle Loan Rate	Corn Price	Alfalfa Price	Soybean Meal Price	Feeder Cattle Price	Fed Cattle Price
01/04/95	8.14	0.1035	2.27	105.00	144.40	0.7817	72.63
01/11/95	8.14	0.1035	2.30	105.00	146.80	0.7786	72.75
01/18/95	8.14	0.1035	2.30	100.00	147.80	0.7670	73.40
01/25/95	8.14	0.1035	2.29	97.50	147.10	0.7702	74.30
02/01/95	7.94	0.1035	2.28	97.50	144.20	0.7500	73.60
02/08/95	7.94	0.1035	2.30	97.50	141.70	0.7337	73.00
02/15/95	7.94	0.1035	2.30	95.00	140.00	0.7348	74.40
02/22/95	7.94	0.1035	2.32	95.00	139.50	0.7141	73.40
03/01/95	7.92	0.1035	2.32	92.50	140.40	0.6987	73.45
03/08/95	7.92	0.1035	2.35	92.50	144.30	0.7047	73.25
03/15/95	7.92	0.1035	2.37	90.00	144.00	0.6821	71.00
03/22/95	7.92	0.1035	2.37	90.00	149.40	0.6722	68.75
03/29/95	7.92	0.1035	2.39	90.00	151.15	0.6417	66.40
04/05/95	7.88	0.1032	2.40	90.00	156.10	0.6814	69.33
04/12/95	7.88	0.1032	2.38	90.00	153.20	0.6596	67.75
04/19/95	7.88	0.1032	2.38	90.00	143.60	0.6389	65.85
04/26/95	7.88	0.1032	2.46	90.00	143.60	0.6466	67.40
05/03/95	7.97	0.1032	2.50	90.00	143.60	0.6572	66.75
05/10/95	7.97	0.1032	2.53	90.00	144.50	0.6379	63.50
05/17/95	7.97	0.1032	2.60	90.00	147.10	0.6459	62.75
05/24/95	7.97	0.1032	2.66	90.00	159.80	0.6500	63.85
05/31/95	7.93	0.1032	2.68	87.50	148.10	0.6476	63.00
06/07/95	7.93	0.1032	2.75	85.00	150.80	0.6719	64.55
06/14/95	7.93	0.1032	2.83	85.00	147.90	0.6787	64.50
06/21/95	7.93	0.1032	2.88	85.00	152.50	0.6652	63.17
06/28/95	7.93	0.1032	2.81	85.00	145.80	0.6746	63.00
07/05/95	7.96	0.1022	2.93	85.00	151.30	0.6643	63.00
07/12/95	7.96	0.1022	2.99	85.00	152.60	0.6661	61.85
07/19/95	7.96	0.1022	3.07	85.00	169.40	0.6719	60.30
07/26/95	7.96	0.1022	3.08	85.00	172.30	0.6741	61.10
08/02/95	8.15	0.1022	2.97	85.00	161.50	0.6927	63.35
08/09/95	8.15	0.1022	2.95	86.00	160.50	0.6749	63.35
08/16/95	8.15	0.1022	3.02	86.00	158.00	0.6641	61.69
08/23/95	8.15	0.1022	3.07	86.00	159.30	0.6515	60.53
08/30/95	8.79	0.1022	3.15	85.00	161.70	0.6409	59.95
09/06/95	8.79	0.1022	3.04	85.00	166.80	0.6634	63.50
09/13/95	8.79	0.1022	3.10	85.00	164.70	0.6646	63.75
09/20/95	8.79	0.1022	3.21	85.00	179.50	0.6611	64.00
09/27/95	8.79	0.1022	3.15	85.00	178.30	0.6662	64.40
10/04/95	9.01	0.1009	3.13	85.00	177.60	0.6585	63.00
10/11/95	9.01	0.1009	3.21	85.00	181.20	0.6656	64.50
10/18/95	9.01	0.1009	3.33	85.00	184.50	0.6564	65.60
10/25/95	9.01	0.1009	3.34	85.00	193.90	0.6674	66.00
11/01/95	8.91	0.1009	3.42	85.00	197.50	0.6617	67.15
11/08/95	8.91	0.1009	3.32	85.00	198.40	0.6756	68.00
11/15/95	8.91	0.1009	3.29	85.00	196.50	0.6810	68.75
11/22/95	8.91	0.1009	3.33	85.00	196.60	0.6648	67.75
11/29/95	8.70	0.1009	3.41	85.00	198.40	0.6737	67.60

**Table B.3: Feeding Margin Data.**

Finished Date	(lbs gain/lbs feed)	(APR)	(\$/bu)	(\$/ton)	(\$/ton)	(\$/lb)	(\$/cwt)
	Feed Conversion	Feeder Cattle Loan Rate	Corn Price	Alfalfa Price	Soybean Meal Price	Feeder Cattle Price	Fed Cattle Price
12/06/95	8.70	0.1009	3.46	85.00	205.60	0.6873	67.30
12/13/95	8.70	0.1009	3.53	85.00	213.10	0.6701	66.20
12/20/95	8.70	0.1009	3.59	86.00	219.50	0.6593	66.00
12/27/95	8.70	0.1009	3.70	86.00	217.30	0.6293	64.75
01/03/96	8.14	0.0985	3.76	86.00	227.40	0.6058	65.00
01/10/96	8.14	0.0985	3.65	87.00	223.00	0.6082	64.10
01/17/96	8.14	0.0985	3.63	88.00	220.00	0.5955	65.00
01/24/96	8.14	0.0985	3.64	89.00	219.60	0.5927	63.00
01/31/96	7.94	0.0985	3.78	89.00	217.50	0.5748	62.40
02/07/96	7.94	0.0985	3.71	89.00	212.20	0.5882	63.00
02/14/96	7.94	0.0985	3.92	89.00	212.40	0.5833	63.00
02/21/96	7.94	0.0985	3.89	89.00	215.80	0.5756	63.00
02/28/96	7.92	0.0985	4.03	89.00	220.60	0.5669	62.80
03/06/96	7.92	0.0985	4.02	89.00	214.40	0.5612	60.90
03/13/96	7.92	0.0985	4.05	89.00	218.20	0.5684	61.40
03/20/96	7.92	0.0985	4.03	89.00	214.80	0.5685	63.00
03/27/96	7.92	0.0985	4.14	90.00	219.40	0.5688	62.00
04/03/96	7.88	0.0987	4.42	91.00	232.50	0.5568	62.00
04/10/96	7.88	0.0987	4.61	91.00	240.50	0.5220	60.70
04/17/96	7.88	0.0987	4.74	92.00	237.50	0.5218	58.55
04/24/96	7.88	0.0987	5.07	100.00	248.10	0.4989	55.40
05/01/96	7.97	0.0987	4.80	100.00	232.80	0.5266	57.25
05/08/96	7.97	0.0987	5.07	100.00	239.00	0.5636	61.00
05/15/96	7.97	0.0987	5.23	100.00	237.90	0.5703	60.00
05/22/96	7.97	0.0987	5.18	102.00	232.50	0.5629	59.00
05/29/96	7.97	0.0987	4.98	100.00	231.40	0.5683	59.44
06/05/96	7.93	0.0987	4.73	100.00	224.50	0.5970	61.75
06/12/96	7.93	0.0987	5.04	100.00	225.50	0.6230	62.80
06/19/96	7.93	0.0987	4.99	100.00	234.40	0.6258	61.15
06/26/96	7.93	0.0987	4.91	100.00	235.40	0.6085	60.20
07/03/96	7.96	0.0987	5.02	100.00	234.60	0.6375	62.50
07/10/96	7.96	0.0987	5.13	100.00	237.70	0.6320	64.40
07/17/96	7.96	0.0987	4.65	100.00	247.40	0.6295	65.00
07/24/96	7.96	0.0987	4.43	100.00	241.00	0.6278	63.65
07/31/96	8.15	0.0987	4.52	100.00	237.90	0.6343	62.50
08/07/96	8.15	0.0987	4.46	100.00	237.50	0.6506	65.70
08/14/96	8.15	0.0987	4.70	100.00	249.30	0.6504	66.00
08/21/96	8.15	0.0987	4.62	100.00	252.90	0.6453	67.88
08/28/96	8.15	0.0987	4.65	100.00	258.60	0.6486	68.40
09/04/96	8.79	0.0987	3.60	100.00	264.30	0.6515	69.40
09/11/96	8.79	0.0987	3.40	100.00	267.50	0.6470	71.00
09/18/96	8.79	0.0987	4.43	100.00	268.90	0.6435	72.00
09/25/96	8.79	0.0987	3.04	100.00	262.40	0.6258	72.00
10/02/96	9.01	0.0983	2.81	100.00	250.50	0.6405	72.45
10/09/96	9.01	0.0983	2.79	100.00	241.80	0.6235	71.40
10/16/96	9.01	0.0983	2.72	100.00	227.70	0.6284	70.00
10/23/96	9.01	0.0983	2.65	102.00	226.60	0.6299	70.00
10/30/96	8.91	0.0983	2.52	103.00	234.70	0.6425	70.80

**Table B.3: Feeding Margin Data.**

	(lbs gain/lbs feed)	(APR)	(\$/bu)	(\$/ton)	(\$/ton)	(\$/lb)	(\$/cwt)
		Feeder				Feeder	Fed
Finished	Feed	Cattle Loan	Corn	Alfalfa	Soybean	Cattle	Cattle
Date	Conversion	Rate	Price	Price	Meal Price	Price	Price
11/06/96	8.91	0.0983	2.51	104.00	226.40	0.6486	71.60
11/13/96	8.91	0.0983	2.58	105.00	242.00	0.6505	72.15
11/20/96	8.91	0.0983	2.60	105.00	250.30	0.6652	70.08
11/27/96	8.91	0.0983	2.59	105.00	248.00	0.6675	67.88
12/04/96	8.70	0.0983	2.54	105.00	241.50	0.6676	67.70
12/11/96	8.70	0.0983	2.51	105.00	230.10	0.6669	65.33
12/18/96	8.70	0.0983	2.52	105.00	240.30	0.6757	65.00
12/24/96	8.70	0.0983	2.53	105.00	238.30	0.6819	65.50
12/31/96	8.14	0.0990	2.45	107.50	235.80	0.6880	66.00
01/08/97	8.14	0.0990	2.44	110.00	231.00	0.6942	64.90
01/15/97	8.14	0.0990	2.58	110.00	237.20	0.7091	65.80
01/22/97	8.14	0.0990	2.51	110.00	241.80	0.7040	64.95
01/29/97	8.14	0.0990	2.55	112.50	240.70	0.7098	64.15
02/05/97	7.94	0.0990	2.50	112.50	241.20	0.7053	63.00
02/12/97	7.94	0.0990	2.56	112.50	244.50	0.7057	63.60
02/19/97	7.94	0.0990	2.67	112.50	259.80	0.7006	65.67
02/26/97	7.94	0.0990	2.76	112.50	262.10	0.7072	68.75
03/05/97	7.92	0.0990	2.84	112.50	259.20	0.6864	68.00
03/12/97	7.92	0.0990	2.77	112.50	272.50	0.6816	67.60
03/19/97	7.92	0.0990	2.84	112.50	265.00	0.6941	67.33
03/26/97	7.92	0.0990	2.87	112.50	275.80	0.6973	67.00
04/02/97	7.88	0.0993	2.80	115.00	300.00	0.7052	67.00
04/09/97	7.88	0.0993	2.83	115.00	280.20	0.7187	66.50
04/16/97	7.88	0.0993	2.77	112.50	271.30	0.7194	68.67
04/23/97	7.88	0.0993	2.74	111.00	269.50	0.7313	67.60
04/30/97	7.97	0.0993	2.86	111.00	280.70	0.7451	68.00
05/07/97	7.97	0.0993	2.76	111.00	297.70	0.7661	68.80
05/14/97	7.97	0.0993	2.77	110.00	302.70	0.7915	67.56
05/21/97	7.97	0.0993	2.71	110.00	295.50	0.7816	66.55
05/28/97	7.97	0.0993	2.75	105.00	290.50	0.7976	65.40
06/04/97	7.93	0.0993	2.80	102.00	291.60	0.7805	63.75
06/11/97	7.93	0.0993	2.77	101.00	275.20	0.7892	63.00
06/18/97	7.93	0.0993	2.71	101.00	284.00	0.8019	64.00
06/25/97	7.93	0.0993	2.54	101.00	279.00	0.8034	63.00
07/02/97	7.96	0.0991	2.49	99.00	245.50	0.8147	63.00
07/09/97	7.96	0.0991	2.52	98.00	249.00	0.8260	61.70
07/16/97	7.96	0.0991	2.66	97.50	271.00	0.8542	63.75
07/23/97	7.96	0.0991	2.62	97.50	274.00	0.8381	63.75
07/30/97	8.15	0.0991	2.85	96.50	279.00	0.8183	66.00
08/06/97	8.15	0.0991	2.65	96.00	270.50	0.8105	64.60
08/13/97	8.15	0.0991	2.77	95.00	257.50	0.8100	64.60
08/20/97	8.15	0.0991	2.83	91.00	267.35	0.8333	66.00
08/27/97	8.15	0.0991	2.75	92.00	262.00	0.7929	64.33
09/03/97	8.79	0.0991	2.75	92.00	274.30	0.7923	64.50
09/10/97	8.79	0.0991	2.68	92.00	289.00	0.8085	67.00
09/17/97	8.79	0.0991	2.50	92.50	287.30	0.8030	66.70
09/24/97	8.79	0.0991	2.42	93.00	251.80	0.7873	66.00
10/01/97	9.01	0.0987	2.37	93.00	214.70	0.7554	65.80



**Table B.3: Feeding Margin Data.**

	(lbs gain/lbs feed)	(APR)	(\$/bu)	(\$/ton)	(\$/ton)	(\$/lb)	(\$/cwt)
Finished	Feed	Feeder	Corn	Alfalfa	Soybean	Feeder	Fed
Date	Conversion	Cattle Loan Rate	Price	Price	Meal Price	Cattle Price	Cattle Price
10/08/97	9.01	0.0987	2.61	93.00	212.30	0.7854	65.00
10/15/97	9.01	0.0987	2.64	95.00	234.90	0.7633	65.75
10/22/97	9.01	0.0987	2.65	95.00	220.20	0.7665	68.25
10/29/97	9.01	0.0987	2.62	95.00	217.70	0.7363	70.00
11/05/97	8.91	0.0987	2.67	95.00	236.00	0.7556	68.67
11/12/97	8.91	0.0987	2.63	96.00	243.80	0.7521	67.50
11/19/97	8.91	0.0987	2.63	97.50	236.10	0.7634	66.88
11/26/97	8.91	0.0987	2.62	97.50	235.20	0.7700	67.00
12/03/97	8.70	0.0987	2.61	97.50	233.80	0.7790	66.25
12/10/97	8.70	0.0987	2.61	97.50	228.70	0.7834	66.00
12/17/97	8.70	0.0987	2.51	97.50	212.30	0.7779	65.00
12/24/97	8.70	0.0987	2.50	97.50	206.20	0.7602	66.00
12/31/97	8.14	0.0979	2.50	100.00	206.00	0.7425	66.00
01/07/98	8.14	0.0979	2.45	100.00	197.20	0.7805	64.56
01/14/98	8.14	0.0979	2.64	100.00	195.70	0.7823	63.95
01/21/98	8.14	0.0979	2.63	100.00	197.30	0.7847	64.97
01/28/98	8.14	0.0979	2.63	100.00	197.80	0.7613	63.15
02/04/98	7.94	0.0979	2.59	100.00	195.70	0.7617	61.23
02/11/98	7.94	0.0979	2.60	97.50	198.00	0.7531	60.04
02/18/98	7.94	0.0979	2.59	97.50	186.90	0.7742	61.95
02/25/98	7.94	0.0979	2.54	97.50	176.50	0.7548	59.41
03/04/98	7.92	0.0979	2.56	95.00	172.10	0.7701	60.94
03/11/98	7.92	0.0979	2.64	95.00	176.60	0.7548	62.94
03/18/98	7.92	0.0979	2.55	92.50	166.60	0.7487	63.00
03/25/98	7.92	0.0979	2.45	92.50	161.80	0.7413	61.80
04/01/98	7.88	0.0978	2.41	92.50	158.40	0.7459	61.92
04/08/98	7.88	0.0978	2.36	90.00	155.20	0.7634	65.87
04/15/98	7.88	0.0978	2.41	88.00	152.90	0.7765	65.92
04/22/98	7.88	0.0978	2.40	82.50	156.50	0.7627	64.06
04/29/98	7.97	0.0978	2.37	80.00	157.10	0.7483	65.94
05/06/98	7.97	0.0978	2.47	80.00	152.60	0.7748	66.00
05/13/98	7.97	0.0978	2.35	80.00	149.40	0.7683	65.13
05/20/98	7.97	0.0978	2.34	75.00	149.40	0.7562	63.99
05/27/98	7.97	0.0978	2.30	72.50	149.50	0.7325	63.03
06/03/98	7.93	0.0978	2.38	72.50	155.00	0.7451	63.89
06/10/98	7.93	0.0978	2.31	72.50	155.70	0.7622	64.96
06/17/98	7.93	0.0978	2.45	72.50	156.80	0.7484	63.99
06/24/98	7.93	0.0978	2.59	72.50	173.80	0.7133	62.91
07/01/98	7.96	0.0971	2.36	72.50	165.30	0.7215	62.04
07/08/98	7.96	0.0971	2.41	72.50	170.00	0.7231	60.99
07/15/98	7.96	0.0971	2.25	70.00	175.30	0.6914	59.97
07/22/98	7.96	0.0971	2.21	70.00	193.80	0.6866	59.35
07/29/98	7.96	0.0971	2.14	70.00	168.80	0.6971	59.01
08/05/98	8.15	0.0971	2.02	70.00	149.90	0.6923	59.75
08/12/98	8.15	0.0971	1.97	70.00	140.70	0.6740	59.98
08/19/98	8.15	0.0971	1.99	70.00	135.20	0.6959	59.01
08/26/98	8.15	0.0971	1.85	70.00	139.70	0.6651	57.18
09/02/98	8.79	0.0971	1.82	70.00	139.90	0.6423	56.36

**Table B.3: Feeding Margin Data.**

Finished Date	(lbs gain/lbs feed)	(APR)	(\$/bu)	(\$/ton)	(\$/ton)	(\$/lb)	(\$/cwt)
	Feed Conversion	Feeder Cattle Loan Rate	Corn Price	Alfalfa Price	Soybean Meal Price	Feeder Cattle Price	Fed Cattle Price
09/09/98	8.79	0.0971	1.84	70.00	138.10	0.6484	57.91
09/16/98	8.79	0.0971	1.73	70.00	133.90	0.6688	59.99
09/23/98	8.79	0.0971	1.74	70.00	135.00	0.6630	59.07
09/30/98	9.01	0.0943	1.71	70.00	127.50	0.6502	57.25
10/07/98	9.01	0.0943	1.85	67.50	124.50	0.6699	58.89
10/14/98	9.01	0.0943	1.97	67.50	144.60	0.6818	62.32
10/21/98	9.01	0.0943	1.95	70.00	132.40	0.6845	63.02
10/28/98	9.01	0.0943	1.98	70.00	135.40	0.7048	63.95
11/04/98	8.91	0.0943	1.97	70.00	136.60	0.6818	63.30
11/11/98	8.91	0.0943	2.10	70.00	146.00	0.6890	63.00
11/18/98	8.91	0.0943	2.05	70.00	145.10	0.6695	60.98
11/25/98	8.91	0.0943	2.02	70.00	138.50	0.6692	61.67
12/02/98	8.70	0.0943	2.02	70.00	143.60	0.6755	61.73
12/09/98	8.70	0.0943	1.99	70.00	142.80	0.6677	61.04
12/16/98	8.70	0.0943	1.99	70.00	140.10	0.6577	57.92
12/23/98	8.70	0.0943	1.97	70.00	146.10	0.6641	57.96
12/30/98	8.14	0.0936	1.99	70.00	144.40	0.6925	59.86
01/06/99	8.14	0.0936	2.01	70.00	142.90	0.7216	60.99
01/13/99	8.14	0.0936	1.97	70.00	139.00	0.7250	61.96
01/20/99	8.14	0.0936	1.98	70.00	132.60	0.7421	60.82
01/27/99	8.14	0.0936	1.98	67.50	132.40	0.7301	61.35
02/03/99	7.94	0.0936	1.99	67.50	137.10	0.7375	60.04
02/10/99	7.94	0.0936	1.98	65.00	130.20	0.7455	62.02
02/17/99	7.94	0.0936	1.97	65.00	126.90	0.7499	63.41
02/24/99	7.94	0.0936	1.89	65.00	121.90	0.7319	63.04
03/03/99	7.92	0.0936	1.94	65.00	121.50	0.7344	64.98
03/10/99	7.92	0.0936	2.02	65.00	120.80	0.7208	65.96
03/17/99	7.92	0.0936	2.01	65.00	125.40	0.6969	65.17
03/24/99	7.92	0.0936	2.07	65.00	128.40	0.7191	64.37
03/31/99	7.88	0.0950	1.99	65.00	131.90	0.7221	64.97
04/07/99	7.88	0.0950	1.95	62.50	130.20	0.7319	65.00
04/14/99	7.88	0.0950	1.97	62.50	130.70	0.7290	65.68
04/21/99	7.88	0.0950	1.97	62.50	132.20	0.7142	65.08
04/28/99	7.88	0.0950	1.90	60.00	127.70	0.7069	66.00
05/05/99	7.97	0.0950	1.92	60.00	129.30	0.6945	65.05
05/12/99	7.97	0.0950	1.96	60.00	129.90	0.6917	63.93
05/19/99	7.97	0.0950	1.91	60.00	132.90	0.7206	64.99
05/26/99	7.97	0.0950	1.89	60.00	127.70	0.7335	65.86
06/02/99	7.93	0.0950	1.95	60.00	125.70	0.7450	66.01
06/09/99	7.93	0.0950	1.92	60.00	132.50	0.7609	66.97
06/16/99	7.93	0.0950	1.91	60.00	132.60	0.7778	67.01
06/23/99	7.93	0.0950	1.96	60.00	138.20	0.7608	65.91
06/30/99	7.96	0.0962	1.88	60.00	133.30	0.7548	64.01
07/07/99	7.96	0.0962	1.75	60.00	125.80	0.7523	63.28
07/14/99	7.96	0.0962	1.82	60.00	128.50	0.7730	64.01
07/21/99	7.96	0.0962	1.90	60.00	127.00	0.7683	64.56
07/28/99	7.96	0.0962	1.82	60.00	130.10	0.7673	65.04
08/04/99	8.15	0.0962	2.01	60.00	141.50	0.7745	64.97

**Table B.3: Feeding Margin Data.**

Finished Date	(lbs gain/lbs feed)	(APR)	(\$/bu)	(\$/ton)	(\$/ton)	(\$/lb)	(\$/cwt)
	Feed Conversion	Feeder Cattle Loan Rate	Corn Price	Alfalfa Price	Soybean Meal Price	Feeder Cattle Price	Fed Cattle Price
08/11/99	8.15	0.0962	1.81	60.00	141.80	0.7633	65.00
08/18/99	8.15	0.0962	1.90	60.00	132.00	0.7826	65.00
08/25/99	8.15	0.0962	1.78	60.00	129.30	0.7782	65.52
09/01/99	8.79	0.0962	1.87	60.00	133.30	0.7891	65.97
09/08/99	8.79	0.0962	1.86	60.00	146.90	0.7873	65.99
09/15/99	8.79	0.0962	1.80	60.00	139.65	0.8121	65.75
09/22/99	8.79	0.0962	1.75	58.00	139.10	0.7892	65.51
09/29/99	9.01	0.0974	1.75	58.00	140.70	0.8045	66.82
10/06/99	9.01	0.0974	1.73	58.00	141.80	0.7912	68.31
10/13/99	9.01	0.0974	1.69	58.00	149.80	0.7924	70.70
10/20/99	9.01	0.0974	1.68	58.00	150.40	0.7938	70.32
10/27/99	9.01	0.0974	1.70	60.00	143.70	0.7929	69.21
11/03/99	8.91	0.0974	1.76	60.00	145.50	0.8138	69.29
11/10/99	8.91	0.0974	1.75	60.00	151.10	0.8182	69.81
11/17/99	8.91	0.0974	1.76	60.00	148.30	0.8225	70.79
11/24/99	8.91	0.0974	1.77	60.00	143.00	0.8245	70.93
12/01/99	8.70	0.0974	1.75	58.00	143.70	0.8400	69.88
12/08/99	8.70	0.0974	1.69	58.00	144.80	0.8771	69.94
12/15/99	8.70	0.0974	1.73	60.00	138.10	0.8732	68.74
12/22/99	8.70	0.0974	1.79	60.00	140.30	0.8627	68.00
12/29/99	8.70	0.0974	1.80	60.00	140.00	0.8393	68.00
01/05/00	8.14	0.1003	1.80	60.00	141.90	0.8822	68.13
01/12/00	8.14	0.1003	1.95	60.00	142.20	0.8704	69.88
01/19/00	8.14	0.1003	1.95	60.00	150.80	0.8574	68.95
01/26/00	8.14	0.1003	2.00	60.00	152.75	0.8521	67.99
02/02/00	7.94	0.1003	1.93	62.50	150.00	0.8586	69.33
02/09/00	7.94	0.1003	2.01	65.00	151.00	0.8538	69.92
02/16/00	7.94	0.1003	1.97	67.50	160.80	0.8309	68.81
02/23/00	7.94	0.1003	1.92	70.00	164.40	0.8287	68.26
03/01/00	7.92	0.1003	1.94	70.00	160.00	0.8666	70.15
03/08/00	7.92	0.1003	1.98	70.00	162.50	0.8611	71.97
03/15/00	7.92	0.1003	2.06	70.00	169.10	0.8350	70.00
03/22/00	7.92	0.1003	2.01	70.00	163.60	0.8422	72.65
03/29/00	7.92	0.1003	2.04	70.00	161.10	0.8470	71.99
04/05/00	7.88	0.1035	1.98	70.00	160.50	0.8603	71.94
04/12/00	7.88	0.1035	1.99	70.00	160.60	0.8559	73.02
04/19/00	7.88	0.1035	2.00	70.00	161.60	0.8606	74.14
04/26/00	7.88	0.1035	2.01	72.50	168.10	0.8612	74.02
05/03/00	7.97	0.1035	2.20	72.50	176.30	0.8545	72.92
05/10/00	7.97	0.1035	2.16	72.50	176.00	0.8495	71.83
05/17/00	7.97	0.1035	2.11	72.50	176.20	0.8485	71.03
05/24/00	7.97	0.1035	2.05	72.50	178.00	0.8487	69.11
05/31/00	7.93	0.1035	2.03	72.50	171.30	0.8426	69.03
06/07/00	7.93	0.1035	2.04	72.50	176.90	0.8449	69.97
06/14/00	7.93	0.1035	1.96	72.50	180.30	0.8726	70.10
06/21/00	7.93	0.1035	1.96	75.00	171.05	0.8991	69.00
06/28/00	7.93	0.1035	1.90	75.00	172.80	0.8907	67.41
07/05/00	7.96	0.1036	1.79	75.00	164.40	0.8851	67.98

**Table B.3: Feeding Margin Data.**

Finished Date	(lbs gain/lbs feed)	(APR)	(\$/bu)	(\$/ton)	(\$/ton)	(\$/lb)	(\$/cwt)
	Feed Conversion	Feeder Cattle Loan Rate	Corn Price	Alfalfa Price	Soybean Meal Price	Feeder Cattle Price	Fed Cattle Price
07/12/00	7.96	0.1036	1.80	75.00	162.50	0.8902	67.72
07/19/00	7.96	0.1036	1.81	75.00	155.30	0.9079	67.80
07/26/00	7.96	0.1036	1.73	75.00	149.50	0.8743	66.50
08/02/00	8.15	0.1036	1.72	77.50	145.50	0.8626	64.31
08/09/00	8.15	0.1036	1.69	80.00	143.90	0.8671	64.04
08/16/00	8.15	0.1036	1.71	80.00	151.80	0.8744	65.90
08/23/00	8.15	0.1036	1.68	80.00	153.60	0.8723	65.00
08/30/00	8.79	0.1036	1.73	80.00	168.90	0.8637	65.56
09/06/00	8.79	0.1036	1.70	80.00	170.00	0.8546	63.97
09/13/00	8.79	0.1036	1.69	85.00	168.00	0.8546	64.73
09/20/00	8.79	0.1036	1.69	85.00	169.60	0.8667	65.03
09/27/00	8.79	0.1036	1.77	90.00	173.50	0.8612	66.10
10/04/00	9.01	0.1030	1.90	90.00	173.50	0.8463	67.07
10/11/00	9.01	0.1030	1.97	95.00	168.20	0.8645	67.92
10/18/00	9.01	0.1030	2.00	100.00	166.20	0.8470	68.00
10/25/00	9.01	0.1030	1.98	102.50	169.70	0.8655	68.97
11/01/00	8.91	0.1030	2.09	105.00	168.10	0.8611	70.06
11/08/00	8.91	0.1030	2.12	110.00	170.90	0.8656	71.14
11/15/00	8.91	0.1030	2.07	110.00	166.70	0.8862	71.97
11/22/00	8.91	0.1030	2.08	110.00	173.30	0.8650	72.86
11/29/00	8.70	0.1030	2.08	112.50	182.40	0.8960	73.08
12/06/00	8.70	0.1030	2.04	115.00	184.20	0.8929	74.80
12/13/00	8.70	0.1030	2.09	116.00	187.30	0.8912	76.97
12/20/00	8.70	0.1030	2.16	117.00	188.90	0.8989	77.00
12/27/00	8.70	0.1030	2.20	117.00	194.50	0.9070	77.97
01/03/01	8.14	0.0960	2.20	117.00	191.30	0.9150	77.43
01/10/01	8.14	0.0960	2.13	117.00	186.55	0.8945	78.75
01/17/01	8.14	0.0960	2.08	117.00	177.40	0.8829	80.01
01/24/01	8.14	0.0960	2.04	117.00	173.10	0.8710	78.08
01/31/01	7.94	0.0960	2.03	117.50	165.80	0.8480	77.99
02/07/01	7.94	0.0960	2.02	117.50	161.70	0.8529	78.07
02/14/01	7.94	0.0960	2.06	117.50	161.70	0.8711	78.07
02/21/01	7.94	0.0960	2.07	117.50	160.30	0.8629	79.95
02/28/01	7.92	0.0960	2.18	120.00	154.20	0.8800	81.89
03/07/01	7.92	0.0960	2.14	122.50	155.40	0.8646	81.06
03/14/01	7.92	0.0960	2.12	125.00	150.10	0.8692	79.95
03/21/01	7.92	0.0960	1.99	127.50	148.00	0.8611	78.08
03/28/01	7.92	0.0960	2.01	130.00	153.60	0.8871	78.92
04/04/01	7.88	0.0898	2.09	130.00	151.80	0.8906	79.57
04/11/01	7.88	0.0898	2.09	130.00	155.30	0.9106	79.25
04/18/01	7.88	0.0898	2.02	130.00	153.70	0.9106	77.02
04/25/01	7.88	0.0898	1.98	130.00	154.50	0.8800	75.12
05/02/01	7.97	0.0898	1.99	125.00	154.60	0.9194	75.07
05/09/01	7.97	0.0898	1.89	122.50	153.60	0.8906	74.12
05/16/01	7.97	0.0898	1.92	120.00	157.70	0.8980	74.73
05/23/01	7.97	0.0898	1.89	115.00	162.10	0.8980	76.16
05/30/01	7.93	0.0898	1.90	110.00	163.50	0.9029	77.06
06/06/01	7.93	0.0898	1.98	100.00	167.60	0.9419	75.80

**Table B.3: Feeding Margin Data.**

Finished Date	(lbs gain/lbs feed)	(APR)	(\$/bu)	(\$/ton)	(\$/ton)	(\$/lb)	(\$/cwt)
	Feed Conversion	Feeder Cattle Loan Rate	Corn Price	Alfalfa Price	Soybean Meal Price	Feeder Cattle Price	Fed Cattle Price
06/13/01	7.93	0.0898	1.96	97.50	173.90	0.9248	73.78
06/20/01	7.93	0.0898	1.90	97.50	169.10	0.9320	72.44
06/27/01	7.93	0.0898	1.92	97.50	163.70	0.9390	71.10
07/03/01	7.96	0.0843	2.02	97.50	174.40	0.9314	70.24
07/11/01	7.96	0.0843	2.32	97.50	176.70	0.9238	70.21
07/18/01	7.96	0.0843	2.15	100.00	173.90	0.9144	70.94
07/25/01	7.96	0.0843	2.17	100.00	171.20	0.9080	71.68
08/01/01	8.15	0.0843	2.10	105.00	176.00	0.8809	69.82
08/08/01	8.15	0.0843	2.15	105.00	170.70	0.9095	68.91
08/15/01	8.15	0.0843	2.13	107.50	171.40	0.9035	69.95
08/22/01	8.15	0.0843	2.16	107.50	167.50	0.9126	70.10
08/29/01	8.15	0.0843	2.19	107.50	160.00	0.9194	69.92
09/05/01	8.79	0.0843	2.17	110.00	167.20	0.9350	70.02
09/12/01	8.79	0.0843	2.22	112.50	172.45	0.8900	70.03
09/19/01	8.79	0.0843	2.14	115.00	177.70	0.9161	68.72
09/26/01	8.79	0.0843	2.19	115.00	174.60	0.8589	66.10
10/03/01	9.01	0.0784	2.16	115.00	164.50	0.8831	67.68
10/10/01	9.01	0.0784	2.20	117.50	164.60	0.9128	67.90
10/17/01	9.01	0.0784	2.13	117.50	158.00	0.8807	66.15
10/24/01	9.01	0.0784	2.15	117.50	156.50	0.8963	65.09
10/31/01	8.91	0.0784	2.12	117.50	164.20	0.8600	64.98
11/07/01	8.91	0.0784	2.11	119.00	164.00	0.8500	64.03
11/14/01	8.91	0.0784	2.15	119.00	162.50	0.8297	60.75
11/21/01	8.91	0.0784	2.18	119.00	161.40	0.8551	64.42
11/28/01	8.91	0.0784	2.09	120.00	157.40	0.8804	65.03
12/05/01	8.70	0.0784	2.19	117.50	154.40	0.8313	65.50
12/12/01	8.70	0.0784	2.17	116.50	146.80	0.8151	62.75
12/19/01	8.70	0.0784	2.14	116.50	146.60	0.8348	61.95
12/26/01	8.70	0.0784	2.13	115.00	147.00	0.8299	63.95
01/02/02	8.14	0.0770	2.14	115.00	145.60	0.8251	65.91
01/09/02	8.14	0.0770	2.13	115.00	151.96	0.8365	66.01
01/16/02	8.14	0.0770	2.17	114.00	168.55	0.8131	67.97
01/23/02	8.14	0.0770	2.13	112.50	155.78	0.8186	68.93
01/30/02	7.94	0.0770	2.09	110.00	156.64	0.8274	70.90
02/06/02	7.94	0.0770	2.08	105.00	151.94	0.8402	71.88
02/13/02	7.94	0.0770	2.10	100.00	144.96	0.8429	71.96
02/20/02	7.94	0.0770	2.10	97.50	152.80	0.8327	71.00
02/27/02	7.92	0.0770	2.05	97.50	149.71	0.8213	70.76
03/06/02	7.92	0.0770	2.04	97.50	151.78	0.8369	73.23
03/13/02	7.92	0.0770	2.04	97.50	156.38	0.8012	74.22
03/20/02	7.92	0.0770	2.02	97.50	155.93	0.8045	71.04
03/27/02	7.92	0.0770	1.99	97.50	160.25	0.8133	70.21
04/03/02	7.88	0.0840	2.00	95.00	155.57	0.8298	72.36
04/10/02	7.88	0.0840	1.97	95.00	148.94	0.7629	68.07
04/17/02	7.88	0.0840	1.96	95.00	158.21	0.7836	65.85
04/24/02	7.88	0.0840	1.96	95.00	161.94	0.7502	63.62
05/01/02	7.97	0.0840	1.96	92.50	156.94	0.7643	64.92
05/08/02	7.97	0.0840	2.01	92.50	153.89	0.7911	67.88

**Table B.3: Feeding Margin Data.**

Finished Date	(lbs gain/lbs feed)	(APR)	(\$/bu)	(\$/ton)	(\$/ton)	(\$/lb)	(\$/cwt)
	Feed Conversion	Feeder Cattle Loan Rate	Corn Price	Alfalfa Price	Soybean Meal Price	Feeder Cattle Price	Fed Cattle Price
05/15/02	7.97	0.0840	2.10	90.00	161.61	0.7792	66.70
05/22/02	7.97	0.0840	2.05	87.50	153.03	0.7557	63.70
05/29/02	7.97	0.0840	2.10	85.00	160.20	0.7819	63.56
06/05/02	7.93	0.0840	2.06	90.00	163.98	0.7618	62.96
06/12/02	7.93	0.0840	2.09	90.00	165.19	0.7780	63.93
06/19/02	7.93	0.0840	2.08	92.50	168.83	0.7955	64.58
06/26/02	7.93	0.0840	2.28	95.00	177.08	0.7874	63.86

## **VITA**

Lora H. Claus was born and raised in Fairfax, Virginia. She attended Virginia Tech and was graduated with a Bachelor of Science in Agricultural and Applied Economics in May of 2001. She stayed on in pursuit of a Master of Science degree in that same field, under the supervision of Dr. Wayne Purcell. She is currently employed as a commodities analyst and trader for Smithfield Foods, Inc. in Smithfield, Virginia.