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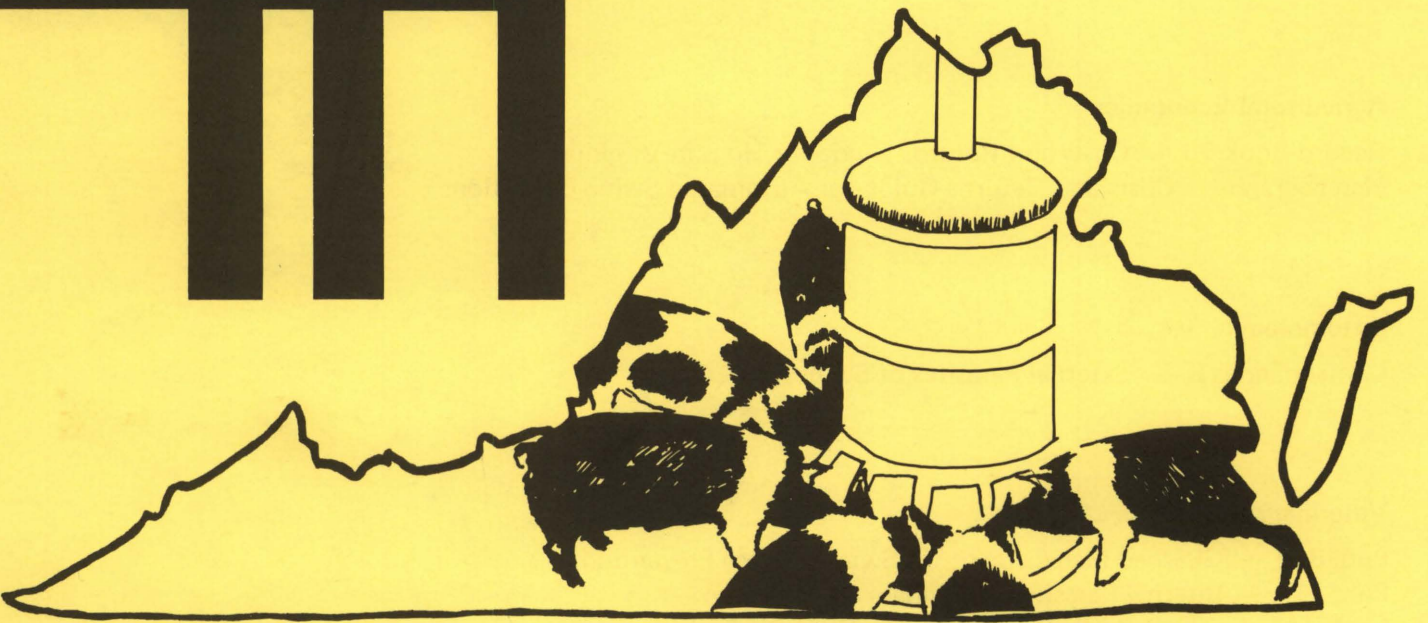
JUN 1 1978

BLACKSBURG, VIRGINIA

4-H

MARKET HOG

Guide & Record



Extension Division · Virginia Polytechnic Institute and State University

Name _____ Age _____ Club Year _____

Address _____ County _____

Name of Club _____ Years in 4-H _____

Name of Leader _____ Record Book 83

Swine Publications *

Animal Science

- Pub. 230 – Virginia Swine Nutrition
- Pub. 207 – Performance Testing Swine Evaluation
- Pub. 385 – Swine Management and Production Schedules
- AS-70-13 – Sow and Litter Record Card
- AS-70-14 – Sow Production Record
- AS-69-04 – Two Sow Group Farrowing System
 - Farrowing Tips for Virginia Producers
 - Table for Rapid Determination of Expected Farrowing Dates
 - Swine Management Tips

Agricultural Engineering

- Mimeograph – Manure Disposal Lagoons
- Mimeograph – Swine Facilities
- Mimeograph – Swine Ventilation Guides
- Mimeograph – Swine buildings (Sketches & descriptions of various available plans for swine buildings—modest to elaborate)

Agricultural Economics

- Record Book 76 – Costs and Returns Guide for Hogs in Virginia
- Mimeograph – Costs and Returns Guide for Automated Swine Operations

Entomology

- Control Series 8 – External Parasites of Swine

Veterinary Science

- Pub. 310 – Guarded Management for Swine Disease Prevention
- Pub. 217 – Internal Parasites of Swine
- Leaf. 147 – The Specific Pathogen Free (SPF) Pig Program
- MV 35 – Swine Vaccines
- Mimeograph – Swine Health (Individual leaflets on specific disease problems)
- Mimeograph – Protect Pigs With a Health Program

* Copies are available from your local Extension Agent.

Record Book 83
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4-H Market Hog Guide and Record-Unit I

Land, Housing and Equipment

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Introduction

The market hog project is designed to meet many of the overall 4-H program objectives including development of leadership, citizenship responsibility, and personal growth.

The project is also designed to help members learn more about raising market hogs. Advantages of market hog production include low initial investment and quick return for the investment. Pigs used for this project may be purebred or crossbred. They may be barrows or gilts. A group of about 5 pigs is a desirable number to feed and manage for beginners. A member may choose to expand into a large market hog operation as he gains experience. Members are encouraged to show pigs in a county, area or state market hog show or fair but this is not required.

Requirements

1. You must be between the ages of 9 and 19 years.
2. Feed at least one market barrow or gilt.
3. Give at least one talk about swine at a club meeting.
4. Give at least one demonstration about swine at a club meeting.
5. Complete the project record.

Hogs may be raised under a confinement system or they may be kept on pasture. Modest but adequate housing can be provided easily such as a total confinement arrangement or shelters on pasture or in dry lots. Most modern swine operations have a system of total confinement.

A Good Pasture:

- * Contains legumes such as clover and alfalfa
- * Saves on feed
- * Provides a clean, healthy place for pigs
- * Should provide pigs with space to get needed exercise
- * Should be large enough to provide 1/4 acre for each 5 pigs
- * Should be well drained, free of ponds, mud holes or other areas where pigs might wallow

A Good Shelter:

- * Provides protection from winter weather
- * Provides shade in the summer
- * Should provide at least 8 to 10 sq. ft. per pig
- * Can be simple and inexpensive
- * Should be thoroughly cleaned and disinfected before use

Feed and water may be provided by self feeders and automatic waterers or with the use of simple troughs. Provide one feeder hole per 4 pigs and 1 automatic water cup per 20 pigs.

A Good Trough:

- * is large enough to provide for a one day supply of water or feed
- * is constructed so pigs cannot lie down in it
- * is built so pigs cannot turn it over

Selecting Market Hogs

Terms You Should Know

Barrow — a male pig that has been castrated before reaching maturity

Gilt — a female pig that has had no offspring.

Boar — a uncastrated male pig or hog

Sow — a female hog that has had at least one litter of pigs.

Litter — offspring produced at one farrowing

Farrow — giving birth to pigs

Pig — young swine of either sex, usually less than 6 months of age

Feeder Pig — a young pig that has been weaned and is ready to feed out. Pigs bought to go on feed generally weigh from 40 to 75 pounds.

Purebred — an animal both of whose parents are of the same breed and are recorded in the registry association

Grade — an animal that has one or both parents that are not recorded in a breed registry association

Crossbreds — an animal that has two purebred or high grade parents of different breeds

3-Way Cross — an animal that has one parent that is a crossbred and one parent that is a purebred of a third breed.

If this is your first year enrolled in this project you should have someone help you select your pigs. This could be your father, club leader, a purebred breeder or Extension agent.

Select a pig:

- * that is well-muscled
- * that has deep, bulging hams
- * that is long, trim and smooth
- * that is thrifty and free from disease

Where to Secure Pigs

1. Pigs you raised from a 4-H breeding project.
2. Your father's herd
3. Your neighbor's herd
4. A special feeder pig sale

When to Secure Pigs

Pigs should be obtained at the correct weight and time to reach 190-240 lbs. by market day. If you plan to exhibit and sell your pigs at a junior market hog show and sale you should use the following guide to determine when to start and what weight pig to obtain. A good market hog should reach a weight of about 220 lbs. when it reaches 150 to 170 days old (5 to 5 1/2 months). If you buy an 8 week old pig that weighs about 50 lbs., he should reach market weight in about 100 days. Be sure to obtain the birth dates of your pigs. Pigs should be treated for worms about 10 days to 2 weeks after purchase.

How Much To Pay

Avoid paying too much for your pigs because this could result in an unprofitable project. Use the following guide to help you decide how much you can afford to pay for feeder pigs.

Assume you have estimated the following:

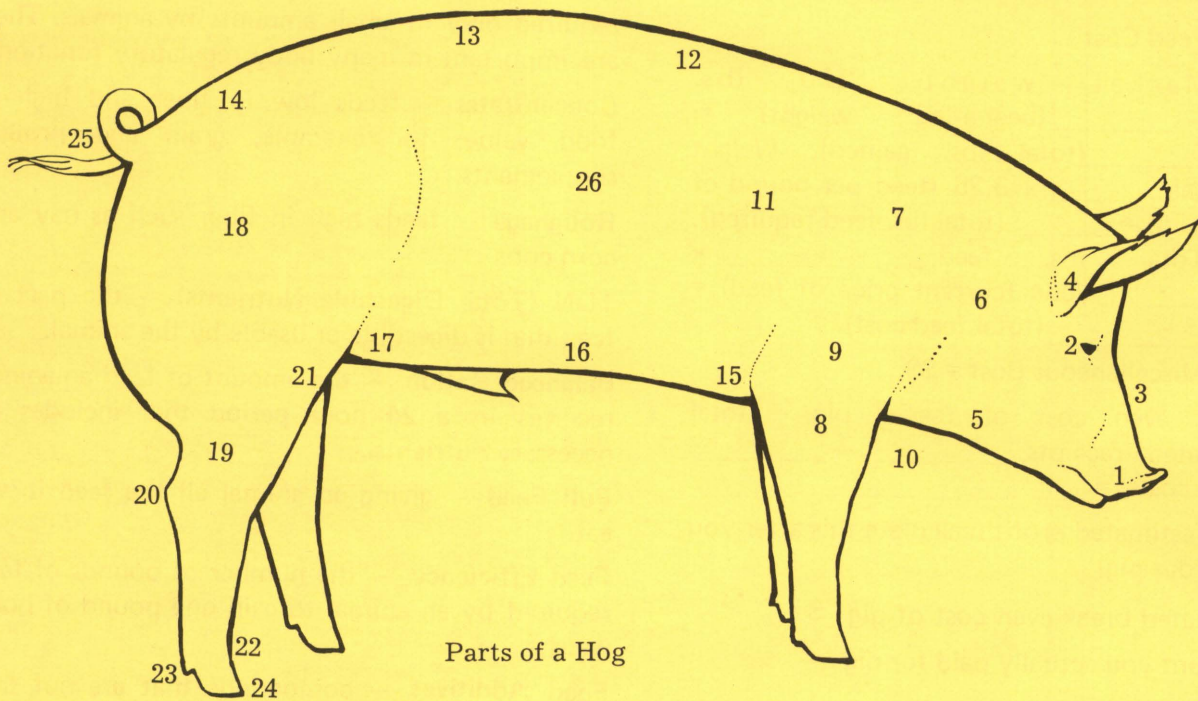
1. Pig weight at purchase, 50 lbs.
2. Expected market weight, 220 lbs.
3. Expected market price, \$20/cwt
4. Amount of feed used, 550 lbs.
5. Feed cost, \$4/cwt

Calculations:

	Expenses	Receipts
1. Sell 220 lbs. hog @ \$20/cwt		\$44
2. Feed cost, 550 lbs. @ \$4/cwt	\$22	
3. Miscellaneous cost	3	
	\$25	- 25
Estimated break-even cost of feeder pig		\$19

Now make your own calculations according to current hog prices, feed costs, etc. using the following steps:

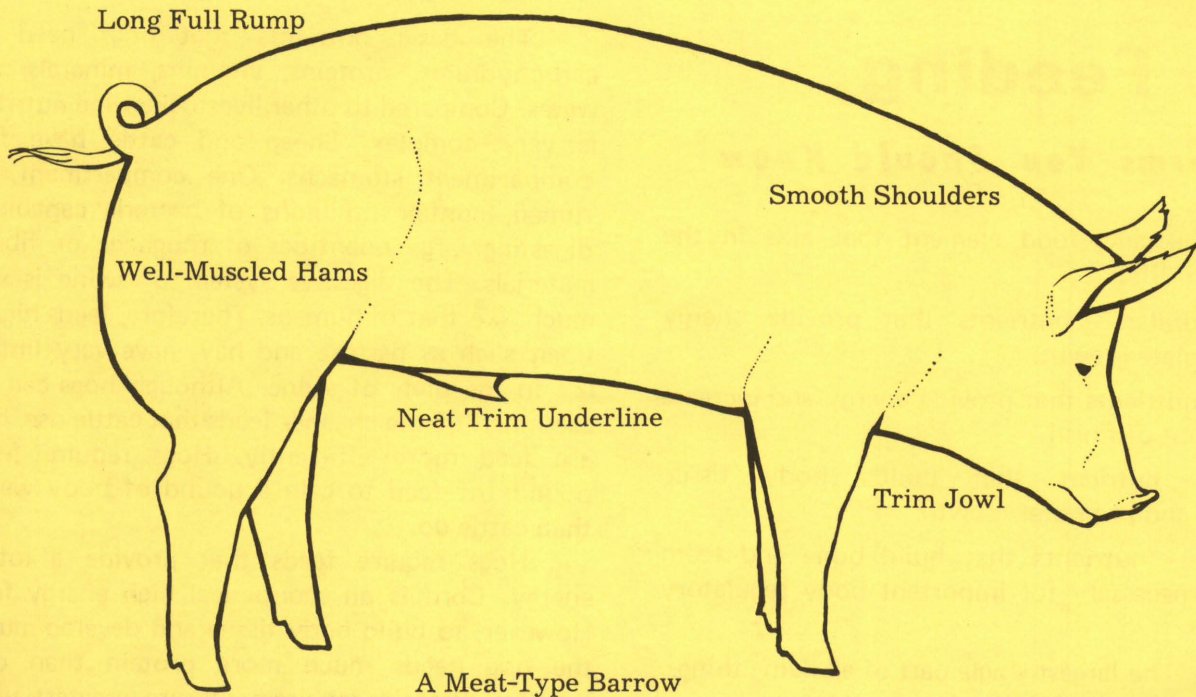
1. Receipts
Sell 220 lb. hog @ \$ _____ /cwt (projected price of market hog) = _____



Parts of a Hog

- | | | | | | |
|----------|--------------|----------------|----------------|------------------|----------|
| 1. Snout | 6. Neck | 11. Forerib | 16. Belly | 21. Stifle | 26. Side |
| 2. Eye | 7. Shoulder | 12. Back | 17. Rear Flank | 22. Pastern | |
| 3. Face | 8. Front Leg | 13. Loin | 18. Ham | 23. Dew Claws | |
| 4. Ear | 9. Forearm | 14. Rump | 19. Rear Leg | 24. Feet or Toes | |
| 5. Jowl | 10. Chest | 15. Fore Flank | 20. Hock | 25. Tail | |

Backfat Thickness



2. Expenses

a. Feed Cost

Market weight, 220 lbs.
– _____ (beginning weight) =
_____ (total lbs. gained). Weight
gain, _____ x 3.25 (feed per pound of
gain) = _____ (total lbs. feed required).
Total lbs. feed, _____ x
_____/cwt (current price of feed) =
_____ (total feed cost).

b. Miscellaneous Cost = \$3.

3. Break even cost of feeder pig = total
estimated receipts, _____ – _____
(total costs) = _____

4. Your estimated profit (calculate this after you
buy your pig)

Estimated break-even cost of pig \$

Amount you actually paid for pig –

Your estimated profit or loss \$

You should realize that little profit is obtained from each pig, but if a producer raises 500 to 1000 market hogs then the total profit may be several thousand dollars. Therefore, a successful market hog operation is based on volume of production with little actual profit from each pig.

Feeding

Terms You Should Know

Nutrient – any food element that aids in the support of life.

Carbohydrates – nutrients that provide energy and stimulate growth.

Fats – nutrients that provide energy and increase the amount of finish.

Protein – nutrient that builds body tissue (muscle) and promotes growth.

Minerals – nutrients that build bone and teeth and are necessary for important body regulatory functions.

Water – The largest single part of all living things. It is a carrier of other nutrients and is necessary in most of the body's chemical reactions.

Vitamins – nutrients which are necessary but required only in small amounts by animals. They are important in many body regulatory functions.

Concentrates – feeds low in fiber and high in food value; for example, grain and protein supplements.

Roughage – feeds high in fiber such as hay and corn cobs.

TDN (Total Digestible Nutrients) – the part of feed that is digestible or usable by the animal.

Balanced Ration – the amount of feed an animal receives in a 24 hour period that includes all necessary nutrients.

Full Feed – giving an animal all the feed it will eat.

Feed Efficiency – the number of pounds of feed required by an animal to gain one pound of body weight.

Feed Additives – compounds that are not true nutrients since they are not required for normal growth. However some have growth stimulating effects.

Nutrient Requirements

The basic nutrients that hogs need are carbohydrates, proteins, vitamins, minerals, and water. Compared to other livestock swine nutrition is very complex. Sheep and cattle have four compartment stomachs. One compartment, the rumen, contains millions of bacteria capable of digesting large quantities of roughage or fibrous materials. The digestive system of swine is very much like that of humans. Therefore, feeds high in fiber, such as pasture and hay, have very limited use in the diets of swine. Although hogs can not use much of the cheaper feeds that cattle use, hogs use feed more efficiently. Hogs require fewer pounds of feed to gain a pound of body weight than cattle do.

Hogs require feeds that provide a lot of energy. Corn is an economical high energy feed. However, to build body tissue and develop muscle the hog needs much more protein than corn supplies. Protein requirements are greatest when the pig is young.

Protein, minerals and vitamins can be mixed as a single supplement and then added to the corn to provide a balanced ration. As the pig grows the amount of supplement can be reduced. Market hogs should be full fed so they will reach market weight as soon as possible.

Rations For Pigs In Confinement

Pig Weight	Crude Protein % of Ration	Amount of Corn and Supplement ^{a/} for 100 lbs. of feed				
		Ration A		Ration B		
		lbs. Corn	lbs. 36% Supplement	lbs. Corn	lbs. Supplement	40%
40-75	16	74	26	77	23	
75-150	14	81	19	84	16	
150-220	12	89	11	90	10	

^{a/} Commercial Supplement with Vitamins and minerals added.

Tips on Fitting and Showing

Pig Preparation:

1. Wash and clean your pig thoroughly.
2. Make no attempt to part or curl the hair on your pig. The hair is groomed to lie in its natural direction.
3. Remove the hair from the base to the switch of the tail and both inside and outside the ears.
4. Apply just enough oil to pigs to give their haircoat a glossy appearance.
5. Work with your pig so that he is gentle and easily handled.

Tips on Showing:

1. Carry brush into the ring, but keep it in your pocket or otherwise out of sight most of the time. (Use when judge is not looking.)

2. An open area 20 feet from the judge provides a better place to show a pig than a crowded area within several feet of the judge.
3. Show your pig at a slow to moderate walk as he looks best while on the move.
4. Bring your pig to an immediate halt if the judge indicates a desire to inspect him at a standing position.
5. Permit your pig to stand for brief moments if he remains alert and does not assume an awkward position.
6. Make no attempt to place your pig's feet by handling them.
7. Keep your pig within clear view of the judge.
8. Use a light whip, cane or light stick to direct the pig about the arena. The pig responds to light taps from or the mere sight of such a show stick.
9. Use a small light panel instead of a cane or stick if the ring is crowded or the pig is known to be a scrapper.
10. Never carry both a panel and cane. One hand is left free.
11. Never force your pig to make abrupt turns in the show ring. Don't permit him to walk into a spot that makes it necessary to back out. Don't overshadow your pig as it will fret and tire him.
12. Make no effort to improve the arch of a pig's back by pushing its nose down or its rump forward. Actually, such tactics make the pig look worse.

Marketing

Successful market hog producers must follow market prices closely. This is necessary because prices vary throughout the year and from year to year. The projected market price is valuable for determining price to pay for feeder pigs.

As an additional exercise for this project you may wish to determine the following:

Monthly Average Price of Market Hogs For One Year

<u>Month</u>	<u>Price</u>	<u>Month</u>	<u>Price</u>	<u>Month</u>	<u>Price</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Weekly Average Price of Market Hogs for Three Months

<u>Date</u>	<u>Price</u>	<u>Date</u>	<u>Price</u>	<u>Date</u>	<u>Price</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Hauling To Market. Proper care of pigs is important when hauling because injuries decrease the value of market livestock. Improper care can also result in the total loss of some pigs.

Follow these tips for hauling:

1. Don't overcrowd.
2. Don't mix pigs with other livestock.
3. Use partitions in truck bed when hauling a small load so pigs will not shift.
4. Provide straw in truck and keep warm for winter hauling.
5. Provide sand and keep pigs cool in summer months.
6. Don't kick pigs; use a slapper to move them.

The following are different ways in which pigs are sold:

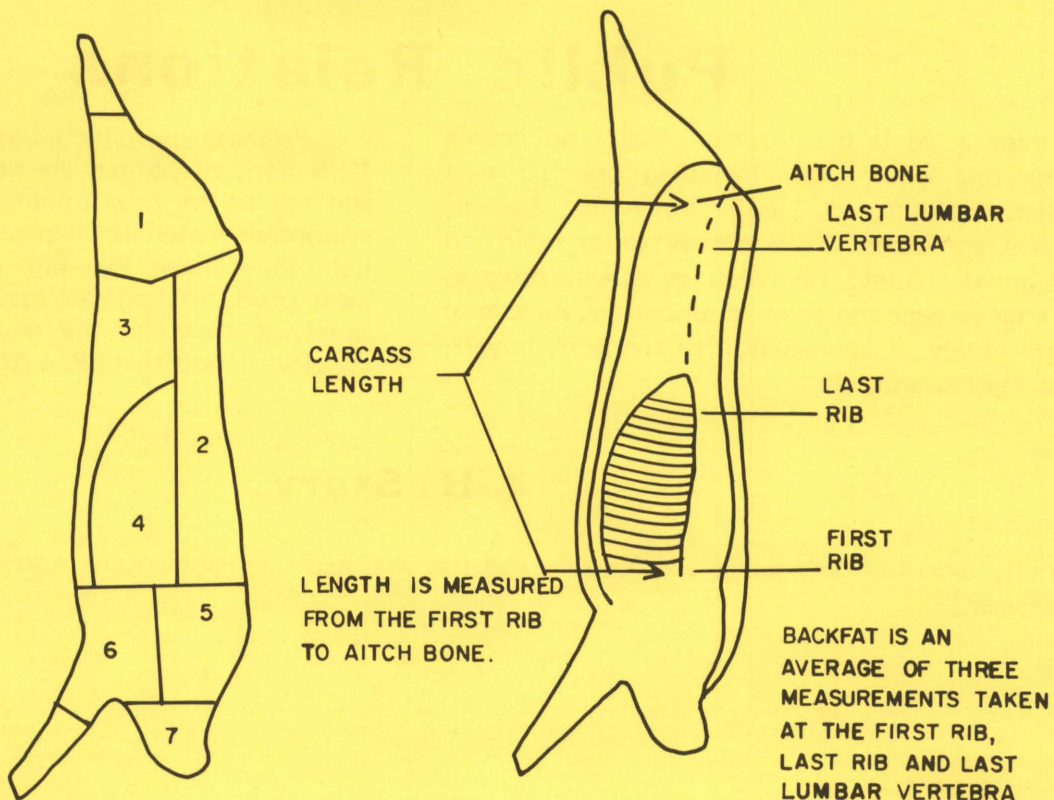
1. Direct to packer
2. Buying station
3. Auction
4. Special show and sale

Carcass Information

Carcass information can help you better understand whether or not the type pigs you raise are a desirable product for the packer and consumer. This is quite important since the producer (you) must continually strive to produce a high quality product at a relatively low cost.

If possible try to obtain carcass data from your pig. This information is available at some of the junior market hog shows and sales in Virginia. Record this information in the appropriate place in this book.

1. HAM
2. LOIN
3. BELLY
4. SPARERIBS
5. BOSTON BUTT
6. PICNIC
7. JOWL



Relationship Of Weight And Value Of Retail Cuts

Retail Cut	Percent of Live Weight	Percent of Carcass Weight	Percent of Retail Value
Ham	14.9	19.8	25.8
Loin	12.5	16.7	22.8
Belly (bacon)	11.0	14.6	21.5
Spareribs	2.6	3.4	4.7
Boston Butt	5.0	6.7	6.7
Picnic	6.2	8.3	7.1
Lean trim	4.3	5.7	6.4
Jowl	2.1	2.8	1.6
Fat	12.3	16.4	2.2
Miscellaneous	4.2	5.6	1.4

Public Relations

Be a good businessman. Visit the people supporting your work including breeder, feed dealer, veterinarian, leader, parents, banker, buyers, and others. Develop news stories, radio and TV broadcasts, etc. Take pictures showing progress of your project and show to supporters. Be sure to write letters of appreciation to sponsors, buyers, donors of awards, etc.

Promote the pork industry. Eat large (1" to 1½") pork chops that are not overcooked. Show and tell others how to do this. Distribute pork promotion materials; help sell the swine industry. Let others know that pigs are clean, intelligent, meat-producing animals that serve a vital role in supplying food for the table. All this will help convince people that "Pigs Are Beautiful".

4-H Story

(Briefly describe some things you have learned this year and the plans you have to improve your project next year.)

PROJECT PICTURES
(Side View)

Picture at beginning of project
Date Picture Taken _____

Picture at end of project
Date Picture Taken _____

TABLE A. Livestock Purchased and Sold

Kind of livestock	Date of Birth	Purchases				Sales			
		Date	Weight	Price/lb.	Total	Date	Weight	Price/lb.	Total
TOTALS				\$	\$			\$	\$

II. Efficiency of Production

1. Weight of animal at start of project (table A) _____ lb.
2. Weight of animal when sold (table A) _____ lb.
3. TOTAL GAIN (subtract line 1 from line 2) _____ lb.
4. Days animal was on feed (table A) _____ days
5. Age of animals in days (table A) _____ days
6. Total feed cost (line 5, Section I) \$ _____
7. Feed cost per pound of gain (divide line 6 by line 3, and multiply this quotient by 100) _____ ¢/lb.
8. Weight per day of age (divide line 2 by line 5) _____ lb./day age
9. Daily gain on feed (divide line 3 by line 4) _____ lb./day

MARKET HOG ANALYSIS

Growth Performance	Set Some Goals	Compare Your Results
Number days - birth to market at 220 lbs.	160 days or less	
Number days - weaning to market	95-125 days	
Average daily gain from 40 lbs. to market weight	1.65 lbs.	
Feed required per lb. of gain	3.0 - 3.5 lbs.	
Market grade at 190-230 lbs.	U. S. No. 1	

Carcass Characteristics (220 lb. market hog)

Backfat thickness	1.4 or less	
Percent lean cuts	53% or more	
Square inches loin eye	4.5 sq. in. or more	
Length	29.5 in. or more	

4-H Activities Record

I. Club Responsibilities

Number of meetings your club held this year. _____

Number you attended. _____

Offices held in 4-H club work this year.

Committees you served on. _____

Did you serve as a 4-H member leader?
yes _____ no _____

II. Project Activities

Projects you completed this year.

Give location for each activity below (Local, L; County, C; District, D; State, S; Regional, R; National, N).

Talks. Give title. _____

Demonstrations. Give title. (Include dress revue.) _____

Exhibits. Give name of project.

Judging Contests. Give type.

Showmanship Contests. Give type.

Public Speaking Contests. Give title.

III. Other Activities

Place a check (✓) beside the following activities and events in which you participated.

- () Project tour
 - () Project workshop
 - () Judging school
 - () Fitting and Showing school
 - () Officer training
 - () Leadership training
 - () Community service project
 - () 4-H Church Sunday
 - () National 4-H Club Week
 - () County Camp
 - () Conservation Camp
 - () TV Camp
 - () Electric Congress
 - () State 4-H Congress
 - () National 4-H Congress
 - () 4-H Citizenship Short Course
 - () 4-H Citizenship Conference
 - () Achievement Day
 - () Health Check-up by Doctor
 - () Dental Check-up by Dentist
 - () News articles written, No. _____
 - () Radio programs, No. _____
 - () TV programs, No. _____
 - () Others _____
- _____
- _____

IV. 4-H Awards and Honors

List those received this year.

Date project completed. _____