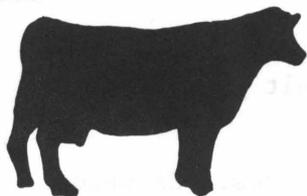


LD
5655
A762
NO. 176
1980
C. J.

Dairy guidelines

EXTENSION DIVISION VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY BLACKSBURG, VIRGINIA

Series 176 - Revised March 1980



GUIDELINES TO REVIEW FEED SUPPLIES AND EVALUATE FEED REQUIREMENTS



G. M. Jones
Extension Specialist, Dairy Management

V.P.I. & S.U. LIBRARY

Purpose:

- Evaluate present feed supplies
- Determine feed requirements
- Summarize your overall feed situation
- Plan feeding strategies and alternatives

MAY 6 1980

BLACKSBURG, VIRGINIA

This Guideline will help you evaluate your feed supply early so that feed shortages can be anticipated and prices and availability of other feed sources can be considered when it is more to your advantage.

Objectives:

By reviewing your available feed supply and establishing your feed needs for the next year or until new feed is available, you can decide which of the following alternatives are feasible:

1. Sell excess feed
2. Reduce or vary the amount of forages
3. Buy additional feed
4. Substitute grain for forage or vice versa
5. Sell dairy beef
6. Cull cows
7. Buy additional livestock

Assignment:

The attached worksheet will allow you to determine the amount of feed available. Provide the necessary information related to feeds, amounts of specific feeds to be included in the feeding program, cow information, and samples of home-grown feeds.

Deliver the feed samples and worksheet to your county Extension Agent. Forages will be analyzed for dry matter, crude protein, and crude fiber. These results as well as other information provided by you will be used in development of a Simplified Feed Program (DAIR2) for your herd.

As soon as you have received your DAIR2 recommendations, the Summary section of the worksheet can be completed. You can determine how much silage or other forage you will need or how short your forage supply will be. The dry matter shortage can be alleviated by such feedstuffs as brewers grains, soy hulls,

Virginia Cooperative Extension Service programs, activities, and employment opportunities are available to all people regardless of race, color, religion, sex, age, national origin, handicap, or political affiliation.
An Equal Opportunity/Affirmative Action Employer

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, and September 30, 1977, in cooperation with the U.S. Department of Agriculture. W. R. Van Dresser, Dean, Extension Division, Cooperative Extension Service, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061; M. C. Harding, Sr., Administrator, 1890 Extension Program, Virginia State University, Petersburg, Virginia 23803.

alfalfa pellets, commercial forage extenders, etc. Obtain a second feeding recommendation which includes the forage substitute at the amount needed to carry your feeding program to the next season.

The example below will help you complete the Guidelines. Consult your Extension Agent if you have any problems with the worksheet.

Farmer Jones has 90 cows, 34 yearling heifers, and 35 heifer calves. He needs feed for all these animals from October through May (243 days or 8 months).

Available feed includes:

- 1 silo (24 x 60 feet, two-thirds full) of corn silage, 3/8" cut
- 1 silo (16 x 50 feet, one-third full) of barley silage, 1/2" cut
- 4,000 bales of first cut hay (45 lb bales)
- 1,000 bushels of wheat
- 3,000 bushels of shelled corn

The grains, wheat and shelled corn were purchased at harvest and will be used in the concentrate mix.

Sample Guide

- I. Cattle inventory. Enter the number of each class of animals on the farm and divide this by the appropriate value to calculate animal units.

90 cows x 1	= 90 animal units
34 yearling heifers divided by 2	= 17 animal units
35 calves divided by 4	= 9 animal units
	<u>116</u> animal units total

II. Feed availability

A. First cut hay:	4,000 bales x 45 lb/bale	= 90 tons
B. Corn silage:	24 x 60 ft silo, 2/3's full	= 458 tons (from Silo Guide)
C. Barley silage:	16 x 50 ft silo, 1/3 full	= 78 tons (from Silo Guide)
D. Wheat:	1,000 bu x 60 lb/bu	= 30 tons
E. Shelled corn:	3,000 bu x 56 lb/bu	= 84 tons

Length of cut was 3/8" for corn silage and 1/2" for barley silage. Silage capacity can be left blank and will be estimated by the Virginia Tech Silo Feeding Guide.

III. Cow information

47 lb milk at 3.8% fat
1350 lb body weight

IV. Limitations on daily amount of specific feedstuffs

First cut hay 3.25 lb/cow 76 cows 243 days = 30 tons

At 3.25 lb/milking cow, there is sufficient hay for the following minimum allowances:

dry cows - 10 lb/cow daily
yearlings - 5 lb/heifer daily
calves - 5 lb/heifer daily

V. Simplified Dairy Cattle Feeding Program

Forage Test:

	Dry Matter	Crude Protein	Acid Detergent Fiber
Hay	87	16	37
Corn silage	35	8	34
Barley silage	38	9	34

Feeding Program:

Concentrate	=	15.0 pounds 20 percent dairy concentrate
Silage	=	64.2 pounds corn or 59.1 lb barley
Hay	=	3.3 pounds

VI. Summary

	Hay		Corn Silage		Barley Silage	
	Available	Need	Available	Need	Available	Need
Days		243		205		38
Milk cows						
lb/c/d	3.25	3.25	43.0	64.2	39.6	59.1
tons	30.0	30.0	335.0	500.1	57.2	85.3
Dry cows						
lb/c/d	10	10	33	33	30	30
tons	17.0	17.0	47.4	47.4	8.0	8.0
Yearlings						
lb/c/d	5	5	21.5	42	19.8	38.6
tons	20.7	20.7	74.9	146.4	12.8	24.9
Heifers						
lb/c/d	5	5	-	-	-	-
tons	21.3	21.3	-	-	-	-
Total	90.0	89.0	458	693.9	78	118.2
Shortage or Excess				-236.9		-40.2
Tons DM				-82.6		-15.3
lb DM/milking cow/d				-7.4		-7.4

Dry cows were restricted to 1.5 lb DM/100 lb body weight. The 10 lb hay provides 8.7 lb DM or allows for 11.6 lb silage DM (33 lb corn silage or 30 lb barley silage). The remainder of the silage is fed to milking cows or yearlings. Calves will not receive silage in this example.

	Ton			Ton DM
Corn silage	458	x	.35	= 160.0
Barley silage	78	x	.38	= <u>29.6</u>
				189.6
Silage for dry cows				<u>19.7</u>
Silage for milk cows and yearlings				169.9 ton DM total

169.9 ton DM ÷ 93 animal units (A.U.) = 1.83 ton DM/A.U.

93 A.U.s = 76 milking cows + 34 yearlings (+2)

1.83 ton DM/A.U. x 2,000 lb/ton = 3,653 lb DM/A.U.

3,653 lb DM/A.U. ÷ 243 days = 15.0 lb DM/A.U. daily

Cows = 15.0 silage DM/d ÷ .35 or .38 (%DM) = 43.0 or 39.6 lb
 Yearlings = 7.5 lb silage DM/d ÷ .35 or .38 = 21.5 or 19.8 lb

	Corn silage	Barley silage
Cows	43.0 lb	39.6 lb
Yearlings	21.5	19.8

Corn silage:

76 cows x 43 lb = 3,268 lb/day
 14 dry cows x 33 lb = 462
 34 yearlings x 21.5 lb = 731
 4,461 lb/day = 2.23 ton/day

458 ton corn silage ÷ 2.23 ton/day = 205 days

Barley silage:

76 cows x 39.6 lb = 3,010 lb/day
 14 dry cows x 30 lb = 420
 34 yearlings x 19.8 lb = 673
 4,103 lb/day = 2.05 ton/day

78 tons barley silage ÷ 2.05 ton/day = 38 days

In this example, there is not sufficient forage dry matter available (-7.4 lb DM per milk cow daily). Other feeds should be made available. (e.g., wet brewers grains, soy hulls, alfalfa pellets, forage extenders, etc.). This farm could use 8.4 lb/milk cow daily of forage substitutes (90% DM) or 30 lb wet brewers grains. A balanced ration should be reformulated, considering the nutritive contribution of the forage substitutes.

WORKSHEET

Name _____ County _____

Address _____ Phone _____

Date _____

I. Cattle inventory Animal Units

Number of milk cows _____

Number of yearlings _____, divided by 2 _____

Number of calves _____, divided by 4 _____

Total number of animal units _____

II. Feed availability

A. Hay Kind _____ Bales x lb /bale = lb available DM CP ADF

_____ x _____ = _____

_____ x _____ = _____

B. Silage (kind) _____ Silo size diam _____ ht _____ Silage ht _____ Length cut _____ Total silage _____ DM CP ADF

C. Other forage _____ lb available DM CP ADF

_____ x _____ = _____

_____ x _____ = _____

D. Grain _____ Bushels x lb /bu = lb available DM CP ADF

Corn _____ x _____ = _____

Barley _____ x _____ = _____

Wheat _____ x _____ = _____

III. Cow information

_____ lb milk/day (milking cows), _____ % butterfat

_____ lb body weight

IV. Limitations on daily amounts of specific feedstuffs

<u>Feed</u>	<u>lb /cow/day</u>	<u>cows</u>	<u>days to feed</u>	=	<u>total lb</u>
_____	_____	_____	_____	=	_____
_____	_____	_____	_____	=	_____
_____	_____	_____	_____	=	_____
_____	_____	_____	_____	=	_____

V. Summary

	Hay		Corn silage		Other _____	
	Available	Need	Available	Need	Available	Need
<u>Days</u>						
<u>Milk cows</u> <u>lb/c/d</u>						
<u>tons</u>						
<u>Dry cows</u> <u>lb/c/d</u>						
<u>tons</u>						
<u>Yearlings</u> <u>lb/c/d</u>						
<u>tons</u>						
<u>Heifers</u> <u>lb/c/d</u>						
<u>tons</u>						
<u>Total</u>						
<u>Shortage or Excess</u> <u>tons DM</u>						
<u>lb DM/c/d</u>						

VI. Questions or comments _____
