

Short Forage ... What to Do? Options Available Using an Example Herd

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With the dry conditions this past summer, several farmers have been left with tight or short forage supplies. The question then becomes, how does one design a feeding program to compensate for these shortages of quality forages at the same time making sure the feeding program is both economical and profitable. In past articles, I have described several of the decisions and options available to compensate for shortfalls in home-grown forages. Here, I would like to use an example herd and walk through the decision-making process involved when deciding what changes to make in the feeding program for the milking herd. When evaluating the various options available, one needs to keep in mind not only the economics of each option, but also whether an option will fit the farm and its management scheme. Please remember that the option best suited for your operation may not be the best solution for your neighbor. Although prices will change from year to year, this article illustrates the process used to determine the best option for your dairy operation.

Description of Herd and Feeding Program

In this example, my Holstein herd consists of 110 milking cows, on average 16 dry cows, and 130 heifers. My cows are averaging 60 lbs of milk and 40% of my cows have freshened within the last 90 days. My cows are fed corn silage, limited amounts of alfalfa hay, whole cottonseed, and a commercially-supplied grain mix which also contains the minerals and vitamins needed by my cows. After heifers are 4 months of age, they are housed on a separate farm five miles from the home farm. Dry cows, until they are within 3 weeks of calving, are also housed on the second farm. These heifers along with the dry cows are fed wheat silage, orchard grass hay, and a grain mix formulated to complement the forages fed.

Starting Point- Determine Amount of Each Forage on Hand

Alfalfa Hay: In this example herd, I have 1500 bales of alfalfa hay to feed the milking cows. To simplify this example, all of this hay contains 39% acid detergent fiber (ADF), 55% neutral detergent fiber (NDF), and has a relative feed value of 105. In order for this hay to last until the middle of May, I can feed 9 bales of hay per day. Assuming my bales weigh 50 lbs each, I can feed 4 lbs of hay daily per cow when I am feeding 110 cows and 4.5 lbs of hay per cow if I decide to decrease the number of milking cows to 100.

Forage Supply	
Alfalfa Hay - 9 bales per day	110 cows = feed 4 lbs/cow/day
	100 cows = feed 4.5 lbs/cow/day
Corn Silage - last until Sept	110 cows = feed 33 lbs/cow/day
	100 cows = feed 36 lbs/cow/day

Corn Silage: In an upright silo, I have 500 tons of good-quality corn silage. If my corn silage only needs to last until the middle of May, I would have enough silage to feed 54 lbs per cow

for 110 cows or 60 lbs per cow if I only feed 100 cows. However, my cropping program is such that I need the small acreage of wheat sown this fall to feed my heifers and dry cows next winter. I have not planted any additional forages to feed the milking herd this summer so I must make my corn silage supply last until September when I normally chop corn silage. Thus, I can only feed 33 lbs of corn silage per cow with 110 cows or 36 lbs if I reduce my herd size to 100 milking cows.

Wheat silage: The wheat silage will be reserved for the heifers and dry cows. The distance from the other farm and also the lower forage quality preclude using it in the milking herd ration.

Take-home points:

- Determine amount of forage on hand
- Allocate forage so that you do not run out before the end of the feeding season
- Incorporate your spring-summer feeding program into your current decision

Feed the Best ... Cull the Least Productive Cows

After evaluating the production and management records for my herd, I have decided to cull ten milking cows. Of the ten cows culled, four cows were culled for high somatic cell count; three stale cows were culled with breeding problems; another two cows with low milk production; and the last cow because of “an attitude”. Thus, on average I will have 100 cows in the milking string over the next nine months. In addition, I have decided I can sell 10 extra bred heifers to help provide cash to pay for some of the purchased forage needs up-front. I have selected those heifers which have the lowest potential to produce milk, thus the heifers with the lowest calculated ETA or from the poorest bulls for PTA \$\$ for milk. Thus, I am retaining the heifers with the best genetics and selling those from the lower end.

Take-home points:

- Review your production and management records to see if your cows are “paying their keep”
- Cull those cows with problems
- Feed the best
- Evaluate the number of heifers you are feeding - The costs associated with raising heifers can account for 15-20% of the costs of producing milk. Reducing the number to those needed as herd replacements decreases feed needs and total costs.

Evaluate Options Available

In this example, we are short corn silage. The remainder of the article looks at some of the options available and the pros and cons of each option.

In this example, I will illustrate five possible options to compensate for the shortage of home-grown corn silage in the milking cow diet.

Ration from Previous Year
• 55-60 lbs corn silage
• 5 lbs home-grown alfalfa hay
• 3 lbs whole cottonseed
• 22 lbs commercial grain mix fortified with needed minerals and vitamins

For this example, the prices listed in the accompanying table were used for economical comparison. I realize that these prices may not totally reflect the cost of these commodities in

your counties, however this exercise is to illustrate the thought process involved when making these types of decisions.

Prices Used in this Example (prices per ton, except corn in bushels)	
Home-Grown Forages	Purchased Feeds
<ul style="list-style-type: none"> • Corn Silage \$25 • Alfalfa Hay \$100 	<ul style="list-style-type: none"> • Alfalfa Hay \$140 • Whole Cottonseed \$150 • Corn Grain \$2.25/bu • Soybean Meal \$200 • Dried Distillers \$150 • Corn Gluten Feed \$110 • Soybean Hulls \$80

Option 1: Feed only my own home-grown forages- by utilizing extra round bales of poor-quality orchardgrass hay

Amounts Fed	Comments
<ul style="list-style-type: none"> • 35 lbs Corn Silage • 4.5 lbs Own Alfalfa Hay • 9 lbs Rough Orchard Grass Hay • 3 lbs Whole Cottonseed • 22 lbs Grain 	<ul style="list-style-type: none"> • No out of pocket costs because no additional forage or additional grain commodities are purchased, • However, this ration <i>will</i> decrease milk production and <i>will</i> decrease potential income or \$\$\$ after feed costs are accounted for.
Option 1: Not an Economical and Profitable Option	

Option 2: Purchase hay to replace the 20 lbs corn silage shortfall

Balanced Ration	Comments
<ul style="list-style-type: none"> • 35 lbs Corn Silage • 4.5 lbs Own Alfalfa Hay • 10 lbs Purchased Alfalfa Hay • 3 lbs Whole Cottonseed • 20 lbs Grain with Corn Gluten Feed 	<ul style="list-style-type: none"> • This option replaces the 20 lb deficit of corn silage with 10 lbs or purchased alfalfa hay with a Relative Feed Value (RFV) greater than 150. • Amount of whole cottonseed remains at 3 lbs/cow/day. • Ration balanced to reflect change.
Option 2: Cost = \$2.75/cow/day	

Option 3: Home-grown forages are fed with an addition of 5 lbs of purchased alfalfa hay and additional whole cottonseed and soybean hulls added to the diet

Amounts Fed	Comments
<ul style="list-style-type: none"> • 35 lbs Corn Silage • 4.5 lbs Own Alfalfa Hay • 5 lbs Purchased Alfalfa Hay • 5 lbs Whole Cottonseed • 4 lbs Soybean Hulls • 20 lbs Grain with Corn Gluten Feed 	<ul style="list-style-type: none"> • In this option, 5 lbs of purchased hay is used with additional commodities, specifically more whole cottonseed and soybean hulls.
Option 3: Cost = \$2.78/cow/day	

Option 4: Purchase all of the alfalfa hay to be fed now and save poor-quality, home-grown alfalfa hay for later in the year when less cows are recently fresh.

<p><u>Amounts Fed</u></p> <ul style="list-style-type: none"> • 35 lbs Corn Silage • 10 lbs Purchased Alfalfa Hay • 5 lbs Whole Cottonseed • 4 lbs Soybean Hulls • 20 lbs Grain with Corn Gluten Feed 	<p><u>Comments</u></p> <ul style="list-style-type: none"> • With the higher quality alfalfa hay, these cows will eat more and get more nutrients from what they eat. • For my example herd, a large percentage (40%) of the herd had calved in the last 90 days. • During early lactation, cows generally return the greatest profit to their owners. • By providing the best quality feed now, I can get these cows to milk better, peak higher, and have a better chance of getting them rebred.
<p>Option 4: Cost = \$2.84 with 10 lbs of purchased alfalfa hay Versus Cost = \$2.78 with only purchasing 5 lbs of alfalfa hay At \$12/cwt -- 0.5 lb milk per cow will pay for the difference</p>	

Option 5: Home-grown forages with purchased “non-forage fiber sources” or commodities, no additional hay purchased

<p><u>Amounts Fed</u></p> <ul style="list-style-type: none"> • 30-35 lbs Corn Silage • 4.5 lbs Own Alfalfa Hay • 5 lbs Whole Cottonseed • 9 lbs Soybean Hulls • 21 lbs Grain with Corn Gluten Feed 	<p><u>Comments</u></p> <ul style="list-style-type: none"> • Important points to consider when balancing rations <ul style="list-style-type: none"> • Provide adequate effective fiber to stimulate cud chewing (no less than 16 -18% Neutral Detergent Fiber (NDF) from forage) and provide appropriate amounts of starch or Nonfiber Carbohydrates (NFC). • Limited research done while feeding these diets 1st 30 days after calving.
<p>Option 5: Cost = \$2.84/cow/day</p>	

Choosing which option to feed: In the scenario described here, a large percentage of the cows have calved within the last 90 days. Therefore, I would look strongly at options 4 or 5 to get me through the winter.

(Please remember that this example is meant to illustrate the thought process needed to make a decision of what to do when you are short forages.)

Steps Involved in Making a Decision of What to Do If You Are Short

Forage:

- Determine where you are by taking an inventory of forages on hand and testing these forages to determine their quality
- Feed the best money makers
- With the help of your nutritionist, look at the economics of various feeding scenarios and find one which fits your farm and is the most economical. When reviewing your options REMEMBER to look at profitability or the amount of milk this ration can potentially support in relation to feed costs not just the cost of the purchased feed.