

Tools for Coping in 2013

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The 2012 drought that impacted major portions of the US created a myriad of challenges for all livestock producers. Hay yields were down sharply and the corn crop ranged from pretty good in a few small pockets of Iowa to absolutely dismal over the majority of the Midwest. This situation has created a double whammy for dairy producers as most have only a limited inventory of home grown forages and are faced with having to pay much higher prices for both hay and corn. Early predictions are that 2013 may not be any better. Although milk prices have been good recently, the forecast is for milk prices to decline. In addition, the higher feed costs are causing the income over feed cost margin to be extremely tight for most dairy producers. Consequently, long-term survival may depend on how successfully producers are able to utilize the various tools and options available to them.

Take a Feed Inventory

The first step is to take an inventory of available feed on hand and estimate the amount needed to last until the next harvest, given current number of livestock to be fed. This will give an indication of how much feed will need to be purchased. Continue to monitor feed inventories through the 2013 harvest so that you can anticipate any potential shortages next year and plan accordingly. Various tables and worksheets are available to assist you in these calculations.

Feed Less

If you are short on feed, consider feeding less. This can be accomplished by changing your traditional ration to include less forage or concentrate, depending on your situation, or by reducing the number of cows or replacement heifers that you feed. There are a number of by-products that you may be able to incorporate into your feeding program to “stretch” your supply of available forages or that may be more economical than purchased corn or soybean meal.

Reduce Animal Numbers

If you do not have enough feed to last until the next harvest season, and want to minimize the amount of feed purchased, consider reducing livestock numbers. The market for culled dairy cows has been strong and predictions are that this trend will continue for much of 2013. Even though milk prices have been strong, they are starting to decline. Consequently, this might be a good time to ship low producing or problem cows. Consider too selling surplus replacement heifers if you have more than are needed to maintain your current herd size.

Limit Feed Heifers

If you are short on forage, consider limit feeding heifers. This involves feeding a higher energy diet than common with free-choice forages, but limiting the total amount of feed offered, thus controlling average daily gain. Researchers in Wisconsin and Pennsylvania have looked at this

practice where heifers are fed a higher concentrate diet that is limit fed as opposed to the more traditional approach of free choice feeding forages and supplementing with a limited amount of concentrate. The heifers will be very vocal for the first week or two after implementing this feeding program, but once they adjust, performance both before and after calving is not reduced. Other potential advantages of a limit feeding program are a reduction in total feed costs for rearing heifers, increased feed efficiency (lb. of feed to get a lb. of gain) and less total manure. The keys to making this work are to:

- balance the rations to meet the NRC requirements for the heifers
- control variation in size of heifers within the group (limit range to within 200 lb)
- have plenty of bunk space available
- avoid using straw or shavings for bedding
- transition from free-choice forage feeding to a limit feeding program gradually
- stop limit feeding and adapt heifers to pre-fresh ration 30-45 d before calving

What Can I Substitute for Forage?

Forages are included in diets of lactating dairy cows to maintain normal ruminal pH and milk fat test, and to minimize digestive disorders – all of which require a diet that promotes adequate cud chewing. Keep in mind that there are no established requirements for fiber. The NRC (2001) includes guidelines (see Table 1) for minimum NDF from forage, minimum total dietary NDF, and maximum dietary NFC. Consider too what might be the impact of particle size of the feedstuff on cud chewing and rumen fermentation. Some by-products, like beet pulp and soy hulls, contain appreciable amounts of highly digestible fiber, but the small particle size does little to contribute to total time cows spend cud chewing, thus are of limited value as a forage replacement.

Forage substitutes are anything that will contribute to the rumen fiber mat and stimulate cud chewing. Consequently, particle size is much greater for these feedstuffs. Adding a few pounds of straw or low-quality more mature hay to lactating cow diets may increase cud chewing and enhance rumen fermentation without compromising milk production or milk fat tests.

What to feed besides corn?

Corn is the primary carbohydrate commonly fed in the upper mid-west as it contains lots of starch. Other cereal grains also contain starch, but their price usually follows corn prices so they may not be an attractive or economical substitute. However, there are a wide variety of by-product feedstuffs that can be used to provide the needed carbohydrates in the form of sugar, starch, or pectin. These include corn gluten feed, distillers grains with solubles, brewers grains, hominy, soy hulls and beet pulp.

Beet pulp and soy hulls are high in pectin, which is rapidly fermented, mostly to acetate, in the rumen, thus there is little risk of milk fat test depression. However, both beet pulp and soy hulls have little value as a forage replacer due to the small particle size and rapid fermentation characteristics.

Determining a “Good” Feed Buy

Determining a “good” feed buy means identifying feedstuffs that provide the needed or required nutrients at the most economical price. This involves two steps, figuring out which by-products are available and their price, then determining which represents the most economical source of nutrients. The University of Missouri maintains a free up-to-date listing of by-product feed prices and availability. Access it at: <http://agebb.missouri.edu/dairy/byprod/bpmenu.asp>. Couple this with the University of Wisconsin’s FeedVal-2012 (also free at <http://www.uwex.edu/ces/dairynutrition/>). However, if you are considering adding more by-products to your lactating cow diets, work closely with your nutritionist to be sure that rumen function, animal health, and performance are not compromised. Some diets will look fantastic on paper but could be a disaster when fed due to a lack of effective fiber or too much readily digestible carbohydrate.

Avoid Common Mistakes (or what NOT to do)

When faced with high feed prices and tight or negative income over feed cost margins, the temptation is to look for ways to reduce the feed bill. When faced with these economic conditions, some dairy producers are tempted to reduce or eliminate the trace minerals and vitamins added to the diet, saving about 6 cents/hd/day on replacement heifers and about 20 cents/hd/day for lactating cows. This may work initially as milk yield will not decline immediately, but it could be a long-term disaster due to reduced growth rates on heifers, reduced immunity on all animals, and reduced fertility on both cows and heifers. When the reduced immunity leads to an increase in somatic cell counts, there will be an average drop of 1.5 lb of milk for each increase of one unit in the SCC linear score (from 3.2 to 4.3 for example).

Another attractive temptation is to eliminate feed additives since they too are a direct out-of-pocket purchased feed expense. However, many of them return 3 to 14 times their cost in additional milk yield. Most nutritionists would rank the various feed additives in the following order (based on return per dollar feed cost): monensin (an ionophore), silage inoculants, organic trace minerals, yeast-based products, rumen buffers, and biotin. Most other feed additives are questionable in terms of value for the cost.

Table 1. Recommended minimum concentrations (% of DM) of total and forage NDF and recommended maximum concentrations (% of DM) of NFC for diets fed to lactating cows when fed as a TMR, corn is the predominant starch source and the forage has adequate particle size (NRC 2001).

Minimum forage NDF, %	Minimum dietary NDF, %	Maximum dietary NFC ¹ , %	Minimum dietary ADF, %
19	25	44	17
18	27	42	18
17	29	40	19
16	31	38	20
15 ²	33	36	21

¹NFC = 100 – (%NDF + %CP + % Fat + %ash)

²Not recommended due to depression of milk fat test