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DS50

Purchasing, Storage, and Commodity Barns[1]

B. Harris[2]

Recently, a number of Florida dairymen have changed the procedures they use in purchasing feedstuffs for formulating dairy cattle rations. The use of commodity feedstuffs has become prevalent on dairy farms of varying sizes. No longer is the purchasing of commodities and mixing of rations on the farm geared only to large dairies. Present day producers have found that certain commodities purchased tend to improve the quality and reduce the cost of the ration and provide for a more consistent ration. Also, by using the mixer wagon with electronic scales, dairymen have more flexibility in feeding cows according to production performance.

Most dairymen who purchase commodities use various premixes to balance their rations. These premixes are usually purchased from a commercial feed manufacturer to assure greater accuracy in their contents. Additives such as sodium bicarbonate and yeast culture may be added in the premix or at the commodity shed. In some cases, dairymen purchase all protein, minerals, vitamins and additives in the premix.

A storage facility and capital are needed to purchase and use commodities in the feeding program. In general, the dairyman would need to invest in trailer loads of 20 or more tons of each purchased commodity. Although a commodity shed is advantageous and ideal, it is not an absolute requirement for the use of bulk feedstuffs. Certain feedstuffs such as hominy feed and soybean meal can be handled in upright bins. Also, a number of dairymen have converted older barns to commodity sheds for storing feedstuffs.

BULK COMMODITY PURCHASING

Commodities are usually purchased in truck-load lots or by rail car. In general, trucks hold about 23 to 25 tons and rail cars about 40 to 90 tons. The right amount for a producer depends on usage rate and local delivery possibilities. While larger lots usually offer better prices, possible losses may occur if materials are stored over long periods.

Dairymen who use commodity feeding must construct facilities that minimize feed losses. The amount of loss suffered depends on type of commodity since some commodities must be further processed at the dairy. Losses have been estimated from a low of 3% for manufactured feeds to a high of 15% for wet brewers grains.

Most dairymen purchase feedstuffs through commodity brokers or local individuals handling specialty products such as wet brewers grains. Wet brewers grains are usually delivered in about 20 ton lots. Since wet brewers are high in moisture (65 to 80%), they must be used fairly rapidly to prevent

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2. Professor, Dairy Science Department , Cooperative Extension Service, Institute of food and Agricultural Sciences, University of Florida, Gainesville.

fermentation losses. It is always good to compare prices from two or more brokers in order to get the best deal.

The bulk commodity system allows the dairy farmer to save part of the cost normally attributed to the additional cost of transportation, milling and overhead required of the commercial feed manufacturer. The amount of savings would depend on the cost of the investment, number of cows being fed, and the ability of the producer to procure feedstuffs at a cheaper price.

A nutritional consultant can help the producer move from just feeding cows to purchasing of feed commodities. Consultants provide producers with current materials and information on balancing rations to maximize performance. The goal is to produce the most milk by more specific nutrient balancing and then feeding according to the best strategies. Also, a consultant can be very helpful in helping the producer in procuring and contracting for better quality and more economical feedstuffs.

STORAGE AND COMMODITY BARNS

Commodity sheds with storage bins are the most common type of storage on large dairies. The buildings are usually sized so that trucks may dump directly into them. Bins should be 12 to 14 feet wide to allow access for opening tail-boards and positioning of the truck. An inside height of about 18 feet in the front of the building is usually needed to dump most platform dump trucks or trailer dumps. If the truck cannot be backed into the bin, it will be necessary to rehandle all the material with a loader. While the depth of the bin will vary with size of herd and needs, about 30 feet is needed to give adequate depth and storage. A strong concrete apron constructed at the entrance of the commodity shed helps in unloading and loading vehicles as well as preventing the tracking of mud and dirt into the commodity barn. The size of the bin should be large and deep enough to handle about two loads of feed without getting wet from blowing rains.

The commodity shed should be located in a convenient area to allow dumping of commodities as well as the loading of the mixer wagon for feeding the cows. Placing it near the silage bunk or silo for ease of handling and loading is a real advantage. It should be designed so that the surrounding area would be about 6 inches lower than the floor of the commodity shed.

The lower portions of the bin walls must be built well enough to contain the material being stored. A reinforced concrete wall is the most durable and will give long-time service. Also, hardwood planks are sometimes used since they will stand more abuse than soft wood. Before building, tour other similar facilities for construction ideas. A reinforced wall of at least 6 to 8 feet in height should be constructed to prevent material from pushing out the walls.

The number of bins needed in the storage shed will vary with the size of the dairy. Most dairymen find that five to six bins are needed for storing commodities as well as one bin for specialty products such as minerals and premixes. Remember, an adequate number of bins offer more flexibility in ration formulation and in purchasing the more economical "superbuys."

Table 1 shows the space occupied by certain commodities when in storage.

The type of commodities used in the feeding program will vary with location, desirability, and season of year. In Florida, ingredients commonly used include hominy feed, corn meal, soybean hulls, wheat midds, soybean meal, peanut meal, citrus pulp, cane molasses, corn distillers grains, and whole cottonseed. Roughages would include silage, cottonseed hulls and hay. A tub grinder is sometimes used in grinding the hay before placing in the mixer wagon.

The total mixed ration (TMR) concept has gained in popularity in recent years. The mixer wagon has been an important part of the TMR program since it offers greater flexibility in the handling of different types of feedstuffs.

In summary, feeding commodities is probably not for all dairymen. The process takes additional management time to formulate rations, purchase feedstuffs, ascertain quality, maintain accurate records as well as take delivery of the commodity. A good storage facility plus additional equipment is needed to reduce losses and waste. The individual commodities must be accurately weighed into the ration to obtain a good balance of nutrients.

Table 1. Space occupied by selected feedstuffs.

Commodity	lb/cu ft	cubic ft/ton
Alfalfa, chopped	12	170
Barley	38	53
Brewers' grains, dry	15	134
Brewers' grains, wet	65	30
Citrus pulp	19	105
Corn meal	38	53
Cottonseed hulls	15	134
Cottonseed meal	38	53
Cottonseed, whole	20	100
Distillers' grains	15	134
Corn gluten feed	33	61
Hominy feed	28	72
Meat and bone meal	41	49
Peanut meal	40	50
Soybean meal	42	48
Soybean hulls	14	142