

# The Ins And Outs Of Commodity Feeding

**Michael J. Gamroth**  
Extension Dairy Specialist  
Oregon State University

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Faced with declining milk prices, dairy farmers in the western U.S. have trimmed feed costs by feeding bulk commodities and byproducts. How effective is this cost-cutting tool and what problems does the dairy operator face in feeding bulk feeds? Oregon dairy farmers shared their costs and tips for making commodity feeding successful in a 1989 survey. These dairies ranged in size from 185 to 700 cows.

## **A few words about management...**

An interest in dairy cow nutrition is important to successful commodity feeding. Most Oregon feeders admit they are very interested in their feeding program and are willing to take the time necessary to make it work. Those that quit feeding commodities lost interest or weren't "into" nutrition before starting.

While the time to manage a commodity feeding program is not overwhelming, some attention to detail is required. Nutritional advice may come from a feed company if you buy your feed through them or you may hire a nutritional consultant. The money and time spent is essential to successful feeding. You gain the responsibility for watching the quality of your feeds at purchase and on delivery. You may have to send some loads back and negotiate with your supplier. You also must use feed analyses to determine the quality of individual ingredients and your final mix.

Total mixed rations are best suited to commodity feeding. Usually additional labor and investment is much less when forages and grain are already mixed before feeding. There is no problem of loading conventional grain tanks with farm-mixed grain when all grain is fed with forages. The TMR advantages of less worry about palatability of feeds and easier ration changes are also beneficial. And finally, using more of a feed in a TMR than is possible in a parlor-fed grain can even out the amounts of commodities fed.

## **Does it pay?**

If you price the value of commodities in a commercial grain mix, there is about a \$40 per ton difference between raw grain prices and the finished product. Saving this difference could mean about \$50,000 (US\$) to the owner of a 300-cow herd. Certainly, some of the savings will dissolve in the same costs a feed mill faces, such as labor, interest, maintenance, and shrink.

A detailed Washington State University study looked at the feed cost savings in a commodity feeding program. This 300-cow herd would save \$100 to \$150 per cow after all costs were considered. Most people agree commodity feeding is profitable for the large herd, but this study showed commodity feeding could save money for the 100 to 130 cow herd if planned carefully.

Studies have to make some assumptions and use general costs to develop the theoretical “bottom line.” The decision to feed commodities must be tailored to the farm and individual. It is important to develop a budget with costs estimated to the farm situation. While it appears that commodity feeding may pay, let’s look at what it costs.

### **What facilities and equipment are needed?**

In the Northwest, it is most common to store bulk feeds in pole or frame-type buildings with floor bins. The entire floor is concrete, including a wide apron at the open side of the building for unloading feeds. Some operations also have a few metal grain tanks or bins for storage.

Operators suggest bins be sized to hold one and a half truckloads of a commodity. While a few operators have bins 12 feet wide, a minimum 14-foot width allows easier loading and unloading of floor bins. Most operators found they need more bins than the number of ingredients in their grain mix. This allows room for storing their pre-mixed grain, an extra load of a feed at a good price, or a fresh load of feed while they use the remainder of an older load.

If a dairy farmer chooses to pre-mix commodities for a week’s feeding and has 5 or 6 feeds in storage, he or she would probably need 7 or 8 bins. If feeds are mixed daily in the wagon prior to feeding, one less bin would be required. The manager feeding a commercially-prepared grain with one or two extra feeds mixed in the forage would get by with only 3 or 4 bins.

A pole-type building with 6" concrete in the floor and 4-foot high concrete foundation walls costs about \$6 per square foot to build. Assuming a 14'X 30' bin with a 14' front apron, a \$3,600 building investment is required for each feed stored. Total investment in the commodity shed ranged from \$8,000 to about \$30,000.

A shed roof with gravel base is adequate to store sacked items on pallets. Adding a shed roof to one end of the barn has worked well for some operators. This 30-foot long storage unit can be used to store salt, minerals, and sacked feed for calves and dry cows. It is important to keep these dry and covered, but storage in a commodity bin is expensive and unhandy.

Most feeding is done during daylight hours or with loader lights on so only moderate lighting in the commodity shed is necessary. If feed mixing, receiving, or loading is done at night, consider yard lighting positioned to shine in each bin and to illuminate the slab area where the feed wagon is parked for loading.

Many commodities are delivered ready to feed. In fact, a good grain mix can be formulated all with feeds not needing processing. This can help hold down the initial investment, but Oregon dairies reported a need for limited processing to make best use of commodity feeding. Most use a dry roller to crack grains for feeding. A dry roller costing \$10,000 to \$15,000 installed can pay for itself in a little more than one year compared to buying rolled grains delivered from a grain company.

Some operations also use a molasses-based liquid feed in the finished ration. Of course, this requires tank storage and a loading pipe. Liquid feed can be drained into the loader bucket and dumped into the mixer wagon, but most who have tried this report it unsatisfactory. Pumping it through a pipe into the running mixer is far better.

A bucket loader, about \$30,000 (used), is required, as well as a mixer wagon with scales (\$8,000 to \$30,000) and a tractor to run the wagon. These may already be part of the outside feeding program or used elsewhere on the dairy. Defining the total investment in commodity feeding is difficult due to variation in size of equipment, price paid and other uses. Building and equipment investments in the 1986 Washington study ranged from \$70,000 to

\$170,000. All the above were changed to the commodity feeding program and the high end included a large stationary mill, not common in the Northwest.

Don't miss the obvious. If commodities are mixed on the farm, do existing housing and feeding systems allow them to be fed? The bill gets bigger if other remodeling is necessary.

### **What about all the work?**

Labor costs in feeding commodities decrease per ton as volume of feed used increases because mixing feed for 300 cows doesn't take much longer than for 200 cows. It is only slightly faster to dump part of a loader bucket than to dump one and a part.

Many of the operators reported pre-mixing a full batch of commodities for later feeding to get a better mix of small measure ingredients. This also makes filling the mixer wagon for daily feeding easier and more fool-proof. This takes about 2 hours weekly. Since most Oregon feeders were already feeding forage and an outside mix prior to switching to commodities, they reported the additional labor of a scoop or two of the prepared feed mix took no more than 30 minutes weekly. Grain preparation and loading took about 2.5 hours weekly regardless of herd size and grain preparation in this survey. This can be converted to a budgeted cost per ton by multiplying by the charge per hour and dividing by the tons of feed used weekly.

Labor costs of receiving commodities can be priced on a per ton basis. While unloading a truck can take from 20 minutes to 4 hours, a good driver with the proper type of truck will take about an hour of your time. If the truck contains 25 tons, at \$8 per hour, the cost will average about \$.35 per ton.

Per ton costs for total labor for receiving, preparing and loading feed in Oregon herds range from \$.95 to \$1.50.

### **Smart buying is important.**

Oregon operators agreed attention to markets and smart buying was necessary, but none felt the phone bill had gotten out of hand nor that it took a lot of time. They agreed good buys are obvious, when they are available, and when they have to buy on the current market the price is about what would be charged by any commercial source. In other words, they bought carefully on quality, but the money to be saved in commodity feeding isn't from buying basic feeds more cheaply than a commercial mill. About half bought most of their commodities through a commercial feed company and about half through a feed broker. A reputable dealer is important.

Taking delivery of feeds requires some management. Most times you receive each load of an ingredient from a new truck driver. They won't know your operation and may be unaccustomed to hauling feeds. Provide a good drive-through to your commodity barn. Truck drivers spend most of their time driving forward on pavement. Backing between buildings on loose gravel, soft soil, or mud will disappoint you and the driver. Deliveries can happen anytime. Always have the driver call ahead with the expected arrival time and to receive directions. When ordering feeds, clearly explain days or hours unacceptable for deliveries. You will still get a load or two when you don't want it. Locate truck scales near your farm that can be used if needed. Several farmers reported loads arriving with no weigh slip available. Two Oregon feeders require every truck to weigh before unloading to reconcile their inventory and feed bills.

Some commodities are available seasonally. Forward contracting is required for year-round feeding. Two examples of seasonal feeds used in the Northwest are sugar beet pulp and whole cottonseed. Loads may be available throughout the year, but the price increases sharply as supplies diminish.

Commodities are hard to get during year-end holidays. Schedule up deliveries before Thanksgiving, if possible. This is where extra storage space in the shed can be used.

Don't forget to find a source for a reliable mineral-vitamin pre-mix. Feed companies may sell this in sacks or in bulk pellets. Trace mineralized salt does not substitute for a quality mineral-vitamin pre-mix. Oregon producers use either dry mix from sacks or suspended in their molasses blend liquid feed.

#### **Other costs.**

The charge for interest on feed inventory should be considered and is included in most economic models. It is calculated assuming the average annual inventory volume is half the yearly feed use. This volume times its average value multiplied by the current interest rate for short term capital gives the inventory interest. But Oregon producers reported terms that allow 6 weeks to two months between delivery and payment due so the load is fed before payment is made so most producers in the Northwest reported costs of less than half the calculated inventory interest. A load of protein supplement may last several months and would result in some interest expense. Interest reported ranged from nothing to about \$3 per ton.

Maintenance and repairs on buildings and equipment costs Oregon feeders about 5 percent of the investment. This cost is typical of charges for other buildings and equipment used on the dairy.

Producers agreed records are essential in a commodity program. From load sheets to purchase records, it was clear the survey herds kept good records and used them frequently. A final cost of mixing grain products on the farm is the "shrink," or loss in volume from delivery to the cow. Some articles critical of commodity feeding report losses as high as 15% (300 pounds per ton). Three producers kept good records of this loss at 2 or 3%. Estimates made by the other herds were usually slightly higher. One Northwest mill with good production control has averaged 1% for three years.

#### **It's up to you.**

Commodity and byproduct feeding is a viable cost-saver, even for smaller herds. However, it requires more work, money, and management. Consider the change to farm mixing carefully. Ask Extension personnel or other advisors to help you with a budget like the one at the end of this article.

The decision to mix your own grain doesn't have to be at the expense of your grain company. Northwest feed dealers are working with producers and both seem satisfied with the results.

**O.S.U. EXTENSION Analysis of a Commodity Feeding Program:**

For: Enter name

Date: 01/23/93

Cost of farm mixed grain:

740 pounds Barley	\$112/ton
480 pounds Whole Cottonseed	\$160
300 pounds Brewer's grains	\$175
150 pounds Protein Supp.	\$220
250 pounds Beet Pulp	\$150
80 pounds Mineral pre-mix	\$375
2000 pounds total mix	\$156.34/ton
\$159.47 w/shrink & waste	

**ASSUME:**

400 milking cows	\$190.00 purchased grain
(50% High producers)	\$159.47 mixed grain
(50% Low producers)	

Hired labor for mixing or feeding: \$0.30 feed delivery  
(per ton) \$1.20 mixing & loading

30 pounds grain daily (high cows).  
22 pounds grain daily (low cows).

26 average pounds fed daily = \$2.47 daily cost @ \$190.00  
- \$2.09 daily cost @ \$160.97  
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\$0.38 less w/mixed grain  
\$150.97 less for 400 cows/day

**INVESTMENT:**

\$30,000 mixer wagon w/scales	\$55,105 gross change in income/yr	\$30,000 commodity shed
\$12,000 mill-grinder w/elect.	-\$8,640 interest @ 12%	
\$72,000 Total investment	\$46,465 net annual change	

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\* It would take 19 months to pay for this investment through the assumed grain savings only.

\* Interest on purchased commodities is not included. Interest is charged on the total capital investment. This analysis assumes 100% borrowed for investment capital and none for operating capital. \* Labor for buying, mixing, and feeding grains are based on averages of other commodity feeders. Make the best estimate for your facilities.