



Dry Weather Feeding Suggestions

Sam Strahan, Manager of Feed Technical Services

With the severe lack of rain in some areas, many questions have arisen regarding feeding alternatives when forage is limited. Below are some suggestions for products carried by the Co-op with a description of how to recommend these for different applications. Priority 1 is to do whatever possible to stretch forage supplies throughout the feeding period, and **do not wait until forage is gone** to look at options. Ruminants and horses have a daily requirement for roughage to keep their digestive systems healthy.

Forage (hay or pasture) replacements:

- ⇒ **Alfalfa cubes or pellets** – Since these are made from hay, they are equal in nutritional value to hay. Alfalfa pellets contain finely ground particles, so it is best not to totally replace the hay or pasture with these, since cattle, sheep, goats and horses all need some long fiber daily. Very palatable, easy to feed. Fairly expensive forage replacement.
- ⇒ **Cottonseed hulls** – High fiber, low energy feed. Can be used to totally replace fiber needs of animals. Usually fed to cattle. Very bulky, so may be challenging to mix with other feeds. Fairly expensive forage replacement.
- ⇒ **Semican hay, Dengi** – processed hay products can replace 100% of forage.

Partial Forage Replacements (use to stretch existing supplies):

- ⇒ **Soyhulls** (pelleted or loose) – Moderately high energy feed, but because of fiber level can partially substitute for forage for cattle, sheep, horses, goats. Often used as substitute for corn or barley. Pellets much easier to handle, available in bag or bulk. Protein 10-12%. Reasonably good value.
- ⇒ **Wheat midds, corn gluten feed, corn distillers** – All of these contain mid-range protein levels (15-25%) and are fairly good energy sources. Midds available in trailerload (24 tons) or as part of pelleted mixes. Moderate in fiber (low in starch) levels, but will add some fiber to a grain mix.
- ⇒ **Beet Pulp** – Excellent fiber source, but also moderately high in energy. Use for cattle, horses, sheep or goats. Bulky to handle. Cost is fairly high in bags.

High Fiber Co-op Feeds:

- ⇒ **MSG Pellets** – Combination of wheat midds, soyhulls, and corn gluten feed, offers three nutritious, but low cost by-product feeds. This feed will be approximately 16-17% protein, and offer highly digestible fiber sources that can help stretch forage supplies. No mineral or vitamin fortification added, so will need to supplement (Co-op High Mag or Diamond 5:1). Also available with Bovatec for improved weight gains of cattle on pasture or CTC if problems with respiratory disease.
- ⇒ **Stock 14 pellet** – Similar to MSG, but 14% protein. Mineral and vitamins not added, so need to supplement (Co-op High Mag or Diamond 5:1).
- ⇒ **Creep Pellet**–Lower protein level at 12%, fortified with vitamins and minerals.
- ⇒ **Range Cube 20** – Offers extra protein/energy where needed, contains some urea. Recommended for cattle. Large size allows feeding on ground. Typical feeding rate, 1-5# daily.
- ⇒ **All-In-One pellets** – Designed for horses. Contains alfalfa meal, wheat midds, soyhulls for fiber. Can replace most of forage portion of diet (up to approximately 1 ½% of body weight), but recommend feeding absolute minimum of 1/2 % of horse’s body weight in hay or pasture daily to satisfy need for “long” fiber and minimize boredom.

Supplements to help meet energy requirements when pasture is limited:

- ⇒ Hand feeding allows more precise amounts to be fed and limits input costs, but if **convenience** is needed, try one of the **Ultralyx tubs/blocks** carried by CFC. Blocks work well in small herds, and hard to reach areas. These products do not cause cattle to eat less forage, and may increase intake if forage quality is poor. **Ultralyx Rumensin block** is excellent choice for growing calves on pasture, as the Rumensin will improve weight gains by .1-.3 lb per day.

For sheep:

Any of the **Prime Lamb** products or soyhull pellets can be fed to lambs to help extend forage, improve growth. Soyhull pellets can be used for ewes and rams as a forage extender.

For Goats:

Nutri-Goat Nugget contains digestible fiber sources and can be fed to yearlings, does and bucks. Use **Goat Maker R** (with Rumensin) for kids under 12 months. Soyhull pellets can also be fed as a forage extender.

Contact Sam in Nutrition Dept. if you need further guidance on how to feed or recommend certain products (and pray for rain!).

DRY WEATHER FEEDING GUIDE FOR BEEF CATTLE

Sam Strahan, Manager of Feed Technical Services, CFC Farm & Home

Use the following reference guide to recommend various feeds, based on the appropriate scenario.

Scenario 1: Limited Pasture, choice to early wean calves The nutrient requirement of a dry cow is about 50 to 65 percent of that of a cow nursing a calf. Early weaning will keep cows from losing weight, improve value of the calf and help cows breed back faster next year. Perhaps, most importantly, early weaning will reduce your feed costs compared to trying to feed a lactating cow.

For calves: **Cattleman's Special (14%)** – combination of digestible fiber sources plus some grain, and fortified with, minerals, and vitamins for calves 300-500 lbs. Also contains Bovatec to prevent coccidiosis and enhance growth, and Aureomycin (CTC) to treat respiratory challenges. Feed at five lb. daily with limited (2-4#) hay or pasture for 30 – 60 days before marketing or putting onto higher grain diet. For higher protein, higher energy option for very young calves, use **Bova Glow Pellet** (16%). If self-feeder to be used, use **MSG/Bova 15** and provide high quality mineral such as Diamond 5:1.

For cows: **MSG Pellets, Stock 14% Pellet, Range Cube 20** – depending on need for protein, these offer moderate energy levels, utilizing high fiber by-product ingredients, to minimize digestive upsets, maintain body condition. Can feed up to 1 ½ % of body weight, depending on forage availability, along with limited hay or pasture. Also provide free-choice mineral (High Mag or Diamond 5:1)

If farm has capacity to hold trailerload of product, **corn gluten feed** (20% protein) or **soyhulls** (pelleted or loose, 10% protein), are best choices for economy and nutritional value. As high fiber by-products, they will minimize digestive upsets when intake is ½ -1 % of body weight, but provide relatively high amount of energy. For calves under 6 months, soyhulls will not contain adequate protein unless fed with legume hay containing at least 16% protein. Either product is adequate for brood cows. Usually best to limit intake to <10# for adult, <5# for 5 cwt. calf.

Scenario 2: Limited Pasture or hay, keep calves with cows Need to creep feed calves, allow cows access to majority of forage. Cows need to be in adequate body condition if choice is to limit amount of forage. This approach will have only a minimal effect on preserving forage during drought conditions, since cows have higher requirements while lactating.

For calves: Use higher protein creep feed such as **Calf Grower (14%)** or **Bova Glow** (16%, pellet or textured) until reaching approximately 400#. Will promote higher weaning weights compared to non-creep fed calves. Switch to **Cattleman's Special, MSG Bova 40 or Creep Ration** when calves have reached 400#.

For cows: Provide adequate protein, energy for milk production until calves are fully adjusted to grain. Use **Range Cubes, Stock 14% Pellet or MSG Pellet** at 3-8 lbs. daily, depending on forage availability. Also provide free-choice mineral (High Mag or Diamond 5:1). After calves are adapted to grain, can start to limit feed cows, providing they are in good body

condition. If cows are thin, will need to continue grain feeding. Pay particular attention to 1st calf heifers, as they need energy to make milk and continue to grow.

Scenario 3: Limit feeding. Forage availability less than 50% of normal, long term wintering program for cows.

Cows can be fed for long term to meet energy and protein requirements with the use of whole grains (corn, barley), or grain byproducts sources (corn gluten,soyhulls,etc), rather than large volumes of hay/pasture. Since grains and byproducts are denser nutritionally than forages, the lower intakes may actually reduce costs compared to traditional diets. However, cows will not have the daily “fill” they desire and a producer needs to expect noisy and hungry cattle. Following are some recommended rations for a pregnant, 1200# beef cow using the “limit feeding” approach, compared to a normal dry matter intake of approximately 22 lbs./day:

	Ration 1	Ration 2	Ration 3	Ration 4	Ration 5
Grass Hay	5	5	10	10	5
Soybean Meal or Cottonseed Meal	1.75 or 2.0				
Corn	9.5				
MSG Pellets		13	10		
Corn Gluten Feed				6.25	
Soyhull Pellets					13.5
High Mag Mineral	.3	.3	.3	.3	.3
Dry matter intake	14.7	16.2	17.8	17.3	17.2
Crude Protein (lb/day)	2.08	2.6	2.5	2.8	2.04
NE maintenance (Mcal)	12.4	12.4	12.4	12.3	12.3

Requirement: 3rd trimester gestation, CP-2.03 lb, NEm – 12.3 Mcal

Assumption: Winter feeding, not nursing a calf. If cow is nursing or weather becomes extremely cold for extended period, grain or hay fed may need to be increased 10-20%.

Replacement amounts for ave. quality hay:

1 lb MSG pellets = .86 Mcal, replaces energy of 1.6 lb. of ave. quality hay (1.6 X .54)

Beef cattle management strategies during a drought

By David Richmond, WVU Extension agent/Agriculture for Raleigh and Summers counties

With this summer being one of the driest on record, livestock producers in southern West Virginia are at a point where monumental management decisions will need to be made in order to survive financially in the livestock arena.

Periods of drought requires beef producers to make some adjustments in their production program or sell livestock. When cattle are sold out of desperation, the producer loses. If you have not begun to make contingency plans, start now.

You certainly want to avoid feeding hay before the winter season begins especially if you know your hay crop is going to be below normal. Even with early conservation, most producers will need additional feed for cattle. Is it possible to make it? The answer is yes, if you plan and make the necessary adjustments. Several small things can be done that collectively can conserve your feed resources.

- **Consider early weaning calves.** The nutrient requirement of a dry cow is about 50 to 65 percent of that of a cow nursing a calf. A young calf on dry feed has an efficient feed conversion rate. It is more cost-effective if you wean and feed the calf and let the cow forage for her own needs. If this is done before the cow loses substantial condition and if we get some rain and forage growth this fall, the cow should be in reasonably good body condition at the time you might normally feed hay. If you take the cow into winter in poor shape, you will increase her nutrient requirements through the winter and probably hinder the herd's reproductive performance next spring.

Let's return to the weaned calf. You can achieve dry matter feed conversions of 5-8 pounds of dry matter per pound of calf gain. The best feed conversions are obtained when feeding a higher concentrate diet and achieving higher average daily gain (ADG). Calves can be weaned on a diet of no more than 2-4 pounds of roughage per day. The current outlook is for relatively cheap corn throughout the fall and winter. When feeding corn, however, you must be careful not to overfeed calves and create acidosis. Calves as young as 3 months can be successfully weaned and fed a dry diet. With very good management, you may be able to wean calves as young as 2 months.

If you are going to use the early weaning strategy, do not wait until the cowherd has lost substantial body condition and/or there is no forage remaining. Cows can live on mature grass, leaves, and some weeds, but they cannot live on bare ground.

- Value the hay crop you do have and plan to get the most you can out of it. When you feed hay, do not waste it by providing cows with more than they can eat or utilize. For example, feeding hay on the ground results in excessive waste. Using hay rings usually results in substantial improvement. Although we do not have research data to support this claim, our experience suggests that using a cone feeder will result in the least hay loss. In addition, if you have a short hay crop, do not store round bales outside without any protection. You simply cannot afford the additional loss. Somehow, you need to cover the hay - under tarp, wrapped, or in a barn.

- **Consider sending replacement heifers to a feedlot** for development so you can divert their feed/hay use to the cowherd. If you can find a feedlot that will grow your heifers at 1.5 to 1.8 pounds per day on silage, it should be cheaper than buying feed for them. Even after paying trucking and labor, you may not have any more cost in them than if you fed them at home.
- **Consider culling poor producers.** The earlier you do it the better. Old cows, late-calving cows, open cows, and worn-out bulls should be marketed as soon as possible. Cows should be checked for pregnancy this year. Schedule this with your veterinarian and do it as early as possible. There may be more open cows than usual because of the stress associated with drought. Do not keep marginal cattle at a time when feed resources are scarce because feed will be your major expense.
- **Consider feeding alternative feeds.** Cattle can eat more than hay; in fact, they will do well on many other types of feed. On a cost per unit of energy basis, hay is usually the most expensive feed for cattle.

For example, 1 pound of corn provides as much energy as 2 pounds of hay, but cows fed only corn will remain hungry. (Feeding only corn plus a protein supplement does have risks that include but are not limited to acidosis, mineral imbalances, and restless cattle.) By-product feeds to consider include; poultry litter, soybean hulls, wheat midds, cottonseed hulls, brewer's grains, and peanut hulls. Check with feed suppliers on availability and prices. Some producers are unwilling to use by-product feeds, but they may be the best alternative to get you through the year. In addition, you might want to include an ionophore such as Rumensin in your feeding program this year. Rumensin or Bovatec will improve gains of cattle fed a high-roughage diet and will improve feed conversion of cattle fed high-energy diets. However, be cautious about using rumensin when horses are around.

Very small amounts of rumensin will kill a horse. Pool resources with neighbors! Purchasing feed and supplies in volume can reduce cost per unit.

- If the opportunity exists, move cows to feed versus shipping feed to cows. If you are in a drought area, check other areas that may have an abundance of precipitation and forage.

Management of Early-Weaned Calves

Mark L. Wahlberg, Extension Animal Scientist, Virginia Tech

Beef calves are normally weaned from 6 to 10 months of age. However, they can be weaned as early as 60 days of age. Early weaning may be a wise management practice because of

- Thin cows that need to pick up body condition
- Low quality forage
- Drought that reduces forage supply

In a companion paper by Dr. John Hall the management of the cow in an early weaning program is discussed. In this article will be factors related to management of the early-weaned calf, including health and nutrition. Cows require about twice as much protein and TDN (energy) in their feed when nursing a calf than when they are dry. As the calf grows he begins to supplement his milk diet with grazing. When feed resources are limited in either quality or quantity, the cow's milk production is reduced. Gains of the nursing calf can be greatly reduced because both pasture and milk supply are restricted. In this situation early weaning is a strategy that should be considered.

Creep feeding is one alternative that is often considered. With creep feeding a supply of high quality feed or pasture is made available to the calves but the cows are prevented from accessing this feed. Calves are not weaned. If creep feed is made available beginning 2 or 3 months prior to normal weaning age, gains are increased 1/2 to almost 1 pound per day, resulting in 50 to 75 pounds more weaning weight. See the VCE publication, Creep Feeding of Beef Calves (publication number 400003) for more details about this management practice. Although creep feeding may fix the problem with calf nutrition, the cows are still lactating and still have fairly high nutrient requirements. Creep feeding does not greatly reduce the nutrition problem in the cow, especially when drought conditions persist.

A second problem is forage quality. If grain type creep feeds are used, the pasture quality and supply shortage is not changed. Consequently, calves substitute grain (expensive) for forage (low-cost) in their total diet. In many experiments, it takes more than 8 or 10 pounds of creep feed to produce an additional pound of weight gain in the calf. Therefore, this practice is sometimes not cost effective, especially when feed is high and calves are low-priced. Of course, if creep grazing of high quality pasture is used, the extra pounds of calf gain are produced much more economically.

Early Weaning Health Concerns -- Calves can experience considerable stress due to weaning at a young age. They need to be properly vaccinated for the clostridial diseases (the typical 7-way vaccine) and perhaps for respiratory diseases. Consult your veterinary for recommendations. Calves can experience problems from coccidia and worms. A feed additive that controls coccidiosis should be included. Rumensin, Bovatec, Deccox, and CoRid are approved for such use. Deworming, especially if calves are 3-4 months or older, is highly recommended. Although not a health practice, at the time of weaning and processing all calves not kept for replacements should receive one of the approved implants to promote weight gain.

Starting on Feed -- Calves should be weaned in a fairly small pen with some type of shelter. Pens of less than 20 calves are best to reduce competition and allow good observation of all animals. Feed and water should be easily accessible and recognized. Because calves are still learning about feed and water, an older calf that is already weaned can be put with the new calves to serve as a teacher. The younger ones will follow the older one to feed and water and become adapted more quickly.

Rations for Early Weaning -- Calves will not eat much feed right after being removed from their dams. Consequently, the feed needs to be very palatable and highly nutritious. Quality is much more important than price when starting calves on feed. In Oklahoma a recommended starter ration is 64% rolled corn, 20% soybean meal, 10% cottonseed hulls, and 5% molasses, plus vitamins and minerals. A successful ration used in Illinois research is 30% chopped hay, 18% soybean meal, 50% cracked corn, plus vitamins and minerals. These rations contain roughage and are designed to be the only source of feed available. Consumption should reach 4 to 5 pounds per head per day within 10 to 14 days.

When offered long hay, some calves will fill up on it and not eat the grain mix. If long hay is the roughage source, it must be limit fed, and care must be given to assure consumption of the grain portion of the total feed offered. Chopping of the hay and making a total mixed ration solves this problem. Young calves are still developing their rumen, and therefore cannot utilize some feeds as well as more mature cattle. Such feeds as urea or broiler litter that contain nonprotein nitrogen should not be used in starter rations for young calves. Once calves are over the stress of weaning and are eating at least 1 1/2% of their body weight in the starter ration each day, they are ready for the next step. They can remain in the drylot and receive a growing ration based on harvested feeds, or go to pasture for a forage-based growing program. If pasture is to be used, quality must be excellent. Calves will not gain well on lower-quality forages. In a North Carolina trial with early-weaned calves on pasture, the poorest gains were on a tall fescue-clover pasture, and the best gains came from grazing pearl millet. In this trial, calves were supplemented with either 1% of their body weight in ground ear corn, or corn was available at all times in self-feeders. Gains of the limit-fed calves ranged from 1 to 1.8 pounds per day, and the self-fed calves gained 1.5 to 2.2 pounds per day. Pastures used, ranked from lowest gain to highest gain, were tall fescue-clover (mostly fescue), bluegrass and orchardgrass with white clover, clover-fescue mix (50% white clover), and pearl millet. The calves, which weighed 330 pounds when weaned in July, were stocked at 4 head per acre, and pastures were rotationally grazed.

Effects Seen Later On -- Calves that are weaned at 2 to 5 months of age and put on feed should weigh at least as much at normal weaning time as they usually do. Gains of 3 pounds per day were recorded by researchers in Illinois on calves weaned at 150 days of age and fed a high grain ration. However, in Oklahoma, calves weaned at 65 days and grazing native range with a high protein supplement weighed 60 pounds less than those weaned at 7-8 months. This emphasizes the importance of feed quality to get early-weaned calves to gain weight rapidly. Several trials in Illinois were run to compare calves placed on high grain feedlot rations beginning at 5 months of age compared to calves that were older at the start of feeding. Cattle were fed to slaughter weight, killed at a similar backfat thickness, and carcass data was obtained. When compared to normal weaning age, early-weaned calves were heavier at slaughter, gained slower after 7 months of age but faster prior to 7 months, and had better feed efficiency. Carcass results showed early-weaned steers to have heavier carcasses, similar Yield Grades, and significantly higher marbling scores, with many more cattle grading high Choice and Prime.

The Bottom Line -- Early weaning (from 2 to 5 months of age) is a strategy to consider when cows are too thin or the feed situation is under pressure due to drought. High quality rations must be fed. If pasture is used, grain supplements must also be fed. When placed on high grain rations at this young age and fed to slaughter, finished weights are heavier, gains are more efficient, and carcass Quality grade is improved. Production costs are higher in intensively-fed early-weaned calves.