

Confinement Feeding Beef Cows

Dr. Rick Rasby
Beef Specialist, University of Nebraska

Introduction

A management consideration when weather conditions result in a reduction in forage production in pastures is to relocate some or all cattle. Cows could be relocated to a feedlot that is located off-site or a dry lot or sacrifice area to dry lot cows on-site could be developed.

Confinement Feeding Considerations

Confinement feeding beef cows is not a new concept for beef producers (Drylot Beef Cow/Calf Production, <http://www.ag.ndsu.edu/pubs/ansci/beef/as974.htm>). Data suggests performance of calves and cows is similar whether they were confinement fed or managed on pasture.

Dry-lotting beef cows may be an alternative to expensive forages, hauling cattle to another location or state, or selling cows in a drought situation. It would be important to inquire with the State Department of Environmental Quality to determine if permits are needed for this type of confined animal feeding operation.

Facilities and Management Considerations

Pen size and lot space can be variable depending on soil type and drainage. A general recommendation is 500 to 800 square feet per pair. Plan on between 28 and 36 inches of bunk space per cow depending on cow weight. If the herd is a mix of young and old cows, it would be ideal to have separate pens for at least two groups. If separate pens are not possible, then hedge toward the higher number in regard to bunk space per cow. Diets for dry lot cows can contain a lot of forage and are bulky so deep feed bunks will help limit waste.

Ration Considerations

In drought situations, forage may be expensive and used in limited amounts in the diet. A rule of thumb would be to have at least 0.5% of the cow's weight on a dry matter basis as forage to keep the rumen healthy. As an example, if the average weight of the cow herd that is being dry-lotted

is 1,200 pounds, then include at least 6 lb/hd/da ($1,200 \text{ lb} \times 0.005 = 6 \text{ lb}$) dry matter basis of forage in the diet. If the forage is 85% dry matter, then feed 7.0 lb/hd/daily ($6 \text{ lb/hd/da} \div 0.85 = 7.06$). As the calf gets older it will come to the bunk and eat and diets need to be adjusted to account the feed consumed by the calf. When the calf weighs 200 to 300 pounds, estimate it will consume about 1% to 1.5% of its body weight on a dry matter basis. This assumes that the calves are not being creep fed.

There are many ways to design diets for cow/calf pairs or nonlactating cows in a dry lot. Cheap or less expensive feeds are needed to make this a profitable enterprise. Baled corn stalk residue, CRP hay, straw can work to stretch higher quality forages such as alfalfa. If cows are dry-lotted because of drought, forages are usually expensive. Depending on the price, corn may or may not fit into the diets for dry-lotted cows. An alternative to corn, especially in the summer, are corn by-products. Distillers grains are usually cheaper in the summer because it is a time when the number of cattle in the feedlot is low. Also, distillers grains (wet and modified) and gluten feed can be stored in bunkers or ag bags. Distillers grains are good sources of protein, energy, and phosphorus. Consider adding calcium to the diet because of the high phosphorus content of distillers grains. Mix the diet uniformly, pay attention to sulfur content, and make sure there is plenty of bunk space so all cows get their share.

Because of the high energy and protein content of distillers grains, it may not be necessary to feed cows to their capacity in a drylot situation. Dry-lotted, nonpregnant cows were fed either a control diet consisting of bromegrass hay, cornstalks, and alfalfa haylage or limit-fed either bunkered wet distillers grains plus solubles (WDGS) and corn stalks or bunkered distillers solubles (DS) and cornstalks (Limit Feeding Beef Cows with Bunkered Wet Distillers Grains plus Solubles or Distillers Solubles,

http://beef.unl.edu/c/document_library/get_file?uuid=24aad2be-6026-4179-bd88-b3f4893e9f8f&groupId=4178167&.pdf). Cows fed the control diet were full-fed. Limit-fed cows were fed 17 lb/hd/daily (1.3% of their body weight dry matter basis) dry matter basis of the bunkered material. Of the 17 lb/hd/daily of bunkered material fed, about 7 lb/hd/daily dry matter basis was either WDGS or distillers solubles. All treatment groups gained weight and the cows that were limit-fed

either the bunkered WDGS or DS gained as much or more weight than the control group that was full-fed. Cows exhibited no signs of sulfur toxicity, but sulfur content should be monitored in limit fed diets using WDGS and DS. Although fat level showed no negative effect on animal performance in this experiment, dietary fat should be closely monitored because of its possible negative effect on forage digestion. These data suggest non-lactating, non-pregnant mature beef cows can be maintained on a limit-fed diet of WDGS or DS. As a management consideration, limit-fed diets should contain some low quality forage to slow down rate of passage of the diet through the digestive tract which will help cows adapt to being dry-lotted. In another experiment, pregnant cows were drylotted and limit fed without a negative effect on cow performance (Wheat Straw, Distillers Grains, and Beet Pulp for Late Gestating Beef Cows,

http://beef.unl.edu/c/document_library/get_file?uuid=d08019c3-fccd-43e0-badd-61f393b79932&groupId=4178167&.pdf.

Unfortunately, as a result of the drought, distillers grains are not readily available. Due to the drought this year, dryland corn not suitable for a corn crop was chopped for silage. Corn silage can be mixed with medium to low quality forages and limit fed to maintain dry, pregnant beef cows in confinement. Cows that are not lactating and are in the middle third of gestation, have fairly low energy requirements. The example diet in Table 1 could be limit fed at 1.75% of body weight to 1200 lb cows. The diet contains 8.1% crude protein, 62.5% TDN, 46% dry matter, and supplies 12.7 Mcal/d when 21 lb of DM are fed. This diet was formulated using corn silage containing 72% TDN and 10% CP and poor quality CRP hay (48% TDN and 4.5% CP). All forages should be sampled and sent to a commercial laboratory for crude protein, dry matter, TDN, and nitrate concentration. Knowing the quality of the forage will be critical for balancing the diet to meet the needs of the cow. If the silage available is lower in quality, some supplemental protein or energy may be required. Table 2 is an example of a diet formulated with drought stressed corn silage containing 64% TDN and 9% CP. This diet contains 8.2% CP, 60% TDN, and 50% DM. It supplies 12.3 Mcal/d when 21 lb of dry matter are fed to 1200 lb cows. Silage can be used in diets for lactating cows and depending on the quality of the other ingredients, and protein source may need to be added. If a protein supplement/pellet needs to be added to the ration, consider incorporating an ionophore as part of the pellet.

Again, when feeding diets that are limit-fed, make sure there is plenty of bunk-space. In addition, if possible, separate young cows from older cows as it may be difficult for young cows to eat their share of the diet because they are the ones that are likely being pushed away from the bunk by the “boss” cows because the ration is fed once daily.

Table 1. Example Limit-Fed Diet Containing High Quality Corn Silage and Poor Quality Roughage for Confined Cows

Item	DM lb/hd	As is or Actual lb/hd
CRP hay or wheat straw	8.25	9.3
Corn silage	12.75	36.4
Total	21	45.7

Table 2. Example Limit-Fed Diet Containing Drought Stressed Corn Silage, Poor Quality Roughage, and Range Cubes for Confined Cows

Item	DM lb/hd	As is or Actual lb/hd
CRP hay or wheat straw	8	9
Corn silage	10.5	30
20% CP Range Cube	2.5	2.8
Total	21	41.8

If cows are relocated off-site in a commercial feedlot, work with your veterinarian to develop a biosecurity protocol for when cows are brought back to the operation. This would be important to consider if part of the herd remained on-site and part of the herd was relocated to a commercial feedlot. This should be standard operating procedure when part of the herd is relocated and in close proximity or mixed with other cattle.