

*Numerous forages, feeds and formulas are available
but only one basic management concept works. ..*

Balance Your Ration

Nutrition is a difficult subject to discuss because of the wide range of forages and feed grains available and even wider range of advice and secret formulations.

Here's a sound but simple bit of advice to chew on awhile:

Your nutrition program should allow your cattle to express their full genetic ability to grow without getting fat and without shrinking your wallet.

How do you keep costs down and your cattle content?

Make the best use of available feed on your farm or ranch — whether it's improved pasture, range, or crop byproducts and residues.

And if you're still uncertain about how to design a well balanced, economical feeding program, there are numerous specialists out there to lend a hand. Extension livestock agents, university professors, veterinarians, feed company nutritionists and veteran breeders are all willing to share advice and get you started in the right direction.

Even though your greatest concern will be replacement heifers, this article will cover the nutritional needs of an Angus female throughout her life.

Weight Range of Angus Females

Birth	60-90 lb.
205 days	450-600 lb.
365 days	600-800 lb.
1st Breeding (15 mo.)	650-900 lb.
1st Calving (22-26 mo.)	900-1,100 lb.

Pre Weaning

Angus calves average about 75 pounds at birth. Angus cows are excellent mothers, and provide plenty of nutritional milk to raise healthy calves. If adequate grass is available, most Angus heifer calves should weigh 580 pounds or more at weaning time (205 days).

Some breeders creep feed their calves throughout or near the end of the cows nursing season. This is necessary only if

nutrition for your cows becomes limited due to heavy stocking rates or dry weather. Although creep feed can increase weaning weights and reduce stress at weaning, disadvantages exist. First, you may fail to identify cows with inferior milking ability if their calves are creep fed. Second, creep feeding can make

ing to reach her maximum yearling weight and frame development without getting fat.

If your calf weighs about 550 pounds at weaning and has the genetic ability to weigh 900 pounds at one year without being fat, she must gain about 350 pounds in the 160 days between weaning and



In southern regions, ryegrass pasture helps flush or condition replacement heifers for the breeding season

heifer calves too fat and hinder their future production.

If you decide creep feeding is necessary, coarsely cracked grains, such as corn, oats, barley or milo, may be used. The creep ration should be approximately 12 percent in protein content.

Post Weaning

A beef cow's milk production peaks two or three months after she calves. At the end of the sixth month, she is at about one-third of peak production. Calves can be weaned at 150 to 220 days of age with little loss of milk nutrition.

With good care and management after weaning, you can keep your calf grow-

yearling or approximately 2 pounds per day. For your heifer to record a 2-pound average daily gain (ADG), feed her 1.5 percent of her body weight per day of good quality grain ration. The following examples show how to calculate the amount of grain your heifer needs each day:

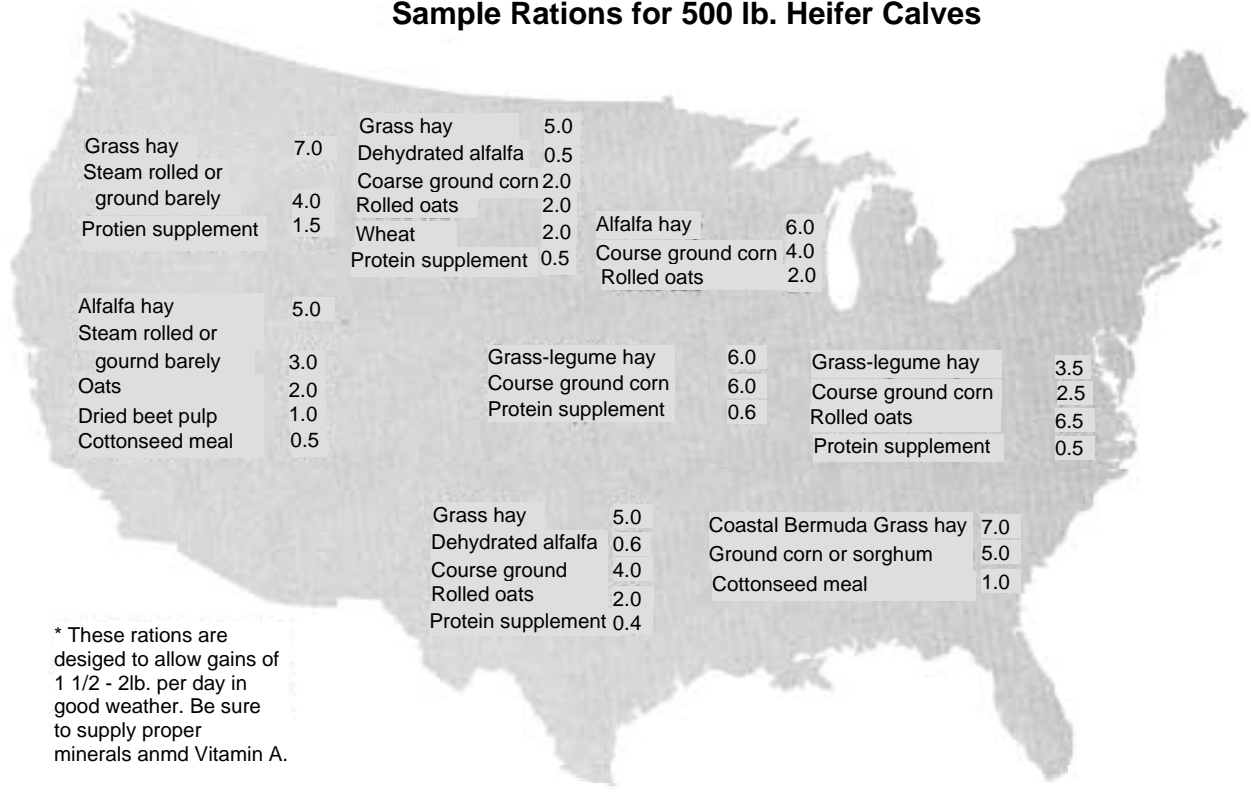
Example 1.

550 lb. heifer needs 1.5% body weight per day in grain ration.
 $550 \times .015 = 8.25$ lb. of grain per day.

Example 2.

700 lb. heifer needs 1.5% body weight per day in grain ration.
 $700 \times .015 = 10.5$ lb. grain per day.

Sample Rations for 500 lb. Heifer Calves



* These rations are designed to allow gains of 1 1/2 - 2lb. per day in good weather. Be sure to supply proper minerals and Vitamin A.

The most common feed grains are corn and grain sorghum. Feed corn whole kernel or very coarsely milled. Grain sorghum should be coarsely milled. Since grain sorghum has lower energy content than corn, expect slightly lower gains. Rolled oats and barley also work well. Occasionally, wheat prices are low and wheat can be used, but don't feed more than one-third of the ration as wheat. Ruminants don't respond well to a high wheat ration.

Always start feeding cattle gradually. Take about 30 days to get them eating their maximum amount of feed.

Along with the above feeding guidelines, you must provide protein, mineral, vitamins, good quality forage and plenty of fresh, clean water.

Forage Foundation

Forage (roughage) production is the backbone of every cattle program—pure-

bred and commercial. The quality will have a dramatic effect on your cattle's performance, appearance and health. Forage quality also will determine the amount and type of additional protein, vitamins and minerals you must supply.

If possible, have forage tested by a university or private laboratory for protein and total digestible nutrients (TDN) content. A core sample from a bale is all that's needed and most labs charge a

You can prepare your own mineral box mix with the following guidelines:

1. If your cattle receive almost all forage and very little grain, mix: one-third trace mineral salt, one-third bone meal (or dicalcium phosphate) and one-third monosodium phosphate.
2. If you feed about 1.5 percent body weight daily of good quality feed grain and roughage source is good quality grass hay or corn silage, mix: one-third trace mineral salt, one-third bone meal (or dicalcium phosphate) and one-third ground limestone.
3. If you use 1.5 percent ration above, but the roughage source is good quality legume, mix: two-thirds trace mineral salt and one-third bone-meal (or dicalcium phosphate).



small fee. Several universities now have mobile forage test labs, as well.

Use the following guidelines to decide on the protein supplement for your ration:

1. If you feed good quality grass hay or pasture, add one-half pound of protein supplement to daily grain ration. Most commercial supplements are 30 to 40 percent protein. Soybean meal and cottonseed meal are slightly more than 40 percent protein.
2. With a leafy legume hay, such as alfalfa, additional protein is not needed.
3. To good quality corn silage or sorghum silage, add three-fourths pound of protein supplement to the daily grain ration.

Cattle receiving quality forage seldom need vitamin supplements other than vitamin A. Cattle on pasture, leafy and bright green legume hay, or dehydrated alfalfa meal, however, generally receive plenty of vitamin A.

If you feed sun or rain-bleached legume or grass hay, or good quality silage, add vitamin A supplement. Fortunately, vitamin A is inexpensive and most feed manufacturers add plenty in their protein supplements. Soybean meal or cottonseed meal, which are high quality protein sources, need vitamin A added.

Always provide salt in a separate mineral feeder protected from the weather. Iodized salt or trace mineral salt in granular form is best.

Feed grains are good sources of phosphorus (P), and legume pastures and hay are excellent sources of calcium (Ca). Most producers provide additional phosphorus and calcium mixed in the salt. A number of commercial mineral mixes supply trace mineral salt along with a proper mixture of phosphorus and calcium. Some are for forage rations and some are for grain rations, so carefully read instructions.

Caring for Your Bred Heifer

Your heifer will reach puberty and come into estrus or heat when she weighs 600 to 700 pounds. Most Angus producers breed heifers so they will calve at about 24 months of age, which means they must be bred at 12 to 15 months of age. If you follow the nutritional program discussed, your heifer should be large enough to be bred at that age.

Keep heifers growing before and after



Corn silage, a byproduct of many farms, is a popular feed.

they are bred. Good nutrition will increase chance of conception early in the breeding season. A word of caution: don't let heifers get too fat! This will reduce their chances of conceiving and their ability to produce milk. Continually analyze their body condition. If they are getting too fat, reduce the feed grain portion of the ration.

Your heifers' growth will naturally slow down as she matures, and they will put on fat much easier as yearlings. Soon after breeding, you should put heifers on an all forage ration. They should be able to maintain body weight and continue skeletal growth through gestation with little or no gram in the ration.

In the last 90 days of your heifers' gestation period, manage their nutrition so that they gain about 1 pound per day. A heifer will lose more than 100 pounds the day she calves. This weight loss represents the weight of her calf, fluid and fetal membranes. Properly fed heifers and cows have less calving problems, deliver stronger calves and rebreed for their next calf much sooner.

Feeding the Lactating Heifer

After your heifer produces a calf, her nutritional needs increase. Her body must perform three major functions: 1. provide milk for her calf; 2. get back into shape to rebreed, and 3. continue to grow.

The key to managing first-calf heifers is to feed the best quality forage available to supply extra energy and protein needs. If you cannot provide superior forage, feed enough grain to keep heifers growing and

gaining some weight while nursing their first calves. When she is rebred, you can manage a first-calf heifer as you would a mature cow.

Feeding Mature Cows

One of your major goals now is to keep your cow calving on schedule each year and raising healthy, valuable calves. Each year be sure cows receive enough energy to gain about 100 pounds during the 90 days before calving. While they are nursing calves and being rebred, they need good quality pasture.

The least critical period for nutrition is after a cow weans her calf and until 90 days before she calves again. Crop residues, such as corn and grain sorghum stalks, are sufficient for her needs. Cows can even lose weight during this period and still come back with strong, healthy calves if you manage them right.

Maintain your cow herd completely on forages. The only time cows might need grain is during extremely cold weather or during drought. Even under these conditions, your Angus cows should be able to survive and do what they've been selected to do best — produce a good calf every year.

Editor's note: Information for this story was compiled from the American Angus Association booklet, "Star of Your Future." Some figures and information have been updated. A new edition of this booklet will soon be available from the public relations department.

AJ