

HOW TO START GROWING BEEF CALVES ON FEED

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Starting calves on feed takes time and effort because of the stress young calves are susceptible to at this point in their lives. The reduction of stress will result in calves consuming more feed, thus remaining healthier.

To successfully start calves on feed, dry matter intake must be maximized while minimizing health problems. The following is a 5-step applied method for starting calves on a silage-based ration.

Step 1

Ensure that all facilities are adequate, including windbreaks or other methods of shelter, a processing protocol has been worked out with your veterinarian and a feeding regime developed with your nutritionist.

Step 2

Depending on the circumstances, calves may have been on a truck for extended periods of time. Even if calves have just been weaned and have not traveled far, the first nutritional goal is to fill them up on long, soft, palatable hay. Their rumens are probably empty and need to be stimulated in order for proper function. Use high quality hay at this point, crude protein about 15% to 17% and acid detergent fiber 30% to 34%. Higher fiber indicates increased maturity and therefore lower quality.

Ideally, the hay should be half grass and half alfalfa. The alfalfa adds protein and the grass is palatable. If the weather is warm, do not put straw in the pen because the calves will fill up on straw rather than hay. If it is cold and/or wet and the calves are tired, bedding may be necessary.

Do not put the hay in round-bale feeders as this teaches the calves to stay away from the bunks – the opposite of what is desired. Feed hay alone for 2 to 3 days.

Step 3

Once calves are consuming the hay and are settled, silage can be introduced. Calves may take a few days to adapt or accept a silage-based diet. The acid and palatability characteristics differ considerably from hay, but over a few days intake will increase.

Dry, chopped hay can be utilized to dilute the silage until the calves develop a taste for the fermented product. Once the calves get onto silage, hay can be reduced but small amounts will increase the protein value of the ration and increase palatability. The amount to use is more

related to economics. The various available feedstuffs should be priced on a per unit of energy and protein basis and with maximum and minimum fiber and concentrate levels established.

The forage portion of a starter ration should include approximately 50:50 silage and hay. As an example, feedstuff proportions could be (dry matter basis): 30% silage, 30% grass/alfalfa hay, 37% concentrate and 3% supplement (an ionophore, vitamins and minerals). This would result in a dry matter content of approximately 60% for the ration.

Step 4

Select a suitable grain for starting calves. In the western U.S., corn or barley are readily available, although oats and wheat can also be used.

Barley and wheat digest quite rapidly and therefore predispose the calves to digestive conditions such as acidosis. Oats are generally too expensive when cost per unit of energy and protein are considered. Corn is generally the most cost-effective grain and nutritionally works quite well. If dry matter intake is depressed significantly during the first 3 to 4 weeks after arrival it may be necessary to feed 35 to 40% concentrate on a dry matter basis in a starter ration. Once suitable intake is achieved then a lower level of concentrate can be included. This may take a couple of weeks. All calves are not created equal and purchased calves may have a diverse history. If possible find out as much as you can about the calves. Do not mix calves from different loads unless you know they are very similar in background (previous feeding regime etc.).

Ionophores reduce digestive upsets such as bloat and acidosis. Ionophores won't eliminate the problem, but they will help keep it under control and so are recommended.

Step 5

Once calves are eating the starter rations well, decrease the concentrate and go to a very simple ration composed of silage, hay, grain, and supplement. An example of this would be 35% silage, 35% alfalfa/grass hay, 27% concentrate and 3% supplement. These values could be increased or decreased depending on desired average daily gain (ADG), weight, frame score, breeding, and feed costs. Increased concentrate levels will increase ADG but as an example may cause a small framed calf to gain at too great a rate, which may decrease eventual slaughter weight. It is advisable to sort calves after they are on their ration a couple of weeks after arrival. Sorting should be based on breed, gender, weight, frame size, and desired ADG.

Dry matter intake of newly arrived feeder calves

Time after arrival	Dry matter intake (% of body weight)
1-7 days	0.5 – 1.5
8-14 days	1.5 to 2.5
15-28 days	2.5 to 3.0

BALANCING THE NUTRIENTS

Protein is very important when starting calves on feed. Feedlot rations can be supplemented with natural sources or urea. Research has indicated lower performance when high levels of urea are fed to starter calves. Therefore, urea should be eliminated from starter rations, or fed at a low level.

Keep protein in the ration at 13% to 14%, a level readily achieved by adding high quality hay to your starter ration.

In terms of supplements, bypass proteins are worth considering during the starter phase. They go through the rumen undigested to be absorbed directly in the small intestine. Examples of bypass proteins are corn gluten meal, dehy alfalfa, and distillers dried grains. They cost more per unit of protein than conventional canola or soybean meal, but with the low feed intake of these calves during the first 28 days, bypass proteins may be economical.

Calcium is not normally supplemented in growing rations as forages contain relatively high levels. If the ration is deficient in calcium, which could occur on a high concentrate diet, it can be supplemented easily. Stiffness is a characteristic calcium deficiency.

Phosphorus, magnesium, and sulfur generally are not required as forages and concentrates will supply enough of these macrominerals to meet the calves requirements.

Research into the effects of potassium on morbidity and mortality indicate a requirement of .55%.

Almost all rations require added sodium in the form of salt. It is best to feed salt in the supplement rather than free-choice. In the supplement, the level can be precisely controlled although many producers add a high salt-containing trace mineralized block product in the feed bunk.

Trace minerals and vitamins are especially important because of their effects on growth and the immune system. Soils in Utah are generally deficient in copper, zinc, manganese, and sometimes selenium. Therefore, forages and concentrates, along with the cattle, are deficient if they are not properly supplemented. In addition, cattle under stress show signs of deficiency much quicker than non-stressed cattle.

When cattle arrive at your feedlot, there is generally no way of knowing their nutritional history. It is best to assume they are short on trace minerals, and probably Vitamins A and E. Research at Colorado State University and elsewhere has reported beneficial effects from high levels of Vitamin E (200-500 IU/day) in stimulating the immune system.

CONCLUSION

A well developed feeding program will reduce stress on newly weaned beef calves resulting in lower costs of gain. In consultation with a veterinarian and nutritionist effective processing and feeding can be achieved.

Note: This paper was adapted and edited based on an article by Dr. Barry Robinson (Cattlemen Magazine/October 1993).

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