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Calf Note #10 – Calf Starter Quality

Calf starter is a crucial link to proper ruminal development and successful weaning. Since intake of dry feed initiates rumen development and allows early weaning, the availability and intake of calf starters is important to calves prior to weaning.

There are many types of starters and other feeds available for calves. These include:

- Commercial textured calf starters
- Commercial pelleted starters (with or without roughage products)
- Commercial lactation feeds
- Home-made grind and mix starters.

There are many commercial calf starters on the market. In general, these high quality feeds are very palatable and provide nutrients required for rumen development and acceptable calf growth. In addition, many starters contain ingredients that are not normally available in lactation feeds or in home-made grind and mix starters. Unfortunately, there are also commercial starters that contain low-quality by-products and fillers that cannot support adequate growth.

Some commercial calf starters include some B-vitamin supplementation to provide calves with a source of B-vitamins before the rumen begins to produce them on its own. Also, many commercial calf starters contain a coccidiostat (Bovatec®, Deccox® and Rumensin® are examples) that provide protection against coccidial infection. Protection provided by a coccidiostat is inexpensive and very important, so a coccidiostat should be part of all starters in locations where coccidiosis is a management problem.

Nutrient	Amount required
Crude protein (% of DM)	18.0
Fat (% of DM)	3.0
TDN (% of DM)	80.0
Metabolizable energy (Mcal/kg DM)	3.11
Calcium (% of DM)	0.60
Phosphorous (% of DM)	0.40
Vitamin A (IU/kg)	2,200
Vitamin E (IU/kg)	25*
Vitamin D (IU/kg)	300

Nutrient requirements of dairy calves. Source: 1989 NRC.

*Recent research indicates the requirement may be higher.

All starters must meet the nutrient requirements of the calf. Some of these are listed below. Note that these values are expressed on a dry matter basis (usually as a % of DM). You can use these values to compare with the feed tag. The feed tag can also tell you if there are additives (e.g., a coccidiostat) in the calf starter.

All calf starters must meet the above requirements. However, it is important to note that the 1989 NRC requirements for calf starters assume that *hay would be offered to calves in addition to starter*. Thus, if

you don't feed hay to calves for the first couple of months after birth, then it is important to look at the requirements for individual animals (body weights and rates of gain).

Palatability may be the most important factor in choosing a calf starter. If calves like the starter, and begin to eat it readily from a young age, you'll find that calves are ready for weaning at an earlier age. That saves you money. Palatability is generally highest with textured feeds, followed by complete pellets. Calves generally do not like mash feeds and palatability and intake are usually lower than with other types of feeds. Fines in pelleted calf starters can also depress intake. Look for a starter with pellets that will not break into fines. If you purchase a commercial calf starter with fines, return it. That type of starter will not optimize intake and may not be of acceptable quality. Many commercial feed companies have developed unique manufacturing technologies designed to improve starter palatability. Molasses is often used as a palatability agent (at 4 to 5% of the formula) to increase intake. It increases palatability and controls dust. Many starters will contain oats, which are palatable and a good source of fiber for the calves. If fat is added to the starter, make sure that it is high quality and will not inhibit intake.

The above ration will contain approximately 18% crude protein and 80% TDN on a DM basis. It is simple and effective. If the ingredients other than corn and oats are pelleted (usually some corn is added into the pellet), this can make an excellent starter.

Lactation feeds generally should **not** be fed to calves. In many cases, lactation complete feeds do not contain sufficient energy to support good calf growth. They may also contain inappropriate amounts of protein and minerals. Also, lactation feeds may contain added fat, animal by-products, or other additives that reduce palatability. Finally, lactation complete feeds do not contain added B-vitamins or coccidiostat.

Example of a simple, acceptable calf starter.

Ingredient	% of total ration
Corn, cracked	52.0
Oats, rolled	20.0
Soybean meal	20.0
Molasses, liquid	5.0
Limestone	1.0
Dicalcium phosphate	0.25
Salt, trace mineral	0.20
Animal fat	1.50
Vitamin supplement	0.05 (or to provide needed vitamins)
Other (coccidiostat, buffer)	as needed

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