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Feeding Your Project Calf

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You're getting a dairy calf! Your project will be rewarding and fulfilling, but will also require lots of dedication and hard work. There are many pieces to the puzzle of raising a healthy calf, so be sure to work closely with your project leader and use resources like the ones listed at the end of this article to expand your knowledge.

In this article, we will discuss how to feed your calf for optimal health. We will focus on using milk replacer powder which is readily available at feed stores and easy to store. Of course, calves can be fed actual cow's milk or pasteurized non-saleable milk from dairies, but access to those sources is likely limited for most youth dairy project members. For more information on these sources, please refer to the publications at the end of this article.

Colostrum- the building block for a healthy calf

Under no uncertain terms, a newborn Holstein calf must receive 1 gallon (6 pints for a Jersey) of good quality colostrum or an appropriate colostrum replacer within 24 (preferably 12) hours of birth. The reasons are many-fold and beyond the scope of this article, but it is imperative to ensure that the calf you purchase has met this requirement.

Biological Need- it's more than you might think

Whole milk, straight from the cow, is 27-30% protein and a suckling calf will nurse an average of 5 times per day. A typical milk replacer powder is formulated to contain 20% protein and 20% fat ("20-20") and is fed in two daily feedings of ½ pound of milk replacer powder mixed with ½ gallon of water. This isn't going to come close to what nature intended! Furthermore, when temperatures drop, especially below freezing, calves need more calories to *maintain* body weight. According to the Dairy Calf and Heifer Association, calves should double their birth weight by 60 days of age and then gain 2.2 pounds per day from 61-120 days of age. At a ***minimum***, they should consume10% of their birth weight in the liquid diet. Feeding levels of 15-20% consumption relative to body weight are more advisable to ensure adequate weight gain. Starter grain should be offered in addition to milk replacer (see grain section below). Calves will need more nutrition than the average milk replacer label recommends to reach these benchmarks.

It is important to recognize that there are many different milk replacer formulations and label recommendations out there. The table below is a *minimum* guideline based on the most widely available milk replacer powders. In most cases, calves should be fed more than the amounts listed below and certainly never less. Formulations with varying amounts of protein and fat are available, including 22.5-18, 21-18, 22-22, and 28-25 and may provide greater nutritional benefits for your calf. In fact, Jersey calves rarely thrive on 20-20 milk replacer and should almost always be fed a Jersey specific formula (usually 22-22 or 28-25). Calves should be fed a minimum of twice per day. Current research suggests that calves thrive on more than 2 feedings daily, so consider adding a third feeding if possible.

Minimum* Guidelines/Day for Feeding 20% Protein-20% Fat (20-20) Milk Replacer Formula to Dairy Calves, Split into 2 or more Daily Feedings

Calf's Birth Weight (pounds)	Milk Replacer Powder (ounces)	Warm Water (pints)
60	12	6
70	14	7
80	16	8
90	18	9
100	20	10

**These are minimum guidelines. Significantly greater gains can be achieved with an enhanced feeding program.*

Supplemental Ingredients

Milk replacers are available with a variety of additional ingredients to supplement the calf's diet. For a typical project calf, it is not necessary to feed milk replacer with added antimicrobials or ionophores. If you feel that it is important to include these supplements in your calf's diet, be sure to consult a veterinarian and educate yourself about the appropriate withdrawal times and residue risks.

Protein Sources

Ingredients in milk replacers can vary widely and are most commonly milk or plant-based. Plant-based formulations (usually soy or wheat) are less expensive, but milk proteins are much more digestible for young calves. Milk-based ingredients include dried whey, dried skimmed milk, milk protein concentrate, dried buttermilk, casein and delactosed whey. Look for these products in the first 3-5 ingredients and avoid the formulation if soy or wheat-based proteins are also listed.

Grain

A palatable starter grain formulated to contain 18-24% protein should be introduced when the calf is 3-5 days old and the amount offered should be consistently increased. The calf can be weaned when it is consuming 2-3 pounds of starter grain per day, usually around 60-80 days of age. Offering grain is incredibly important for rumen development and calves will fail to thrive after weaning if it is not offered early in life. Once the calf is fully weaned, high quality alfalfa hay should be offered along with a "grower" or "heifer" grain.

Water

Above all, water is the single most important nutrient for any animal. Fresh, cool, free-choice water should be available at all times after 2-3 days of age.

A well fed calf is a healthier calf who is better equipped to fight off the inevitable challenges that come with an immature immune system. Calves will be less susceptible to typical health challenges when fed on a higher plane of nutrition and, when scours or respiratory issues do occur, they will use fewer energy reserves, recover more quickly, and avoid major setbacks in growth rate. Less sickness reduces antibiotic usage and its associated issues as well.

For more information about raising dairy calves and heifers, consult these resources:
www.calfandheifer.org
www.extension.org/dairy_cattle
Feeding the Newborn Dairy Calf- Penn State Cooperative Extension
(http://pubs.cas.psu.edu/freepubs/pdfs/ud013.pdf)

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