



Hand-raising a baby calf requires a commitment to providing adequate nutrition, housing, and care to give the calf the best chance to grow into a healthy, productive adult. This information is designed to help provide a better understanding of generally accepted calf management guidelines and how each recommendation benefits the calf. It is not intended to provide treatment recommendations - there is no substitute for sound advice from your veterinarian.

WINTER FEEDING - WHY BE CONCERNED?

At 0°F, a 90 pound calf receiving 1 pound of milk replacer powder daily (1 gallon of 12.5% milk replacer solution) can “burn up” its entire body fat reserve (about 3-4% of body weight) within 18 hours! Time to feed more calories!

Calves' energy intake is the sum of the starter and milk or milk replacer consumed. So you might ask, “can't the calves just eat more starter to compensate?” Yes, they can, if they are ruminating, and are consuming 1-2 pounds of grain per day. But most calves less than 2 weeks old are not. Milk or milk replacer is the sole source of energy for pre-ruminating calves, and a significant source for the remainder of energy needed by ruminating calves.

WHAT'S COLD TO A CALF?

A newborn calf's *thermoneutral* temperature (range in which the calf does not have to expend energy to stay warm or cool) is about 50-80°F. By a month old, a calf's lower critical temperature is closer to 32°F. Depending on a number of factors, newborn calves are neither heating nor cooling themselves somewhere between 50 and 80°F. Some of these variables are:

- Wind exposure (calves feel wind chill, too)
- Breed (smaller breeds have more surface area per body weight and are more temperature sensitive)
- Hair coat condition (wet, rain, snow, mud, manure)
- Thickness of hair (adaptation)
- Bedding type and condition (dry, deep packed straw has far more insulating capacity than wood shavings)

Calves may need one third more energy when temperatures drop from 55°F to 25°F. Realize, though, that the extra energy required is not used or available for growth or support of a developing immune system – the extra energy is diverted from weight gain and growth to maintenance of core body temperature. Some researchers estimate that 20% more energy yet is required for immune system development.

WHAT IF MY CALVES DON'T CONSUME ENOUGH ENERGY WHEN IT'S COLD?

If their calorie intake is below maintenance requirements in cold temperatures, calves WILL lose weight. Body fat stores are burned first, then calves will begin to burn muscle. Body functions suffer, particularly the immune system. *Calves with little or no body fat reserves can actually starve to death during a single day cold snap if they cannot consume enough calories to maintain body heat.* Body weight loss can be caused by cold temperature alone, but is also exacerbated by stress or disease challenge – energy requirements increase when the immune system must combat an infection.

HOW CAN I INCREASE ENERGY INTAKE DURING COLD WEATHER?

Options for boosting calorie intake of calves include:

- Feed a milk replacer with a higher fat level (18 to 20% is standard for most calf milk replacers; 22 to 24% is sometimes available as a “winter formula”).
- If a higher fat milk replacer is not available, add a fat supplement to increase the calorie content of your current milk replacer. It is important to follow feeding directions carefully, and not to feed more than 1/4 pound (4 ounces) of fat supplement per day, as this is likely to reduce starter feed intake, slowing rumen development and growth.
- Increase the amount of liquid milk replacer volume by 25 to 50% (for a calf on 2 quarts twice daily, this would be an extra 1 to 2 pints per feeding).
- Feed an extra 1/2 to 1 bottle in a third feeding in the middle of the day (this is a good option for calves less than 3 weeks of age, which may not be able to handle more than 2 quarts per feeding).
- Increase the milk replacer powder dilution rate (amount of powder in the same amount of water) by 25 to 50% while still feeding the same volume of milk replacer solution. It is important not to exceed 20% solids (max 12 ounces of milk replacer powder in 2 quarts of water), and to keep fresh water available at all times.



CALF CARE: Volume 1.09 Raising Healthy Calves in Cold Weather



IMPORTANT! Any feeding change should be transitioned slowly over several days time to allow the digestive system of the young calf to adjust. Remember to keep fresh water available at all times if possible - calves consume considerably more starter feed when water is available. If frozen buckets are a problem, offer lukewarm water to calves at least 2-3 times daily, after milk feedings. Don't forget the "warm soup effect" – warm fluid feeding can help warm up moderately chilled calves.

ADDITIONAL RESOURCES

Your livestock veterinarian and local university extension agent are excellent resources for calf management information, as well as many online sources. Please visit the Learning and Resource Center at www.savacaf.com for some helpful online links.