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Clell V. Bagley

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Animal Health Fact Sheet

PREVENTING CALF LOSSES

Clell V. Bagley, DVM, Extension Veterinarian
Utah State University, Logan UT 84322-5600

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Many beef producers and practicing veterinarians noted there were higher than normal calf death losses during the 1993 calving season. We were especially aware of the increased losses here in the western states, but there were also heavy losses in the midwest and east, so the problem was very widespread. Losses were probably not due to ONE simple cause. There has been no evidence of some new viral or bacterial agent that became a rampant problem nation-wide. But rather, the problem was probably due to a combination of common disease agents and environmental conditions.

Weather conditions were more severe than normal. But producers raise two important questions in relation to weather as a cause: 1) The weather had been severe, but then became more mild and was near normal (for some areas) during actual calving; how could the effect of weather have been delayed and still had its effect at calving? 2) We can't change the weather, so what can we do in the future to help prevent a recurrence? There are reasonably good answers for both questions.

DELAYED WEATHER EFFECTS

Cold, wetness, mud and wind all have a tremendous impact on the energy requirements of pregnant cows. The cows may have survived and produced well for many years in the same area, with minor problems. But they may also have been in a marginal situation, just meeting their nutritional requirements. They could endure short periods of severe weather and then recover and compensate after it had passed. However, when the much longer periods of weather stress came in 1992-93, it may have greatly exceeded the energy intake of some cows. Weather stress does not have to be so severe that it kills cows in order to have a major affect on the ability of the calf to survive. The cows may even appear to be in reasonably good body condition because of a thicker, heavier haircoat.

The time period involved in an energy deficiency doesn't have to be extensive; as little as 30 days is enough to have a major impact on calf viability and survival. A study on the effect of energy intake by pregnant cows was reported in the Large Animal Veterinarian (October 1993). Cows were fed a low level energy (TDN) ration for the last 100 days before calving. But at 30 days before calving, the herd was divided into two groups. One group was fed a "high" resulting effects on calf illness and survival were dramatic. In the low energy group of cows there were 9.5% more calves dead at birth, 19% more had scours and 19.1% more died as a result of scours.

During that last 30 days, the cows in the high energy group gained 92.8 pounds and those in the low energy group lost 22.9 pounds.

Producers don't have to starve their animals for this same affect to occur. It may be related to weather stress and increased energy requirements. There is a "lower critical temperature" at which just a maintenance ration will provide enough energy for body heat. For a 1000 pound pregnant cow, with a heavy winter haircoat, that lower critical temperature is about 19 degrees Fahrenheit. However, as the temperature drops below this level, the energy requirement increases tremendously. For each 2 degree drop below the critical temperature there is a 1% increase in energy requirement. There is also a 1% reduction in digestability of feed for each 18 degree drop in temperature, so even though they eat the same feed, they get less energy value from it. During periods when the temperature drops even to zero, there is an automatic need for 10% more energy intake plus a loss of digestability of 1% on the total diet consumed. If there is also moisture (snow), along with some wind and/or mud, the energy requirements increase astronomically. In fact, at some temperatures and environmental conditions, some heifers will not be able to eat enough of any feed to compensate for their needs.

Other research work has shown that protein levels for the pregnant dam are just as critical as energy, for healthy calves. The relationship of "weak calves" and protein levels was demonstrated by Dr. Bull and others and reported in 1981. They showed that at three levels of crude protein intake per cow (2, 1.5-2, and less than 1.5 pounds per day) the per cent of weak calves was definitely correlated (0.6%, 3.4%, and 9.8%). Another factor that should be considered is that when energy requirements increase, some of the protein may be shunted into use for energy and this would further reduce the amount of crude protein available.

So, we should be aware that a deficiency of energy or protein can affect the fetus and decrease calf survival. Severe weather can increase the nutritional requirements of pregnant dams so that a ration which was adequate becomes deficient. The detrimental effect of a ration that is inadequate because of weather stress may not become apparent until calving.

PREVENTION

Producers can prevent these delayed effects of weather on calving by:

1. Feeding adequate amounts of crude protein; at least 2 pounds per head per day.
2. Increasing the energy level fed during periods of colder, more severe weather and by close monitoring of body condition losses.
3. Improving feed quality. Producers often let stored feed spoil just for lack of a little care. Yet spoilage has a major effect on energy and protein content levels and these, in turn, have a major effect on the incidence of calf scours and on calf survival. We can't continue to ignore feed quality for beef cattle.

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