

News Column
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Quickest Way to Warm up a Chilled Calf Re-warming Methods for Cold-stressed Newborn Calves Tell Mom to get the tub ready

By Glenn Selk, Oklahoma State University Emeritus Extension Animal Scientist

Last winter was one of the mildest winters in recent history and we have of lately experienced some colder than average temperatures. Nonetheless, before the spring calving season is over, there is a chance that some calves will be born in very cold winter temperatures. Newborn calves that are not found for several hours after birth and have been exposed to extremely cold temperatures may become hypothermic or very cold stressed.

Years ago a rancher called to tell of the success he had noticed in using a warm water bath to revive new born calves that had been severely cold stressed. A quick check of the scientific data on that subject bears out his observation.

Canadian animal scientists compared methods of reviving hypothermic or cold stressed baby calves. Heat production and rectal temperature were measured in 19 newborn calves during hypothermia (cold stress) and recovery when four different means of assistance were provided. Hypothermia of 86° F rectal temperature was induced by immersion in cold water. Calves were re-warmed in a 68 to 77° F air environment where thermal assistance was provided by added thermal insulation or by supplemental heat from infrared lamps. Other calves were re-warmed by immersion in warm water (100° F), with or without a 40cc drench of 20% ethanol in water. Normal rectal temperatures before cold stress were 103° F. The time required to regain normal body temperature from a rectal temperature of 86°F was longer for calves with added insulation and those exposed to heat lamps than for the calves in the warm water and warm water plus ethanol treatments (90 and 92 minutes versus 59 and 63 minutes, respectively).

During recovery, the calves re-warmed with the added insulation and heat lamps had to use up more body heat metabolically than the calves re-warmed in warm water. Total heat production during recovery was nearly twice as great for the calves with added insulation, exposed to the heat lamps than for calves in warm water and in warm water

plus an oral drench of ethanol, respectively. This body heat production leaves the calves with less energy to maintain body temperature when returned to the cold environment.

By immersion of hypothermic calves in warm (100° F) water, normal body temperature was regained most rapidly and with minimal metabolic effort; no advantage was evident from oral administration of ethanol. When immersing these baby calves, do not forget to support the head above the water to avoid drowning the calf that you are trying to save. Also make certain that they have been thoroughly dried before returning to the cold weather and the mother. And save some of the afterbirth or fluids to rub on the calf to help its' dam claim it after being warmed up. With today's calf prices and high feed cost inputs, it is imperative to save as many calves as possible.

Source: Robinson and Young. Univ. of Alberta. J. Anim. Sci., 1988.