

OSU EXTENSION NEWS

# *Re-warming methods for severely cold-stressed newborn calves*

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A very cold wet night in Oklahoma undoubtedly caused a few newborn calves to be cold-stressed.

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 degrees F. rectal temperature was induced by immersion in cold water. Calves were re-warmed in a 68 to 77 degrees 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 degrees F.), with or without a 40cc drench of 20 percent ethanol in water. Normal rectal temperatures before cold stress were 103 degrees F.

The time required to regain normal body temperature from a rectal temperature of 86 degrees 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 minutes and 92 minutes vs 59 minutes and 63 minutes, respectively). During recovery, the calves re-warmed with the added insulation and heat lamps produced more heat metabolically than the calves re-warmed in warm water. This represents energy that is lost from the calf's body that cannot be utilized for

other important biological processes. Total heat production (energy lost) during recovery was nearly twice as great for the calves with added insulation, or exposed to the heat lamps than for calves in warm water and in warm water plus an oral drench of ethanol, respectively. By immersion of hypothermic calves in warm (100 degrees F) water, normal body temperature was regained most rapidly and with minimal metabolic effort. No advantage was evident from oral administration of ethanol. (Source: Robinson and Young. Univ. of Alberta. J. Anim. Sci., 1988.)

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 it is important to dry the hair coat before the calf is returned to cold winter air. If the calf does not nurse from the cow within the first few hours of life (6 or less), then tube feeding of a colostrum replacer will be necessary to allow the calf to achieve passive immunity by consuming the immunoglobulins in the colostrum replacer.

Obviously not every calf born in cold weather needs the warm water bath. However, this is apparently a method that can save a few severely stressed calves that would not survive if more conventional re-warming methods are used. With 2015 calf prices, saving every calf is important to the bottom line.



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