

Hypothermia and Frostbite

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Hypothermia is a profound drop in body temperature. Animals less than 48 hours old or animals with a pre-existing condition or disease are at the greatest risk for developing hypothermia. Newborns are often hypoglycemic (low energy reserves) and have electrolyte imbalances. Animals with pre-existing conditions (pneumonia, old age) have impaired body reserves and may succumb more readily to very cold and windy conditions.

Frostbite refers to the destruction of tissue in a localized area due to extreme cold. It is uncommon in healthy, well fed, and sheltered animals. Again, animals that are less than 48 hours old or animals that have a pre-existing condition are at the greatest risk for developing frostbite. The areas most likely to be injured include the ears, tail, teats, scrotum, and distal parts of the limbs, especially the hooves. Hind limbs are more likely to be involved in cattle since the normal posture for the animal is to draw its front legs up under the chest while the hind legs protrude out from under the body.

Prevention

Treating cases of hypothermia and frostbite is often unrewarding. Prevention is of primary importance. Prevention consists of keeping the animals warm and dry, especially newborns. Windbreaks must be provided to counteract the effects of wind-chill.

Bedding is essential. Bedding has two functions. It insulates the animal from the snow and ice underneath the body, which prevents hypothermia and frostbite, and lowers the nutritional requirements of the animal. Bedding also allows the animal to "snuggle" into the bedding and lowers the body surface area exposed to the wind. The final essential aspect of prevention is to increase the amount of energy supplied in the animal's diet.

Treatment

Calves with hypothermia need to be warmed slowly. The heat source should be about 105-108° F. Warmer temperatures may cause skin burns or shock. Sources of heat include a warm water bath, an electric blanket, heat lamps, or hot water bottles, plus a warming box. Supplying an energy source to these calves is essential. If the calf is newborn, colostrum should be supplied within the first 6-12 hours of life. Milk or electrolytes with an energy source such as glucose are recommended. An esophageal feeding tube works quite well to supply these. Without fluids, the animal becomes acidotic as it warms up. An acidotic calf is predisposed to contracting scours or pneumonia.

Areas suffering from frostbite should be warmed up quickly. Frostbite is the actual destruction of tissue. To prevent permanent damage, affected areas need to be restored with circulation as soon as possible. Again, the heat source should be about 105-108°F. Opposite to what you see in the movies, do not rub affected areas. They are already damaged and quite fragile. As the area

warms up, it will be painful. Do not let the animal rub these areas, it will only make the situation worse. In severe cases, analgesics (pain killers) may be indicated. Consult your veterinarian.

Frostbite in teats and scrotums deserves special mention. Frostbitten teats may be difficult to detect. The first sign may be a thin calf. The actual teat end is affected and can slough. If this happens, the sphincter muscle of the teat may be lost. This makes mastitis a possibility. Also, an affected teat may cause that quarter to dry up since the cow won't let the calf nurse. In addition, the frostbitten teat may go unnoticed until next year. At that time the calf is thin, and when the cow is examined, the actual teat is healed over with scar tissue. This teat will need to be opened.

Scrotums and testicles of bulls can suffer frostbite. Often these lesions go unnoticed. These lesions can cause transitory or permanent infertility. All herd bulls should have breeding soundness exams 45-60 days after the last severe cold spell. Your veterinarian can help you with these exams.

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