

Cold Exposure and Bull Fertility

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The extreme combination of cold temperatures and blizzard conditions during winter months is always a concern to cow-calf producers because of the added difficulty in feeding and caring for the cattle herd. First priority for most cattle producers is the well-being of the cow herd. Herdbulls, which are generally kept separate from the cowherd, may experience equal hardship if proper nutrition and shelter are neglected. The future reproductive success of the herd will suffer if herdbulls are not prepared for or protected from winter weather. Like the cowherd, herdbulls need to be maintained in a body condition score of 5 to 6 in order to be in ideal breeding condition. Low temperatures and windy conditions can easily increase feed requirements 25 to 30 percent above normal maintenance requirements. Also, lack of wind protection and lack of bedding will increase the chance of frost damage to the scrotum and testicles. During normal winter conditions frostbite is not a common problem with breeding bulls, but prolonged exposure to extreme cold and wind increases the incidence of frostbite and is a problem that must be considered when planning for the breeding season.

Evidence of frostbite to the scrotum is usually apparent a few days after freezing in the form of noticeable inflammation and swelling. The heat generated from the inflammation directly affects the sperm that are maturing and stored in the epididymis, which surrounds the testicle at the lower end of the scrotum. The resulting damage may cause temporary or, in more severe cases, permanent sterility in the bull. A scab may appear on the lower portion of the scrotum as healing occurs. However, the absence of a scab does not indicate that frostbite injury has not occurred. Severe frost damage to the testicle and epididymis may cause tissue adhesions, affecting mobility and circulation within the scrotum.

Evaluation of possible frostbite damage is best accomplished by a trained veterinarian performing a breeding soundness examination 45 to 60 days after the injury occurred. A semen evaluation performed earlier than this period will most likely indicate poor semen quality and could result in unnecessarily culling a bull that may produce satisfactory semen after healing has occurred. An examination normally includes a physical evaluation of the entire reproductive tract including the testicles and epididymis, as well as a microscopic semen evaluation recording sperm motility and morphology. The following table illustrates the importance of having a breeding soundness exam completed before the breeding season.

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