

Determining the Sex of a Calf

Timothy W. Wilson
Extension Animal Scientist – Beef Cattle

Technologies involved in artificial insemination breeding programs have changed dramatically since AI began in 1780. Bull semen once stored in ampules can now be stored in straws, calving seasons can be tightened with estrous synchronization protocols, and estrus can be determined through the use of computerized estrus detection equipment.

In the past, when traditional pregnancy checks were concluded, it was understood that the calf crop would yield about a 50:50 male:female ratio. This assumption was made knowing that the X-chromosome (egg) of the female would combine with either the X- or the Y-chromosome (sperm) of the male. This combination would result in either an XX (female) or XY (male) offspring.

Now, however, current research reported in the 2002 Nebraska Beef Cattle Report indicate that with the use of emerging technologies, producers may eventually decide the sex of a calf using sexed semen. Through the use of sperm sorting equipment (SX Mo Flo, Cytomation, Inc., Ft. Collins, Colo.), researchers from the University of Nebraska, Colorado State University and XY, Inc. (Ft. Collins, Colo.) have been able to separate bull sperm up to 4,000 live sperm/sec. of each sex (Deutscher et al., 2002). Sorted sperm have a 90% accuracy rate and only a slight decrease in AI pregnancy rates compared to normal sperm (Deutscher et al., 2002).

Although this technology has advanced in recent years, it has not reached the efficiency necessary to offer sexed semen commercially. As additional studies are completed and procedures are enhanced sexed semen may become commonplace. This technology as well as others offers exciting new alternatives for the innovative producer. If you have any questions regarding this topic, please contact your local county agent, or call me at (912) 681-5639.

Source: Deutscher, G., R. Davis, G. Seidel, Z. Brink, J. Schenk. 2002. Use of sexed (female) sperm is successful in yearling heifers. Nebraska 2002 Beef Cattle Report. Pg. 12-14.