Artificial Insemination With Sorted Semen Can Help Rebuild Cow Herds

FAYETTEVILLE, ARK.

The number of cattle and calves in Arkansas and the United States has dropped to the lowest level since the 1950s, according to the U.S. Department of Agriculture.

Mike Looper, head of the Department of Animal Science, University of Arkansas System Division of Agriculture, said beef producers have been selling cattle in response to record high beef prices and near record costs of production, especially feed and fuel. Drought in Texas and other areas is also a major factor.

A 15 percent reduction in the number of heifers retained by producers to replenish cow herds is of particular interest, Looper said. It suggests that herds will likely decline further until market prices drop to a level that promotes the rebuilding of herds in anticipation of the next period of higher prices.

Bull calves, or steers, usually bring a higher price than heifers due to higher meat quality, but producers who decide to rebuild their cow herds may place a premium on heifers, Looper said.

It may now be economically feasible for an increased number of Arkansas beef producers to use advanced artificial insemination, or AI, technology that determines the gender of most calves born in a herd, Looper said.

Professor Rick Rorie and Associate Professor Jeremy Powell are using sorted semen, also called sexed semen, in a Division of Agriculture herd of about 200 cows at the Division of Agriculture's Savoy Research Unit near Fayetteville.

"We have used AI the past 3 years to improve the overall genetics of our herd, and this year we are using sorted semen to increase the number of high quality replacement heifers," Rorie said.

Artificial insemination, which has been used in cattle since the 1950s, is a proven method of enhancing the profitability of a herd, Powell said. Semen from bulls with documented heritable genetic traits can be purchased. Most producers benefit from AI due to significantly improved production, including more and heavier calves and better carcass quality, Powell said.

AI is used extensively by dairy and pork producers, but not as much in beef herds, in which management is often less intensive, Rorie said. Smaller scale farms, which describes most Arkansas beef producers, seldom use artificial insemination because they lack basic handling facilities or don't have the training and equipment. However, he added, some AI companies provide "turnkey" service to synchronize and inseminate the herd in a short period of time.

Over the past decade, sorted semen has become more widely available, Powell said. Sorted semen is commercially available where the insemination dose is up to 90 percent Y (to produce males) or X (to produce females) chromosome bearing sperm. The expected pregnancy rate from sorted semen is about 80 percent of what can be expected from unsorted semen. Pregnancy rates of 50 percent or better can be achieved after a single insemination with sorted semen, with 90 percent of the calves born being of the desired gender, Powell said. Cows are also exposed to a herd bull to increase the overall pregnancy rate.

As producers plan to rebuild cow herds, Rorie said, an AI program using sorted semen is a highly reliable method of increasing the supply of heifers with superior genetics to enhance the profitability of future calf crops. Δ