Part II: Trace Minerals

Cattle Breeders Find Answers

by Teresa Spivey

"Nutrition is the prime factor in a successful breeding program," says Dr. Ernie Henderson, development and technical services veterinarian at Sanofi Animal Health Inc. (formerly (CEVA).

Nutrition, says Dr. Henderson includes more than the obvious macro elements such as grains and forages, but also "the very important but often overlooked micro elements such as zinc, copper and selenium."

As was noted in the first article, these micro elements (trace minerals) can play an important role in the reproductive efficiency of a cow herd. The 1980 Boyne Mountain Symposium concluded that problems relating to ovulation, estrous detection, natural mating, artificial insemination, fertilization, early embryo implantation and development, prenatal and postnatal death, and delayed post partum fertility may decrease the efficiency of reproduction.

There are a number of cattle breeders across the country that would agree with these conclusions. They have seen some of these problems in their herds. In many cases the nutritional program was the first thing checked, but as most found out when the final results came in, it was the mineral program that needed improvement. However, once on the right track, the breeders found that although results don't happen overnight, they are proving to be profitable in the long run.

"We have seen significant results in our herd since we started them on the proper trace mineral program," says Dr. Randy Bennett, D.V.M. The resident veterinarian at Lone Star Herefords, Henrietta, Texas, Bennett notes that all the reproductive parameters have improved. "The quality of semen in our bulls and the conception rate in our females has solidly improved."

Bennett also sees noticeable differences in the overall health of the herd. Problems with pneumonia, diarrhea and various diseases related to the immune system have considerably decreased.

Bennett, as most cattle breeders, didn't recognize that their reproductive and overall health problems were related to trace minerals until much testing had been done. Recognizing that they were not getting the results they desired from their donor cows, they began an intense search to identify the source of the problem.

Feed, water and forages were tested and blood samples taken. It was discovered the herd had copper and selenium deficiencies, both which have been found to be closely connected with reproductive inefficiencies. From there, Dr. Bennett began his search for products that would help reduce their problems.

"Breeders need to try and understand the problem and what is behind it so they can use the proper product to help solve the problem," says Bennett.

In Dr. Bennett's mind, this attempt to understand the problems and continuously pursue the testing of feeds, forages, minerals . . . ., has gotten Lone Star Herefords to the successful position they are in today.

Respiratory problems, scours and reproductive inefficiencies were also apparent at Brost Angus Farm, Oxford, Ind.

"We used to have a lot of problems with calves coughing and having scours," says Chuck Brost, who with his father, Gary Brost, operates Brost Angus Farms and Granada Genetics. "We also had problems with our donor cows producing more degenerates than we like to see and having low stimulation."

Consultation with a number of veterinarians and doing blood work on a sampling of the cow herd revealed that this herd also had a copper deficiency. As a result, Brost began using products with amino acid chelated minerals with successful results.

"We began by using a chelated drench on the calves that were having health problems," Brost says. "Before we started using the chelated mix, it seemed like we were treating scours continuously. Now we may treat them one time and they are fine."

The overall results on the calves led the Brosts to analyze the cow herd's mineral program and make the necessary changes. As a result, they are seeing a major improvement in their embryo transplant program.

During a five-year period (1985-1989) the production of the donor cows has improved. The number of good, transplantable embryos has increased and the number of degenerates or unfertilized eggs has decreased (see Fig. 1). This improvement is seen in the Brost's own donor females as well as the females they have taken care of in the Granada Genetics program the past year.

All donor cows at the Indiana operation are on an amino acid chelated trace mineral program, with a more intense concentration fed for approximately 23 days during the flush cycle.

"It usually takes 60 to 90 days to bring the cows around once we have started them on the mineral program," says Brost. "We haven't had a problem cow yet that didn't successfully respond after being on the mineral program for a period of time."

Brost cites some examples of these "problem" cows which are all different breeds. Two cows in the donor program at Granada Genetics had never been flushed successfully (no eggs recovered). Although it took some time, one cow produced 14 good embryos on her third collection, and the other produced three embryos on her third collection which resulted in three confirmed pregnancies.

He also notes examples of cows that had gotten "stale" and were not producing up to capacity. In one case, a cow that had been open for three years has produced a total of 30 good embryos in her last three flushes.

It's not only in cow herds that producers are seeing improvements with a good mineral program. Randy Graham of Nokota Genetics, Minot, N.D., has seen bulls at his stud farm improve their performance considerably once on the program.

"We had some bulls come into the stud farm that looked real good on paper, but their semen wouldn't freeze," says Graham.

He also noticed problems with concentration/density levels. For example, Graham cites one exotic breed bull that had a semen density score of 90, with 10 percent live cells, when he entered. Area1 good bull will have a density score in the teens or single digits. Blood work showed the bull had an iron overload and a copper deficiency.

"It took 90 days to straighten the bull out, but then we were able to collect 300

straws on him a week," Graham says.

Graham housed bulls from 16 states and four Canadian provinces last year at his stud farm. He starts all bulls on the amino acid chelated mineral program when they enter. Several bulls, which have been on the Albion mineral program since birth, have had fewer problems at time of collection.

"I've had seven bulls in here that were on the mineral program since conception and all froze quality semen on their first collection," he says.

Semen quality and freezing are two of the main improvements Graham has seen in the bulls. He also notices their hair coat has more bloom and decreased ringworm problems.

The positive results noted at these various operations has not only been in the overall health of the cattle, but the economic results have improved as well, Increases in semen production at Nokota, and an increased number of embryos at both Lone Star and the Brost operation, adds up to the potential for more dollars to be generated in sales.

"The biggest investment we have made is in time," says Dr. Bennett. If you invest the time and the money, however, you will reap the profits."

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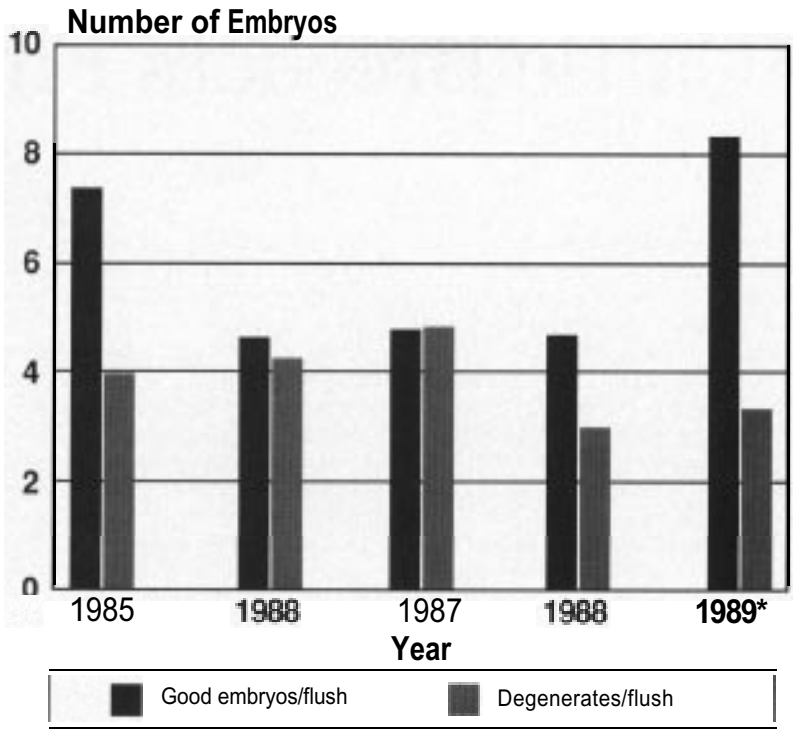
Brost Angus ET Results



*1989 data includes Granada Genetics.