

Pump Up Reproduction

Feeding whole soybeans to cows hastens rebreeding.

by **ROD FEE**

With rapid rebreeding being the key to keeping cows in the herd, several researchers are looking at feeding high-fat feed supplements for relatively short periods before breeding and shortly after calving.

One such experiment, conducted at the Miles City, Mont., research station, concluded that calves born to cows fed high-fat diets during late gestation were better able to maintain their body temperatures following calving. The fat source for that experiment was safflower seed.

Coincidentally, the Montana research also found a 14% increase in first-service conception rates from cows on the high-fat diets.

With that in mind, three researchers at the University of Missouri (MU) wondered if there was an inexpensive source of fat in the Midwest that might have similar effects on cows there. Monty Kerly, beef nutritionist; David Patterson, beef reproductive physiologist; and Chris Zumbrunnen, regional Extension livestock specialist, decided to conduct a series of experiments using whole soybeans or soybean

meal during the final 30-45 days before breeding and until cows were bred or inseminated.

Six scenarios for soybeans

They tried six different rations:

- 3.5 pounds (lb.) of whole soybeans per head daily starting 45 days precalving and ending when cows calved;
- 3.1 lb. of corn gluten feed and 1.1 lb. of soybean meal for the same 45 days precalving and ending when cows calved;
- 3.5 lb. of whole soybeans starting with the onset of calving and ending at breeding;
- the corn gluten and soybean meal ration from calving until breeding;
- the whole soybean regime 31 days postcalving until rebreeding; and
- the corn gluten and soybean meal ration 31 days postcalving until rebreeding.

"Interestingly enough," Zumbrunnen says, "the first trial, feeding whole soybeans for 45 days precalving, was the only one that showed significant results — but those were striking. Cows on this ration showed nearly a 25% increase in the number cycling 14 days prior to breeding

and had a 76% first-service conception rate compared to 50%-62% on other trials.

"Overall conception rates, too, were somewhat higher on this trial, even though all cows in the trial were considered in optimum body condition at the beginning of the trial," he continues. The increase was in the neighborhood of 3%-7%.

"The third and most interesting outcome was the increased cycling activity during first service," Zumbrunnen says. "The conclusion was that the timing of supplementation with high-fat sources could definitely enhance reproduction."

A follow-up trial in Missouri fed cows the high-fat diet only 30 days precalving. Amazingly, the artificial insemination (AI) conception rate for the soybean-fed cows was 86%, compared to only 63% for cows on the hay-only diets.

One of the concerns of the researchers was that feeding high-fat diets might boost birth weights. While slight increases of up to about 3 lb. were reported, there was no reported increase in birthing problems.



A cost-efficient solution

Cattle can handle whole soybeans fed in the amounts listed in the above trials. Soybeans for cattle need not be processed or extruded. During the last four years, feeding whole soybeans in these amounts would have cost about 25¢-29¢ per head per day, which is very similar to the cost of feeding corn gluten and soybean meal.

There appeared to be few advantages to cracking the soybeans before feeding. The rumen in beef cattle is very effective at hydrolizing fatty acids and protecting a portion of the fatty acids so that they are better absorbed in later digestion.

Researchers caution that soybeans should not be fed at levels resulting in more than 5% fat in the diet, so the 3.5 lb. per day is about as much as they would recommend.