

Whole soybeans improve rebreeding rates

Calving clinic reports that whole soybeans in the diet boost rebreeding rates for beef cows in studies at MU research farms.

Feeding whole, unprocessed soybeans to cows in late pregnancy boosts rebreeding rates, said Chris Zumbrunnen, regional Extension livestock specialist at Milan, Mo. Feeding 3.5 pounds (lb.) of whole beans per day increased both first-service conception rates and overall pregnancy in beef herds, Zumbrunnen told attendees of a Jan. 12 calving clinic at the MU Forage Systems Research Center, Linneus, Mo. He was relaying the findings of University of Missouri (MU) research and farmer experience.

"When 3.5 pounds of beans are added to the hay ration of cows in their last weeks of pregnancy, you get a ration with about 5% fat," Zumbrunnen said. He cautioned against feeding higher rates of soybeans.

A study of feeding high-fat safflower diets to cows at a U.S. Department of Agriculture (USDA) lab in Montana first attracted Zumbrunnen's attention to the possible benefits of additional dietary fat. In that study, calves from cows fed high-fat diets had higher cold tolerance — and survivability. He thought that would be useful in northern Missouri where he works.

Locally grown soybeans might provide fat that could help save calves, Zumbrunnen thought. The improved rebreeding rate was an added benefit.

In the first study at Linneus, cows were fed beans 45 days prior to calving, compared to cows fed beans 30 days after calving. All were compared to cows on a control diet. The only benefit came from feeding beans ahead of calving.

In a follow-up study at MU's Thompson Farm, Spickard, Mo., the advance feeding was cut to 30 days. The shorter feeding period worked almost as well as the 45-day feeding.

"On university farms and on producer farms we have consistently seen a 14% to 23% increase in first-service conception rates from feeding soybeans," Zumbrunnen said.

In a study at Thompson Farm, cows bred by artificial insemination (AI) after being fed soybeans had an 86% conception rate. That compared to 63% AI conception for cows fed a control diet. All other conditions, including the AI technician, were the same.

In Missouri, where winters are less frigid than in Montana, no difference was seen in calf survival from the soybean diets. "All calves receive excellent care from the MU farm staffs," Zumbrunnen added.

Nor has there been any increase in calving difficulty, even though there was a slight increase in calf weight from cows that were fed precalving, whether fed soybeans or a diet of corn gluten and soybean meal. The increase in birth weights averaged 3.7 lb.

The livestock specialist admits he has had plenty of questions — and some doubters. "Everyone has heard stories of cows dying from eating soybeans," he said. "In those cases, it was the amount eaten, not the soybeans, that caused death."

But Zumbrunnen cautions producers not to overfeed beans. Five percent fat is the maximum recommended for a ration. "The

3.5 pounds of beans is right for mature cows. That drops to 2.5 to 3 pounds for bred heifers." Too much fat in the diet can cause digestive upset.

Many believe beans must be processed before being fed. However, in the studies the soybeans are uncooked, uncracked and unprocessed. "These are bin-run beans, cockleburs and all," he told listeners.

The whole soybean protects the fatty-acid content from digestion by bacteria in the rumen, the cow's first stomach. When broken down lower in the digestive tract, the fatty acids benefit cows directly. Some fatty acids in soybeans are components of reproductive hormones.

At Thompson Farm, the soybean ration cost 25¢-29¢/head/day. The diet of corn gluten and soybean meal cost 26¢-29¢/head.

Soybean diets could cost less this winter. Audience members said local elevators were paying \$4.01/bushel (bu.) for beans. "It depends on how much you value the beans in your bin," Zumbrunnen said. "If you have to buy bagged beans, it will be more expensive."

In the MU study, even cows with high body condition scores (BCS) benefited from the added fat.

The Missouri Soybean Merchandising Council used farmer check-off dollars to finance the first study of cow diets.

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— by **Duane Dailey**



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