

Experts Say BST Works, Safe Too

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- The veterinarian working for Monsanto Corp. said, "If you can prove it is safe, it should be allowed to be offered for sale."
- A representative for American Cyanamid Co. said he wanted farmers to know that, of all new bovine pharmaceutical products, BST "will be the most widely researched and tested for safety . . . before it will reach you, the farmer."
- The anti-BST spokesman for Ben and Jerry's ice cream - fearing an increased milk supply, and dropping milk support prices will plunge dairy income drastically - said, "We have to find a balance between new technology and continued rural life."

David Rock, PhD, is a manager of international animal development for American Cyanamid Co., Princeton, N.J., which is one of the four companies currently manufacturing BST and awaiting approval of the drug by the Federal Drug Administration in order to produce full-scale. Rock has a doctorate in ruminant nutrition.

According to Rock, BST is a management tool for the dairy industry and it appears to be safe.

BST is created using recombinant biotechnology, similar to the way insulin is manufactured for diabetics.

Citing a number of studies already performed on the drug, Rock said that the protein-based hormone works.

"Milk is being produced by the same metabolic pathway. It's just that there is more milk being produced over the whole amount of maintenance (of the cow)," he said.

However, Rock said that artificially increasing milk production will also take its toll.

"Body condition, they do have a decrease in the body condition score, but they do increase body condition score throughout lactation. However, that is kind of more in a phase," he said adding that the bottom line in safety is, "We're going to have to manage these cows a little differently."

"The key is that you are not managing a high-producing, genetically superior cow," he said.

According to Rock, studies show that cows under stress, such as under high temperatures, have also shown that with an increase of BST, the milk production has increased. The fat content is slightly lower, he said, but the protein content remains about the same. "BST works under a wide variety of conditions," he said.

In a study done on the use of BST in cow-calf development with Angus beef cattle, Rock said growth was improved. But he said he had some reservations about adopting the data for dairy cattle.

"I must caution you. In most conditions, BST will work in dairy cows; but this is not the case, as far as in research, in growth. Growth seems to be a much more complex issue. There's still a lot of work that still has to be done in that area."

In comparing average dairy animals to genetically superior cows, Rock said, "Research shows that both, the BST cow and the genetically superior cow, produce about the same and need to be managed about the same."

Although cost estimates have not been offered by manufacturers (Rock said they are awaiting approval before providing retail prices), Rock calculates that feeds costs would be about the same for a non-BST cow that produces 10,000 pounds of milk as it would for a BST cow producing 9,000 pounds of milk.

According to Rock, some research has estimated the cost at about 40 cents a dose, but he said he thought it would probably be lower.

Rock also said computer simulations have shown that, in order to get an equal amount of milk, the amount of feed, weight and condition for the inferior cow with BST would be comparable to that of the superior cow without BST.

"The things you use now to get more milk out of your cows, you will be able to use those same management techniques, if you decide to use BST," Rock said.

The safety of the drug has been shown to be very good, Rock said.

"I would like to think that BST, when it does get to the market, will be the most widely researched product from the safety standpoint, because every company is having to do the same thing," he said. "In other words the safety is being tested four times."

Rock said conception rates for BST and non-BST cows are "about the same," with some exception.

"Certainly, as you get up to the high levels (50 mg. per day) this is not the same, because that animal is producing a lot of milk and they are putting their energy toward milk production and not cycling as they should," Rock said. "Otherwise, conception rate is about the same," he said.

He said that studies show that days open remain the same up to about 16.5 mg BST per day.

Research on the incidence of mastitis has shown that while cows on BST aren't necessarily more susceptible to the disease, cows that already have a problem show a proneness for re-occurrence of the infection, Rock said.

"There did seem to be an increase in what we call 'incidence density,' or the chance of having a re-occurring case of mastitis. But really, this is trying to stretch the case to find something (negative)," Rock said.

He said he interprets research to show that there is no difference among other health aspects between BST-treated and non-treated animals.

As far as human safety, Rock relied on Monsanto Corp. research done in 1977 and 1978. He said that BST levels in milk were about the same although there "might be a slight increase in IGF (Insuline Growth Factor), but these are (measured) in nanograms - parts per billion. This is not a large increase," he said.

"What about BST, what if it is ingested?" Rock asked rhetorically. "BST is a protein and you are going to break it down in your digestive tract, just like you would break down any other protein," he said.

Rock said a study done by the Upjohn company on rats shows that this is true. According to Rock, the pituitary gland - the part of the brain responsible for growth hormone production - was removed on two groups of rats.

One group was injected with BST, the other was fed BST. The group that ate BST did not grow; the group that was injected with BST grew.

"The fact that four companies are, in fact, testing . . . will assure the safety of this product, both to . . . dairy cattle and people," Rock said.

Switching from reporting on published research to commenting on field observations, Dr. Charles Gardner, of Ackermanville, is a veterinary consultant to Monsanto Corp. He said that BST is a new technology and ties in with all good dairy management tools; from keeping strong records to maintaining clean stalls and milking equipment.

Gardner said he draws his experience with BST from hands-on experience with farmers in Pennsylvania and Michigan. He also qualified his financial interest in wanting to see BST put on the public market; "I don't want to see the farm community fail . . . because 15 percent of my income comes from Monsanto. The other 85 percent comes from farmers. I need them."

At the onset of his presentation, Gardner said listeners might come away with a definite impression: "You might think I have a fair amount of enthusiasm for this product."

Supporting his talk mostly with results from a Michigan farmer - who, for 2½ years, has been using BST on half of a 200-head Holstein operation - Gardner said he can draw on experience with eight different farms in the United States.

According to Gardner, the key to using BST is following "overall good management." He broke good management into six different areas; nutrition, mastitis control, reproduction, replacement, housing and keeping records.

Beginning with mastitis control, Gardner said the effectiveness of BST will not overcome ill teats.

"When you give this product to the cow, she is going to respond within a couple of days with an increase in milk production," Gardner said.

"And the people, who say they can see the udders are fuller in these cows, there is very little doubt that there is more milk coming from these cows most of the time," he said, adding that "some cows respond extremely well. Some don't respond at all."

"The product works by sending more nutrients to the udder. The udder doesn't suddenly become more efficient and get more milk out of the same level of nutrients, but the product works in such a way that body reserves are sort of mobilized and nutrients are sent to the udder."

"Now, if you have a healthy udder, (the udder) can respond with more milk. If you have an udder that's being hampered by sub-clinical mastitis and a high somatic cell count, that udder probably will not respond with more milk, because it's already doing all it can do," Gardner explained.

Related to mastitis, Gardner said there appears to be some

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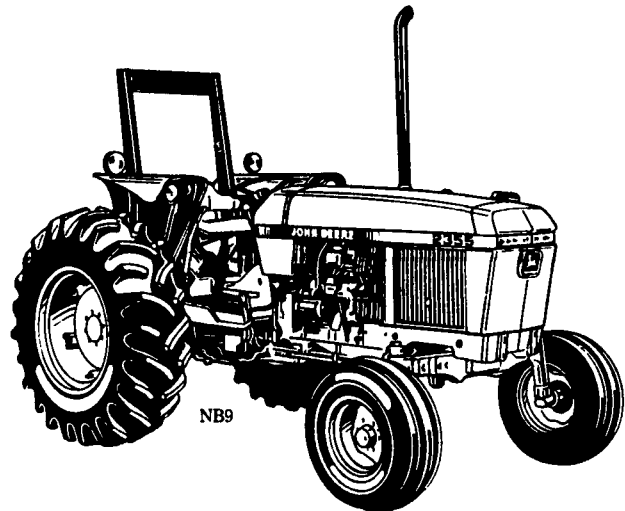
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