

# Dairy Digest—Potential Economic Impact of BST

STATE COLLEGE (Centre Co.) — The dairy industry is poised for what may be the most rapid period of technological change in its history. The immediate focus is on bovine somatotropin (BST), a naturally-occurring growth hormone which today can be recombinantly reproduced through biotechnology. Currently awaiting FDA approval for full commercial use, BST has been shown to increase milk production per cow by as much as 40 percent, with an average response of 10-20 percent.

The rate of BST adoption is the key determinant in projecting the potential economic impacts of this technology. Factors affecting rate of adoption of any technology include its relative advantage, compatibility with existing resources, complexity and cost, divisibility, and communicability. Most national and state surveys of milk producers indicate that a majority of farmers would consider adopting BST as a management practice if it becomes commercially available. Those more receptive to BST tended to be younger farmers with more formal education, and who managed larger herds with higher average milk output per cow.

The economic feasibility of BST will vary by farm and will depend on the level of milk production response in each herd, the price of BST, any related additional costs of production, the price received for milk, and each farm's required rate of return. None of these variables are known at this time. The limited farm-level economic analyses performed to date generally indicate that BST-adopters will experience higher cash returns than if BST were not commercially available. However, non-adopters and lagged-adopters would tend to see lower cash returns.

The current national dairy situation and outlook for 1990-1995 suggests that the industry has been and will continue to undergo structural change, with or without BST. A slow decline in cow numbers will more than be offset by higher productivity per cow,

resulting in increasing total milk production. Productivity gains will also lead to reduced costs of producing milk. Under provisions of current law (Food Security Act of 1985), milk prices will trend downward. Overall, the dairy industry trend toward fewer farms with larger herds will continue. The exact impact BST has on these trends depends on many factors, most of which are not quantifiable at this time. Most dairy industry economists expect some acceleration in these trends when BST becomes commercially available.

R.D. YONKERS,  
Ag Economics Ext.

## CALVES ARE THE FUTURE

When thinking about your future dairy herd, think of the calves that you have or will have soon. These calves are going to be the next milking animals that you'll have. It is important to get them off to a good, healthy start.

Give first thought to the calving area. During the summer, cows can freshen in a pasture. The pasture shouldn't be overcrowded with other adult animals. The cow's udder should be washed close to freshening to remove manure and dirt. When cows freshen in a pen, clean and disinfect it between every use. Keep the straw bedding clean at all times.

Immediately after the calf is born, two things need special attention. First dip the navel with iodine. Second, make sure the calf drinks an adequate amount of colostrum. Hand feed the calf two quarts of colostrum soon after birth and then 12 hours later, using an esophageal feeder, if necessary. If there is a disease problem within the herd, such as Johne's disease, calves should be taken away from their dam as soon as possible. Calves should not even be allowed to nurse.

Calves should be placed in a clean, individual pen and checked regularly for disease problems. If coccidia contributes to a serious scouring problem on your farm, a coccidiostat should be started

soon after birth. Your veterinarian can give recommendations on a vaccination program designed for your farm.

C.M. BURNS,  
Vet Ext Asst,  
Vet Sci Ext  
"HOLES?"

As you prepare your barns for winter don't forget the holes! Cows, calves and heifers continually breathe out moisture. Without adequate ventilation this moisture will buildup, resulting in wet, foggy barns, condensation on walls and windows, and sick animals. To prevent buildup of moisture, wet inside air must be exchanged for dry outside air. A ventilation system requires proper holes (inlets and outlets) to aid in this exchange of air.

When using natural ventilation, holes at the high point (usually the ridge) of the barn allow a continuous exhaust of warm moist air. Holes along sidewalls allow cooler dryer air to enter the barn. A barn that is too tight will often drip and be foggy due to buildup of moisture.

Barns that use fans to exhaust warm moist air must have openings to supply fresh outside air to the fans. These holes are best located around the barn assuring a little fresh air to every cow. Areas with moist foul air often found along the bank walls of old barns are best corrected by adding some holes to provide fresh dry air. A barn without inlets to supply air to the fans is like trying to use a vacuum cleaner while standing on the hose.

Remember, for maximum production, you need to supply your animals good fresh air to go along with the feed and water.

R.E. GRAVES,  
Ag Eng Ext

## AN OVERLOOKED MANAGEMENT TOOL

With all the attention being given to BST, the feeding of fat, nutritional additives, and other new opportunities for improving production are being overlooked by too many dairymen. One such management tool is artificial insemination of heifers. A Penn State survey in 1987 showed that only 60% of the dairy farmers utilized heifer AI.

Heifers are your future herd and

in some herds as many as 30 percent of the herd replacements are from heifers. Heifers usually leave more offspring in the herd on an annual basis than any other age group. Breeding heifers naturally to unproven bulls, or worse yet, to beef bulls does not allow the dairyman to maximize genetic progress in his herd. Remember, the benefits of the BST nutritionally balanced ration are limited by the genetic potential of the herd. The average predicted transmitting ability for milk among the AI sires in the July 1989 sire summary was +1158 lbs while non-AI sires averaged -18 lbs. This amounts to a +1176 lb advantage for AI sires.

Secondly, heifers are clearly more fertile than cows. Since they are more fertile and probably leave more calves in the herd there is a great opportunity to recover the maximum benefit from superior AI sires through use of heifer AI. In addition to the genetic superiority of the heifer entering the milking herd and her future AI daughters there is also the benefit of more effective culling because more quality AI-sired replacements are available. In some herds there is the added advantage of merchandising quality heifers.

Calving ease information for AI sires has been available for several years and the incidence of dystocia has steadily decreased in recent years. Obviously there is no calving ease data available for natural service sires until it is too late. Semen quality is monitored for AI sires and the use of artificial insemination prevents the spread of reproductive disease. Since AI fosters better record keeping and animal identification, breeding dates, pregnancy status and more accurate calving dates are available. Bulls are dangerous, even young bulls, AI eliminates the need to have a potentially dangerous animal on the farm.

Granted AI requires time for heat detection and adequate facilities for restraining heifers. However, estrous synchronization especially for heifers, has been used effectively by many dairymen in Pennsylvania to consolidate the time spent in detecting heat. Restraint facilities for heifers need not be elaborate or expensive but facilities are definitely needed

for artificial insemination. Other heifer management tasks will more likely be accomplished in a timely manner if good restraint facilities are available.

There are numerous advantages of heifer AI and it should not be ignored when you are considering areas that need improvement in your operation.

M.L. O'CONNOR  
4-H DAIRY  
JUDGING TEAMS

Pennsylvania's 4-H dairy cattle judging teams continued their success this year. At the Pennsylvania All-American contest, the team placed first out of fifteen states. Team members included Matt Welk, Peach Bottom; Matt Wanner, Narvon; Tom Wiker, Holtwood; and Thad Sturgeon, Fombell. Sturgeon was high individual overall and also won Guernseys, while Wiker placed third in Jerseys and Wanner placed eighth overall. Joe DeLong of Quarryville was the team coach.

At the World Dairy Expo in Madison, another team from Pennsylvania placed eleventh out of thirty-six teams. Tom Barley, Conestoga; Corey Gesford, Montrose; Troy Koenig, Bernville; and Thad Sturgeon were coached by Dave Trotter of Enon Valley. The team placed in the top ten for two breeds and reasons, and Barley was recognized as an All-American judge by virtue of his top twenty placing as an individual.

The Westmoreland County Dairy Bowl team will represent Pennsylvania at the national contest in Louisville on November 4. Team members include Todd Frescura, Jason Frye, Renee Miller, and Wade Johnson. Their coach is Bob Graham.

The teams are funded through Pennsylvania Friends of 4-H and by individual contributions from the counties involved.

DALE OLVER



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