

**FLORIDA ON-FARM EXPERIENCE WITH BST**  
**Roger P. Natzke, Mary Russell and Francois Elvinger**

Research trials conducted at Land Grant Universities across the U.S. have demonstrated that BST will increase milk production 15 to 40% during the portion of lactation in which it is used. In spite of all that research several unanswered questions remain for Florida dairymen.

1. Will we get equal response when we turn BST over to dairymen and use it in a commercial setting?
2. Will BST be effective in cows during heat stress?
3. Will cows that have been heat stressed be able to respond?
4. Can a dairyman initiate treatment on an entire herd at once without regard to lactation stage?

With those questions in mind the Monsanto Company asked the Dairy Science Department to cooperate in a study on two Florida farms, one in North Florida and one in South Florida. The design included starting the trial in early July with cows in three different stages of lactation at the start of the treatments - 57 to 100 days, 101 to 140 days and 141 to 180 days. Half of the animals were in first lactation and half in second or greater. Half of the animals were treated and half served as control. Treatment of these animals was to continue through January 1989. In the North Florida herd a second group of animals was started in October and continued through January 1989. Some general characteristics of the herds.

**South Florida herd**

800 cows  
milked 2x  
cows fed in feeding barn  
portable shades in pastures  
fans in the holding area  
54 cows on trial in July

**North Florida herd**

1500 cows  
milked 3x  
fans and sprinklers in feeding barns  
cows had access to exercise lot  
fans and sprinklers in holding area  
72 cows on trial in July plus 72 added in October

The results of the study are similar to what is expected when the product is approved for sale. The data revealed excellent response in one herd and limited response in the other.

Table 1. Effect of BST on 3.5% FCM on two Florida herds

Herd		Summer			Fall		
		Average	difference		Average	difference	
			lbs.	%		lbs.	%
North Florida	control	63.3	12.6	19.9	58.3	16.7	28.8
	BST	75.9			75.0		
South Florida	control	54.7	3.1	5.7			
	BST	57.8					

The cows in the South Florida herd were at a lower production level (5.47 lbs.) at the start, compared to the North Florida herd and only averaged 3.1 lbs. of milk more for the duration of the trial. The North Florida cows started in July produced an average of 12.6 lbs. per day more than the controls. The cows that started in the fall produced 16.7 lbs. more than the controls. These excellent responses indicate that BST can be beneficial to dairymen and can be utilized in all seasons as long as the proper management conditions exist.

#### Effect of Parity

The effect of parity could only be studied in the North Florida herd as insufficient first lactation animals were available in the South Florida herd. The percentage change in production was nearly identical for first lactation and second or greater lactation cows. The response was consistent for cows beginning treatment in summer and those started in the fall. Thus it appears that all age animals will respond similarly.

#### Stage of Lactation

The results of the effect of stage of lactation was less clear cut. For the animals that began treatment in July the early lactation animals showed the greatest increase in both lbs. of milk and percentage increase. In the group of cows which began treatment in the fall, cows in later lactation showed a greater lbs. of milk and percentage increase. A possible explanation is that the early lactation animals that started treatment in the fall, actually calved in the middle of the heat stress period and didn't have enough reserve to respond at a greater rate. When the data is combined for all animals it appears that the percentage increase in production will be similar for cows in all stages of lactation.

The body condition of the cows was scored every other week to determine the effect of treatment on body condition. During the course of the trial the condition scores of the treatment and control cows remained nearly equal. Another way of saying it is that changes in score were similar to those seen is a result of lactation. Cows on BST did not become excessively thin. It should be noted that all cows, even those which were as much as 300 days in lactation remained in the high feeding group.

Somatic cell counts of the treated and control cows were very low in the 100,000 to 200,000 cells per ml range. There was no significant change in cell level due to treatment.

## Summary

While this was a study in two herds only, the study did demonstrate that there will be differences in response between herds. In this case, the herd with the best heat stress control procedures showed the greatest response to BST treatment.

The results show that Florida dairymen can expect a response to BST treatment even if it is initiated during the heat stress period. Cows started on treatment after going through heat stress will also respond.

Dairymen can expect that the percentage increase in first lactation and older animals will be similar.

There may have been differences in response by cows in differing stages of lactation due to season. However, since all cows responded it would appear that a dairyman could initiate treatment at any time in all animals which are beyond 60 days in lactation and expect a positive response.

More work is needed to determine why some herds respond better than others to BST. This information will insure that as many Florida dairymen as possible can benefit if they elect to use the product.