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The effects of rbST (POSILAC®) on heat stressed, lactating, dairy cows

Abstract

Two hundred cows located on a commercial dairy in Mesquite, NM were used to evaluate response to rbST (POSILAC®) during heat stress in the summer of 1996. Cows were paired by days in milk (average = 153 d at initiation of experiment), parity, and milk yield (average = 92 lb at start of experiment). Prior to initiation of the experiment, all cows received rbST, then rbST treatment was discontinued for one cow from each pair. Milk production was monitored for 4 months. No interactions were detected between lactation number and treatment. Cows maintained on rbST gained .09 of a score (1 to 5 scale) less ($P < .05$) body condition but produced more ($P < .05$) milk in June, July, August, and September. The average milk productions for rbST-maintained vs rbST-discontinued cows were 80.7 vs 73.5 lb/d in June, 80.1 vs 74.6 lb/d in July, 72.6 vs 67.1 lb/d in August, and 65.1 vs 59.2 lb/d in September. Although rbST-discontinued cows had greater declines in production discontinued cows had greater declines in production persistency was similar between groups during the final 3 months. Under conditions of heat stress, cows maintained on rbST produced 6.2 lb/d more milk than cows for which treatment with rbST was discontinued.; Dairy Day, 1997, Kansas State University, Manhattan, KS, 1997;

Keywords

Dairy Day, 1997; Kansas Agricultural Experiment Station contribution; no. 98-100-S; Report of progress (Kansas Agricultural Experiment Station and Cooperative Extension Service); 792; Dairy; rbST; Heat stress; Lactating cows

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THE EFFECTS OF rbST (POSILAC®) ON HEAT-STRESSED, LACTATING, DAIRY COWS

J. F. Smith, J. E. Shirley, and E. C. Titgemeyer

Summary

Two hundred cows located on a commercial dairy in Mesquite, NM were used to evaluate response to rbST (Posilac®) during heat stress in the summer of 1996. Cows were paired by days in milk (average = 153 d at initiation of experiment), parity, and milk yield (average = 92 lb at start of experiment). Prior to initiation of the experiment, all cows received rbST, then rbST treatment was discontinued for one cow from each pair. Milk production was monitored for 4 months. No interactions were detected between lactation number and treatment. Cows maintained on rbST gained .09 of a score (1 to 5 scale) less ($P < .05$) body condition but produced more ($P < .05$) milk in June, July, August, and September. The average milk productions for rbST-maintained vs rbST-discontinued cows were 80.7 vs 73.5 lb/d in June, 80.1 vs 74.6 lb/d in July, 72.6 vs 67.1 lb/d in August, and 65.1 vs 59.2 lb/d in September. Although rbST-discontinued cows had greater declines in production during the first month of the trial, lactation persistency was similar between groups during the final 3 months. Under conditions of heat stress, cows maintained on rbST produced 6.2 lb/d more milk than cows for which treatment with rbST was discontinued.

(Key Words: rbST, Heat Stress, Lactating Cows.)

Introduction

Many dairy producers who use rbST in their herds have concerns about whether cows under heat stress respond to it. Some producers choose to discontinue the use of rbST during the sum-

mer months. A trial was carried out on a 2,000 cow commercial dairy in Mesquite, NM in 1996 to evaluate the effect of discontinuing rbST during heat stress on milk production and body condition.

Procedures

Two hundred cows were used to evaluate response to rbST (Posilac®) during heat stress in the summer of 1996. Cows were paired by days in milk (average = 153 d at initiation of experiment), parity, and milk yield (average = 92 lb at start of experiment). Prior to initiation of the experiment, all cows received rbST, then rbST treatment was discontinued for one cow from each pair. Individual milk weights were collected monthly for 4 months. Body condition of cows was scored at the beginning and end of the trial. Milk production was analyzed as a repeated measure experiment.

Results and Discussion

No interactions were detected between parity and treatment. Cows maintained on rbST gained .09 of a score (1 to 5 scale) less ($P < .05$) body condition but produced more ($P < .05$) milk in June, July, August, and September (Table 1). The average milk productions for rbST-maintained vs rbST-discontinued cows are illustrated in Figure 1. Although rbST-discontinued cows had greater declines in production during the first month of the trial, lactation persistency was similar between groups during the final 3 months. Discontinuing supplementation of rbST during periods of heat stress reduced milk production by an average of 6.2 lb/d. Individual dairy operations make the decision whether to

continue supplementing cows with rbST in the summer or to start treating new cows that become eligible for the rbST program in summer months. This decision is complicated, because it involves the economics of using rbST in the

summer and will affect the volume of milk cows will produce during the fall. In the decision-making process, producers should evaluate the long-term effects of reducing rbST usage on annual milk production and annual income per cow.

Table 1. The Effect of Discontinuing rbST (-rbST) on Body Condition Scores of Lactating Cows during Heat Stress

Date	rbST	-rbST	SEM*	Probability
5/23	2.73	2.71	.03	.65
9/10	3.00	3.05	.03	.31
Change	.26	.35	.03	.04

*For smallest n.

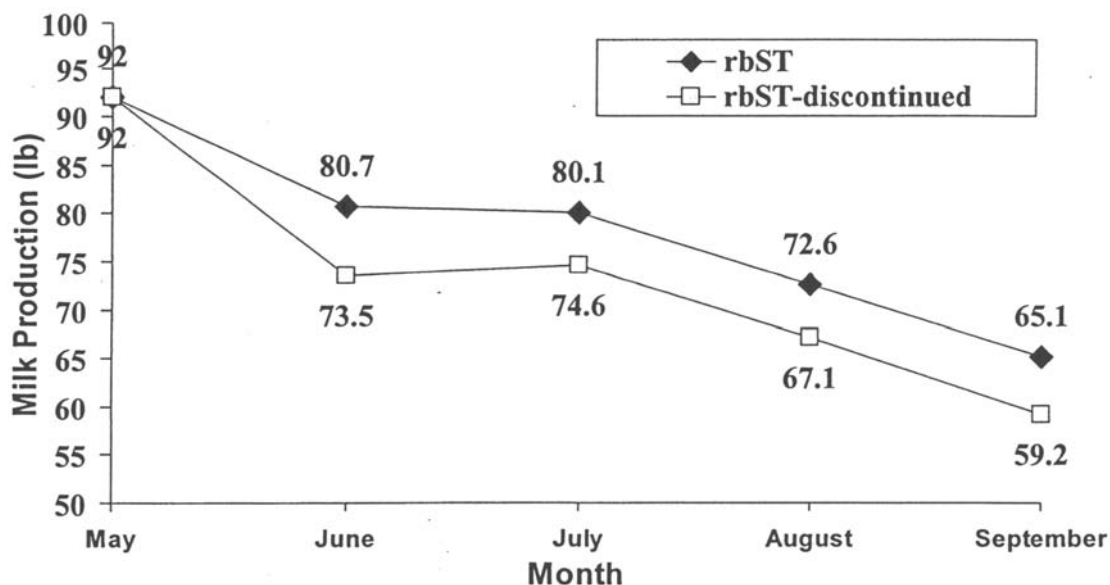


Figure 1. The Effect of Discontinuing rbST on Milk Production during Heat Stress.