NUTRITION

Effect of two recombinant bovine somatotropin products on milk production and feeding parameters of lactating Holstein cows

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INTRODUCTION

Recombinant bovine somatotropin (rbST) sustains the increase in milk production by stimulating dry matter intake (DMI); therefore, DMI may vary according to hormone levels. Variability in consumption is one of the five main forms of interference in feed efficiency, warranting research to evaluate rbST use in dairy production systems.

OBJECTIVE

This study evaluated the effect of two commercial products of rbST on milk production and feeding parameters in lactating Holstein cows.

MATERIALS AND METHODS

18 cows were randomly divided into 2 groups, i.e., “rbST-Slow” and “rbST-Fast” and treated respectively with 2 rbST formulations: Lactotropin® (Agener União Saúde Animal, SP, Brazil) and Boostin® (MSD Saúde Animal, SP, Brazil). Both products were administered subcutaneously in mid-lactation Holstein cows, in 5 applications at a 14-day interval. Milk yields were measured daily using the DelPro™ software (DeLaval®). Feed consumption, feeding behavior and day-to-day variability in feed intake were also assessed daily using automatic individual feeders (Intergado®, SP, Brazil). Body weight and body condition score (BCS) assessments were performed on the day of each treatment application. Blood samples were collected on days 1, 4, and 7 post-treatments of each administration cycle, to assess circulating levels of non-esterified fatty acids (NEFA).

The “rbST-Fast” group resulted in higher milk yield compared to the “rbST-Slow” group. This increased milk yield in the “rbST Fast” group was not accompanied by the day-to-day variability in feed intake.

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RESULTS

Cows in the “rbST-Fast”group produced more milk **(figure 1)**, higher concentrations of NEFA **(figure 2)**, more frequent visits to feeders, longer time in consumption, higher relative DMI per percentage of live weight **(figure 3)** , and tended to present greater feed intake, but no impact was noted on variability of feed intake. Furthermore, the mean weight of the cows was significantly different between groups, but no difference was noted in BCS between the groups **(figure 4)**.

FIGURE 1. Means ± standard errors for milk yield in animals treated with 500 mg of two commercial rbST formulations every 14 days for 70 days.

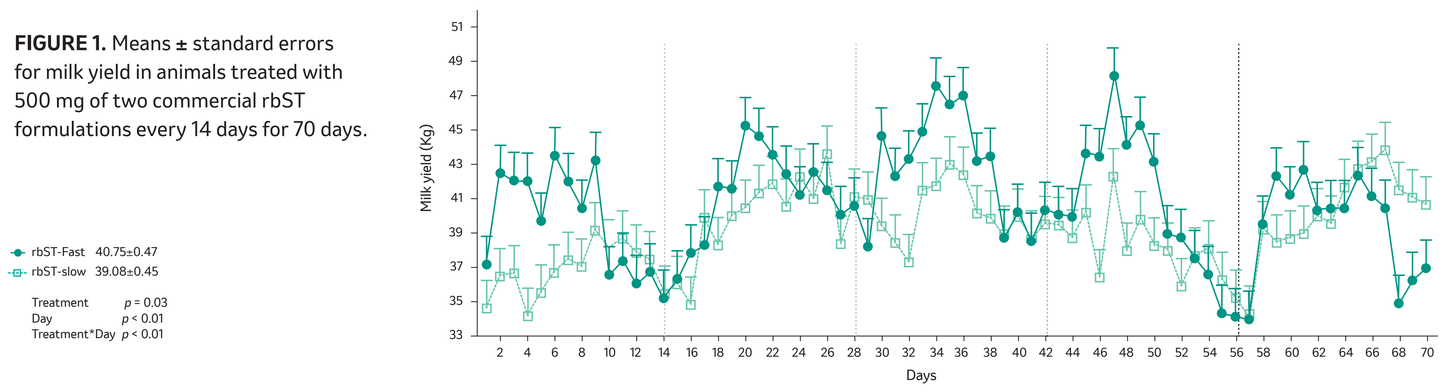

FIGURE 2. Means ± standard errors for concentrations of non-esterified fatty acids in animals treated with 500 mg of two commercial rbST formulations every 14 days for 70 days.

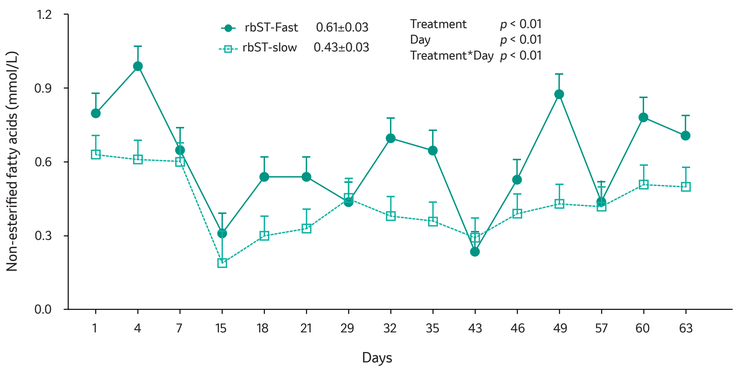

FIGURE 3. Means ± standard errors for dry matter intake in animals treated with 500 mg of two commercial rbST formulations every 14 days for 70 days.

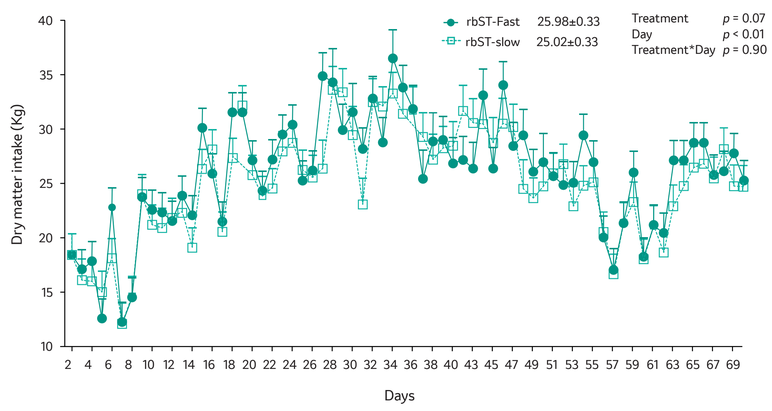

TABLE 1. Means ± standard errors for change body weight and body condition score (BCS) in animals treated with 500 mg of two commercial rbST formulations every 14 days for 70 days.

	Treatment		SEM	p-values		
	rbST- Fast	rbST- Slow		Treatment	Cycle	Treatment x Cycle
BW, kg	687.10	704.75	5.14	0.05	< 0.01	0.63
BCS, unit	3.01	3.11	0.10	0.56	0.19	0.77

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