

Timing and amount of forage and grain affect exercise response in Thoroughbred horses.

JD Pagan¹ and PA Harris². 1998.

¹Kentucky Equine Research Inc.

²Waltham Centre for Pet Nutrition

Proc. 5th International Conference
on Equine Exercise Physiology,
Utsunomiya, Japan (In press).

Purpose

Three experiments were conducted to evaluate if feeding hay with and without grain affects glycemic response and hematological responses in Thoroughbred (TB) horses at rest and during a simulated competition exercise test (CET) on a high speed treadmill. The first experiment evaluated how feeding forage along with grain influences plasma variables and water intake. The second experiment was conducted to determine whether these changes affect exercise performance. The third experiment was conducted to determine how forage alone affects exercise response.

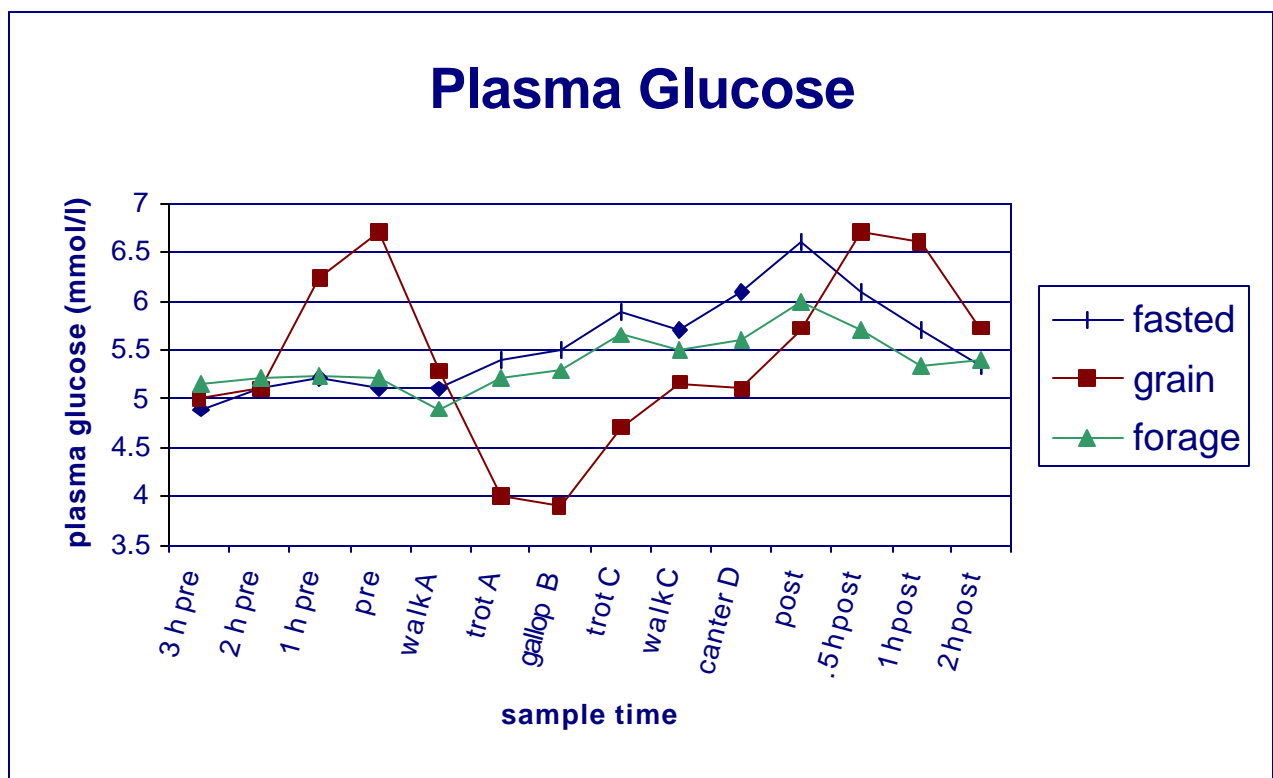


Results

Experiment 1. Time of hay feeding affects glycemic response, plasma protein and water intake post grain feeding.

Experiment 2: Ad libitum hay feeding resulted in a 9% reduction in plasma volume. Fasted horses had lower blood lactate after the 8 min. canter ($p < 0.10$) compared to the grain fed treatments. Heart rate (HR) was significantly different between treatments.

Experiment 3. Feeding only forage before exercise had a much smaller effect on glycemic and insulin response to exercise than a grain meal. Forage did not affect FFA availability.



Implications



The results of these studies suggest that grain should not be fed before exercise. Small amounts of hay or grazing do not adversely affect performance and will stimulate saliva production which may help preserve gastrointestinal integrity.