PURINA

REVIEW >

< RESEARCH

Purina® Omega Match™ Ration Balancing Horse Feed Elicits a Low Glucose and Insulin Response to Feeding in Horses

A SUMMARY OF RESEARCH CONDUCTED AT THE PURINA ANIMAL NUTRITION CENTER EVALUATING THE GLUCOSE AND INSULIN RESPONSE TO FEEDING OF PURINA® OMEGA MATCH™ BALANCER.[1]

< INTRODUCTION >

For most horses, pasture is the predominant source of omega fatty acids in the diet. However, pasture commonly contains high levels of sugars that may be inappropriate for horses with metabolic concerns. Purina® Omega Match™ Ration Balancing Horse Feed is a novel way of providing horses with the omega fatty acids typically found in pasture, without the starches and sugars that may be unsuitable in the diet. Purina® Omega Match™ Ration Balancer is a Timothy-based concentrate with no added molasses that contains less than 12.5% starch and sugar, in contrast to pasture that may contain 15%-20% starch and sugar. In addition, in a typical 1-pound feeding of Omega Match™ Ration Balancer, the horse ingests the same amount of omega fatty acids as if they were grazing on pasture for 2 hours. Evaluating the glycemic response to feeding of certain diets allows for a more complete understanding of the physiological effects of a specific feedstuff on the horse. As such, the objective of this trial was to evaluate the glucose and insulin response to feeding of horses consuming Purina® Omega Match™ Ration Balancer.

< MATERIALS AND METHODS >

Quarter Horse geldings (n=9; average 614.5 kg BW) were acclimated to consuming Purina® Omega Match™ Ration Balancer over the course of 10 days. Horses were offered 1 lb of Purina® Omega Match™ Ration Balancer per feeding twice daily at approximately 0700 and 1500 daily. Horses were additionally offered 1.5% BW as local grass hay daily. All horses had free-choice access to fresh water and salt. On the day of testing (d 11), all horses were fitted with a jugular catheter to allow for serial blood collection. Two baseline samples were obtained prior to feeding. Feed was offered (1 lb) to all horses and blood samples were obtained every 30 min for 6 hours. Blood was collected and processed for collection of serum and plasma. Plasma was immediately evaluated for glucose concentration utilizing a COBAS blood analyzer. Serum insulin was determined via a colorimetric ELISA designed specifically to detect equine insulin (Mercodia).

< RESULTS >

All horses consumed their rations within the first 15 minutes post offering. Data are presented below as means. Plasma glucose response to feeding was minimal with a peak at 60 min post feeding. Serum insulin followed a similar curve, peaking at 60 min post feeding and gradually returning to baseline levels at 270 min post feeding (**Figure 1**). At all measured timepoints, plasma glucose and serum insulin remained at very low levels.

[1]HR 336- Glucose and insulin response to feeding of Omega Match. Internal Research, PANC. 2021

< IMPLICATIONS >

Evaluating the circulating levels of glucose and insulin in response to feeding in the horses' body remains the gold standard in determining the metabolic response to feeding of a particular diet. When comparing the glucose and insulin curves that result from feeding Purina® Omega Match™ Ration Balancing Horse Feed to other hays and a low starch and sugar diet, it is evident that the glycemic response to feeding is very low (**Figures 2 and 3**). This indicates that for horses with metabolic concerns, Purina® Omega Match™ Ration Balancer, represents an optimal option to provide the omega fatty acids they require without the added starch and sugar that are present in pasture.

FIGURE 1

Plasma glucose and serum insulin levels from horses consuming Purina® Omega Match™ Ration Balancing Horse Feed.

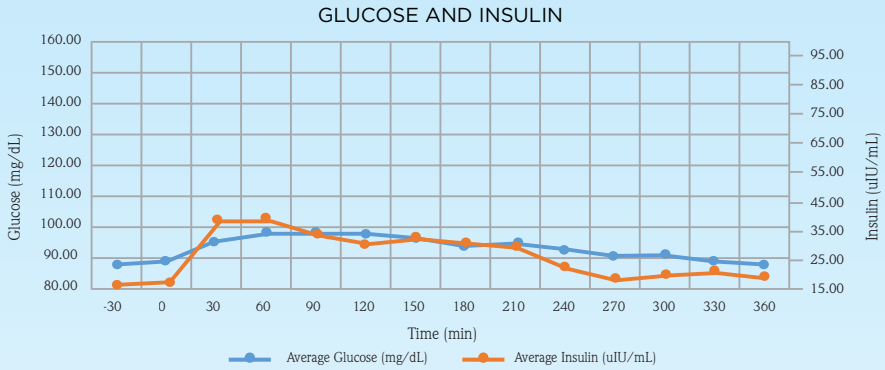


FIGURE 2

Plasma glucose levels in horses consuming Timothy hay, Alfalfa hay, Purina® Strategy Healthy Edge® Horse Feed, and Purina® Omega Match™ Ration Balancing Horse Feed.

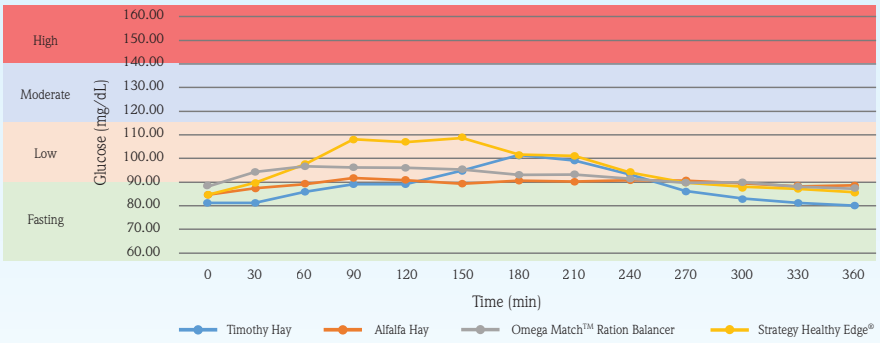
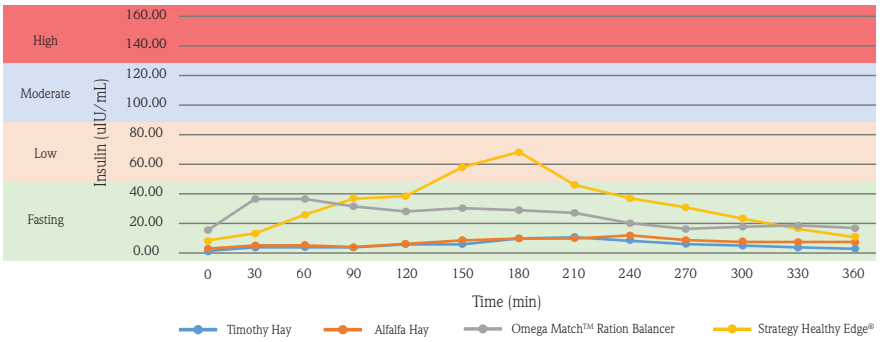


FIGURE 3

Serum insulin levels in horses consuming Timothy hay, Alfalfa hay, Purina® Strategy Healthy Edge® Horse Feed, and Purina® Omega Match™ Ration Balancing Horse Feed.



< FOR MORE INFORMATION > Contact your local Purina® representative if you would like more information about these studies.

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