PURINA

RESEARCH REVIEW >

Purina® Enrich Plus® Ration Balancing Feed Elicits a Low Glycemic Response to Feeding

A SUMMARY OF RESEARCH CONDUCTED AT THE PURINA ANIMAL NUTRITION CENTER, EXAMINING THE EFFECTS OF FEEDING A ONE-POUND MEAL OF ENRICH PLUS® ON GLUCOSE AND INSULIN RESPONSE.[1]

< INTRODUCTION >

Purina® Enrich Plus® Ration Balancing Feed is a nutrient-dense concentrate that provides high quality protein, vitamins and minerals to horses in a small meal size. The typical one pound feeding rate per 1,000 pounds of equine body weight provides a convenient and cost-effective form of concentrated nutrition. This is helpful for horses that are "easy-keepers" and/or maintain body condition score on forage alone. Although Enrich Plus® Ration Balancing Feed is low in soluble carbohydrate content, averaging 15% starch + WSC (water soluble carbohydrate), research is needed to demonstrate the actual glucose and insulin dynamics. Certain horses have a necessity for a feed with a low glucose and insulin response due to obesity, metabolic syndrome or other conditions. Data garnered from this study will help to support the recommendation of feeding Enrich Plus® Ration Balancing Feed to horses with these special needs. The objective of this study was to test the hypothesis that Enrich Plus® Ration Balancing Feed would produce a low glucose and insulin response and therefore be suitable for feeding many types of horses.

< MATERIALS AND METHODS >

Eight mature American Quarter Horses with a body condition score of 5.5-6 and average body weight of 1,208 pounds were utilized in this trial. Horses were previously accustomed to eating Purina® Strategy® Professional Formula GX Horse Feed at a rate of 8 pounds per day (split into two meals) up until the testing day when they received Enrich Plus® Ration Balancing Feed in a one-pound meal. Horses also received 1.5% BW grass hay daily. On the day of glucose and insulin testing, jugular catheters were placed 45 minutes prior to normal scheduled feeding (0730). Two baseline blood samples were obtained via the catheter prior to feeding and samples were obtained at 30-minute intervals for a total of 360 minutes post-feeding. Blood parameters measured included glucose, insulin, triglycerides and non-esterified fatty acids (NEFAs).

[1]HR-136 Purina® Enrich Plus® Glycemic Index Trial

< RESULTS >

All data are presented in Figures 1-4 below. Horses consuming Purina® Enrich Plus® Ration Balancing Feed had very low glucose and insulin concentrations post-feeding. The peak glucose concentration was 82.88 ± 3.78 mg/dL measured at 120 minutes post-feeding and the peak insulin concentration was 12.06 ± 2.85 uIU/mL measured at 60 minutes post-feeding (mean ± standard error, Figures 1 and 2). Considering that fasting levels of glucose are considered to be 60-90 mg/dL and a fasting level of insulin is considered to be <20 uIU/mL, the response to Enrich Plus® Ration Balancing Feed in healthy, normal weight horses was quite low. The triglyceride response was as expected, with a slight increase after feeding, before returning to normal physiological levels (Figure 3). The NEFA response was also as expected with a meal-induced progressive decrease throughout the testing period, followed by a return to baseline concentrations (Figure 4).

< IMPLICATIONS >

Horses classified as "easy-keepers" or having special needs regarding carbohydrate sensitivity generally require a feed with a low glucose and insulin response to feeding. Purina® Enrich Plus® Ration Balancing Feed has demonstrated a low glycemic index and may be helpful to meet these horses' needs for quality nutrition without an exacerbation of glucose and insulin concentrations.

FIGURE 1 Glucose Response to Enrich Plus®

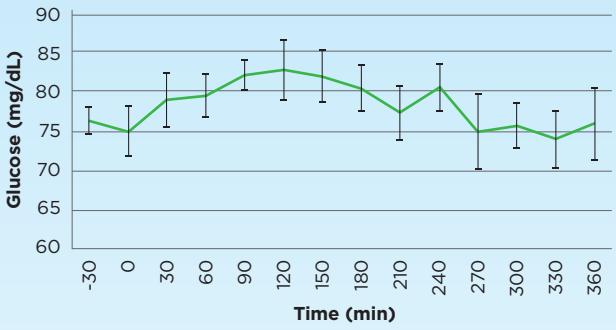


FIGURE 2 Insulin Response to Enrich Plus®

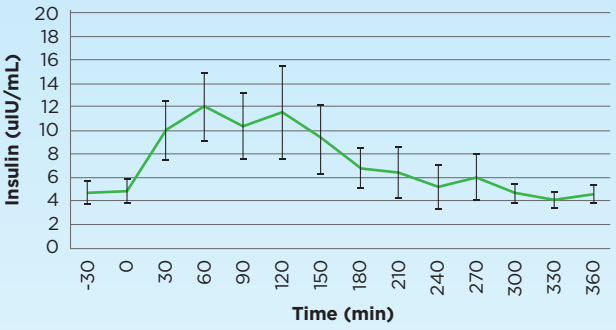


FIGURE 3 Triglyceride Response to Enrich Plus®

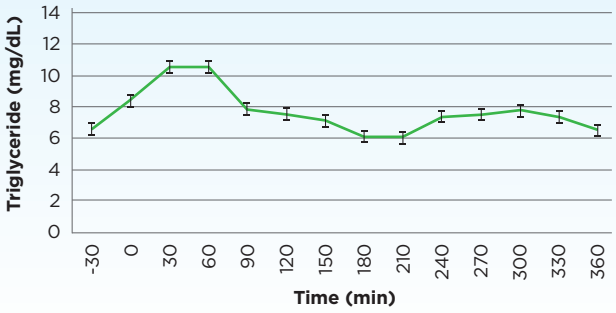
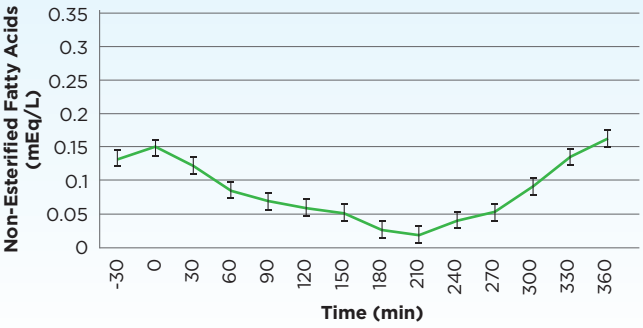


FIGURE 4 NEFA Response to Enrich Plus®



< FOR MORE INFORMATION > Contact your local Purina representative if you would like more information about this study.

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