



## RESEARCH >

# RESEARCH >

## Evaluation of Purina<sup>®</sup> Strategy Healthy Edge<sup>®</sup> Horse Feed as a Low Starch and Sugar Concentrate Diet

A SUMMARY OF RESEARCH CONDUCTED AT THE PURINA ANIMAL NUTRITION CENTER, EXAMINING THE STARCH AND SUGAR CONTENT ALONG WITH THE GLUCOSE AND INSULIN RESPONSE TO FEEDING OF PURINA<sup>®</sup> STRATEGY HEALTHY EDGE<sup>®</sup>.<sup>1</sup>

### < INTRODUCTION >

The overall starch and sugar content of a horse feed is an important consideration for many horse owners. When feeding horses with certain special needs, such as those with insulin dysregulation, PPID, or other veterinary-diagnosed conditions, diets very low in starch and sugar (NSC) such as Wellsolve L/S<sup>®</sup> or Enrich Plus<sup>®</sup> can support normal glucose and insulin responses to feeding. For healthy horses, diets lower in calories as well as starch and sugar, can also be helpful to optimize body condition and maintain a healthy physiological response to feeding. Therefore, Purina<sup>®</sup> Strategy Healthy Edge<sup>®</sup> Horse Feed is formulated to contain a low amount of starch and sugar. Independent analysis has determined the starch and sugar content of Purina<sup>®</sup> Strategy Healthy Edge<sup>®</sup> to be 14.4% when analyzed on an as-fed basis. Interestingly, tag guarantees typically reflect a higher value than actual analyses, due to the reporting of maximum values required by law, slight variability in ingredients across production facilities, and variability between laboratories performing the analyses. And, while it is important to evaluate the starch and sugar content of horses' diets as a whole, it is equally important to understand the role of low NSC feeds, such as Purina<sup>®</sup> Strategy Healthy Edge<sup>®</sup> on physiological parameters in the horse. To fully understand the effects of feeding Purina<sup>®</sup> Strategy Healthy Edge<sup>®</sup>, a study was conducted to evaluate the glucose and insulin response to feeding. It was hypothesized that based on the starch and sugar content of the feed, the glycemic response would be low.

### < MATERIALS AND METHODS >

Five Quarter Horse geldings (mean age  $\pm$  SEM; 12.6  $\pm$  2.1) were acclimated to consuming Purina<sup>®</sup> Strategy Healthy Edge<sup>®</sup> over the course of a five-day period. On day 6, a glucose and insulin response to feeding was evaluated by collecting serial blood samples via a jugular catheter over the course of six hours following a 4-pound feeding of Purina<sup>®</sup> Strategy Healthy Edge<sup>®</sup>. Plasma glucose was analyzed via a COBAS analyzer and serum insulin was determined via a colorimetric ELISA (Merckodia; Uppsala, Sweden). All data are presented as mean  $\pm$  SEM.

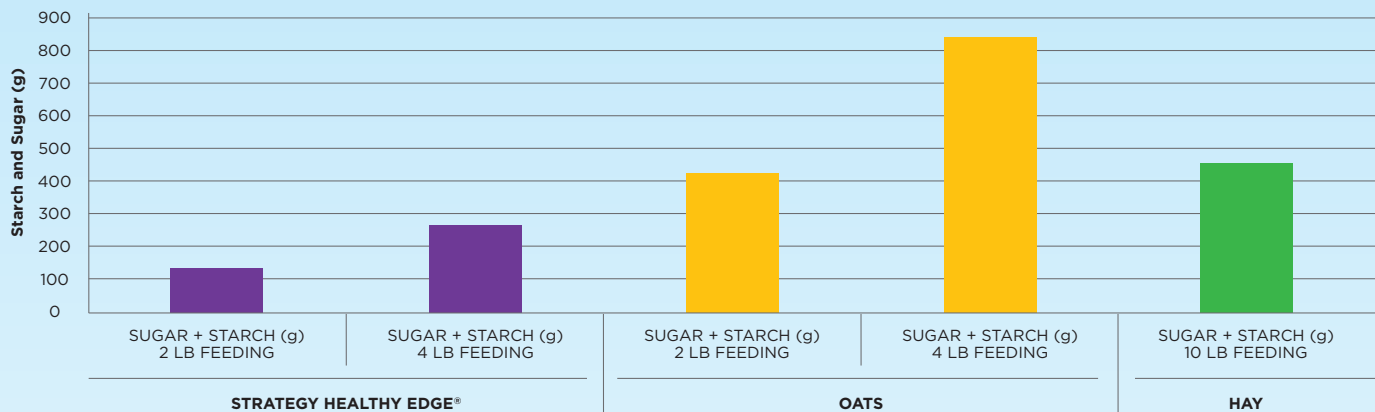
<sup>1</sup>Jacobs, RD, Gordon MB, et al., HR 272. Glycemic index of Purina Strategy Healthy Edge 2018.

## < RESULTS AND IMPLICATIONS >

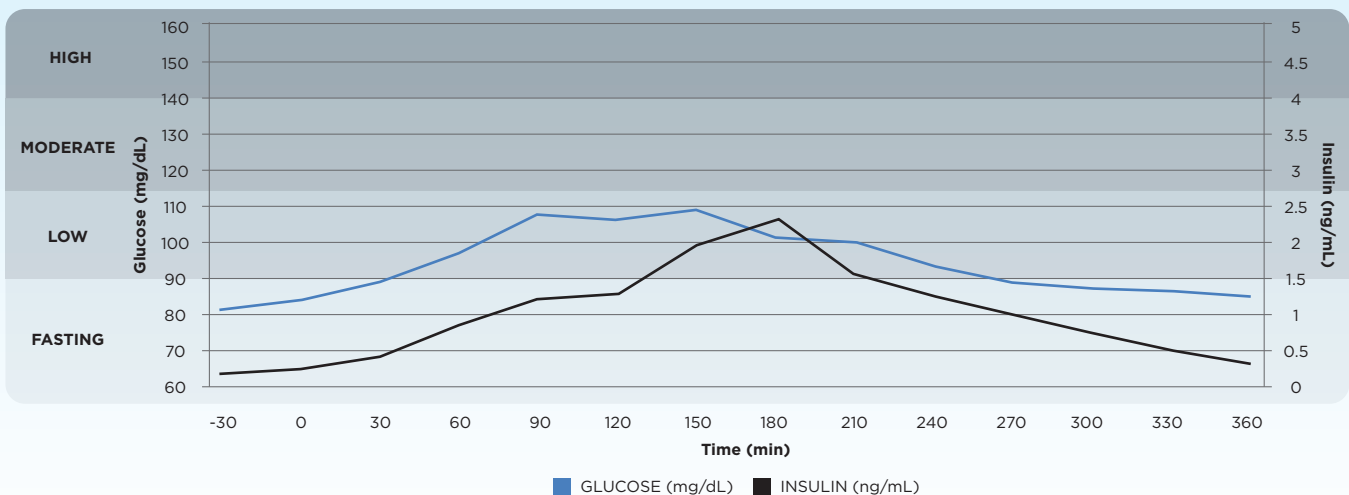
Figure 1 highlights the starch and sugar levels of different feeding rates of Purina® Strategy Healthy Edge®, compared to those resulting from a meal of oats and moderate quality grass hay. As expected, a meal of oats results in the largest quantity of starch and sugar, however a 10-pound hay offering provides a measurable quantity of NSC to the horse. In contrast, a meal of Purina® Strategy Healthy Edge® Horse Feed provides a relatively small amount of starches and sugars due to the optimized formulation and inclusion of select ingredients with low levels of NSC.

Figure 2 depicts the low glucose and insulin response our horses had from a 4-pound meal of Purina® Strategy Healthy Edge®. In addition, glucose and insulin responses to feedings have been classified into ranges from fasting values to high responses to feeding. It is important to understand that individual horses will have variable responses to feedings of similar diets and this response can be impacted by a variety of factors including age, gender, body condition, fitness level, metabolic status and disease state. It is important to work closely with a veterinarian to understand what a specific blood value may mean. This dataset indicates that Purina® Strategy Healthy Edge® Horse Feed has a formula that is low in starch and sugar, and when fed to healthy horses, it can result in a low glucose and insulin response to feeding. The increased fat and fiber content in Purina® Strategy Healthy Edge® is formulated to provide a controlled amount of calories from sources that have low levels of starch and sugar, resulting in a diet appropriate for horses that may benefit from this type of concentrate feed.

**FIGURE 1** Starch and sugar amounts resulting from feedings of various amounts of Purina® Strategy Healthy Edge® (purple), oats (yellow), or hay (green).  
*\*Sugar values are represented by ESC. All values have been determined via analysis by independent laboratory (Equi-analytical; Ithaca, NY)*



**FIGURE 2** Glucose and insulin response to feeding a meal of Purina® Strategy Healthy Edge®.



< AVAILABLE UPON REQUEST > Contact your local Purina representative if you would like more information about this study.