

Consider This . . . Metabolic Syndrome

- Horses with metabolic syndrome (the precursor to insulin resistance) tend to have thick, cresty necks, and/or abnormal fat deposits near the tail head, along the loin area and behind the shoulders.
- Morgans, Arabs, Peruvian Pasos and Finos, Icelandics, donkeys, miniature horses and many ponies are more prone to insulin resistance. However, any overweight, under-exercised horse can develop insulin resistance.

What Makes The Biggest Difference? DE, NSC, WSC, ESC

When feeding the insulin-resistant or metabolic-syndrome horse, it's most important to understand and pay attention to two things: Digestible energy (calories) and non-structural carbohydrates (NSC).

Digestible energy (DE): Typically, digestible energy or DE will be measured as Mcals/lb (mega calories per pound). The average DE for grasses is .80 to .90 Mcals/lb on a dry matter basis whereas alfalfa can have upwards of 1.00 Mcals/lb. What makes alfalfa more caloric isn't sugar or starch (it has less sugar and starch than most grass hays), it's the high protein content. Therefore, while adding alfalfa is beneficial to boost protein, avoid feeding too much to the overweight horse.

You don't need to actually "count calories," but you do want to watch your insulin-resistant equine's caloric intake. Forages should have no more than .88 Mcals/lb. When forage is fed at a rate of 2.0 to 2.5% of body weight, the DE is in line with National Research Council recommendations.

NSC percentages: Fiber contributes to a plant's structure; non-structural carbohydrates (NSC) do not. Sugars, starches, and fructans make up NSC. NSC is generally not listed as such on hay analysis reports or feed labels, whereas water-soluble carbohydrates (WSC), starch, and ethanol-soluble carbohydrates (ESC) are. WSC plus starch equals NSC. ESC describes simple sugars; the difference between WSC and ESC gives you a good estimate of the fructan levels in your hay. Fructans not only raise blood insulin levels but can also be fermented in the hindgut, leading to endotoxin-related laminitis.

Ideally, your hay should have less than 10 percent NSC. This level, however, is hard to find, so a more realistic goal is less than 12 percent. If your hay has an NSC value higher than this, you can soak it for 30 (hot water) to 60 minutes (cold water) to remove some of the sugar. Then drain the water. Do not pour it into your horse's water supply since it is concentrated in sugars. However, note that minerals are also removed in the water, making mineral supplementation critical. For detailed information on soaking and testing hay, see the March 2012 issue at www.horse-journal.com.



You don't have to "count calories," but you do need to limit his overall intake.