

What is NSC and Why Should I Care?



Non-Structural Carbohydrate (NSC) is the term used to describe the sugar and starch content of horse feeds (i.e. the digestible carbohydrates). NSC is the sum of the water-soluble carbohydrates (WSC) and starch.

When horses digest sugar and starch in the stomach and intestines, and absorb glucose, they also release insulin from the pancreas to help the uptake of glucose into cells (i.e. the cells are sensitive to insulin). When high levels of NSC are fed, the cells become resistant to insulin (i.e. the horse is insulin resistant), and blood glucose levels rise. Insulin resistance is associated with metabolic disorders including laminitis, EMS, Cushing's and colic. High NSC feeds (>12% NSC) are also related to tying up. NSC levels below 12% are considered necessary to maintain insulin sensitivity, to maintain long-term horse health, and to avoid the starch related metabolic disorders. **The NSC level in Cool stance is 11%.**

Traditional cereal grains used in horse feeds are all high in NSC. But, due to consumer demand (based on significant increases in the metabolic disorders listed above) many feed companies now provide "low-starch" product lines. Unfortunately, what these companies don't readily advertise is that they are using "fillers" or "by-products" to bring the overall NSC levels of their cereal grains down to more acceptable levels.

So what are these "fillers" and where do they come from? In the US, most of our grains (corn, soy, oats, wheat) are funneled into commercial channels for processing. Grains are sorted at processing plants and graded. Superior graded grains go to human consumption. Lower graded grains go to animal consumption. By-products of the processing (soy hulls, oat hulls, peanut hulls, rice hulls and wheat middlings for instance) become inexpensive fillers for horse feed. Other cheap ingredients like rice bran and beet pulp are also used as fillers. Many of the "by-products" contain a very high percentage of lignin (a complex organic polymer deposited in the cell walls of many plants, making them rigid and woody), which is 100% not digestible to the horse. Read the ingredient list of most low-NSC feeds on the market and you will sometimes see these fillers listed as simply "Plant By-Products" or "Processed Grain By-Products."

Another concern is that because the grains designated for animals are nutritionally lower than the human graded grains, feed companies that sell "complete (balanced) feeds" must add synthetic additives to provide nutrients. These synthetic additives (including vitamins) are often made from coal tar derivatives, petroleum extracts, acetone, formaldehyde, and even irradiated cattle brains (vitamin D). The processing of the grains themselves can expose the grains to temperatures exceeding 450 degrees. Enzymes and other nutrients can't survive in temperatures exceeding 145 degrees.

Cool Stance is not only a naturally low NSC feed, but it contains only one GMO-free ingredient: coconut meal. It doesn't get any simpler, or any healthier, than that!