

Tying-Up: What is it & how is grain involved?

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What is tying-up?

Tying-up, otherwise known as Monday Morning Sickness or azoturia is a term used to describe muscle disorders affecting some breeds of horses. Horses suffering with tying-up may experience painful muscle contractions, stiffness, profuse sweating, and elevated respiratory rates during or following exercise. There are actually two distinct forms of tying-up, known as polysaccharide storage myopathy (PSSM) and recurrent exertional rhabdomyolysis (RER):

1. Polysaccharide Storage Myopathy (PSSM)

PSSM is the form of tying-up that mostly affects Quarter Horses, “double muscled” and “warm blood” breeds. Horses affected by PSSM appear to have an enhanced insulin sensitivity which causes them to store abnormally high levels of glycogen in their muscles. Horses with PSSM appear to have no problem utilizing the glycogen they have stored in their muscles when exercising. Why the storage of abnormally high levels of muscle glycogen causes muscle damage is still unknown. PSSM is exacerbated on high starch diets.

2. Recurrent Exertional Rhabdomyolysis (RER)

RER is the form of tying-up that commonly affects thoroughbreds, and particularly fillies. Horses affected by RER do not accumulate high concentrations of muscle glycogen; however they tend to exhibit abnormal muscle contraction mechanisms. RER is often triggered by exercise and excitement.

How is grain involved?

The feeding of grain will often increase the occurrence of PSSM and RER in susceptible horses. Grains provide energy in the form of sugar and starch (non-structural carbohydrate...NSC). Starch is broken down in the small intestine and absorbed into the bloodstream as glucose. For horses affected by PSSM, feeding high starch diets increases the amount of glycogen

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stored in the muscles, and therefore increases the chances of the disease occurring. For horses with RER, high starch diets often contribute to the horse being highly excitable and nervous, making the horse more susceptible to tying-up. In a nutshell, feeding grain to susceptible horses increases the risk of tying-up.

How can CoolStance help?

Research has shown that horses with PSSM and RER both benefit from a low starch diet (<12% NSC) that contains some oil. CoolStance is a natural, high energy feed that contains 8% oil and less than <12% NSC, making it a perfect substitute for grain in the diet of horses susceptible to PSSM or RER.

Feeding tips

If your horse is in moderate work, feed 2 to 4 lbs. of **CoolStance** per day, in two feeds. Take all the grain out of the diet, and feed only medium quality hay. If you can see seed heads, the hay will contain NSC. Feed a mineral supplement, and ensure the water is clean at all times.



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