

Summer Founder - Seasonal Alert (Published 12/1/2013)

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Many horse and pony owners start to relax once the spring grass is grazed off, or the grass dries off in the pasture in mid to late summer and autumn. They believe that the threat of founder is over as summer heats up with little regular rain. However, at this time of year, there is a potential new risk referred to as 'summer founder'. This is most likely in horses and ponies which are 'good doers' and are in heavy condition. The risk is increased when horses graze plentiful dry perennial ryegrass and other good quality grass based pastures 24/7, with little regular exercise.

How Summer Founder Can Develop

The underlying cause is the high intake of soluble sugars in the dying, dry grass.

Green spring and early summer grass starts to dry off as rainfall becomes less regular in the early summer to autumn months in many areas. The present hot, dry summer conditions in Southern Australia hasten this process. The grass plants become stressed as there is little moisture in the soil. Even if there are a few light showers of rain or a heavy dew, the heat of summer can dry the moisture from the soil surface layers within a few hours. Eventually, the top 30 cm of soil dries out and subsoil moisture is reduced. The grass cannot take up and store enough water to survive. When a grass plant begins to dry off and wilt as it dies, the soluble sugar compounds produced in its leaves and stems are moved down the stems into the base as the plant dries off. In fact, the concentration of sugars is normally highest in the lower stems because plants store 'food' there so that grazing animals cannot 'steal' their energy supply. As horses graze close to the ground, they are more likely to eat the high sugar plant bases.

The leaves dry or fall off and stems eventually collapse, leaving the base of the plant which is high in soluble sugars. In grass, this is thought to allow the plant to reshoot after a soaking rain so that it can continue from season to season. The plant stores the sugars in its base just above the ground and becomes very sweet to the taste. Grazing horses and ponies love to eat sweet grass and quickly find the sugary grass base. The moisture content of the dried off plant is low, so all the nutrients, especially the sugars, are concentrated.

Note: This scenario also occurs after spraying weeds, such as milk thistles, variegated thistles, Paterson's Curse rosettes, cape weed and dock, which makes them palatable to eat as they wilt and die, storing sugars, which makes them palatable to horses, as well as retaining their risk of toxicity or poisoning to horses in some cases.

A horse left out to graze 24/7 is able to consume 40% of its energy need in the first 3-4 hours in the evening and after dark as it grazes to fill its 'tummy'. This is a normal grazing habit for all horses if they are left out in the paddock overnight. Even sparse, dying grass can be dangerous if a horse is left out to graze 24/7.

The high intake of soluble sugars and non-structural carbohydrates (NSC's), especially in a horse or pony which is overweight and 'cresty' in the neck, can result in a Diabetes Type 2 condition with an increase in insulin hormone in the blood. The high insulin levels then trigger changes to the blood supply to the lamellae of the hooves, resulting in devitalisation of the lamellae and onset of laminitis or founder. This change in metabolism as a horse ages is called Equine Metabolic Syndrome, or EMS. It is most common in 'good doers', which many ponies are, particularly those in heavy condition and over 10-12 years of age. However, it can also affect younger and less conditioned horses as well which are over-weight and are grazing pastures high in sugars 24/7.

How to Avoid Summer Founder

It is very important to monitor your horse's condition carefully every 2-3 days, especially if he is fat. Press over the fat deposits above his tail area ('tail-butt') with your fingers, or gently squeeze the crest along his neck between your fingers. **If you can feel that these areas are becoming firm and hard, especially if his neck develops a firm 'crest' under his mane, then you must reduce his access to the dry sweet, sugary pasture.**

Only allow him to graze for a couple of hours each day and ensure that he is confined to a yard or stable at night so that he is unable to graze as his natural behaviour would encourage him to do overnight. You may wish to fit a grazing muzzle to limit his grazing intake during the day if you are not going to be at home to bring him in from the pasture during the daytime. Even a pasture which appears to have very sparse amounts of dry, stressed grass or grass bases, can be dangerous if your horse has a good appetite and is left out to graze for long periods during the day and especially overnight.



The photo above shows the fat deposits that developed on the rump of a pony after a couple of weeks spell in a 'sparse' paddock over the 2012/2013 Christmas/New Year period.

Did You Know that....

A survey in the USA a few years ago found that dry summer standing grass, although once thought to be poor in nutritional value, is similar to hay made from the same pasture in the spring, especially if there has been little or no rainfall. The study demonstrated that showers of rain on the dry grass remove some of the soluble sugars (called leaching). Rain also removes other nutrients from the plants and reduces the danger of high sugar accumulation in the bases of the plants as they finally dry off and begin to die.

What else can you do to reduce the risk of Summer Founder?

There are 3 products which you can supplement to help reduce the risk of founder due to high sugar content of summer and autumn pasture grass. Founderguard® helps to control acid build in the hind bowels caused by excess sugar and starch intake. EquiShure® acts to neutralise acid levels in the hind bowels. Both these products are helpful during spring when horses and ponies are grazing high fructans, soluble sugars and NSCs in spring grasses. However, they may not be beneficial in cases of Summer Laminitis. Consult your vet for advice. If the laminitis is triggered by a high blood insulin level (termed Insulin Resistance) due to sugars taken in from dry grass, then a product such as **Kohnke's Own TRIM®**, which contains nutrients which have a role in supporting weight control in horses on low calorie diets, may be used as directed. It has a role in the small bowel to naturally maintain a normal blood sugar level in horses where diet control, such as soaking hay and limiting grazing, is being used to reduce the risk of summer founder.

It is also a good idea to plan a daily exercise program by riding your horse or pony to help burn up excess calories and allow gradual weight loss without over-working him.

Once the 'crest' or 'tail butt' fat deposits feel soft (rather than firm and hard), the supplement of **TRIM®** can be reduced to a maintenance dose and the amount of soaked hay reduced to only providing half the hay as soaked hay to remove soluble sugars. Monitor the 'firmness' of the 'crest' and 'tail-butt' on alternate days and introduce **TRIM®** as required with the full amount of hay as soaked hay until the firmness softens again. Limit pasture grazing again if the season breaks and the grass rejuvenates with new, high sugar growth. Keep monitoring your horse's condition and firmness if the tail butt fat deposits and along the crest of the neck.

Handy Hint

Feed Your Horse Soaked Hay

If your horse or pony develops a hard 'cresty' neck, or starts to become sore in his feet and short in his stride because he is beginning to founder, it is important that you reduce his intake of soluble sugars, even in hay. There is no advantage gained by purchasing 'shedded' or last season's hay, because the sugars do not reduce during storage, only some of the vitamin content is lost. Lucerne hay has the lowest natural sugar content of common hays. If your horse is 'cresty' and overweight, soak a biscuit of lucerne hay in a large tub in double its volume (30 litres) of warm water for 60 minutes. Then take it out to drain and air dry for 30 minutes before feeding your horse. The soaking will remove up to 25% of the soluble sugars. It is even more important to soak ryegrass and good quality cereal hay in the same way, as both these are higher in soluble sugars compared with lucerne hay. Soaking in warm water for 60 minutes will leach out up to 33% of soluble sugars in grass hay. You may also supplement with 100g/100kg body weight with wet sugar beet fibre or feed a low GI feed. Supplementing with the product **TRIM®**, as directed on the label, is also highly recommended. You should continue feeding the soaked hay twice daily and supplementing with **TRIM®** until his tail-butt and neck become soft again and he loses weight. If you continue to feed the soaked hay for more than 7-10 days to reduce your horse's calorie intake, then you should add a daily supplement of trace-minerals and vitamins, such as **Kohnke's Own Cell-Provide®**, to help make up important soluble nutrients, (trace-minerals, salts and vitamins) soaked out from the hay with the sugars. **Kohnke's Own Cell-Salts™** can be supplemented to replace salt leached out if all the hay is soaked. A low GI feed should be fed as a hard feed with minimal chaff to mix in the **TRIM** and other supplements. Avoid excess molasses as it contains sucrose - a sugar source. Apples are also high in carbohydrates which digest to sugars.

NOTE: A detailed fact sheet on Managing EMS and Summer Founder can be obtained by emailing Gary at newsletters@kohnkesown.com. You may also wish to contact Gary, who will pass it on to one of our nutritional advisors or myself, or email info@kohnkesown.com if you would like dietary advice at any time. It is a free service.

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