



Ryegrass Staggers

What is ryegrass staggers?

A microscopic fungus growing in ryegrass – known as an endophyte - is responsible for a condition that horses can develop called ryegrass staggers. It can also be known as grass staggers. The fungus produces mycotoxins ie. fungal toxins that affect the cerebellar area of the brain. This part of the brain is responsible for muscle coordination. When the mycotoxin affects the cerebellum it produces the classic signs of muscle trembling and loss of coordination which results in a staggering gait.

Horses are most affected by the mycotoxin due to their hind gut digestion but sheep, cattle, alpacas and some deer species can also be affected.

Ryegrass staggers is not caused by a magnesium deficiency even though the clinical signs can look similar.

Annual ryegrass toxicity is a distinctly different clinical condition with a bacteria and a nematode being the causative agents.

Why do we have pasture plants with endophytes?

A basic summary of what seed companies can supply for pastures is outlined below but for more detailed information contact your local seed supplier to see what plants can provide the most benefit for the environment you are in.

Endophyte plants provide more palatable pasture and better plant growth than non endophyte plants. The endophytes have a symbiotic relationship with the host plant to provide protection from insect attack. They

outperform non endophyte plants and dominate the pasture.

However they are also responsible for staggers under certain conditions and need to be thoroughly understood.

Non endophyte plants are really only suitable for wet summer areas of the South Island as they have greatly reduced insect resistance.

Low endophyte grasses will have some insect resistance but won't persist as well against the endophyte grasses.

AR1 endophytic ryegrass is non-staggering but does not give resistance to black beetle infestations.

AR6 endophyte ryegrass has non staggering endophytes and is more likely to give protection from black beetle which is a problem in the northern half of the North Island. It will therefore persist better than AR1 in the pasture.

What are the clinical signs of ryegrass staggers?

In acute cases there is generalised trembling of muscles, unsteadiness when walking and falling over. An affected horse can lose condition very quickly due to being unable to graze and drink properly. In milder cases there is trembling of the head and neck areas but they still have a reasonably normal gait. In very mild cases there may be only behavioural changes of an erratic and anxious demeanour. It is important to have your horse thoroughly checked by a veterinarian to diagnose ryegrass staggers so as not to confuse it with low magnesium levels in the body which can also produce behavioural changes.

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A horse with ryegrass staggers must be closely supervised in the recovery period to make sure they do not sustain severe or fatal injuries from their inability to move around normally.

Most horses make a full recovery in one to two weeks when they are removed from the affected pasture and given supportive nursing care.

How do I manage my pastures and horses to reduce the chance of ryegrass staggers?

Horses have a wide variation in their susceptibility to the mycotoxin – two horses grazing on affected pasture could result in one horse with severe staggers while the other horse appears unaffected. Know which horses are most likely to be affected so that pre-emptive action can be taken.

Horses that are growing, heavily pregnant mares and lactating mares are more at risk because they are ingesting more grass because of their higher nutritional needs.

Binding agents are now available to absorb the toxins and prevent absorption into the bloodstream. Some are based on organic agents and some are based on clays. The clay based products need to be used carefully as they can also prevent absorption of essential nutrients. Long term use as a preventative would need to be carefully assessed.

Ryegrass staggers is a seasonal problem being worse in the summer/autumn period. The fungus is found mainly at the base of the leaf sheath and in the seed heads. It is not spread from plant to plant but through infected seed being sown into the pasture. Seed which is two years old will have virtually no endophyte present. Silage will retain the toxin for over two hundred days but in hay it will significantly decline over this period.

Eaten down pasture will also have a higher level of endophytes so rotational grazing will help grass retain some length and maturity. Try to avoid grazing of the seed heads.

Plants under moisture stress in a dry summer will also have higher levels of the endophyte.

Consult with pasture or seed specialists to see which mix of plants would be best suited for your area – maybe consider phalaris and cocksfoot in addition to ryegrass.

If mushrooms and toadstools are noted in the paddock it could be an indicator that endophytes could also be very active in the pasture grasses.

Mycotoxins can also be found in hay, silage, haylage and baleage. Generally mould is visually obvious in the hay and the horse refuses to eat it.

Mycotoxins in grain do not affect the palatability and in large amounts can lead to organ shutdown and death.

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