



Endophyte animal safety ratings

Ryegrass endophytes

Endophytes

These were compiled by AgResearch, Barenbrug, Cropmark, Germinal, Grasslanz, PGG Wrightson Seeds and RAGT. These ratings are indicative. Animal performance and health can vary under different management systems and between seasons.

The information in this table is based on animal safety trial protocols designed to expose animals to simulated worst-case scenario management. This involves forcing them to graze deep into the base of pure perennial ryegrass pastures that have been allowed to grow for several weeks over late spring/summer (similar to a hay crop) where they will encounter the highest concentrations of harmful endophyte chemicals if these are present. This management does not represent normal farm practice although similar situations may arise on farms in rare circumstances.

Under normal farm grazing practices, the contribution of basal pasture material to total animal dry matter intake is relatively low and therefore the intake of harmful chemicals (if they are present) is diluted. Thus, the likelihood of adverse effects on animals is reduced, but the potential for problems to occur may still exist if the endophyte brand is rated < 4-star for 'freedom from staggers' and/or there are comments on animal performance which flag potential issues. Comments on animal performance have been moderated based on information from other trials (in addition to the formal animal safety testing protocols), consideration of the 'normal' grazing management practices implemented on farm (see previous paragraph), and recognition that animal diets are very seldom pure ryegrass. Other dietary components such as clovers or non-ryegrass grass species, crops or supplements will dilute the intake of endophyte alkaloids.

Ryegrass staggers & animal performance (September 2024)

Endophyte brand	Freedom from staggers		Effects on animal performance
	Sheep and lambs	Cattle and dairy cows	
AR1	++++	++++	High level of animal performance
AR37	+++	++++	Typically provides a high level of animal performance. Can cause ryegrass staggers in sheep and lambs in extreme circumstances. Lamb liveweight gain can be reduced during periods of severe staggers. While ryegrass staggers has not been observed in cattle and dairy cows, it could occur on rare occasions.
CM142	(++++)	++++	Typically provides a high level of animal performance. Can cause ryegrass staggers in sheep and lambs in extreme circumstances. Lamb liveweight gain can be reduced during periods of severe staggers. While ryegrass staggers has not been observed in cattle and dairy cows, it could occur on rare occasions.
NEA	++++	++++	High level of animal performance
NEA2 and NEA4	++++	++++	Typically provides a high level of animal performance. Lamb liveweight gain could be reduced in extreme circumstances. While no effects have been observed in cattle and dairy cows, body temperature could be elevated on rare occasions.
NEA12	++++	++++	Typically provides a high level of animal performance. Can cause ryegrass staggers in sheep and lambs in extreme circumstances. Lamb liveweight gain can be reduced during periods of severe staggers. While ryegrass staggers has not been observed in cattle and dairy cows, it could occur on rare occasions
RGT18	(++++)	++++	Typically provides a high level of animal performance. Can cause ryegrass staggers in sheep and lambs in extreme circumstances. Lamb liveweight gain can be reduced during periods of severe staggers. While ryegrass staggers has not been observed in cattle and dairy cows, it could occur on rare occasions.
U2	++++	++++	High level of animal performance
MaxP (AR584)	++++	++++	High level of animal performance
Standard endophyte	+	++	Can cause ryegrass staggers in sheep and lambs, and significantly decrease lamb growth rates in summer and autumn, and significantly increase dags In dairy cows, it has been shown to depress milksolids production through summer and autumn.
Without endophyte	++++	++++	High level of animal performance

Key to ryegrass staggers ratings:

- + Likely to cause severe staggers in most year
- ++ Can cause severe staggers in some years

- +++ Can cause severe staggers occasionally
- ++++ Very unlikely to cause staggers

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