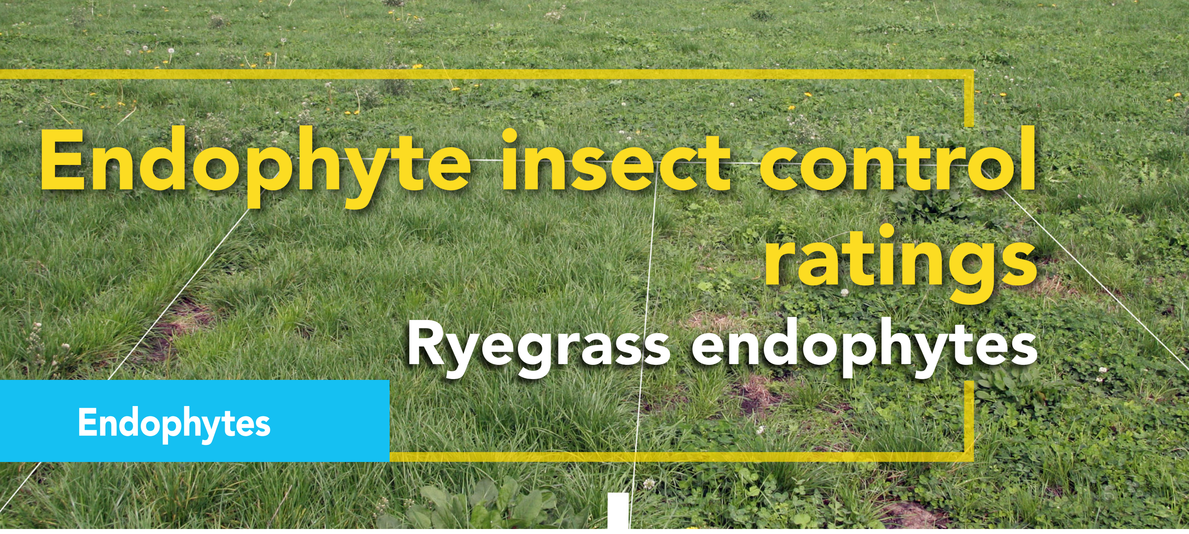

Endophyte insect control ratings

Ryegrass endophytes

Endophytes

These were compiled by AgResearch, Barenbrug, Cropmark, Germinal, Grasslanz, PGG Wrightson Seeds and RAGT.

These ratings are indicative and may vary slightly between cultivars. If Argentine stem weevil or black beetle are present at sowing, an appropriate seed treatment is recommended to improve insect resistance during establishment.

The ratings in this table are based in part on glasshouse studies where test plants are 100% infected with endophyte, whereas commercial seed must meet minimum standards of 70% of seeds infected.

Insect control: ryegrass, festulolium & continental tall fescue (September 2024)

Endophyte Brand	Argentine stem weevil	Pasture mealy bug	Black beetle	Root aphid	Porina	Grass grub	Field cricket
Diploid perennial ryegrass							
AR1	++++	++++	+	-[2]	-	-	Not tested
AR37	++++[1]	++++	+++	++++	+++	+	Not tested
CM142	Not tested	Not tested	Not tested	++++	Not tested	Not tested	Not tested
NEA2	+++	(++++)	+++	++	Not tested	-	Not tested
NEA4	+++	(++++)	+++	++	Not tested	Not tested	Not tested
NEA12	(++++)[1]	Not tested	(+++)	++++	(+++)	Not tested	Not tested
RGT18	(+++)	Not tested	(+++)	Not tested	Not tested	Not tested	Not tested
Standard endophyte	++++	++++	+++	++	+	-	Not tested
Without endophyte	-	-	-	-	-	-	Not tested
Tetraploid perennial ryegrass							
AR1	(+++)	(++++)	+	-[2]	-	-	Not tested
AR37	(+++)[1]	(++++)	+++	++++	(+++)	+	Not tested
CM142	Not tested	Not tested	Not tested	++++	Not tested	Not tested	Not tested
NEA2	++	(++++)	+++	++	Not tested	-	Not tested
Without endophyte	-	-	-	-	-	-	Not tested
Diploid and Tetraploid Italian and short term (hybrid) ryegrass							
AR1	++	(++++)	+	-[2]	Not tested	-	Not tested
NEA	Not tested	(++++)	+++	Not tested	Not tested	-	Not tested
AR37	+++[1]	(++++)	+++	++++	Not tested	-	Not tested
NEA12	(+++)[1]	Not tested	(+++)	++++	Not tested	-	Not tested
Without endophyte	-	-	-	-	-	-	Not tested
Festulolium							
U2	++++	(++++)	++++[3]	++++	(++)	+++	+++
Continental tall fescue							
MaxP (AR584)	Not tested	Not tested	+++	(++++)	Not tested	(++)	+++
Without endophyte	-	-	-	-	-	-	-

Notes on Tables

-	No control.
+	Low level control: Endophyte may provide a measureable effect, but is unlikely to give any practical control.
++	Moderate control: Endophyte may provide some practical protection, with a low to moderate reduction in insect population.
+++	Good control: Endophyte markedly reduces insect damage under low to moderate insect pressures. Damage may still occur when insect pressure is high.
++++	Very good control: Endophyte consistently reduces insect populations and keeps pasture damage to low levels, even under high insect pressure.
( )	Provisional result: Further results needed to support the rating. Testing is ongoing.
1	AR37, NEA12 and RGT18 endophytes control Argentine stem weevil larvae, but not adults. While larvae cause most damage to pastures, adults can damage emerging grass seedlings. In Argentine stem weevil prone areas it is recommended to use treated seed for all cultivars with novel endophyte.
2	AR1 plants are more susceptible to root aphid than plants without endophyte.
3	Active against black beetle adults and larvae.

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