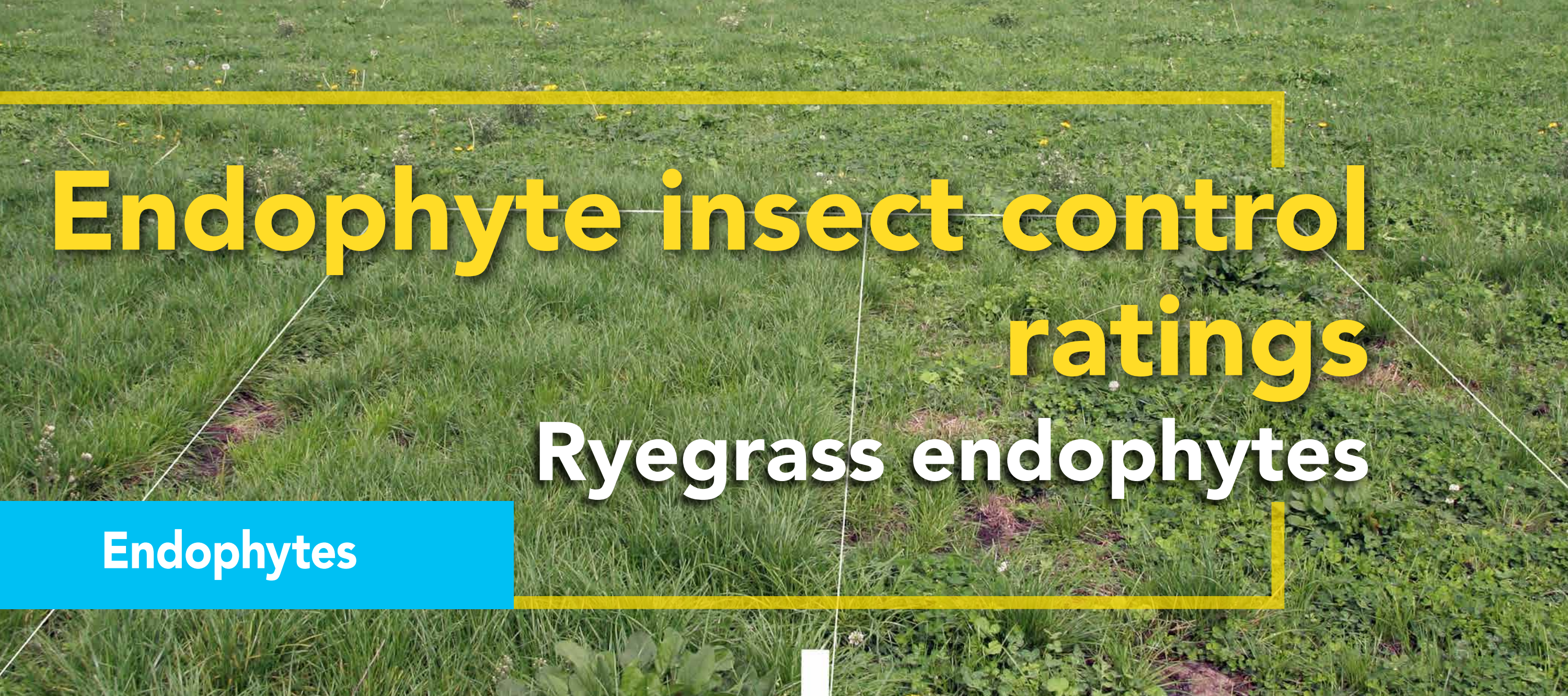




# Endophyte insect control ratings

## Ryegrass endophytes

Endophytes

These were compiled by AgResearch, Barenbrug, Cropmark, 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 following table summarises the results from over 100 replicated pot and field trials, where insect feeding has occurred, and the resultant insect damage was assessed.

### Insect control: ryegrass, festulolium & continental tall fescue (September 2026)

| Endophyte Brand                                                 | Argentine stem weevil | Pasture mealy bug | Black beetle      | Root aphid     | Porina    | Grass grub | Field cricket |
|-----------------------------------------------------------------|-----------------------|-------------------|-------------------|----------------|-----------|------------|---------------|
| Diploid perennial ryegrass                                      |                       |                   |                   |                |           |            |               |
| AR1                                                             | ++++                  | ++++              | +                 | - <sup>2</sup> | -         | -          | Not rated     |
| AR37                                                            | ++++ <sup>1</sup>     | ++++              | +++               | ++++           | +++       | +          | Not rated     |
| AR128                                                           | ++++ <sup>1</sup>     | Not rated         | +++               | (++++)         | (+++)     | Not rated  | Not rated     |
| AR153                                                           | ++++                  | Not rated         | +                 | -              | (-)       | Not rated  | Not rated     |
| CM142                                                           | (++++) <sup>1</sup>   | Not rated         | (+++)             | ++++           | (+++)     | Not rated  | Not rated     |
| NEA2                                                            | +++                   | (++++)            | +++               | ++             | Not rated | -          | Not rated     |
| NEA4                                                            | +++                   | (++++)            | +++               | ++             | Not rated | Not rated  | Not rated     |
| NEA12                                                           | (++++) <sup>1</sup>   | Not rated         | (+++)             | ++++           | (+++)     | Not rated  | Not rated     |
| RGT18                                                           | (++++) <sup>1</sup>   | Not rated         | (+++)             | ++++           | (+++)     | Not rated  | Not rated     |
| Standard endophyte                                              | ++++                  | ++++              | +++               | ++             | +         | -          | Not rated     |
| Without endophyte                                               | -                     | -                 | -                 | -              | -         | -          | Not rated     |
| Tetraploid perennial ryegrass                                   |                       |                   |                   |                |           |            |               |
| AR1                                                             | (+++)                 | (++++)            | +                 | - <sup>2</sup> | -         | -          | Not rated     |
| AR37                                                            | (+++) <sup>1</sup>    | (++++)            | +++               | ++++           | (+++)     | +          | Not rated     |
| CM142                                                           | (+++)                 | Not rated         | (+++)             | ++++           | (+++)     | Not rated  | Not rated     |
| NEA2                                                            | ++                    | (++++)            | +++               | ++             | Not rated | -          | Not rated     |
| Without endophyte                                               | -                     | -                 | -                 | -              | -         | -          | Not rated     |
| Diploid and Tetraploid Italian and short term (hybrid) ryegrass |                       |                   |                   |                |           |            |               |
| AR1                                                             | ++                    | (++++)            | +                 | - <sup>2</sup> | Not rated | -          | Not rated     |
| NEA                                                             | Not rated             | (++++)            | +++               | Not rated      | Not rated | -          | Not rated     |
| AR37                                                            | +++ <sup>1</sup>      | (++++)            | +++               | ++++           | Not rated | -          | Not rated     |
| NEA12                                                           | (+++) <sup>1</sup>    | Not rated         | (+++)             | ++++           | Not rated | -          | Not rated     |
| Without endophyte                                               | -                     | -                 | -                 | -              | -         | -          | Not rated     |
| Festulolium                                                     |                       |                   |                   |                |           |            |               |
| U2                                                              | ++++                  | (++++)            | ++++ <sup>3</sup> | ++++           | (++)      | +++        | +++           |
| Continental tall fescue                                         |                       |                   |                   |                |           |            |               |
| MaxP (AR584)                                                    | Not rated             | Not rated         | +++               | (++++)         | Not rated | (++)       | +++           |
| 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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