

Endophyte seed tests

Seed information

Sow

ALL Barenbrug ryegrasses containing endophyte are tested prior to sale and have a current test at time of sale. The type of endophyte contained in the seed is stated (e.g. *NEA2*).

Levels are given for the percentage of seed containing endophyte:

- *NEA, NEA2, NEA4, NEA12, AR1* or *AR37*: 70%+ of seed contain stated endophyte
- *LE* or '*Low endophyte*': less than 70% of seeds have endophyte

Endophyte level

A seed either has, or does not have endophyte, and this endophyte level for a line is given as a percentage e.g. a level of 80% means 80% of seeds contain endophyte and 20% do not.

For seed to be sold as containing an endophyte, a level of 70% or more is required. This may be *NEA, NEA2, NEA4, NEA12, AR1, AR37* or another endophyte.

Any seed line with an endophyte result lower than 70% is classed as *Low* endophyte (LE).

Endophyte levels in stored seed drop over time. To ensure high endophyte levels in our seed, Barenbrug uses controlled storage (see Storing Seed with Endophyte) with continual monitoring and re-testing of endophyte levels.

Testing seed for endophyte

Two main tests are available.

1. Seed test:

This tests the seed directly. It is a quick test for presence of endophyte, but does not indicate whether the endophyte present is dead or alive. This is an

overnight test typically done on newly-harvested seed up to 31 May.

2. Seedling grow out test:

This is used after 31 May, to ensure endophyte is alive. Seed is sown in our laboratory and the tiller of the resultant seedling is tested for endophyte after 3–6 weeks.

ELISA testing

The ELISA (Enzyme Linked Immuno Sorbant Assay) test is a specific test for *AR1* or *AR37*, to ensure they are not contaminated by *Standard* endophyte.

The ELISA test determines the presence of lolitrem B in a seedline. Seed with *Standard* endophyte always contains lolitrem B. Seed with *AR1* or *AR37* doesn't contain any lolitrem B.

The result of the ELISA test is reported as a grade that runs from 1 to 6.

Grades 1-5 are all acceptable for 1st Generation seed, and mean less than 5% contamination. Grade 6 is not suitable for sale.