

Endophyte seed tests

Summary

- ALL Agriseeds permanent pasture ryegrass seed is tested for endophyte.
- Type of endophyte is stated (e.g. *Plus NEA2*).
- Levels are given for the percentage of seed containing endophyte:
 - *Plus AR1 or Plus NEA2* : 70%+ of seed have stated endophyte
 - *Without* : less than 5% of seed have any endophyte

Endophyte level

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

For seed to be sold as containing endophyte a level of 70% or greater is required. This may be *Plus AR1*, *Plus NEA2*, *AR37* or another endophyte.

For seed classed as *Without* endophyte Agriseeds guarantees levels of less than 5% (usually levels are close to 0%).

Endophyte levels in stored seed can drop over time. In Canterbury's relatively low humidity, levels usually remain constant for 2-3 years. In areas of higher humidity and temperature, levels fall more quickly.

ELISA testing

The ELISA (Enzyme Linked Immuno Sorbant Assay) test is to ensure *Plus AR1* is 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 *Plus AR1* 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 1G seed, and mean less than 5% contamination. Grade 6 is not suitable for sale.

Testing seed for endophyte

Two tests are available. (Agriseeds offers these as a commercial seed test.)

1. Seed test:

This tests the seed directly. It is a quick test for presence of endophyte, but does not indicate whether endophyte present is dead or alive. It is used on younger seed, usually up to 15 months old, in which the endophyte is alive.

2. Seedling grow out test:

This is used on older seed, or when there is doubt if endophyte is alive. Seed is sown and the leaf of the resultant seedling is tested for endophyte at six weeks of age. This test is more accurate as only live endophyte will grow into the seedling.