

# Endophyte Options

Using Endophytes in your permanent pasture mixes improves animal health providing better animal performance, more palatable pasture, and easier pasture management.

The different types of Endophyte currently available are: WE, LE, HE/SE, AR1, AR6, AR37, Endo 5, NEA2, and GrubOUT U2.

## **Without Endophyte (WE):**

Without Endophyte gives good animal performance, but reduced insect resistance. Only suitable for summer wet South Island areas.

## **Low Endophyte (LE):**

Low Endophyte grasses provides better animal performance than High Endophyte ones but the downside of this is that it won't persist as well.

## **High / Standard Endophyte (HE/SE):**

High/ Standard Endophyte is still available in some older varieties. It is not recommended because it causes ryegrass staggers, depresses live weight gains in lambs and reduces milk production in dairy cows. This type of endophyte although persists extremely well in tough conditions.

## **AR1 Endophyte:**

Ryegrass with AR1 endophyte is a non-stagging endophyte that has excellent animal performance. However, the Peramine does not give good resistance against Black Beetle, and care is needed in areas with high Black Beetle numbers, such as the northern half of the North Island. AR1 endophyte has now been extensively field-tested for animal safety and productivity, and is now available commercially in a number of ryegrass cultivars.

AR1 in ryegrass gives:

- Better liveweight gains and milk production than wild-type endophyte ryegrass
- No ryegrass staggers
- No heat stress
- Less dags and flystrike
- No prolactin depression
- Excellent control of Argentine stem weevil
- Pasture productivity similar to that of wild-type endophyte ryegrass
- Better pasture persistence than endophyte-free ryegrass

## **AR6 Endophyte:**

These are non-stagging endophytes that provide the equivalent insect protection of AR1, with the additional benefit of resistance to Black Beetle through the presence of low to moderate levels of Ergovaline. AR6 pastures are likely to persist better than AR1 pastures in areas with high Black Beetle numbers, such as the northern North Island.



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## AR 37 Endophyte:

Ryegrass with AR37 gives you simple, economical insect control and around the clock protection from most pasture pests. AR37's continual and superior insect protection ensures maximum pasture production and better pasture persistence allowing higher animal productivity.

Benefits:

- Provides continual protection against Argentine Stem Weevil, Adult Black Beetle, Pasture Mealy Bug, Root Aphid and Porina.
- Improves tiller density and persistence of perennial ryegrass.
- Maximises animal performance.
- Provides higher pasture productivity allowing higher animal productivity.

## Endo 5 Endophyte:

Ryegrass with Endo5 protects against a range of pasture insect pests including Argentine Stem Weevil, Adult Black beetle and Pasture Mealy Bug. Farmers using tetraploid ryegrass to improve animal productivity will choose Endo5 to increase pasture persistence.

Benefits:

- Endo5 provides excellent insect protection for tetraploid ryegrasses.
- Provides continual protection against Argentine Stem Weevil, Adult Black Beetle and Pasture Mealy Bug.
- Does not produce lolitrem B, a compound known to cause ryegrass staggers.

## NEA2 Endophyte:

NEA2 endophyte is suited to intensive farming systems through out NZ, providing persistent, staggers free pasture with excellent animal performance. Ryegrass with NEA2 gives good control of black beetle, to the same level as AR37. It also provides a level of control of Argentine stem weevil (ASW), pasture mealy bug (provisional rating) and root aphid.

## GrubOUT U2 Endophyte:

The GrubOUT® U2 endophyte is a strain of *Neotyphodium uncinatum*. It contains a unique set of alkaloids called lolines, which insects don't like. Use GrubOUT® U2 and enjoy the benefits of better pasture protection against insect pests, improved pasture persistence and superior livestock performance potential.

Its benefits include:

- Protection of host grasses against root and top feeding insect pests including:
  - grass grub larvae
  - black beetle adults and larvae
  - Argentine stem weevil
  - porina caterpillar
  - the red headed pasture cockchafer and more
- Improved pasture persistence
- No known ill-effects to sheep, cattle or deer. (No grass staggers or heat stress either)
- High palatability and animal acceptance
- Enhanced livestock performance
- Better farm profit potential



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