



Lester Fletcher – Senior Scientist, AgResearch

“The development of MaxP tall fescue endophyte at AgResearch has been a significant breakthrough for farmers growing tall fescue. Providing protection against a number of insect pests, MaxP may also improve drought tolerance, with trials in Australia showing MaxP cultivars had improved drought survival. As a result, tall fescue cultivars with MaxP endophyte have shown improved persistence.

In the northern North Island, cultivars with MaxP have also shown dry matter production advantages greater than 20 percent in the second year compared to the same cultivars without endophyte and these advantages increase over time, offering significant benefits to the farmer. MaxP endophyte provides real production advantages without compromising quality and as such is an important new technology delivering real results to New Zealand farmers.”

UNDERSTANDING ENDO5

Endo5 is also an AgResearch novel endophyte.

Endo5 endophyte is available in BANQUET® II tetraploid long rotation ryegrass (page 23) and in Quartet II (page 22). In the plant breeding process, both BANQUET® II and Quartet II were specifically selected to achieve the best cultivar/endophyte interaction. Endo5 endophyte has been successfully trialled through the AgResearch animal safety trial at Lincoln.

Insect Protection: Endo5 provides very good insect protection against a range of pasture pests including Argentine Stem Weevil, adult Black Beetle and Pasture Mealy Bug. Further research is being undertaken on the protection provided against other insect pests.

Persistence: As a result of the protection provided by Endo5 against key insects, expect improved persistence from Endo5 pastures compared with AR1 pastures, especially in areas subject to Black Beetle.

Animal Performance: Expect very high animal performance from these combinations of a high yielding, very high quality, late or very late heading tetraploid, with an endophyte that does not contain Lolitrem B. # *

Endo5 contains Ergovaline for insect protection. It is recommended to avoid prolonged set stocking or grazing fresh regrowth of such pastures during summer and autumn.

* Lolitrem B is the main causative agent of ryegrass staggers.

UNDERSTANDING MAXP® TALL FESCUE ENDOPHYTE

What is MaxP®?

MaxP® is a novel tall fescue endophyte that improves the ability of tall fescue pastures to handle pest attack and moisture stress. Tall fescue with MaxP® endophyte offers improved persistence compared with tall fescue without endophyte.

Unlike ryegrass endophyte, MaxP® endophyte produces a Loline compound. This compound along with Peramine is likely to be a key factor in providing protection against Argentine Stem Weevil, Black Beetle, Pasture Mealy Bug and Root Aphid. MaxP® can improve the drought tolerance of tall fescue. In areas where there are few insect pests and little moisture stress, MaxP® may not be essential, but may still improve pasture production.

Animal Production

MaxP® novel endophyte has been used extensively on sheep and cattle farms and has shown no negative effects on animal health and production of these species.



Persistence

The persistence of MaxP® tall fescue has been very good, out-yielding perennial ryegrass three years after sowing, and having considerably higher plant density than the same fescue without endophyte.



Dry Matter Production

Tall fescues with MaxP® endophyte have been tested throughout New Zealand since 1997. In areas with insect pests, trials consistently show significant yield and persistence advantages to tall fescues with MaxP® endophyte. In Kerikeri, Northland, MaxP® tall fescue produced 21 – 81% more dry matter per year than the same cultivar without endophyte. This benefit is more pronounced through late summer and autumn, when yield increases of up to 180% have been measured.

Much of the increased performance is due to the resistance MaxP® provides against the destructive insects Black Beetle and Argentine Stem Weevil. These insects reduce the growth and persistence of tall fescue without endophyte.

MaxP® is protected in NZ by PVR.

MaxP® is protected in NZ by patent number 233083.

MaxP® is a registered trademark of Grasslanz Technology Limited NZ.

Endophyte Type	Grass Species	Endophyte Compound			
		Peramine	Lolitrem B	Ergovaline	Lolines
MaxP®	Tall Fescue	✓	x	x	✓
Without	Tall Fescue	x	x	x	x