

Northland Pastoral Extension: Popular Summary

Subtropical Pastures

Limpogress



Summary of Key Findings

Research work on Limpogress (*Hemarthria altissima*) during the 1980s and 1990s showed:

- Limpogress has potential to produce summer feed for cattle (up to 34 tonnes DM/ha).
- Limpogress has to be vegetatively established, rather than by seed.
- Summer grass invasion can be a major problem at establishment.
- Limpogress is frost tender.
- When fed at the same daily amount, milk production (March) is very similar for cows fed Limpogress and for cows fed temperate pasture species.
- When cows being fed temperate pastures showed signs of heat stress or ryegrass staggers, those fed Limpogress were unaffected.



Features of Limpograss

Limpograss has potential for use as a special-purpose, perennial, summer-forage crop in dairy and/or beef systems.

Growth rates January–March average minimum of 100 kg DM/ha/day.

Measured annual growth rates 20–34 t DM/ha.

Limpograss has to be vegetatively established – a major problem.

Limpograss has digestibility levels of 68–78% (low to moderate) and protein levels of 12–14% (low to very low).

Limpograss is most likely to flourish on sites with:

- Fertile, moisture-retentive soils.
- Low frost levels (no lower than -6°C frost, ie minimum of -6°C air temperature).
- 200–300 kg N/ha supplied November to March.
- Irrigation or effluent spray applied.

Whether it is possible to have a cool-season grass species present in the same sward as Limpograss – to provide winter feed when Limpograss is dormant – is **not** known.



I'd feel less LIMP if it wasn't so darn cold!

Kauri Trial

A 3-year trial in the early 1980s showed:

- It took 12 months for Limpograss to establish successfully. Most areas had to be replanted a second time, and in these areas it still took a year for Limpograss to become established.
- Limpograss dormant May to August period.
- Limpograss is frost tender – frost from temperatures lower than -6°C cause major damage to the plant.

Production

Pasture species	Annual dry matter (t DM/ha/year) at a 3-cm mowing height		
	Year 1	Year 3	Mean of 3 years' production
Limpograss lines:			
• Bigalta	19.0	4.8	13.0
• Floralta	21.1	12.6	16.9
• P1264884	20.9	19.7	19.1
Wana cocksfoot	16.1	18.2	17.4

The dramatic **decreases** in production over the 3 years for certain lines of Limpograss were largely the result of frost damage.

Wana Cocksfoot

Wana cocksfoot was used as a comparison to Limpograss at the Kauri trial.

- Annual yields similar to best of the Limpograss lines.
- Wana cocksfoot was still improving in production in Year 3.

Wana cocksfoot grew throughout the year, with a spring peak – did not have the extreme summer peak and winter trough in growth Limpograss showed.

Establishment of Limpograss

Establishment was vegetative – by very labour-intensive planting stems of the plant.

A less labour-intensive method, used in Florida, involves broadcasting mature stems followed by moderate discing and then rolling the soil. This process, trialled in Northland, has had success on soils with good summer moisture – but it failed on free-draining soils with low summer rainfall.

Nitrogen Use

Being a subtropical grass, Limpograss responds well to nitrogen.

Trial work in Northland generally used 200–300 kg N per hectare in October to March period.

Persistence

The Kauri trial **indicated** Limpograss was going to be short lived, only surviving 3–4 years. However, 6 years after Limpograss established, while some lines of Limpograss had perished, some were still present (but at low plant density). With good management, surviving lines quickly improved to become the dominant grass species present.

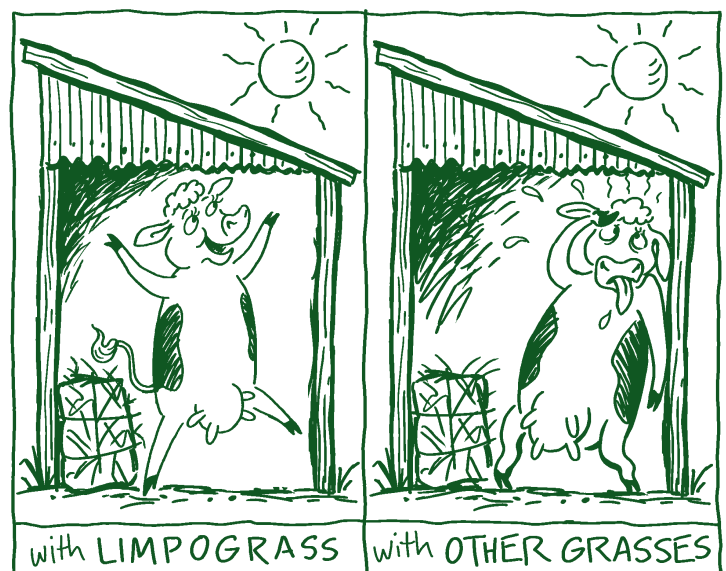
Revisiting four sites around Kaitaia 10–13 years after establishment of Bigalta, this line had disappeared in three sites. The one site where it remained as a strong plant was:

- Frost free.
- A very heavy clay.
- Grazed only by cattle.
- Cut for hay each year.

Milk Production

Trial work at Kaikohe in the early 1990s compared daily milk production from cows fed Limpograss with cows fed normal pasture made up of temperate species.

- Heat stress and ryegrass staggers were seen in cows that were stall-fed temperate pasture. No signs of these problems in cows fed Limpograss. This would have been an endophyte issue with the temperate pasture.
- Slightly lower milk production from cows stall-fed Limpograss, but no difference in the grazing trial.



Milk Production – March 1994

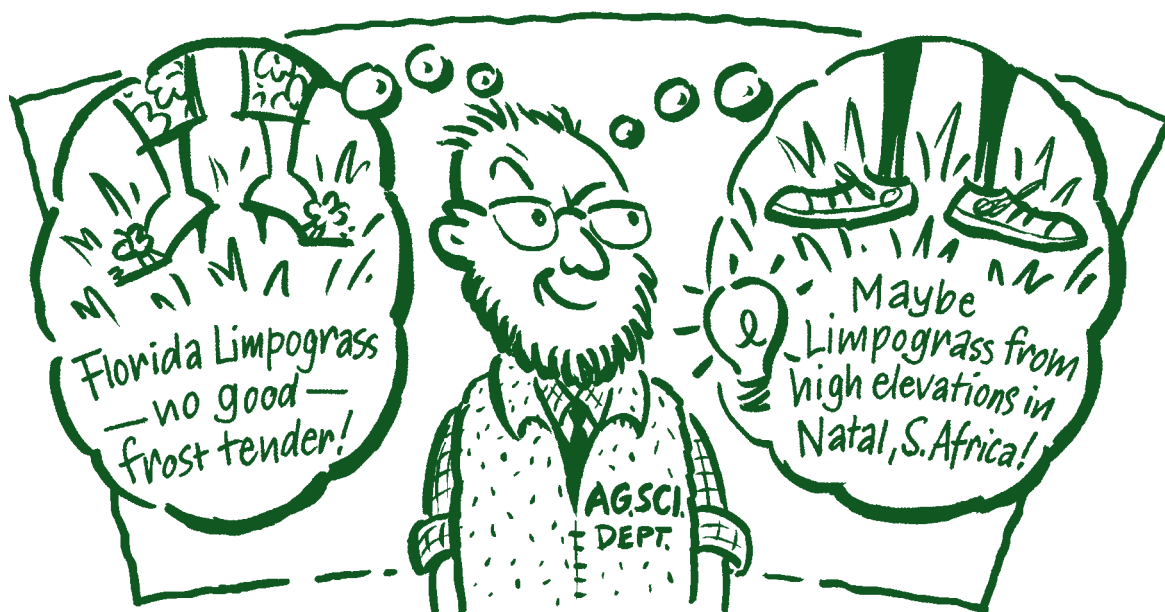
Cattle were stall-fed Year 1, grazed Year 2.

Diet – stall-fed Year 1	Limpograss	Temperate species pasture
Milk volume (litres/cow/day)	78	8.5
Milk solids (kg MS/cow/day)	0.62	0.72
Feed intake (kg DM/cow/day)	13.1	13.5
Rectal temperate (°C)	39.0	40.0
Final liveweight (kg)	522	498

Potential

Limpograss has been developed as a perennial forage crop for providing cattle feed during summer in Florida. The majority of the lines grown are frost tender and so are *not* very well suited to Northland conditions.

Other lines show more winter hardiness – eg lines from high elevations in Natal, South Africa. These *could* be better suited to Northland.



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A project coordinated by the Northland Pastoral Farming Development Group
The unabridged version of **Research Stocktake – Subtropical Pastures** is available on the
Enterprise Northland website www.enterprisenorthland.co.nz