Grasslands® **Relish** Red Clover

Agrinote

"Step change in red clover genetics"

- A major improvement in persistence within grazing systems
- High yield potential over time
- Semi-prostrate growth habit
- Low levels of formononetin (oestrogen)

PERENNIALITY	OESTROGEN	LEAF SIZE	1000 SEED WEIGHT (grams)	PLOIDY	SUGGESTED SOWING RATE (kg/ha)
Perennial	Low	Medium	2.5	Diploid	4-6 grass or brassica mix 12 pure stand

Background

Relish red clover is a major advancement in red clover breeding. It has shown outstanding persistence compared to current alternative varieties. It is ideally suited to pasture mixes where its growth habit should help to maintain red clover content over time.

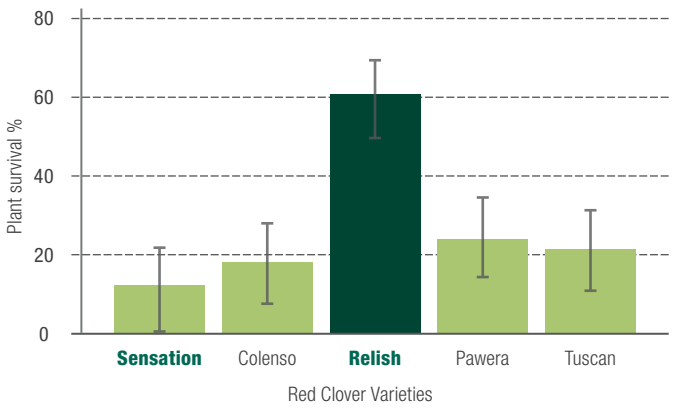
Relish is a primary option for a red clover forage crop with proven persistence and production. **Relish** has shown to be highly productive with enough early spring growth for it to be used as a lambing forage (as early as September).

With changing land use the need for traditional store farms to finish lambs has never been greater. After years of red clover use in general pasture mixes (at often lower than ideal sowing rates), it has subsequently been proven how productive red clover can be as a pure stand.

Production Data

Research was conducted to test the growth and persistence of 18 red clover lines among a wider set of 142 New Zealand and overseas accessions of red clover, in a mixed-sward replicated plot trial under rotational grazing by cattle in the Manawatu[1]. After three and a half years under grazing, **Relish** showed 60% plant survival. This was more than any other entry, and significantly (P<0.05) more than any commercial cultivars in the trial. This is a significant breakthrough in red clover genetics for New Zealand based grazing systems and highlights why **Relish** is a major step change in red clover reliability. For persistence under grazing, nothing else evaluated from within New Zealand or from around the world came close to **Relish**.

Figure 1. Plant survival percentage (%) of red clover plants surviving after three and a half years under cattle grazing in the Manawatu[1]



Animal Production Data

Table 1 shows the range of literature that is published showing the benefits of herb/clover mixes or red clover live weight gains over that of ryegrass.

Table 1: Benefits of herb/clover mixes or red clover live weight gains over ryegrass. Adapted from Marley *et al.*, (2005) and Fraser *et al.*, (2004).

FORAGE SPECIES	LIVE WEIGHT GAIN (g/day)	REFERENCE
White clover	282	Marley *et al.*, (2005)
Red clover	292	
Alfalfa	210	
Perennial ryegrass	201	
Red clover	305	Fraser *et al.*, (2004)
Alfalfa	243	
Perennial ryegrass	184	

[1] Ford, J.L., & Barret, B.A. (2011). Improving red clover persistence under grazing. Proceedings of the New Zealand Grassland Association.

Statistical Significance: Those cultivars whose error bars do not overlap are significantly different from each other at the 95% confidence level. Those cultivars whose error bars do overlap are not significantly different from each other.

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Additional Data

Formononetin Levels:
Grasslands Pawera was a red clover which was high in plant formononetin (oestrogen). This historically caused negative effects on ewe fertility if fed prior to mating. Since then Grasslands **Sensation** and Colenso have been bred for lower levels of formononetin to reduce these potential issues. Some red clover cultivars with higher levels of formononetin are still available.

Table 2. Formononetin levels measured in a replicated plant trial in Palmerston North[1]

	Cultivar	Formononetin (% dry weight)
Older cultivar	Grasslands Pawera	0.27
	Grasslands Colenso	0.18
Current cultivar	Grasslands Sensation	0.14
	Tuscan	0.25
New cultivar	Grasslands **Relish**	0.10
	Mean	**0.17**
	LSD 5%	**0.12**

[1] Ford, J.L., & Barret, B.A. (2011). Improving red clover persistence under grazing. Proceedings of the New Zealand Grassland Association.

Key Tips - Sheep

- Rotationally graze to maximise potential growth
- Spring growth is very rapid. Be prepared to utilise and increase stocking rate accordingly
- Graze from 20-25 cm pre-grazing, down to around 4 cm during the growing season
- Never allow red clover to build up too much stem as this will reduce quality for the grazing animal and if it is too advance all also reduce silage quality
- Graze hard in autumn to clean up residual stems and reduce clover cover to reduce potential disease presence in winter
- Soil test to monitor paddocks and apply P, K and S as required to maximise red clover growth potential.
- Set stock in-lamb ewes onto pure clover stands in the spring (triplet bearing ewes, twin bearing hogget's, twin bearing light or last lambing ewes)
- Provides exceptional lamb fattening feed over summer and autumn (post weaning)
- Graze ewe lambs to increase hogget mating weight
- Has the potential to last three years
- Surpluses can be converted into high quality hay or silage
- Adding **Tonic** plantain will increase cool season growth (but will limit herbicide options)

Suggested Mixes

RELISH RED CLOVER PURE STAND

	RATE (kg/ha)
Relish red clover (Superstrike)	12 - 14
Tribute white clover (Superstrike)	3
Total	**15 - 17**

Often red clover stands are supported by small volumes of white clover which spread and provide ground cover.

RELISH RED CLOVER AND ASSET ITALIAN STAND

	RATE (kg/ha)
Relish red clover (Superstrike)	10
Asset Italian ryegrass (WE)	10
Tribute white clover (Superstrike)	2
Total	**22**

RELISH RED CLOVER IN A PASTURE MIX (AN EXAMPLE)

	RATE (kg/ha)
ONE[50] AR37 perennial ryegrass	18
Relish red clover (Superstrike)	6
Tribute white clover (Superstrike)	3
Total	**27**