

RELISH

RED CLOVER

PURE STAND SYSTEMS

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.

Sowing red clover as a pure stand for lamb finishing provides some advantages over other forage products such as leaf turnips and rapes. While these brassicas provide high quality feed over the summer, they are in the ground for 6 – 8 months, along with an associated cost of resowing in late autumn. If a surplus results, the only option is to graze, meaning the brassica is less flexible.

Relish red clover in sheep systems is being used effectively in several ways:

1. As a three year high performance pasture system
2. As a development tool in a rotation for hill country renewal
3. As a specialist high performance pasture system.
4. In other pasture systems **Relish** has benefits when included in a perennial pasture, or with an Italian ryegrass for short term finishing and silaging.

When used as either a pure stand or in a mix **Relish** adds to the animal performance potential from young pastures and also has a major influence on that pasture's potential for producing quality silage.

Key Relish Attributes

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

Relish Pure Stands

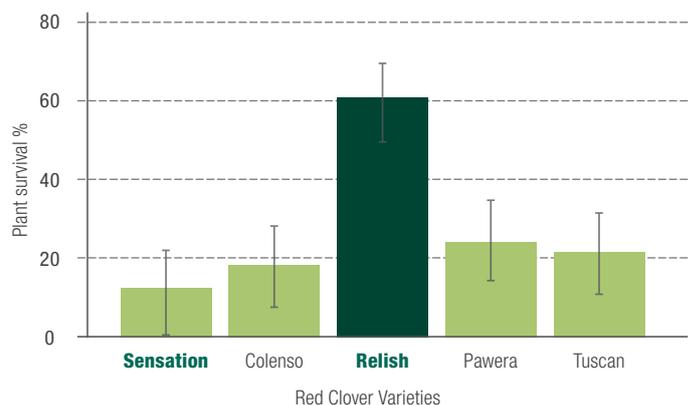
- Set stocking of in-lamb ewes onto pure stands in the spring (triplet bearing ewes, twin bearing hogget's, twin bearing light or last lambing ewes)
- Provides exceptional lamb fattening feed over summer and autumn (post weaning)
- Grazing of ewe lambs to increase hogget mating weight
- Has the potential 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)

Performance of Relish Red Clover

The concept of red clover as a pure stand was established on the back of Grasslands Colenso and **Sensation** red clovers. These were well utilised and proven New Zealand bred cultivars. However, Agricom has now commercialised a variety providing a major step forward in red clover genetics with the release of Grasslands **Relish** red clover.

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



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 1. Formononetin levels measured in a replicated plant trial in Palmerston North¹

	Cultivar	Formononetin (% DW)
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

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

Management of Relish Red Clover

FIRST YEAR

1. Soil test and create a fertiliser programme to address any limitations that will hinder legume performance
2. Apply best practice to remove all hard to kill weeds during the preparation for sowing
3. Spring sow **Relish** into warming soils of between 10 - 12°C
4. First grazing should occur at 7 - 8 true leaves to minimise plant loss, this could be around 25 cm in height
5. Rotational grazing maximises growth with 5 - 7 day breaks ideal
6. Stocking rates will vary during the year peaking in late October and November, with summer stocking rates relative to summer moisture
7. Apply capital P, S and K fertiliser in the autumn
8. Do not allow build-up of stem and dead material during the summer and autumn, and tidy up paddocks in late autumn
9. Spray for grass weeds where possible as these will shorten the stand life

SECOND YEAR

1. Set stock ewes to lamb on stands in the spring. Stocking rates of 10 - 14 ewes per ha depending on region and stock class are typical
2. Focus on best value stock, e.g. triplet bearing ewes, twin bearing hogget's, twin bearing light or last lambing ewes
3. Be ready to increase stocking rate in late October as **Relish** will grow beyond initial stocking rates
4. Establish a rotation as soon as is practical
5. Maintain ewes and lambs on the stand until weaning. **Relish** stands can result in lambs with high dressing out percentages (similar to **Tonic** plantain stands), and this may influence your weaning weights and dates
6. Summer and autumn grazing programmes could include
 - a. Grazing ewe lamb replacements
 - b. Finishing remainder of lamb crop
 - c. Store lamb finishing
 - d. Putting weight on light ewes
 - e. Making high protein silage
7. Apply capital P, S and K fertiliser in the autumn
8. Do not allow build-up of stem and dead material during the summer and autumn and tidy up paddocks in late autumn
9. Spray for grass weeds again if required

THIRD YEAR

Repeat management as per second year.

AT THE END OF A RELISH RED CLOVER STAND

If the stand is finished in late summer and the paddock is clean of all serious grass weeds it is a good time for the next step in the rotation.

RELISH PURE STANDS IN THE ROTATION

Relish has the potential to fix upwards of 150 kg of plant available N/ha/year. Therefore the next option in the rotation benefits from a large amount of soil available nitrogen. Options include:

- **Asset** Italian ryegrass
- **Tonic** plantain
- Slower establishing perennials such as **Easton MaxP** tall fescue or **Savvy** cocksfoot
- **Spitfire** rape or **Sovereign** kale
- **Monty** forage barley for whole crop cereal silage (WCCS)



Pre (left) and post grazing (right) of red clover forage crops.

Environments and Soils

- Although once established red clover can tolerate dry conditions, it is best suited to 800+ mm rainfall zones
- For high performance, red clover is best suited to medium to high fertility soils
- Red clover can grow at a more moderate pH than lucerne. This is partly because a red clover stand isn't expected to last as long as lucerne
- Free draining silt loams are best suited for red clover. However, red clover will tolerate winter wet, clay based soils and will perform well through summer on these soil types

Supplementary Feed

Red clover silage can be a very high quality product both for metabolisable energy (ME) and for crude protein. The photo below shows red clover silage being cut at an ideal stage to maximise quality. Unlike a brassica or chicory fattening system, if you do not need the red clover, it can be turned into quality balage.



Silage being cut at the ideal stage to maximise quality.



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Example Mixes Including Other Forage Combinations

RELISH RED CLOVER PURE STAND

Cultivar	Sowing 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

Cultivar	Sowing Rate (kg/ha)
Relish red clover (Superstrike)	8
Asset Italian ryegrass	10 - 14
Total	18 - 22

RELISH RED CLOVER IN A PASTURE MIX (AN EXAMPLE)

Cultivar	Sowing Rate (kg/ha)
ONE ⁵⁰ AR37 perennial ryegrass	18
Relish red clover (Superstrike)	6
Tribute white clover (Superstrike)	3
Total	27