

## Newsletter No. 9

September 2018



A feature of our project results over the last 2-3 months has been the growth of the annual clovers on most of our sites, plot sites plus whole-paddock sowings.

Growth rates of 35 to 50 kg DM/ha/day for mid-July to end of August, at both Dargaville and Awanui. Pleasing growth rates, considering the underfoot conditions being extremely wet.

Much of these high growth rates has been fueled by the high presence of annual clovers, e.g. the mixed plots at NARF, so containing a perennial grass, white and red clover plus an annual clover giving the following composition as at 1 September:

- Berseem clover @ 84% of these mixed plots
- Persian @ 84%
- Balansa clover @ 61%

### NARF – Dargaville

The treatments at NARF have been based on perennial grasses, white and red clover plus a range of annual clovers. The same mixes have been sown at three other sites this last autumn.

Examples of the seed mixes:

Treatment 1: Perennial ryegrass, white and red clover plus balansa annual clover.

Treatment 2: Same mix as T1 with the exception of balansa being replaced with Persian annual clover.

Treatment 4: Tall fescue replacing the perennial ryegrass, with all the clovers being the same as T1.

Seed Mixes – Sowing Rate				
	Treatment 1	Treatment 2	Treatment 4	Treatment 9
Species	1	2	4	9
Perennial ryegrass	10	10		
Tall fescue			15	
Cocksfoot				5
White clover	3	3	3	3
Red clover	4	4	4	4
Balansa annual clover	4		4	
Persian annual clover		6		
Berseem annual clover				10

The idea behind these mixes is that we can compare the various annual clovers with the same basic white and red clover but changing the grasses between perennial ryegrass, tall fescue and cocksfoot.

We will be able to see how large the advantage is of adding the various annual clovers, this from increased growth during the July to December period in the first year.

We will also get a feel regarding whether there is a real disadvantage of adding these annual clovers: Do we lose out in future growth in Years 2 – 4 because we may have a more open pasture base following strong annual clover production, i.e. does the substantial short term growth have a negative impact on pasture persistence?

### **NARF – Results to Date – Overview**

Very strong growth from the mixes that have annual clovers added, also the same strong growth from the pure annual clover plots (no grass sown).

<b>NARF – Pasture Growth August 2018</b>	
<b>Pasture Mixes</b>	<b>Growth Kg DM/ha/day</b>
Perennial grasses, white & red clover, no annual clover	27
Perennial grasses, white & red clover plus annual clover	48
Annual clover only	47

A major difference in daily growth between plots with no annual clover present compared to strong annual clover population in other plots.

The perennial grasses plus perennial clover plus annual clover mixes are being currently driven by the strong annual clover presence. These annuals are making up:

- 84% for berseem clover
- 84% for Persian clover
- 61% for balansa clover.

The monoculture plots for these annual clovers are all at 99% pure. This is a pleasing result, considering the excess water challenge that the trial site and paddock have experienced in May to August inclusive, along with all other clay soils within Northland!

**NARF – Dargaville**  
**Seed Sown 13 April ex-turnip crop**  
**Pasture Production to Date**

Pasture Mix	Kg DM/ha/day		Year to Date Kg DM/ha
	13 April to 31 July	31 July to 1 Sept	
Rye + Balansa	21	42	3,599
Rye + Persian	28	39	4,292
Rye + Berseem	26	54	4,607
Tall Fescue + Balansa	21	52	3,903
Tall Fescue + Berseem	25	54	4,401
Cocksfoot + Balansa	20	49	3,758
Cocksfoot + Persian	23	42	3,880
Cocksfoot + Berseem	25	49	4,260
Tall Fescue – no annual	15	28	2,547
Tall Fescue – no annual	16	26	2,518
Rye – no annual	17	26	2,677
Balansa on own	25	44	4,092
Persian on own	25	44	4,109
Berseem on own	27	54	4,663
Alsike on own	17	40	3,133

**Gillatt's – Te Kopuru**

Pasture growth from a 9 kg/ha berseem annual clover and 70 kg/ha of annual ryegrass mix has been strong from an early-May sowing. This mix has grown @ 40-43 kg DM/ha/day for two paddocks between 8 May and 26 August.

As at 26 August the Berseem component within the grazing exclusion cages was averaging 57% and the annual ryegrass @ 43%.

Berseem clover plant population from the sowing rate of a 9 kg/ha, is just “moderate to good” @ 176 plants/m<sup>2</sup> in late-June. Our target is 200 plus plants/m<sup>2</sup>. One key is having a good population for the winter and spring surge of growth from the berseem clover: So we need a high population right at the start, otherwise we will not see this surge in growth.

**Awanui**

At Awanui we have some whole paddock-sowings of high legumes, low grass mixes, plus plot sowings similar to NARF.

A number of plots have been “contaminated” by volunteer balansa annual clover. This balansa germinated extremely well in April 2018, from a strong flowering and seedset in spring 2016. This balansa, with a very high plant population initially, has been growing very well.

## Awanui Plots – Pasture Growth August 2018 July & August 2018

Seed Mix	Daily Growth Kg DM/ha/day
Ryegrass, perennial and annual clover	50
Tall fescue, perennial and annual clover	38
Cocksfoot, perennial and annual clover	36
Berseem annual clover on its own	35
Crimson annual clover on its own	28
Medic annual clover on its own	35
Balansa, volunteer	50+

The whole-paddock sowings have had variable growth. After sowing on 27 April, a very slow 64 days of growth up to end of June. Growth started to move in July, at an estimated 30 kg DM/ha/day and it has taken off in August-Sept @ 70-80 kg DM/ha/day.

These paddocks are now just being grazed by 140 kg autumn-born bulls. Prior to this, it had been far too wet and soft for any livestock to graze: Ducks made a mess in June!

These paddocks were sown with 8 kg/ha of ryegrass, 3 kg/ha of white clover, 4 kg/ha of red clover, 1-2 kg plantain, 4-5 kg of alsike clover plus 14 kg of annual clover. The annual clovers being a mix of berseem, Persian and balansa.

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