

## Newsletter No. 3 March 2017

During Northland's latest drought, ending in mid-March some perennial clover species have performed well for growth during the hot and dry period, but more importantly, plant persistence.



**NORTHLAND'S  
DIVERSIFIED FORAGES**

<b>Perennial Legume Monitoring</b> <b>Site: Te Kopuru                      Date: 8 March 2017</b>			
<b>Species</b>	<b>Pasture Mass Present Kg DM/ha</b>	<b>Plant Dry Matter %</b>	<b>Estimated Growth since 6 December 2016 Kg DM/ha/day</b>
Lotus Major	3,317	13.0	21
Tall fescue	4,845	19.2	36
Control – Rye + w/clover	4,657	19.8	34
Red clover	3,438	15.0	22
Mainstay white clover	3,524	15.9	23
Lucerne spring sown	5,238	20.5	

### Comments

- The current presence of the species sown back in May 2016, is very variable – see below.
- While the legume in some individual plots were showing physical signs of stress, probably from drought, 80% of the legumes, plus the volunteer white clover were looking very good
- Growth by Lucerne @ 31kg DM/ha/day from 19 September sowing date.  
Lucerne plot was very dense @ 120 plants/m<sup>2</sup>

## Diversified Forage Farms

One of the farms being monitored has been growing lucerne for 12-14 years. This is dryland lucerne, as opposed to being irrigated.

Soil type is a free-draining sand with variable soil fertility. Two paddocks being monitored are 11 and 13 years old – a strong indication of how persistent lucerne can be in Northland when grown in the “right” situation and conditions.

<b>Period</b>	<b>10 Nov – 13 Dec 2016</b>	<b>14 Dec – 20 Jan 2017</b>	<b>21 Jan – 28 Feb 2017</b>	<b>1 – 30 March 2017</b>
<b>Growth Kg DM/ha/day</b>	92	36	28	42
<b>% Lucerne in cut</b>	59	79	67	53
<b>Soil Moisture - %</b>	17	16	17	28

### Point: Dec-Jan growth

4 cages @ 28 kg DM/ha/day from composition of 78% lucerne of the pasture material being cut.  
1 cage @ 80 kg DM/ha/day from 98% lucerne present in the cut.



*Lucerne in mid-Dec 2016 showing growth rates of 92 kg DM/ha/day*



*Lucerne - end of March 2017 showing growth rates of 42 kg DM/ha/day*

Maximum height and presence of perennial legumes Site: Te Kopuru Date: 8 March 2017			
Species	Maximum Plant Height (mm)	% of Species present of those sown	Comment – Other species present
Lucerne – winter active cultivar	300	3	Very small plants
Lucerne SF7	385	18	Small to medium plants
Control – perennial rye + white clover	237	60	Plantain the main other species
Mainstay white clover	213	87	Pure very pure plots of white clover
Lotus Major	193	35	Prairie, ryegrass and white clover present
Lotus Corniculatus	195	20	Largely volunteer white clover being the balance of species
Red clover	300	55	White clover. Major other species
Strawberry clover	150	40	Some flowers of strawberry clover

#### Other Plots

Tall fescue plots had a winter spray issue – in areas with no carryover spray damage there was a healthy plant population and equally good plant size of tall fescue.

Talish clover – not able to determine whether plants of this clover are still present.



Aberlasting hybrid clover – very difficult to identify the Aberlasting and separate it from the volunteer white clover. This separation was not attempted.

## **Soil Fertility regarding the Lucerne crop**

Soil and leaf analysis shows:

- pH @ 5.9 to 6.2 for 0 – 7.5cm depth and still being very good @ pH 6.1 for 7.5 to 15 cm depth
- phosphate levels being very low @ 6 – 8 for the 0 – 7.5 cm depth. In contrast to these low levels, a leaf analysis in late-February shows a reasonably good level of 0.35% for phosphorus. Re-testing both soils and leaf analysis will be undertaken during the spring of 2017
- potassium levels @ 6 – 8 for the 0 – 7.5 cm depth and half this level @ 3 for the 7.5 – 15 cm depth. The leaf analysis “agrees” with the soil, with a medium level of 2.72%
- sulphur levels are low to medium @ 7- 10 ppm for sulfate sulphur in the 0 – 7.5 cm depth saying that there is just sufficient sulphur present in November, to promote strong legume growth. The organic sulphur levels of 4 - 8 are low and are saying that this free-draining soil has a very low soil reserve of sulphur. The leaf sulphur level in February, was very high @ 0.50%. It will be interesting to see what the leaf sulphur level is like in August to November!



*Lucerne in mid-Jan 2017, under drought conditions with growth rates of 36 kg DM/ha/day*



<b>DIVERSIFIED FARMS – FARM 2:</b> <b>Tall fescue under irrigation and dryland conditions</b> <b>Peat soils - Awanui</b>	
<b>Pasture Type</b>	<b>Average Daily Pasture Growth 15 Sept – 6 Jan 2017 Kg DM/ha/day</b>
Tall Fescue – High plant density - Irrigated	87
Tall Fescue – Low plant density – Irrigated	62
Tall Fescue – Dryland	50
Ryegrass – control	70
Italian ryegrass – Irrigated	100
Kikuyu dryland (sand)	46

Results are showing large advantages to irrigating both tall fescue and Italian ryegrass. They also show the growth advantage of pastures with high plant density compared to low density.

Ministry for Primary Industries  
Manatū Ahu Matua



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