

GRASSING BARE PATCHES DEMONSTRATION

FARM 3 - Allan

February – April 2021

What has happened so far 35 Weeks Later

Some rain falls have continued over summer but it has definitely reduced. April has been well below average. All the plots browned off during summer and there were only a few hints of green. I have noticed as we moved into autumn growth of some grasses on the plots which I assume are the mostly C4 type grasses. The ryecorn and crimson clover has sprung to life within the Common Improved and Variation 2 plots. Variation 1 had very good germination originally in September / October and there is no evidence of any ryecorn or crimson clover germination in that plot. Examination of the active crimson clover root system did show some nitrogen nodules.

With plenty of feed around the farm, the temporary fence seems to continue restricting native grazing and I have still not seen any Kangaroos or Wallabies etc on the demonstration plots.

Again, I have included pictures below to show the original site and the current status of the demonstration plots after 35 weeks as well as the plots after mulching and sowing.

As previously observed there is an abundance of kangaroo and wallaby grass around the plots inside the basic exclusion fence. Minimal Kangaroo grass is prevalent in any of demonstration plots except the control reinforcing that Kangaroo grass does not like to be disturbed and was easily out competed by a green manure crop.

GRASS SEED & SOWING

The green manure crop browned off over summer and I chose late April as a suitable time to sow the grass seed for the plots. I am hoping that the forecast early May rains will eventuate to help the grass seeds. I chose to use a combination of both exotic and native grass seed. I have used a native grass mix which suit native wildlife combined with Cocksfoot Lazuly. While I know the variety of grass seeds in the native mix, I do not know the individual ratios of the seed mix. I do not believe that all the native seed mix will be highly suitable for the Canberra region. I have some doubts about the suitability of the Queensland Silky Bluegrass and Curly Mitchell grass within the mix. The native mix does not include Kangaroo grass (*Themeda triandra*) but I am relying on the abundant Kangaroo grass to self sow over the plots.

NSW DPI website classifies grasses as either C3 or C4 plants. C3 plants are adapted to cool season establishment and growth in either wet or dry environments.

On the other hand, C4 plants are more adapted to warm or hot seasonal conditions under moist or dry environments. A feature of C3 grasses is their greater tolerance of frost compared to C4 grasses. C3 species also tend to generate less bulk than C4 species; however, feed quality is often higher than C4 grasses. Cocksfoot is a C3 grass.

The native grass seed mix contains

C3 GRASSES

- Native Wheat grass (*Anthosachne scabra*)
- Evans Wallaby grass (*Rytidosperma caespitosa*)
- Oxley Wallaby grass (*Rytidosperma bigeniculata*)
- Burra Weeping grass (*Microlaena Stipoides* var. *Burra*)
- Griffin Weeping grass (*Microlaena Stipoides* var. *Griffin*)
- Common Tussock grass (*Poa labillardieri*)

C4 GRASSES

- Purple Wire Grass (*Aristida personata*)
- Knead spear grass (*Austrostipa bigeniculata*)
- Scent Top grass (*Capillipedium spicigerum*)
- Silky top Lemon Scented grass (*Cymbopogon obtectus*)
- Silky Bluegrass (*Dichanthium sericeum*)
- Curly Mitchell grass (*Astrebla lappacea*)

The sowing rate for the native grass seed mix is recommended at 9-12 Kg/Ha and the cocksfoot Lazuly is 10–12 Kg/Ha. Using the higher rate of 12 Kg/Ha, this equates to about 30 grams per plot for combined native grass mix and cocksfoot.

All vegetation was slashed / mulched prior to sowing. To ensure contact with the soil, a light coating of compost was applied after sowing the seed to help ensure the seed / soil contact.

The original control plot was 5m X 10m. Half of the control was mulched, and seeded (Control Plot A) and the other half left totally undisturbed (Control Plot B). While seed was distributed over Control Plot A, only half of the area was covered with compost. Mulching the brown manure and any existing growth in the plots appears to have “opened up” the naturally occurring growing grasses in the plot to air movement, sunlight and any rain or moisture. This was especially noticeable in Control Plot A.

The quantity of mulch was consistent with the growth / germination rates of the green manure crop. The most mulch was seen in descending order on

- Variation 1 Plot,
- Common Improved plot
- Variation 2 Plot
- Control Plot A

BACK GROUND INFORMATION

COMMON IMPROVED PLOT

The Common Improved plot had lime added to the surface and was to be incorporated to a depth of 5cm by hand. My compact soil did not allow for the lime to be incorporated to that depth and was “scratched” into a maximum depth of 2cm. The green manure crop consisting of 90% ryecorn and 10% crimson clover was broadcast across the plot at a rate of 40 grams per m². The Common Improved plot was then covered with jute mesh. The jute mesh as covered with compost obtained from the Queanbeyan Palerang Regional Council waste minimisation centre.

VARIATION 1 PLOT

The Variation 1 plot had lime distributed in the same manner as the Common Improved plot. For this plot mechanical means were used to incorporate the lime. The four tines on a box grader were used to break up the soil to a depth of approximately 10cm. The green manure crop was then broadcast at the same rate of 40 grams per m². The plot was then covered with the compost obtained from the Queanbeyan Palerang Regional Council waste minimisation centre.

VARIATION 2 PLOT

The variation plot 2 was completed a little later (5 days) after the common improved and Variation 1 plots. This variation 2 was without any physical incorporation of the treatments to the plot. The lime was distributed by the same manner as the Common Improved plot and left on the surface and not incorporated. The green manure crop was then broadcast at the same rate of 40 grams per m². The plot was then lightly covered with meadow hay. Pelletised poultry manure (Dynamic lifter) was broadcast on this plot at the same rate as the green manure crop of 40 grams per m². The variation plot 2 was then also covered with the compost obtained from the Queanbeyan Palerang Regional Council waste minimisation centre.

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Figure 1 Active Crimson Clover nitrogen nodules April 2021

COMMON CONTROL PLOT



Figure 2 Common Control Plot – No Treatment September 2020



Figure 3 Common Control Plot – No Treatment April 2021



Figure 4 Common Control Plot No Treatment April 2021

COMMON IMPROVED PLOT



Figure 5 Common Improved Plot - No treatment September 2020



Figure 6 Common Improved Plot April 2021 – Ryecorn germination



Figure 7 Common Improved Plot April 2021- Crimson clover germination

VARIATION 1 PLOT



Figure 8 Variation 1 Plot - No treatment September 2020



Figure 9 Variation 1 Plot - April 2021



Figure 10 Variation 1 Plot - April 2021

VARIATION 2 PLOT



Figure 11 Variation 2 Plot - No treatment September 2020



Figure 12 Variation 2 Plot - April 2021- Crimson clover germination



Figure 13 Variation 2 Plot - April 2021

MULCHING & SEEDING



Figure 14 Common Control Plot A & B - mulched & not disturbed



Figure 15 Common Control Plot A mulched



Figure 16 Common Improved Plot mulched



Figure 17 Variation 1 Plot mulched



Figure 18 Variation 2 Plot mulched

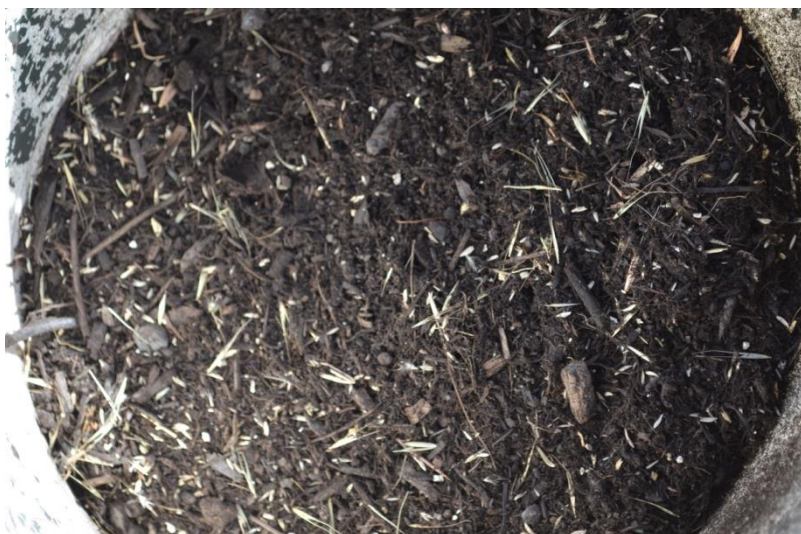


Figure 19 Native and Cocksfoot seed mixed with compost



Figure 20 Distributed seed mix covered with compost