

Healthy Soils, Productive Pastures

PASTURE TRIALS 2019-2023



Autumn 2023 update

The final stage for the rolling pasture trials under the 'Healthy Soils, Productive Pastures' 4 year program include two new trials that have been implemented. A winter active cover crop trial has been sown that includes rye, corn, oats and barley, as well as a bee pollinator blend. The second trial is for horses on hard-wearing properties, sowing pasture species trial that help maintain ground cover. A re-trial has also been undertaken sowing ryegrass in established kikuyu pastures.



Summer 2023 update

A number of the pasture trials have progressed over the summer. There was no germination of the rye grass (left to seed) in the kikuyu plot and therefore had to be sown again. The Subtropical species trial showed a dominance of the Katambora Rhodes species across this trial, outcompeting some of the other species in this blend. The Equine Blend eventually terminated itself possibly due to climatic impacts over a couple of years. Annual rye has been sown here to maintain ground cover in this plot.



Spring 2022 update

A pasture trial was established early October 2022 to partner with the soil biology field day. The trial aimed to demonstrate crop species that help build soil biology. In the case of this trial, there were mixed results but good lessons learned. Crops did not germinate successfully due to waterlogged conditions as well as on-going low soil temperatures due to La Nina conditions. There was some germination of Forage sorghum, 'Banker' sudan grass, Forage brassica; while 'Lantern' sweet sorghum, Sun hemp & Cowpeas did not germinate. Recently tropical grass species were oversown and have been successful despite the ongoing wet conditions. These species include: Premier digit grass (60%), Bambatsi panic (30%) and Cats Rhodes grass (10%).



Winter 2022 update

Winter 2022 shows the pasture trial looking productive and healthy. The subtropical species are dormant but the species has left a mulch cover that will protect the soil over winter. The rust trial is being grazed by the sheep who are preferring the softer rye grasses over the oats and barley at the moment. The kikuyu is going dormant over the cooler months with the annual rye that has been oversown into the kikuyu is establishing well.



Autumn 2022 update

This trial demonstrates a mix of flowering varieties designed to stimulate bee activity, the flower colours are white, yellow and purple. Species in the blend include Brassica, Radish, Vetch, Mustard and Clover. These species have high nectar and pollen levels. This mix is often used with tree crops such as almonds, avocados etc. The June 2022 field day saw participants learning about these different species that aid pollination. The LLS Demo Farm currently has native bee hives.



Autumn 2022 update

The Demonstration Farm pasture trial has been flooded 3 times in 12 months. March 2021 and 2022 and April 2022. In summary- Wet Area Blend- Summer fescue and clovers has survived being under nearly a metre of floodwater. Rye and Prairie Grass is reshooting again. Coastal Blend - the fescue is showing signs of leaf rust and root disease. Equine Blend -Patchy with areas of fescue that was damaged more in some areas across the paddock but is reshooting well in areas out of the zone that experienced the longest inundation. Hawkesbury Blend- Damage sustained where water inundation was the longest. Subtropical Blends- looks amazing, survived flood inundation brilliantly.



Summer 2022 update

Millet has been a popular choice of growers in the Greater Sydney Region due to lower input costs and flexibility of the species. Millet – (*Echinochloa esculenta*) is a fast growing species which provides late spring and summer forage for all classes of livestock. As a forage, millet can be sown at 15 to 30 kg per Ha, into cooler soil temperatures eg; 14 degrees plus which is a great trait in a cooler summer. Millet was sown to demonstrate its flexibility as it can be grazed by cattle, sheep and horses, it can be grazed from 60 cm in height, weather dependant, safely with no health issues. The millet has shown that as a lower cost option, it is ideal for many growers in the Sydney Basin due to the diverse range of animals kept on the farms.



Summer 2022 update

The site was prepared on the 9th of November, but rainfall and delayed trial seed arriving caused us to delay sowing. In a normal year, this would have been an issue, but the cooler soil and air temperatures have lead to a successful establishment of the Sub Tropical Species Trial. The trial was sown on the 18th of November, 2021 on 3 metre x 40 metre plots which equals 120 metres square. The varieties sown include Bambatsi Panic, Gatton Panic, Katambora Rhodes Grass, Callide Rhodes Grass, Premier Digit Grass, Northern Horse Blend these blends will allow the best side by side comparison. This trial of Sub tropical grasses will see which species are suitable for the area, with increasing warm temps and summer rain predicted.



Spring 2021 update

The Annual grass blend of Ascend ryegrass and Concord 2 ryegrass, which was sown in Autumn to give late Winter, early Spring feed has powered on with good grazing management and paddock rotation. The ryegrass was sown as a separate plot and also over sown into the kikuyu plots to show as the kikuyu dies off in the cooler weather the ryegrass can then grow through. The ryegrass will be grazed well into Late December/ Early January, weather permitting. This trial has certainly shown the benefit of sowing late variety ryegrass types to value add to any pasture system.



Winter 2021 update

With the cool season pasture species that were sown in Autumn have proved to be extremely successful. Five different blends were trialled plus a hybrid brassica. Each blend has measured between 3-3.5 tonnes dry matter per ha. Two different sowing methods were also trialled, direct drilling and hand broadcast over kikuyu has also been extremely successful showing that significant pasture improvement can be achieved without the use of multiple types of farm machinery.



Autumn 2021 update

The pasture trial was re sown on the 21 April 2021. The trial sowing was conducted under two different methods, direct drill and broadcast via a small spreader by hand. Seed species included perennial and annual ryegrasses as well as cool season seed blends. All grasses were sown at a rate of 30kg per ha to give us an even trial point to compare plant numbers per sqm in each of the plot. All plots received the equivalent of 125 kg of an N, P and K fertiliser at sowing. The new plot was sown with a hybrid Brassica crop @ 8kg per ha with an N, P & K fertiliser. This crop will have an additional equivalent of 100 kg of Urea spread next week. It was also sprayed with a selective herbicide prior post sowing and watered in.



Summer 2021 update

The summer crops of Kikuyu and hybrid brassica, worked extremely well for the flock of 20 sheep over summer. After an initial few days of a timed grazing period to get the sheep accustomed to the different type of pasture, they made short work of grazing it down. Within a two-week rotation, we ensured adequate ground cover and sufficient feed for the summer season. It was disease and pest free, and recovered well after each grazing. A one off spray of selective herbicide was used to control the Johnson and Crab grass. Lessons learnt was that the crop was successful in reducing the weeds that were able to germinate during the season. The crop will be ploughed in as a green manure crop in Autumn.



Winter 2020 update

With the cool season pasture species taking off we are looking forward to planning what is to be sown in Spring 2020. To reduce the weed burden to trial a crop that's completely different we plan to sow a brassica crop to grow over summer. This is a hybrid cross between radish and kale. Its suitable for sheep and cattle, is extremely palatable. It can be grazed in less than two months post sowing and can withstand multiple grazing's. It is also excellent to clean up a weedy site due to its dense foliage cover crowding out unwanted weed species. This species will be ploughed in next Autumn to get ready for sowing cool season species.



Autumn 2020 update

At the pasture field trial at the Greater Sydney Local Land Services Demonstration Farm, after a very hot summer, the pasture species sown in Spring 2019 have established and grown well over the cooler months. Species include Clovers, Lucerne, Fescue, Prairie and Rye Grasses. These plots compared the addition of compost and irrigation to control plots. Results of these additions did not show a significant difference.



Summer 2019 update

After an extremely hot summer, the main lessons we learnt was that the plot had a huge summer weed seed burden that needed to be controlled before the next crop was sown. Further more, the native species plot that was sown last spring did not established at all over the very hot dry summer. Thorough weed control and ideal conditions before sowing is necessary for native pastures to succeed as well as checking seed viability.



Establishing Pasture Species Trial- Spring 2019

The pasture field trial at the Greater Sydney Local Land Services Demonstration Farm has begun and was showcased to crowds at the 'Pasture Sowing Field Day' on the 11 September 2019. The field trial began with a soil test to assist soil preparation followed by sowing. This trial has sown four pasture blends suitable for cattle, horses and sheep in the Hawkesbury area. The trial consists of 16 plots where each pasture blend will trial four scenarios: 1) compost application and irrigation 2) compost application only 3) irrigation only and 4) no treatments. A grazing program will also be incorporated into the trial using sheep. This trial aims to assist primary producers in the Greater Sydney region around pasture management and resilience.