

Landmark pasture trial

Background

Farmers planning to renovate pastures can face an almost bewildering choice of varieties to select from. Victorian perennial rye grass is one of the best known of the ryegrass varieties and is still used by many. However, given it was developed and released in the early 1900's it's been superseded by many new and improved varieties. To look at this another way, this would compare to you buying rams from a breeder that had not done any genetic improvement in his flock for 100 years.

What was done

In 2017, two sites were sown to a wide variety of ryegrasses and clovers. These sites were monitored to determine those with the best fit for Kangaroo Island in terms of heading date and seasonal growth patterns.

The two sites were:

- S Glynn's - (Kohinoor Rd opposite Kingscote Landmark). A slightly alkaline soil ranging from heavy clay soil to sandy loam over limestone marl
- Tremaine's - pasture trial site (Playford Highway). An acidic deep loamy ironstone prone to waterlogging

Minimal rainfall during May and June 2017 presented some significant challenges.

The Glynn site was sown on the 2nd June but due to limited soil moisture, didn't germinate until early July. The lack of soil moisture affected the germination of several species with the ryegrasses establishing the most strongly. Several varieties of clovers struggled to germinate due to seeding depth concerns and patchy moisture. By the middle of September, several areas of the plots were under significant moisture stress and this worsened as spring progressed.

At the Tremaine site, seeding was delayed several times due to mechanical issues affecting seeding depth control.

Unfortunately, during this delay some cross contamination of several plots occurred and overall seeding density was not consistent.

Due to the plant establishment difficulties at both sites, no measurements were taken and only visual observations were recorded.

Results

1. Clovers

a) Glynn's

As expected, the clovers performed poorly due to the high soil pH. The medics performed well as they are adapted to alkaline soils.

The Persian clover did recover the best once conditions warmed up.

The rose clover also performed better in the dry conditions than others.

The main concern for the clovers was weed pressure swamping them when they were stressed.

b) Tremaine's

All the clovers had establishment issues with seeding depth.

The site was slightly waterlogged for a brief period in late August. As expected the Balansa and Persian clovers performed well with the waterlogging. The Yannicum sub-clovers were next best in terms of dry matter production.

The rest of the clovers performed poorly as they have less tolerance to waterlogging.

The Balansa did show some variation in flowering dates:

- Viper and Vista (late flowering varieties) stood out as definitely true to type flowering about 10-12 days after the other varieties.
- Cobra, surprisingly, was not much earlier than Paradana.

2. Annual and Italian Ryegrasses

a) Glynn's

There was some noticeable differences in early vigour at this site that corresponded with Tremaine's site.

- Atomic ryegrass had the best early vigour for about 6 weeks, then others caught up and went past it.

The significant effects of the moisture stress across the majority of the plots did not allow for any further comment on varieties.

Landmark pasture trial (cont.)

b) Tremaine's

This site performed well despite the seeding issues and there were some very distinctive production differences between varieties:

- Atomic ryegrass was definitely the fastest in the first 6 weeks, but was overtaken by several others during spring
- Burst was the earliest to flower
- The Diploids showed great tiller density compared to all the tetraploids, showing their value for grazing, however were much shorter in height
- The Italians were the last to mature and are possibly too late for most areas on KI to have any persistence via seed set

Late annual

- Rhambo produced a lot of leaf bulk – ideal for hay production in long season scenarios
- Zoom struggled

Mid annual

- Attain was the best of the mid maturity options – a great option for hay
- Atomic started out well but fell short of all the others (Amazon T, Astound, Vortex, Attain)
- Winter star II has now been replaced due to its poor early vigour in late sowings



Early mid annuals

- No real stand outs, most would suit the mid-season or earlier areas of KI for hay production
- Burst matured earlier than all the others
- Tetila performed the worst

Italian Ryegrasses

- Do your homework when looking to use Italian varieties. Some have far better winter production vs longevity and a vast array of heading dates.
- Commonly Italians are later heading than Annuals, this is of advantage in very wet areas or under irrigation
- The ability to carryover a summer into the second year is a key trait for selection

3. Perennial grasses & other species

The selection of varieties was very limited, the key focus being an alternative to Victorian Perennial Rye:

- Barberia hybrid ryegrass had great early growth and performed as well as the annuals right up until mid-spring. Then its growth slowed as it went into its reproductive phase with its very early heading date. It shows great promise for grazing systems
- Uplands Cocksfoot, was by far the slowest in the first year of establishment and requires careful paddock preparation to reduce competition. It also suffered plant thinning with the waterlogging at Tremaine's
- Wintas is a far superior variety for early vigour over all the perennial ryegrasses planted. It maintained this advantage through spring. As expected, Wintas outperforms Victorian perennial rye
- Victorian Perennial Rye showed significant levels of rust by the end of spring. All other varieties had improved disease tolerance
- The Plantains showed some promise at the Glynn site for that soil type
- Shogun is a hybrid but kept pace with some of the Italians, where its genetics are predominantly derived. Its key advantage is the late heading date and potential for multiple seasons.

Sponsors

- PGG Wrightson
- Valley Seeds
- Dyna-Gro
- Heritage Seeds
- Pasture Genetics
- Stephen Pasture Seeds
- Upper Murray Seeds
- AGKI - for the hire of the cone seeder & Landmark's contribution towards its maintenance and improvements.

For further information contact

Daniel Pledge, Landmark Agronomist
 Ph: 08 85532082 mobile 0428 810224
 E: daniel.pledge@landmark.com.au