

Grazier experience with *Stylosanthes* technology.

I. The use and significance of *Stylosanthes* on Wycheproof

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'Wycheproof', Mount Larcom, Queensland, Australia

The property

Wycheproof is an 8200 ha beef cattle property approximately 100 km south of Rockhampton and 30 km west of Gladstone. Our family has owned Wycheproof since 1962 and I have been there most of the time since then, after having come from the Clermont–Charters Towers area.

The country is basically undulating with approximately 30% being blue gum flats. The soils on the flats vary from deep friable dark soils to red duplex types. The flats were cleared many years ago and are now heavily grassed with natural pastures. The balance of the area is undulating to hilly, fairly well cleared ironbark and bloodwood country. These soils are mainly duplex with some friable brown deeper soils. The higher hills are quite rocky. This country is covered with native grasses, mainly black speargrass and kangaroo grass. Yearly rainfall is 850 mm.

The enterprise

Our original aim was to breed on the larger property at Clermont and forward yearling cattle to fatten at Wycheproof, which lies closer to the meatworks and is supposedly in a more reliable rainfall area. Our ideas on cattle policy have changed over the years as the cattle coming from the western country took 12 months to acclimatise. This was unacceptable to us, so we now run 1000 breeders and brand 650–700 calves every year. We have been fattening bullocks for the Japanese market over the years. However, these

markets come and go, so we are not specifically targeting any particular market at the moment. If there is a demand for steers or heifers for the live export trade, we supply that market. If there is a Korean order for lighter bullocks and the price is right, that is where they go. It makes it very difficult to plan policy for your property when the export marketing system for manufactured meat is so unpredictable.

The main thing is to be versatile, to be able to produce good quality cattle and maintain good condition on them throughout the year. We have a high percentage of Brahman in our herd, mainly for tick resistance and heat tolerance reasons.

Pastures

Our type of coastal speargrass country has always had a problem as the native grasses are good only for a short period of time each year. The challenge has always been to try to extend the fattening period for as long as possible by improving the pastures. Over the years, we have tried cultivating some of the flats and planting improved grasses such as green panic, buffel, rhodes grass and many other varieties in conjunction with a legume, with little success. They grow reasonably well for the first year after cultivating, then slowly deteriorate over the years until very little is visible. We have been told that this is due mainly to the poor quality of the soil and the low phosphate level (approximately 6 ppm).

Introduction of legumes into the pastures has been an on-going challenge in our area for many years. I can recall, in the mid-1960s, when the CSIRO had an experimental station at Rodds Bay, approximately 30 km from Wycheproof. They were trying to establish stylos in similar type country to ours and the best they could come up with in those days was Townsville stylo. It commanded a lot of interest in the area. However, one of the drawbacks, in my opinion, was that the

country had to be double stocked in order to get it established. This goes contrary to my beliefs as I don't like to see country overstocked. It packs the top soil down very hard and the moisture has a difficult job to penetrate the surface. If there is moisture in the soil, the earth worms become very active and help aerate the soil. This, in turn, lets more moisture in for the betterment of the pastures. The Townsville stylo in my area did not last for many years before the anthracnose disease got into it and curtailed its spread.

Our experience with Seca

In 1986, the DPI in Rockhampton approached us to see if we had land we could make available to them for trials on stylos. We gladly offered them the use of some 80 ha, as it was to our advantage to learn how we might improve the productivity of our land. The country was divided into 2 equal paddocks, burnt, and one paddock seeded with Seca and Verano stylo at a rate of 4 kg of Seca and 1 kg of Verano per ha. Cattle were put in both paddocks and the stocking rate remained constant at 1 beast/2.7 ha throughout the whole exercise. Cattle were weighed every 3 months and the weights were recorded. The stylos were very slow to establish and it was about 3 years before a good coverage could be seen, with Seca becoming the more prominent species. The weight gains of the cattle on the stylo were fairly modest for the first 2 years. However, once a good body of Seca could be seen, we had a weight advantage each year of 30–50 kg/hd.

Of interest was the fact that the cattle on stylo out-performed those on native pasture from June to August, when the native pastures had passed their peak and the Seca was still going strong (Figure 1). The seasons certainly had a bearing on the results, but we were constantly getting an extra 2–3 months fattening time which is very important when you are trying to finish your cattle at a younger age.

Seca planting at Wycheproof

After seeing the results of the DPI trial, we decided to start our own program of establishing Seca stylo in our native pastures, and in 1988, we broadcast a modest 250 kg of seed on to 100 ha. The results were not good as some of the areas

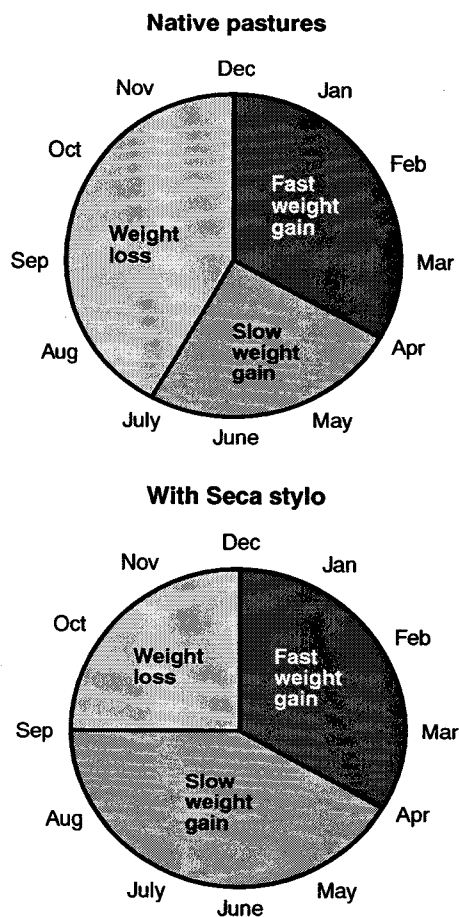


Figure 1. Yearly animal weight gain cycle with native pasture and pasture improved with Seca stylo.

planted (flats) were not suitable. They were either hit by frost or got waterlogged on our black soil, melon hole flats.

In 1989, we tried another 250 kg of Seca seed. This time, we stick raked 35 ha on a gentle undulating ridge and seeded it at 5 kg/ha. The aim was to establish a patch so that we could harvest the seed for our own use. The seasons weren't kind and it took ages to establish. It is quite thick now and looking good but we haven't harvested any seed from it yet.

In 1990, we broadcast another 500 kg of Seca, only this time, we increased the seeding rate to 5 kg/ha. We were wanting to see results more quickly. The aim was to establish areas of approximately 40 ha of Seca stylo in each paddock and let the cattle spread it from there.

The idea seemed okay, but with the run of dry seasons, the cattle have kept the plants very short and it has not had a chance to produce large numbers of seeds.

Seca grows quite well in the summer months if we get sufficient rain and while the cattle are mainly eating the native pastures. When the season gets dry, the cattle eat the Seca stylo down to the ground. I am now of the opinion that I should be planting larger areas of Seca in each paddock to get it established more quickly, or fence off the areas planted so that we can control the stocking rate a bit better.

We did not broadcast any seed in 1991 because of the dry season. However, in 1992, we planted out 1 tonne of Seca at 5 kg/ha with good results. We are slowly learning more about it and finding out what country it does well on and what country is unsuitable. I am much more confident now that, if I seed an area, I can expect to get a satisfactory stand of Seca stylo. We would prefer not to have a fire through it for the first 3 years if possible, so we try to burn the country before we plant. However, this is not essential as long as the grass is short and the seed can get to the ground.

We planted a further 500 kg of Seca in 1993 and one tonne in 1994. It was followed by 2 years of extremely dry weather and, consequently, the germination rate has been a bit patchy and disappointing in some areas. As each year goes by, we are seeing more and more Seca stylo plants and are even finding them coming up in paddocks which were not planted.

There are concerns in some areas about Seca stylo becoming too prominent in the pastures and eventually choking out the native grasses. This does not appear to be a problem for us at this stage. We have a long way to go yet before we have anywhere near enough Seca stylo on our property to show significant improvement in the performance of all our cattle. I believe that 30–50% Seca in our pastures would be quite acceptable, especially if it is confined to the hills. It loves the hard rocky hills. Since it has trouble surviving on our lower, flat, melon hole, black soil country because of frosts and waterlogging, I cannot see it ever taking over all of our county.

To date, we have seeded only by using a broadcaster on the back of a farm tractor. Now we understand more about the plant, where it grows, how it grows and what results we can expect. I am quite keen and confident to start seeding some of the higher country by plane. It is

a very slow, long-term program as you can do only so much each year as funds become available. You cannot expect to get a quick return on your money, and at times, you feel that you have wasted your money, especially when you get years of drought. However, I am still very keen to establish Seca stylo over all of our higher country.

I see enormous advantages with Seca for our whole herd as not only can we expect to get an extra 2–3 months weight gain in our cattle but also our breeders should perform much better with increased milk production and better calving percentages. Our weaners should perform much better also, as they would have been receiving more milk from their mothers. They are being weaned mainly between May and July when the Seca stylo is at a good stage. Normally, at that time of the year, the native grasses are all seeded and nearly finished so I see the Seca stylo as having a very important role in our overall management.

Seca will establish without tilling of the soil and it is self seeding. All it needs is about 5 days of continual wet or moist conditions and we find that we get a good germination rate if planted on the right country. The plants grow quite well without fertiliser. We have not fertilised any of our country to help the establishment or growth of Seca stylo as I would rather put that money towards more seed.

We do not supplement our cattle with anything unless it is extremely dry, and then it is only a high-urea block to help utilise the dry pastures more effectively. During the DPI trials on Wycheproof, they tried supplementing the cattle with a high phosphorus lick in the wet season but found that the cattle would not eat very much. We have not proceeded with trials in this direction as we get more benefit by reducing the dry period poor growth phase each year by a couple of months with the help of Seca stylo.

Other pasture systems

We have tried ponded pastures on the flats in a small way and have found that to be an interesting alternative as you are retaining the moisture on your land and have green feed there when you don't have it anywhere else. However, unless you have large areas of perfectly flat country with a good catchment area, it is very costly to establish by the time you build the levee

bank, fence the ponded area, manually plant the improved grasses and refrain from utilising it for a few years until the grasses become established.

Improving our pastures is and will be an on-going exercise for many years to come. I would prefer to be able to grow improved grasses such as buffel and green panic as I believe the cattle would perform much better on these. However, I

have to face the reality that our soils are not suitable and, at the present time, it appears that Seca stylo is the best plant we have available to use for the undulating to hilly speargrass country. We will be working towards improving our pastures in this direction for quite a few years to come. Possibly ponded pastures such as hymenachne, para grass and aleman have a role.