



## Subterranean clover and native pastures boost cattle performance on the North West Slopes

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### Introduction

Although subterranean clover is adapted to a Mediterranean climate it can be grown successfully on the North West Slopes of NSW as far north as the Queensland border. Native pastures in this area provide a stable plant community and are adapted to the local climate and low fertility soils but give poor production and feed quality during the winter months. The introduction of suitable fertilizer and a winter green legume such as subterranean clover into native pastures can provide a productive pasture. Both winter and summer production can be enhanced and stock performance increased provided that with correct management is applied.

There has been minimum use of sub clover in the Ashford/Bonshaw district on the North West Slopes because many producers consider this a marginal area for improved pasture. The average stocking rate on natural pastures in the area is about 1 beast to 4 hectares. Natural pastures on the sedimentary (trap) soils are unsuitable for fattening livestock for most of the year. Fodder crops are grown to provide feed for the winter/early spring period.

In response to good pasture and livestock performance on a 20 hectare native pasture paddock sown to subterranean clover a project commenced at "Llanarth", Ashford to monitor weight gains on cattle over a 12 month period.

### Paddock history

The paddock used for the project has sedimentary (trap) soil with low to moderate phosphorus and sulphur levels. The elevation is 410 metres and average rainfall is about 650 mm with a strong summer dominance. This paddock was sown to lucerne and subterranean clover by a previous owner but sowing rates of sub clover and fertilizer were very low. Native grasses had regenerated when the property was purchased in 1994. Single super at the rate of 125 kg/ha was applied to the paddock in autumn 1997 but there were only isolated plants of subterranean clover present. In May 1998 a super spreader was used to apply 125 kg/ha of single super with 5 kg/ha of Seaton Park subterranean clover. The subterranean clover established well and above average rainfall in the following winter/spring provided excellent clover growth. Stock records from mid June to late September 1998 indicated a stocking rate of 2.5 steers per hectare for 4.5 months. An inspection of the paddock in early 1999 prompted commencement of a project measuring weight gain on steers over a 12 month period. At this time there was about 3 t/ha of native grass in the paddock and it was a dark green colour presumably due to nitrogen fixed by the subterranean clover. The weight gain on the steers was excellent. There was no prescriptive form of grazing management practiced but the number of stock was varied according to available fodder. An attempt was made to graze native grasses heavily enough in the summer months to maximise fodder quality where possible.



## Results

A mob of 22 steers that had been in the paddock since November 1998 were weighed on 9<sup>th</sup> March 1999 and had an initial average weight of 395 kg. They were weighed again on the 4<sup>th</sup> May and had an average weight of 433 kg indicating a weight gain of 0.69 kg/hd per day; this is a good weight gain on native pastures in autumn. Very dry conditions prevailed in autumn/winter and another 10 head of steers were moved into the paddock giving a stocking rate of 1.6 head per hectare. Although there was a large quantity of dry feed in the paddock the quality was poor because of extremely dry conditions; when the stock were next weighed on 24<sup>th</sup> June, there was a substantial weight loss. This was a valuable lesson as livestock could have been maintained by appropriate supplementary feeding.

Rain fell during June/July and the stock were removed from the area to allow subterranean clover growth.

On 25<sup>th</sup> July 1999, 20 steers with an average weight of 211.5 kg were placed in the paddock for 81 days and another twelve 12 steers were added for about half this time. This gave an average stocking rate of 1.3 steers per hectare. When the steers were weighed on 14<sup>th</sup> October there was an average weight gain of 0.6 kg/hd/day for the 81 days.

Only 224.4 mm of rain was recorded at the site over the 6.5 months from mid March to early October. This was well below average but except for the May to July period, the steers were able to maintain a satisfactory weight gain.

Twenty steers that were left in the paddock on 14<sup>th</sup> October were weighed on 30<sup>th</sup> December. There was an average weight gain of 1 kg/hd per day for the 77 days at a stocking rate of 1 steer per hectare.

## Conclusion

The practice of introducing subterranean clover and applying superphosphate into native pastures has been more widely adopted because of this project; the expectation is that this will reduce the reliance on winter fodder crops and give similar production to that of fully improved pastures. Native pastures have the added advantage of being well adapted to the local environment and are a stable plant community that will survive severe drought conditions. Protein levels are generally low in mature native perennial grasses, particularly in the autumn/winter months. If legumes are not present, supplementary feeding with protein at this time may be necessary to maintain body weight.