

# Silvopastural Trials at Lundsville

## Introduction

Doug and Sue Campbell run a 5,000 hectare cattle property at Gaeta, near Gin Gin. The property has been in the family for 3 generations, since 1923. Connection to the land and to the local community has been important to the Campbell family since those early days. There are regular BBQ catch ups and an annual 22km cattle walk that people in the area get involved in.

The farm produces grass-fed beef (Brahman/Angus and Charolais/Simmental crosses) to the Grasslands Pasturefed Standard, participates in the Livestock Production Assurance (LPA) program and is registered with Meat Standards Australia (MSA). This means a commitment to high standards and regular audits. The Campbells' beef is 100% grass-fed and is produced without the use of hormonal growth promotants or antibiotics. Most products go to export, including to the European Union. As far as Doug and Sue are concerned, Australian farmers produce the cleanest and best meat in the world, and they are keen to uphold these standards.

As well as beef production, the Campbells occasionally harvest timber from their property. The native forest on the property contains several commercially important tree species, including spotted gum (*Corymbia citriodora* subsp. *variegata*), ironbark (*Eucalyptus crebra*) and forest red gum (*Eucalyptus tereticornis*). While the native forest has been harvested several times, there has been little management of the trees in recent times, until the Meat and Livestock Australia / Queensland Department of Agriculture and Fisheries project commenced in 2020.

Silvopasture is the practice of integrating trees, pasture and the grazing of stock in a mutually beneficial way. In the Producer Demonstration Site project at Lundsville, the aim was to measure the impact of managing tree density on beef and timber productivity, and to demonstrate the opportunities of integrating pasture and sustainably managed native forests. The benefit of forest thinning is to allow the better trees in any given area to access the available light, water and nutrients to grow faster.



Sweeping view of the Lundsville property at Gaeta, near Gin Gin.

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## Continuous improvement

Around 20% of the property is planted with improved pasture and legumes, which helps to keep the level of protein up to the herd. Native grasses such as black speargrass and Burnett bluegrass have a shorter window with high protein levels, which is why improved pasture and legumes are helpful. The cattle also help to spread the improved pastures seeds around, slowly but surely. Improved pasture species used as part of the Producer Demonstration Site project include signal grass, Rhodes grass, shrubby stylo, fine stem stylo, siratro and Caribbean stylo.

Around 2 years ago, the Campbells started to experiment with rotational grazing for their breeder herd, based on what they saw on neighbouring farms. The large paddocks were broken up into smaller paddocks, with help from a grant from the Burnett Mary Regional Group to install electric fencing. Doug and Sue were surprised at how well the cattle handled the new system, even the older ones. Although it's early days they have observed how rotational grazing helps to utilise the whole property, take pressure off the pasture and even to break the tick cycle.

Now that the infrastructure is in place and the cattle are used to being moved regularly it's easy to manage. Sue commented, "Rotational grazing means that you spend more time with the cows and learn their habits. I can muster 170 cows into the yards by myself, life is easier and there is less time spent on the horses mustering. The cattle are more settled now that they are educated in the new routine".



Doug Campbell examining some of the improved pasture planted as part of the silvopastural trial.

# Silvopastoral Trials at Lundsville

## Integrating timber with cattle

While cattle prices are fantastic at the moment, it's not always like that. In the Campbells' lifetimes they have seen some poor times and probably the best times too. However, there is always the risk that there will be another slump in the market in future, like there was in the 1970s, and the availability to harvest timber in the tough times provides a secondary source of income. It's also important to manage the private timber resource as Queensland will always need timber.

In order to make the best of the timber resource however, the forest needs to be managed sustainably. That means silvicultural thinning, or removal of the defective and non-commercial trees, to maximise the growth of the best trees. Luckily that also benefits the pasture and the cattle.



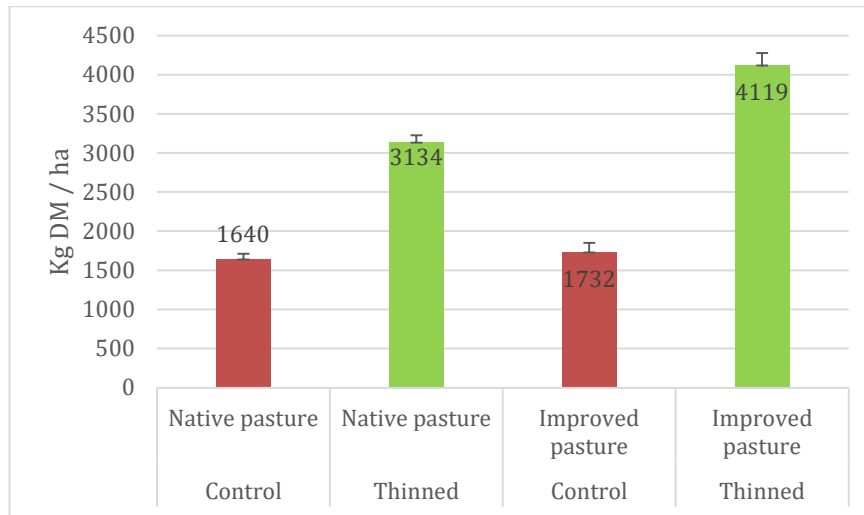
Doug Campbell and a spotted gum tree, with improved pasture beneath.

## Results from the silvopastoral trials

Plots were established with two forest different treatments: thinned and unthinned. In the thinned areas, the trees with the highest potential to produce timber products (commercial species, straight, with minimal damage or branching) were selected and retained, and other trees were removed. The average initial stand density without thinning was 350 stems/ha and after thinning, this was reduced to around 95 stems/ha. The pasture in the demonstration plots also had two treatments: native and improved pasture.

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In July 2022, 10 months after the improved pasture was sown and thinning was completed, the amount of pasture had increased markedly compared to native pasture under unthinned forest.



## Tips for other producers

If other producers are thinking of managing their forests sustainably, Doug and Sue have some tips to share:

- Know your tree species and the value of the timber.
- Get some advice from a group such as Private Forestry Services Queensland (PFSQ.org.au) to learn which trees to keep and which to cut out. You need to get the stocking rates right and ensure that you retain several generations of trees.
- Go to field days, where you can chat to your neighbours about their experiences. Field days spark conversations on different topics, and you learn a lot.
- Learn how to manage trees and grass, you need the land to produce something while the trees are growing.
- Get involved in research projects if you can – learn from the experts and other growers.

## The future

The Campbells plan is to keep on going the way they are and to keep on learning and improving things. As the cost of living continues to rise, it's important to keep improving the land and getting the right balance between cattle and timber. As Doug says, "Timber is an industry that will profit you in the end if you can manage the trees properly. It's a continual cycle and it's sustainable for ever".