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ILC2018 Poster and Producer paper*

Ingelara Grazing: Leucaena in speargrass country, Queensland, Australia

Ingelara Grazing: Leucaena en pasturas nativas de Heteropogon contortus *en Queensland central, Australia*

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Background

Ingelara is a 7,280 ha property located 20 km from the Carnarvon National Park in central Queensland. It was originally operated as a breeding block, selling store cattle, as there was no capacity to fatten. The establishment of leucaena on Ingelara has allowed us to change to a breeding and fattening operation. Ingelara receives an average annual rainfall of 750 mm and consists of loamy creek flats, leading into narrow-leaf ironbark ridges. Cunningham and Peru cultivars of leucaena have been established across 445 ha, and the oldest plantings are 30 years old. Forage oats is also grown on 240 ha. Our crossbred steers (combinations of Simmental, Brahman and Angus; Figure 1) are sold to Teys Abattoir, Biloela and we target premium EU and PCAS markets. By grazing leucaena, these steers reach market weights at under 24 months of age, averaging 300 kg dressed weight and are graded into Meat Standards Australia (MSA) boning groups 1 to 8 (Figure 1).

Leucaena in speargrass country

In the early 1990s we started clearing creek flats to grow forage crops including oats, lablab and Sugargraze forage sorghum. When we observed the benefits achieved on the neighboring property 'Nyanda' from planting leucaena, we realized that black speargrass (*Heteropogon contortus*) flats could be transformed into sustainable, prime fattening country. We started planting leucaena at 6–8 m inter-row spacing on our farming country. Aside from some weed pressure, leucaena established easily on our soil types, particularly the deep (>6 m) well drained loamy creek flats. Paddock production losses (opportunity cost losses) were kept to a minimum during the establishment stage as forage oats was grown between rows in the establishment year. We adapted our existing machinery for use in planting leucaena and performing cultivation to control these costs. Leucaena was planted straight into the oat stubble from a previous crop using a seeding rate of 2.5 kg/ha at a depth of 2–3 cm. We consider the optimal sowing time is October–December but have planted as late as the end of February. For weed control at the planting stage, we used Fusilade® (250 g/kg fluazifop-p-butyl; for grasses) and Basagran® (broad-leaf) on the strip rows and, once leucaena was established, have not needed to control weeds. We estimate establishment costs of approximately $200–250/ha, on land that was already cultivated for oats.

Figure 1. Crossbred steer on Ingelara in 2018.

Leucaena management

Leucaena is managed in a 3-stage cycle at Ingelara.

Stage 1

We manage leucaena under a rotational grazing system using a 4-paddock system and a 200-day cattle rotation.

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In the wet season, when leucaena is green (Figure 2), our steers run in one mob and are moved when the paddock has been optimally grazed and needs a rest. Approximately 450 steers, with a start weight of 300–350 kg, enter the system in November (depending on rainfall) and achieve average daily liveweight gains (ADG) of 1–1.2 kg/head or 200–220 kg/head over the 200-day grazing period. Forage oats are also planted in other paddocks for grazing during the winter.

Figure 2. Leucaena has regrown and is ready for the first grazing rotation.

Stage 2

With the onset of frosts (Figure 3) around June, our cattle are moved from the leucaena pasture to the oats paddocks (Figure 4) at weights ranging from 500 to 550 kg. Steers graze on the oats until they reach target slaughter live weights of 560–600 kg. Ninety percent of leucaena plants are frosted to ground level in winter (July) which controls leucaena height. For leucaena which is not frosted, height is controlled by cutting or pushing with a bulldozer. Weaner steers are moved on a rotation through frosted leucaena paddocks and graze on inter-row Callide Rhodes grass until spring.

Figure 3. Frosted leucaena (Stage 2).

Figure 4. Oats paddock to which steers are moved after frosting of leucaena (Stage 2).

Stage 3

The leucaena is spelled in spring for 6–8 weeks to allow adequate regrowth (Figure 5). Rumen inoculum (*Synergistes jonesii*) was introduced on one occasion approximately 10 years ago. We could not detect any noticeable benefit from the drenching and consider that these organisms must be widespread across our environment.

Figure 5. Leucaena re-shooting in spring following frosting and a 6–8 week spell (Stage 3).

Limitations and challenges

One of the biggest challenges is controlling the spread of leucaena from designated paddocks into creeks and waterways. We have a poisoning program in place to control leucaena spread into riparian areas and manage our grazing of leucaena stands to minimize seed-set.

The most significant leucaena production losses are associated with leaf loss from psyllid attack in wet and humid years. The last psyllid outbreak was in the mid-2000s and we estimate that weight gains were halved. Aerial spraying of psyllids with Rogor (dimethoate) is the only effective control method and suppresses psyllids for only 2–3 weeks. We consider it is undesirable to spray our paddocks regularly, although there is no withholding period before slaughter on this chemical.

Establishment failures have been experienced only in wet areas or on clay soils (box or sandalwood country) and where soil types were appropriate, establishment has always been successful.

Summary

We intend to expand areas sown to leucaena at Ingelara when seed of the Redlands variety becomes readily available. New plantings will be into cultivated strips and we will not be ploughing whole paddocks. The aim is to use leucaena on areas that are inundated during the wet season, and on some hilly country to reduce the risk of erosion. The use of leucaena has transformed our business from one of breeding and selling store cattle, into breeding and selling top quality prime finished cattle. The value of our land has increased from $3,700 to $12,000/ha. Growing leucaena is the single most important element in our system. In the future, we intend to trial slashing leucaena to ground level in an endeavor to improve leaf volume in our non-frosted areas.

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