



lippia
case study



Establishing equilibrium

Lippia management technique: long-term development of competing introduced pastures

Property name: 'Taraba'
Location: South Toobeah, QLD
Manager / owner: John and Liz Wood

background

'Taraba' is a 4500 ha (11,120 acres) property on the Macintyre River floodplain approximately 70km west of Goondiwindi.

Key Points:

- Floodplain property on Macintyre River
- Dealing with the challenge of long term management of grazing country infested with Lippia
- Bambatsi planted to compete with Lippia
- Had most success in paddocks that were cropped for 2-3 years before sowing to bambatsi
- Establishing 'equilibrium' can take up to 10-15 years

John and Liz bought 'Taraba' in 1968 as undeveloped land. Over the ensuing years they developed half the land (2200 ha [5435 acres]) to cropping wheat, cotton, sorghum, barley and faba beans, leaving the rest for grazing. They have selectively cleared most of the grazing land and sown half of that area (900ha [2224acres]) with introduced pasture.

The native grasses represented on 'Taraba' are Queensland bluegrass (*Dicanthium sericeum*), feathertop wiregrass (*Aristida latifolia*), umbrella grass (*Digitaria divaricatissima*), neverfail lovegrass (*Eragrostis setifolia*) and Flinders grass (*Iseilema* sp).

When the Woods first moved onto the property there was one lower, more open paddock on the floodplain heavily infested with Lippia (*Phyla canescans*). At the time they assumed it was a native and "part and parcel of this country". Over the years it spread and is now present over almost the entire property.

John and Liz first started developing introduced pastures in 1972 to increase productivity. However from the late 1980's onwards it became obvious that further pasture introduction was necessary for the sole purpose of managing Lippia. The increasing presence of Lippia on paddocks in the floodplain after flooding events was reflected in reduced stocking capacities.

John says that under his present grazing regime his native pastures are not able to out-compete Lippia and give good production. Lippia has effectively displaced many of the native grasses present at 'Taraba.'

control strategies

1. Pasture establishment

John has planted exclusively with bambatsi (*Panicum coloratum* var. *makarikariense*), maintaining that it suits the natural conditions of the property, provides good feed, and is capable of competing with Lippia.

John has used two main methods to establish pastures: either cropping the paddocks for two to three years with sorghum or barley before sowing to pasture; or sowing straight to pasture.

2. Spraying

John has trialled spraying paddocks with 2,4-D amine and DP600 (Lantana 600™) after sowing pasture seed. This process had a variable success rate and John concluded that it was not economically viable. However John does intend to trial the use of Amicide 625 as a tool for managing heavy infestations of Lippia, with the hope that it will allow other pastures to get a competitive edge.



Funded by:





the outcome

John believes that generally, in his bambatsi pastures, equilibrium eventually develops between Lippia and bambatsi, after a period of between 15 to 20 years. John defines this 'equilibrium situation' as one where there is a good cover of bambatsi, but Lippia persists between grass tussocks. John is happy with the stocking rate achieved in these equilibrium type situations.

According to John, the time it takes to reach this equilibrium stage largely depends on the initial establishment. Initial strike depends on the method used (cropping for three years before sowing to pasture, or sowing straight to pasture), and the weather conditions during the first year of establishment. John believes bambatsi establishes best with a light flood during the first year.

John has had the most success in paddocks that were first cropped before being sown to bambatsi. These paddocks had a good strike rate and reached the equilibrium stage relatively quickly. Paddocks that were sown straight to pasture have generally had a poorer strike rate and were quickly re-infested with Lippia. John thinks this is because cropping develops the soil into a better seed bed.

While John has found that cropping for three years before sowing to bambatsi is the most effective way to establish the pasture, he says that this requires extra work and also makes the point, "Some areas are not suitable for cropping for three years – the flooding risk is too great."

the future

John and Liz intend to move to a rotational grazing system in the next few years. This will be another tool for improved management of Lippia infested pastures. With rotational grazing, John believes they will be able to achieve the following:

Approximate cost of developing introduced pasture on Lippia affected land on Taraba:

Blade plough:	\$80 / ha
Leveling:	\$20 / ha
Two sprays (Roundup @ 1.5L+ Amicide 625 @ 2L/ha):	\$68 / ha
Seed (2.5kg/ha) and plant:	\$44 / ha
Total:	\$212 / ha

- increase the overall stocking rate of the property
- achieve a higher bambatsi coverage in the introduced pastures
- increase the competitiveness of their native grasses against Lippia
- increase the productivity of these paddocks
- reduce the incidence of woody weeds and weeds in general

John and Liz are partnering their Lippia management strategies with a three year monitoring program in their bambatsi and native pastures.

Lippia has been a major problem on Taraba for many years and has necessitated very costly pasture development over an extended time frame. While John and Liz believe Lippia will always be present, they hope that, with introduced pastures a cell grazing system, it will become less significant.



Above: John in a poorly established pasture. This paddock wasn't cropped before being planted with bambatsi. Despite the sparsity of grass tussocks, John says the bambatsi will eventually increase its extent to become a productive pasture.



Above: a well established pasture approaching the 'equilibrium stage'. This paddock was cropped for two years before being sown to bambatsi. John hopes that spraying this paddock with Amicide 625 will speed up the time taken to reach equilibrium.