



lippia  
case study

# Competition in practice



**Lippia management technique:** competitive pasture alternatives and grazing management strategies

**Property name:** 'Boundary farm'  
**Location:** 12 km NE of Leyburn  
**Manager / ownership partner:** Alan Teakle

Left: Alan Teakle, 'Boundary Farm'

### KEY POINTS:

- Introduced pastures intercept floodwater, shade out Lippia and provide stock feed
- Rotational grazing allows maximum pasture growth for feed and assists pasture competition with Lippia reducing bare soil significantly
- Lippia infestations in riparian zones more difficult to manage
- 324 ha (800 acres) of flood plain country near the Condamine River
- 243 ha (600 acres) farming, 81 ha (200 acres) grazing

### background

'Boundary Farm' comprises 324 ha (800 acres) of black soil, floodplain country in the Condamine River catchment. It is primarily a farming property with 243 ha (600 acres) under cultivation. The remainder is grazing land and fattens around 50 steers annually. Flooding usually occurs every two years with a major event every ten years. When Alan purchased the property in 1995, Lippia (*Phyla canescans*) was present, but Alan has noted that it has since thickened and spread.

### effects of lippia



Lippia has compromised the grazing capacity of 'Boundary Farm' by displacing native grasses, limiting grazing potential.

The presence of Lippia has hindered the establishment of introduced pastures, which were a key strategy for Alan's flood control measures.

Above: Lippia. Photo: Sheldon Navie

Alan has observed Lippia causing environmental damage on his property; with native vegetation being displaced and slumping and erosion occurring along creek banks. As Alan says, "With the help of the recent drought, the deep rooted Lippia has become the dominant weed."



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## control strategies

### 1. Flood control measures

Alan believes that Lippia is chiefly distributed by floodwaters; consequently, "Our Lippia control is linked to our flood control measures."

Between 1995 and 1999, Alan implemented flood mitigation measures, converting cropping land around his watercourses to pasture to act as a buffer zone. He also established a drainage system for the area in cooperation with neighbours. Alan believed this would achieve:

1. Minimise flood damage by reducing bare soil and slowing the flow of floodwaters
2. Trap weed fragments and seed carried by floodwater and prevent them from establishing in the cropping areas
3. Provide feed for cattle

Later, (in 1999 and 2001) Alan converted two cropping paddocks to permanent pasture. These paddocks (a long, 14 ha paddock on the eastern edge of his property and a smaller paddock incorporating the spillway of a weir) are strategically placed to intercept flood waters from the Condamine River and spillage from the weir respectively, and perform a similar function to the 'watercourse paddocks'.

### 2. Pasture establishment

Alan's pasture establishment methods form a key role in controlling Lippia. Alan establishes his pastures much like a crop; cultivating in autumn and sowing seed and fertiliser in spring. He believes that establishing a good seed bed at the right time of year is critical in out-competing the weed.

Because grass seed is very small and not really suited for use in a traditional planter, Alan mixes the seed with starter phosphate to 'bulk out' the seed and ensure even and correct application through the planter.

The primary species Alan uses is floren bluegrass (*Dicanthium aristatum*), which survives well in waterlogged conditions and is highly palatable to stock. Alan tried bambatsi (*Panicum coloratum* var. *makarikariense*), but found that its poor strike rate and slow growth rate was no match for Lippia, with Lippia quickly reinfesting and dominating trial areas. Floren bluegrass, however, has proven to be vigorous and has resisted any Lippia



**Above:** one of Alan's 'buffer paddocks' – cropping to the left and a shallow gully to the right. This paddock is predominantly floren bluegrass. The grass is very thick with only the occasional patch of Lippia.

**Below:** floren bluegrass paddock, established 1999. There is now limited bare soil, and no Lippia.





infestation on 'Boundary Farm'. Floren bluegrass shades the Lippia and grows in 'plates', so, once established, there is minimal bare soil for the Lippia to colonise. Alan believes that once floren bluegrass is established it will out-compete anything on his property.

Importantly, floren bluegrass provides excellent, palatable feed through the second half of summer and into winter. As Alan says, "Floren is a good standing hay in winter." For example, through the winter of 2004, a well grassed 14 ha paddock, with protein and molasses supplement, maintained 27 steers for eight weeks and 35 heifers for 12 weeks. It should be noted that the floren bluegrass on 'Boundary Farm' was fertilised with nitrogen every year to sustain vigorous growth.

More recently (2002 to 2003), Alan tried a mix of fine-cut rhodes grass (*Chloris gayana*), lucerne (*Medicago sativa*) and a light population of floren bluegrass in some higher paddocks. At this stage the rhodes grass is dominating these areas and providing spring stock feed to balance the autumn vigour of floren bluegrass. "Rhodes grass covers the ground well, but won't take too much waterlogging," Alan said. "But it helps us work towards year round stock feed for the steers."

### 3. Spraying in less accessible areas

Alan has been less successful controlling Lippia in the low lying gully, drain and creek bank areas on his property where slope renders cultivation unsuitable. In one more accessible area he tried cultivating in strips, which proved moderately successful, but otherwise has been restricted to spraying the Lippia with 2,4-D amine and DP600 (Lantana 600™), then seeding with floren bluegrass using a fertiliser spreader. Results of this technique have been patchy.

### 4. Grazing management

Grazing management strategies have also been implemented in an attempt to manage Lippia. Alan is practicing rotational grazing, locking up paddocks until a good body of feed exists and then allowing cattle to graze for limited periods of time. Alan explains, "Grazing this way ensures that grasses aren't continually 'flogged' and are able to recover, and shade out and out-compete the Lippia. This grazing regime also gives production benefits - stock have more high quality feed year round."

## the outcome

The establishment of dense pastures has provided flood protection and stock feed, sometimes in less than six months from planting. Alan achieved this result after trial and observation of several pasture species. Major challenges have included pasture establishment in gullies and long, dry periods of drought. The grazing management program has been integral in facilitating pasture competition against Lippia. Rotational grazing has lowered feeding pressures on the pastures whilst maintaining carrying capacity.

Controlling Lippia on 'Boundary Farm' is an ongoing process and Alan believes he will never completely eradicate it from his land. However these measures have significantly reduced Lippia and minimised its impacts.