Feed availability in mature leucaena paddocks

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Introduction

Leucaena (*Leucaena leucocephala*) is a valuable forage legume that increases productivity and profitability of cattle enterprises. However, on-going poor management can result in tall growth where much of the edible biomass occurs above cattle browse height. This can lead to the undesired establishment of dense volunteer leucaena plants and suppressed inter-row pastures which further reduces grazing value. The leucaena paddocks established > 45 years at Brian Pastures Research Facility (near Gayndah, south-east Queensland) illustrate these challenges and provided a basis for assessing the distribution dynamics of accessible versus inaccessible leucaena biomass for grazing cattle.

Methods

In May 2025, 16 representative sites across four paddocks were selected for leucaena and pasture biomass measurements. At each site, a 3 m section of leucaena row was marked. Edible leucaena biomass (leaf and stem to 5 mm diameter) was hand-stripped into three components: (i) biomass < 2 m high (within browse height), (ii) biomass > 2 m high (above browse height), and (iii) biomass on volunteer plants in inter-row. Total grass pasture biomass was cut (using 0.25 m² quadrats) from 4 representative areas per site. Samples were oven-dried at 75 °C and converted to dry matter (kg/ha) using row dimensions and quadrat area.

Results

Total edible leucaena dry matter averaged 1,286 kg/ha across the sites. 123 kg/ha of edible dry matter was under 2 m (10%), 767 kg/ha was above 2 m (60%) and 396 kg/ha (30%) was contributed by volunteer plants. The companion grass dry matter averaged 352 kg/ha across all sites.

Discussion and conclusion

Although total dry matter biomass was typical for leucaena systems (Bowen et al., 2016), in these paddocks the majority (60%) was inaccessible to cattle and 30% was growing in the inter rows, competing with grass. Although leucaena provides high-quality leaf, the balance between grass and leucaena is integral to maintaining high cattle liveweight gain and stocking rates, and long grazing periods (Bowen et al., 2016).

The feed distribution dynamics in overgrown leucaena systems reflect the broader challenges in managing mature leucaena stands. Research and commercial experience suggests adaptive grazing practices are important to sustain grazing productivity (Buck et al., 2019). While mechanical renovation is recommended when forage grows beyond browse height, economic analysis is also needed to determine whether the benefits of renovation justify the costs.

References

Bowen M, et al. (2016) Animal Production Science 58(2) 332-342

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