Book review

Leucaena — A guide to establishment and management

By Scott Dalzell, Max Shelton, Ben Mullen, Peter Larsen and Keith McLaughlin. Published by Meat and Livestock Australia Limited, 2006. 70 pp.
Price AUD$30 (MLA members), AUD$60 (non-members), AUD$120 (overseas buyers).
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When asked to carry out a review on the above publication, we readily agreed as our knowledge to date has been based around a few articles and case studies published in rural newspapers such as the Queensland Country Life etc. and also being extremely impressed seeing the end result with steers coming off an irrigated leucaena block on the Ord river scheme in the early 1990s.

Hearing that more and more country around central Queensland is being planted to leucaena and recently moving to a property on the beef road north of Dingo, we started wondering about the following questions:

- Are our heavier scrub / clay-based soils suitable to successfully grow leuceana?
- If so, how risky is trying to establish dryland leucaena and is our varying annual rainfall enough to successfully establish leucaena?
- As we aren't farmers, are we able to leave strips of grass in the paddock to reduce pre-working and grass establishment costs?
- Our questions went on and on but the main one was — What would be the total cost involved in establishing leucaena if we did not have any gear?

The book answered all of the above questions in plenty of detail and any others that came up along the way. It seems the more you think about taking on a new enterprise, especially one with expensive up-front costs and an element of risk, the more questions you have. However, we are confident, after reading and re-reading the book *Leucaena — a guide to establishment and management*, and given the right soil preparation and profile of moisture, that growing leucaena is an option for us and something we have added to our 5-year plan.

The book starts off with an introduction to leucaena, what it is and why you might consider planting it. This includes a long list of benefits, which suggest leucaena not only improves the weight gain of your cattle but also improves the overall sustainability of your country through improved soil fertility, reduced erosion and salinity to name a few. This section is finished off with a balanced list of limitations to keep in mind.

The largest section of the book details how best to establish leucaena from selecting the correct climate and soil types down to the most suitable paddock. This follows on to the choices of seed varieties, with reasons for and against, and land preparation and the reasons you might go for clean cultivation as opposed to leaving grass strips. As you move through this section, there is a detailed discussion on the numerous planters available and pros and cons of varying row spacings, insect and weed control and how you will need to consider all the options available for companion grasses once your leucaena is established.

The third section of the book covers the general ongoing management of the leucaena plant. Topics covered include: issues for the plant itself like mineral requirements and how to troubleshoot any deficiencies it may encounter; the importance of height management; and how and when to control psyllid attacks. It also discusses irrigated leucaena, establishment, water management and height and grazing management and the significant productivity increases that can be achieved with irrigated leucaena.

The book then moves to grazing management, discussing leucaena growth and how this affects carrying capacity, particularly the Rainfall Use Efficiency (RUE). RUE is the amount of leucaena forage that can be grown per mm of rainfall and it varies according to how the stand is managed and environmental conditions. This section has easy-to-understand tables and graphs detailing such things as "Relationships of liveweight gain with intake of leucaena" and a table showing calculations of carrying capacity for 450kg steers on leucaena-grass pasture based on RUE and assuming 35% leucaena in the diet.

In the grazing management section, regrowth following grazing and the various grazing systems are outlined. The three distinct phases of growth (lag period, rapid leaf production and woody growth period) are described and appropriate rest/inter-grazing periods to optimise performance and minimise wastage are discussed. As in any grazing system, the grazier has to decide which grazing system is most suitable to his/her particular situation, *e.g.* continuous grazing, seasonal grazing, rotational grazing or cell grazing. The book clearly outlines the pros and cons of each grazing system and how it might fit into your overall grazing system.

Having addressed the issue of best grazing management for the leucaena, the book moves into the strategic use of luecaena, how it can be used to best advantage and to minimise wastage. As well as filling a protein gap, leucaena is shown to have many strategic uses, such as adding those extra kilos or condition to ensure any class of animal, going to slaughter, meets the targeted grid specifications. Other possible uses listed include 'spike' feeding of heifers before joining or calving or conditioning stud bulls for sale. All of these issues we would like to achieve but at times find them difficult depending on grazing conditions.

Lastly, in Section 4 of the book, leucaena toxicity and the leucaena 'bug' are discussed. The book outlines the history of leucaena toxicity and its effect on productivity, how to obtain the 'bug', and how to introduce and maintain the organisms in your cattle.

Although quite short, Section 5 — *Leucaena costs and returns*, is straight to the point with discussion

on aspects like Cost of establishment and Returns during and after establishment. Individual tables cover issues like: a cost calculator for establishing leucaena on old cultivation country at contract rates; and potential gross margins for leucaena, both in the establishment year and once established. The question, "Is converting from a buffel grass pasture to a luecaena pasture the best investment?", is answered with a short but exact scenario discussing the two different productivity outcomes. The outcome with leucaena is positive even without allowing for the benefits in relation to buffel run-down. Lastly, this section discusses the economics of planting irrigated leucaena.

The last section, Section 6, discusses leucaena and its impact on the environment. As the heading suggests, this section outlines the sometimes forgotten effects some introduced plants can have on our environment. The authors highlight the potential weed threat of leucaena, and outline how the Leucaena Network has developed a voluntary Code of Practice for the sustainable use of leucaena-based pastures in Queensland. It further discusses how a Queensland government policy was agreed on by EPA, DPI&F and DNR&M "to reduce the weed threat of leucaena." Lastly, the book details how to control unwanted plants, should you need to, via chemical or mechanical control.

To conclude, we have found the book to be extremely beneficial in terms of the aspects covered and the level of detail within each section. It is very easy to read and understand and is very well illustrated with excellent photographs, tables and graphs throughout. We found the small sections, highlighted in green, to be a very useful tool to help summarise important aspects, largely by use of dot points, throughout the book. We believe this book would be very useful to anyone interested in leucaena, including students, consultants and particularly producers, who may be thinking of planting luecaena. It is excellent value for money, with the knowledge gained from reading this publication far outweighing its cost for us.

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