

# LEUCAENA FOR PROFITABLE & SUSTAINABLE BEEF PRODUCTION

## WHAT IS LEUCAENA

- Leucaena is a high quality, long-lived leguminous forage tree. It is well adapted to the >600 mm rainfall zone of Queensland.
- It produces very palatable, nutritious, high protein leaf for cattle, giving liveweight gains of 250-300 kg/hd/yr. This is twice that of grass only pastures.
- Leucaena is normally planted in rows 5-6 m apart with grass in between and directly grazed by cattle.
- Plantings can be extensive with 400 ha (about 1-2 million trees) per property not unusual (see photo).
- More than 100,000 ha has already been planted in Queensland by 400-500 graziers.



## AGRONOMIC & NUTRITIONAL ADVANTAGES OF LEUCAENA

- It is adapted to fertile sub-coastal clay soils, where it is planted without the use of fertilisers.
- It reverses soil nitrogen decline (nitrogen 'run-down') in pure grass pastures, and when used to replace annual cropping systems.
- It has a deep root system, which imparts a high degree of drought tolerance, and it produces green forage almost year-round.
- It is an excellent drought mitigation strategy.
- It is highly persistent once established, with a life span in excess of 30-40 years, and is therefore a sustainable pasture feeding system.
- It has exceptional crude protein content (up to 30% in leaf), with high content of the essential elements required by cattle (except sodium and iodine).
- It has very high palatability, low fibre content, and high digestibility.
- Leucaena contains condensed tannin that imparts 'by-pass' protein characteristics resulting in more efficient protein utilisation by cattle.

Cattle fattened on leucaena (above) from large-scale plantations in Central Queensland (below) produce beef of superior quality and can meet all premium domestic and export grass-fed market specifications.



## VALUE OF LEUCAENA FOR SALINITY AND WATER QUALITY

- Leucaena is a deep rooted tree that prevents seepage of water through salt zones into ground water in recharge areas.
- Leucaena is suited to the high salinity hazard areas of several Queensland catchments (see photos over page).
- Leucaena is a profitable and sustainable large-scale revegetation option for the recharge areas of the Burdekin, Fitzroy, Burnett, Condamine and Lockyer catchments.
- Leucaena reduces runoff and soil erosion, and water quality is improved.
- Leucaena is salt tolerant and can be grown in moderately saline areas, although its real benefit will be in recharge areas.
- Farmers & graziers planting leucaena areas will be in a financial position to negotiate complementary bio-diversity, conservation and vegetation protection outcomes for whole property environmental plans.
- Leucaena development can be integrated with whole property planning and with whole catchment management planning goals.

## ENVIRONMENTAL BENEFITS OF LEUCAENA

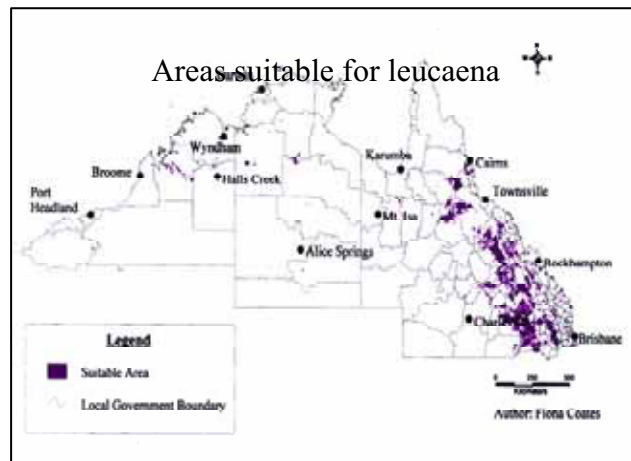
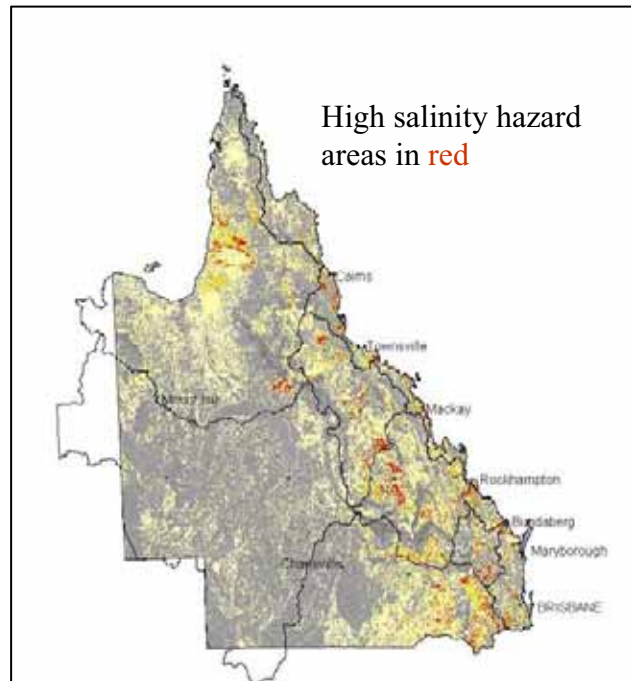
- Leucaena systems use little or no artificial fertilizers, and soil fertility is improved from biological nitrogen fixation.
- When grown with a vigorous grass component (e.g. buffel, rhodes, bambatsi panic) it prevents soil erosion.
- Leucaena pastures are productive and persistent under grazing, enabling cattle to be moved off ecologically fragile native pastures & vulnerable riparian zones.
- Leucaena pastures sequester approx. 500 kg carbon/ha/year in the first 4 years after establishment.
- Methane emissions from cattle grazing leucaena will be substantially reduced due to the higher quality of the pasture.

## BENEFITS OF LEUCAENA FOR GRAZIERS & COMMUNITY

- Leucaena/grass pastures are the most productive and sustainable grazing systems available for Northern Australian graziers.
- Leucaena systems produce a high quality product (similar to feed-lot beef) suited to quality conscious domestic and Asian markets. It produces cattle that meet all market weight and age specifications.
- Leucaena systems are highly profitable for farmers, and contribute to the viability of rural communities.

## CAN LEUCAENA BECOME A WEED?

- A weedy subspecies of leucaena entered Australia over 100 years ago and is a minor weed in coastal environments of Queensland.
- There is less than 10,000 ha of weed leucaena in Queensland.
- **The Leucaena Network** is working with Local Government personnel to assist with the control of feral leucaena stands on public lands.
- Whilst there has been very little spread of the cultivated varieties planted further inland, graziers need to exercise due care with the use of exotic plants, and take responsibility for any leucaena plants that move outside their property boundaries.
- **The Leucaena Network** promotes a *Code of Practice* for responsible use of leucaena pastures minimizing weed potential. Queensland Government agencies accept the Code of Practice which acknowledges graziers' responsibilities.



## WHAT IS NEEDED

- Funds are needed to develop sterile leucaena varieties suitable for planting in high weed risk areas. Sterile parent materials are already available but support is needed to develop these into new cultivars.
- The Code of Practice needs to be promoted to all growers. This is being done by **The Leucaena Network**.
- Graziers with limited agricultural skills need assistance in the form of technical information during establishment of leucaena. Training is being provided through FarmBis supported *Leucaena for Profit and Sustainability* courses.

This document was prepared by **The Leucaena Network**, a grazier group "Promoting the responsible development of leucaena in sustainable and productive grazing and agroforestry systems to build stronger rural communities".

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