

Future Farm Industries CRC

Profitable Perennials™ for Australian Landscapes



P3 New Woody Crop Industries

Bulk biomass production using short cycle woody crops - Mallee an example of a generic opportunity



Generic products:

- Wood products (charcoal, panels)
- Co-products (extractives/fodder)
- Bioenergy (electricity, liquid fuels)

Mallee products:

Activated carbon, eucalytus oil & electricity

Key contributions of the program

Overcoming key limits to commercially viable woody crop production, including:

- Genetics
 - Breeding to improve key species (limited number of high prospect opportunities)
- Harvester prototype
 - Prospectus for a prototype commercial harvester
- Feasibility assessment – use strong science base to design integrated systems to:
 - Conduct commercial feasibility investigation and undertake R&D on a fee for service basis.
 - Prepare business cases to enrol collaborators and attract investment
- Water and yield
 - Combine water harvest technologies (design and demonstration) with growth models to predict yields and optimise returns

What is so innovative about P3?

High water use

- Opens potential to capture local runoff, increase yield and have a hydrological footprint greater than the planted area.

Economic diversification

- Introduces wheatbelt farmers to industrial commodity markets that are large in scale and have better terms of trade outlook.
- The low per tonne value of woody biomass demands local processing and regional economic activity
- Woody crops have larger energy gain (ratio energy output/energy input) than annual crops and will ultimately be the favoured bio-energy feedstock.

Biological diversification

- Provides a new suite of robust native perennial crops complementary to annual plant agriculture and favourable to the environment.

Key Scientists

Mr John Bartle	Time Committed: 0.8	Organisation: DEC WA
Skills and expertise: John Bartle has worked on development of revegetation practices for degraded land in WA for 30 years. His focus has been on management of water and salt balances using the high water use potential of woody species, coupled with their commercial potential as an inducement to adoption. His key achievements relate to being at the forefront of technical development of bluegum as a crop for high rainfall farmland and an industry based on mallee as a short cycle coppice crop. He has subsequently been leading an effort to systematically screen the flora of WA to identify species with potential for domestication and to fill large volume markets.		
Refereed Journal: 6	Conference papers: 11	Industry publications:
Mr. Michael Bennell	Time Committed: 0.5	Organisation: SA WLBC
Skills and expertise: Michael's research focus across a 25 year career has included the biology of the Australian flora, the commercial development of native plant species and the integration of perennial plants into dryland farming systems. Mike Bennell has provide leadership to the south east Australian component of an effort to systematically screen the flora of Australia to identify species with potential for domestication and deliver into large volume markets.		
Refereed Journal: 4	Conference papers: 3	Industry publications: 9
Dr Richard Harper	Time Committed: 0.3	Organisation: WA FPC
Skills and expertise: Richard has primary interests in soil science and its application to forestry issues. He has specific skills in carbon sequestration via reforestation, climate change impacts, insertion of farm & plantation forestry into dryland farming systems, land degradation, soil survey and land evaluation and the soils and geomorphology of south-western Australia. He has demonstrated ability in developing strategic research directions and delivery of industry relevant research products. He has considerable experience at the science-policy interface and with farmer extension.		
Refereed Journal: 30	Conference papers: 58	Industry publications: 36

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Resource Summary

Program	New Woody Crops and Products	Notes
Cash resources	\$1.085m – FFI CRC investors \$2m – CRC Program	
Inkind FTE	6.9 FTE per annum	
Inkind \$ resources	\$5.4m	9.3% of total
Total Resources	\$8.5m	7.5% of total
Key Industry Investors	GRDC - \$0.525m DEC WA - \$0.525m	