

Sandalwood Establishment in the Wheatbelt

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7-year-old sandalwood near 8-year-old jam
FPC Plantation, Wheatbelt, WA





Jam (*Acacia acuminata* – typical variant)



Host & sandalwood establishment

- Select a suitable site for both host & sandalwood (good soil, no grazing)
- Rip lines 5 m apart (scalp or mound)
- Spray with knockdown and residual
- Plant hosts at 1.6 m intervals (1250 hosts/ha)
- Sow sandalwood seeds at host age 1-2 yrs
- Sow 1-2 seeds near every host in April, bury seeds 2-3 cm below surface, 0.5 m from host
- Spray sowing spots 2-3 weeks after break of season with a knock-down herbicide
- At sandalwood age 1-2 yrs, thin to 400 sandalwood/ha

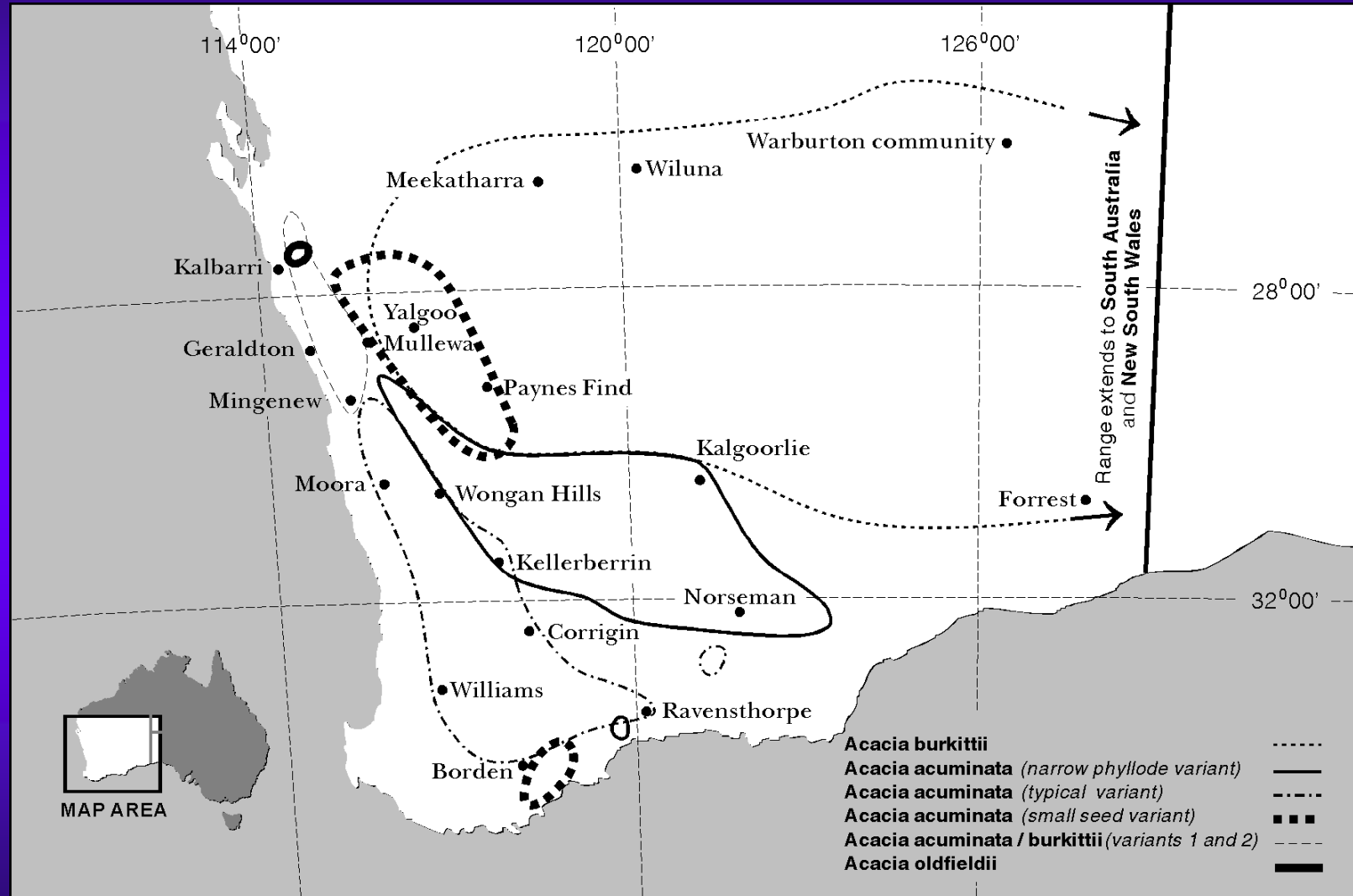


Proven suitable sandalwood host species

- *Acacia acuminata* (Jam, typical variant)
- *Acacia acuminata* (Jam, narrow-phyllode variant)
- *Acacia burkittii* (Jam, Burkitt's jam)
- *Acacia aneura* (Mulga)
- *Acacia saligna* (Golden wreath wattle)
- *Acacia resinimarginea* (Wodjil)
- *Allocasuarina huegeliana* (Rock sheoak)



Jam (*Acacia acuminata*) variants in WA



Derived from World Wide Wattle (www.worldwidewattle.com)



Acacia acuminata (Typical)



Acacia acuminata (narrow-phyllode variant)





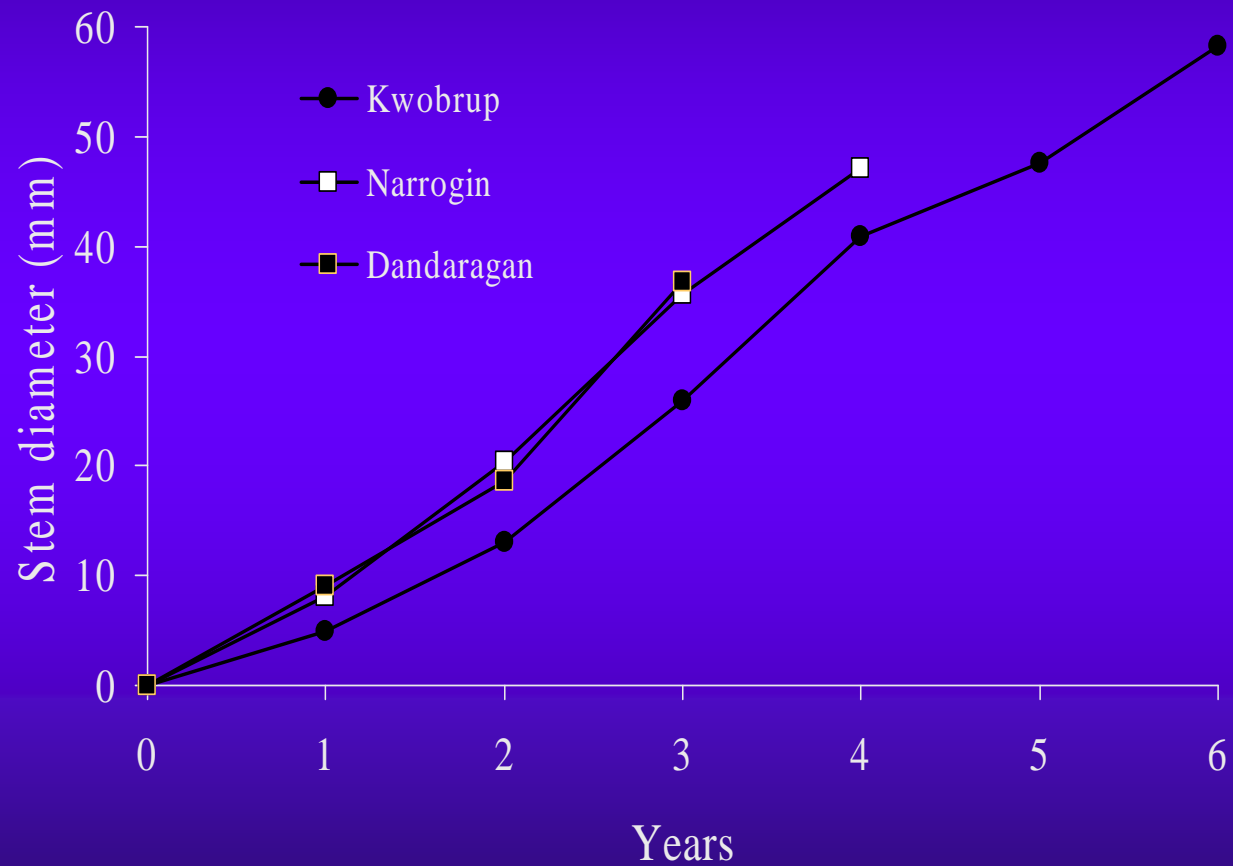




5-year-old sandalwood with 7-year-old jam
FPC Plantation, Wheatbelt, WA



Mean annual stem diameter growth (at 150 mm) of sandalwood near jam (*A. acuminata*) in the Wheatbelt (above 400 mm rainfall)





Mean proportion of compounds and total extractable oil from sandalwood, age 10 years

% Compounds

| Stem height | α -santalol | β -santalol | Farnesol | Total oil (%) |
|-------------|--------------------|-------------------|----------------|---------------|
| 15 cm | 15.8 ± 2.7 | 5.3 ± 1.0 | 17.8 ± 2.6 | 2.6 ± 0.2 |
| 25 cm | 12.2 ± 2.4 | 4.5 ± 0.9 | 20.5 ± 3.0 | 2.3 ± 0.2 |



Predicted Yield (above 400 mm rainfall)

- Mean stem diameter (at 150 mm) growth of 7 mm/year
- 300 sandalwood with mean stem diameters 127 mm at age 20 years
- Approx. 14.7 kg/tree and 4.4 tonnes/ha
- Timber classed as small green logs (0.3–1.2 m long, 25-50 mm heartwood)
- Value of timber - AU\$ 4,000/tonne = AU\$ 17,600/ha
- Establishment, maintenance, harvesting costs = AU\$ 3,500/ha
- Net return = AU\$ 14 000/ha at age 20 years



WA sandalwood flowers





- Nut is 15-25 mm in diameter
- Edible kernel, 60 % fat, 18 % protein
- Sandalwood can produce up to 200 seeds/tree or 0.5 kg/tree at age five years
- Seed is currently worth approximately AU\$50/kg