

# REVIEW OF THE INFLUENCE OF ACACIA SPECIES ON SANDALWOOD (*SANTALUM SPICATUM*) ESTABLISHMENT IN WESTERN AUSTRALIA

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Sandalwood (*Santalum spicatum*) is a root hemi-parasitic tree that produces valuable fragrant oils. Harvesting of *S. spicatum* timber occurs mainly from natural stands in the semi-arid pastoral regions of the Goldfields and Midwest, Western Australia. These natural stands consist mainly of mature trees, with very little successful recruitment. Recruitment failure is most likely due to grazing and poor seed dispersal. On de-stocked pastoral leases, *S. spicatum* seedlings have been successfully established by direct seeding near suitable host plants, including many *Acacia* species.

The opportunity exists to reduce harvesting of natural *S. spicatum* and supplement this with *S. spicatum* grown in tree farm systems. The most suitable areas to grow *S. spicatum* are the 400-600 mm mean annual rainfall areas of the Wheatbelt and Midwest. *S. spicatum* has been successfully established in these regions by direct seeding near 1-2 year old *Acacia acuminata* seedlings. Using this technique, *S. spicatum* growth rates have been relatively fast, with mean stem diameters (at 150 mm) increasing up to 7-9 mm yr<sup>-1</sup>. Current research is determining methods to further improve *S. spicatum* performance by studying the influence of host species, stocking and provenance.

In a host trial near Katanning, *S. spicatum* stem diameter was higher near *A. acuminata* (47 mm) than near *Allocasuarina huegeliana* (21 mm), at age five years. All *S. spicatum* seedlings died near *Eucalyptus loxophleba* subsp. *loxophleba* within two years.

*S. spicatum* performance near four separate *Acacia* species is being examined at two sites, near Narrogin and Dandaragan. At age two years, *S. spicatum* mean stem diameter near *A. saligna* (28-33 mm) was 2-4 times greater than those near *A. microbotrya* and *A. hemiteles*.