

Sandalwood

Santalum spicatum

Buying Seed

Buy seed from a reputable supplier who can provide you with the correct provenance to ensure you have a close match with your soil type. Generally plantation seed will have a greater genetic diversity and the resulting plants will be more vigorous. You can also enquire about the form of the trees the seed was collected from.

Sandalwood growers are generally looking for good apical dominance characteristics but those interested in the seed may be looking for a large seed size. At present there is little information on the differences in oil content of the resulting wood produced from different provenances.

Seed Collection

Sandalwood seed is normally harvested from November onwards depending on the season. If seed is collected or sourced from the wild you will need to contact Department of Environment and Conservation (DEC) for a license to collect.

The population you collect from should contain as many individuals as possible to ensure that inbreeding is reduced. Conditions on the license will indicate the percentage of seed that should be collected. This is to ensure that seed is retained at the site for natural regeneration and conservation of the remnant populations. Ideally seed should be collected in years when there is a mass flowering event.

Storage and Preparation

Once collected the seed will need to be dried and dehusked before storage. See "*Separating husks from sandalwood nuts and the importance of moisture content*" by Geoff Woodall in *The Sandalwooder* (6th edition).

A number of locally produced machines have been developed by ASN members or for small growers a method of stomping and sieving gives a good result if the husk is very dry.

Store seed away from extremes of heat and high humidity to maintain viability until planting time. If storage conditions are maintained sandalwood seed viability can remain good for several years.

Before sowing the seed needs to be cracked to assist the germination process. This cracking can be achieved by soaking the seed in water overnight in a 1% solution of household bleach or fungicide to prevent the transference of fungal diseases through the water. The seed is then laid out in single layer in the hot sun to dry. This process will cause the seed to develop a fine crack on one side. On inspection of a sample if over 70% have a crack, the seed is ready to be sown. The process can be repeated if not successful the first time.

Seed Sowing

A very economic and efficient method to establish sandalwood is by direct seeding. Sow the sandalwood seeds when the host trees are 1 - 2 years of age. For good root connections, the host trees should be approximately 1m tall before introducing the sandalwood. In April after opening rains plant 2 - 3 sandalwood seeds approximately 0.5m from every second host (500 sowing spots ha - 1). Sow the seeds along the rip line; the host roots will be more concentrated in this region. Plant the sandalwood seeds approx 2 - 3cm below the surface, slightly deeper on very light soils and firm with your heel. On hard-setting surfaces, the soil may need to be loosened with a hoe or spade, before seeding.



To ensure good germination:

- * Purchase good quality seed
- * Sow nuts into warm and preferably moist soil (break of season)
- * Use a spade, pottiputki or machine (egad)
- * Use cracked nuts
- * Sow at a depth appropriate for the soil type
- * Balance host root availability and soil moisture

(Reference Geoff Woodall sandalwood cultivation, Lessons from Nature, Presentation to ASN on 8th April 2004

Approximately two weeks after the break of the season (e.g. early June), spray each sandalwood planting spot (in a 0.5m radius) with a knock down herbicide. Ensure no spray touches the host plants. Weed control is very important before the sandalwood seedlings emerge. Weeds can smother the seedlings and reduce survival and growth.

Sandalwood seeds take 4 - 8 weeks to germinate after good rains in late autumn or early winter. Sandalwood seedlings normally emerge in July/August.

In the year after host establishment control of inter-row weeds (in the same year of sandalwood seed establishment) is important to reduce the fire risk.

Selling Seed

After 4 - 5 years your plantation will start to produce seed. For the first few years you may want retain the seed for your own use. Eventually you will probably want to sell what you produce. At present even though it is plantation grown you need a license from DEC to sell Sandalwood seed as it is a native plant species.



Sandalwood growth at the end of second summer



Sandalwood germination by Dr Geoff Woodall

References and further information

Brand, John 2006 WA Sandalwood (*Santalum spicatum*) establishment guide for farmland in the Wheatbelt, Cultural experiences of Members of the Australian Sandalwood Network gathered over the last five years and shared through newsletters, workshops and meetings. www.sandalwood.org.au

Further information and application forms on licensing can be obtained from DEC's Nature base website http://www.dec.wa.gov.au/plants_animals/licensing/flora_licensing.html or by contacting DEC's Wildlife Licensing Section on 9334 0441.

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