

Sandalwood

Santalum spicatum

Sandalwood to Host Ratio

At age 5 years, parasitic requirements of sandalwood trees greatly affect the survival and performance of the host. A sandalwood-to-host ratio of 1:1 will place too much stress on the host. When sandalwood age is 2 years, the sandalwood-to-host ratio should be 1:2 or 1:3. Therefore an area with 1000 host's per ha should have no more than 400 sandalwood per ha at age 2 years.

Thinning

If you have planted high density sandalwood to avoid reseeding the following year and you have had good germination, the Sandalwood plantation may require selective thinning to achieve the right balance. Do not be too eager to thin the Sandalwood when they have just germinated as some plants may not have established a good enough connection with their hosts and may not survive the first summer. Wait until the following winter when you can also gap up any areas where germination has failed.

Pruning

Ideally we are aiming for one long straight trunk which will ultimately provide the biggest area of heartwood and therefore oil content. How much pruning you do ultimately depends on how much time you can put into your plantation. Harvesting sandalwood mostly involves the use of the whole tree. If you are planning to harvest seed then this may be reduced by pruning so the decision is yours.

Insurance

Taking out an insurance policy on your sandalwood plantation is one way of managing the risk.

In relation to sandalwood plantations the main risks could be considered, fire, drought, insect or vermin damage and storm damage. Other risks can stem from poor management i.e. accidentally spraying herbicide on trees or inadvertently allowing sheep to graze young trees.

The strategy you choose to adopt for each of the risks will determine the type of insurance you need and can afford. Most insurers will insist that you provide a duty of care for the plantation. This may require the development of a management plan or the provision of evidence that you have considered risks, such as fire, and have in place the necessary systems and equipment to deal with a fire or other risks should they occur.

The Australian Forest Growers www.afg.asn.au has an insurance scheme that would suit most sandalwood plantations. Alternatively a number of insurance companies that deal with agricultural pursuits are able to arrange insurance. If you already have policies with one of these companies they are often worth talking to as they may be able to package your needs into existing policies. An example of a typical plantation insurance policy can be downloaded at www.agricola.com.au.



Common pests and diseases in Sandalwood plantations

The more diverse your host plants the less likely that they will suffer serious deleterious effects of one particular pest or disease event.

Gall rust commonly infects *Acacia saligna* and *Acacia acuminata*. A systemic fungicide can be used for this but it is expensive to treat. Infected trees can be cut down and burnt. Gall rust tends to show up at the end of summer when trees are under stress. Early removal may help. Don't collect seed from susceptible plants.

Mistletoe is a native parasitic plant growing mainly on Jam (*Acacia acuminata*), which can overwhelm a tree which is already the subject of parasitism by the sandalwood. It is spread through host species quite quickly by the mistletoe bird and is best cut out when first spotted.

Sap sucking insects such as aphid, rutherghlen bug and crusader beetles will inflict passing damage on the new growth but large infestations may need treatment. On newly emerged seedling sap suckers will do serious damage even in small infestations.

Locusts can be more damaging if in plague proportions, often stripping all the leaves from the hosts and the sandalwood tree. Again, if in large numbers, you should begin spraying while they are at the hopping stage. Contact your local Department of Food and Agriculture office for details of appropriate chemicals.

Ring-neck parrot numbers also need to be monitored because they can ring-bark seedlings. Parrots can be shot or trapped during the late autumn before they breed but in some areas you need a license to do this. Check with DEC for details.



Mistletoe



Gall

References and further information

Jones, Peter (2006) ASN newsletter No 5

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

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