



## PAULOWNIA PESTS AND DISEASES

*It's worth noting that if you get the foundations right - proper site selection and ground preparation, clean planting stock with good genetics and you give correct management - you will generally have no important insect or disease issues and will not need to spray your trees with anything (other than spraying around them with a herbicide to keep weeds down when the plantation is young).*

*A number of fungal diseases, as well as caterpillars, slugs, snails and aphids can affect very young Paulownia plants in the nursery (as for most young plants), however Toad Gully Growers has control measures in place for all of these. The following deals with pests and diseases that may be encountered in a plantation.*

**FUNGAL.** Paulownia can suffer from fungal leaf spots such as Anthracnose during very humid weather, however this is generally not a problem in temperate climates as it usually only occurs late in the growing season, just before leaf fall, requiring no treatment. Even in tropical regions, where high humidity can make Anthracnose more likely, it often just affects the occasional tree for a period of time then goes away again without the need for any treatment. If trees are stressed and an infection really takes hold it can be treated with Antracol, Zineb or Bravo 500. Occasionally recently planted Paulownia are affected by collar rot - a brown or black rot on the stem just above soil level which can cause the plant to collapse. This is generally a result of over watering, usually in conjunction with humid weather, and sometimes excessively rough handling or planting too deep. Be sure not to confuse the symptoms with cut worm - see below. Antracol or sulphur mixed with Mancozeb is often effective against collar rot, but prevention is better than cure. Over watering can also lead to root rot. Aliette mixed with Rovral will sometimes work against root and collar rots, Banrot is effective in stopping the spread of mild root rot problems, but root rot is usually terminal for those plants which already have it. Generally, young Paulownia plants which have lost their trunks due to collar rot will resprout a new trunk from the base, provided the fungus is treated quickly and the over watering is stopped before the roots rot.

### **SNAILS & SLUGS.**

Newly planted Paulownia and emerging shoots at trunk regeneration (after coppice or harvest) are vulnerable to snails and slugs and should be protected with bait pellets in affected areas.



**INSECT.** Caterpillars, and to a lesser extent, aphids can be a problem on young trees. They can be controlled with Pyrethrum or other mild insecticide sprays but don't be too quick to spray - often if left alone predatory wasps, lady bugs or other beneficial insects will move in and control the bad ones, and the trees will simply outgrow the pressure from the pests. If only caterpillars are present, spraying with spore suspensions of *Bacillus Thuringiensis* such as Novosol or Dipel is effective. The caterpillar ingests the spores which germinate in its gut and kill it. The bacteria are not harmful to any others, not even birds which may eat the infected caterpillars. Cutworm - which is actually a caterpillar that lives in the soil - can be a problem in some locations as they cut through the trunk of little trees just above soil level. If you are lucky they will just 'harvest' the tree once and it will simply regrow a new trunk shoot, but if the cut worms are very persistent you'll need to kill them using an insecticide. Novosol or Dipel (see above) will kill cutworm, but only if the caterpillar ingests it, so if they cut through the stem below the surface or where there is no spray it will not work. Procidate 80SC is effective against cut worms as a soil drench.



**MAMMALIAN.** Rabbits, sheep, goats, cattle and just about any other leaf-eating animal will devour young Paulownia (particularly during times when other greenery is scarce) which therefore must be protected either with suitably strong individual guards or fencing around the perimeter of the plantation. Guards need to be tall enough to prevent the reach of the animal concerned and should ideally be at least 1 metre wide to accommodate the large leaves. Ordinary 45cm tall plastic tree guards are useful if only a few rabbits are the problem, provided they have plenty of alternative feed sources. In any case, on Australian properties, a control programme should be put in place for rabbits and other introduced pests. Sheep and goats will ringbark Paulownia trees at least during the first four or five years when the bark is thin. Cattle may cause damage by rubbing the trunks, but if grass is abundant under the trees short term supervised grazing may be possible from about year 4. Kangaroos in moderate numbers don't usually do harm if they have grass to eat. Poultry, ducks, geese, emus or ostriches are suitable for grazing beneath Paulownia as once the canopy is above their reach they don't harm the trees at all.

**AVIAN.** In China wood peckers sometimes damage trunks. In Australia it's more likely to be birds of the parrot family like Galahs or Sulphur-Crested Cockatoos that cause damage - either by pulling out freshly planted trees or breaking off leaves and bark from older plantations. Can be anything from a minor nuisance to a real problem in cases where large numbers are involved. Some people have had limited success with bird scaring devices, but usually more drastic control measures are needed. These birds are quite smart and will learn to avoid plantations once they know it's an inhospitable area for them. Contact your local Agriculture Department for information on allowable methods.



**WITCHES' BROOM DISEASE.** This is an important disease of Paulownia, particularly in China, but all TGG stock is free of the pathogen and will remain so due to strict quarantine conditions which effectively make our nursery a closed system. Witches' broom gets its name from the masses of twiggly branches formed in the crowns of infected trees. It is a sap born pathogen (a mycoplasma type organism) which can be spread from tree to tree by some insects, but the main reason for its spread in China has been the large scale use of vegetative propagation from infected trees. Seed (even from infected trees) can not carry the disease, indeed the use of seed propagation is one of the control measures used by the Chinese.

**CHEMICALS** mentioned in this document are generally brand names (used for brevity), as available in Australia. For active ingredients or further details email TGG. Incorrect chemical use can harm Paulownia trees.

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**PROBLEMS, QUERIES, COMMENTS, SUGGESTIONS.** Telephone (03) 5983 5688 [international +61 3 5983 5688] preferably between 8:30am and 5:30pm Australian Eastern Standard Time, Monday to Friday, or any time any day send facsimile (03) 5983 1999 [international +61 3 5983 1999] or email [help@toadgully.com.au](mailto:help@toadgully.com.au) Visit our web site at <http://toadgully.com.au> or <http://paulownia.com.au>

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