



Phytosanitary guidelines for the Polyphagous Shot Hole Borer

Purpose:

To minimise the spread of Polyphagous Shot Hole Borer or PSHB (*Euwallacea whitfordiodendrus*), previously referred to as *Euwallacea nr. fornicatus* and its fungal symbiont, *Fusarium euwallaceae*.

Background and introduction

The PSHB and its fungal symbiont are associated with agricultural, indigenous, forestry and alien ornamental trees. However, even if the PSHB might attempt to bore in many species of trees, it will only reproduce in some. Such trees are called reproductive hosts. The symptoms and impact of the beetle, as well as the fungus, may vary between all hosts (reproductive and non-reproductive), but the fungus will not spread naturally without the PSHB. The transport of invasive insects is not intentional, but it can have severe consequences for agriculture, native and urban forests.

1. Land owners and users should ensure that:

- Trees which are heavily infested with PSHB are removed
- Branches of partially infested trees are cut, if the main stem is not infested (which is unlikely, as the PSHB usually infests the stem first)
- The wood is chipped finer than 2 cm pieces and on-site
- Chips are composted by keeping them wet or solarised (leave in full sunlight) in plastic bags.

2. Alternatively, but only if point 1 is not feasible, chopped wood can:

- Be solarised under thoroughly sealed clear plastic sheets for at least one month in summer or several months during winter
- Be burned on-site (some beetles will fly away when the wood becomes hot or when smoke appears, so do not burn in uninfected areas)

- Be moved to a pre-determined site in collaboration with the local municipality, cut trees can be put into mobile batch type carbonisation kilns for charcoal production. Kilns for on-site charcoal production can be used to recoup costs

- Emphasis on replacement of wood for braai fires in protected areas.

3. Properly Dispose of Infested material (This could be mitigated by charcoal production)

- Beetles can emerge from infested material weeks after the branches or trees have been removed.
- If infested wood cannot be treated on-site, always cover wood chips and logs when transporting them to other facilities for treatment.
- The wood should also be tightly covered if it needs to be kept on-site for a short period.
- Do not use, sell or move untreated PSHB-infested logs for firewood to other locations.

4. Pruning

- Poor pruning practices can facilitate the spread of plant disease. So far, researchers have only observed Fusarium Dieback spreading with the help of the PSHB, but other species of Fusarium fungi have been known to spread with pruning tools and wood cutting equipment.
- Sterilise pruning, woodcutting, sampling, or any other tools that are exposed to infected wood before being used on a new tree.
- Take care of all of the uninfected trees first and then move on to the infested trees if several infested and un-infested trees need to be maintained on a property so that tools will not need to be cleaned until the end of the day.
- Some fungicides have fungi repellent characteristics that can be used for trees being pruned.

5. Firewood (Consider a self-implemented firewood moratorium).

- Try not to move any firewood from an infested area to other un-infested areas.
- Do not move firewood into protective areas such as game parks, nature reserves, etc. Rather procure wood at such facilities.

- Try to obtain the identity of the firewood before procuring. If the vendor cannot provide it, do not buy it.
- Do not use reproductive host trees for firewood.
- The Black wattle is a reproductive host that is often used for firewood. Many other wattles and thorn trees may be hosts, which may also be a risk.
- Gum or pine trees are non-reproductive hosts and should rather be used for firewood.
- Use charcoal, it is a safer method than using firewood.

6. Other wood

- Wood for timber and wooden pallets and packing material may also be infested with wood borers and the PSHB. Always check wood for timber pallets and other wood sources for signs of wood-boring insects.
- Do not procure wood that is infested with woodborers.
- Furniture sold at informal markets may not be treated properly against wood-boring insects. Check such furniture properly for signs of wood-boring insects. Check the identity of the wood used. Do not procure untreated furniture if it is made from reproductive host trees (such as Blackwattle).

7. Ornamental trees

- Try to replace host trees with non-host trees of the PSHB.
- Do not procure known reproductive host trees.
- Do not move reproductive or non-reproductive host trees with a stem diameter of more than 2,5 cm outside an infested area. Refer to the list of trees at <https://fabinet.up.ac.za/pshb>.

8. Reporting

- Report all sightings of possible PSHB symptoms in new areas to the local municipality, provincial or national Departments of Agriculture.

For more information, please consult the FABI website <https://fabinet.up.ac.za/index.php/research/7>

