

POTENTIAL PEST ATTACK TO FOREST PLANTATION

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PINE PEST

THE MOST FAMILIAR PEST WHICH ATTACK *Pinus merkusii* in Northern Bandung, West Java is *Pineus boernerii*. (Adelgidae, Hemiptera). Both young and old tree were attacked by these pests. Attack symptoms could be seen clearly at the white wax covered branch alike powder because of wax fibres extracted by insect to protect themselves which is weak. Young trees were suffer to death or declining growth rate because of pest attack

- **It is a polyphagous insect, live in tropical and subtropical region. Generally attack highland trees in Java.**
- **Spreading by air, rainfall, and ants.**
- **High population growth during dry season, especially when humidity reach 75 % at daylight and precipitation rate less than 10 days/month in 3 – 4 month**

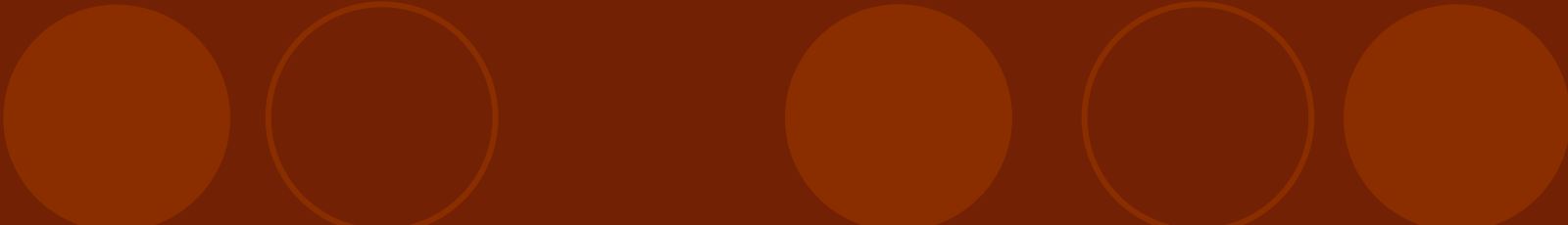
- **Generally, it has mollusic body and size at about 1mm.**
- **Live and reproduced at the bole outer side of pine.**
- **Extract white wax from the hole that it get from dorsal side.**
- **On the female, it has ovipositor, long rustrum, abdominal spiracle and inactive movement (sessile).**



Most of adelgidae family have 2 years life cycle.

Pineus boernerii is an asexual bug which produce eggs parthenogenesically, during years.

Suscepted pine needle at 2 and 3 years old



Better to use natural insecticides to control wax bug attack, such as pine wood acid or logged wood acid mixed with *B. thuringiensis* 4 gr/l and the allowable ratio:

pine wood acid : bacillus 60 % : 40 %,

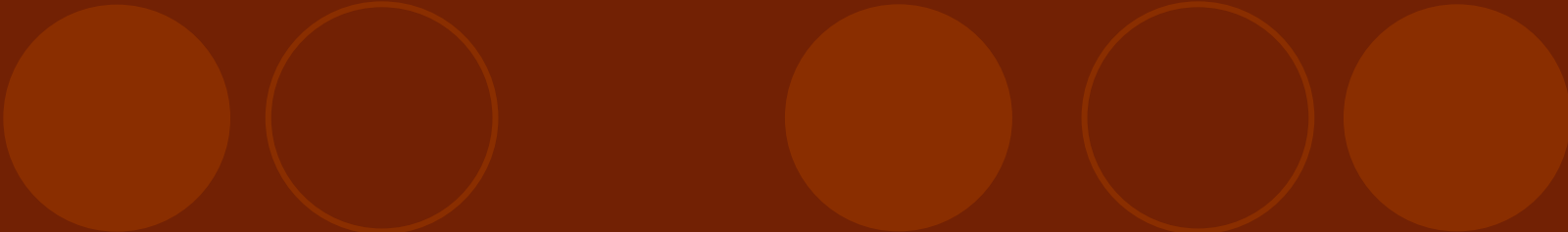
**logged wood acid : bacillus 70 % : 20 % or
60 % : 40 %.**

Insecticides with active content Acephate or malathion could also be used.



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Teakwood plantation establishment may also suffer from pest attack, such as leaf pest *Hyblaea puera*, and *Pyrausta machaeralis*, stem borer *Neotermes tectonae* (termites), *Monohamus rusticator*, *Phasus damor* (uter-uter), *Duomitus ceramicus* (oleng-oleng). those attacks may cause growth inhibition, decrease of production and quality of teakwood

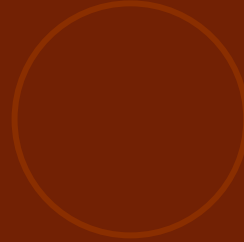
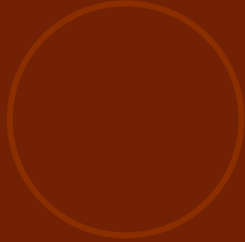
- **Actually it has small amount of population, on single individu of teakwood tree only found 1 pest inside stem (low density pest) but it already cause damage to teakwood tree as suscept host**
- **Usually attack young trees, may caused suffer on stem, weak and easy to break**

- **'oleng-oleng' population growth may facilitated by high level of humidity and temperature of forest floor. 'oleng-oleng' generally attacked teakwood stem hieghted on 1 – 2 m from ground**
- **'*tumpang sari*' crop such as corn heighted 1–1,5 m may increase humidity and expose mature insects growth to put their eggas on young teakwood trees.**
- **Air humidity at plot site reached 80 – 86 %, it was suitable condition for increasingly pest attack**



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