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Sirex: initial report (19/5/94)

Two dead wood-wasps (a male and a female) were found on 25.4.94 under the loose bark of a P. radiata log which had been discarded during the clearfelling of compartment C10 in Tokai plantation. These wasps had obviously been there for some time and had disintegrated to such an extent that no positive identification could be made, although they closely resembled Sirex noctilio. They were definitely woodboring wasps as their rounded exit holes were found in the stump and their tunnels could be traced in the wood.

A survey of the debris remaining in that compartment revealed a minimum number of 3772 exit holes. The wasps which have an annual cycle (but can complete development in 3 months or even two years) must therefore have arrived at least in the previous summer of 1993. Four standing trees in the adjacent compartment, of the same age (42 yrs) as the clearfelled trees, were found to be dead and also riddled with Sirex exit holes. Several of the felled trees must therefore have been infested prior to being felled and many wasps may have dispersed before felling. This was confirmed by exit holes being present in the splintered breaks in the trunk of one discarded tree when it fell during clearfelling which clearly indicates that the exit holes were there prior to felling.

A chain-saw operator reported seeing many of the "blue-metallic" wasps for the first time this last season when they were clearfelling that area of Tokai in December 1993. They flew amongst the felled trees. The dead trees containing the Sirex holes were discarded by the timber millers and the sound logs had been taken to Mondi's mill in Stellenbosch. A few logs with small diameters could have been taken to Kraaifontein for use as poles.

No wasps are likely to be found now because they are not present during the winter months and only live for about three days after emergence. They immediately lay their eggs in stressed trees or felled logs and overwinter as larvae within the wood. The adult wasps are strong fliers. Sirex noctilio is well adapted to winter rainfall conditions and its main host is P. radiata. It thus poses a real threat to SAFCOL's plantations in the Cape winter rainfall region. The tree is killed by a mucus 'plug' deposited in the tree after a few eggs have been laid. The mucus interferes with translocation and the tree wilts and dies. A fungus is also associated with the Sirex wasp and, although it does not on its own kill the tree, it is essential for the survival of the wasp's larvae. This wasp is one of the most devastating pests of P. radiata and it has spread from its native Europe to countries like New Zealand and Australia in recent times.

We have been accumulating literature on the Sirex pest for several years for just this eventuality, although we did not expect it to arrive so soon. Our Biosystematics Division will be able to identify the wasp once complete specimens are obtained and we have requested pinned specimens from Australia as an additional measure. Biological control is the best method of containing Sirex and a nematode has been sprayed onto infected trees in other countries with considerable success. The nematode breeds in the reproductive organs of the female wasp and renders her sterile but without affecting her normal behaviour. This means that she is attracted to stressed trees along with other females but lays eggs full of nematodes which infect the larvae of the other wasps which are active in the wood. The key to control is the wasp itself.

The following steps have been taken to contain the wasp and more elaborate detection and trapping methods will be in place by the time of the wasp's emergence, beginning possibly from early spring with a peak in numbers in December.

1. Logs with Sirex exit-holes have been both dissected and placed in insect-proof cages at Rosebank but no wasps have yet been recovered for identification.
2. Standing trees have been inspected for the tell-tale signs of resin exudation caused by the wasp during oviposition but none has been seen. This search is continuing.
3. The trap logs set out for Pissodes at two-weekly intervals (and which could also serve as trap logs for Sirex) have yielded no signs of larvae or eggs of Sirex.
4. The chain-saw operators at Tokai (who saw the wasps in December) have been asked to inform Mr. Botes directly when they see the wasp again or further Sirex exit holes.
5. The DFO of the western Cape region has been informed of the wasp's presence and supplied with the literature on Sirex.
6. Dying trees at Tokai are being dissected when found and a search made for the wasp's tunnels and larvae.
7. The Quarantine section at the Cape Town docks was contacted but no pine logs have been imported for several years - the only pine which arrives are in the form of packing cases.

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