TIP-DIEBACK OF PINES AT GNANGARA NURSERY

Rooted radiata cuttings in which the new shoots had died were received from Ray Fremlin from Gnangara nursery on 22-12-87. The dead needles were light brown, dry, but not particularly brittle. The stems were soft and watery above healthy tissue. On some samples there were black pycnidia embedded in both the dead needles and stems. These pycnidia contained large brown spores 32 X 14 μ, initially non-septate, later developing a median septum; the mature spores had a thick punctate wall: immature spores were hyaline. Pieces of stem from the margin between the soft rot and healthy tissue were plated out, and the same fungus was recovered from these samples.

The Gnangara nursery was visited on 13.1.88 in the company of Ray Fremlin and Ian McKinlay. Pinaster cuttings and both hardwood and softwood radiata cuttings showed tip dieback, the radiata plants were most severely affected. Some seedlings showed tip dieback too, but the frequency was much less than in the cuttings. Platings of the margin between the soft-rot and healthy stem yielded the same fungus as had been received from the cuttings.

The fungus is probably Sphaeropsis sapinea (Fr.) Dyko & Sutton (Diplodia pinea (Desm.) Kickx, Petrak & Sydow) a well known pathogen of pines. It is associated with defoliation, dieback and cankers of mature trees, seedling diseases and it also causes blue stain. Most damage is caused in summer rainfall areas in association with hail damage or insect attack. Sphaeropsis can also grow saprophytically on pine litter which may provide an abundant source of inoculum (Gibson, 1979). The main economic effects of infection are on volume and quality of wood produced in heavily infected stands (Wright and Markes, 1970).

S. sapinea is common in the eastern states, but its position in Western Australia is uncertain. Purnell (1956) states that it is known from all pine growing areas in Australia, but so far, I have been unable to find documentation of its occurrence in W.A. Between 1963 and 1966 S. sapinea was suggested as a possible cause of a tip disorder in P. pinaster in the Lake Pinjar area and symptoms were loosely referred to as Diplodia-like, however there is no evidence that the fungus was recovered from affected shoots (File 00586F1708).

The fate of the infected plants at Gnangara depends on whether Sphaeropsis is widespread, or whether it is a recent introduction into this state. Since the problem was first recognised in December the cuttings have been sprayed with Benlate and Bavistan, and irrigation has been reduced. The plants have responded with new shoots replacing the dead tips.

Proposed action is as follows:

1. To confirm the identity of the fungus recovered from the affected pines (this may take several weeks).
2. To survey the Gnangara nursery to determine the proportion of affected plants.
3. To sample material from Nannup nursery to see whether the fungus is present there.
4. To sample bluestained timber from the Blackwood Valley to see whether the fungus is present in mature stands.

Gibson, I.A.S. 1979. Diseases of forest trees widely planted as exotics in the tropics and southern hemisphere. Part II The genus Pinus. Commonwealth Forestry Institute, Oxford.

Purnell, H. 1956. Notes on fungi found in Victorian plantations. Forests Commission of Victoria, Plantation Technical Papers 2.

Wright, J.P. and Marks, G.C. 1970. Loss of merchantable wood in radiata pine associated with infection by Diplodia pinea. Aust. For. 34. 107-119.

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