SPHAEROPSIS SAPINEA DISEASES

Mondi Ltd.

INTRODUCTION

Sphaeropsis sapinea, which was formerly known as *Diplodia pinea*, is one of the most important pathogens of pine in South Africa. This fungus is associated with a number of different symptoms including shoot blight or die-back, stem cankers, root diseases and blue stain. Many of these symptoms become apparent after hail damage or when the tree is stressed due to factors such as drought.

Dead tops of *P. radiata* commonly associated with infection by *S. sapinea*.

SYMPTOMS

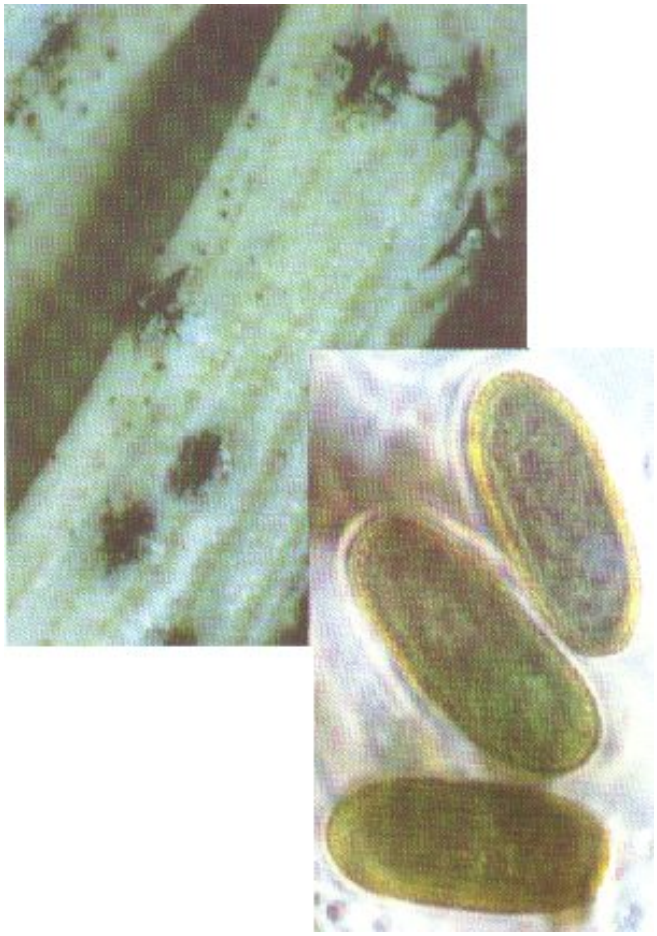
Sphaeropsis sapinea exists as both an endophyte and saprophyte in/on healthy and dead tissue (cones, twigs, needles) respectively. This fungus is also an opportunistic pathogen causing disease symptoms when wounds or other stress factors occur. It may also infect young, unwounded pine shoots. Moisture as well as warm conditions at the onset of growth are needed for this to occur.

Characteristic symptoms of the root disease caused by *S. sapinea* are dark-blue, radial lesions in young roots which extend to larger roots and into the trunk of diseased trees. Needles become yellow (chlorotic) and are shed.

MANAGEMENT STRATEGIES

The only practical means of controlling losses due to *S. sapinea* is to plant resistant species in hail belts (for example, *P. patula* should not be planted below 1200m in the summer rainfall area). Selection for resistance in a number of species is currently underway. Eliminating stress factors should also be attempted. Cultural practices such as site selection and early thinning deserve attention. It is usually not necessary to clearcut affected stands and even in severe cases, the majority of trees often recover. Pruning wounds can become effected with *S. sapinea*. To avoid infection taking place through wounds created in this matter, it has been suggested that pruning takes place in winter. Fungicides can be used in nurseries where shoot blight occurs. Fungicide applications to plantation trees have been attempted without success.

Symptoms associated with infection of pruning wounds.



TOP: Infected needles with asexual fruiting structures of *S. sapinea* breaking through the epidermis.

BOTTOM: Large brown asexual spores (conidia) of *S. sapinea*.

Section through a fruiting structure showing cavity containing spores.

Typical symptom associated with root infection on *P. taeda*.

HOST RANGE

Pinus patula, *P. pinaster* and *P. radiata* have become restricted, in South Africa, to areas where hail is infrequent. *Pinus patula* is still planted in summer rainfall areas and severe losses commonly occur. Although less frequent, hailstorms do occur in areas where *P. radiata* is planted and these often also lead to substantial losses.

A root disease of *P. elliottii* and *P. taeda*, caused by *S. sapinea*, has been found in many parts of South Africa. Apparently, *P. taeda* is most susceptible. The disease is always associated with stress due to factors such as overstocking, drought or planting on poor sites.

If you need any further information, please contact us.

Back to INDEX of pamphlets...