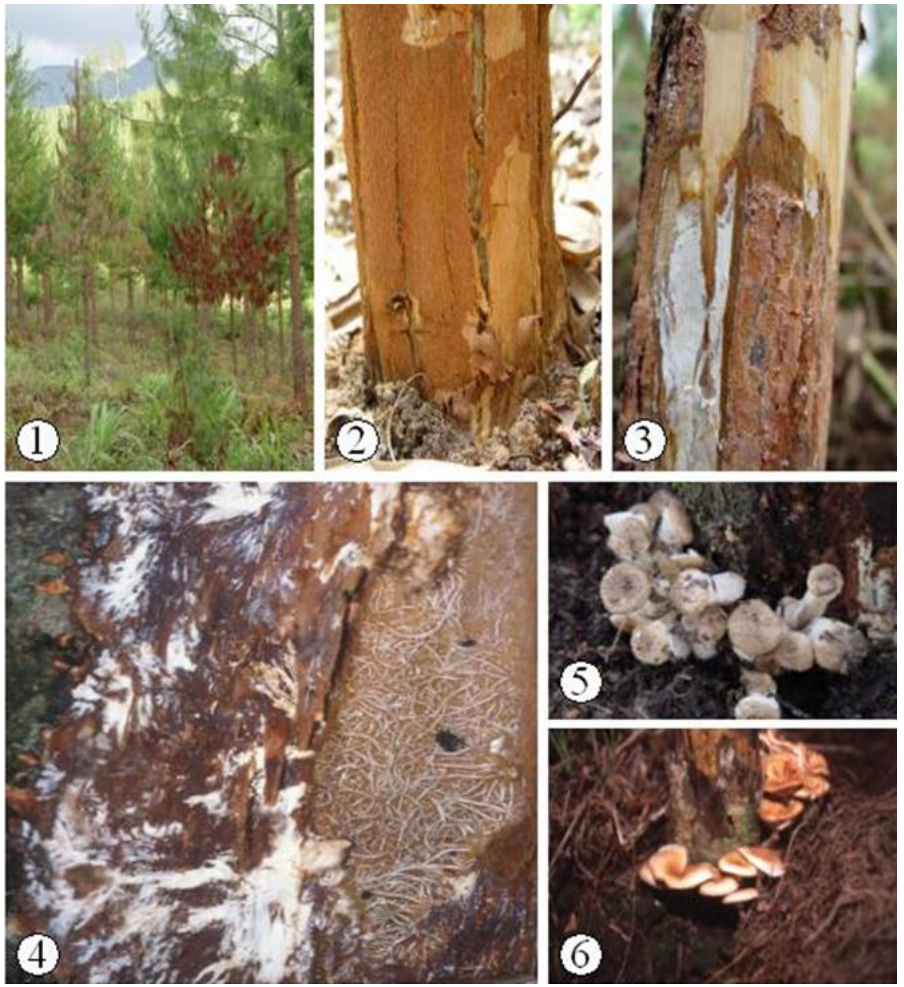
ARMILLARIA ROOT ROT

Causal agent: *Armillaria fuscipes*
Hosts: *Pinus elliottii, P. kesiya, P. patula, P. taeda, Eucalyputs grandis* (Also found on indigenous tree species such as *Acacia* spp., *Podocarpus* sp.).
Geographic distribution: Entire South Africa. Regular reports from Sabie and Louis Trichardt areas. Other species of Armillaria also cause problems on plantation grown *Pinus* and *Eucalyptus* spp. in other African countries, as well as Proteaceae in the Western Cape Province.
Relative importance: Armillaria root rot of *Pinus* spp. in South Africa can result in mortality of young and old trees. Disease often starts with a single tree, from where it spreads to kill trees in patches. In some compartments these patches can cover a considerable area. Trees may continue to die through-out the rotation. Infection of *Eucalyptus* spp. is relatively rare, with only a few cases reported in the Sabie area. Here, infection resulted in slow decline and eventual death of trees.
Symptoms and signs: The disease often only becomes visible when the foliage of trees becomes discoloured and trees die (Fig. 1). In some cases resin exudation and cracking of the bark is visible at the bases of infected trees (Fig. 2). To confirm Armillaria root rot it is necessary to chop into the base or root collar of trees to reveal the white fungal growth (mycelial fans) between the bark and the wood (Fig. 3). On roots these are often visible as white rings between the bark and wood. Under favourable conditions sporocarps (mushrooms) of *Armillaria* may be found at the bases of affected trees or emerging above ground from roots (Fig. 5,6). These are relatively rare in South Africa.
Biology: *Armillaria* spp. live on plant material in the soil. They spread via root to root contact, the production of rhizomorphs (Fig. 4), the movement of infected plant material, in soil or through the production of spores from above ground fruiting bodies. *Armillaria* spp. are well adapted to survival, being capable of living as saprophytes on dead plant parts in the soil, or as pathogens in living trees. Disease of plantation forestry species often occur where new plantations have been established on virgin forest land as the fungus occurs widely on native tree genera.
Management: Avoid establishment of plantations on areas cleared of indigenous tree species as *Armillaria* spp. are common on indigenous trees.



(1) Dying patch of *P. patula* trees, (2) cracks at the base of a *Eucalyptus* tree infected by *Armillaria*, (3) leading edge of canker and white mycelial fan between the bark and wood at the base of a infected *P. patula* tree, (4) Rhizomorphs (right) and developing mycelial fan between the bark and wood of a *Pinus* tree, (5) young *Armillaria* fruiting bodies at the base of an infected tree, (6) mature fruiting bodies of *A. fuscipes* at the base of a dead *P. patula* tree.