



The silky hakea gummosis fungus, *Colletotrichum acutatum* J.H. Simmonds, causes a serious disease of silky hakea (i), and has done so in parts of South Africa since the 1960s. Studies began in the 1980s for its deliberate use, and are still continuing. Various methods of use have been developed that target either the trees, or the recently germinated seedlings of this invasive species.

DESCRIPTION

The silky hakea gummosis fungus causes characteristic stem and branch cankers (dead areas of bark), which exude large quantities of gum (gummosis). The fungus produces masses of orange asexual spores (conidia) on special cushion-like structures (acervuli), the minute spores are hyaline and oval in shape. These fungal spores can be mass produced at the laboratories of the ARC-PPRI in Stellenbosch and used as an effective biocontrol agent against silky hakea.

DISEASE SYMPTOMS

As the bark is invaded by the gummosis fungus, cracked and discoloured cankers develop (ii). Large quantities of gum ooze from these cankers (iii). At this point, the stem frequently becomes malformed (iv). Only the bark of trees, not the wood, is killed.

DAMAGE TO PLANTS

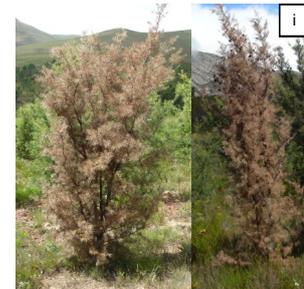
As cankers develop and kill areas of bark, plant growth and seed production are reduced. Where cankers girdle the stem, the plant dies off completely above the inoculation point. If this happens at the base of the plant, the whole plant is killed, thus, deliberately inoculating plants just above ground level, in effect, ringbarks trees. Since the fungus spreads from inoculated trees to neighbouring ones, the number of trees killed over time is more than was treated. The fungus spreads by spores splashed by rainfall, and is most likely to occur in dense stands, since the effective range of splash is usually less than 2 meters.

IMPACT ON SILKY HAKEA

Both seedlings and mature silky hakea trees are killed by the gummosis fungus. The specific form of the fungus used is only known from silky hakea in South Africa, and has been proven to not pose a threat to any indigenous South African flora. It also does not infect other hakea species. Naturally occurring disease occurs in low levels throughout the invaded area of silky hakea, but this can be increased substantially by inoculating trees. Since rainfall favours the spread of the fungus, it is most effective in high rainfall areas and becomes progressively less effective in drier areas. However, this can be compensated for by inoculating more plants, and more frequent applications.

ORDERING INFORMATION:

Orders for the fungus must be placed a month in advance and directed to Ms Gwen Samuels. Tel: (021) 887 4690 Fax: (021) 886 6479 E-mail: SamuelsG@arc.agric.za.



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

