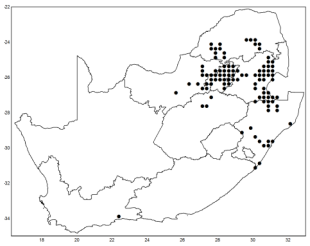

The pompom rust fungus, ***Puccinia eupatorii*** Dietel, was collected in 2003 in northern Argentina as a biological control agent against pompom weed (*Campuloclinium macrocephalum* (Less.) DC.). Owing to its high specificity and virulence on pompom weed, the rust fungus was considered to be suitable for release in South Africa. However, in 2006, a rust fungus was discovered on pompom weed in the Pretoria area, and was confirmed to be the same species. Since then, pompom rust has spread through wind dispersal to most areas invaded by the weed.

DESCRIPTION

Within the native range of the weed, pompom rust has been collected in Brazil, Argentina and Uruguay. The rust fungus produces two types of spores, the spiny single-celled, light brown urediniospores and the overwintering two-celled, black teliospores carried on a pedicel (i). Both spore types are produced in mass on the surface of the leaves and stems, appearing as dark brown, blister-like pustules that burst open to release the spores, and which can be easily brushed off (ii).

LIFE CYCLE

Wind-dispersed urediniospores germinate and infect the leaves and stems from the start of the summer rainfall months, and continue until March. Germination occurs at temperatures between 15 and 20°C, with 6 to 12 hours of high humidity. Infected leaves and stems turn yellow (iii), and the rust fungus becomes more visible as the brown pustules emerge on both the upper and lower surfaces of the leaves. Heavily infected pompom plants lose their leaves and dieback occurs. The pompom rust fungus overwinters as teliospores, reinfecting the pompom plants as they emerge at the start of summer.

DAMAGE TO PLANTS

The rust fungus induces early senescence of the pompom weed, thereby reducing growth and seed production. As with all rust fungi, the rust fungus can only survive inside a living, host plant and, since it is specific to pompom, it can only survive on a pompom plant.

IMPACT ON POMPOM WEED

The leaves (both sides) and stems of infected plants are covered with noticeable brown pustules. Heavily infected plants will turn yellow (iv). Unfortunately, despite the presence of this fungus, pompom weed populations have remained constant - largely due to the plant's perennial rootstock, which produces annual stems in spring (September/October), and dieback in autumn (May). Nevertheless, augmentative releases of the pompom rust fungus early in spring could potentially cause greater dieback throughout the growing season, resulting in less rootstock growth and seed production.

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