Host-Specificity Testing of *Liothrips tractabilis* (Thysanoptera: Thripidae), a Candidate Biological Control Agent for *Campuloclinium macrocephalum* (Asteraceae) in South Africa

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Abstract

Pompom weed, *Campuloclinium macrocephalum* (Less.) DC. (Asteraceae), originates from Central and South America and was first detected in South Africa in 1962. In the 1980s *C. macrocephalum* started slowly extending its range and in the 1990s and 2000s it entered a dramatic expansion phase. An invasive of grasslands, savannas and wetlands, *C. macrocephalum* reproduces and spreads via numerous wind-dispersed seeds. Studies have highlighted the significant negative impact the weed has on biodiversity. A biological control program was initiated against the weed in 2003. Two rust fungi and nine insect species have been found to be associated with the plant in its native range. Of these, two insect species, *Liothrips tractabilis* Mound & Pereyra (Thysanoptera: Thripidae) and *Cochylis campuloclinium* Brown (Lepidoptera: Tortricidae), and one pathogen, *Puccinia eupatorii* Dietel (Uredinales: Pucciniaceae) were rated (based on damage, range and abundance) as having the most potential. The stem-deforming thrips, *L. tractabilis*, was selected as the first agent to be tested. Field host range surveys (15 species - one Lamiaceae and 14 Asteraceae) and laboratory host-specificity testing (43 species in 11 tribes in the Asteraceae) were conducted in Argentina and quarantine in South Africa, respectively. In the native range, no signs of thrips activity were recorded on any of the species surveyed. In laboratory no-choice trials, feeding damage and/or oviposition was recorded, albeit at lower levels than on the *C. macrocephalum* controls, on 14 test species in four tribes. Paired-choice trials were conducted on the 14 species that were positive in the no-choice trials. No feeding or oviposition was recorded on any of the test species, whereas the control plants were heavily attacked. *Liothrips tractabilis* is therefore considered to be suitably host-specific to *C. macrocephalum* and permission for its release is currently being sought.