

The Scotch Broom Gall Mite: Accidental Introduction to Classical Biological Control Agent?

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Abstract

The gall mite, *Aceria genistae* (Nal.) Castagnoli s.l., an accidentally introduced natural enemy of Scotch broom (*Cytisus scoparius* (L.) Link), was first discovered in the Portland OR and Tacoma WA region in 2005. It has since been reported from southern British Columbia to southern Oregon. Observationally, the mite appears to reduce Scotch broom seed production and at high densities can cause extensive stem die-back and plant mortality. In order to utilize the mite as a classical biological control agent, a study of its host range and potential nontarget attack was started in 2006 and continued in 2008-2010. Over 20 ecologically- and economically-valued species were tested in greenhouse and open-field studies. Surveys of confamilial nontarget plant species naturally co-occurring with mite-infested Scotch broom were also assessed. Mites and gall formations were noted on hybrids and ornamental species of Scotch broom. Under greenhouse tests, gall-like growth and eriophyid mites were found on *Lupinus densiflorus* Benth. (*L. microcarpus*), a species listed as endangered in Canada. One unidentified eriophyid mite and no deformed growth was detected on *L. densiflorus* at naturally occurring populations growing sympatrically with mite-infested Scotch broom on Vancouver Island. The ambiguous taxonomy of the mites found on Scotch broom, gorse (*Ulex europaeus* L.) and *L. densiflorus* has added further complications to the study. The overall project and plans for developing a petition for its approval as a biological control agent will be discussed.