Field evaluation of *Fusarium oxysporum* as a biocontrol agent for *Orobanche ramosa*

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Under the changing agro-climatic conditions of western Europe, the root parasitic weed *Orobanche ramosa* infests at a progressing rate host crops such as hemp, tobacco and to an increasing degree oilseed rape in France. *Fusarium oxysporum* (FOG) was isolated from *O. ramosa* tubercles, parasitizing tobacco in Germany. The fungus was formulated in wheat flour kaolin (‘Pesta’) granules and showed promising results in controlling *O. ramosa* under greenhouse conditions, reducing number and dry matter of the parasite by up to 90%. Consequently FOG was tested under field conditions using different application techniques. In-furrow application and broadcasting of the inoculum after tobacco planting as well as subsoil application pre-planting decreased the number of *Orobanche* shoots. In a further experiment, in-furrow application of FOG markedly reduced number and dry matter of *O. ramosa*. However, no distinct further reduction could be noticed when biocontrol was combined with a resistance reducer. The results revealed the potential of plant pathogens for *Orobanche ramosa* control and future experiments should work on enhancing the observed effect under natural conditions.

Potential for biological control of *Hydrocotyle ranunculoides* in Europe

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*Hydrocotyle ranunculoides* is an invasive aquatic macrophyte, present in several European countries and elsewhere outside its native range of southern North America. The plant has spread from single introductions to occupy marginal habitats of over 30 miles in at least three rivers in the UK in the last 4 years. Attempts have been made to control this plant using mechanical and chemical means, combined with manipulation of the environment. Most of these have proved unsuccessful due to rapid recolonisation. Given the restrictions on chemical use for aquatic weed control in Europe, we propose a novel combination of mechanical control and biological control as a technique to prevent the spread of the plant within catchments where it is already established, and to eradicate relatively new small infestations. Data will be provided on collection of potential biological control agents from Argentina, the initial screening and preliminary host specificity studies.