

Towards to study of the sunflower broomrape fungi disease in Georgia

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The parasite plant, sunflower broomrape, *Orobance cumana*, is a major pest and is widely spread in sunflower production regions of East Georgia. Experiments were conducted on influence of the introduced fungus, *Fusarium oxysporum* f. sp. *orthoceras* (FOO) on *O. cumana* and its host sunflower strain 'Donskoy-60'. These investigations indicate that FOO is a potent biological agent to control against *O. cumana* in conditions experienced in Georgia, and it is an important component in integrated pest management for sunflower management.

Biological control of *Imperata cylindrica* in West Africa using fungal pathogens

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Imperata cylindrica (cogon grass), a noxious, rhizomatous grass with a pan-tropical distribution represents one of the most serious constraints to crop production and poverty alleviation in West Africa. The fungi, *Bipolaris sacchari* and *Drechslera gigantea*, have shown potential as bioherbicides to control cogon grass (var. major) in the southeastern USA. Biological control may however prove to be ineffective if the West African cogon grass (var. *africana*) is genetically heterogeneous from the southeastern USA cogon grass. The objectives of this study are to assess the genetic diversity between the West African and southeastern USA cogon grass populations and to determine the virulence of the southeastern USA and West African isolates of *B. sacchari* and *D. gigantea* on the West African cogon grass population. A further objective is to determine the potential of three biotrophs: two rust fungi, *Puccinia imperatae* and *Puccinia fragosoana*, and a head smut, *Sporisorium schweinfurthiana*, associated with cogon grass in South Africa, where cogon grass is not a weed, for control of cogon grass. Interim results indicate that there are no differences between the USA and West African fungal isolates in terms of their virulence on the var. *africana*. The genetic variation results and the implications for fungal biocontrol on cogon grass in West Africa will be discussed.