influenced by C and N sources in the suspending-medium. Current investigations cover nutrition, spore production/infectivity and extended host-range testing. The prospects are good for the development of this pathogen as a biocontrol agent.

Screening of fungal pathogens for the control of *Papaver somniferum* in the former Soviet Union

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Field collections of samples of diseased, cultivated *Papaver somniferum* and wild *Papaver* spp. was carried out in Russia, Kazakhstan and Tadzhikistan, for the purpose of identifying biocontrol agents of illicit-drug plants. In total, about 500 plant samples were collected. Laboratory-screening experiments showed that some strains of *Fusarium* and *Rhizoctonia* species were virulent against *P. somniferum*. It was found that wild papaver samples often resulted in strains virulent against *P. somniferum*. Virulent strains have been isolated from roots and soil samples more often than from the stems and from reproductive organs. Host-specificity of the virulent strains was tested on common cultivated plants in Russia. In field experiments, three isolates of *Fusarium oxysporum* and one isolate of *Rhizoctonia callae* were effective, up to 20-40% of the plants were killed or infected (root discoloration). Comparative molecular diagnosis of DNA of inoculated and of re-isolated strains, by PCR, suggested that the infections were caused by the inoculated fungi. However, further investigations are necessary to prove their suitability for biological control.

Rottboellia cochinchinensis: developing a biological control strategy

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Rottboellia cochinchinensis (itch grass) is a pantropical, aggressive, annual weed of several tropical and subtropical crops, including maize, sugar cane and upland rice. The species has an Old World centre of origin, but was introduced into the New World around the turn of the century, and has become a major invasive weed in Central America and more recently in many South American countries. The weed is proving to be difficult to control using conventional methods, and hence was selected for an investigation into the potential of fungal pathogens as biological control agents. Both mycoherbicide and classical approaches are being investigated. A prototype mycoherbicide has been developed based on isolates of *Colletotrichum* sp. nov. near *graminicola* from Asia. These isolates were found to be highly specific and damaging to *R. cochinchinensis* in the glasshouse, and field trials were undertaken using various novel formulations. However, the results have been inconclusive. This work is being continued at Kasetsart University, Thailand. Investigations have also been undertaken on two obligate basidiomycetes, a systemic, head smut, *Sporisorium* (*Sphacelotheca*) *ophiuri*, and a rust, *Puccinia rottboelliae*. Both are endemic in Africa and Asia, but absent from Australasia and the New World. The rust has been observed to cause severe seedling-infection in the field. Investigations are underway using an isolate of the rust from Kenya. The results have shown that the rust will attack 14 of the 16 biotypes of *R. cochinchinensis* that have been screened, from regions of Africa and tropical America. Preliminary host-range tests suggest that the rust is specific to *R. cochinchinensis*. Thus, the rust may have potential as a classical biocontrol agent in the New World, perhaps involving a management strategy based on early season augmentation.