

## Greenhouse Screening of the Saprophytic Resident Microflora for Control of Leaf Spots of Wheat (*Triticum aestivum*)

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Ten microorganisms of the epiphytic microflora of wheat leaves in Buenos Aires Province, Argentina, were evaluated under greenhouse conditions as potential biocontrol agents of the pathogens *Alternaria triticimaculans*, *Bipolaris sorokiniana*, *Drechslera tritici-repentis* and *Septoria tritici* in two application sequences (prior to or together with the pathogens). The antagonists significantly reduced the expression of the diseases on wheat plants compared with control plants not inoculated with the antagonists. Maximum percentage of reduction of the necrotic lesion area (NLA) (40–55%) of *S. tritici* resulted when *Cryptococcus* sp., *Rhodotorula rubra* and *Penicillium lilacinum* were sprayed on leaves prior to inoculations with the pathogen. *Bacillus* sp., *Cryptococcus* sp., *Fusarium moniliforme* var. *anthophyllum*, *P. lilacinum* and *R. rubra* reduced significantly (34–52%) the NLA of *B. sorokiniana* in both of the application sequences. The best antagonistic effect against *A. triticimaculans* was shown by *Aspergillus niger*, *Bacillus* sp., *Chaetomium globosum*, *F. moniliforme* var. *anthophyllum* and *Nigrospora sphaerica*, with a NLA reduction from 21% to 35% in the co-inoculation or in the sequential application. All microorganisms except *N. sphaerica* performed better than the control against *D. tritici-repentis*. The area under disease progress curve (AUDPC) of the pathogens appeared to progress similarly, but at lower values, in treated plants than in untreated controls. The two yeasts and the bacteria decreased AUDPC to 50–55% of *S. tritici* and *B. sorokiniana* compared with the control in both application sequences, whereas the maximum efficacy against *A. triticimaculans* was reached by *N. sphaerica* and *A. niger* for the sequential application and by *F. moniliforme* var. *anthophyllum* for the co-inoculation. If the parasitism occurs also in nature, application of antagonists for biological control might provide the opportunity to compete with the pathogens and regulate their colonization in wheat leaves.

KEY WORDS: Biological control; wheat; foliar pathogens; phylloplane.

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Received Jan. 20, 2001; revised ms. received May 25, 2001; received in final form July 10, 2001; <http://www.phytoparasitica.org> posting July 27, 2001.

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