

5.5 CHRISTOPH KREITZER¹, HERBERT EIGNER¹

AGRANA Research & Innovation Center, Josef-Reither-Str. 21-23, A – 3430 Tulln

PREVENTATIVE EFFECTS OF BCA-COATED INTERCROP SEEDS AGAINST *RHIZOCTONIA SOLANI*

ABSTRACT

Rhizoctonia solani (AG 2-2IIIB) causes Rhizoctonia root and crown rot, a major problem in sugar beet production worldwide. Recent investigations showed differences in the susceptibility of some major intercrop species against the soilborne pathogen. Furthermore preventative effects of Biological Control Agents (BCA) against *R. solani* could be realized in vivo by “seed coating”, even on Phacelia, a well-known host plant. The consideration of the present study was to investigate effects of intercrops as well as BCAs – used as “seed coating” – on a following sugar beet - maize crop rotation in vivo.

For this approach, three different intercrop species were coated with a *Trichoderma* genus by a newly established technique. Intercrops were grown in pots in a multi-factorial-design (intercrop x coating x artificial inoculation). The residues of intercrops were mixed into the soil. These substrates were the basis of further sugar beet and maize growing.

Tested intercrop species didn't differentiate in Rhizoctonia-symptoms on sugar beet, they significantly increased their yield. Applied BCAs reduced root rot and constrictions on a susceptible sugar beet cultivar up to 20%. Furthermore, results figured out that protective effects of BCAs could be extended on roots of maize, which was grown after sugar beet. Results showed this approach as an appropriate method to assemble an antagonistic potential in soil to form a microbial controlled atmosphere for a sugar beet - maize crop rotation against soilborne pathogens.