

4.4 SASCHA SCHULZE, HEINZ-JOSEF KOCH

Institute of Sugar Beet Research (IfZ), Holtenser Landstraße 77, D – 37079 Göttingen

SOIL STRUCTURE EFFECTS ON RHIZOCTONIA INFESTATION OF SUGAR BEET (*BETA VULGARIS*) – CONCEPT AND FIRST RESULTS

**Influence de la structure du sol sur l'infestation de betteraves sucrières (*Beta vulgaris*) par le rhizoctone – concept et premiers résultats /
Einfluß der Bodenstruktur auf den Befall von Zuckerrüben (*Beta vulgaris*) mit Rhizoctonia – Konzept und erste Ergebnisse**

ABSTRACT

The soil borne pathogen *Rhizoctonia solani* (*R. solani* AG2-2IIIB) is known to cause the late crown and root rot in sugar beet. Chemical and physical soil characteristics are assumed to have a strong influence on the Rhizoctonia inoculum potential in the soil and the Rhizoctonia infestation of sugar beet. To verify these hypotheses, two multi-factorial split-plot field experiments (pre-crop / inoculation as main plot, tillage, sugar beet cultivar and harvest time as sub-plots) with four replicates were conducted in Göttingen and Haardorf (Lower Bavaria). Both soils were inoculated (Göttingen 150 kg ha⁻¹ and Haardorf 50 kg ha⁻¹) with a barley inoculum and maize was grown as a susceptible pre-crop to create a high and uniform infestation potential in the soil. Maize straw was left (grain maize) or removed (silage maize) from the field, and the soil structure of the topsoil (0-15 cm) was differentiated by a variation of soil tillage and additional soil compaction in autumn (plow 25 cm, cultivator 10-12 cm, cultivator 5 cm plus additional load).

In 2014 and 2015 soil samples will be taken to determine relevant chemical and physical soil characteristics. Soil properties will be additionally recorded by data loggers in the field. Furthermore, the Rhizoctonia infestation level will be evaluated by a crop scoring system for sugar beet and additionally, field bean (*Vicia faba*) as a susceptible catch crop in the field; sugar beet yield and quality will be determined at three harvest dates.

The poster will present the concept and first results from 2013/14.
