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CHEMICAL CONTROL OF THE LATE ROOT AND CROWN ROT IN SUGAR BEET CAUSED BY *RHIZOCTONIA SOLANI*

Contrôle chimique du Rhizoctone brun en betteraves sucrières causé par *Rhizoctonia solani* / Chemische Kontrolle der Späten Rübenfäule in Zuckerrüben, verursacht durch *Rhizoctonia solani*

ABSTRACT

The late root and crown rot (RCR), caused by *Rhizoctonia solani*, is a severe disease in sugar beet world-wide resulting in yield losses of up to 50% in infested fields. Therefore integrated pest management strategies are of increasing importance. In Germany control measures are restricted to cultivation management like crop rotation and growth of resistant cultivars. Quantitative resistance in the cultivars available results in insufficient disease control and is connected to yield penalty under non-diseased conditions. Whereas in other countries suffering from RCR, fungicides containing the active substance azoxystrobin, are used successfully for disease control, no fungicides are registered in Germany. The efficacy of a new fungicide was compared to an established fungicide in three independent field trials with artificial epiphytotic as well as natural infestation. Both, the control fungicide and the test product, containing active substances belonging to the triazole and strobilurin group, were applied at BBCH16 and BBCH31. The application of both fungicides resulted in a comparable level of disease control and disease severity was decreased from up to average 82% rotten beet surface to 16%. Further, the interaction of fungicide treatment and plant resistance level under varying disease pressure was studied. In the trial, showing the highest disease severity, fungicide application increased white sugar yield from 7.6 to 13t/ha in the resistant cultivar, from 5.7 to 13.7t/ha in the intermediate resistant cultivar and from 3.3 to 14.1t/ha in the susceptible cultivar.
