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OCCURRENCE OF VARIOUS TYPES OF BNYVV IN AUSTRIAN SOILS

ABSTRACT

Rhizomania of sugar beet is one of the most serious diseases in sugar beet occurring worldwide. The plant pathogen BNYVV can cause a considerable yield damage in heavily infested fields. The only effective mean to control the virus is the cultivation of resistant cultivars. Since several years, *Rz1* resistance breaking types of BNYVV were detected in different soils in USA and Europe. A monitoring of regions with intensive sugar beet cultivation accompanied by the occurrence of Rhizomania is therefore indispensable to identify potential sources of *Rz1* resistance breaking pathotypes. Here, we analysed soil samples taken from regions in the Eastern part of Austria where plants with *Rz1* resistance gene showed severe Rhizomania symptoms. In a greenhouse test BNYVV susceptible genotypes and genotypes with resistance genes *Rz1* and *Rz1+Rzx*, respectively, were grown in BNYVV infested soils and subsequently ELISA and pathotype analysis were performed. Analysis of the p25 tetrad combination revealed a broad spectrum of different types of the virus and can be allocated to different regions in Austria. Additionally, the presence of RNA 5 was tested. ELISA results demonstrated that lateral roots of susceptible plants clearly contained higher virus titres compared to the resistant genotypes and displayed variation in virus content depending on the region of the field sample. The knowledge of the distribution of the various types of BNYVV in Eastern Austrian soils will contribute to a better understanding of the spread of the various types of virus and may improve management of sugar beet cultivation.
