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OF SUGAR BEET RESEARCH

ABSTRACTS OF PAPERS

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**Innovation: our driver for a profitable
and ecologically balanced
sugar beet production**

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RTD and SBR

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FIELD TRIAL EVALUATION TO RTD SUSCEPTIBILITY/TOLERANCE TO RTD IN SERBIA: IS THERE A TOLERANCE TO RTD IN CURRENT VARIETIES?

Sugar beet is the second most important source for the sugar industry, particularly important in temperate climate zones of Central, West, and East Europe. However, its production has declined recently due to various factors of which the most important are subsidy cuts and the spread of various plant diseases. In the Pannonian Plain (Slovakia, Hungary, Romania, and Serbia), a disease called rubbery taproot disease (RTD) has been observed for a long time. The variability in RTD symptoms and the extent of damage it causes have made its detection quite challenging, often leading to misdiagnoses as other diseases. However, the identification of *Candidatus* Phytoplasma solani as the cause of RTD has resolved the issue of its diagnosis. The latest outbreak in Serbia has had a significant economic impact on sugar beet production, prompting an urgent response to aid the industry and growers. In our study, conducted during the 2022 and 2023 seasons, we assessed the susceptibility/tolerance of thirty registered sugar beet hybrids in Serbia, evaluating their impact on root yield and quality in naturally infected experimental fields. Building on the results from the 2022 season, we included an additional trial in the 2023 season involving two hybrids placed in a cage with inserted vectors (*Reptalus* spp.). One of the added hybrids exhibited high sensitivity to RTD, while the other demonstrated a high level of tolerance during the first season of 2022. In both seasons, we observed a high RTD infection rate, with variations among hybrids, ranging from 18.5% for variety no. 22 to 80% for variety no. 30 in 2022, and similar variations in 2023. Notably, in the cage containing two hybrids with differing RTD susceptibility in 2022, both hybrids deteriorated in 2023. These findings suggest that there is likely no RTD resistance among registered hybrids in Serbia, and specific insect vectors' attractiveness may play a role in this phenomenon.