

Development of winter wheat leaf blotches depending on meteorological conditions

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Abstract: Tan spot (caused by *Pyrenophora tritici-repentis*) and Septoria tritici blotch (caused by *Zymoseptoria tritici*) are the most widespread winter wheat leaf blotches in Latvia. Precipitation and air temperature are important factors in the development of fungal diseases. The aim of the present research was to clarify the development of leaf blotches in winter wheat depending on meteorological conditions. A field trial was conducted at the Research and Study farm “Peterlauki” (Latvia) of the Latvia University of Life Sciences and Technologies in 2018–2021. The disease impact during the vegetation periods was estimated by calculating the area under the disease progress curve (AUDPC). The severity of leaf blotches in winter wheat leaves differed significantly during the four vegetation seasons. Tan spot was the dominant disease in 2018, 2019 and 2021 (respectively 2.12%, 18.7% and 4.1% in the untreated variant at the time of grain ripening (GS 75–79)), when weather conditions were dry and warm. The first symptoms of tan spot were observed already at GS 31–32, but rapid development of the disease began at the time of grain ripening (GS 73–79 depending on year). In such conditions, Septoria tritici blotch started later and its progression was slower than that of tan spot. Septoria tritici blotch dominated in 2020 (11.4% in the untreated variant at GS 75–79), when precipitation amount was high. The first symptoms were observed at GS 31–32, but rapid disease development started at GS 73 (2.7% in untreated variant) which coincided with rainfall. The differences in average AUDPC values during investigation years fluctuated within a range of 13–142 units for tan spot and 1–57 units for Septoria tritici blotch. The research was supported by the EIP–Agri project “The development of the decision–making support system for restriction of the diseases, affecting leaves and ears of winter wheat”.

Keywords: *Zymoseptoria tritici*, *Perenospora tritici-repentis*, Values of AUDPC, Severity

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Conflict of interests

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