Using of disease resistant wheat varieties – an important IPM tool

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Abstract

Crop varieties that are bred to resist certain pests are an important component of IPM. Many diseases have been managed effectively by using in production resistant or at least tolerant varieties.

Cereal growing is the main area of plant production in Latvia; there were 48% of cereals from all sowings (1086 thousand ha) in 2011 (46% winter, 64% spring type). The main crop is wheat – 311.3 thousand ha (59% of all cereals). The base of variety selection for growing mainly is a yield potential and grain quality, for winter type – winter hardiness also. There are very widely grown wheat varieties in Latvia which origin is Sweden, Germany, Poland etc. Important element of a wheat growing technology is a disease control. There is a wide spectrum of diseases spread and been economically important in wheat in Latvia: root rots (*Fusarium* spp., *Bipolaris sorokiniana*, *Gaeumannomyces graminis* etc.), leaf diseases (*Blumeria graminis*, *Pyrenophora tritici-repentis*, *Septoria tritici*, *Stagonospora nodorum*, *Puccinia striiformis*, *P.triticina*), ear diseases (*Fusarium* spp., *Tilletia caries, T.controversa etc*). Therefore the information about disease resistance is very important for farmers selecting varieties for growing, especially using minimum or zero tillage technologies.

In the action plan for preparation of a system to implement IPM principles there is planed an activity – the collection of information about cereal variety reaction to the diseases in Latvian conditions. Information will be available for farmers through the public database on the webpage of the State Plant Protection Service – the responsible body for implementation and using of IPM in agricultural production. Field tests of winter and spring wheat varieties were carried out in 2008-2012 evaluating an incidence and severity (%) of main diseases in natural conditions. Plot size 10.5 m^2, 4 replicates, seed material untreated, no fungicide applications, other technological elements according to the local GAP. Duo to variable climate conditions by years results are fluctuating but there can be marked varieties infected in lower level by root rots and main leaf diseases, more suitable for growing in the integrated plant production system based on a reasonable using of fungicides.

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