THE INFLUENCE OF FUNGICIDES FOLIAR TREATMENTS ON THE WHEAT YIELD AND QUALITY

Nagy Elena
Agricultural Research, Development Station Turda, Romania, nagyeln@yahoo.com

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SUMMARY

Wheat crops are damaged by numerous diseases which caused quantitative and especially qualitative yield losses in Transylvania conditions. The complex of foliar diseases: powdery mildew (Blumeria graminis f. sp. tritici), leaf and glume blotch (Septoria tritici and Stagonospora nodorum), rusts (Puccinia striiformis, Puccinia recondita and Puccinia graminis) and tan spot (Pyrenophora tritici – repens) as well as head blight (Fusarium spp.) and ears blackening (Alternaria and Cladosporium) are the most frequently in wheat crops. Yield losses reaching to 30% from yield value depend on climatic conditions and wheat cultivar. The effect of fungicide foliar treatments and winter wheat was studied at ARDS Turda during two ears. It was organized twofactorial trials after block split type with 3 treatments variants: untreated (T_0), 1 Treatment (T_1) applied through early flag leaf emergence (ZGS38) and 2 treatments (T_2) applied through early flag leaf emergence (ZGS38) and in the end of flowering (ZGS73). The fungicides used contain: spiroxamine 250 g/l+tebuconazole 167g/l+triadimenole 43g/l at dose 0.6 l/ha, respectively prothioconazole 125g/l+ tebuconazole 125g/l at dose 0.9 l/ha. In the field, attack degree for main diseases (%) and yield (kg/ha) and in the laboratory, some baking parameters. Foliar diseases: powdery mildew, tan spot, leaf blotch and brown rust and ears diseases: Fusarium head blight (FHB) were presented in wheat crops. By applying of one single fungicide treatment, attacked leaf area by foliar diseases was significantly reduced in average with 50% and quite more at Turda 2000 and Apullum cultivars. Applying of 2 treatments diminished substantially diseased leaf area (3,8%) and the FHB attack (2,6%), with positively effect on the yield capacity. Applying one foliar treatment increases yield with 5,4-13,8 %, average being 9,5% and for two treatments with 14,0-20,1%, average being 16,4 %, in the two ears. For Turda 95 and Dumbrava wheat cultivars, the highest yield by 6436 kg/ha respectively 6462 were registered. Between spikes and diseased kernels a positive and significant correlation exists, defined by equation: y=1,0447x+5,7327; R² = 0,6268*. Besides substantially significant yield gains were really improved the quality in term baking due to gluten content. Applying two treatments with fungicides determined an evident increase reach up to 30,7 % of the wet gluten and to 11,7% of the protein content. Realizing of wheat performed and quality yield could not possible without a corresponding protection against foliar and ear diseases in humide and semi-humide area, like Transilvania-Romania.