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2.22. PREGLED PROUČAVANJA POPULACIJE *Puccinia graminis* Pers. F. sp. *Tritici* Erikss. Et Henn. U SRBIJI

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Prva proučavanja populacije *P. graminis tritici* u Srbiji započeta su krajem 50-tih godina XX veka. U dosadašnjim proučavanjima razlikuju se dva perioda: prvi obuhvata identifikaciju fizioloških rasa pomoću standardnih diferencijalnih sorti, a drugi utvrđivanje biotipova korišćenjem izogenih linija pšenice.

Dobijeni rezultati više autora pokazali su da je populacija *P. graminis tritici* u Srbiji složena, jer se sastoji iz većeg broja rasa i biotipova. Osim toga, ona je ispoljila i značajnu varijabilnost, jer se rasni sastav vremenom menjao. Na pšenici i ječmu su identifikovane 22 rase (1, 10, 11, 14, 14A, 17, 19, 21, 21oranž, 34, 40, 53, 95, 116, 184, 194, 194oranž, 208, 214, 221, 222 i 227) i 52 biotipa (RKK, RKT, RKF, RKC, RKR, RKH, RKG, RKB, RKJ, RKS, RKD, RHT, RHK, RHP, RHJ, RHF, RHS, RHL, RRT, RRF, RTT, RTF, RTH, RTK, RTG, RFB, RPG, RGG, CKF, CFF, CKK, CJC, CKC, CJR, CDF, CJT, MKF, MKC, MJC, MKT, MCK, MTC, TRT, TKH, HHQ, HKS, HKB, GHB, QKG, KKH, KKJ i LKK). U prvim istraživanjima rasa u Srbiji utvrđena je dominacija rasa 14 i 21, a kasnije 11 i 34, dok su najzastupljeniji bili biotipovi RKK, RKT, RKF i RHT.

Populacija prouzrokovala stabljične rđe pšenice na travama sastojala se od 15 rasa (1, 10, 11, 14, 14A, 21, 22, 34, 111, 116, 186, 194, 196, 214 i 294) i 35 biotipova (RKT, RKK, RKF, RKB, RKR, RKG, RHT, RHN, RHR, RHS, RHK, RRK, RRT, RTT, RFB, BBB, BBD, DBB, TKH, THK, THT, HKG, KKH, NTH, LBB, LGB, MKC, MJC, QKS, QHB, QKB, QBB, QGF, CKC i CJC).

Strukturu populacije *P. graminis tritici* na *Berberis* vrstama činilo je 18 rasa (1, 11, 14, 14A, 21, 34, 102, 111, 116, 151, 180, 186, 194, 212, 214, 215, 221 i 251) i 30 biotipova (RKF, RKK, RKT, RKB, RKG, RKH, RKC, RKL, RHT, RRT, RRK, RTT, RTK, RTH, RTF, RGD, RQB, MKT, MQB, NHC, NTH, BBB, BBD, LGB, LBB, LDB, CKF, CBB, PHB i THT). Na ovoj prelaznoj hraniteljki utvrđene su rase 102, 151, 180, 212, 215, i 251 i biotipovi RGD, RQB, MQB, NHC, LDB, CBB i PHB, kojih na osnovnim hraniteljicama nije bilo, što potvrđuje važnu ulogu *Berberis* spp. u nastajanju novih genotipova patogena.

Dosad su u Srbiji na pšenici, ječmu, travama i *Berberis* vrstama identifikovane 33 rase i 77 biotipova *P. graminis tritici*. Ovako visoka varijabilnost ovog patogena predstavlja otežavajući faktor u iznalaženju dobrih donora Sr gena i rad na oplemenjivanju pšenice na otpornost prema *P. graminis*.

2.22. INVESTIGATIONS OF THE *Puccinia graminis* F. sp. *Tritici* Erikss. Et Henn. POPULATION IN SERBIA – AN OVERVIEW

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The first investigations on the population of *Puccinia graminis tritici* in Serbia were carried out in the 1950s. In the past investigations two periods may be differentiated: identification of physiologic races based on standard differential varieties and biotypes establishment based on isogenic wheat lines.

The results obtained by numerous authors showed that the *Puccinia graminis tritici* population in Serbia is composed of a great number of races and biotypes. In addition, the population showed considerable variability due to the changes of the race composition with time. Twenty-two races (1, 10, 11, 14, 14A, 17, 19, 21, 21orange, 34, 40, 53, 95, 116, 184, 194, 194orange, 208, 214, 221, 222 and 227) and 52 biotypes (RKK, RKT, RKF, RKC, RKR, RKH, RKG, RKB, RKJ, RKS, RKD, RHT, RHK, RHP, RHJ, RHF, RHS, RHL, RRT, RRF, RTT, RTF, RTH, RTK, RTG, RFB, RPG, RGG, CKF, CFF, CKK, CJC, CKC, CJR, CDF, CJT, MKF, MKC, MJC, MKT, MCK, MTC, TRT, TKH, HHQ, HKS, HKB, GHB, QKG, KKH, KKJ and LKK) were identified on wheat and barley. The first investigations on races in Serbia proved the predominance of races 14 and 21, later these were 11 and 34, while the most expanded biotypes were RKK, RKT, RKF and RHT.

The population of stem rust causer on the grasses was composed of 15 races (1, 10, 11, 14, 14A, 21, 22, 34, 111, 116, 186, 194, 196, 214 i 294) and 35 biotypes (RKT, RKK, RKF, RKB, RKR, RKG, RHT, RHN, RHR, RHS, RHK, RRK, RRT, RTT, RFB, BBB, BBD, DBB, TKH, THK, THT, HKG, KKH, NTH, LBB, LGB, MKC, MJC, QKS, QHB, QKB, QBB, QGF, CKC and CJC).

The population of *Puccinia graminis tritici* on *Berberis* spp. was composed of 18 races (1,11, 14, 14A, 21, 34, 102, 111, 116, 151, 180, 186, 194, 212, 214, 215, 221 and 251) and 30 biotypes (RKF, RKK, RKT, RKB, RKG, RKH, RKC, RKL, RHT, RRT, RRK, RTT, RTK, RTH, RTF, RGD, RQB, MKT, MQB, NHC, NTH, BBB, BBD, LGB, LBB, LDB, CKF, CBB, PHB and TNT). Races 102, 151, 180, 212, 215 and 251, and biotypes RGD, RQB, MQB, NHC, LDB, CBB and PHB were identified on this secondary, but not on the primary host. This confirms the importance of *Berberis* spp. in originating new genotypes of the pathogen.

Until now 33 races and 77 biotypes on wheat, barley, grasses and barberry have been identified in Serbia. Such high variability of the pathogen poses the limiting factor in discovering useful donors (sources) of Sr genes and breeding wheat resistant to *P.graminis*.