

## Determination of Physiological Races of *Puccinia striiformis* f.sp. *tritici* in Iran, 2015

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### Abstract

The stripe (Yellow) rust of wheat is one of the wrecker diseases in Iran. Since 1980 several epidemics have occurred in Iran and causing the breakdown of widely utilized sources of resistance in wheat cultivars. In 1993 wheat yield loss due to stripe rust was estimated 1.5 million tones in Iran. In the spring of 2010 widespread of stripe rust was started from west and north west of our country, and most old cultivated wheat cultivars in this region showed susceptibility reaction. In this study twenty-four isolates of *Pst.* were collected from different parts of Iran during 2015. Infection types were assessed on a 0-9 scale 16 and 18 days after inoculation using a scale similar to that described by McNeal *et al.* (1971). Infection types (ITs) 7 to 9 were regarded as virulent (susceptible) and less than 7 are avirulent. Pathotypes 230E150A+, Yr27+ (from Karaj), 174E150A+, Yr27+ (from Shavoor) and pathotype 166E190A+, Yr27+ from Mashhad were more aggressive during this study. Virulence on plant with gene/s *Yr2*, *Yr6*, *Yr7*, *Yr9*, *Yr25*, *Yr27*, *YrSD* and *YrA* were more common and detected in greenhouse condition, and virulence for plants with the gene/s *Yr1*, *Yr3*, *Yr32*, *YrSU*, *YrND* and *YrCV* was limited. For genes *Yr4*, *Yr5*, *Yr10*, *Yr15* and *YrSP* virulence was not detected during 2015. Use of resistant cultivar is the best method to control the disease. Because of screening of wheat germplasm over last 10 years to pathotype of stripe rust with virulence on *Yr27*, new released cultivars included Mehregan, Parsi, Sirvan, Baharan, Morvareid, Gonbad, Pishgam, Zareh, Urom, Maihan, Haydarei and Shabrang were resistant to the new raising race with virulence on plants with *Yr27* in the field condition. Strategy of our breeding program is using of pathology data to release of new resistance cultivars.

Key Words: Wheat, Yellow Rust, Physiological Race, Resistance

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