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Evaluation of powdery mildew resistance in wheat cultivars in Mazandaran province

M. SALARI[1], D. YAZDANI[2] S. M. OKHOVVAT[3] and A. AKBARI-HAGHIGHI[4]

Ph.D student, 2- Former graduate student, 3- Professor, Plant Pathology Department, College of Agriculture, University of Tehran, Karaj. Iran. 4- Seed and Plant Improvement Institute. AREEO. Karaj, Iran.

ABSTRACT

Powdery mildew resistance was evaluated in 44 wheat cultivars selected from a total of 400 relatively resistant wheat cultivars during the growing season in 1994. In subsequent year, 34 of these cultivars were tested for resistance under field conditions in Gharakhil and Baie-Cola in Mazandaran province. A total of 15 wheat lines and cultivars exhibiting reasonable levels of resistance against powdery mildew were identified. These wheat plants could be utilized for incorporating resistance genes into high yielding wheat varieties in future breeding programs.

Infection index of plants was graded between "O" (immune) to "9" (highly susceptible). Line carpenter/Ald "S" Showed to be immune and line Ad "m" Pewee "s" was highly resistance. The average index for all the tested cultivars showed to be less than "5" using 8 internationally standard wheat varieties in a greenhouse experiment. Three races of the pathogen (races "46", "52" and "75") were identified throughout the region. These 8 varieties were planted in plastic pots and were placed in the soil on the margin of the wheat field. In spring of 1995 we realized that the variety "Weihenst, M1" carrying (Pm4b) gene was resistant to all races of pathogen present in the entire area. Greenhouse studies also showed the same results. Host range studies of powdery mildew fungi on graminacious weeds of Mazandaran province showed that except *Lolium temolentum*, other species such as *Avena sativa, Bromus japonicus, Phalaris minor* and *Aegilops triuncialis* were all susceptible to the pathogen. When fungus conidia as inoculum were sprayed on these grasses, only species of the genera *Triticum* and *Aegilops* showed to be infected.

Key words: Resistance, Powdery mildew, Wheat, Cultivars, Race, Host ranges.

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Address of the authours: Engg. M. Salari, Engg. D. Yazdani, Prof. S. M. Okhovvat, Plant Pathology Department college of agriculture (Karaj), Tehran Univ., Prof. A. Akbari-Haghighi, Seed and Plant Improvement Institute, AREEO, Karaj, Iran.