عنوان مقاله:

Identification of resistance to Puccinia striiformis f. sp. tritici in some elite wheat lines

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خلاصه مقاله:

Race-specific resistance of wheat to yellow rust caused by Puccinia striiformis f. sp. tritici has been reported as short-lived. Partial resistance, a kind of quantitative resistance, has been reported to be more stable. Partial resistance in terms of slow rusting parameters including final rust severity (FRS), apparent infection rate (r), relative area under disease progress curve (rAUDPC), and coefficient of infection (CI) was evaluated in a set of twenty six wheat genotypes along with susceptible control during ۲۰۱۰-۲۰۱۱ cropping year. This study was conducted in field plots at Ardabil Agricultural Research Station (Iran) under natural infection conditions with twice artificial inoculation. Artificial inoculation was carried out by yellow rust inoculum having virulence against Yr۲, Yr۶, Yr۷, Yr۹, Yr۲۲, Yr۲۳, Yr۲۴, Yr۲۵, Yr۲۶, Yr۲۷, YrA, and YrSU. Seedling reaction was also evaluated in greenhouse by using race ۶۶E۰A+, Yr۲۷+. Results of mean comparison for resistance parameters showed that, lines C-۸۹-۴, C-۸۹-۱۷ and C-۸۹-۱۶ along with susceptible had the highest values of FRS, CI, r and rAUDPC, therefore were selected as moderately susceptible or susceptible lines. The lines C-۸۹-۷, C-۸۹-۸, C-۸۹-۹, C-۸۹-۱۰, C-۸۹-۱۳, C-۸۹-۱۴ and C-۸۹-۲۰ had susceptible reactions at seedling stage and low level infection at adult plant stage. Accordingly these lines with low level of different parameters supposed to be having gene/s for varying degrees of partial resistance or high temperature adult plant resistance (HTAP) that can be used for future manipulation in wheat improvement program after confirmatory studies. The remaining lines (except for C-۸۹-۲) were immune or had low level of infection. Thus, these were selected as resistant lines. In this study correlation coefficient between different parameters of slow rusting was highly significant. Based on .the results, the reaction of the studied genotypes to stripe rust varied from sensitive to immune

کلمات کلیدی:

Wheat, partial resistance, durable resistance, yellow (stripe) rust, leaf tip necrosis