Variability and Associations Among Components of Slow Rusting to Leaf Rust in Wheat

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ABSTRACT

It may never been possible to prove the effectiveness of any type of resistance to all races of the pathogen, there are reports that slow rust resistance is long lasting. Experiments were conducted for two seasons during 1998-99 and 1999-2000 with leaf rust pathotype 77-5 (*Puccinia recondita* f.sp. *tritici*) at Indian Agricultural Research Institute, New Delhi to study slow rusting of six leaf rust resistant varieties. Wheat variety Agra Local was used as susceptible check. The rust resistant varieties showed highly significant phenotypic variability for each component of slow leaf rusting (latency period, uredial size and uredial number) at adult stage of plant growth under glasshouse and area under disease progress curve in field conditions. All the varieties expressed long latent period, small uredial size and uredial number than the fast ruster, Agra Local. All the varieties also showed less AUDPC values compared to Agra Local. Positive correlation between uredial size and uredial number and negative correlations between latency period and uredial size, and latency period and uredial number suggested that the components of slow rusting resistance were either tightly linked or under pleiotropic gene control. AUDPC was negatively associated with latency period and positively with uredial size and number. So both the components of slow rusting as well as AUDPC can be used suitably as selection criteria in breeding programmes aimed at resistance to leaf rust. Kundan, Galvez-87 and Trap showed stable and high degree of slow rusting resistance as compared to the fast ruster, Agra Local in both the seasons and can serve as slow rust resistance donors in wheat breeding programmes.

Key words : AUDPC, Latency Period, Slow Leaf Rusting, Uredial Number, Uredial Size.

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