

عنوان مقاله:

Genetic analysis of resistance to stripe rust in cross of commercial bread wheat cv. Aflak × Avocet

محل انتشار:

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خلاصه مقاله:

Stripe rust caused by *Puccinia striiformis* f. sp. *tritici* (Pst) is one of the most devastating wheat diseases worldwide. Identification of virulence factors of the pathogen as well as using resistant cultivars are effective approaches in controlling wheat stripe rust. Knowledge of genetic basis of resistance to stripe rust in commercial wheat cultivars is an important objective to ensure that diverse resistance genes are deployed in breeding programs. Five bread wheat commercial cultivars were evaluated for stripe rust using ۴۰ Pst races that were collected from different locations in Iran. Among them cultivar Aflak showed seedling resistance to all races and the other cultivars displayed field resistance at the adult plant stage. To study the heritability and genetic basis of resistance to stripe rust in bread wheat cv. Aflak, it was crossed with susceptible cultivar Avocet's' and F₁, F₂, BC₁ and BC₂ generations were developed. The generations along with their parents were planted in Randomized Complete Block Design (RCBD) with three replications under greenhouse conditions. The seedlings were inoculated using the race ۲۳۰E۱۵۸A+, Yr۲۷+ urediniospores. The resistance components including infection type, latent period, pustule size and pustule density were recorded on single plants of each generation. The results of the weighted analysis of variance showed that there were significant ($p \leq 0.01$) differences among generations for each of the four traits. Generations mean analysis showed that in addition to additive and dominance effects, epistasis, particularly the additive × dominance epistasis also played a significant role in controlling resistance to stripe rust. For all traits, high broad-sense heritability was observed.

Moderate to high narrow-sense heritability was estimated for resistance components

کلمات کلیدی:

resistance components, epistasis, Generations mean analysis, heritability

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