



## GENETIC ANALYSIS OF AGRONOMIC TRAITS OF WHEAT UNDER TERMINAL DROUGHT STRESS

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### Introduction & Aim:

Drought is one of the most devastating environmental stresses which limiting the productivity of agricultural crops. Reduction of crop yield under water deficit conditions is the primary concern of plant breeders the reaction of plants to drought stress depends on several factors such as developmental stage, severity and duration of importance, and genotype. Among the crops, common wheat is the main food of most people in the world According to USDA reports (2018), the total area under wheat cultivation in the worldwide is estimated at 46.0 million acres in the 2017-18. In wheat, germination, tillering and reproductive stages are considered as most sensitive traits to drought stress. Katerji reported that imposition of drought stress during ear formation and flowering stages of wheat reduced 37% and 18% in grain yield and straw yield.

Drought tolerance is one of the leading components of yield stability One effort to improve wheat tolerance to drought stress is through a breeding program. Before setting the breeding and selection methods breeders need to correct the character of genetic information. One way to obtain genetic information is Diallel cross analysis. Diallel analysis can be done using different methods such as Griffing In this method, the general combining ability and the specific combining ability can be conducted by using the appropriate statistical model

to the estimation of components of variance; then, these variances can be used to predict genetic components such as additive and dominant effects of a population based on special assumptions. This study was made to find appropriate parents for hybridization process of desirable plant traits under study as well as sorting of superior cross combinations for development of new cultivars with desirable attributes and future varietal development program.

**Keywords:** GCA, SCA, Wheat genotypes, Drought stress, Diallel.