

DIALLEL CROSS ANALYSIS FOR EARLINESS, YIELD, ITS COMPONENTS AND RESISTANCE TO LATE WILT IN MAIZE

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ABSTRACT

A half diallel set of crosses involved eight yellow maize inbred lines were evaluated in normal and artificial infection by late wilt environments at the Agricultural Research and Experiment Center, Faculty of Agriculture, Benha University, Egypt. To estimate combining ability, improve productivity of maize and resistant to late wilt in Egypt. Mean squares of environments, genotypes and its fractions as well as general and specific combining abilities (GCA and SCA) reached the significance level of probability for all traits. High GCA/SCA ratios exceeded than unity were obtained for days to 50% silking and resistance to late wilt% in artificial infection environment and across environments. For remain cases, non-additive type of gene action seemed to be more prevalent. Ten crosses in both and across experiments, gave significant superiority over SC 168. The useful superiority over SC 168 ranged from 10.02 to 33.59 %. Two crosses P1xP2 and P2xP3 in both and across experiments had significant superiority over the best check hybrid Hytech 2055 by 14.68 and 15.49% in the combined analysis. The parental inbred line P2 exhibited the most accurate general combiner for earliness and grain yield plant-1. The cross P2xP3 was contain most desirable inter and intra-allelic interactions for most traits.

KEYWORDS: *Combining Ability, Diallel Analysis, Yellow Maize, Resistant to Late Wilt*

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