

HETEROSIS AND COMBINING ABILITY OF SUNFLOWER HYBRIDS STUDY

By

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ABSTRACT

The present study was carried out at Sakha Agricultural Research Station , ARC, Egypt during the two growing summer seasons 2009 and 2010 . Six CMS lines ($A_3, A_{10}, A_{28}, A_{29}, A_{33}$ and A_{34}) and four R lines (R_1, R_5, R_8, R_{10}) were used to develop 24 sunflower hybrids to be cultivated at North Delta region . Heterosis, general and specific combining ability were studied for yield and its components and oil percent. Data recorded on ten guarded plants chosen at random . Data revealed that most of the variance due to the lines, testers and line x testers were highly significant for most of the characters. On the other hand, positive and negative heterosis over mid-parent and better parent were detected for all characters , indicated that parental genotypes were genetically diverse. The parents ; A_{29}, A_{33}, A_{10} considered as good combiners for earliness. While , the parent A_{10} was considered as good combiner for (head diameter, No. of seeds/head, seed yield/plant, 100-seed weight, seed yield/fed., seed oil percent and oil yield/fed). From the results, It could be concluded that the progeny of the cross ($A_{33} \times R_{10}$) was the best hybrid for earliness and the crosses ($A_{10} \times R_{10}$), ($A_{10} \times R_1$) and ($A_{10} \times R_5$) are the best hybrids for seed and oil yield / fed. and these crosses could be used as a good hybrids for cultivation at North Delta Region .

Key Word: Heterosis, Combining Ability, Sunflower, Yield components, Oil Percent.