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**STUDIES ON THE OFF-TYPES OF GIZA 86 COTTON**  
**CULTIVAR IN COMMERCIAL SCALE**

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# **STUDIES ON THE OFF-TYPES OF GIZA 86 COTTON CULTIVAR IN COMMERCIAL SCALE**

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## **ABSTRACT**

This investigation was carried out in the Agronomy Department, Faculty of Agriculture, Kafrelsheikh University and Sakha Agriculture Research Station, Kafrelsheikh, Agriculture Research Center, Egypt, during 2015, 2016 and 2017 seasons. Two varieties (Giza 86 and Giza 88) and their off-types were collected from commercial cotton area. In the first season (2015), the off-types were grown and self-pollinated. In the second season (2016), the plants from selfed seeds of Giza 86 normal (N) were crossed to produce F1 seeds. In the third season (2017), nine genotypes (Giza 86 normal, its off-types and their F1 crosses) and eleven genotypes (Giza 88 normal and its off-types) were grown during 2017 at Sakha Agric. Res. Experiment Station. The entries were grown in a randomized complete block design experiment with three replications to study the variance in growth, earliness, yield and yield components and fiber properties between genotypes. Genetical comparison was done by using a random amplified polymorphic DNA (RAPD) analysis and genetic relationships between genotypes were estimated using the cluster analysis. Analysis of variance revealed highly significant differences among all genotypes under study for growth, earliness, yield and its components as well as fiber properties. The off-types showed more vigorous growth while Giza 86 and Giza 88 (pure) gave the highest values of earliness, yield and fiber. The cluster analysis based on all studied traits showed two main groups, Giza 86 (pure) represented the first group. Meanwhile, the off-types represented the rest groups. Giza 88 (pure) revealed the same results. Dissimilarity between the (Giza 86, Giza88) and their off-types were the highest. The results cleared that the mean performance of the standard varieties Giza 86 and Giza 88 exhibited the best values for most traits, while the off-types had the worst values of both yield and fiber traits, especially Fiber length (F.L.), Fiber fineness (F.F.), Yellowness (+b) and Brightness (RD%). This obligates the cotton breeders to exclude the off-type plants from the fields of original cotton varieties, during the purification of seed certification fields of cotton varieties. Also this study disclosed significant differences in mean squares of the standard varieties Giza 86, Giza 88 and their off-types for majority of both yield and fiber traits, indicating the presence of a lot of genetic variability among these used materials.

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