

Abstract

In the present study, the genetic variation and correlation for 24 traits were investigated among 19 cotton cultivars in order to identify the most feasible trait for breeding purposes. The study was performed as a complete randomized blocks with four replications in Kashmar Research Station.

The ANOVA results revealed significant difference among the cultivars with regards to generative branch count, boll weight, early maturity, initial and final height, fifth generative branch length, maximum vegetative branch length, non-bloomed bolls count, tissue length, tissue uniformity, microner, tissue strength, and tissue tension. Duncan's multiple range test suggested that the $\nu\lambda\lambda-93\lambda$ and SKG(A-1) cultivars have the highest and lowest yield, respectively.

Stepwise regression analysis suggested early maturity, boll count; plant density and fifth generative branch length have the highest impact on variation among the cultivars. Factor analysis suggested plant density has the highest direct impact on yield. It's therefore recommended that plant density, boll count and boll weight as feasible criteria for selection purposes. Factor analysis narrowed the 24 selected traits to only six.

Cluster analysis categorized the genotypes into 6 groups, where the first cluster were early maturing genotypes and the fifth cluster had the highest yield.

Keywords: Cotton, Seed cotton, Multivariate analysis



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Title

Studying morphological variation traits in cotton and its correlation with seedcotton yield using multivariate methods

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