**Rapid selection of high yielding and early maturing S1 families of sunflower through multivariate analysis**

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**ABSTACT**

This study examined the relationships of some agronomic traits associated with achene yield and oil content in selected S1*per se* families of Giza 102 sunflower cultivar. And to employ the cluster and principle component (PC) analyses to identify and classify superior S1 families based on the genetic distances. The current work was carried out at Shandaweel Agric. Res. St., ARC, Sohag, during two successive summer seasons, 2016 and 2017. 23 S1*per se* families and Giza 102 were evaluated for days to50% flowering, days to maturity, plant height in cm, stem diameter in cm, head diameter, 100-seed weight in g, achene yield per plant in g plant-1, achene yield per plot in g plot -1 and oil content (%). The portion of each three components was 38.09, 28.23 and 12.33% of total variance, respectively. Achene yield/plant and achene yield/plot have the highest weight in PC1 and S1 families can be grouped by utilizing these two components. Head diameter, SI and SD were associated positively with PC1. Days to flowering, DM and PH were correlated to PC2, while oil content was associated with PC3. The 23 S1 families and Giza 102 were clustered into mainly three clusters.