

RELATIONSHIP AMONG OPEN-POLLINATED CULTIVARS BASED ON DISCRIMINATE ANALYSIS. Paul J. Linnen, Interstate Seed Company, P.O. Box 470, Fargo, ND 58103, U.S.A.

When pedigrees are unknown or incomplete, multivariate statistical methods can be helpful in determining the relationships that exist among genotypes. Once phenotypically similar cultivar groups are identified, limited resources can be allocated to emphasize line development from different groups rather than from cultivars at random. Ten different agronomic and morphological characteristics were measured on 19 different open-pollinated sunflower cultivars. A discriminate analysis was used to study the spatial relationships among the cultivars examined. Of the characteristics examined, those concerned with seed size contributed the most to distinguishing among the entries. The first two discriminate functions were significant (0.01) and explained over 65% of the variation present. Plotting the cultivar centroid values for the first two discriminate functions indicated that the 19 cultivars could be combined to form 8 groups of similar cultivars. Of the cultivars examined, the two appearing to be most different from each other were 'Vympel' and 'Zenith'.