PHENOTYPIC AND GENOTYPIC CORELLATIONS AMONG QUANTITATIVE CHARACTERS CONFERRING ORNAMENTAL VALUE IN GILLYFLOWER (M. INCANA L.)

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SUMMARY

Seven cultivars of gillyflower (Matthiola incana L.), differentiated on the basis of their homogeneity of distinctive plant and flower characters (height of plant, flower color, predominance of plants with composite flowers) were tested in three successive years (2003-2005) in Cluj-Napoca, Transylvania. The experiment aimed at an accurate evaluation of respective cultivars on the basis of their performances for six quantitative characters considered as having ornamental value (plant height, no. of inflorescences/plant, no. of flowers in inflorescence, flower diameter, start of blooming and persistence of flowering). Heritability in wide sense (H) was computed for these six characters and phenotypic and genotypic correlations among all possible pairs of characters were evaluated and discussed in view of efficiency of tandem selection.

It is noticeable that quite a few of the analyzed pairs of characters were found significantly correlated at the phenotypic level (i.e. flower diameter with plant height, no. of inflorescences/plant, no. of flowers/inflorescences; persistence of flowering with no. of flower in inflorescence, plant height and start of blooming) but out of these only in four pairs significant correlations were found at the genotypic level as well. This means that for an efficient tandem selection, aiming at improving ornamental value in gillyflower, there are only few pairs of characters which could be taken into consideration.

All heritability coefficients discussed in the paper seem to indicate a fair efficiency of phenotypic selection for the six quantitative characters under study in gillyflower. This might be true when only single characters are considered, but when pairs of characters are taken into consideration, in spite of their high values of individual heritabilities, the coefficient of genetic correlations are not significant. This is an additional proof that for tandem selection, the individual heritabilities of each character are not reliable indices and breeders should go computing genotypic correlation between the pairs of characters of interest.

REFERENCES


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