CORRELATION AND PATH COEFFICIENT ANALYSIS IN YELLOW SARSON (BRASSICA CAMPESTRIS VAR. SARSON)

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ABSTRACT

In yellow sarson (B. campestris var. sarson) correlation and path coefficient analysis showed significant positive association of seed yield with days to maturity. Path coefficient analysis revealed maximum direct effect of oil yield and number of seeds per siliqua on seed yield.

Information on character association is useful in selection programme. Among Brassicaceae, yellow sarson is an important oilseed crop due to yellow seed colour and high oil content. In order to develop high yielding varieties with desirable attributes the present study was undertaken to estimate correlation and path coefficients with respect to yield and its components in yellow sarson.

The experiment was conducted at the Students Instructional Farm, Narendra Deva University of Agriculture and Technology, Kumarganj, Faizabad (U.P.) during rabi season 2000-2001. Thirty seven newly collected germ plasm of yellow sarson along with national check Type-151 were grown in randomized complete block design with three replications during rabi season 2000-2001. Each entry and check were grown in three meter long row spaced 45 cm apart. Inter plant distance within rows was maintained at about 15 cm by thinning after 15 days of sowing. Recommended agronomic practices and fertilizer dose of 50 : 30 NP kg/ha was applied to raise a good crop. Observations were recorded on five randomly selected plants for days to initial flowering, plant height (cm), number of primary branches/plant, number of siliquae on main raceme, number of siliquae/plant, length of siliqua (cm), days to maturity, 1000-seed weight (g), seed yield/plant (g), oil content (%) and oil yield/plant (g). Correlations were worked out according to the formula given by Robinson et al. (1951). Path coefficients were calculated as per method of Dewey and Lu (1959).

Analysis of variance revealed significant differences due to genotypes for all the characters understudy. The genotypic and phenotypic correlations were worked out. At phenotypic level, seed yield showed significant and positive correlation with days to maturity (r= 0.355). Oil yield showed positive and significant correlation with seed yield per plant (r= 0.974) and days to maturity (r= 0.366). Days to flowering showed positive and significant correlation with days to maturity (r= 0.544). Number of siliquae per plant showed positive and significant correlation with plant height (r= 0.398) and number of primary branches/plant (r= 0.464).

The maximum direct effect on seed yield was exerted by oil yield (1.00) followed by number of seeds/siliqua (0.019). Days to flowering and 1000-seed weight showed positive but low direct effect. Oil yield showed maximum positive indirect effect on seed yield via days to maturity (0.372) followed by number of primary branches/plant (0.346), number of siliquae per plant (0.331), 1000-seed weight (0.292) and number of siliquae on main raceme (0.206). Arunachalam and Devarathinam (1977) and Kumar et al. (1987) reported that number of seeds/siliqua made substantial positive and direct contribution to the total correlation with seed yield in B. campestris L. var. toria and yellow sarson.
REFERENCES