Research Notes

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Correlation studies in Ribbed gourd (Luffa acutangula L.)

Ribbed gourd (*Luffa acutangula* L.) is a cucurbitaceous vegetable of South India. Observations were made in this crop to assess the yield of seed in relation to pod characters so that the quantity of seeds in a pod can be known without breaking open the pod. A total of 150 fully mature and dry pods were studied for their characters viz., weight of pod, length of pod, girth of pod, number of grooves, number of seeds and weight of seeds. The simple correlation between seed yield [both by number and weight] and other characters was worked out as described by Panse and Sukhatme [1957]. The multiple regression function of seed yield with other characters was also set up as suggested by Goulden [1959]. The data are presented in the Table below :

Correlation coefficients between pod characters and seed yield

	Weight of pod	Girth of pod	Length of pod	No. of grooves	Weight of seeds
No. of seeds	0.2000	0.0665	0.2464	0.0816	0.5929**
Weight of pod		0.5713**	0.4442*	0.0265	0.5291**
Girth of pod			0.0661	0.1328	0.2447
Length of pod				0.1023	0.3157*
No. of grooves					0.0470

Regression equation :

$$y_n = 30.69 + 0.097657 \ X_1 + 2.929836 \ X_2 + 2.045439 \ X_3 + 9.126287 \ X_4$$

$$y_w = 6.38 + 0.060210 \ X_1 - 0.739686 \ X_2 - 0.017537 \ X_3 - 0.016953 \ X_4 + 0.085487 \ X_5$$

Where
y_n = No. of seeds per pod
y_w = Weight of seeds per pod
X_1 = Weight of pod
X_2 = Girth of pod

X_3 = Length of pod
X_4 = No. of grooves
X_5 = Weight of seeds

Among characters studied significant correlation exists between seed yield [weight of seed/pod] and weight of pod. Seed yield also shows positive relationship to number of seeds and to length of pod. The weight, length, girth and number of grooves of pods show positive correlations with number of seeds per pod but not statistically significant. Among the individual pod characters other than seed yield, a high degree of positive correlation exists between weight of pod and length of pod and weight of pod and girth of pod. Other characters are also interrelated positively but not to a significant level. Regression equation has also been worked out for predicting seed yield, both number and weight of seeds per pod [Vide Table]. In the multiple regression for weight of seeds, the partial regression of yield on weight of pods and number of seeds are significant. The multiple regression for weight of seeds per pod has a high degree of predictability viz., 0.7250 i.e., [73%] which shows the closeness between the predicted values of seed yield and observed values.

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