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Short Communication

Association of Fruit Characters in Pomegranate

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In recent past pomegranate (*Punica granatum* L.) has become a major fruit crop in Maharashtra. However, its cultivation is based on a few commercial cultivars. To broaden the cultivar base, the improvement programme has been taken up vigorously. Besides seedling and clonal selection, the hybridization programme is also being attempted. Early flowering of the seedling progeny within a year or two, shruby nature of the plant, large flower, less fruit drop and very high seed number per cross make the hybridization programme easier in pomegranate, as compared to that in other fruits. A knowledge of association of different characters is required for selecting the parents and assessing the hybrid progeny to make efficient use of the resources (Desai *et al.* 1992). The present communication reports the findings on correlations between fruit characters.

The investigation comprised indigenous and exotic pomegranate genotypes collected from temperate countries. They were grown in three replications with a two plant unit. The characters on 18 cultivars were recorded during 1987-88 and 1988-89, adopting standard procedure.

Fruit size was significantly and positively associated with juice percentage, aril size, aril content and vitamin C, while it was significantly and negatively associated with seed content and acidity (Table 1). Juice percentage was also positively and significantly correlated with vitamin C, aril content, and negatively but significantly correlated with rind percentage, seed percentage, acidity and seed hardness. Rind content was positively and significantly correlated with acidity and negatively correlated with aril content. Seed content was significantly and negatively correlated

Table 1 *Correlation co-efficient for fruit characters in pomegranate*

Character	Fruit wt.	Juice content	Rind content	Seed (%)	Acidity	T.S.S.	Vitamin C	Seed hardness	Aril colour	Aril size	Aril content
Fruit weight	1.000	+0.539*	−0.096	−0.484*	−0.490*	+0.053	+0.398	−0.359	+0.133	+0.662**	+0.565*
Juice content		1.000	−0.617*	−0.472*	−0.748**	+0.376	+0.600**	−0.756**	−0.311	+0.315	+0.755**
Rind content			1.000	−0.396	+0.583*	−0.193	−0.279	+0.412	+0.274	+0.049	−1.000**
Seed%				1.000	+0.204	−0.261	−0.405	+0.349	+0.063	−0.508*	−0.133
Acidity					1.000	−0.313	−0.456	+0.636**	+0.239	−0.396	+0.599**
T.S.S.						1.000	+0.429	−0.224	+0.416	+0.474*	+0.547*
Vitamin C							1.000	−0.302	+0.120	+0.357	+0.579*
Seed hardness								1.000	+0.484*	−0.333	−0.565*
Aril colour									1.000	−0.043	−0.174
Aril size										1.000	+0.043
Aril content											1.000

* = 0.05 and ** = 0.1% level of significance

with aril size and had positive association with seed hardness. The acid content also showed negative correlation with aril content. T.S.S. had significant positive correlation with aril size and aril content. Higher T.S.S. also revealed higher vitamin C content and coloured arils. Vitamin C showed positive significant correlation with aril content. Big sized arils also had higher vitamin C content. Though the correlation was non-significant, both had also inverse relationship with seed hardness. Seed hardness had significant and positive correlation with coloured arils and negative with aril content.

Bigger fruits, higher contents of aril, juice, T.S.S. and vitamin C, big sized arils with colour and soft seeds are desirable characters in pomegranate. Most of these characters were favorably associated with each other and thus indicate promise to pursue hybridization and selection programme in pomegranate.

Reference

Desai UT, Jagtap DB & Choudhari SM 1992 Relationship between growth characteristics and yield potential in pomegranate. *Annals of Arid Zone* **31** 299-300