



Research Paper

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Variability studies for quality traits in sweet pepper (*Capsicum annuum* L.)

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ABSTRACT : The present investigation was carried out to generate information on variability for quality traits in sweet pepper (*Capsicum annuum* L.). The experimental materials consisted of ten diverse lines of sweet pepper and forty five crosses generated from them that were evaluated in randomized complete block design during *Kharif*, 2010. The observations were recorded on total chlorophyll (mg/100g of fresh wt.), TSS (^oBrix), vitamin C (mg/100g) and total carotenoids (mg/100g). The data were analyzed as per standard statistical procedures. Highly significant differences were found among the parents and their crosses for all the traits under consideration. The total chlorophyll, TSS, vitamin C, and total carotenoids showed mean values of 121.06, 4.24, 64.03 and 0.32 with a range of 48.89 to 236.14; 2.87 to 5.06; 26.89 to 99.11 and 0.06 to 1.37, respectively. Vitamin C showed moderate values of PCV and GCV while total chlorophyll and total carotenoids exhibited high PCV and GCV. Highest phenotypic and genotypic variance was recorded for total chlorophyll followed by vitamin C. Heritability in broad sense was found to be high for all traits (greater than 91%).

KEY WORDS : Sweet pepper, Total chlorophyll, T.S.S., Vitamin C, Total carotenoides

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Sweet pepper is traditionally consumed as a vegetable. It is a major ingredient in many Indian recipes. It is used in salads, pizza and loaf and also a vegetable and culinary supplement. It is also used to a limited extent for canned, frozen, pickled and fermented products. Those used for dehydration and sauce are allowed to ripen on the plant before being harvested. Sweet pepper is a high value crop with highly nutritious fruits containing more than 90 per cent of water. Fiber, pectin, glucose, starch and fructose represent main components (Hernandes *et al.*, 1996). The fruits also contain colouring pigments, pungent principles, resin, protein, cellulose, pentosans, mineral elements (like Ca, P, K, Fe) and a very little volatile oil. The fruits in fresh state contain significant amounts of vitamins B, C, E and provitamin A. Sweet pepper is among the richest known sources of vitamin C which may be present up to 340 mg/100 g in some varieties (Purseglove *et al.*, 1981). As a medicinal plant, sweet pepper lowers blood cholesterol level, aids in digestion, improves

blood circulation, neutralizes carcinogens, boosts immune system and relieves arthritic pain (Kushad *et al.*, 2002). The capsicum plants have also been used as folk remedies for dropsy, colic diarrhoea, asthma, arthritis, muscle cramps and tooth ache. Sweet pepper is a versatile crop; its many uses make it a major commodity even though it is listed as a minor crop in many countries. The consumption of sweet pepper is on the increase all over the world with the increase in the fast food industries. Due to increasing pressure of population and changing food habits of people the crop is gaining popularity day by day.

RESEARCH METHODS

The experimental materials consisted of ten diverse lines of sweet pepper and forty five crosses generated from them that were evaluated in randomized complete block design during *Kharif*, 2010 at three different locations. Recommended package of practices were followed to raise a