



Effect of different varieties and spacing on growth and yield parameters of broccoli (*Brassica oleracea* L. var. *Italica* Plenck) under Pune conditions

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ABSTRACT

A field experiment was conducted to study the effect of different varieties (Ganesh Broccoli and Pusa KTS-1) with five spacing (60x60cm, 60x45cm, 45x45cm, 60x30cm, 45x30cm) in Factorial Randomized Block Design with three replications under Pune conditions. The data revealed that cv. GANESH BROCCOLI performed superior over the cv. PUSA KTS-1 with days to 50% harvest (53.4days), days to last harvest (68.4 days), curd diameter (10.81cm), average weight of curd (154.80 g) and yield per hectare (70.75q) while, cv. PUSA KTS-1 recorded significantly highest values for growth parameters. Amongst five spacing S_5 (45 x 30 cm) gave significantly minimum values of the various parameters under study except days to 50% harvest (64.5days), days to last harvest (79.33days) and yield per hectare (77.08q). However, S_1 (60 x 60 cm) gave significantly maximum values of various parameters except days to 50% harvest (59.83 days) and days to last harvest (74days). Interaction effect of different varieties and spacings was found non significant but numerically the interaction effect of V_1S_1 was the best among the all treatment combination except yield per hectare.

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Broccoli (*Brassica oleracea* L. var. *italica* Plenck) is an important winter season vegetable crop after cabbage and cauliflower from the family Brassicaceae. It is cherished for its delicious taste, flavour and nutritive value and has been reported to prevent cancer.

In broccoli, very few cultivars such as Pusa KTS-1, Palam Samridhi and Punjab Broccoli-1, which are developed for very cool winter of North India. Hence, variety Ganesh Broccoli has been developed in popularizing cultivation of this crop for Maharashtra. To study the production practices is a pre-requisite for a new crop. In broccoli adhoc recommendations are being followed by the growers in Maharashtra. Availability of suitable high yielding cultivars and optimum plant spacing may help the farmers to achieve more returns per unit area and also for efficient absorption of nutrients and trapping of solar energy. The effect of growing different varieties at various spacing under Pune conditions is yet not tested. The response may differ in growth and yield parameters of broccoli. Keeping this in view, the present investigation was planned.

MATERIALS AND METHODS

The present investigation was carried out during 2006 to 2007 at Modibaug Garden, Horticulture Section, College of Horticulture, Pune-5. The soil of the experimental plot was medium to deep black having good drainage with good water holding capacity. A field experiment was laid out in Factorial Randomized Block Design with two varieties viz., Ganesh Broccoli and Pusa KTS-1 and five spacing viz., 60 x 60 cm, 60 x 45 cm, 45 x 45 cm, 60 x 30 cm and 45 x 30 cm. Ten treatment combinations were formed thus replicated thrice. Farm Yard Manure @20 tonnes per hectare to all treatments was incorporated in the soil before the lay out was prepared. Nitrogen was applied in the form of urea in two split doses; half the dose of nitrogen through urea along with full dose of phosphate and potassium through single super phosphate and muriate of potash, respectively were applied at the time of transplanting. The remaining dose of nitrogen was applied 30 days after transplanting.

30 days old seedlings were dipped in solution of *Azotobactor* and phosphate solubilizing bacteria (2.5 kg /ha each) and transplanted in previously laid flat beds