

## Effect of nitrogen and spacing on seed production of paprika (*Capsicum annum* sub *grossum*) under temperate conditions

S. NARAYAN, N. AHMED, M.A. CHATTOO, K. HUSSAIN, SHAHNAZ MUFTI AND S.A. BHAT

Accepted : April, 2009

See end of the article for authors' affiliations

Correspondence to:

**S. NARAYAN**

Division of Olericulture,  
Sher-e-Kashmir University  
of Agricultural Sciences  
and Technology (K),  
Shalimar, SRINAGAR  
(J&K) INDIA

### ABSTRACT

An experiment was conducted during summer season of 2003 and 2004 at Vegetable Research Farm, Division of Olericulture, SKUAST-K, Shalimar on KT-PL-19 cultivar of paprika involving four levels of nitrogen *i.e.*, N<sub>1</sub> (100kg N/ha), N<sub>2</sub> (150 kg N/ha), N<sub>3</sub> (200 kg N/ha) and N<sub>4</sub> (250 kg N/ha) and three spacings *i.e.*, 60 x 30 (S<sub>1</sub>), 60 x 45 (S<sub>2</sub>) and 60 x 60 (S<sub>3</sub>) using RBD design. There was a significant increase in seed yield with the application of nitrogen and the highest yield was obtained at 150 kg N/ha. Interaction effect was also found significant. Highest seed yield of 3.63 and 3.69 q/ha was recorded with the treatment combination of N<sub>3</sub>S<sub>1</sub> (200 kg N/ha at spacing of 60 x 30 cm) during the year 2003 and 2004 with mean of 3.66 q/ha followed by N<sub>4</sub>S<sub>1</sub> (250 kg N/ha at spacing of 60 x 30 cm) which gave 3.18 q/ha mean seed yield. It was concluded that for obtaining maximum and economic seed yields in paprika, the crop should be fertilized with 200 kg N/ha and planted at 60 x 30 cm plant spacing.

**Key words :** Paprika, Nitrogen, Spacings, Cost benefit ratio.

**P**aprika (*Capsicum annum* sub *grossum*) is one of the most important vegetables as well as spice crops grown all over the world. It is a mild or non-pungent type of capsicum. There is a considerable demand for paprika powder in the western countries. It has very high nutritive value with vitamin C content of 150 to 200 mg / 100g, the highest among the vegetables. The dried red paprikas are valued chiefly for their red colour and mild flavour. It is used for its colouring and flavouring properties by the food manufacturing industries. Hence, there is a need to extend area under this crop with the objective of diversification of exports. Although this crop has export value, but the fruit and seed yield in this vegetables are very low which can be enhanced by the adoption of best production technology based on research funding. Hence, the present studies were planned to analyze the effect of nitrogen and spacing on seed production of paprika.

### MATERIALS AND METHODS

An experiment was conducted during summer season of 2003 and 2004 at Vegetable Research Farm, Division of Olericulture, SKUAST-K, Shalimar on KT-PL-19 cultivar of paprika involving four levels of nitrogen *i.e.*, N<sub>1</sub> (100kg N/ha) N<sub>2</sub> (150 kg N/ha), N<sub>3</sub> (200 kg N/ha) and N<sub>4</sub> (250 kg N/ha) and three spacings *i.e.*, 60 x 30 (S<sub>1</sub>), 60 x 45 (S<sub>2</sub>) and 60 x 60 (S<sub>3</sub>). The trial was laid out in Randomized Block Design in a plot size of 2.4 x 1.8 m<sup>2</sup>. The observations were recorded on seed yield per plant and plot. Recommended cultural practices were followed to raise a good crop.

### RESULTS AND DISCUSSION

There was a significant increase in seed yield with the application of nitrogen and the highest yield was obtained at 150 kg N/ha. Further, application of nitrogen *i.e.*, 200 and 250 kg N/ha led to significant reduction in seed yield. The variation in seed yield may be due to the fact that excess of N affects seed production through its promotive effect on vegetative growth, which further helps to augment the flowering and seed setting. Almost similar results have been reported in paprika by Sharma (2001), in bell pepper by Shukla *et al.* (1987) and Singh and Naik (1990). Maximum seed yield per plant was obtained at 60 x 60 cm spacing having significant differences

**Table 1 : Effect of various nitrogen levels and spacings on seed yield of paprika**

Treatments	Seed yield (q/ha)		
	2003	2004	Pooled
<b>Nitrogen levels (k/ha)</b>			
100 (N <sub>1</sub> )	2.51	2.78	2.64
150 (N <sub>2</sub> )	2.98	3.19	3.08
200 (N <sub>3</sub> )	2.56	2.71	2.63
250 (N <sub>4</sub> )	2.43	2.52	2.47
C.D. (P=0.05)	0.499	0.648	
<b>Spacing (cm)</b>			
60 x 30 (S <sub>1</sub> )	2.53	2.87	2.70
60 x 45 (S <sub>2</sub> )	2.30	2.46	2.38
60 x 60 (S <sub>3</sub> )	2.23	2.12	2.17
C.D. (P=0.05)	1.31	0.527	