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Growth, flowering and yield of chilli, *Capsicum Annuum* L as influenced by age of seedlings

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ABSTRACT

Chilli is one of the major spices grown in MP. Field trials were conducted at the Department of Horticulture, AKS University, Satna, MP during the Kharif season of 2013-2014 and it was found that the growth and yield of chilli variety JM-218 was significantly influenced by the quality of seedlings especially total number of days spent in nursery. The present trial quantified that seedlings of the age of 25 days lead to highest yield of 134.40 q/ha while seedlings of the age of 40 days resulted in significantly lower yield of 86.70 q/ha.

Keywords: Chilli; age of seedlings; growth; flowering; yield

INTRODUCTION

Chilli is an important spice which is grown throughout India. It is usually grown by transplanting of seedlings either in July-August or in February- March. However in Kharif chilli is grown commercially in north Bihar for its disposal in dried form. The growth and yield of this spice is affected by the quality of seedlings especially total number of days spent in nursery. Since there is scanty research information on the subject present trial was carried out to quantify the effect of age of the seedlings on the growth, flowering and yield of chilli variety JM-218 which is a commercial variety of this region.

MATERIAL and METHODS

Experiment was carried out at the Department of Horticulture, AKS University, Satna, MP during Kharif season of 2013-2014. The 15, 20, 25, 30, 35 and 40 days old seedlings were transplanted on 7, 12, 17, 22 and 27 July and 1 August 2014 (6 treatments) at a spacing of 45 x 30 cm in plots of size 2.7 x 2.1 m. The experiment was replicated 4 times. All the treatments were given identical cultural practices as per package of practices for Kharif chilli (Maurya and Singh 1984). Data were recorded on plant mortality, plant height, number of branches/plant, number of leaves/plant, days to 50 per cent

Table 1. Effect of age of the seedlings on mortality, growth, flowering and yield of chilli

Seedling age (days)	Plant mortality (%)	Plant height (cm)	# branchaes/ Plant		# leaves/ plant	Days to 50% flowering	# fruits/ plant	Weight of fruits/ plant (g)	yield (q/ha)
			Primary	Secondary					
15	0.0	65.10	6.5	10.9	750.25	28.26	116	172.25	110.25
20	0.5	57.00	8.7	14.5	816.15	27.72	121	176.43	114.16
25	1.5	58.25	10.8	18.6	945.25	24.18	136	201.88	134.40
30	10.0	51.45	7.6	12.6	690.80	24.02	184	156.80	103.26
35	21.6	50.35	6.8	8.5	635.40	22.64	98	135.46	96.18
40	23.5	41.20	4.2	9.6	603.44	20.18	96	128.37	86.70
$CD_{0.05}$	6.35	6.02	5.44	7.26	255.40	NS	12.55	22.72	13.16

flowering, number and weight of fruits per plant and yield of red ripe fruits/hectare.

RESULTS and DISCUSSION

Maximum plant mortality of 23.5 and 21.6 per cent was observed in case of plants grown from seedlings of 40 and 35 days of age respectively the two being at par with each other followed by 10.0 per cent in case of plants grown from seedlings of 30 days. Maximum plant height (65.10 cm) was observed in seedlings planted after 15 days and minimum (41.20 cm) in 40 days seedlings; number of primary branches/plant was 10.8, 8.7, 7.6, 6.8 and 6.5 in plants grown from the seedlings of 25, 20, 30, 35 and 15 days all being statistically at par and minimum (4.2) in plants of 40 day old seedlings; secondary branches per plant were 18.6, 14.5 and 12.6 in the plants from 25, 20 and 30 days seedlings respectively all being at par. The higher number of leaves was 945.25, 816.15, 750.25 and 690.80 in the plants from 25, 20, 15 and 30 days seedlings respectively all being statistically at par and lower in from 35 and 40 days old seedlings (635.40 and 603.44 respectively). No significant differences were recorded wrt to the days to 50 per cent flowering. Maximum (184) number of fruits/plant were recorded in case of plants from 30 days old seedlings and minimum (96 and 98) in 40 and 35 days old seedlings respectively. Maximum weight of fruits per plant (201.88 g) and fruit yield (134.40 q/ha) were recorded in the plants from 25 day old seedlings which were statistically different from all other treatments.

Lim and Wong (1975) and Maurya(1990) reported that young chilli seedlings were more vigourous in vegetative growth particularly in top growth and flowered and fruited earlier than those transplanted at older days. Shukla et al (2011) also observed that 3-4 week old seedlings produced more vegetative growth, flowered early and produced higher yield than those transplanted at 5, 6 and 7 weeks age. Hence transplanting of seedlings at the age of 25 days is beneficial for getting early and higher yield of chillies in subtropical monsoon climate of north Bihar.

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