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Nursery Management Practices for Improving the Yield of Dry Chilli (*Capsicum annuum* L.)

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The experiment was conducted at Horticulture Research and Extension Station, Devihosur, Haveri, Karnataka to study the effect of different methods of seed beds for raising seedlings and nipping practices followed at different intervals (before transplanting) on growth and dry yield of Bydagi Chilli (Dabbi). The pooled results of the experiment indicated that significantly higher dry Chilli yield (966 kg/ha) was obtained with raised bed + nipping of the seedlings 5 days before transplanting and this was followed by the flat bed + 5 days before transplanting (807 kg/ha). The incidence of leaf curl was also found least *i.e* the leaf curl index at 45 and 90 days after transplanting was found 0.60 and 0.56 respectively with the treatment raised bed + nipping 5 days before transplanting compare to other treatments.

Keywords: Dry Chilli, Nipping, Nursery management.

Chilli is one of the most important commercial crops of India. It is grown almost throughout the country. Chilli occupies an important place in Indian diet. It is an indispensable item in the kitchen, as it is consumed daily as a condiment in one or the other form. Although the crop has got greater export potentiality in spite of its huge domestic requirements, a number of factors have been seen to limit the crop productivity. Among them the damage caused by pests is significant. More than 293 insects pest are known to attack the crop. Among these thrips, mites and pod borer are the most serious pests. Though application of insecticides brought down the pest population they have led to the problem of pesticide residues in the fruits. The presence of residual pesticides has seriously affected the export of chillies. It is learnt that byadgi chilli lots were rejected at the international ports of the importing countries very often due to large pesticide residues. The indiscriminate use of chemicals has led to many undesirable problems like pest resurgence, destruction of natural enemies, environmental pollution etc. Hence, the present study initiated with ecofriendly approaches for raising healthy seedlings by adopting good nursery management practices.

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MATERIALS AND METHODS

A field experiment was conducted in *kharif* season during 2011, 2012 and 2013 on medium deep black soils at Horticultural Research and Extension Station, Devihosur, Haveri, which is located at latitude of 14.47°N, longitude of 75.2°E and with an altitude of 563.0 m above mean sea level (MSL). The experiment was laid out in randomized complete block design with three replications. The seeds of 'Byadagi Dabbi' cultivar were used for nursery preparation. Two types of seed beds were prepared, the flat beds

with dimension of 7.5 m length and 1.0 m width and raised beds with dimension of 7.5 m length, 1.0 m width and 10 cm height on this seedlings were raised. The 35 days old seedlings were transplanted with the spacing of 60 cm × 60 cm. Before transplanting the nipping practice was followed on seed beds at different intervals. The treatments includes mainly T1 - Flat bed + Nipping 10 days before transplanting, T2 - Flat bed + Nipping 5 days before transplanting, T3 - Flat bed + Nipping on same day of transplanting, T4 - Flat bed + No Nipping, T5 - Raised bed + Nipping 10 days before transplanting**,** T6 - Raised bed + Nipping 5 days before transplanting**,** T7 - Raised bed + Nipping on same day of transplanting**,** T8 - Raised bed + No Nipping.

RESULTS AND DISCUSSION

The pooled results of the experiment revealed that raised bed + nipping of seedlings 5 days before transplanting has recorded significantly highest dry chilli yield (966 kg ha^{-1}) compare to rest of the treatments and this is followed by flat bed + 5 days before transplanting (807 kg ha^{-1}). The similar trend was observed during all the three years experimentation (2011 to 2013) (Table 2). Similar result of increase in yield due

Table 1. Method of seed bed and nipping practices on growth and leaf curl index chilli (pooled of three years)

Treatments	Growth parameters 45 DAT			Leaf Curl Index	
	Plant Height (cm)	No. of Branches /plant	No. of Leaves /plant	45 DAT	90 DAT
T1 - Flat bed + Nipping 10 days before transplanting	37	4.0	128	1.38	1.83
T2 - Flat bed + Nipping 5 days before transplanting	35	3.9	133	0.62	0.88
T3 - Flat bed + Nipping on same day of transplanting	31	3.4	119	0.97	1.48
T4 - Flat bed + No Nipping	41	2.9	112	1.50	1.67
T5 - Raised bed+ Nipping 10 days before transplanting	36	4.3	134	1.05	1.76
T6 - Raised bed + Nipping 5 days before transplanting	35	4.2	148	0.60	0.56
T7 - Raised bed + Nipping on same day of transplanting	34	3.5	128	1.10	1.72
T8 - Raised bed + No Nipping	40	3.2	118	1.25	1.59
S.Em ±	1.09	0.35	6.7	0.19	0.12
C. D @ 5%	3.2	1.0	20.0	0.55	0.35

Table 2. Method of seed bed and nipping practices on growth and yield attributes of chilli (pooled of three years)

Treatments	Plant Height (cm)	No. of Branches $plant^{-1}$	No. of Leaves $plant^{-1}$	No. of Fruits $plant^{-1}$	Fruit length (cm)	Yield ha^{-1} (kg)
T1 - Flat bed + Nipping 10 days before transplanting	62.5	5.5	367	30.9	8.8	685
T2 - Flat bed + Nipping 5 days before transplanting	57.7	5.2	371	34.4	9.9	807
T3 - Flat bed + Nipping on same day of transplanting	56.5	5.1	353	28.6	8.0	676
T4 - Flat bed + No Nipping	57.0	4.6	343	26.1	8.1	699
T5 - Raised bed+ Nipping 10 days before transplanting	61.9	5.6	402	40.8	9.8	745
T6 - Raised bed + Nipping 5 days before transplanting	57.5	6.5	458	49.8	11.2	966
T7 - Raised bed + Nipping on same day of transplanting	60.1	5.1	382	37.8	9.5	727
T8 - Raised bed + No Nipping	56.4	4.4	271	34.8	8.8	726
S.Em ±	3.49	0.16	10.8	1.76	0.38	36.1
C. D @ 5%	NS	0.50	35	5.4	1.1	109.5

Table 3. Economics of method of seed bed and nipping practices chilli (Pooled of three years)

Treatments	Yield ha^{-1} (kg)	Cost (Rs ha^{-1})	Gross returns (Rs ha^{-1})	Net returns (Rs ha^{-1})	B:C
T1 - Flat bed + Nipping 10 days before transplanting	685	26800	65028	38228	2.43
T2 - Flat bed + Nipping 5 days before transplanting	807	26800	76665	49865	2.86
T3 - Flat bed + Nipping on same day of transplanting	676	26800	64173	37373	2.39
T4 - Flat bed + No Nipping	699	26800	66405	39605	2.48
T5 - Raised bed+ Nipping 10 days before transplanting	745	26800	70775	43975	2.64
T6 - Raised bed + Nipping 5 days before transplanting	966	26800	91770	64970	3.42
T7 - Raised bed + Nipping on same day of transplanting	727	26800	69065	42265	2.58
T8 - Raised bed + No Nipping	726	26800	68970	42170	2.57
S.Em +	36.1	-	3972	3720	0.12
C. D. @ 5%	109.5	-	12400	10800	0.34

to nipping practices was reported by Baloch and Zubair, 2010 and Traipathi and Rathi, 2000 also reported that nipping practices not only increase the yield but also reduces the fungal deceases in chickpea. Venkate Gowda *et al.* (2011) reported that nipping practice in castor made the crop free from Botrytis disease and increased yield over non nipping practice. The significant increase in dry fruit yield of chilli in treatment raised + nipping 5 days before transplanting is mainly due to higher yield parameters such as number of fruits per plant and fruit length and the growth parameters such as number of branches and number of leaves per plant (Table 2). The increase in growth and yield parameters was mainly due to enhanced photosynthetic activity resulting in production and accumulation of photosynthates in fruits. Trivedi, 2006 also reported the similar results.

The enhanced yield in treatment raised bed + nipping 5 days before transplanting is also due to significantly reduced leaf curl index (Table 1) at 45 and 90 days after transplanting (0.60 and 0.56 respectively) . The nipping of leaves 5 days before transplanting made the seedlings free from sucking pest (thrips). The similar results of reduced disease was also noticed by Venkate Gowda *et al*. (2011)

The economics of the experiment (Table 3) revealed that significantly higher gross returns (Rs. 91,770/-), net returns (Rs. 64,970/-) and B : C ratio (3.42) per hector was recorded with raised bed + nipping 5 days before transplanting compare to rest of the treatments. The similar trend was also noticed with B:C ratio (3.42). These results are in conformity with Venkate Gowda *et al.* (2011).

REFERENCES

1. Baloch, M.S. and M., Zubair, Effect of nipping on growth and yield of chickpea, *The Journal of Animal Plant Sciences,* 2010; **20**(3) : 208-210
2. Tripathi, H.S. and Y.P.S., Rathi, Effect of certain cultural practices on severity of Botrytris gray mould of chickpea. *Indian Phytopathology*, 2000; **53**(2) : 172-174.
3. Venkate Gowda, J., H. S., Shivaramu, N., Krishna Murthy, H. S., Ravi Kumar and B. N. Manjunatha, Effect of nipping and dates of sowing on growth, yield and disease infestation of castor genotypes, *International Journal of Forestry and Crop Improvement,* 2011; **2**(1): 73 - 77.
4. Trivedi, P.C. Advances in plant physiology, 2006; Book: 134-135.

As an economic crop, pepper satisfies peopleâ€™s spicy taste and has medicinal uses worldwide. To gain a better understanding of Capsicum evolution, domestication, and specialization, we present here the genome sequence of the cultivated pepper Zunla-1 (C. annuum L.) and its wild progenitor Chiltepin (C. annuum var. glabriusculum). We estimate that the pepper genome expanded âˆ¼0.3 Mya (with respect to the genome of other Solanaceae) by a rapid amplification of retrotransposons elements, resulting in a genome comprised of âˆ¼81% repetitive sequences. Capsicum annuum - L. Common Name. Sweet Pepper, Cayenne Pepper, Chili Pepper, Christmas Pepper, Red Pepper, Ornamental Chili Pepper.Â Pungent-fruited peppers may cause painful irritation when used in excess, or after accidental contact with the eyes[238]. Although no reports have been seen for this species, many plants in this family produce toxins in their leaves. The sap of the plant can cause the skin to blister[200]. Avoid in patients taking monoamine oxidase inhibitor antidepressants and antihypertensive drugs [301]. Habitats. Not known in the wild. Range. Probably native of the Tropics, but the original habitat is obscure. Edibility Rating. (4 of 5). Integrated nutrient management of chilli (Capsicum annuum L.) in Gangetic alluvial plains. A. Pariari, S. Khan. Chemistry.Â Effect of integrated nutrient management on growth and yield of king chilli under foothill condition of Nagaland. Journal of the Indian Society of Soil Science, 2012. Effect of integrated nutrient management on growth, yield and quality of tomato (Lycopersicon esculentum Mill). Chumyani, S. P. Kanaujia, V. Singh, A. Singh. Environmental Science. Effect of Varieties and Integrated Nutrient Management on Growth and. Yield of Chilli (Capsicum annuum L.) K. S. Chouhan1, Satish Singh Baghel2*, Kashyap Mishra, Ajeet Kumar Singh1 and Vijay Singh3. 1 Department of Agriculture, Distt.Â INTRODUCTION Chilli is one of the most important commercial spice crops of India. India is the major exporter of chilli, though; only 3-7 per cent of total produced is exported, contributing 25 per cent of the total world production. Area under chilli during the year 2011-12 in India was 805,000 ha, production 1276,000 MT and productivity was 1.6 MT/ha.1 The crop is very important for agricultural economy and is used. in processing industries.