



ISSN (E): 2277-7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2022; 11(8): 1612-1613
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www.thepharmajournal.com

Received: 08-05-2022

Accepted: 16-07-2022

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Performance of coriander (*Coriandrum sativum* L.) on growth and selecting best variety

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Abstract

A field experiment was carried out at the Horticultural experimental field of the Department of Horticulture, Pandit Deen Dayal Upadhyay Institute of Agricultural Sciences, Utlou from March 2021 - April 2021. The experiment was set out in Randomized Block Design (RBD) consisting of three replications and seven varieties viz., Local, Khushboo, Ramses, Coriander Caribe, Green Champion, Kalmi and Sugandhi. Seeds of coriander varieties were bought from a local market and were planted on a bed size of 1 m² at spacing of 15cm x 10cm respectively. The observations recorded revealed best variety and yield parameters with the application of FYM. However, Green Champion exhibited maximum plant height at 15 DAS (4.20cm), 30 DAS (7.73cm), 45 DAS (13.20cm); number of leaves at 15 DAS (7.73), 30 DAS (8.26), 45 DAS (8.66); number of basal leaves 15 DAS (3.80), 30 DAS (4.53), 45 DAS (5); average length of the whole plant at 15 DAS (6.33), 30 DAS (14.26), 45 DAS (18.26) while the minimum was recorded in Local variety. Variety Sugandhi exhibited maximum number of branches at 45 DAS (2.60) which was statistically at par with variety Green Champion at 45 DAS (2.40) while the minimum was recorded in Local variety control. Therefore, from the analysis of data, it is concluded that the Green Champion becomes the best variety based on the growth and yield of Coriander. Green Champion (Vs) also have strong aroma while Sugandhi is mild.

Keywords: Coriander, best variety, green champion, aroma

Introduction

Coriander (*Coriandrum sativum* L.) is one of the important leafy vegetables as well as seed spice crop having a pleasant aroma and taste mainly grown in *rabi* season. Green coriander, which is also called cilantro, Chinese parsley, Mexican parsley and Japanese Parsley belongs to family Apiaceae. It is diploid and has 2n=22 chromosomes. Coriander is an annual herbaceous cross pollinated crop. Mediterranean region is the centre of origin of this crop. India is the largest producer of coriander and ranks first among the seed spices with respect to export. The pleasant aroma in the plant is due to an essential oil called 'Coriandrol' ranges from 0.1 to 1.3% in dry seeds. It is prominently cultivated in Rajasthan, Andhra Pradesh, Gujarat and Madhya Pradesh with scattered pockets in Tamil Nadu, Odisha, Karnataka and Haryana. Rajasthan occupies the premiere position in production and acreage and contributes about 40% of total production of coriander.

The nutritional value of 100g fresh of coriander leaves contain: Moisture 87.9%, protein 3.5%, fat 0.6%, carbohydrates 6.5%, mineral matter 1.7%, Ca 0.14%, P 0.06%, Fe 10 mg and vitamin A 10,460 to 12,600 I.U. The health benefits of coriander leaves are lower bad cholesterol. Coriander stimulates insulin secretion and lowers the blood sugar levels; hence good for diabetes patients. The fat soluble Vitamin A is good for the eyes and prevents eye diseases and protects from lungs and cavity cancer. Coriander contains high amount of iron, which is essential for curing anemia.

The various agronomic practices such as application of nitrogen fertilization and plant spacing are the important deciding factors influencing growth and yield parameters of coriander. Coriander plant could be used as indicator plant for rapid determination of N, P and K deficiency of Indian soils. Thus, keeping in the above consideration in view, the present research work has been conducted to study the performance of Coriander (*Coriandrum sativum* L.) on growth and selecting the best variety.

Materials and Methods

The present study was carried out at the Horticultural experimental field of the Department of

Horticulture, Pandit Deen Dayal Upadhyay Institute of Agricultural Sciences, Utlou which comes under sub-tropical climate and experimental farm is located at an elevation of 770m above mean sea level, at latitude of 24°43'23"N and longitude of 93°51'34"E. The experiment was laid out in Randomized Block Design (RBD) with three replications. Each treatment was grown in a plot of 1m x1m per plot with spacing of 15cm x 10cm. All the cultural practices were followed. Five randomly selected equally competitive plants from each row in each replication were tagged for the purpose of recording the observations on 6 characters viz. plant height (cm), number of leaves, number of branches, number of basal leaves, average length of whole plant and yield plot⁻¹ (g). The observations were recorded at 15, 30, 45 days after sowing.

Results and Discussions

Plant height and number of leaves plant⁻¹ of different varieties were significant at 15 DAS, 30 DAS and 45 DAS (as shown in Table 1). At 15 DAS, 30 DAS and 45 DAS, Green Champion variety produced the tallest height (4.20 cm) (7.73 cm) and (13.20 cm) and highest number of leaves (7.73), (8.26) and (8.66) whereas Local variety produced the shortest height (2.40 cm) (4.26 cm) and (8.20 cm) and the least number of leaves (3.73), (4.13) and (4.60). A similar result was reported by Duwal *et al.* (2019) [3] and Lal *et al.* (2017) [4] in coriander. The maximum number of branches (2.60) was recorded in variety Sugandhi, which was statistically at par with the variety Green Champion (2.40) whereas; the Local variety produced the least number of branches (1.53). The

findings of Bajad *et al.* (2017) [1] and Pujari *et al.* (2020) [5] support the results of present finding. At 15 DAS, 30 DAS and 45 DAS, Green Champion variety produced the highest number of basal leaves (3.80), (4.53) and (5), maximum length (6.33), (14.26) and (18.26) and yield of green leaf plot⁻¹ (36.76 g) whereas, Local variety produced the least number of basal leaves (1.73), (2.13) and (2.66), minimum length (3.73), (10.26) and (13.40) and minimum yield plot⁻¹ (11.44 g). A similar finding was reported by Duwal *et al.* (2019) [3] in coriander.



Fig 1: Picture of the field

Table 1: Performance of Coriander (*Coriandrum sativum* L.) on Growth

Variety No.	Variety details	Plant height (cm)			Number of leaves			Number of branches plant ⁻¹			Number of basal leaves			Average length of whole plant			Yield of fruit plot ⁻¹ (g)
		15 DAS	30 DAS	45 DAS	15 DAS	30 DAS	45 DAS	15 DAS	30 DAS	45 DAS	15 DAS	30 DAS	45 DAS	15 DAS	30 DAS	45 DAS	
V ₁	Local	2.40	4.26	8.20	3.73	4.13	4.60	1.00	1.33	1.53	1.73	2.13	2.66	3.73	10.26	13.40	11.44
V ₂	Khushboo	3.66	5.40	11.46	6.33	6.73	7.26	1.13	1.53	1.73	2.53	3.20	3.60	4.26	11.73	14.73	27.44
V ₃	Ramses	3.46	5.33	11.66	6.40	6.93	7.60	1.13	1.87	2.07	2.20	2.80	3.26	5.26	12.53	15.53	22.64
V ₄	Coriander Caribe	3.60	5.33	11.33	6.73	7.26	7.73	1.00	1.67	1.87	3.33	3.80	4.13	4.20	13.53	16.53	24.36
V ₅	Green Champion	4.20	7.73	13.20	7.73	8.26	8.66	1.07	2.13	2.40	3.80	4.53	5.00	6.33	14.26	18.26	36.76
V ₆	Kalmi	3.80	6.46	12.8	6.53	7.13	7.40	1.13	2.00	2.27	2.73	3.53	4.13	5.20	10.53	13.53	22.91
V ₇	Sugandhi	2.60	4.53	8.40	4.33	4.66	5.53	1.27	2.33	2.60	2.53	2.86	3.13	5.46	11.46	14.33	17.37
F-test		S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
S.Ed (±)		0.09	0.14	0.11	0.09	0.06	0.08	0.058	0.054	0.085	0.116	0.100	0.063	0.141	0.079	0.089	0.6945
C.D. (0.05%)		0.21	0.32	0.24	0.20	0.14	0.18	0.127	0.119	0.185	0.355	0.219	0.1382	0.307	0.173	0.195	1.5132

Conclusion

The present investigation revealed that Variety (V₅) Green Champion shows significant variations for all growth and yield parameters. Among all the varieties, Variety (V₅) Green Champion was rated the best variety in terms of growth and yield parameters. Green Champion (V₅) also have strong aroma while Sugandhi (V₇) is mild. Thus, Green Champion variety is suited for commercial cultivation for small and marginal farmers and can be utilized in kitchen gardening also.

References

1. Bajad GB, Dahale MH, Nandeshwar VN. Performance of Different Coriander Varieties for Seed Yield. *Journal of Krishi Vigyan*. 2017;5(2):132-137.
2. Chaulagain R, Pant SS, Thapa RB, Sharma MD. Performance of Coriander cultivar for green leaf production under late sowing conditions. *The Journal of*

Agriculture and Environment. 2011;2:68-73.

3. Duwal A, Nepal A, Luitel S, Acharya S, Pathak R, Poudel PR, *et al.* Evaluation of Coriander (*Coriandrum sativum* L.) varieties for growth and yield parameters. *Nepalese Journal of Agricultural Sciences*. 2019;18:36-46.
4. Lal G, Harisha CB, Meena NK, Meena RD, Choudhary MK. Performance of Coriander Varieties (*Coriandrum sativum* L.) under organic management system. *International Journal of Seed Spices*. 2017;7(1):8-11.
5. Pujari R, Kurubar AR, Chethan T, Kale S. Collection & Evaluation of Coriander for Growth & Seed Purpose. *International Journal of Current Microbiology and Applied Sciences*. 2020;9(7):2467-2472.
6. Sannapanavar S, Rao GGE, Vasundhara M. Performance of Coriander (*Coriandrum sativum* L.) to different sources of Organic Phosphorous and PSB on Growth & Seed Yield. *International Journal of Current Microbiology and Applied Sciences*. 2019;8(8):2584-2589.