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Short Communications

Effect of Sowing Dates and Varying Levels of Nitrogen and Phosphorus on Coriander (*Coriandrum sativum* L.)

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A field trial was conducted at the Instructional Farm of the Gujarat Agricultural University, Junagadh during *rabi* season of 1994-95 on coriander Var. Gujarat Coriander-2 with twenty seven treatment combinations of three dates of sowing (15 and 30 October and 15 November) and three levels each of nitrogen (20, 40 and 60 kg/ha) and phosphorus (0, 20 and 40 kg/ha). The dates of sowing were taken in main plots and combinations of levels of nitrogen and phosphorus were taken in sub plots. The layout was a split plot design with three replications. The crop was sown and fertilized as per treatments with inter row spacing of 30 cm and seed rate of 20 kg/ ha. The soil of the experimental field was medium black clayey. It was low in available nitrogen (218.2 kg/ha) and medium in available phosphorus (32.5 kg/ha) and potash (214.2 kg/ha) with pH 7.7 and EC 0.35 dS/m.

Sowing coriander on 30 October recorded significantly the highest seed (905 kg/ha) and stick (1070 kg/ha) yields. Fifteen days earlier sowing on 15 October reduced the seed yield by 14 % and the stick yield by 26 %. Corresponding reductions due to 15 days delayed sowing on 15 November were 12 and 22 %. Greater plant height, more number of branches and umbels per plant and more test weight of seeds of 30 October sown crop contributed to greater seed and stick yield as compared with those of 15 October and 15 November sowing. The results confirmed the earlier findings of Mathakia (1993) who reported maximum yield of coriander with 25 October sowing under Junagadh condition. The maximum seed oil content (18.19%) and the net monetary return (Rs. 4,743/ha) were also obtained by sowing the crop on 30 October.

Response to increasing level of nitrogen was observed upto 40 kg N/ha, only. Thereafter the yield declined with additional application of nitrogen. Application of 40 kg N/ha recorded 19.6 and 4.0 % more seed yield than those of 20 and 60 kg N/ha. The corresponding increases in

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TABLE 1

Effect of sowing dates and levels on N and P on growth, yield, oil content and monetary return.

Treatment	Plant height (cm)	Number of Branches/ plant	Number of Umbels/ plant	1000 seed weight (g)	Yield (kg.ha) Seed	Yield (kg.ha) Stick	Oil content (%)	Net monetary ruturn (Rs./ha)
Date of sowing								
15 Oct.	37.22	3.72	6.55	21.46	778	942	17.95	3,441
30 Oct.	40.27	4.09	6.83	22.34	905	1070	18.19	4,743
15 Nov.	36.23	3.39	6.39	20.97	669	839	18.09	2,326
S.Em ±	0.58	0.11	0.07	0.20	21	31	0.17	-
C.D. at 5%	2.28	0.43	0.27	0.80	83	123	NS	-
C.V.%	8.06	15.10	5.38	4.92	14	17	4.80	-
Nitrogen (kg/ha)								
20	36.30	3.58	6.33	20.58	703	820	18.01	2,814
40	39.31	3.93	6.82	22.24	841	1046	18.17	4,086
60	38.21	3.69	6.63	21.93	809	984	18.06	3.607
S.Em ±	0.39	0.10	0.06	0.17	16	21	0.14	-
C.D. at 5%	1.55	0.28	0.16	0.50	45	61	NS	-
C.V. %	5.44	13.80	4.65	4.19	11	12	3.99	-
Phosphorus (kg/ha)								
0	36.30	3.40	6.42	20.60	715	821	17.98	3,197
20	37.95	3.69	6.59	21.55	793	975	18.07	3,599
40	39.51	4.11	6.76	22.61	844	1055	18.18	3,701
S.Em. ±	0.39	0.10	0.06	0.17	16	21	0.14	-
C.D. at 5%	1.55	0.28	0.16	0.50	45	61	NS	-
C.V. %	5.44	13.80	4.65	4.19	11	12	3.99	-

Interaction : None of the interactions was found significant.

stick yield being 27.5 and 6.3 %. The higher yield under application of 40 kg N/ha might be due to its favourable influence on growth and yield attributes as compared with 20 and 60 kg N/ha. The highest oil content (18.17 %) and net monetary return (Rs. 4,086/ha) were also realized with application of 40 kg N/ha. The results corroborate those of Jani (1988) and Sankat (1993).

Positive response was found to application of phosphorus upto 40 kg P_2O_5/ha. Seed (844 kg/ha) and stick (1055 kg/ha) yields produced with the application of 40 kg P_2O_5/ha were 6.4 and 8.2 % more than those of 20 kg P_2O_5/ha and 18.0 and 28.5 % more than those of the control plot. The highest oil content (18.18%) and net moneatry return (Rs. 3,701/ha) were also obtained with application of 40 kg P_2O_5/ha. Higher yield with the highest level of phosphorus (30 kg/ha) was also reported by Sankat (1993) under Junagadh conditions.

It can be summarized from the above findings that for higher production and profit from coriander Var. Gujarat Coriander 2, the crop should be sown on 30th October with 40 kg/ha each of nitrogen and phosphorus.

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REFERENCES

Jani, N. N. 1988. Response of coriander *(Coriandrum sativum* L.) Var. Gujarat 2 to different levels of nitrogen and phosphorus. M. Sc. (Agri. thesis submitted to GAU S. K. Nagar.

Mathakia, H. V. 1993. Effect of different dates of sowing, methods of sowing and levels of nitrogen on growth and yield of coriander *(Coriandrum sativum* L.) M. Sc. (Agri.) thesis submitted to GAU, S. K. Nagar.

Sankat, K. B. 1993. Response of coriander *(Coriandrum sativum* L.) to irrigation, nitrogen and phosphorus. M. Sc. (Agri.) thesis submitted to GAU, S. K. Nagar.