

International Journal of Statistics and Applied Mathematics

ISSN: 2456-1452

Maths 2023; SP-8(6): 367-375

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<https://www.mathsjournal.com>

Received: 05-10-2023

Accepted: 06-11-2023

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Effect of various doses of nutrients on growth and yield parameters of coriander

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Abstract

The experiment conducted at Dehradun during Rabi season 2022-23. The present field experiment was conducted on 22 treatments. The experiment was laid out in Factorial RBD design and replication. It revealed from results that at 30 DAS and 60 DAS stage, the plant height, primary and secondary branches, dry weight, fresh weight, root length and girth length were obtained in narendra -2 and fertility level Vermicompost @ 5t/ha+50% RDF (F₇). It clearly evident from results that the yield parameter of coriander significantly influenced organic and inorganic treatments, maximum number of umbels per plant, Umbellate/umbel (No.), No. of seeds/umbels, Weight of seeds/ umbels, Yield per plant (kg) and Test weight of seed were found in narendra deva -2 as compared to narendra deva-1 variety with fertility level (F₈) Vermicompost @ 2.5 t/ha +1 00% RDF. Maximum seed yield and maximum straw yield were found in the variety narendra deva -2. Maximum seed yield 14.81 q/ha were found in fertility level (F₈) having Vermicompost @ 2.5t/ha + 100% RDF. Maximum straw yield 26.69 q/ha were found in fertility level (F₉) having FYM @ 5t/ha +50% RDF+ Azotobacter.

Keywords: Plant height, primary branches, secondary branches, dry weight, fresh weight, root length, girth length, number of umbels per plant, Umbellate/umbel (No.), No. of seeds/umbels, Weight of seeds/umbels, Yield per plant (kg) and Test weight

Introduction

Coriander (*Coriandrum sativum* L.) is seed spices which are used in flavoring food by human and humankind as early as 5000 BC. Coriander belongs to family Apiaceae. Coriander is an annual herb and cultivated for tender green leaves and seeds. India is one of the biggest producers of coriander amongst the world with an area of 516070 hectares and annual production of 496240 tones. In Uttar Pradesh, coriander is cultivated in 6732 hectares area and production is 3684 tones (State Agri./ Horticulture Departments, DASD Calicut, 2013-14). Coriander is a good source of vitamin-K and α -tocopherol. Coriander seeds and leaves are highly valued for high vitamin- A and vitamin- C contents. The dried round fruits of coriander are considered major source of curry powder. Coriander is also used for relish foods like pickles, chutney preparation, sauces and confectionary. Coriander is also used as medicinal purpose too. The whole plant of coriander produced pleasant aroma. Flowers of coriander are small, white or pink and compound terminal umbels. The fertility of soil isn't sufficient to fulfill the nutrient requirement of the crop. Hence, external supply of nutrients via chemical fertilizers and manures has become needed for higher yield. Therefore, the present study conducted entitled, "Response of different nutrient sources on growth and yield of coriander".

Materials and methods

The present field experiment was conducted on 22 treatments. The experiment was laid out in Factorial RBD design and 3 replication. The data related to plant growth and yield were recorded at 30 DAS and 60 DAS. The details of experiments are given below.

Experimental details

Cultivar Name: Narendra Deva-1, Narendra Deva-2

Design of Experiment: FRBD

Season: Rabi

No. of treatments: 22

No. of Replications: 3

Total No. of Plots: 66

Plot Size: 4.0 × 2.4 m

Spacing: 30 × 10 cm

Details of treatment

T₁ = V₁+ Control

T₂ =V₁+RDF 100%

T₃ = V₁+ RDF 50%

T₄ =V₁+FYM @ 10t/ha

T₅ = V₁+Vermicompost @ 5t/ha

T₆ = V₁+FYM @ 10t/ha+50% RDF

T₇ = V₁+FYM @ 5t/ha+100% RDF

T₈ = V₁+Vermicompost @ 5t/ha+50% RDF

T₉ =V₁+Vermicompost @ 2.5t/ha+100% RDF

T₁₀ =V₁+FYM @ 5t/ha +50% RDF+ Azotobacter

T₁₁=V₁+Vermicompost @ 2.5t/ha+50% RDF+ Azotobacter

T₁₂ = V₂+Control

T₁₃=V₂+ RDF 100%

T₁₄= V₂+RDF50%

T₁₅= V₂+ FYM @ 10t/ha

T₁₆= V₂+ Vermicompost @ 5t/ha

T₁₇=V₂+ FYM @ 10t/ha+50% RDF

T₁₈= V₂+ FYM @ 5t/ha +100% RDF

T₁₉= V₂+ Vermicompost @ 5t/ha+50% RDF

T₂₀= V₂+ Vermicompost @ 2.5t/ha+100% RDF

T₂₁= V₂+ FYM @ 5t/ha + 50% RDF + Azotobacter

T₂₂=V₂+Vermicompost @ 2.5t/ha+50% RDF +Azotobacter

Observation recorded

For recording different field observation, five plants from each plot were randomly selected and tagged for purpose of observation.

Growth Character

A. Plant height (cm): Plant height (cm) was measured at 30DAS and 60 DAS. Five plant were selected and their plant height measures in cm

1. Number of primary branches/ plant (30day, & 60day): Total number of primary branches/plant at 30 DAS and 60 DAS were counted randomly selected plants
2. Number of secondary branches/ plant (30day, & 60day): Total number of secondary branches/plant at 30 DAS and 60 DAS were counted randomly selected plants
3. Days taken to first flowering: Day taken to first flowering of the plant was recorded.
4. Days taken to 50% flowering: Day taken from sowing to an thesis of the main umbel in 50 percent of the plant in plot were counted to represent day to 50% flowering
5. Stem girth (cm)
6. Root length (cm)
7. Fresh weight of plant (60 days after sowing)
8. Dry weight of plant (60 days after sowing): Over dry weight of plant were recorded and noted

B. Yield Character

1. Number of umbels per plant: Average number of umbels per plant was counted at the maturity time
2. Number of seeds per umbel: Total number of seed per umbel was counted at maturity
3. Weight of seeds umbel (gm)
4. Number of seeds per plant

Total seed weight of five randomly selected plants was recorded and averages were calculated. Seed yield was taken from each treatment when the plants started shedding of the leaves and seeds turned into light yellow Color and become bold and tough. Overall harvesting was done after the full maturity of crop.

Seed yield per plot (kg)

Seed yield was taken from each treatment when the plants started shedding of the leaves and seeds turned into light yellow color and become bold and tough. Overall harvesting was done after the full maturity of crop.

Statistical analysis

The methods analysis of variance as described by Panse and Sukhatme (1989) [9] was used for statistical analysis of data recorded in all observations. Whatever, various ratio (calculated 'F' value) was found significant critical difference (CD) values were computed as follows for comparison between the treatments.

$$\frac{\sqrt{\text{Error variance}} \times \sqrt{2X1}}{N}$$

Where,

N = the number of observations averaged

Error variance = mean sum of squares (MSE) and

't' is the values from 't' table at 5% level.

Test of significance

To test the significance difference between the treatment means, following formula were used for evaluating the critical differences for varieties, fertility levels along with interaction values.

Standard error for fertility levels means

$$S.E.m = \sqrt{\frac{\text{Error variance (MSE)}}{R \times \text{Varieties}(r - \text{replications})}}$$

$$CD = S.E.m \times \sqrt{2} \times t \text{ (tabulated value at 5\% level)}$$

Standard error for variety means

$$S.E.m = \sqrt{\frac{\text{Error variance (MSE)}}{R \times \text{fertility levels}}}$$

$$CD = S.E.m \times \sqrt{2} \times t \text{ (tabulated value at 5\% level)}$$

Standard error for variety means

$$S.E.m = \sqrt{\frac{\text{Error variance (MSE)}}{R(\text{replications})}}$$

$$CD = S.E.m \times \sqrt{2} \times t \text{ (tabulated value at 5\% level)}$$

Results and Discussion

Plant height (cm)

Tables-1 Revealed that the plant height of coriander significantly influenced by the use of various treatments. It depicted from Table-1 that the plant height, enhanced with the age of plant from 30 DAS up to the harvest and increases by multi-fold between 60 DAS up to harvest stage. At 30 DAS stage, the plant height ranged from 4.54 to 4.58 cm in both the varieties. At 60 DAS plant height ranges from 49.01 to 49.92

in both varieties and 44.92 to 49.93 cm in different fertility levels. The height ranged from 82.04 to 83.66 cm in both the varieties and 46.30 to 96.19 cm in different fertility treatments. Table-1 also depicted that maximum plant height

4.83 cm, 49.93 and 96.19 cm observed with Vermicompost @ 5t/ha+50% RDF (F₇) at 30DAS, 60 DAS and at harvest stage respectively followed by F₅ and F₈.

Table 1: Plant height (cm) of coriander varieties influenced by different organic and inorganic nutrients

Treatments	Plant height		
	30 DAS	60 DAS	At harvest
Verities (V)			
V ₁ (Narendra Deva-1)	4.54	49.01	82.04
V ₂ (Narendra Deva-2)	4.58	49.92	83.66
SEM±	0.078	0.133	0.832
CD (P=0.05)	NS	0.372	NS
Fertility levels			
Control (F ₀)	3.23	44.92	46.30
RDF 100% (F ₁)	4.64	48.95	72.67
RDF 50% (F ₂)	4.50	46.44	56.61
FYM @ 10t/ha (F ₃)	4.68	49.20	88.36
Vermicompost @ 5t/ha (F ₄)	4.71	49.64	86.95
FYM @ 10t/ha+50% RDF (F ₅)	4.80	49.81	88.11
FYM @ 5t/ha+100% RDF (F ₆)	4.76	49.92	91.95
Vermicompost @ 5t/ha+50% RDF (F ₇)	4.83	49.93	96.19
Vermicompost @ 2.5t/ha+100% RDF (F ₈)	4.77	50.14	95.23
FYM @ 5t/ha + 50% RDF + Azotobacter (F ₉)	4.75	49.39	90.63
Vermicompost @ 2.5t/ha+50% RDF+Azotobacter (F ₁₀)	4.74	49.84	93.27
SEM±	0.187	0.301	1.891
CD (P=0.05)	0.594	0.837	5.362
Interaction (V×F)	NS	NS	NS

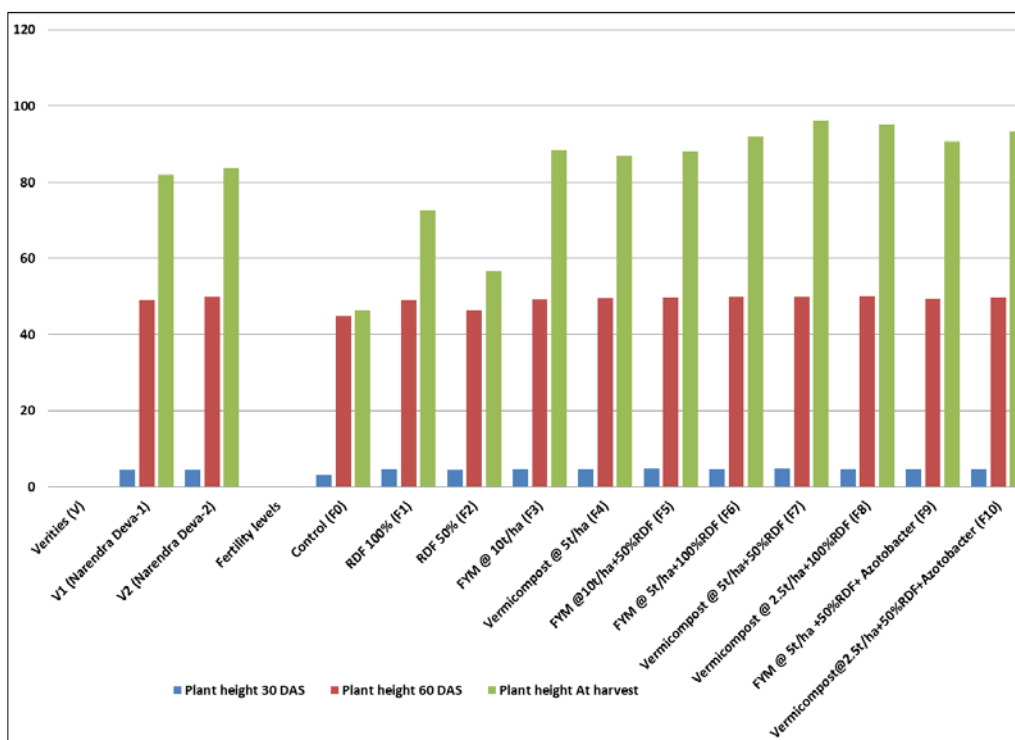


Fig 1: Plant height (cm) of coriander varieties influenced by different organic and inorganic nutrients

Number of primary and secondary branches per plant

Tables 2 revealed that the number of branches per plant of coriander significantly influenced by organic and inorganic treatments. Table-2 also revealed that the number of primary and secondary branches increases at 30 DAS to harvest ranges from 2.84 to 2.87 in both the varieties. At 60 DAS primary branches ranges from 3.81 to 3.87 in both varieties and 2.15 to 4.36 in different fertility levels. Therefore, the primary branches ranged from 6.24 to 6.47 in both the varieties and 3.88 to 7.18 in different fertility levels.

Table-3 revealed that at 30 DAS stage, the number of secondary branches ranged from 12.34 to 12.77 in both the varieties. Whereas it ranged from 8.27 to 14.40 in different fertility levels at 30 DAS. At 60 DAS secondary branches ranges from 14.70 to 15.07 in both varieties and 10.77 to 16.57 in different fertility levels. Therefore, the secondary branches ranged from 22.25 to 22.86 in both the varieties and 17.22 to 24.75 in different fertility levels. It also revealed from table 4.3 that highest number of secondary branches observed in vermicompost @ 2.5t/ha +50% RDF+ Azotobacter (F₁₀) at every stage of growth.

Table 2: Influenced of different organic and inorganic nutrients on number of primary branches per plant

Treatments	Primary branches		
	30 DAS	60 DAS	At harvest
Verities (V)			
V ₁ (Narendra Deva-1)	2.84	3.81	6.24
V ₂ (Narendra Deva-2)	2.87	3.87	6.47
SEM±	0.056	0.043	0.042
CD (P=0.05)	NS	NS	0.117
Fertility levels			
Control (F ₀)	1.87	2.15	3.88
RDF 100% (F ₁)	2.75	3.87	5.67
RDF 50% (F ₂)	2.42	3.09	4.87
FYM @ 10t/ha (F ₃)	2.97	3.98	6.48
Vermicompost @ 5t/ha (F ₄)	2.96	4.17	6.65
FYM @ 10t/ha+50% RDF (F ₅)	3.06	4.15	6.92
FYM @ 5t/ha+100% RDF (F ₆)	3.02	4.10	6.83
Vermicompost @ 5t/ha+50% RDF (F ₇)	3.09	4.17	6.89
Vermicompost @ 2.5t/ha+100% RDF (F ₈)	3.11	4.36	7.13
FYM @ 5t/ha +50% RDF+ Azotobacter (F ₉)	3.19	4.22	7.18
Vermicompost @ 2.5t/ha+50% RDF+Azotobacter (F ₁₀)	2.97	4.19	7.08
SEM±	0.180	0.172	0.096
CD (P=0.05)	0.516	0.491	0.271
Interaction (V×F)	NS	NS	NS

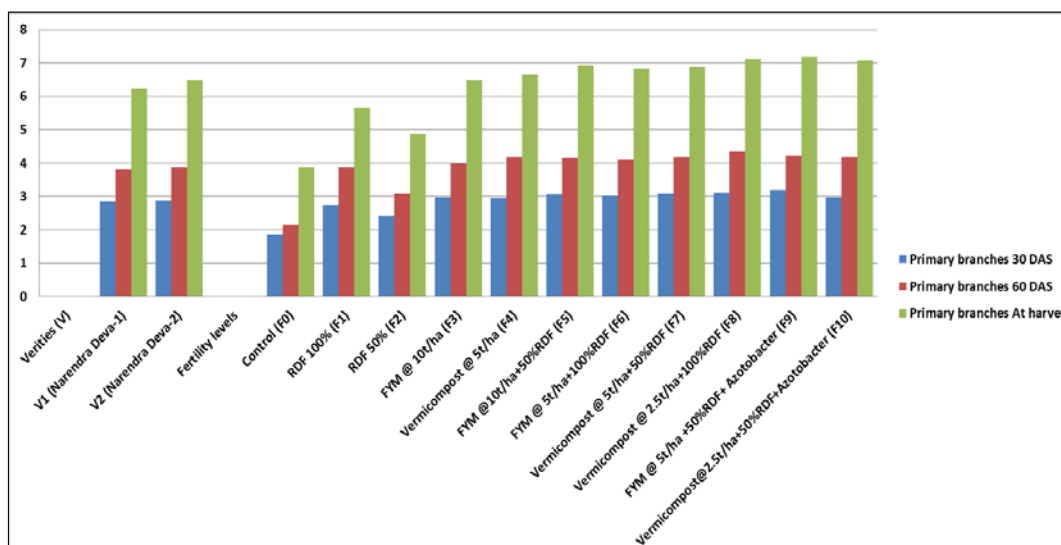


Fig: 2 Influence of different organic and inorganic treatments on number of primary branches per plant

Table 3: Secondary branches of coriander influenced by different organic and inorganic nutrients

Treatments	Secondary branches		
	30 DAS	60 DAS	At harvest
Verities (V)			
V ₁ (Narendra Deva-1)	12.34	14.70	22.25
V ₂ (Narendra Deva-2)	12.77	15.07	22.86
SEm±	0.074	0.100	0.147
CD (P=0.05)	0.206	0.283	0.413
Fertility levels			
Control (F ₀)	8.27	10.77	17.22
RDF 100% (F ₁)	11.46	14.06	22.26
RDF 50% (F ₂)	10.32	12.75	19.68
FYM @ 10t/ha (F ₃)	12.67	15.21	23.14
Vermicompost @ 5t/ha (F ₄)	12.58	15.16	22.74
FYM @ 10t/ha+50% RDF (F ₅)	12.50	15.36	22.95
FYM @ 5t/ha+100% RDF (F ₆)	13.44	16.09	23.07
Vermicompost @ 5t/ha+50% RDF (F ₇)	13.96	16.38	23.63
Vermicompost @ 2.5t/ha+100% RDF (F ₈)	14.13	16.42	24.53
FYM @ 5t/ha +50% RDF+ Azotobacter (F ₉)	13.49	16.12	24.56
Vermicompost @ 2.5t/ha+50% RDF+Azotobacter (F ₁₀)	14.40	16.57	24.25
SEM±	0.263	0.237	0.341
CD (P=0.05)	0.748	0.664	0.960
Interaction (V×F)	NS	NS	NS

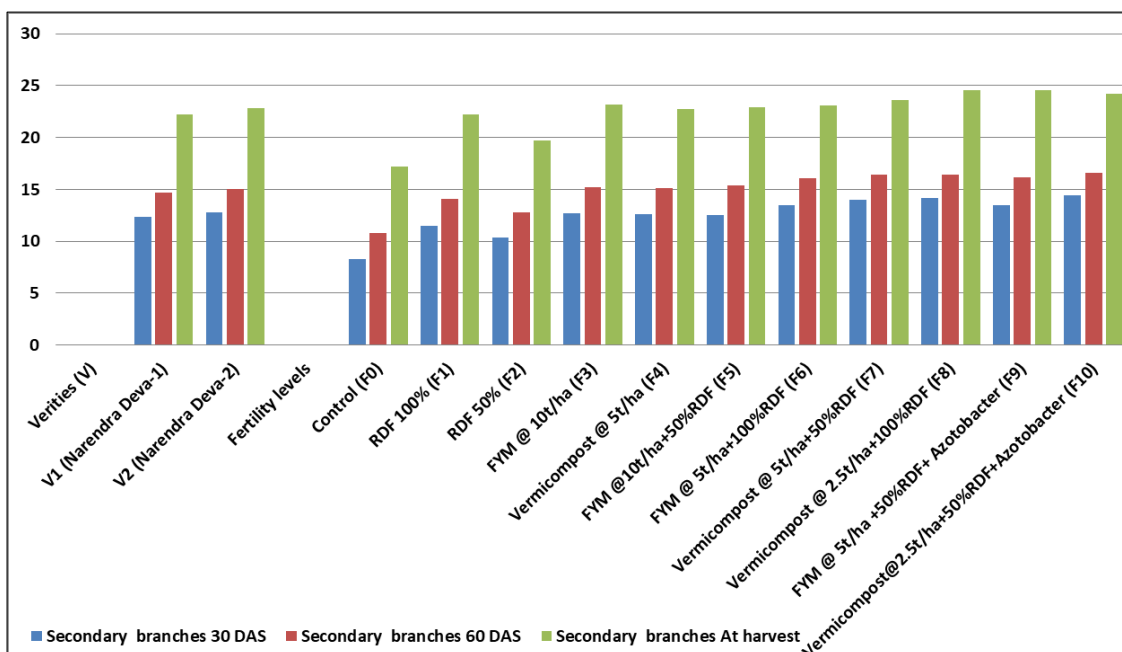


Fig 3: Secondary branches of coriander influenced by different organic and inorganic nutrients

Phenological parameters

It clearly depicted from table 4 Narendra deva-2 attained first flowering in 48.29 days, 50% flowering in 60.96 days and fruiting initiation in 85.90 days. Whereas narendra deva-1 came into first flowering in 58.80 days, 50% flowering in 71.63 days and fruiting initiation in 96.71 days. It clearly depicted from table 4.4 that the fruiting initiation in narendra deva-1 was delayed by 10.81 days over narendra deva-2. In case of fertility levels, F₈, F₇, recorded early first flowering in 50.59 to 51.14 days, 50% flowering in 63.90 to 64.80 days and fruiting initiation in 88.42 to 89.01 days. In control treatment, first flowering was in 57.09 days, 50% flowering in 69.70 days and fruiting initiation in 94.75 days.

Stem girth (cm) root length (cm)

It revealed from table 4.5 that the root length were influenced up to significant extent due to varieties, fertility levels but not due to their interactions. It revealed from table 4.5 that the root length was found significantly higher 15.81 cm under Narendra Deva-1 variety as compared to narendra deva-2 14.39 cm. In case of fertility levels, Vermicompost @ 5t/ha+50% RDF (F₇) resulted in significantly higher root length 19.12 cm followed by F₈ and F₁₀ (18.13 to 17.61 cm) and then F₆ (17.01 cm). The significantly minimum root length (8.70 cm) was noted under the control treatment (F₀). Table-5 also reveals that the stem girth was found significantly higher in case of narendra deva -2 (1.28 cm) as compared to narendra deva-1 (1.22 cm). Amongst the fertility treatments, F₇ and F₈ recorded equally enhanced stem girth (1.44 to 1.46 cm), followed by F₁₀ (1.42 cm).

The control treatment resulted in significantly lowest stem girth (0.88 cm).

Fresh weight and dry weight

It depicted in table-6 that the fresh weight at 60 DAS under different treatments, in general, ranged from 8.30 to 14.68 g/plant, whereas at harvest stage, 16.30 to 25.14 g/plant. The fresh weight of narendra deva-2 variety at 60 DAS was found significantly higher (13.60 g) over narendra deva-1 (11.68g). Similarly, at harvest stage, the fresh weight was 24.78 g/plant under narendra deva-2 variety as against 23.14 g/plant in case of narendra deva-1. In F₈ fertility level recorded significantly higher fresh weight 14.68 g/plant at 60 DAS. This was equally followed by F₉ and F₁₀ (14.63 to 14.60 g/plant). The reduction in this parameter was more (9.50 to 11.83 g) F₂ and F₁ having inorganic than in F₅ and F₄ having organics (12.90 to 13.11 g/plant). The control treatment recorded significantly minimum fresh weight (8.30 g/plant) at 60 DAS stage. At harvest stage maximum fresh weight recorded under treatment F₈ (25.14 g/plant). It clearly revealed from table 4.6 that the dry weight at 60 DAS under different treatments, ranged from 1.47 to 2.81g/plant, whereas at harvest stage, 2.77 to 5.23 g/plant observed. The dry weight of narendra deva-2 variety at 60 DAS was found significantly higher (2.44 g) over narendra deva-1 (2.29 g). Similarly, at harvest stage, the dry weight was 4.53 g/plant under narendra deva-2 variety as compared to 4.22 g/plant in narendra deva-1. Fertility level F₈ recorded significantly higher dry weight 2.81 g/plant at 60 DAS followed by F₉ and F₁₀ (2.77 to 2.75 g/plant). The control recorded significantly minimum dry weight F₀ (2.77 g/plant).

Table 4: Phenological parameters of coriander varieties influenced by different organic and inorganic nutrients

Treatments	Days to first flowering	Days to 50% flowering	Days to fruiting initiation
Verities (V)			
V ₁ (Narendra Deva-1)	58.80	71.63	96.71
V ₂ (Narendra Deva-2)	48.29	60.96	85.90
SEm±	0.198	0.138	0.089
CD (P=0.05)	0.557	0.387	0.251
Fertility levels			
Control (F ₀)	57.09	69.70	94.75
RDF 100% (F ₁)	55.24	68.05	93.17

RDF 50% (F ₂)	56.12	68.96	94.07
FYM @ 10t/ha (F ₃)	53.03	65.87	90.92
Vermicompost @ 5t/ha (F ₄)	52.87	65.14	90.33
FYM @ 10t/ha+50% RDF (F ₅)	54.56	67.39	92.51
FYM @ 5t/ha+100% RDF (F ₆)	53.88	66.46	91.65
Vermicompost @ 5t/ha+50% RDF (F ₇)	51.14	63.90	89.01
Vermicompost @ 2.5t/ha+100% RDF (F ₈)	50.59	67.43	88.42
FYM @ 5t/ha +50% RDF+ Azotobacter (F ₉)	52.02	64.80	89.17
Vermicompost @2.5t/ha+50% RDF+Azotobacter (F ₁₀)	53.20	65.17	89.05
SEM±	0.457	0.319	0.216
CD (P=0.05)	1.338	0.898	0.682
Interaction (V×F)	NS	NS	NS

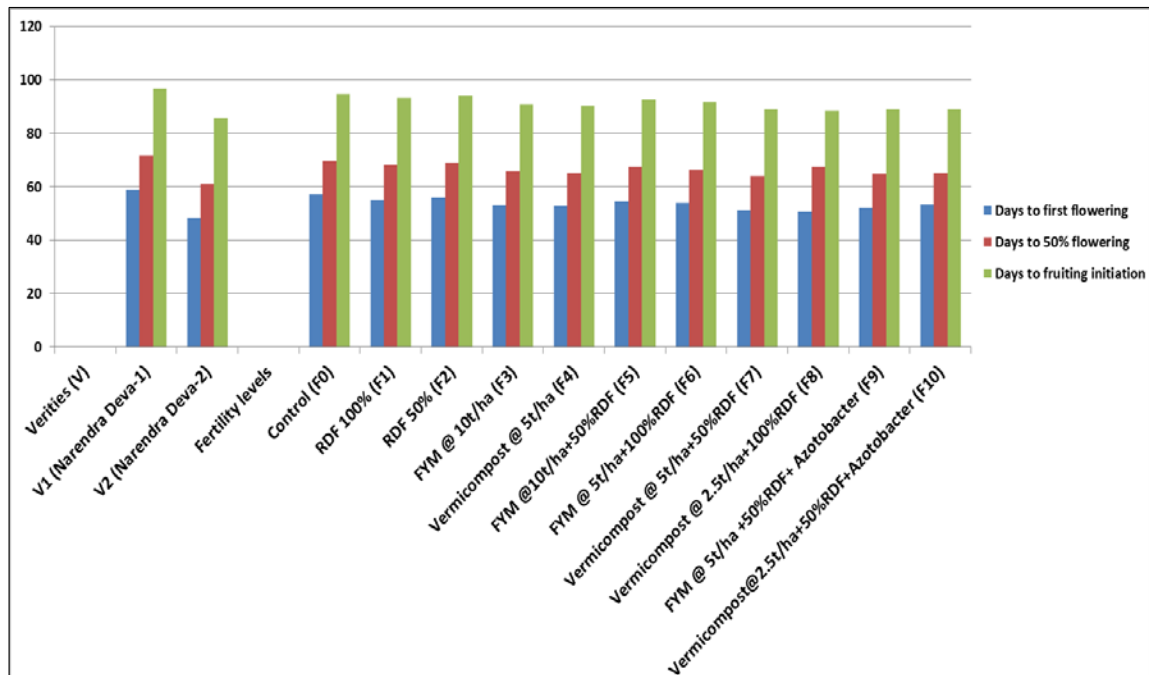


Fig 4: Phenological parameters of coriander varieties influenced by different organic and inorganic nutrients

Table 5: Root-shoot growth of coriander varieties influenced by different organic and inorganic nutrients

Treatments	Root length (cm)	Stem girth (cm)
Verities (V)		
V ₁ (Narendra Deva-1)	14.39	1.22
V ₂ (Narendra Deva-2)	15.81	1.28
SEM±	0.128	0.014
CD (P=0.05)	0.362	0.039
Fertility levels		
Control (F ₀)	8.70	0.88
RDF 100% (F ₁)	14.50	1.11
RDF 50% (F ₂)	12.50	0.95
FYM @ 10t/ha (F ₃)	14.69	1.23
Vermicompost @ 5t/ha (F ₄)	16.02	1.27
FYM @ 10t/ha+50% RDF (F ₅)	15.83	1.32
FYM @ 5t/ha+100% RDF (F ₆)	17.01	1.38
Vermicompost @ 5t/ha+50% RDF (F ₇)	19.12	1.44
Vermicompost @ 2.5t/ha+100% RDF(F ₈)	18.13	1.46
FYM @ 5t/ha +50% RDF+ Azotobacter (F ₉)	17.55	1.35
Vermicompost @2.5t/ha+50% RDF+Azotobacter (F ₁₀)	17.61	1.42
SEM±	0.407	0.032
CD (P=0.05)	1.162	0.088
Interaction (V×F)	NS	NS

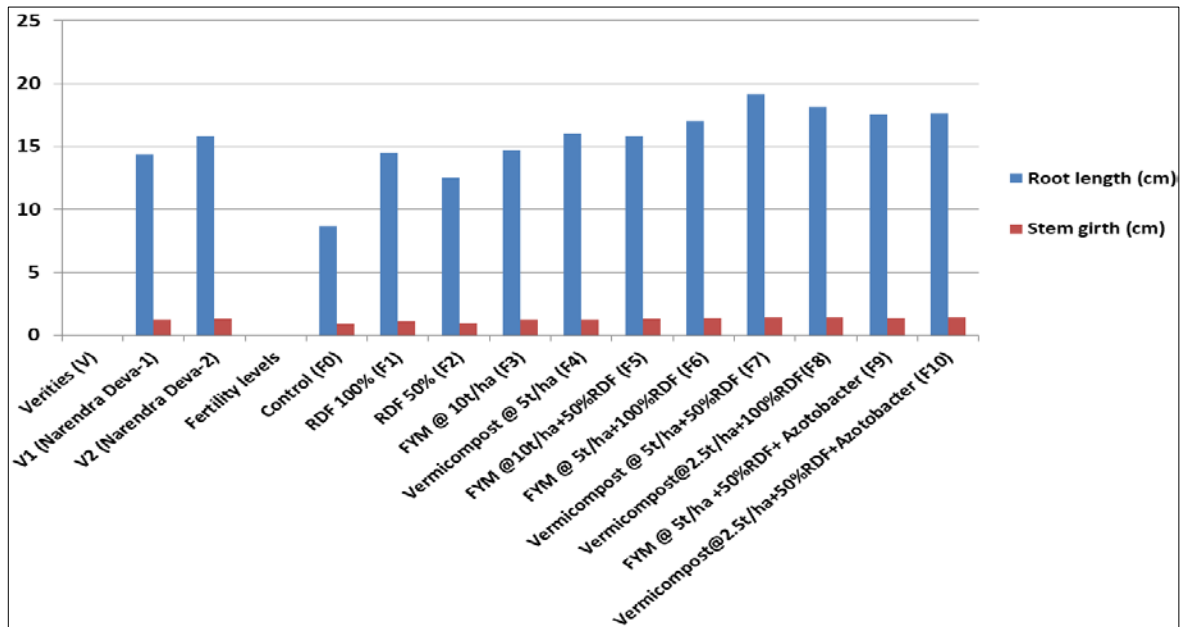


Fig 5: Root-shoot growths of coriander varieties influenced by different organic and inorganic nutrients

Table 6: Fresh weight (g) and dry weight (g) of plant of coriander varieties influenced by different organic and inorganic nutrients

Treatments	Fresh weight at 60 DAS	Fresh weight at harvest	Dry weight at 60 DAS	Dry weight at harvest
Verities (V)				
V ₁ (Narendra Deva-1)	11.22	23.14	2.29	4.22
V ₂ (Narendra Deva-2)	13.60	24.78	2.44	4.53
SEM±	0.245	0.289	0.038	0.056
CD (P=0.05)	0.701	0.825	0.109	0.159
Fertility levels				
Control (F ₀)	8.30	16.30	1.47	2.77
RDF 100% (F ₁)	11.83	23.10	2.28	3.95
RDF 50% (F ₂)	9.50	22.78	2.18	3.58
FYM @ 10t/ha (F ₃)	13.11	19.81	2.26	3.48
Vermicompost @ 5t/ha (F ₄)	13.39	23.68	2.37	4.47
FYM @ 10t/ha+50% RDF (F ₅)	12.90	23.61	2.34	4.26
FYM @ 5t/ha+100% RDF (F ₆)	13.40	23.80	2.43	4.39
Vermicompost @ 5t/ha+50% RDF (F ₇)	13.91	24.89	2.48	4.82
Vermicompost @ 2.5t/ha+100% RDF (F ₈)	14.68	25.14	2.81	5.23
FYM @ 5t/ha +50% RDF+ Azotobacter (F ₉)	14.63	24.81	2.77	5.09
Vermicompost @ 2.5t/ha+50% RDF+Azotobacter (F ₁₀)	14.60	24.78	2.75	5.06
SEM±	0.582	0.678	0.088	0.217
CD (P=0.05)	1.663	1.934	0.251	0.629
Interaction (V×F)	NS	NS	NS	NS

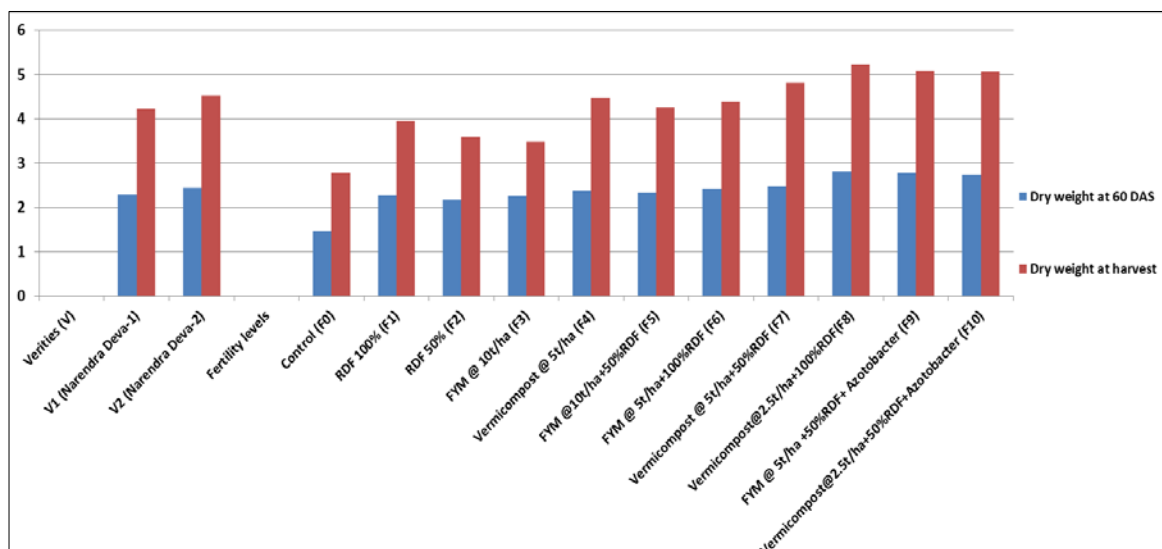


Fig 6: Dry weight /plant (g) of coriander varieties influenced by different organic and inorganic nutrients

Yield character

No. of umbels per plant

It revealed from table-7 that maximum numbers of umbels per plant (19.88/plant) were found in narendra deva -2 as compared to narendra deva-1 variety (19.43/plant). Maximum number of umbels per plant (23.45 /plant) observed at fertility level (F₈) Vermicompost @ 2.5 t/ha+1 00% RDF (F₈) followed by F₉ and F₇.

Umbellate/umbel (No.)

It revealed from table-7 that maximum umbellate (6.65/umbel) were found in narendra deva-2 as compared to narendra deva-1 variety (5.99/umbel). Table-4.7 indicated that maximum no. of umbellate/umbels observed 7.07 with fertility level (F₈) Vermicompost @ 2.5 t/ha +100% RDF followed by F₆ and F₇.

No. of seeds/umbels

Table-7 indicated that maximum (15.54 seeds/umbel) were found in variety narendra deva-2 which was significantly higher as compared to narendra deva-1 variety (15.08 seeds/umbel). In case of fertility level maximum (16.04seeds/umbel) were found in FYM @ 5t/ha +50% RDF+ Azotobacter (F₉) followed by F₆, F₇, F₈ and F₁₀ fertility levels.

Weight of seeds/ umbels

Table-7 indicated that maximum weight of seeds umbel observed in variety narendra deva-2 recorded significantly higher weight of seeds (75.79 mg/umbel) over narendra deva-1 variety (71.78 mg/umbel).Maximum weight of seeds/umbels 85.53 mg were found in fertility level (F₈) Vermicompost @ 2.5t/ha + 100% RDF followed by F₁₀,F₇ and F₄.

Test weight of seed

Table-7 indicated that higher 8.54g test weights of seed were found in narendra deva-2 as compared to narendra deva-1 variety (8.38g).Amongst the fertility levels, maximum 9.78g test weight were found in F₈ Vermicompost @ 2.5t/ha + 100% RDF recorded followed by F₉, F₁₀ and F₇.

Yield per plant (kg)

Table-7 indicated that maximum yield per plant (kg) the variety narendra deva-2 was found significantly higher (4.51 g/plant) as compared to narendra deva-1 variety (4.42 g/plant). In case of fertility level, maximum seed yield (5.94 g/plant) were found in Vermicompost @ 2.5t/ha + 100% RDF (F₈) followed by F₁₀, F₉ and F₇.

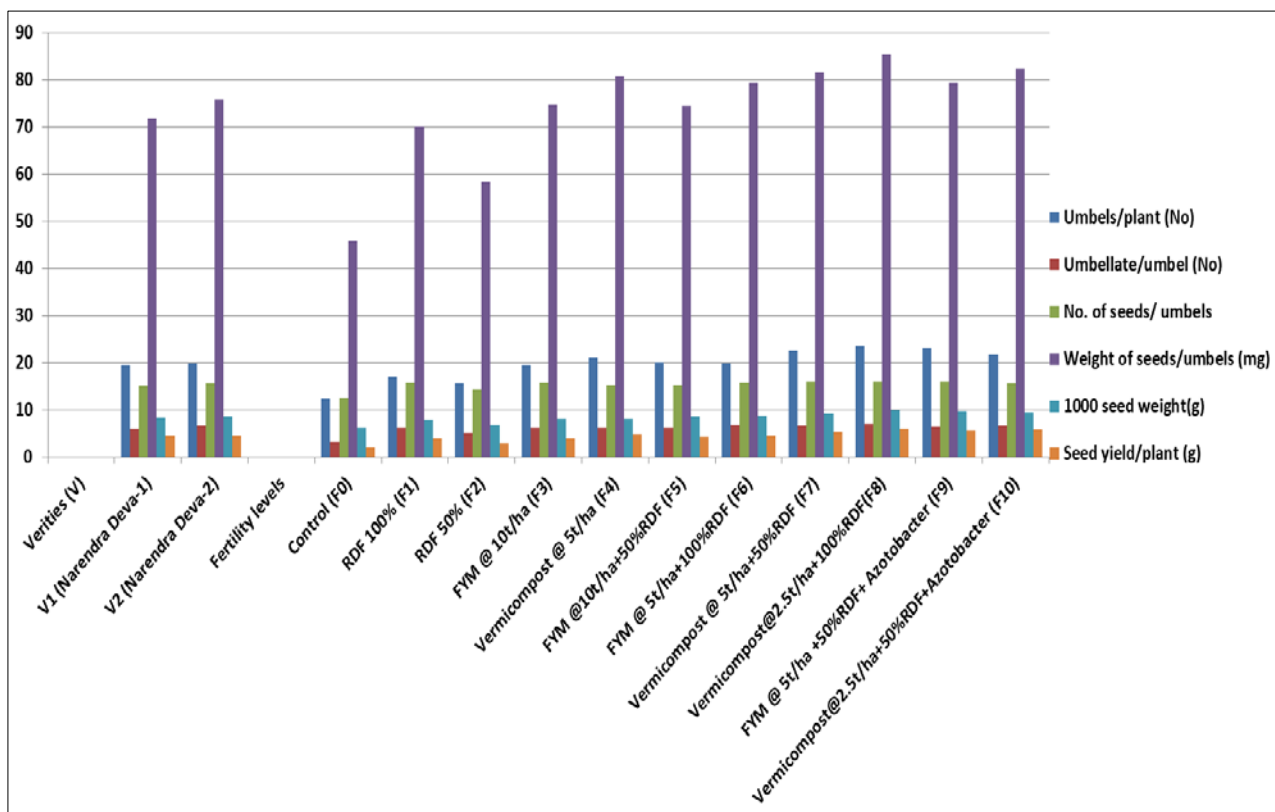


Fig 7: Effect of different organic and inorganic nutrients on yield characters

Table 7: Effect of different organic and inorganic nutrients on yield characters

Treatments	Umbels/Plant (No)	Umbellate/ Umbels (No)	No. of Seeds /Umbels	Weight of Seeds /Umbels (mg)	1000 Seed Weight (g)	Seed yield/ Plant (g)
Verities (V)						
V ₁ (Narendra Deva-1)	19.43	5.99	15.08	71.78	8.38	4.42
V ₂ (Narendra Deva-2)	19.88	6.65	15.54	75.79	8.54	4.51
SEM±	0.179	0.083	0.404	0.389	0.089	0.061
CD (P=0.05)	NS	NS	NS	1.091	NS	NS
Fertility levels						
Control (F ₀)	12.34	3.09	12.58	45.78	6.23	1.98
RDF 100% (F ₁)	17.04	6.16	15.73	70.03	7.97	3.93
RDF 50% (F ₂)	15.66	5.09	14.26	58.37	6.79	2.94

FYM @ 10t/ha (F ₃)	19.55	6.18	15.73	74.78	8.08	3.96
Vermicompost @ 5t/ha (F ₄)	20.98	6.27	15.30	80.87	8.19	4.80
FYM @ 10t/ha+50% RDF (F ₅)	20.03	6.15	15.29	74.55	8.55	4.21
FYM @ 5t/ha+100% RDF (F ₆)	19.87	6.79	15.79	79.30	8.72	4.44
Vermicompost @ 5t/ha+50% RDF (F ₇)	22.51	6.67	15.95	81.52	9.33	5.33
Vermicompost @ 2.5t/ha+100% RDF(F ₈)	23.45	7.07	15.96	85.53	9.78	5.94
FYM @ 5t/ha +50% RDF+ Azotobacter (F ₉)	23.16	6.35	16.04	79.32	9.64	5.67
Vermicompost @ 2.5t/ha+50% RDF + Azotobacter (F ₁₀)	21.79	6.60	15.72	82.40	9.50	5.89
SEM±	0.567	0.189	0.873	1.306	0.182	0.207
CD (P=0.05)	1.618	0.534	NS	3.729	0.529	0.587
Interaction (V×F)	NS	NS	NS	NS	NS	NS

Summary and Conclusion

It revealed from results that at 30 DAS stage, the plant height ranged from 4.54 to 4.58 cm in both the varieties. It ranged from 3.23 to 4.83 cm in different fertility treatments at 30 DAS. At 60 DAS plant height ranges from 49.01 to 49.92 in both varieties and 44.92 to 49.93 cm in different fertility levels. The result might be due to the high water holding capacity of FYM and vermicompost with proper supply of macro- and micro-nutrients. It also concluded from results that the secondary branches ranged from 22.25 to 22.86 in both the varieties and 17.22 to 24.75 in different fertility levels. It clearly evident from results that in case of fertility levels, F₈, F₇, recorded early first flowering in 50.59 to 51.14 days, 50% flowering in 63.90 to 64.80 days and fruiting initiation in 88.42 to 89.01 days. It concluded from results that the root length was found significantly higher 15.81 cm under Narendra Deva-1 variety as compared to narendra deva-2 14.39 cm. In case of fertility levels, Vermicompost @ 5t/ha+50% RDF (F₇) resulted in significantly higher root length 19.12 cm. It revealed from results that the fresh weight at 60 DAS under different treatments, in general, ranged from 8.30 to 14.68 g/plant, whereas at harvest stage, 16.30 to 25.14 g/plant at harvest stage, the fresh weight was 24.78 g/plant under narendra deva-2 variety as against 23.14 g/plant in case of narendra deva-1. In F₈ fertility level recorded significantly higher fresh weight 14.68 g/plant at 60 DAS. The dry weight at 60 DAS under different treatments, ranged from 1.47 to 2.81g/plant, whereas at harvest stage, 2.77 to 5.23 g/plant observed. Fertility level F₈ recorded significantly higher dry weight 2.81 g/plant at 60 DAS followed by F₉ and F₁₀ (2.77 to 2.75 g/plant). It clearly evident from results that the yield parameter of coriander significantly influenced organic and inorganic treatments, maximum number of umbels per plant, Umbellate/umbel (No.), No. of seeds/umbels, Weight of seeds/ umbels, Yield per plant (kg) and Test weight of seed were found in narendra deva -2 as compared to narendra deva-1 variety with fertility level (F₈) Vermicompost @ 2.5 t/ha +1 00% RDF. Maximum seed yield and maximum straw yield were found in the variety narendra deva-2. Maximum seed yield 14.81 q/ha were found in fertility level (F₈) having Vermicompost @ 2.5t/ha + 100% RDF. Maximum straw yield 26.69 q/ha were found in fertility level (F₉) having FYM @ 5t/ha +50% RDF+ Azotobacter followed by F₈, F₁₀ and F₆.

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