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Effect of growth regulators and vermicompost on No of nods per vine and vine length of bottle gourd [*Langenaria siceraria* (Mol.) Standl.]

Varsha Uikey, Dr. RK Pathak and Dr. RK Jaiswal

Abstract

The present investigation in titled “Effect of Growth parameters Bottle Gourd [*Langenaria siceraria* (mol.) stand L.] by Growth Regulators” at the Horticulture Research Farm, R.A.K college of Agriculture, Sehore (M.P.) during 2019-20 and 2020-21. The thirteen treatments viz., T₁ (GA₃ 0 ppm + Vermicompost @ 0), T₂ (GA₃ 25 ppm + Vermicompost. @ 2 t/ha), T₃ (GA₃ 50 ppm + Vermicompost @ 4 t/ha), T₄ (GA₃ 75 ppm + Vermicompost @ 6 t/ha) T₅ (Etherel 100 ppm + Vermicompost @ 2 t/ha.), T₆ (Etherel 200 ppm + Vermicompost @ 4 t/ha.), T₇ (Etherel 300 ppm + Vermicompost @ 6 t/ha.) T₈ (NAA 100 ppm + Vermicompost@ 2 t/ha.), T₉ (NAA 150 ppm + Vermicompost @ 4 t/ha.), T₁₀ (NAA 200 ppm + Vermicompost @ 6 t/ha.), T₁₁ (CCC 200 ppm+ Vermicompost @ 2 t/ha.), T₁₂ (CCC 400 ppm + Vermicompost @ 4 t/ha.) and T₁₃ (CCC 600 ppm + Vermicompost @ 6 t/ha.) were evaluated during the experiment ranges from 130.50cm to 210.83cm. The maximum vine length were recorded under the treatment T₄ (210.83cm). While the minimum vine length was found under control treatment T₁ (130.50cm). During the experiment the treatment T₄ over all performed superior in relation to pooled data. The vine length increase every stage might be GA₃ increase cell elongation and the closely finding are Komal Kumari *et al.*, (2019) he studied on different dosed of GA₃ and reported that the 200 ppm GA₃ give highest growth of vine.

Keywords: Regulators, vermicompost, length, *Langenaria siceraria*

Introduction

Bottle gourd [*Langenaria siceraria* (Mol.) stand L.] is a one of the most popular vegetable of cucurbits and it is also commonly grown in India. Bottle gourd is also popular vegetable in other tropical sub-tropical countries like Ethiopia, Africa, and Central America. It is photo-insensitive crop but sensitive to thermo-periodism. Thus, most of the existing bottle gourd varieties are season specific. Its chromosome number is 2n=22 and belongs to family Cucurbitaceae. The tender fruits of the bottle gourd is used for cooking vegetable, making sweet and pickle. It is easily digest, even by patients. The fruit has a cooling effect, cardio tonic and diuretic. The pulp is good for overcoming constipation, cough, and night blindness. Per 100g of fresh fruit contain 0.2% of protein, 2.9% of carbohydrate, 0.5% of fat and, 0.5% mineral matter, 0.044 mg thiamine, 0.023mg riboflavin, 0.33mg niacin and 12 mg vitamin C and 0.6g fibre (Aykyoyd, 1968).

Material and Methods

The experiment was carried out at the Horticulture Research Farm, R.A.K college of Agriculture, Sehore (M.P.) during 2019-20 and 2020-21 i.e., from July 2019 to November 2020. The experimental site is situated in the western part of the Vindhya Plateau at 23.11° North latitude and 77.04° East longitudes at an altitude of 502 meter above mean sea level in Madhya Pradesh. The topography of the experimental field is plain. The region lies under 5th agro-climatic zone of state. Sehore belongs to sub-tropical zone. The summers here have a good deal of rainfall, while the winters have very little. The average temperature is about 25.30 C. The rainfall here is around 1266 mm (49.8 inch per year). The highest temperature recorded in the month of May at around 33.8° C whereas January is the coldest month with temperature 18.6° C. Temperatures in the summer range from 25 to 45° C, while the temperature in winter is 10 to 25° C. The experiment was laid out in Randomized Completely Block Design (RCBD) with three replications. Each replication consists of 13 treatments. The above experiment was conducted in medium black soil having sand 25% sand, 38% silt and 37% of clay. The plant seedlings were prepared in polybags and transplanted at four true leaves.

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The treatments details was given in table: 1.

Table 1: Treatments detail: - Foliar spray doses.

S. No.	Treatment Notation	Treatments detail
1.	T ₁	GA ₃ 0 ppm + Vermicompost @ 0
2.	T ₂	GA ₃ 25 ppm + Vermicompost. @ 2 t/ha
3.	T ₃	GA ₃ 50 ppm + Vermicompost @ 4 t/ha
4.	T ₄	GA ₃ 75 ppm + Vermicompost @ 6 t/ha
5.	T ₅	Etherel 100 ppm + Vermicompost @ 2 t/ha.
6.	T ₆	Etherel 200 ppm + Vermicompost @ 4 t/ha.
7.	T ₇	Etherel 300 ppm + Vermicompost @ 6 t/ha.
8.	T ₈	NAA 100 ppm + Vermicompost @ 2 t/ha.
9.	T ₉	NAA 150 ppm + Vermicompost @ 4 t/ha.
10.	T ₁₀	NAA 200 ppm + Vermicompost @ 6 t/ha.
11.	T ₁₁	CCC 200 ppm+ Vermicompost @ 2 t/ha.
12.	T ₁₂	CCC 400 ppm + Vermicompost @ 4 t/ha.
13.	T ₁₃	CCC 600 ppm + Vermicompost @ 6 t/ha.

Table 2: Effect of growth regulators and vermicompost on No. of nodes per vine and vine length

Trt. Sy.	Number of node per vine in 2019-20	Number of node per vine a in 2020-21	Pooled data on number of node per vine	Vine length during 2019-20	Vine length during 2020-21	Pooled data on vine length
T ₁	24.33	22.67	23.50	128.00	133.00	130.50
T ₂	36.33	31.00	33.67	168.00	173.00	170.50
T ₃	41.67	39.33	40.50	199.33	204.33	201.83
T ₄	44.33	42.67	43.50	208.33	213.33	210.83
T ₅	33.00	31.00	32.00	159.00	164.00	161.50
T ₆	40.00	37.00	38.50	168.00	173.00	170.50
T ₇	32.83	30.67	31.75	177.00	182.00	179.50
T ₈	39.67	37.67	38.67	167.33	172.33	169.83
T ₉	42.00	39.67	40.83	182.33	181.00	181.67
T ₁₀	37.67	36.67	37.17	176.00	187.67	181.83
T ₁₁	32.67	31.00	31.83	148.00	153.00	150.50
T ₁₂	29.33	27.00	28.17	147.00	152.33	149.67
T ₁₃	27.33	25.33	26.33	146.33	151.33	148.83
SE(m)	1.54	1.88	1.53	5.56	5.59	5.51
SE(d)	2.18	2.66	2.16	7.87	7.91	7.80
C.D.	4.41	5.38	4.37	15.93	16.01	15.79

Number of nodes per vine

In relation to number of nodes per vine during the field research experiment 2019-20 and 2020-21 the pooled data of both of the years were calculated. It is observed that the highest significant number of nodes was observed while the minimum number of nodes were recorded under controlled treatment. Overall the treatment T₄ performed well during experiment for number of nodes.

Vine length

Regarding vine length during kharif season 2019-20 and 2020-21, the pooled data on vine length for both years were calculated. It is observed that the vine length at different growth stages were observed that under treatment T₄. While the minimum vine length was find out under controlled treatment T₁. During the experiment the treatment T₄ over all performed well in all growth stages.

Conclusion

It is concluded that the all growth parameters were superiorly recorded in the treatment T₄. While the poor performance of all the growth parameters were recorded under controlled treatment.

Result and discussion

The vegetative characters *viz.*, vine length, number of leaves, number of nodes and inter-nodal length were significantly superior by application of GA₁₀₀ (gibberellic acid 100 ppm). The vine length were. During the *kharif* season 2019-20 the vine length 128.00 cm to 208.33 cm. The maximum vine length significantly recorded under the treatment T₄ (208.33cm). It was significantly at par with the treatment T₃ (199.33cm). While the minimum vine length at same day and same season recorded under treatment control T₁ (128.00cm) compare to other treatments.

During the *kharif* season 2020-21 the vine length 133.00 cm to 213.33 cm. The maximum length of vine significantly recorded under the treatment T₄ (213.33cm). It was significantly at par with the treatment T₃ (204.33cm). While the minimum vine length at same day and same season recorded under treatment control T₁ (133.00cm) compare to other treatments.

References

1. Anonymous. Influence of drought ameliorative measures on leaf metabolism of clusterbean. Annual progress Report. All India Coordinated Research Project on Arid Legumes. Central Arid Zone Research Institute, Jodhpur, Rajasthan, 1999, pp. 133.
2. Anonymous. Report of Project Director (wheat), Directorate of Wheat Research, Karnal, 2004.
3. Ansari Abdul Majid, Chowdhary BM. Studied on effects of boron and plant growth regulators on bottle gourd (*Lagenaria siceraria* (Molina) Standle.) Zonal Research Station (Birsra Agricultural University, Ranchi), Chianki, Palamau, Jharkhand, India. Journal of Pharmacognosy and Phytochemistry. 2018;SP1:202-206.
4. Arora D. Effect of thiourea and zinc on growth yield and quality of barley (*Hordeum vulgare* L.). Ph.D. Thesis, Rajasthan Agricultural University, Bikaner, 2004.
5. Arora SK, Partap PS. Influence of foliar application of plant growth regulators on growth, sex expression and yield of watermelon. Haryana Agricultural University Journal of Research. 1988a;18(2):114-118.