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Effect of foliar application of boron and molybdenum on growth, yield and curd quality of cauliflower (*Brassica oleracea* var. *botrytis* L.)

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Abstract
The current study was carried out in Agriculture Research Farm, Department of Horticulture, Suresh Gyan Vihar University, Jagatpura, Jaipur (Rajasthan) during rabi season 2021-2022 to study the effect of foliar application of boron and molybdenum on growth, yield and quality of cauliflower (*Brassica oleracea* var. *botrytis* L.). The research was laid out in Randomized Block Design with three number of replications which comprises of sixteen combinations of treatment T_0 = Control (Water Spray), T_1 = Boric Acid @ 0.2%, T_2 = Boric Acid @ 0.5%, T_3 = Boric Acid @ 1.0%, T_4 = Ammonium Molybdate @ 0.1%, T_5 = Ammonium Molybdate @ 0.2%, T_6 = Ammonium Molybdate @ 0.3%, T_7 = Boric Acid @ 0.2% + Ammonium Molybdate @ 0.1%, T_8 = Boric Acid @ 0.2% + Ammonium Molybdate @ 0.2%, T_9 = Boric Acid @ 0.2% + Ammonium Molybdate @ 0.3%, T_{10} = Boric Acid @ 0.5% + Ammonium Molybdate @ 0.1%, T_{11} = Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%, T_{12} = Boric Acid @ 0.5% + Ammonium Molybdate @ 0.3%, T_{13} = Boric Acid @ 1.0% + Ammonium Molybdate @ 0.1%, T_{14} = Boric Acid @ 1.0% + Ammonium Molybdate @ 0.2%, T_{15} = Boric Acid @ 1.0% + Ammonium Molybdate @ 0.3%. The different concentration of B and Mo were significantly influenced the morphological characters and yield parameters.
The highest curd diameter (16.9 cm), curd weight (1143.9 g), yield per plot (9.1 kg), yield per hectare (3.37 t), net return (Rs. 277250.85) and ratio of cost benefit (1:2.96) was produced in treatment T_{11} next to treatment T_{10} curd diameter (16.8cm), net curd weight (1099.7 g), yield per plot (8.79 kg), yield per hectare (3.25 t), net return (Rs.265557.69) and cost benefit ratio (1:2.88). It is accomplished from the current study, treatment T_{11} was found to be best followed by T_{10} and show significant result on growth, yield and curd quality of cauliflower cv. 'Girija'.

Keywords: Foliar application, boron, molybdenum, growth, yield, curd quality, cauliflower

Introduction
Cauliflower (*Brassica oleracea* var. *botrytis* L.) is the majorily accepted vegetable crops i.e. derived from Latin word 'cauli' means cabbage, 'floris' means flower and 'botrytis' means budding. Cauliflower has originated in Eastern Mediterranean region from its ancestor wild cabbage (*Brassica oleracea* var. *sylvestris* L.). In India it was introduced by a botanist Dr. Jemson in 1822 (Swarup and Chatterjee, 1972) [14]. In India, it is developed mostly within states like Bihar, Uttar Pradesh, Orissa, West Bengal, Assam, Haryana, Madhya Pradesh and Maharastra. Curd is the suitable for eating part of cauliflower which is something like 45 percent of the plant. 100 g of curd has high value protein (2.6 g), moisture (90.8 g), fat (0.4 g), carbohydrates (4.0 g), calcium (33.0 mg), phosphorus (57.0 mg), vitamin C (56.0 mg) and energy (30 kcal) (Singh, 1998). It has adaptation to different climatic situation, popular in temperate, subtropics and tropical parts. Most favorable temperature essential in favor of development of immature plants is 23ºC, and during soon after stages 17-20ºC temperature is required. During curd formation higher or lower temperature than the optimum required by the cultivars possibly will source of physiological disorder like riceyness, leafy curd and blindness. Temperature lower the most favorable requirement for the duration of rising stage delays development as well as underdeveloped minute unmarketable curds or buttons possibly will be produced.
Cauliflower crop required soil with good fertility and good regime. Plants are the majority susceptible toward drought in light soil along with require proper humidity. Light soils are ideal for early crops whereas, loamy and clay loam soils are further appropriate designed for mid-season as well as late growing types.

Deep loamy soils among higher organic matter substance a pH series of 5.5 near 6.6 and well-drained soil are best for cauliflower cultivation.

Browning of curd and whiptail structure of leaves are the deficiency symptoms of boron and molybdenum in cauliflower crop. These disorders reduce the curd yield and curds unfit, for human consumption and considerably; (Singh and Thakur, 1991) [11]. Boron (B) plays an important role in cell wall expansion, cell division, along with pollen development, which affects seeds and fruit, sets (Sharma *et. al.*, 1999) [10]. B also enhance the vegetative reproductive development of crops (Singh, 2003) [12]. The appliance of B considerably improved curd weight, as well as curd yield of cauliflower (Kumar and Chaudhary, 2002) [3]. B shortage along with curds contact in the direction of sunlight through growth causes browning. Exterior symptoms of boron deficiency are not very clear until the curd begin developing. The first sign of boron deficiency minute water saturated areas become visible on top of the stem as well as top face, slowly the stem becomes vacant also curd turns brown. In rigorous B shortage condition, cauliflower plants performance symptoms are not likely to form a head. Reproductive development, specially blossoming, fruit, and seed set are extra responsive toward B shortage than vegetative development. Affected curds develop a sour taste. This possibly will be control by means of applying borax or sodium borate.

Cauliflower responds severally to the insufficiency of molybdenum. Its shortage appears on top of immature plant among chlorosis of leaf boundaries along with slowly the entire leaf turns white. As a consequence the leaf blade fails toward expand accurately in addition to simply the midrib portions expand follow-on sword similar appearances of leaves give whiptail warning sign. Mo appliance considerably improved the top, nodule development, along with yield of the crop (Khan *et al*., 2019) [4]. (Ranjan *et al.*, 2018) [9] originate superior yield plus fine vegetative development of the crop through foliar appliance of B and Mo. Yield as well as feature parameters were in addition influenced extensively suitable to B and Mo appliance (Ningawale *et al.*, 2016) [16]. Foliar appliance of B, Mo, as well as additional micronutrients extensively improved the yield along with value of cauliflower. Molybdenum has promotive effects on vegetative development which eventually lead to additional photosynthetic actions while, appliance of boron, superior carbohydrate and nitrogen metabolism of pectic substances in addition to develop the water metabolism as well as water relation in the plants. (Chattopadhyay and Mukhopadyay 2003) [1].

Materials and Methods

This section comprises the informations regarding the resources used and the method adopted throughout the way of analysis entitled “Effect of foliar application of boron and molybdenum on growth, yield and quality of cauliflower (*Brassica oleracea* var. *botrytis*) in Department of Horticulture at Suresh Gyan Vihar University, Jagatpura, Jaipur (Rajasthan) throughout the rabi time 2021-2022. The research was laid out in the Randomized Block Design (RBD) along with three number of replications. Every replication has sixteen combinations of treatments.

The soil of the trial ground was sandy loam into consistency along with had EC 0.85 m mhos per cm, natural carbon (0.13). Seeds were sown on 10 September 2021 on top of raised nursery beds. One month older vigorous as well as standardized seedlings were transplanted at diverse levels of spacing taking place 6 October 2021. Basal dose of fine rotten FYM @ 200 q/ha was evenly mixed in the soil 15 days prior to transplanting. Partially amount of nitrogen (75 kg /ha), complete dose of phosphorus (100 kg/ha) plus potassium (60 kg/ha) was supplied throughout urea, single super phosphate and muriate of potash, in that order like basal appliance on transplanting point. Residual partially dose of nitrogen (75 kg/ha) was applied at 30 DAT. The information were recorded in favor of diverse development as well as yield parameters inside cauliflower throughout the path of analysis subjected toward statistical analysis through factorial RBD in favor of analysis of variance (ANOVA) recommended online opstat software by Sheoran.

Results and Discussion

1. Morphological Characters

1. Leaves number for each plant

Amount of green leaves of chosen plants was counted average was worked out. The highest leaves number per plant (19.2) was observed in treatment T_{11} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%) and minimum number of leaves (10.7) in T_0 (Control).

2. Height of plant (cm)

Height of plant of the chosen plants was recorded along with the mean was calculated. The plant height revealed that the treatment T_{11} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%) had the highest plant height (52.09 cm) whereas the lowest (41.06 cm) was observed in treatment T_0 (Control).

3. Leaf width for each plant (cm)

The width of the leaf of five by chance chosen plants was recorded on profitable phase as well as the average was worked out. The treatment T_{11} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%) had the highest leaf width (20.95 cm) whereas the lowest (12.16 cm) was observed in treatment T_0 (Control).

4. Length of stalk (cm)

Length of the stalk of selected plants was recorded as of ground level the bottom of the curd on the time of harvesting of curds and the mean was calculated. The highest stalk length (7.31 cm) in treatment T_{11} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%) while, the lowest stalk length (3.18 cm) was observed in treatment T_0 (Control).

2. Quality Parameters

1. Curd Compactness

Compactness of curd was categorized as loose, medium compact, very compact.

3. Yield Parameters

1. Curd Diameter (cm)

The curd diameter was calculated withvernier caliper and average was worked out.

Treatment T_{11} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%) was observed highest curd width (16.9 cm). Whereas, the lowest diameter of curd (10.3 cm) was originate in the treatment T_0 (Control).

2. Days to 50% curd initiation (days)
The numbers of days in use since the date of transplanting toward date, while at least 50% plants show curd initiation were counted for every plot. Maximum days to 50% curd initiation (50.22 days) were observed inside treatment T_0 (Control) While, the minimum days to 50% curd initiation (43.12 days) were found inside treatment T_{11} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%)

3. Curd maturity duration (days)
Amount of time from 50% curd initiation to amount of time to curd maturity (at least 50% plants) for each plot was recorded. The data clearly indicate that the maximum value for curd maturity duration i.e. 19.14 days in treatment T_0 (Control) and it was minimum (14.18 days) for treatment T_{11} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%).

4. Total plant weight (kg):
The tagged plants were harvested along with the leaves and stalks and weighed immediately for their fresh weight. The average weight was noted. Treatment T_{11} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%) recorded highest total plant weight (2.5 kg) whereas, lowest (1.52 kg) was found in treatment T_0 (Control).

5. Net curd weight (g)
The curds of tagged plants were recorded as average weight of curd just (exclusive leaves and stalk) at saleable stage. Treatment T_{11} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%) recorded maximum net curd weight (1143.9 g) while minimum net curd weight (569.87 g) was originate in treatment T_0 (Control).

6. Yield per plot (kg)
Yield of curds was recorded separately for each plot. The treatment T_{11} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%) was found superior (9.10 kg) above rest of the treatments, while the yield for each plot was observed lowest (4.71 kg) inside treatment T_0 (Control).

7. Yield per hectare (t)
The yield of crop is the ultimate indicator of the research which indicates the achievement or else breakdown of every treatment through this vision the curd yield of cauliflower was recorded. The data in support of the yield for each plot below different treatments were recorded and changed into yield t/ha.
The analysis of variance chart showed to facilitate cauliflower yield (t/ha) was considerably affected suitable toward diverse treatments of boron and molybdenum. The yield per plot was changed into yield per hectare. The maximum yield per hectare (3.37 t) was recorded in treatment T_{11} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%) which was followed by treatment T_{10} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.1%).i.e. (3.25 t). It was observed that the treatment T_0 (Control) had least yield per hectare (1.74 t).

4. Economics
The economics (net return for each hectare) as of every treatments was worked out via deducting the whole expenses incurred below every treatment as of the whole (gross) income as of the produce (cauliflower curd) obtained from that treatments. The cost benefit fraction was worked out through dividing the whole expenditure as of the gross income.
High money rate and fewer cost of cultivation are pleasing traits in favor of receiving superior returns. Therefore, economics of the treatments was worked out. It is discovered as of the information obtained with the aim of a considerable highest curd yield of (3.37 t) in treatment T_{11} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%) was obtained in cauliflower variety Girija. The net return of Rs 277250.85 as well as cost benefit fraction 1:2.96 was inside treatment T_{11} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%) followed by treatment T_{10} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.1%) i.e. (3.25 t) as well as a net return of 265557.69 with cost benefit ratio 1:2.88. While lowest curd yield (1.74 t) and net return (Rs. 101014.72) and in treatment T_0 (Control) cost benefit ratio (1:1.12) was recorded.

Table 1: Effect of Foliar Application of Boron and Molybdenum on quality parameters of Cauliflower

S. No.	Treatments symbol	No. of leaves	Plant height (cm)	Leaf width (cm)	Stalk length (cm)	Curd Compactness
1.	Control (Water Spray)	10.7	41.06	12.16	3.18	Medium compact
2.	Boric Acid @ 0.2%	14.3	46.18	16.7	4.33	Compact
3.	Boric Acid @ 0.5%	15.8	47.87	17.63	5.24	Medium compact
4.	Boric Acid @ 1.0%	14.9	46.77	15.9	4.68	Medium compact
5.	Ammonium Molybdate @ 0.1%	14.2	45.47	16.59	3.94	Medium compact
6.	Ammonium Molybdate @ 0.2%	15.7	46.83	17.39	4.9	Medium compact
7.	Ammonium Molybdate @ 0.3%	15.2	45.64	17.22	4.78	Loose
8.	Boric Acid @ 0.2% + Ammonium Molybdate @ 0.1%	16.7	48.97	18.09	5.68	Compact
9.	Boric Acid @ 0.2% + Ammonium Molybdate @ 0.2%	17.2	49.43	18.78	6.09	Medium compact
10.	Boric Acid @ 0.2% + Ammonium Molybdate @ 0.3%	17.1	49.05	18.15	5.96	Medium compact
11.	Boric Acid @ 0.5% + Ammonium Molybdate @ 0.1%	18.9	51.95	20.71	7.27	Compact
12.	T_{11} Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%	19.2	52.09	20.95	7.31	Very compact
13.	Boric Acid @ 0.5% + Ammonium Molybdate @ 0.3%	17	49.88	19.07	5.78	Medium compact
14.	Boric Acid @ 1.0% + Ammonium Molybdate @ 0.1%	16.3	49.32	18.39	5.01	Medium compact
15.	Boric Acid @ 1.0% + Ammonium Molybdate @ 0.2%	16.1	48.98	18.31	4.97	Loose
16.	Boric Acid @ 1.0% + Ammonium Molybdate @ 0.3%	13.8	45.19	17.39	3.98	Loose

Table 2: Effect of Foliar Application of Boron and Molybdenum on Quality parameters of Cauliflower

Treatments Symbol	Curd Diameter (cm)	Days to 50% curd initiation	Curd maturity duration (days)	Total plant weight (kg)	Net curd weight (g)	Yield per plot (kg)	Yield per hec. (t)	B:C Ratio
Control (Water Spray)	10.3	50.22	19.13	1.52	569.87	4.71	1.74	1:1.12
Boric Acid @ 0.2%	11.7	45.98	17.89	1.69	768.63	5.03	1.86	1:1.26
Boric Acid @ 0.5%	13	44.04	16.05	1.93	887.91	5.69	2.1	1:1.55
Boric Acid @ 1.0%	12.7	45.79	17.08	1.72	798.58	5.05	1.87	1:1.27
Ammonium Molybdate @ 0.1%	11.5	46.21	18.13	1.65	738.92	4.98	1.84	1:1.20
Ammonium Molybdate @ 0.2%	12.5	45.18	16.29	1.79	859.86	5.41	2	1:1.35
Ammonium Molybdate @ 0.3%	12.4	45.22	16.58	1.68	840.07	5.14	1.9	1:1.20
Boric Acid @ 0.2% + Ammonium Molybdate @ 0.1%	13.7	44.62	16.26	1.9	907.72	6.19	2.29	1:1.74
Boric Acid @ 0.2% + Ammonium Molybdate @ 0.2%	14.2	43.96	15.7	2.08	952.65	7.28	2.69	1:2.16
Boric Acid @ 0.2% + Ammonium Molybdate @ 0.3%	14	44.1	15.94	2.06	896.13	7.12	2.63	1:2.04
Boric Acid @ 0.5% + Ammonium Molybdate @ 0.1%	16.8	43.18	14.73	2.5	1099.7	8.79	3.25	1:2.88
T_{11}Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%	16.9	43.12	14.18	2.5	1143.9	9.1	3.37	1:2.96
Boric Acid @ 0.5% + Ammonium Molybdate @ 0.3%	15.9	44.32	15.33	2.28	923.02	7.01	2.59	1:2.00
Boric Acid @ 1.0% + Ammonium Molybdate @ 0.1%	14.2	45.19	15.74	2.09	820.66	6.96	2.57	1:2.07
Boric Acid @ 1.0% + Ammonium Molybdate @ 0.2%	14.1	45.28	16.08	1.98	798.74	6.89	2.54	1:1.98
Boric Acid @ 1.0% + Ammonium Molybdate @ 0.3%	12.2	47.05	17.04	1.65	588.64	4.68	1.73	1:1.01

Discussion

1. Morphological Characters

The highest leaves number per plant (19.2) was recorded inside treatment T_{11} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%). This finding is also in harmony with the conclusion of (Sharma 2016) [16] within cauliflower, who declared that the possible reasons in favor of improved more amount of leaves, might be suitable toward promotive effects of molybdenum scheduled vegetative development which eventually lead to further photosynthetic behavior, although (Muthoo *et al.,* 1987) [15] reported that the vegetative growth improved might have been suitable to activated physiological practice by motivating reason in the metabolism as well as development of plant. Parallel conclusion were too reported by (Choudhary and Mukherjee 1999) [2]. However, the minimum (10.7) was observed in treatment T_0 (Control) because shortage of boron as well as molybdenum, possibly will reason of death of rising point suitable to negative effects on top of vigorous salt absorption as well as water relation inside the plants.

Maximum plant height (52.09 cm) found in treatment T_{11} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%). These conclusion are supported by the conclusion of (Choudhary and Mukharjee 1999) [2], who reported that the raise inside growth attributes among the application of boron may be suitable to particular purpose of boron, which outcome the precipitation of overload cation, buffer action and preservation of conducting tissues.

The appliance of boron and molybdenum did not apply any important pressure upon the leaf width per plant. The treatment (20.95 cm) had found highest leaf width per plant T_{11} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%) over all of the treatments and minimum leaf width per plant (12.16 cm) was observed in treatment T_0 (Control).

The stalk length increased drastically by the diverse treatments of boron and molybdenum. The maximum stalk length (7.31 cm) was originate in treatment T_{11} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%). Increase in length of stalk might be accredited to the suitable quantity of boron and molybdenum substance, which gave superior outcome during metabolic functions inside plant life and cooperate significant roles in both the vegetative plus reproductive phases. The lowest stalk length (3.18 cm) was experimental in treatment T_0 (Control). This may be suitable to the deficiency of boron, because the main character of boron appears to be concerned among calcium metabolism or calcium mobility in plants and lack of calcium causes a rapid and quite spectacular of the terminal growing of root and shoot portion of plant.

2. Yield parameter

Average curd diameter was considerably inclined by the diverse treatments of boron and molybdenum. On the basis of present investigation, TreatmentT_{11} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%) was gave highest curd diameter (16.9 cm). This might suitable to the particular role of boron which resulted into the precipitation of overload cation, buffer action, preservation of conducting tissues which eventually helped during absorption of nitrogen resulted, play an essential function in the vegetative, reproductive phases and indispensable for ultimately curd yield. Parallel outcome have been reported by Kotur (1993) [5], Singh (2003) [12] and Kumar and Choudhary (2002) [3]. Although the lowest curd diameter (10.3 cm) was originate inside the treatment T_0 (Control) suitable to incomplete result of boron and molybdenum.

The various treatments of boron and molybdenum, did not exhibit any significant effect on days to 50% curd initiation. However, highest days to 50% curd initiation (50.22 days) were observed inside treatment T_0 (Control) although the minimum days to 50% curd initiation the minimum days to 50% curd initiation (43.12 days) were found inside treatment T_{11} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%)

Maximum curd maturity duration is 19.14 days in treatment T_0 (Control) whereas, it was (14.18 days) for treatment T_{11} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%).Similarly results were found by Kotur (1993) [5].

The yield per plot as well as per hectare was considerably inclined suitable to different treatments of boron and molybdenum. The maximum yield per plot as well as per hectare were recorded in treatment T_{11} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%) i.e. (9.10 kg) and (3.37 t) respectively. The possible cause for improved curd yield possibly will be due to promotive effects of molybdenum on

top of vegetative development which ultimately lead to additional photosynthetic activities although, application of boron, enhanced carbohydrate as well as nitrogen metabolism of pectic substances as well as recover the water metabolism in addition to water relation in the plants. Findings corroborates through their outcome obtained as a result of Chattopadhyay and Mukhopadyay (2003) [1], Kumar and Choudhary (2002) [3], Singh and Thakur (1991) [11]. Whereas the lowest yield for each plot along with for each hectare was found under treatment T_0 (Control) i.e. 4.71 kg and 1.74 t respectively. This might be due to improper growth of the plants.

3 Economics

Superior capital cost and a smaller amount cost of cultivation are advantageous character for receiving superior income. It is exposed from the data obtained, that maximum curd yield of (3.37 t) was obtained in cauliflower variety Girija. Net return of Rs. 277250.85 as well as cost benefit ratio 1:2.96 was originate with treatment T_{11} (Boric Acid @ 0.5% + Ammonium Molybdate @ 0.2%) although lowest curd yield and net return (1.74 t and Rs 101014.72 respectively) beside among cost benefit ratio (1:1.12) was observed inside treatment T_0 (Control).

Similarly, Singh (2003) [12] found that appliance of boron significantly improve the vegetative development, quality in addition to curd yield of cauliflower, Kotur (1998) [6] also reported that in cauliflower the foliar application of 0.1% boric acid plus 0.1% ammonium molybdate was found to be greatest treatment in favor of promoting high curd yield plus net returns. Kotur (1998) [6] further revealed that in cauliflower cv. Pusa Snowball K-1, three foliar sprays of 0.125% boric acid was optimum for maximum curd yield plus net returns for each rupee invested (Rs 4.47).

References

1. Chattopadhyay SB, Mukhopadhyay TP. Effect of foliar application of boron and molybdenum on growth and yield of cauliflower in Terai zone, West Bengal. Environment and Ecology. 2003;21(4):955-959.
2. Choudhary D, Mukherjee S. Effect of boron and zinc concentration on growth and yield of cauliflower (*Brassica oleracea* var. *botrytis* L.) cv. Snowball-16. Haryana J Horti. Sci., 1999;28(1& 2):119-120.
3. Kumar S, Chaudhary D.R. Effect of FYM, molybdenum and boron application on yield attributes and yields of cauliflower. Crop Res. 2002;24(3):494-496.
4. Khan QA, Cheema SA, Farooq M, Wakeel A, Haider FU. Monitoring the role of molybdenum and seed priming on productivity of mung bean (*Vigna radiata* L.). J Res. Ecol. 2019;7(1):2417–2427.
5. Kotur SC. Response of cauliflower to lime and boron in a boron deficient soil. Indian J Hort. 1993;50:344-349.
6. Kotur SC. Synergistic interaction of lime, boron and molybdenum on curd rot and curd yield of cauliflower on an alfisol. Indian J Agric. Sci. 1998;68(5):268270.
7. Kumar S, Chaudhary DR. Effect of FYM, molybdenum and boron application on yield attributes and yields of cauliflower. Crop Res. 2002;24(3):494-496.
8. Rahman M, Shahadat MK, Rashid MH, Nasim FA. Effect of foliar spray of micronutrients and hormones on cauliflower (*Brassica oleracea* var. *botrytis* L.). Archives of Agriculture and Environmental Science. 2021;6(4):548-555.
9. Ranjan Seema, Misra Sanyat, Sengupta S, Parween Sayma, Kumari Usha. Influence of micronutrients on Growth and Yield of Cauliflower. Journal of Pharmacognosy and Phytochemistry. 2018;1:238-240.
10. Sharma SK, Singh H, Kohli UK. Influence of boron and zinc on seed yield and quality of radish. Seed Res. 1999;27(2):154-158.
11. Singh AK, Thakur OP. Effect of boron and molybdenum on curd yield of cauliflower (*Brassica oleracea* var. *botrytis*). Him. J Agric. Res. 1991;17(1&2):137-142.
12. Singh DN. Effect of boron on the growth and yield of cauliflower in lateritic soil of western Orissa. Indian Journal Horticulture. 2003;60(3):283-283.
13. Singh SP. Production technology of vegetable crops, ARCC, karnal, India; c1998, 335.
14. Swarup, Chaterjee SS. Econ. Bot. 1972;26:381-393.
15. Muthoo AK, Kumar S, Moury AN. Studies on the effect of foliar application of GA_3, NAA and Molybdenum on growth and yield of cauliflower (*Brassica oleracea*var. *botrytis* L.) cv. Snowball-16. Haryana journal of Horticulture Science. 1987;16(2):115-20.
16. Ningawale DK, Singh R, Bose US, Gurjar PS, Sharma A, Gautam US. Effect of boron and molybdenum on growth, yield and quality of cauliflower (*Brassica oleracea* var. *botrytis)* cv. Snowball 16. Indian Journal Agriculture Science. 2016;86(6):825-829.