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Bhavi Ahlawat
M.Sc.(Horti) Vegetable Science
Sam Higginbottom University of Agriculture, Technology & Sciences, Prayagraj,
Uttar Pradesh, India

Vijay Bahadur
Associate Professor and Head
Department of Horticulture,
Sam Higginbottom University of Agriculture, Technology & Sciences, Prayagraj,
Uttar Pradesh, India

Suresh Kumar Choudhary
Sam Higginbottom University of Agriculture, Technology & Sciences, Prayagraj,
Uttar Pradesh, India

Corresponding Author:
Bhavi Ahlawat
M.Sc.(Horti) Vegetable Science
Sam Higginbottom University of Agriculture, Technology & Sciences, Prayagraj,
Uttar Pradesh, India

Effect of different levels of gibberellic acid (GA_3) on growth and yield of two varieties of cucumber (*Cucumis sativus* L.) *cv.* Malini, Nazia F_1

Bhavi Ahlawat, Vijay Bahadur and Suresh Kumar Choudhary

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Abstract
The present investigation was carried out with title "Effect of different levels of gibberellic acid (GA_3) on growth and yield of two varieties of cucumber (*Cucumis sativus* L.) *cv.* Malini, Nazia F_1" atResearch Farm, Department of Horticulture, Naini Agricultural Institute, SHUATS, Naini, Prayagraj, Uttar Pradesh during the *Zaid*-2023-24 with a view to identify the effects of different combinations of PGR doses and its role in growth, yield and quality of two varieties of cucumber. The experiment was laid in Randomized block design with 10 treatments and 3 replications. Under this experiment, overall, 10 treatment was taken T_1 (Malini + Control), T_2 (Malini + (GA_3) @ 5 ppm), T_3 (Malini + (GA_3) @ 10 ppm), T_4 (Malini + (GA_3) @ 15 ppm), T_5 (Malini + (GA_3) @ 20 ppm), T_6 (Nazia F_1 + Control), T_7 (Nazia F_1 + (GA_3) @ 5 ppm) T_8 (Nazia F_1 + (GA_3) @ 10 ppm),T_9 (Nazia F_1 + (GA_3) @ 15 ppm) and T_{10} (Nazia F_1 + (GA_3) @ 20 ppm). From the above experimental finding it may be concluded that the treatment T_{10} (Nazia F_1 + (GA_3) was found to be best in the terms of growth, yield and quality of Cucumber. The highest net return was found in the T_{10} (Nazia F_1 + (GA_3) with (Rs 1,76,507/ha) and the highest B:C ratio was found in the same with 2.39.

Keywords: *Cucumis sativa*, GA3, benefit cost ratio

Introduction
Throughout history, fruits and vegetables have been highly regarded for their nutritional value, particularly for their abundance of essential vitamins such as A and C, minerals including electrolytes, and more recently recognized phytochemicals, notably antioxidants. In 2020, India emerged as the world's second-largest producer of fruits and vegetables, with a staggering output of 82.85 million tons of fruits and 166.18 million tons of vegetables, contributing nearly 14.0% to global vegetable production. Despite this impressive production, significant amounts, approximately 25% go to waste annually, highlighting the challenge of agricultural waste management (Anonymous, 2015) [3].

The Cucurbitaceae, also called cucurbits or the gourd family, are a plant family consisting of about 965 species in around 95 genera, of which the most important to humans are:

Cucurbita – squash, pumpkin, zucchini, some gourds
Lagenaria – calabash, and others that are inedible
Citrullus – watermelon (*C. lanatus*, *C. colocynthis*) and others
Cucumis – cucumber (*C. sativus*), various melon
Momordica – bitter melon
Luffa – the common name is also luffa, sometimes spelled loofah (when fully ripened, two species of this fibrous fruit are the source of the loofah scrubbing sponge).

The plants in this family are grown around the tropics and in temperate areas, where those with edible fruits were among the earliest cultivated plants in both the Old and New Worlds. The family Cucurbitaceae ranks among the highest of plant families for number and percentage of species used as human food. Cucurbits are the largest group of summer vegetables crops belonging to the family Cucurbitaceae. Most of the cucurbits are monoecious in nature except *Coccinia* and pointed gourd (Parval) which are diocious. Several hermaphrodites and andro-monoecious cultivars are also available in some crops (melons). Fruit is Pepo botanically.

Botanically Cucumber is known as *Cucumis sativus* L. Belongs to family Cucurbitaceae. It is a diploid self-pollinated species with chromosome number 2n=2x=14. Cucumber probably originated from Indo-Burma region of Hindustan centre (Vavilov, 1935). It is mainly cultivated in China, India, Turkey, Iran, and other parts of south-east Asia. Progenitor of cucumber is "*Cucumis hardwickii".* Economic sex ratio is 15:1.The area under Cucumber production in India accounts to 94 million ha with production of 1608.29 million tonnes in year 2020-21 (*Source: NHB*, Ministry of Agriculture & Farmers Welfare, Government of India, 2021-22). West Bengal ranks first in area and production of Cucumber in year 2021-22 followed by Madhya Pradesh and Haryana. The production of Cucumber in Jammu & Kashmir is 20.68 million tonnes for year 2021-22. The cucumber is used as salad, pickles, and as cooked vegetable. It has many uses in ayurvedic medicines. According to 'Unani' medicines, the oil from its seed is God for the brain and the body. Cucumber has 96.3 g water, magnesium 11 mg, sodium 10.2 mg, Vitamin C 7 mg, 2.5g Carbohydrates, Oxalic acid 15 mg, Calcium 10 mg, Sulphur 17 mg, Potassium 50 mg and many other nutrients out of 100 g of edible portion. (Choudhary, 2013) [9]. It is considered as quality dietary food due to its excellent digestibility and rich water content (96.3 g/100 g). Cucumber is a dependable laxative for those who suffer constipation. The juice of cucumber is a valuable food in the treatment of hyper acidity, gastric and duodenal ulcers. Cucumber is well adapted crop for warm season crop, and it does not withstand even light frost. The crop performs well in temperature range between 18 °C- 24 °C and soil having pH ranging between 5.5-6.7irrespective of its kind from sandy to heavy clay soil. It is grown as sole crop in India in *Zaid* and *Kharif*season. It is well suited to hot and warm climate with annual rainfall of 60-75 cm. However, cucumber cannot withstand water lodging.

Role of plant growth regulators (PGRs) on crop plants

Plant Growth Regulators (PGRs), or plant hormones, are crucial for regulating plant growth and development, thereby influencing crop yield. PGRs have various key roles in crop growth:

Stimulating cell division and elongation: PGRs like auxins and cytokinin promote shoot and root growth by stimulating cell division and elongation, leading to larger and more productive crops.

Regulating flowering and fruiting: PGRs such as gibberellins and cytokinin affect flowering initiation, flower development, and fruit set. They synchronize flowering, ensuring successful pollination and fertilization, resulting in improved fruit formation and increased crop yield.

Regulating senescence and ripening: PGRs like ethylene and abscisic acid influence leaf senescence and fruit ripening. Ethylene is a key regulator of fruit ripening, initiating changes in colour, texture, flavour, and aroma. Proper PGR management optimizes fruit maturation, post-harvest quality, and extends the shelf life of crops. PGRs have been found to alleviate the adverse effects of various abiotic stresses on chilli plants, including drought, salinity, and extreme temperatures. They can enhance stress tolerance and improve the plant's ability to withstand challenging environmental conditions.

Materials and Methods

The present investigation entitled "Effect of different levels of gibberellic acid (GA_3) on growth and yield of two varieties of cucumber (*Cucumis sativus* L.) *cv.* Malini, Nazia F_1" was done to understand the effect of plant growth regulators (GA_3) on fruit growth, yield and quality of Cucumber. The details of the materials used, and the procedures adopted in the investigation, which was carried out at Research Farm, Department of Horticulture, Naini Agricultural Institute, SHUATS, Prayagraj during the *Zaid* season of 2022-23 are described under the following heads.

Experimental Site

The study was conducted at the Horticultural Research Farm within the Department of Horticulture, Naini Agricultural Institute, Sam Higginbottom University of Agriculture, Technology and Sciences, Prayagraj, U.P., during the *Zaid* seasons of 2022-23. The university is positioned alongside the Prayagraj – Rewa National Highway, approximately 5 kilometres from Prayagraj City. All essential facilities required for successful crop cultivation, including field preparation, inputs, irrigation provisions, and labour, were provided by the Department of Horticulture, Naini Agricultural Institute, Sam Higginbottom University of Agriculture, Technology and Sciences, Prayagraj, U.P., India.

Location and climatic conditions of the experimental farm

Prayagraj lies within the central plain sub-zone of Agro-climatic zone V, as per the Perspective and Strategic Plan (SPSP) for IWMP of Uttar Pradesh by the Department of Land Development and Water Resources, Government of U.P. The geographical coordinates for Naini range between 20° 33' 40'' to 21' 50" N latitude and 73° 27' 58'' to 73° 56' 36'' E longitude. The region features a tropical climate characterized by relatively hot summers, moderately cold winters, and humid, warm monsoons. Rainfall is abundant, primarily occurring from June to September, predominantly driven by the south-west advancing monsoon. The bulk of precipitation concentrates in July and August. Detailed meteorological data for the cropping seasons are provided in Tables 1.

Tables 1: Detail of treatment combination

SL. No.	Treatment Symbols	Treatment combination
1	T_1	Malini + Control
2	T_2	Malini + (GA_3) @ 5 ppm
3	T_3	Malini + (GA_3) @ 10 ppm
4	T_4	Malini + (GA_3) @ 15 ppm
5	T_5	Malini + (GA_3) @ 20 ppm
6	T_6	Nazia F_1 + Control
7	T_7	Nazia F_1 + (GA_3) @ 5 ppm
8	T_8	Nazia F_1 + (GA_3) @ 10 ppm
9	T_9	Nazia F_1 + (GA_3) @ 15 ppm
10	T_{10}	Nazia F_1 + (GA_3) @ 20 ppm

Statistical analysis the statistical analysis of the data was carried out using STATISTICA (7.0) software.

Results and Discussion

Plant Height

It was also found that T_{10} (Nazia F_1 + GA_3 @ 20 ppm) had maximum plant height at 15,30, 45 DAS (4.07, 18.27, 69.75 cm) which was at par with T_5 (Malini + GA_3 @ 20 ppm) having 61.84 cm whereas the minimum plant height was observed in treatment T_1 (Malini + Control) with (2.8, 12.27, 45 cm) Nazia F_1 cucumber variety demonstrates superior growth at a GA_3 concentration of 20 ppm due to its genetic predisposition and responsiveness to this specific hormone level. At 20 ppm, GA_3 effectively stimulates cell elongation processes, particularly in the internodes, resulting in increased plant height. Similar

findings were reported by Anayat *et al.,* (2020) [4] in bitter gourd.

Number of Branches

The results pertaining to the effect of GA_3 on number of branches per plant of two different varieties of cucumber observed at 15, 30 and 45 DAS.

It is evident that the number of branches per plant was influenced by different treatments for plant growth regulators. There was significant difference present among the treatments applied. It was also found that T_{10} (Nazia F_1 + GA_3 @ 20 ppm) had maximum number of branches per plant at 15, 30, 45 DAS (1.85, 6.63, 15.98 branches) whereas the minimum number of branches per plant was observed in treatment T_1 (Malini + Control) with (1.18, 3.80, 12.67 branches). Similar findings were reported by Duhan *et al.,* (2022) [12] in bottle gourd.

Days to first flowering

It was also found that T_{10} (Nazia F_1 + GA_3 @ 20 ppm) took minimum days to first flowering (38.21 days) which was at par with T_3 (Malini + GA_3 @ 10 ppm) and T_7 (Nazia F1 + GA_3 @ 5 ppm) having 40.60 days whereas the maximum days to first flowering was observed in treatment T_1 (Malini + Control) with 42.03 days. Similar findings were reported by Jeevitha and Vasudevan (2019) [5] in sponge gourd.

Days to first fruit setting

The results pertaining to the effect of GA_3 on number of branches per plant of two different varieties of cucumber observed.

It was also found that T_{10} (Nazia F_1 + GA_3 @ 20 ppm)took minimum days to first fruit setting (42.52 days) which was at par with T_8 (Nazia F1 + GA_3 @ 10 ppm) having 43.23 days whereas the maximum days to first fruit setting was observed in treatment T_1 (Malini + Control) with 45.22 days. Similar findings were reported by Jishnu *et al.,* (2023) [15] in Sponge gourd.

Days to first fruit picking

It was also found that T_{10} (Nazia F_1 + GA_3 @ 20 ppm) took minimum days to first fruit picking (50.07 days) which was at par with T_8 (Nazia F1 + GA_3 @ 10 ppm) having 50.33 days whereas the maximum days to first fruit picking was observed in treatment T_1 (Malini + Control) with 55.70 days. The Malini variety may exhibit different genetic or hormonal sensitivities, resulting in variations in fruit maturity responses even at similar GA_3 doses. Similar findings were reported by Kumar *et al.,* (2019) [16]; Pandey *et al.,* (2021) [17] in cucumber.

Number of pickings

It was also found that T_{10} (Nazia F_1 + GA_3 @ 20 ppm) had maximum number of pickings (3.83) which was at par with T_5 (Malini + GA_3 @ 20 ppm) having whereas the minimum number of pickings was observed in treatment T_3 (Malini + GA_3 @ 10 ppm) with 2.33. The Malini variety may exhibit different genetic or hormonal sensitivities, resulting in variations in fruit maturity responses even at similar GA_3 doses. Similar findings were reported by Kumar *et al.,* (2019) [16]; Pandey *et al.,* (2021) [17] in cucumber.

Number of fruits per plant

It was also found that T_{10} (Nazia F_1 + GA_3 @ 20 ppm) had maximum number of fruits per plant (12.90 fruits) which was at par with T_5 (Malini + (GA_3) @ 20 ppm) having12.20 fruits whereas the minimum number of fruits per plant was observed in treatment T_1 (Malini + Control) with10.40 fruits. Similar findings were reported by Rosales and Galinato (2015) [18] in bitter gourd.

Average 10 fruit weight

It was also found that T_{10} (Nazia F_1 + GA_3 @ 20 ppm)had maximum average 10 fruit weight (3175.10 gram) which was at par with T_5 (Malini + GA_3 @ 20 ppm) having3048.34 gram whereas the minimum average 10 fruit weight was observed in treatment T_1 (Malini + Control) with 1582.65 gram. The Malini variety may exhibit different genetic or hormonal sensitivities, resulting in variations in fruit weight even at similar GA_3 doses. Similar findings were reported by Shah *et al.,* (2023) [19] in bitter gourd.

Fruit length

It was also found that T_{10} (Nazia F_1 + GA_3 @ 20 ppm) had maximum fruit length (20.00 cm) which was at par with T_9 (Nazia F_1 + GA_3 @ 15 ppm) having19.00 cm whereas the minimum fruit length was observed in treatment T_1 (Malini + Control) with15.00 cm. Similar findings were reported by Shukla *et al.,* (2023) [20] in Ridge gourd.

Fruit diameter

It was also found that T_{10} (Nazia F_1 + GA_3 @ 20 ppm) had maximum fruit diameter (13.05 mm) which was at par with T_7 (Nazia F_1 + GA_3 @ 5 ppm) having 12.82 mm whereas the minimum fruit diameter was observed in treatment T_1 (Malini + Control) with 9.74 mm. The Malini variety may possess different genetic or hormonal traits, resulting in variations in fruit diameter even at similar GA_3 doses. Similar findings were reported by Shukla *et al.,* (2023) [20] in Ridge gourd.

Fruit yield per plot

It was also found that T_{10} (Nazia F_1 + GA_3 @ 20 ppm) had maximum fruit yield per plot (12.31 kg/plot) which was at par with T_5 (Malini + GA_3 @ 20 ppm) having 12.15 kg/plot whereas the minimum fruit yield per plot was observed in treatment T_1 (Malini + Control) with8.09 kg/plot. Similar findings were reported by Shukla *et al.,* (2023) [20] in Ridge gourd.

Fruit yield per hectare

Fruit yield per hectare had significant influence under GA_3 on different varieties of cucumber at different GA_3 doses. It was also found that T_{10} (Nazia F_1 + GA_3 @ 20 ppm) had maximum fruit yield per hectare (143.86q/ha) which was at par with T_5 (Malini + GA_3 @ 20 ppm) having 135.35q/ha whereas the minimum fruit yield per hectare was observed in treatment T_1 (Malini + Control) with86.76q/ha. Similar findings were reported by Vyas *et al.,* (2023) [21] in Ridge gourd.

TSS

TSS had significant influence under GA_3 on different varieties of cucumber at different GA_3 doses. It was also found that T_{10} (Nazia F_1 + GA_3 @ 20 ppm) had maximum TSS (5.74°Brix) which was at par with T_3 (Malini + GA_3 @ 10 ppm) having 5.63°Brix whereas the minimum TSS was observed in treatment T_2 (Malini + GA_3 @ 5 ppm) with 4.26°Brix. Similar findings were reported by Shukla *et al.,* (2023) [20]; Vyas *et al.,* (2023) [21] in Ridge gourd.

Ascorbic acid content

Ascorbic acid content had significant influence under GA_3 on

different varieties of cucumber at different GA_3 doses. It was also found that T_{10} (Nazia F_1 + GA_3 @ 20 ppm) had maximum ascorbic acid content (5.38 mg/100 g) which was at par with T_5 (Malini + GA_3 @ 20 ppm) having 5.35 mg/100 g whereas the minimum ascorbic acid content was observed in treatment T_1 (Malini + Control) with 3.47 mg/100 g. Similar findings were reported by Shukla *et al.*, (2023) [20]; Vyas *et al.*, (2023) [21] in Ridge gourd.

Table 2: Effect of GA_3 on the plant height of Cucumber

Treatment Notation	Treatment details	Plant height (cm)		
		15 DAS	30 DAS	45 DAS
T_1	Malini + Control	2.80	12.27	53.39
T_2	Malini + (GA_3) @ 5 ppm	3.30	13.47	61.41
T_3	Malini + (GA_3) @ 10 ppm	3.67	16.07	60.51
T_4	Malini + (GA_3) @ 15 ppm	3.03	13.27	53.39
T_5	Malini + (GA_3) @ 20 ppm	3.82	17.37	61.84
T_6	Nazia F_1 + Control	3.31	14.81	53.86
T_7	Nazia F_1 + (GA_3) @ 5 ppm	3.33	16.04	60.27
T_8	Nazia F_1 + (GA_3) @ 10 ppm	3.10	15.27	58.71
T_9	Nazia F_1 + (GA_3) @ 15 ppm	3.20	17.51	58.70
T_{10}	Nazia F_1 + (GA_3) @ 20 ppm	4.07	18.27	69.75
'F' Test		S	S	S
SE. m (±)		0.15	0.59	1.42
CD. at 5%		0.43	1.73	4.16
CV.		8.23	7.24	4.56

In this table we observed that maximum plant height are found in T_{10} (Nazia F_1 + (GA_3) @ 20 ppm) (4.07, 18.27, 69.75 cm) and minimum plant height are found in T_0 (Malini + Control) (2.80, 12.27, 53.39 cm

Table 3: Effect of GA_3 on the number of branches of Cucumber

Treatment Notation	Treatment details	No of branches per plant		
		15 DAS	30 DAS	45 DAS
T_1	Malini + Control	1.18	3.80	12.67
T_2	Malini + (GA_3) @ 5 ppm	1.40	4.34	13.91
T_3	Malini + (GA_3) @ 10 ppm	1.50	4.27	14.58
T_4	Malini + (GA_3) @ 15 ppm	1.37	4.49	12.83
T_5	Malini + (GA_3) @ 20 ppm	1.67	5.73	14.20
T_6	Nazia F_1 + Control	1.50	4.32	12.88
T_7	Nazia F_1 + (GA_3) @ 5 ppm	1.72	5.00	14.38
T_8	Nazia F_1 + (GA_3) @ 10 ppm	1.37	5.80	12.87
T_9	Nazia F_1 + (GA_3) @ 15 ppm	1.53	5.66	13.93
T_{10}	Nazia F_1 + (GA_3) @ 20 ppm	1.85	6.63	15.98
'F' Test		S	S	S
SE. m (±)		0.08	0.17	0.47
CD. at 5%		0.23	0.49	1.37
CV.		9.69	6.28	6.40

In this table we observed that maximum number of branches are found in T_{10} (Nazia F_1 + (GA_3) @ 20 ppm) (1.85, 6.63, 15.98) and minimum number of branches are found in T_0 (Malini + Control) (1.18, 3.80, 12.67).

Table 4: Effect of GA_3 on days to first flowering, days to first fruit setting, days to first picking and number of picking of the Cucumber

Treatment Notation	Treatment details	Days to first flowering	Days to first fruit setting	Days to first fruit picking	Number of pickings
T_1	Malini + Control	42.03	45.22	55.70	2.67
T_2	Malini + (GA_3) @ 5 ppm	40.81	43.97	51.18	3.33
T_3	Malini + (GA_3) @ 10 ppm	40.89	43.70	51.64	2.33
T_4	Malini + (GA_3) @ 15 ppm	41.36	44.03	51.69	3.33
T_5	Malini + (GA_3) @ 20 ppm	41.55	44.55	51.27	3.67
T_6	Nazia F_1 + Control	41.58	44.36	50.46	2.67
T_7	Nazia F_1 + (GA_3) @ 5 ppm	40.60	43.49	53.03	3.00
T_8	Nazia F_1 + (GA_3) @ 10 ppm	40.48	43.23	50.33	2.67
T_9	Nazia F_1 + (GA_3) @ 15 ppm	41.83	43.43	50.80	2.33
T_{10}	Nazia F_1 + (GA_3) @ 20 ppm	38.21	42.52	50.07	3.83
'F' Test		S	S	S	NS
SE. m (±)		0.82	0.81	0.53	0.32
CD. at 5%		2.40	2.36	1.55	-
CV.		3.18	3.50	1.95	19.99

In this table we observed that minimum days to first flowering are found in T_{10} (Nazia F_1 + (GA_3) @ 20 ppm) (38.21) and maximum days to first floering are found in T_0 (Malini + Control) (42.03days).
In this table we observed that minimum days to first fruit setting (42.52 days), days to first fruit picking (50.07 days) and number of picking (2.67) are found in T_{10} (Nazia F_1 + (GA_3) @ 20 ppm) and maximum days to first fruit setting (45.22 days), days to first fruit picking (55.70 days) and number of picking (23.83) are found in T_0 (Malini + Control).

Table 5: Effect of GA_3 on Number of fruits per plant, Average 10 fruit weight (g), fruit length (cm) and fruit diameter (mm) of the Cucumber

Treatment Notation	Treatment details	Number of fruits per plant	Average 10 fruit weight (g)	Fruit length (cm)	Fruit diameter (mm)
T_1	Malini + Control	10.40	1582.65	15.00	9.74
T_2	Malini + (GA_3) @ 5 ppm	10.90	2078.65	15.33	9.91
T_3	Malini + (GA_3) @ 10 ppm	11.20	2995.99	17.00	12.74
T_4	Malini + (GA_3) @ 15 ppm	10.80	2061.84	18.67	9.90
T_5	Malini + (GA_3) @ 20 ppm	12.20	3048.34	18.67	11.43
T_6	Nazia F_1 + Control	11.00	2170.99	15.67	10.58
T_7	Nazia F_1 + (GA_3) @ 5 ppm	11.80	2426.01	17.67	12.82
T_8	Nazia F_1 + (GA_3) @ 10 ppm	11.40	1619.37	17.33	12.76
T_9	Nazia F_1 + (GA_3) @ 15 ppm	10.80	2401.77	19.00	12.80
T_{10}	Nazia F_1 + (GA_3) @ 20 ppm	12.90	3175.10	20.00	13.05
'F' Test		S	S	S	S
SE. m (±)		0.56	3.22	0.90	0.23
CD. at 5%		1.65	9.45	2.64	0.68
CV.		9.40	0.26	9.79	3.80

In this table we observed that maximum number of fruit per plant are found in T_{10} (Nazia F_1 + (GA_3) @ 20 ppm) (12.90) and minimum number of branches are found in T_0 (Malini + Control) (10.40).
In this table we observed that maximum average fruit weight (3175.10 g), fruit length (20m) and fruit diameter (13.05 mm) are found in T_{10} (Nazia F_1 + (GA_3) @ 20 ppm) and minimum average fruit weight (1582.65g), fruit length (15 cm),and fruit diameter (9.74 mm) are found in T_0 (Malini + Control).

Table 6: Effect of GA_3 on Fruit yield per plot, fruit yield per hectare, TSS and Ascorbic acid of the Cucumber

Treatment Notation	Treatment details	Fruit yield per plot (kg/plot)	Fruit yield per hectare (q/ha)	TSS (°Brix)	Ascorbic acid content (mg/100 g)
T_1	Malini + Control	8.09	86.76	4.66	3.47
T_2	Malini + (GA_3) @ 5 ppm	9.13	105.94	4.26	3.87
T_3	Malini + (GA_3) @ 10 ppm	12.02	131.25	5.63	4.07
T_4	Malini + (GA_3) @ 15 ppm	8.24	114.15	5.43	4.10
T_5	Malini + (GA_3) @ 20 ppm	12.15	135.35	5.42	5.35
T_6	Nazia F_1 + Control	9.73	94.03	4.81	3.90
T_7	Nazia F_1 + (GA_3) @ 5 ppm	10.12	122.25	5.27	4.74
T_8	Nazia F_1 + (GA_3) @ 10 ppm	10.12	122.81	5.21	5.21
T_9	Nazia F_1 + (GA_3) @ 15 ppm	10.00	107.42	4.81	4.42
T_{10}	Nazia F_1 + (GA_3) @ 20 ppm	12.31	143.86	5.74	5.38
'F' Test		S	S	S	S
SE. m (±)		0.41	1.21	0.28	0.17
CD. at 5%		1.22	3.54	0.81	0.51
CV.		7.72	1.97	3.26	7.39

In this table we observed that maximum fruit yield per plot are found in T_{10} (Nazia F_1 + (GA_3) @ 20 ppm) (12.31kg) and minimum fruit yield per plot are found in T_0 (Malini + Control) (8.09 kg).
In this table we observed that maximum fruit yield per q/ha (143.86 q/ha), TSS (5.74) and Ascorbic acid (5.38) are found in T_{10} (Nazia F_1 + (GA_3) @ 20 ppm) and minimum fruit yield per q/ha (86.76 q/ha), TSS (4.66), Ascorbic acid (3.47) are found in T_0 (Malini + Control)

Conclusion

From the above experimental finding it may be concluded that the treatment T_{10} (Nazia F_1 + (GA_3) was found to be best in the terms of growth, yield and quality of Cucumber. The highest net return was found in the T_{10} (Nazia F_1 + (GA_3) with (Rs 1, 76,507/ha) and the highest B: C ratio was found in the same with 2.39.

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