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Effect of Jeevamrutha on growth and yield of hybrid TMOH-2361 & TMOH-2366 in okra [*Abelmoschus esculentus* (L.) Moench.]

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Abstract
The present investigation was carried out at Research Farm, Department of Horticulture, Naini Agricultural Institute, SHUATS, Naini, Prayagraj, Uttar Pradesh during the *Zaid*-2023 with a view to identify the effects of different doses of jeevamrutha and its role in growth, yield and quality of two varieties of okra. The experiment was laid in Factorial Randomized block design with 10 treatments and 3 replications. Under this experiment, overall, treatment combination was taken V_1T_0 (TMOH-2361+ water spray); V_1T_1 (TMOH-2361+ 4% jeevamrutha); V_1T_2 (TMOH-2361+ 6% jeevamrutha); V_1T_3 (TMOH-2361+ 8% jeevamrutha); V_1T_4 (TMOH-2361+ 10% jeevamrutha); V_2T_0 (TMOH-2366 + water spray); V_2T_1 (TMOH-2366+ 4% jeevamrutha); V_2T_2 (TMOH-2366+ 6% jeevamrutha); V_2T_3 (TMOH-2366+ 8% jeevamrutha); and V_2T_4 (TMOH-2366+ 10% jeevamrutha). From the above experimental finding it was concluded that among various doses of jeevamrutha applied amid two varieties of okra, combination V_2T_4 (TMOH 2366 + 10% spray of jeevamrutha) was found to be best in the terms of growth parameters like highest height of plant (65.34 cm at 60 DAT), maximum number of branches per plant (8.45 branches); yield parameters like maximum number of fruits per plant (10.28 fruits); maximum fruit length (10.76 cm) was observed in V_2T_4 (TMOH 2366 + 10% spray of jeevamrutha) and maximum fruit yield per hectare (10.78 t/ha).

Keywords: *Abelmoschus esculentus*, jeevamrutha, growth, yield

Introduction
Okra, also known as gumbo or ladies' fingers, botanically known as *Abelmoschus esculentus* Moench. is one of the most popular and widely grown vegetable crops throughout the world and treated as “protective food” universally. It is rich source of vitamins, vegetable protein and minerals and holds a glorious position among vegetable. The pulp and juice of okra fruit are digestible and a mild aperient, a promoter of gastric secretion and a blood purifier. The pods of the plant are mucilaginous, resulting in the characteristic "goo" or slime when the seed pods are cooked; the mucilage contains soluble fibre. One possible way to de-slime okra is to cook it with an acidic food, such as tomatoes, to render the mucilage less viscous. Pods are cooked, pickled, eaten raw, or included in salads. Okra may be used in developing countries to mitigate malnutrition and alleviate food insecurity. Okra are horticulture crop belongs to the family *Malvaceae* bearing chromosome number 2n=130. Okra is an allopolyploid of uncertain parentage. However, proposed progenitor includes *Abelmoschus ficulneus, A. tuberculatus* is a reported "diploid" form of okra. The geographical origin of okra is disputed, with supporters of Southeast Asian, South Asian, Ethiopian and West African origins. It originated from Ethiopia. Fruits and vegetables have historically held a place in dietary guidance because of their concentrations of vitamins, especially vitamin A and C; minerals, especially electrolytes; and more recently phytochemicals especially antioxidant. India is world’s second largest fruit and vegetable producer, produced around 81.285 million tons fruits and 162.187 million tons of vegetables which accounts for nearly 14.8% of country’s share in the world production of vegetables in the year 2016. It ranked amongst the world’s five largest producers of over 80% agricultural produce items, encounters a waste of close to 25% worth of produce (NHB, 2021) [8]. Use of organic manures to meet the nutrient requirement of crop would be an inevitable practice in the years to come for sustainable agriculture since, organic manures generally improve the soil

physical, chemical and biological properties along with enhancing the moisture holding capacity of soil and thus resulting in enhanced crop productivity along with maintaining the quality of crop produce. Nutrients contained in manures are released slowly and are stored for a longer time in the soil ensuring longer residual effects, improved root development and higher crop yield. In recent days, the use of organic inputs like FYM, vermicompost and jeevamrutha etc., is becoming popular in the worldwide. There is a need of effective technology to deal with disposal of farm wastes which continues to be a challenge as population increases. Organic manure has been identified as one of the potential processes in managing waste, since it is a natural process, cost effective and required only shorter duration. The jeevamrutha environmentally safe organic amendment made from the products of cow. Jeevamrutha is acidic in nature and good source of macro and micronutrients (1.89 percent N, 0.21 percent P, 0.29 percent K, 47 ppm Mn and 50 ppm Cu). Jeevamrutha promotes immense biological activity in soil and provides the nutrients for the crop stand. Mixing cow urine, cow dung, pulse flour and jaggery (gur), it is prepared and allowed to ferment for a week. Fermented liquid manures apart from readily available nutrients, they have higher microbial load and contain plant growth promoters, which helps in improving plant growth, metabolic activities and resistance to pest and diseases. Conducting a trial using different doses of Jeevamrutha on okra production is crucial for optimizing agricultural practices. Jeevamrutha, an organic bio-fertilizer, potentially enhances soil fertility, promotes plant growth, and boosts yield. Testing varied doses helps identify the most effective concentration, maximizing benefits while minimizing costs and environmental impact. This approach ensures sustainable farming by reducing reliance on chemical fertilizers. Moreover, it addresses the variability in soil types and climatic conditions, providing tailored recommendations for farmers. Such trials contribute to scientific understanding of Jeevamrutha efficacy, fostering broader acceptance and integration into organic farming systems. Ultimately, the research aims to improve crop productivity, soil health, and farmer livelihoods. Keeping these above point the present investigation was carried out with objective to study the effect of jeevamrutha on growth yield and quality of okra. To study the interaction effect between variety jeevamrutha on growth yield and quality of Okra.

Materials and Methods

The present investigation entitled was done to understand the plant growth, fruit yield and quality of fruit under influence of jeevamrutha of Okra. The investigation was carried out at Horticultural Research Farm, Department of Horticulture, Naini Agricultural Institute, Sam Higginbottom University of Agriculture, Technology and Sciences (SHUATS), Prayagraj during the *Zaid* season of 2022-23. In the present investigation the design used for analysis of variables were Factorial Randomized Block Design (FRBD) comprising two varieties of okra as factor I and different doses of Jeevamrutha as factor II replicated thrice all total ten treatment combinations was prepared overall, treatment combination comprised; V_1T_0 (TMOH-2361+ water spray); V_1T_1 (TMOH-2361+ 4% jeevamrutha); V_1T_2 (TMOH-2361+ 6% jeevamrutha); V_1T_3 (TMOH-2361+ 8% jeevamrutha); V_1T_4 (TMOH-2361+ 10% jeevamrutha); V_2T_0 (TMOH-2366 + water spray); V_2T_1 (TMOH-2366+ 4% jeevamrutha); V_2T_2 (TMOH-2366+ 6% jeevamrutha); V_2T_3 (TMOH-2366+ 8% jeevamrutha); and V_2T_4 (TMOH-2366+ 10% jeevamrutha). Observations were recorded at different stages of growth for parameters like plant height, number of branches per plant, days to 50% flowering, number of fruits per plant, fruit length, fruit yield per hectare. The data were statistically analysed by the method suggested by Fisher and Yates, 1963 [4]. The experimental site is levelled land with sandy loam soil of uniform fertility status with low clay and high sand percentage. Soil samples were collected randomly from depth of 0-30 cm and the soil was analysed for pH found to be slight neutral (6.9), organic carbon was 0.36%, available nitrogen was 212.56 kg ha^{-1}, available phosphorus was 14.59 kg ha^{-1}, and available potassium was 225.10 kg ha^{-1}. The preparation of the experimental field involved several steps to ensure optimal conditions for cultivation. Initially, a tractor drawn disc plough was used to plough the field. Following this primary ploughing, two cross harrowing sessions were conducted, and the field was then planked. To achieve a uniform surface, a leveller was employed to thoroughly level the field before proceeding with the experimental layout. This sequence of activities was undertaken to create an environment conducive to the study's objectives and to promote consistent and reliable results. To maintain a weed-free field, regular and shallow cultivation was performed frequently. This process aimed to eliminate weeds, enhance soil aeration, and support healthy root development. Furthermore, two to three hoeing sessions and earthing up were conducted to meticulously control weed growth and maintain the crop's weed-free status. Light irrigation was provided at critical stages of crop growth, such as just after transplanting, pre flowering, fruit formation.

Results and Discussion

Growth Parameters

Among the different treatments applied (table 1) comprising of level of jeevamrutha, T_4 (10% spray of jeevamrutha) showed tallest height of plant (29.37 cm) followed by T_3 (8% spray of jeevamrutha) with 28.40 cm. However, shortest height of plant (27.19 cm) was observed in T_1 (4% spray of jeevamrutha). Amid the two different varieties sown, V_2 (TMOH 2366) showed tallest height of plant (29.10 cm) While, V_1 (TMOH 2361) had shortest height of plant (26.50 cm). The interaction between two factors comprising application of jeevamrutha and two varieties showed that tallest plant height (30.45 cm) was observed in V_2T_4 (TMOH 2366 + 10% spray of jeevamrutha) followed by V_2T_3 (TMOH 2366 + 8% spray of jeevamrutha) with 29.85 cm. However, shortest plant height (25.10 cm) was observed in V_1T_0 (TMOH 2361 + water spray). Among the different treatments applied comprising of level of jeevamrutha, T_4 (10% spray of jeevamrutha) showed tallest height of plant (61.43 cm) followed by T_3 (8% spray of jeevamrutha) with 57.96 cm. However, shortest height of plant (50.60 cm) was observed in T_1 (4% spray of jeevamrutha). Amid the two different varieties sown, V_2 (TMOH 2366) showed tallest height of plant (60.46 cm) While, V_1 (TMOH 2361) had shortest height of plant (51.11 cm). The interaction between two factors comprising application of jeevamrutha and two varieties showed that tallest plant height (65.34 cm) was observed in V_2T_4

(TMOH 2366 + 10% spray of jeevamrutha) followed by V_2T_3 (TMOH 2366 + 8% spray of jeevamrutha) with 63.18 cm. However, shortest plant height (46.08 cm) was observed in V_1T_0 (TMOH 2361 + water spray). The superior plant height of TMOH 2366 over TMOH 2361 in okra is likely due to genetic variations favouring increased growth and development in TMOH 2366. This variety may possess genes that promote greater cell elongation, division, and nutrient uptake, leading to taller plants with improved stature. Increasing the concentration of Jeevamrutha to 10% and spraying it on both varieties of okra enhances plant height through various mechanisms. Jeevamrutha contains beneficial microorganisms that improve soil health, promoting better nutrient availability and uptake by plants. These microbes aid in breaking down organic matter, releasing essential nutrients that contribute to plant growth. Additionally, Jeevamrutha stimulates root development, allowing plants to explore a larger soil volume for nutrients and water. Similar findings were reported by Chethan *et al.*, (2020) [3] in potato and Singh *et al.*, (2022) [9] in tomato for panchagavya and jeevamrutha spray.

Among the different treatments applied comprising of level of jeevamrutha, T_4 (10% spray of jeevamrutha) showed maximum number of branches per plant (7.33 branches) followed by T_3 (8% spray of jeevamrutha) with 6.58 branches. However, minimum number of branches per plant (5.85 branches) was observed in T_1 (4% spray of jeevamrutha). Amid the two different varieties sown (table 1), V_2 (TMOH 2366) showed maximum number of branches per plant (6.92 branches) While, V_1 (TMOH 2361) had minimum number of branches per plant (5.75 branches). Although the interaction was found to be non-significant. The interaction between two factors comprising application of jeevamrutha and two varieties showed that maximum number of branches per plant (8.45 branches) was observed in V_2T_4 (TMOH 2366 + 10% spray of jeevamrutha) followed by V_2T_3 (TMOH 2366 + 8% spray of jeevamrutha) with 7.15 branches. However, minimum number of branches per plant (5.42 branches) was observed in V_1T_1 (4% spray of jeevamrutha). The superior performance of variety TMOH 2366, with more branches per plant compared to TMOH 2361 in okra, likely stems from genetic disparities favouring leaf development and proliferation. TMOH 2366 probably harbours genes that promote increased leaf initiation, expansion, and retention throughout the plant's growth cycle. These genetic traits may lead to a higher leaf area index and more efficient photosynthesis, resulting in greater biomass accumulation and overall plant vigour. Additionally, TMOH 2366 may possess traits that confer enhanced resistance to environmental stressors, allowing for sustained leaf growth and longevity. Consequently, the genetic makeup of TMOH 2366 predisposes it to exhibit a greater number of branches per plant, contributing to its superior performance in this aspect over TMOH 2361. Increasing the concentration of Jeevamrutha to 10% and spraying it on both okra varieties enhances the number of branches per plant through several mechanisms. Jeevamrutha contains beneficial microorganisms that improve soil health, facilitating better nutrient absorption by plants. The increased availability of essential nutrients stimulates leaf initiation and expansion, promoting the development of more branches. Moreover, Jeevamrutha contains growth-promoting substances like auxins and cytokinin, which stimulate cell division and elongation, further contributing to leaf proliferation. Additionally, the enhanced microbial activity in the soil induced by Jeevamrutha promotes root growth, providing plants with a larger root system to support greater leaf development. Overall, the application of Jeevamrutha at a higher concentration fosters a more favourable environment for leaf growth, resulting in an increased number of branches per plant in both okra varieties. Similar findings were reported by Naidu *et al.*, (2009) [7] in chilli.

Earliness parameters

Among the different treatments applied (table 2) comprising of level of jeevamrutha, T_4 (10% spray of jeevamrutha) showed minimum days to 50% flowering (35.72 days) followed by T_3 (8% spray of jeevamrutha) with 37.05 days. However, maximum days to 50% flowering (41.01 days) was observed in T_0 (water spray). Amid the two different varieties sown, V_2 (TMOH 2366) showed minimum days to 50% flowering (36.59 days) While, V_1 (TMOH 2361) had maximum days to 50% flowering (41.08 days). Although the interaction was found to be non-significant. The interaction between two factors comprising application of jeevamrutha and two varieties showed that minimum days to 50% flowering (34.87 days) was observed in V_2T_4 (TMOH 2366 + 10% spray of jeevamrutha) followed by V_2T_3 (TMOH 2366 + 8% spray of jeevamrutha) with 35.81 days. However, maximum days to 50% flowering (46.20 days) was observed in V_1T_1 (TMOH 2361 + 4% spray of jeevamrutha).

The earliness in flowering of variety TMOH 2366 compared to TMOH 2361 in okra is likely due to genetic variations influencing flowering time. TMOH 2366 likely harbours genes that promote early flowering, such as those involved in the regulation of photoperiod sensitivity or floral transition pathways. These genetic factors may enable TMOH 2366 to initiate floral development sooner under favourable environmental conditions, leading to earlier flowering compared to TMOH 2361. Additionally, TMOH 2366 may exhibit traits that confer enhanced adaptability to environmental cues, allowing it to perceive and respond more rapidly to stimuli triggering flowering, further contributing to its earliness in flowering compared to TMOH 2361. Increasing the concentration of Jeevamrutha to 10% and spraying it on both okra varieties promotes earliness in flowering through various mechanisms. Jeevamrutha contains beneficial microorganisms and bioactive compounds that enhance soil fertility and plant health. By improving nutrient availability and uptake, Jeevamrutha accelerates overall plant growth and development, including the initiation of reproductive structures like flowers. Kondapa *et al.* (2010) [6] in tomato and Veeranna *et al.* (2023) [10] in groundnut both reported similar results regarding earliness when used panchagavya and jeevamrutha.

Yield parameters

At varying levels of jeevamrutha applied (table 2), the results regarding the number of fruits per plant in okra revealed significant differences for both factors. Out of all the treatments that were applied, T_4 (10% spray of

jeevamrutha) produced the highest number of fruits per plant (9.57 fruits), followed by T_2 (6% spray of jeevamrutha), which produced 9.12 fruits. However, T_0 (water spray) showed the lowest number of fruits per plant (8.58 fruits). Between the two distinct varieties that were sown, V_2 (TMOH 2366) had the highest number of fruits per plant (9.47 fruits) and V_1 (TMOH 2361) had the fewest number of fruits per plant (8.57 fruits). The interaction was found to be significant. The maximum number of fruits per plant (10.28 fruits) was observed in V_2T_4 (TMOH 2366 + 10% spray of jeevamrutha), followed by V_2T_3 (TMOH 2366 + 8% spray of jeevamrutha) with 9.72 fruits. This was the result of the interaction between two factors, which included application of jeevamrutha and two varieties. On V_1T_0 (TMOH 2361 + water spray), however, the lowest number of fruits per plant (8.27 fruit branches) was noted. The higher number of fruits per plant in variety TMOH 2366 compared to TMOH 2361 in okra can be attributed to genetic differences favouring greater fruit set and retention. TMOH 2366 likely possesses genes that promote more efficient pollination, fertilization, and fruit development processes. Additionally, it may exhibit traits such as increased flower production, improved resource allocation, or enhanced resistance to abiotic and biotic stressors, all contributing to a higher fruit yield per plant. Increasing the concentration of Jeevamrutha to 10% and spraying it on both okra varieties enhances the number of fruits per plant through improved nutrient availability and uptake. Jeevamrutha beneficial microorganisms and nutrients optimize soil fertility, supporting robust plant growth and fruit development. Additionally, Jeevamrutha contains growth-promoting compounds that stimulate flowering, pollination, and fruit set processes. The bioactive substances in Jeevamrutha, such as auxins and cytokinin, may also contribute to increased fruit production by enhancing hormonal regulation and fruiting efficiency. Overall, the application of Jeevamrutha fosters a more conducive environment for fruit formation, resulting in a higher yield per plant in both okra varieties. Jyoti *et al.* (2020) [5] in tomato and Veeranna *et al.* (2023) [10] in groundnut both reported similar results regarding enhancement in number of fruits when used panchagavya and jeevamrutha.

At varying levels of jeevamrutha applied, the results regarding the fruit length (table 3) in okra revealed significant differences for both factors. Out of all the treatments that were applied, T_4 (10% spray of jeevamrutha) produced the maximum fruit length (10.08 cm), followed by T_3 (8% spray of jeevamrutha), which produced 9.79 cm. However, T_0 (water spray) showed the minimum fruit length (9.08 cm). Between the two distinct varieties that were sown, V_2 (TMOH 2366) had the maximum fruit length (10.01 cm) and V_1 (TMOH 2361) had the lowest fruit length (9.08 cm). The interaction was found to be non-significant. The maximum fruit length (10.76 cm) was observed in V_2T_4 (TMOH 2366 + 10% spray of jeevamrutha), followed by V_2T_3 (TMOH 2366 + 8% spray of jeevamrutha) with 10.26 cm. This was the result of the interaction between two factors, which included application of jeevamrutha and two varieties. On V_1T_0 (TMOH 2361 + water spray), however, the lowest fruit length (8.73 cm) was noted.

At varying levels of jeevamrutha applied, the results regarding the fruit yield per hectare (table 3) in okra revealed significant differences for both factors. Out of all the treatments that were applied, T_4 (10% spray of jeevamrutha) produced the maximum fruit yield per hectare (9.13 t/ha), followed by T_3 (8% spray of jeevamrutha), which produced 8.21 t/ha. However, T_0 (water spray) showed the minimum fruit yield per hectare (7.19 t/ha). Between the two distinct varieties that were sown, V_2 (TMOH 2366) had the maximum fruit yield per hectare (8.70 t/ha) and V_1 (TMOH 2361) had the lowest fruit yield per hectare (7.00 t/ha).

The interaction was found to be significant. The maximum fruit yield per hectare (10.78 t/ha) was observed in V_2T_4 (TMOH 2366 + 10% spray of jeevamrutha), followed by V_2T_3 (TMOH 2366 + 8% spray of jeevamrutha) with 8.98 t/ha. This was the result of the interaction between two factors, which included application of jeevamrutha and two varieties. On V_1T_1 (TMOH 2361 + 4% spray of jeevamrutha), however, the minimum fruit yield per hectare (6.62 t/ha) was noted. The enhanced fruit yield per hectare in variety TMOH 2366 compared to TMOH 2361 in okra likely stems from genetic disparities favouring greater fruit size and biomass accumulation. TMOH 2366 probably carries genes that promote enhanced cell division, expansion, and nutrient assimilation during fruit development stages. These genetic traits may result in larger fruits with increased biomass. Additionally, TMOH 2366 might exhibit traits such as optimized fruit filling pathways or superior resource allocation, contributing to its heavier fruit yield per hectare compared to TMOH 2361.Increasing the concentration of Jeevamrutha to 10% and spraying it on both okra varieties enhances fruit yield per hectare through improved nutrient availability and uptake. Jeevamrutha beneficial microorganisms and nutrients enrich soil fertility, supporting robust plant growth and fruit development. The enhanced microbial activity and nutrient content promote increased cell division, enlargement, and biomass accumulation in fruits. Additionally, Jeevamrutha contains growth-promoting compounds that stimulate hormonal regulation and metabolic processes, contributing to enhanced fruit filling and weight. Overall, the application of Jeevamrutha creates optimal conditions for fruit development, resulting in heavier fruits in both okra varieties. Chethna *et al.*, (2020) [3] in potato and Vishwajith and Devakumar, (2018) in okra both reported concluded same regarding enhancement in yield when used panchagavya and jeevamrutha.

Table 1: Effect of different doses of jeevamrutha for plant height and number of branches per plant sprayed on two varieties of Okra.

Levels of (T)	Plant height (cm)						No of branches per plant					
	45 days			60 days			45 days			60 days		
	Levels of (V)		Mean (T)	Levels of (V)		Mean (T)	Levels of (V)		Mean (T)	Levels of (V)		Mean (T)
	V_1 (TMOH 2361)	V_2 (TMOH 2366)		V_1 (TMOH 2361)	V_2 (TMOH 2366)		V_1 (TMOH 2361)	V_2 (TMOH 2366)		V_1 (TMOH 2361)	V_2 (TMOH 2366)	
T_0 -water spray	25.10	29.28	27.19	46.08	61.11	53.60	4.04	4.33	4.19	5.71	6.00	5.86
T_1 -4% spray of jeevamrutha	25.81	26.90	26.36	48.63	52.56	50.60	3.75	4.61	4.18	5.42	6.28	5.85
T_2 -6% spray of jeevamrutha	26.35	29.00	27.68	50.58	60.12	55.35	4.33	5.05	4.69	5.42	6.72	6.07
T_3 - 8% spray of jeevamrutha	26.95	29.85	28.40	52.74	63.18	57.96	3.75	5.48	4.62	6.00	7.15	6.58
T_4 - 10% spray of jeevamrutha	28.28	30.45	29.37	57.51	65.34	61.43	4.33	6.78	5.56	6.20	8.45	7.33
Mean (V)	26.50	29.10		51.11	60.46		4.04	5.25		5.75	6.92	
	F-test	SE m. (±)	C.D. at 5%	F-test	SE m. (±)	C.D. at 5%	F-test	SE m. (±)	C.D. at 5%	F-test	SE m. (±)	C.D. at 5%
Treatments (T)	S	0.484	0.988	S	0.915	1.868	S	0.515	1.052	S	0.515	1.052
Variety (V)	S	0.306	0.625	S	0.579	1.182	S	0.326	0.665	S	0.326	0.665
Interaction (T x V)	S	0.684	1.397	S	1.294	2.642	NS	0.728	1.488	NS	0.728	1.488

Table 2: Effect of different doses of jeevamrutha for days to 50% flowering and number of fruits per plant sprayed on two varieties of Okra

Levels of (T)	Days to 50% flowering			No of fruits per plant		
	Levels of (V)		Mean (T)	Levels of (V)		Mean (T)
	V_1 (TMOH 2361)	V_2 (TMOH 2366)		V_1 (TMOH 2361)	V_2 (TMOH 2366)	
T_0 -water spray	46.20	35.81	41.01	8.27	8.88	8.58
T_1 -4% spray of jeevamrutha	43.48	36.89	40.19	8.46	9.06	8.76
T_2 -6% spray of jeevamrutha	40.89	39.56	40.23	8.85	9.39	9.12
T_3 - 8% spray of jeevamrutha	38.29	35.81	37.05	8.42	9.72	9.07
T_4 - 10% spray of jeevamrutha	36.56	34.87	35.72	8.85	10.28	9.57
Mean (V)	41.08	36.59		8.57	9.47	
	F-test	SE m. (±)	C.D. at 5%	F-test	SE m. (±)	C.D. at 5%
Treatments (T)	S	1.886	3.850	S	0.038	0.078
Variety (V)	S	1.193	2.435	S	0.024	0.049
Interaction (T x V)	NS	2.667	5.445	S	0.054	0.110

Table 3: Effect of different doses of jeevamrutha for fruit length and yield per hectare sprayed on two varieties of Okra

Levels of (T)	Fruit length (cm)			Fruit yield per hectare (t/ha)		
	Levels of (V)		Mean (T)	Levels of (V)		Mean (T)
	V_1 (TMOH 2361)	V_2 (TMOH 2366)		V_1 (TMOH 2361)	V_2 (TMOH 2366)	
T_0 -water spray	8.73	9.43	9.08	6.80	7.58	7.19
T_1 -4% spray of jeevamrutha	8.96	9.62	9.29	6.62	7.88	7.25
T_2 -6% spray of jeevamrutha	9.00	9.96	9.48	6.66	8.30	7.48
T_3 - 8% spray of jeevamrutha	9.32	10.26	9.79	7.43	8.98	8.21
T_4 - 10% spray of jeevamrutha	9.40	10.76	10.08	7.48	10.78	9.13
Mean (V)	9.08	10.01		7.00	8.70	
	F-test	SE m. (±)	C.D. at 5%	F-test	SE m. (±)	C.D. at 5%
Treatments (T)	S	0.187	0.381	S	0.185	0.377
Variety (V)	S	0.118	0.241	S	0.117	0.239
Interaction (T x V)	NS	0.264	0.539	S	0.261	0.533

Conclusion

From the above experimental finding it was concluded that among various doses of jeevamrutha applied amid two varieties of okra, combination V_2T_4 (TMOH 2366 + 10% spray of jeevamrutha) was found to be best in the terms of growth parameters like highest height of plant (65.34 cm at 60 DAT), maximum number of branches per plant (8.45 branches); yield parameters like maximum number of fruits per plant (10.28 fruits); maximum fruit length (10.76 cm) was observed in V_2T_4 (TMOH 2366 + 10% spray of jeevamrutha) and maximum fruit yield per hectare (10.78 t/ha).

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