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REPORT

On

Evaluate the Pearl of Sea in Okra

Sponsored By

Nivashakti Bioenergy Pvt. Ltd.



Submitted by

*Dr. M.S. Parihar
&
Shri Pravin Barde*

**RAJMATA VIJAYARAJE SCINDIA KRISHI VISHWA VIDYALAYA
GWALIOR**

Fruit Research Station, Entkhedi, Bhopal (M.P)

2016-17

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Evaluate the Pearl of Sea in Okra is a balanced organic foods elements and bio stimulant for growth

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*Nivashakti Bioenergy Pvt. Ltd.
Junaid Manzil, 2nd Floor, 7B, Aliripukur Road,
Kolkatta 700010 (West Bangal)*

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REPORT ON TESTING OF PRODUCTS

1. **Details of Sponsor:** Nivashakti Bioenergy Pvt. Ltd., Junaid Manzil, 2nd Floor, 7B, Aliripukur Road, Kolkatta 700010 (West Bangal)
2. RVSKVV, Gwalior letter no: DRS/CPC/2015/1741 dated 27-10-2016
3. **Name of the trial:** Evaluate the Pearl of Sea in Okra (Bio stimulant)
4. **Name of the Scientist:** Dr. M.S. Parihar, Fruit Research Station, Entkhedi, Bhopal, (M.P.)
5. **Name of Product:** Magic Shakti

General information

Location : Research Field, Fruit Research Station, Entkhedi, Bhopal, (M.P.)

Season : Rabi 2017

Crop : Okra

Variety : Arka Anamika

Irrigated/Rain fed : Irrigated

Spacing : Plant to Plant 45 cm and Row to Row 60 cm

Methods of Sowing : Line to line

6. Introduction

Okra (*Abelmoschus esculentus* L) is commonly known as bhindi or lady's finger belonging to family Malvaceae. It is one of the oldest cultivated crops and presently grown in many countries and is widely distributed from Africa to Asia, Southern Europe and America. It is an important fruit vegetable crop cultivated in various states of India. Okra is cultivated for its immature fruits to be consumed as a fresh and canned food as well as for seed purpose. Fruits of okra contain a mucilaginous substance that thickens the soup and stews. Okra has a relatively good nutritional value and is a good complement in developing countries where there is often a great alimentary imbalance. It is a good source of vitamin A, B, C and also rich in protein, carbohydrates, fats, minerals, iron and iodine.

The green fruits (per 100 g edible portions) of okra contains 89.6 per cent of moisture, 1.9 g protein, 88 IU of vitamin A, 0.07 mg thiamine, 0.1 mg riboflavin, 13 mg vitamin C, 0.7 g minerals like 103 mg potassium, 6.9 mg sodium, 56 mg phosphorus, 66 mg calcium, 1.5 mg iron, 30 mg sulphur and other nutrients.

Project title: Evaluate the Pearl of Sea in Okra is a balanced organic foods elements and bio stimulant for growth.

Treatment details:-

T₁ – 1.0 ml/liter of water + 0.2 ml Magic Shakti

T₂ – 1.2 ml/liter of water + 0.2 ml Magic Shakti

T₃ – 1.5 ml/liter of water + 0.2 ml Magic Shakti

T₄ – 2.0 ml/liter of water + 0.2 ml Magic Shakti

Design : RBD

Replication : Four

7. Methodology:

- Recommended of practice were followed.
- First application should be done after 20 DAS
- Second application after 40 DAS
- Third application flowering and Fruiting stage

8. Observation recorded:

- I. Plant height (cm) at 30, 60 and at harvest stage
- II. Number of branches at 60 DAS
- III. No of fruits per plant
- IV. Length of fruits (cm)
- V. Fresh weight of fruits (g)
- VI. Fresh weight of fruits/plant (g)
- VII. Yield of okra (q/ha)

Yield at harvest: Observation on the yield were recorded treatment-wise.

Site of the Experiment: Research Field, Fruit Research Station, Entkhedi, Bhopal (M.P.) during *Rabi* season of 2016.

9. Experiment details:

Crop	: Okra
Variety	: Arka Anamika
Experimental trial layout	: RBD
Type of soil	: Sandy and black cotton soil
Date of application	: 06-02-2017

Plot size	: 3 m x 2.25 m = (6.75 m ²)
Spacing	: 60 X 45 cm
Number of treatments	: 04
Number of replication	: 04

10. Result:

Plant height (cm):

The results in Table 1 revealed that all the treatments were found statistically significant for growth and yield of okra at each time interval of observation. The maximum plant height (32.56, 97.88 and 116.00 cm) at 30, 60 and at gravest stage was found best in treatment T₄ (2.0 ml/liter of water + 0.2 ml Magic Shakti) followed by treatment T₃ (1.5 ml/liter of water + 0.2 ml Magic Shakti) and treatment T₂ (1.2 ml/liter of water + 0.2 ml Magic Shakti) and minimum plant height (28.18, 79.57 and 93.20 cm) was found in treatment T₁, (1.0 ml/liter of water + 0.2 ml Magic Shakti) respectively.

Number of branches per plant:

The maximum number of branches per plant (2.80) at 60 DAS was found best in treatment T₄ (2.0 ml/liter of water + 0.2 ml Magic Shakti) followed by treatment T₃ (1.5 ml/liter of water + 0.2 ml Magic Shakti) and treatment T₂ (1.2 ml/liter of water + 0.2 ml Magic Shakti) and minimum number of branches per plant (2.19) was found in treatment T₁, (1.0 ml/liter of water + 0.2 ml Magic Shakti) respectively.

Number of fruits per plant:

The maximum number of fruits per plant (28.13) was found best in treatment T₄ (2.0 ml/liter of water + 0.2 ml Magic Shakti) followed by treatment T₃ (1.5 ml/liter of water + 0.2 ml Magic Shakti) (23.50) and treatment T₂ (1.2 ml/liter of water + 0.2 ml Magic Shakti) and minimum number of fruits per plant (20.12) was found in treatment T₁, (1.0 ml/liter of water + 0.2 ml Magic Shakti) respectively.

Fruit length (cm):

The maximum fruit length per fruit (19.86 cm) was found best in treatment T₄ (2.0 ml/liter of water + 0.2 ml Magic Shakti) followed by treatment T₃ (1.5 ml/liter of water + 0.2 ml Magic Shakti) (17.91 cm) and treatment T₂ (1.2 ml/liter of water + 0.2 ml Magic Shakti) and minimum length of per fruit (13.84 cm) was found in treatment T₁, (1.0 ml/liter of water + 0.2 ml Magic Shakti) respectively.

Fresh weight of per fruits (g):

The maximum fresh weight of per fruit (14.87 g) was found best in treatment T₄ (2.0 ml/liter of water + 0.2 ml Magic Shakti) followed by treatment T₃ (1.5 ml/liter of water + 0.2 ml Magic Shakti) (14.30 g) and treatment T₂ (1.2 ml/liter of water + 0.2 ml Magic Shakti) and minimum fresh weight of per fruit (13.46 g) was found in treatment T₁, (1.0 ml/liter of water + 0.2 ml Magic Shakti) respectively.

Fresh weight of fruits/ plant (g):

The maximum fresh weight of fruits per plant (369.52g) was found best in treatment T₄ (2.0 ml/liter of water + 0.2 ml Magic Shakti) followed by treatment T₃ (1.5 ml/liter of water + 0.2 ml Magic Shakti) (336.72 g) and treatment T₂ (1.2 ml/liter of water + 0.2 ml Magic Shakti) and minimum fresh weight of fruits per plant (271.36 g) was found in treatment T₁, (1.0 ml/liter of water + 0.2 ml Magic Shakti) respectively.

Yield of okra (q/ha):

The maximum yield of okra (136.86 q/ha) was found best in treatment T₄ (2.0 ml/liter of water + 0.2 ml Magic Shakti) followed by treatment T₃ (1.5 ml/liter of water + 0.2 ml Magic Shakti) (124.71 q/ha) and treatment T₂ (1.2 ml/liter of water + 0.2 ml Magic Shakti) and minimum yield of okra (100.50 q/ha) was found in treatment T₁, (1.0 ml/liter of water + 0.2 ml Magic Shakti) respectively.

Table 1: Effect of Pearl of Sea in growth and yield of Okra

Treat.	Plant height (cm)			Number of branches 60 DAS	No of fruits per plant	Fruit length (cm)	Fresh Weight of Fruits (g)	Fresh Weight of Fruits/ plant (g)	Yield q/ha
	30 DAS	60 DAS	At harvest						
T ₁	28.18	79.57	93.20	2.19	20.12	13.84	13.46	271.36	100.50
T ₂	29.81	86.59	103.07	2.43	21.83	16.00	13.90	303.99	112.59
T ₃	31.34	93.10	109.58	2.64	23.50	17.91	14.30	336.72	124.71
T ₄	32.56	97.88	116.00	2.80	25.13	19.86	14.67	369.52	136.86
S.Em.±	0.050	0.210	0.257	0.007	0.057	0.068	0.014	2.211	0.819
CD at 5 %	0.160	0.673	0.822	0.022	0.183	0.218	0.044	7.074	2.620

11. Conclusion:

One the basis of one season trial, it can be concluded that spray after pearl of sea in Okra at (2.0 ml/liter of water + 0.2 ml Magic Shakti) found best in all the growth stages therefore they increase the yield.


INCHARGE FARM
Fruit Research Station
Entikoodi-482038

Table 5. Meteorological data:

Location: Entkhedi

Month	Temperature (°c)		RH (%)	Rain fall (mm)
	Minimum	Maximum		
February 2017	25.00	34.00	65 %	-
March 2017	16.00	39.20	70 %	-
April 2017	17.00	42.20	85%	-
May 2017	24.00	44.00	75 %	-
June 2017	24.00	41.50	68 %	-

CERTIFICATE

Certified that the information in the report is based on the bonafied work carried out under Contractual Research of RVSKVV and the same has been analysed and interpreted by the concerned scientist. No part of the research has been utilized for any other purpose.

Signature :

Name :

Designation :

Dr. M.S. Parihar

Professor/In-Charge
FRS, Entkhedi, Bhopal (M.P.)

R.V.S. Krishi Vishwa Vidyalaya, Gwalior (M.P.)


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