



# **BIO- ORGANIC ENRICHED MARGOSA**

## **Organic Nitrogenous Fertilizer Supplement**

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(57) Abstract :

Exemplary embodiments of the present disclosure are directed towards eco-friendly and organic nitrogenous fertilizer supplement compositions comprising an enriched margosa. The enriched margosa comprises of neem (*Azadirachta indica*), karanj (*Pongamia Pinnata*), sucrose, Bio-Zinc, and plant symbiotic fungal spores such as *Trichoderma* spores and *Mycorrhizal* spores. Other exemplary embodiments of the present disclosure are directed towards methods for preparing the enriched margosa compositions and methods of application of nitrogenous fertilizers supplemented with the enriched margosa. Enriched margosa can be applied to the soil in the form of at least one of a basal application, a top dressing, a plough sole placement, a deep placement, a localized placement, a hill placement, a row placement and a pellet application. Based on the results wider use of enriched margosa is recommended for different crops considering the organic nature of enriched margosa, its potential as nitrogenous fertilizer saver and its ability to counter pests.

Number of Pages = 22

## ENRICHED MARGOSA – Organic Nitrogenous Fertilizer Supplement

### Ingredients:

- The Enriched Margosa comprises of neem (*Azadirachta indica*), karanj (*Pongamia Pinnata*), sucrose, Bio-Zinc, and plant symbiotic fungal spores such as *Trichoderma* spores and *Mycorrhizal* spores.
- Enriched Margosa contains 100% natural N, P, K, Ca, Mg, and S.
- Enriched Margosa is a brown colored, crushed powder and is bio degradable.



Neem seeds



Neem Cake



Karanja seeds



Karanja Cake





# Composition

## Enriched Margosa

- **Organic Nitrogenous Fertilizer Supplement** contains symbiotic fungal spores of *Trichoderma* and *Mycorrhiza* as they are the best organic amendment for the management of soil borne pathogens.
- **Neem seeds and karanj seed** are used in the form of de-oiled cake powder



## **Enriched Margosa Application**

### **Soil pH Management:**

**It is having pH range between 6.8- 7.0. When applied with chemical fertilizers to various types of soil with pH range from 4.0 to 9.5, it optimizes the pH band towards neutral. Therefore, ideal for all types of soil: alkaline, acidic, black cotton, light soil and in Submerged condition.**

### **Productivity:**

**This gives significant yield and enhances productivity of agricultural crop.**



**Cont...**

**As an Antioxidant**

- **Enriched Margosa powder is a rich source of antioxidants having abundant polyphenolic compounds such as phenols, flavonoids; furanoflavones, furanoflavonols, chromenoflavones, furanochalcones and pyranochalcones and isoflavones appear to be important in cancer prevention.**
- **The content of flavonoids (antioxidants) in Organic NFE are significantly higher as compare to other organic manures.**
- **Ingredients like Margolone and Margolonone present in neem and prenylated flavonoid such as furanoflavones, furanoflavonols, chromenoflavones, furanochalcones and pyranochalcones showed long lasting radical scavenging activity.**



## FIELD DEMONSTRATION REPORT ON ENRICHED MARGOSA- BIO-ORGANIC FERTILIZER ON VEGETABLE CROPS

**Crop:-** Okra

Village: BHINJHARPUR District: - JAJPUR

**Results:** - Enriched Margosa @ 2kg/acre mixed thoroughly and applied as basal dose. 48q/ha yield of Okra was obtained with increase in number of branches/flowers and fruits with good keeping quality, color & taste with enhanced productivity over conventional farming.



**Crop:-** Cauliflower

Village: BHINJHARPUR District: - JAJPUR

**Results:** - Enriched Margosa @ 2kg/acre mixed thoroughly and applied as basal dose at the time of transplanting. 72q/ha yield of Cauliflower was obtained with increased fruits size with good keeping quality, color & taste with increased productivity over conventional farming.





## FIELD DEMONSTRATION REPORT ON ENRICHED MARGOSA- BIO ORGANIC FERTILIZER ON VEGETABLE CROPS

**Crop:-** Tomato

Village: BHINJHARPUR District: - JAJPUR

**Results:** - Enriched Margosa @ 2kg/acre mixed thoroughly and applied as basal dose at the time of transplanting. 125q/ha yield of Tomato was obtained with increase in number of branches/flowers, number of fruits with good keeping quality, color & taste with increased productivity over conventional farming.



**Crop:-** Brinjal

Village: BHINJHARPUR District: - JAJPUR

**Results:** - Enriched Margosa @ 2kg/acre mixed thoroughly and applied as basal dose at the time of transplanting. 103 q/ha yield of Brinjal was obtained with increase in number of branches/flowers, number of fruits with good keeping quality, color & taste with increased productivity over conventional farming.



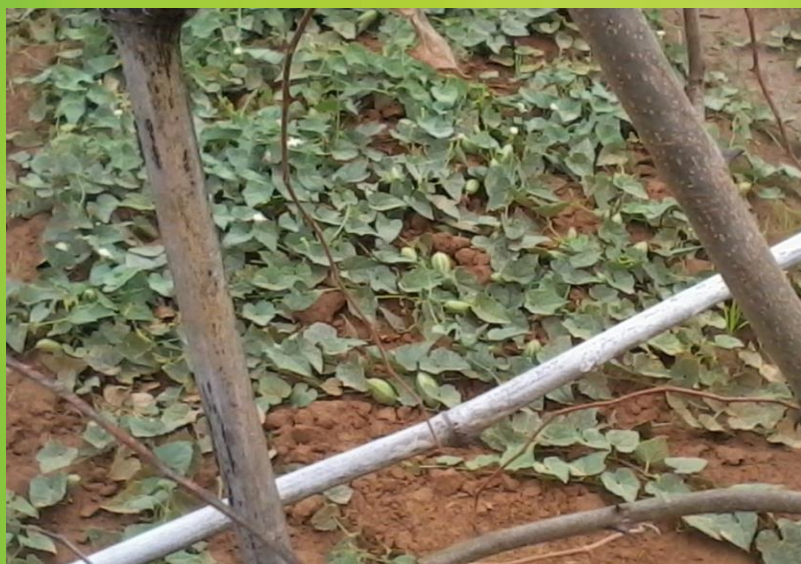


## FIELD DEMONSTRATION REPORT ON ECO-FRIENDLY ENRICHED MARGOSA ON VEGETABLE CROPS

### **Crop:-** Pointed Gourd

Village: BANGA,SUKINDA District: - JAJPUR

**Results:** - Enriched Margosa @ 2kg/acre mixed thoroughly and applied as basal dose at the time of transplanting. 102 q/ha yield of Pointed Gourd was obtained with increase in number of branches/flowers, number of fruits with good keeping quality, color & taste with increased productivity over conventional farming.



### **Crop:-** Bitter Gourd

Village: MANGARAJPUR,SUKINDA District: - JAJPUR

**Results:** - Enriched Margosa @ 2kg/acre mixed thoroughly and applied as basal dose at the time of transplanting.44 q/ha yield of Bitter Gourd was obtained with increase in number of branches/flowers, number of fruits with good keeping quality, color & taste with increased productivity over conventional farming.





## Method of Application

**Crop production: Organic farming Horticulture, Hydroponic cultivation, Plantation, Medicinal plants, Herbs & Lawns**

•**Basal Application:** Enriched Margosa-Bio Organic Fertilizer powder can be mulched with Urea/ Nitrogenous fertilizer @ 1 kg Enriched Margosa powder to 50 kg Urea/Nitrogenous fertilizer and kept for at least 2 to 3 hrs prior to application.

•**Top Dressing :** Enriched Margosa-Bio Organic Fertilizer powder can be mulched with Urea/ Nitrogenous fertilizer @ 1 kg Enriched Margosa powder to 50 kg Urea/Nitrogenous fertilizer and kept for at least 2 to 3 hrs prior to application

•**Nursery Cultivation:** It can be applied @ 5kg per mother bed of 2X5m bed size before seed-sowing.

Enriched Margosa-Bio Organic Fertilizer powder can be used @ 5gm p/pot.

•**Poly houses and Hydroponic cultivation:** Can be used as in Nursery cultivation

•**Plantation:** For Plants less than one year old Enriched Margosa can be applied @ 100gms/plants round the collar girth of the plants.

•**Organic Farming:** 50 kg per Acre minimum basal dose of Enriched Margosa can be used for exclusive organic farming along with farm yard manure/other amendments.





***ENRICHED MARGOSA***  
***Organic Nitrogenous Fertilizer Supplements***

***BENEFITS***

- **The Enriched Margosa-Bio Organic Fertilizer restricts “leaching loss” of urea and Nitrogenous fertilizers increase crop yield.**
- **Nematodes control, triggers nematodes resistance mechanisms.**
- **It is significantly beneficial in organic agri-production Enriched Margosa is an extensive research based novel organic product. In order to enhance nutrient uptake efficiency , Enriched Margosa powder is impregnated with biomimetic nanoparticules.**
- **It is not only a bio-nutrient supplement, but also acts as natural soil binder.**
- **It helps to eliminate the denitrifying bacteria. It also act as pH mordant.**
- **It is ideally compatible for alkaline, acidic, black cotton, light soil and submerged condition.**
- **It has High Antioxidant potential(Higher Flavonoids Content).**
- **Enriched Margosa-Bio Organic Fertilizer has a longer shelf life.**



## Role of Enriched Margosa



- Nitrogen assimilation is the key function on plant cells, and this mineral has played a major role in the success story of green revolution.
- Excessive and in-efficient use of Nitrogenous fertilizer by the major cereals has led to the pollution of groundwater and eutrophication (depletes the dissolved oxygen content of the water and often causes a die-off of other organisms) of the surface water posing a severe problem for human health as well as ecosystem.
- Enormous losses in the form of emission of  $\text{NO}$  also lead to changes in nitrogen-carbon balance.
- Pollution caused by fertilizer (and manures) is being referred to as a chemical time bomb but to sustain food production for the ever increasing population their demand increases by several fold every decade.  
This is the major challenge we are facing therefore, it is very important to increase the food production with minimum adverse impacts on the environment.

# Role of Enriched Margosa in limiting Greenhouse Effect



- Research on uptake of nitrogen, its acquisition, assimilation and storage is essential.

- Efficient utilization of fertilizer is one of the keys to economic crop yield.

- It reduces various loss of N, including volatilization and maintaining ecological balance.

It is of great importance to optimize the availability of an added N fertilizer in crop not only due to continuous increase in prices of fertilizer but also due to environmental pollution.

- There is an urgent need to assess the possibilities of N management for climate abatement and at the same time increase food security, while minimizing environmental and human health impacts.

- In brief N application in agriculture, emit Greenhouse Gases (GHGs ) and causes climatic change.



- To slow down the increased rate of atmospheric Green House Gases (GHGs) concentrations will require efforts in every sector of the economy.
- Agricultural practices that reduce or offset GHGs emissions can increase farmer income, improve soil productivity and water quality.
- However, judicious management of N can mitigate Greenhouse Gases (GHGs) emission and also help in adaptation.
- Therefore, future N management strategies should be developed with a target of climatic change mitigation and adaptation.



# ENRICHED MARGOSA in Poly houses and Hydroponic cultivation



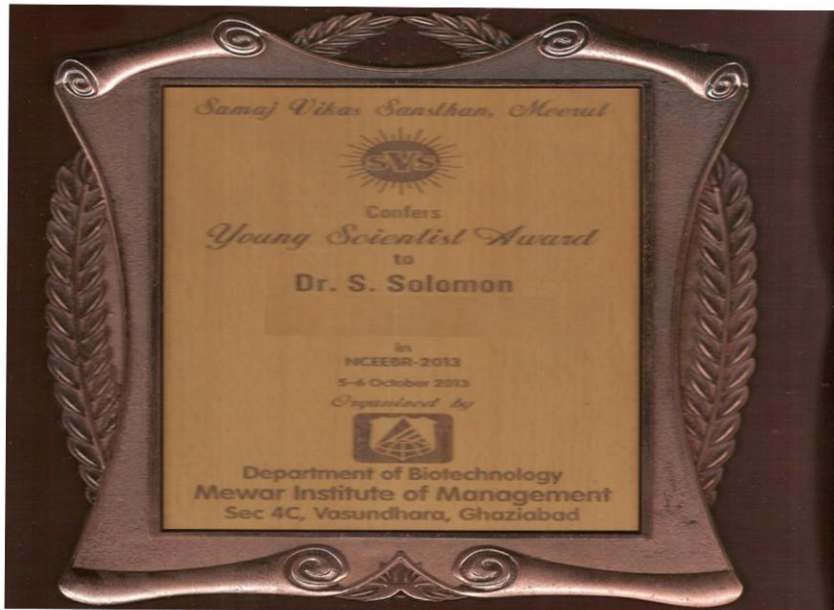


## Effect of Enriched Margosa- Organic Nitrogenous Fertilizer Supplement on Average Yield of Various Agricultural Crops.

(Tested at Agril. Res. Farm SHIATS Allahabad, Janta Vedic College Baraut, U. P., during Kharif 2011 to Rabi 2012)



# Recognition of ENRICHED MARGOSA



**Best Bioved 2015 product award for Margosa**





**Dr. S. Solomon receiving felicitation by Prof. R.B. Singh, renowned Agriculture Scientist at present Chancellor Imphal Agril. Univ. in the presence of Dr. K.P. Vishwanathan, vice Chancellor, Rauri Agril. Univ., Dr. J.S. Sandhu, D.D.G (crop science) ICAR New Delhi and Dr. M. Mahadevappa (Padma Bhushan) Ex Chairman ASRB New Delhi.**



## **Conferences attended and Research paper Presentation :**

### **National**

1. Presented research paper on “Enriched Margosa- Organic Nitrogenous Fertilizer Supplement” in Mewar University, Meerut,
2. J. V. College Baraut U.P.,
3. BHU Varanasi,
4. Bioved research institute of agriculture & Technology, Allahabad, U.P.
5. Biolim centre for Science and Technology, Chennai (TN).

### **International**

1. Kathmandu (Nepal),
2. Dubai,
3. South Africa
4. Bangladesh
5. Singapore.

# Mauritius Test report of Enriched Margosa on Hydroponic cultivation



From,

Dated: 7<sup>th</sup> April, 2016

Dr. Bhukuth Kramanand Vishal,  
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To,

Dr. S. Solomon  
Chairman,  
Organic Modern Agrovet, Delhi, India.

Sub: Test report of Enriched Margosa: An Organic Nitrogenous Fertilizer Supplement on Vegetables in Mauritius.

Dear Sir,

This is to inform you that we have tested your product Enriched Margosa: An Organic Nitrogenous Fertilizer Supplement on Vegetable such as Chilies, Cucumber, Tomato, Capsicum and long Bean in Poly Houses during this season.

It was noticed that the use of Enriched Margosa: An Organic Nitrogenous Fertilizer Supplement has controlled the incidence of Nematodes and fungal diseases and also significantly improves the yield of the crop and enhanced shelf life of vegetables.

Director



Dr. Bhukuth Kramanand





## Users/Clients

- Rashtrapati Bhawan Garden
  - Primary Agricultural Societies, Uttar Pradesh
  - Farmers of various states
  - amazon.com
  - Nurseries
- Interview link:** *<http://newscircle.in/home/margosa-is-designed-for-the-prosperity-of-rich-farmers-dr-sunil-solomon.html>*

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thank  
you