An Ideal Exogenous Soil Inoculant

NOVCOM COMPOST

A Cost- effective Pathway towards Soil Health Management through Effective On-farm Resource Utilization

Selecting the Right Composting Method

for

Assured Effectiveness, be it Crop Sustenance, Soil Health Rejuvenation or effective Carbon Sequestration in Soil

INHANA ORGANIC RESEARCH FOUNDATION

In Harmony with Nature

Quality Soil is One of the Founding Pillars of Sustainable organic Agriculture

Can We Get Back our Live Soil ?

A Non- living Entity – The Healthy is **Enlivened by a Diverse Population of Microflora** - **The Drivers of All Soil Ecological Processes**

Few Years of Chemicalization & our Live Soil Has been PRACTICALLY DEACTIVATED

Yes It's Possible !

Provided we can Create an Environment for Natural Restoration of the Native Soil Microflora

Healthy Soil Fosters . . . Healthy Plants

But restoration of Soil Health is a Time taking process

- Resource Scarcity for On- farm Compost Production
- High dosage requirement
- No Quality Guarantee & High Price of Off- farm Organic Soil Input

A SPEEDY SOIL RESOURCE RECOVERY SYSTEM IS THE ONLY ANSWER

BUT HOW?

Enough Elements have been added for this.

Its now time to add the **ENERGY**, because the elements are not deficient **…they are just de-activated**

Microflora are 'THE ENERGY' For Soil

MICROFLORA

The Energy for Soil

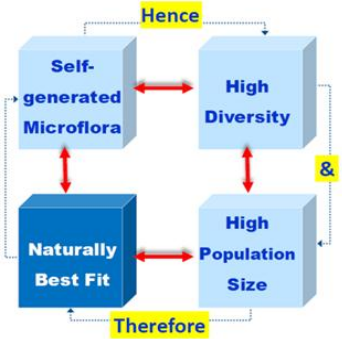
FAQ . . . .

What can we do to increase microbial activity in soil?

. . . BECAUSE

Lab Cultured Inoculants, almost always fail to perform under the Un- favourable Soil Environment & Antagonism from Scavengers

The Answer Again Lies in Going The Natural Way



SELF– GENERATED MICROFLORA . . . .

The Only True Energy Source for Soil Re-activation

- *When Self- generated, the population size will be naturally huge with wide Diversity*
- *Will have better acclimatization capacity irrespective of the soil environment*

Novcom Composting Method was developed in this background. The Process **does not go for Artificial Inoculation of Microbes** but **Creates the Environment for their Self- generation during the process of Biodegradation.**

The end product Novcom compost contains Microbial Population in the order of 10^{16} c.f.u.

Soil Energization

Novcom Compost enables the application of ENERGY in the form of an un- believable population **of SELF- GENERATED MICRO FLORA** (*in the order of 10^{16}c.f.u.*) **to ensure gradual regeneration of soil of micrflora to the order of 10^{8} c.f.u.**

Did You Know ?

The Top 6 inches of Soil in 1 hectare weighs about 22,40,000 kg

So if we put even 10 Tons of Compost we are actually adding **only about 0.5g compost in 1 kg soil.**

*Under the present Resource Scarcity where **application of even 2 to 3 tons Compost is a difficult proposition**, this 0.5 g compost becomes further miniscule*

It is apparent that **Soil Regeneration** will remain **Practically Impossible** under the Quantitative Approach of Element Addition.

So What's the way Out ?

The Best Way to restore SOIL DYNAMICS is to provide the LOST ENERGY

When Resource Scarcity is a Bottleneck . . .
Any type of Biodegradable Matter is an Asset

NOVCOM Composting Method

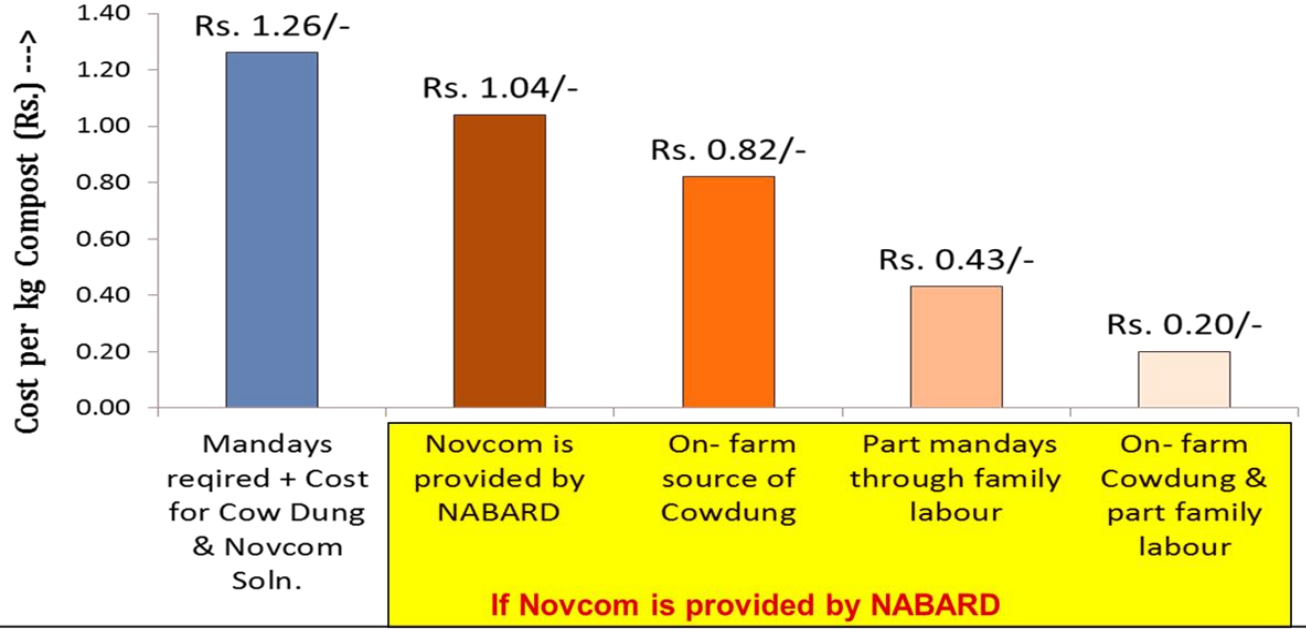
An Efficient Composting Process that Ensures Mature, Non- phytotoxic, Quality Compost irrespective of the Raw Material Type . . . & within 21 Days

Eliminate all risk components in different Raw Materials

- Threat of **weed seeds** while using Farm Weeds
- Material **Toxicity and Pathogenicity** as in MSW
- **Very high C/N ratio** as in Coir Pith, Wheat Flour Mill Waste, paddy straw etc
- **Aflatoxin** as in Poultry Litter
- **High wax content**, which inhibits the utilization of nutrient rich Distillery Waste as soil amendment

Farmers Adoptability

Reduction in Novcom Compost cost as per Resource Availability & Inclusion of Family Labour



The Cost of Production gets drastically lowered through better utilization of on-farm resources and family labour

UNIQUENESS OF NOVCOM COMPOSTING METHOD

No Raw Material Specificity

Any type of organic material viz. green matter (weeds, water hyacinth, etc.), cow dung, poultry litter, paddy husk, paddy straw, press mud, municipal solid waste etc. can be used as raw material. Novcom solution that is used during Novcom composting are specially designed according to raw material specificity, so that it can be equally effective irrespective of the type of raw material used.

No Infrastructure Required

Novcom composting method does not require any structure construction; the composting heap is erected layer wise following a simple, easy to adopt process, on a flat land that is free from waterlogging. Hence, no prior investment on infrastructure build up is required, which serves as a lucrative proposition for entrepreneurs and an easy option for on-farm soil management for even the small farmers.

High Temperature Generation in Short Succession

High temperature (may reach as high as 68 to 72^{0}C) is generated during Novcom composting process within 72 hours of heap erection, which ensures destruction of harmful pathogens as well as weed seeds that may be present in the raw material.

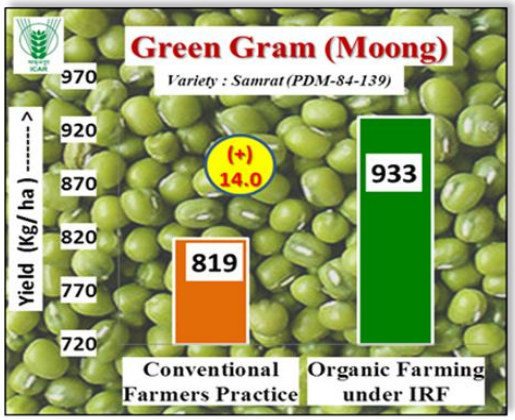
Shortest Composting Period

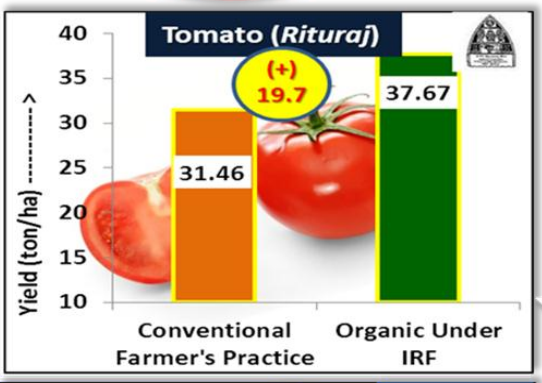
Generally the available composting processes require 10 to 15 weeks for completion, which comes as a major hindrance towards production of the required quantity of compost especially for organic crop production. But under Novcom composting method compost is ready within a period of just 21 days, and may vary from 21 to 30 days depending upon the type of raw material used.

Sustaining Yields under Organic Production from the Very 1st Season - a Challenging Task for Field Crops

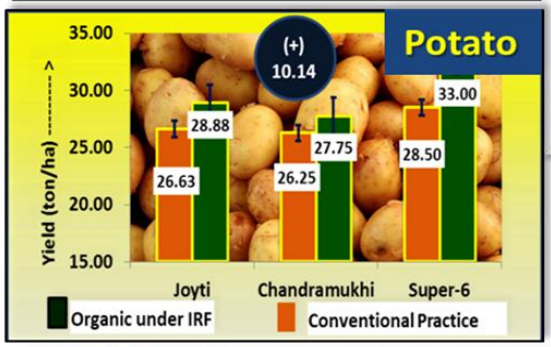
Primary Problem . . . Nutritional Deficiency at Specific Growth Stages

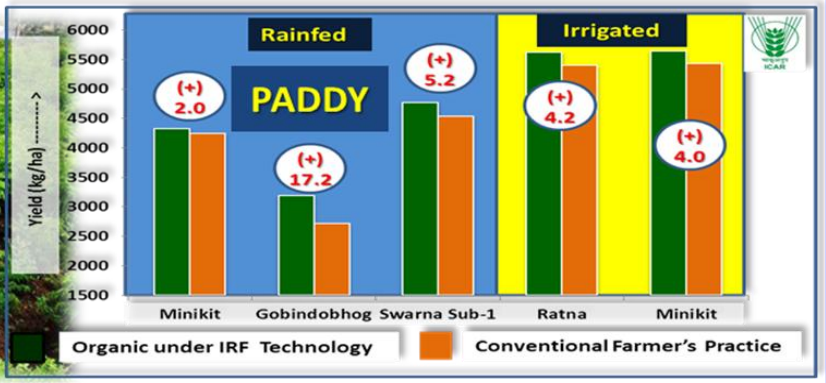
All the **CONS** have been **TICKED OFF** under IRF Technology . . . **FROM THE VERY 1ST SEASON**



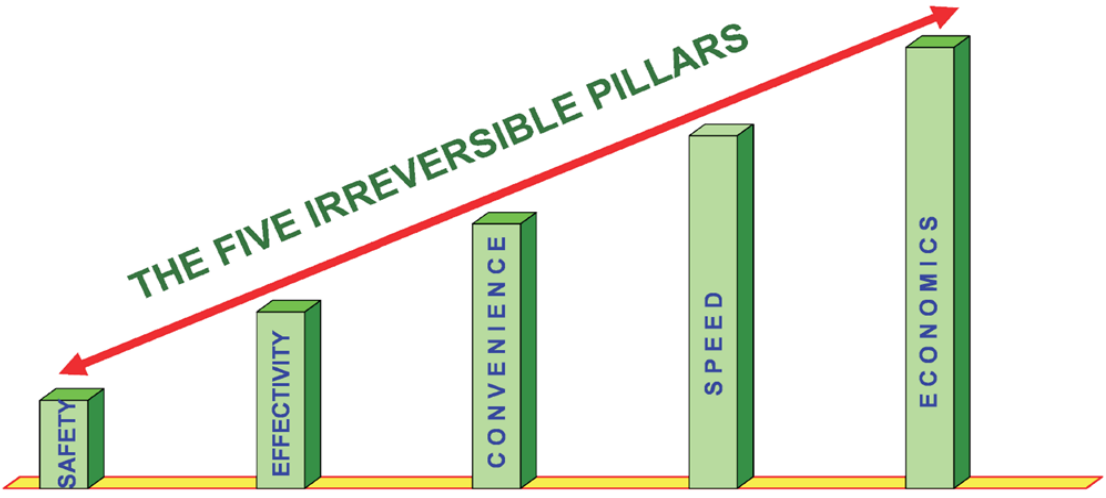


Not only Sustenance . . . Novcom compost helps Better Yields Aspects over Chemical Farming





Five Pillars for an Effective Composting Method
– *Compliance by Novcom Method*



SAFETY

The high temperature (observed up to 75^{0}C) generated in an intense, rapid as well as desired manner during the Novcom composting process ensures the total destruction of weed seeds and all harmful pathogens. At the same time, performance of various stages of biodegradation in the programmed manner ensure a **safe end product for both human handling and soil environment.**

CONVENIENCE

Novcom composting method is a convenient system of bio-degradation. It **does not require construction of pits or any specific infrastructure.** It is not raw material specific & various types of raw materials can be used for compost production.

SPEED

Novcom composting method perhaps ensures the **speediest biodegradation - about 21 days,** which is shorter in certain raw materials i.e. cow dung, poultry litter etc.

EFFECTIVITY

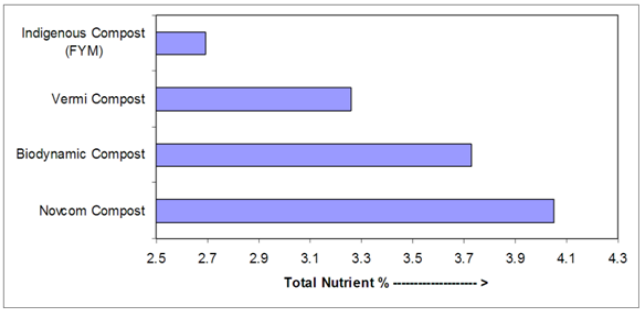
Novcom compost ensures both **ready nutrient supply** post soil application as well as its **high microbial status** with adequate energy sources works towards restoration of soil quality and soil dynamics.

ECONOMY

Novcom composting method is an economical process, which does not require any investment on infrastructure, needs minimum labour deployment and does not require any specific raw material. The technology cost is also very low. **Under this method 1 ton of compost can be produced at a low rate of Rs. 1.00 to 1.50/-**

Comparative Compost Quality as per FAO Project Report

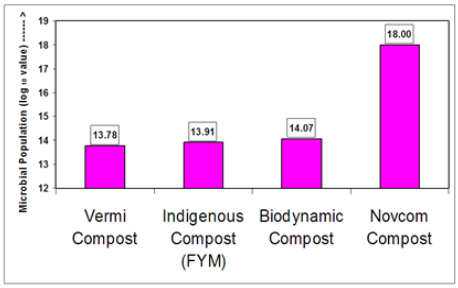
TOTAL NUTRIENT CONTENT IN FINAL COMPOST



Total Nutrient Content in Novcom compost is 50.6, 24.2 and 8.6 percent higher than that of Indigenous, Vermi and Biodynamic compost respectively.

The High Nutrient Content in Novcom compost is due to an Efficient Composting Process.

Microbial Population in Compost . . .
THE KEY COMPONENT FOR SOIL REJUVENATION



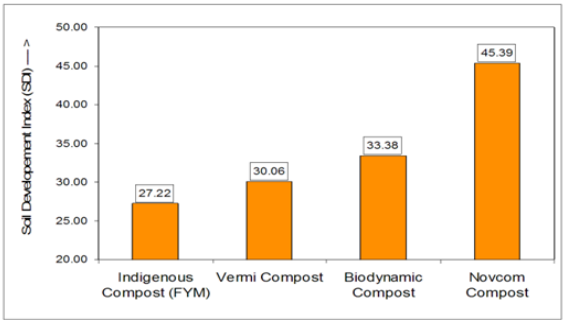
Total microbial population in Novcom compost is at least 10,000 to 100,000 times higher than the compost prepared under all the other composting processes

Source : FAO-CFC-TBI Project (2009-2011)

Self- Generated Microbes in On-farm compost is PRICELESS

This Enormous population is due to high Energy Flow during Novcom composting process– the most Potent Source for Soil Microbial Rejuvenation

Soil Quality Development under Continuous 3 years Application of different Compost



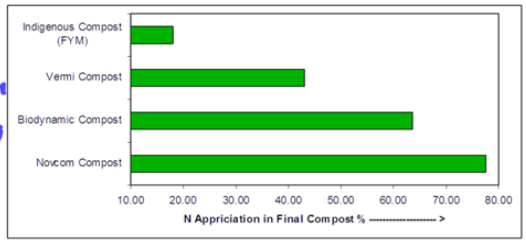
Highest Soil Quality Development under application of Novcom compost was corroborated with the highest crop response under Novcom compost application

Appreciation of N Value – Strongest Indicator of the Efficiency of Any Composting Process

During any composting process the value of Nitrogen gets appreciated due to.....

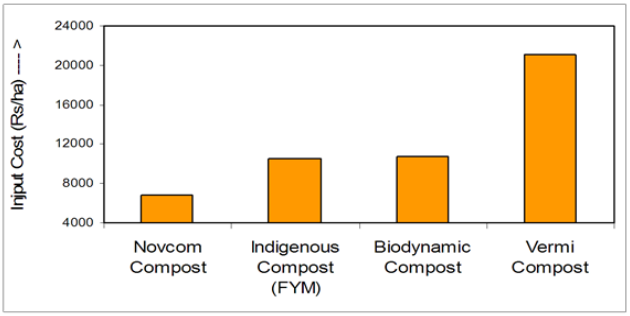
Condensation Effect + **Atmospheric N Fixation** - **Evaporation Loss** ≈ **N Appreciation**

Efficiency in composting Process



Initiated with same N value in raw material, N Appreciation was highest in Novcom compost

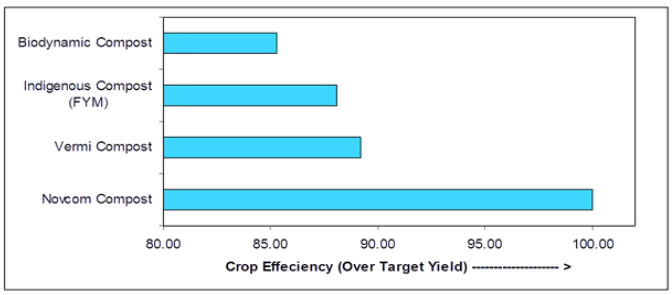
Projected Cost to Achieve same Crop Target



Considering cost of On-farm vermi compost @ Rs. 2000 per ton

The lowest cost requirement for Novcom compost to achieve crop target (TY : 1500 kg/ha) indicated Novcom Composting Method is the Most Economical way to produce On-farm Quality Compost

Crop Efficiency – Validation of Post Soil Application Effectivity



With application of different compost (*same dose on N basis*), **highest crop response was achieved in case of Novcom compost – which indicated far better Post Soil Application Effectivity.**

Data sourced from FAO-CFC-TBI Project 'Development, Production and Trade of Organic Tea' at Maud Tea Estate, Assam (2008-2013).

Effective Resource Recycling using Novcom Composting Method demonstrated in different ecosystems, soil types and varied crops in collaboration with Research institutes & Universities

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