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Natural Farming: The Best Way to Maintain Soil Health

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SUMMARY

Soil health is defined as the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans. Natural farming is a sustainable approach that improves soil health. It includes the use of organic materials and minimizes external inputs. Through practices like cover cropping and crop rotation, it enhances biodiversity, fostering a balanced ecosystem. By avoiding synthetic fertilizers and pesticides, natural farming promotes long-term soil fertility. Overall, it maintains a harmonious relationship between agriculture and the environment, ensuring sustainable and resilient soil ecosystems.

INTRODUCTION

Natural Farming (NF) refers to the indigenous traditional farming totally based on low cost, naturally available inputs like desi cow dung-urine and other plant-based formulations. In this system no externally purchased inputs namely synthetic, chemical, or organic fertilizers are used, thus, it reduces the input cost of farming and improves economic benefits of farmers. Natural farming is called by different names like Zero budget natural farming, Prakrithik Krishi , Cow based natural farming , Shashwatkheti , Chemical free agriculture, Do-nothing farming and the natural way of farming. Fukuoka is the one who started natural farming in Japan , hence he is known as 'Father of natural farming'. Recently in 2020-21, as per the report submitted by 17th Loksabha standing committee on agriculture, a scheme called "Bhartiya Prakritik Krishi Padhati" was introduced for the promotion of NF nationwide by the Ministry of Agriculture & Farmers Welfare farming in India.

Natural Farming in India

- Nearly 2.7% of the total area under farming in India, is farmed organically or through natural methods, which means using natural processes and inputs to improve the soil health, crop yield and quality, a move away from commonly used chemical fertilizers and pesticides.
- It is roughly estimated that around 2.5 million farmers in India are practicing regenerative agriculture. In the next 5 years, it is expected to reach 20 lakh hectares in any form of organic farming, including natural farming, of which 12 lakh hectares are under Bharatiya Prakritik Krishi Padhati.
- To motivate farmers to adopt chemical free farming and enhance the reach of natural farming, the Government has formulated National Mission on Natural Farming (NMNF)

- As a separate and independent scheme from 2023-24 by up scaling the Bhartiya Prakritik Krishi Paddati (BPKP). The success of NMNF will require behavioural change in farmers to shift from chemical-based inputs to cow based locally produced inputs and thus requires continuous creation of awareness, training, handholding and capacity building of farmers in the initial years (NMNFKP, 2023).
- At present, about 4.09 lakh ha area from 8 states viz. Andhra Pradesh, Chhattisgarh, Kerala, Himachal Pradesh, Jharkhand, Odisha, Madhya Pradesh and Tamil Nadu have been covered under NF, among these states Andhra Pradesh state has reported 6.30 lakh farmers practicing natural farming which is highest across India and Gujarat state has reported highest area under natural farming in India.
- ZBNF (Zero budget natural farming) was introduced by Padma Shree award winner **Subash Palekar** in collaboration with Karnataka Rastriya Raitha Sanga. Palekar is known as **"Father of ZBNF".**

Principles followed in Zero budget Natural Farming

- No tillage
- No synthetic fertilizer
- Crop diversity
- Use of indigenous microorganisms
- Natural pest control
- Minimal external inputs

Components/Pillars of Natural Farming

1. Jivamrita/jeevamrutha

It is a fermented microbial culture which is used to increase the microbial population in soil.

How to prepare jeevamrutha:

Put 200 liters of water in a barrel; Add 10 Kg fresh local cow dung and 5 to 10 liters aged cow urine; Add 2 Kg of Jaggery (a local type of brown sugar), 2 Kg of pulse flour and a handful of soil from the bund of the farm. Stir the solution well and let it ferment for 48 hours in the shade. Now jeevamrutha is ready for application. 200 liters of jeevamruta is sufficient for one acre of land

Jeevamrutha Application :

Apply the jeevamrutha to the crops twice a month in the irrigation water or as a 10% foliar spray

2. Bijamrita/beejamrutha

It is a treatment used for seeds, seedlings or any planting material. Bijamrita is effective in protecting young roots from fungus as well as from soil-borne and seedborne diseases.It is composed of similar ingredients as jeevamrutha - local cow dung, a powerful natural fungicide, and cow urine, a strong anti-bacterial liquid, lime, soil.

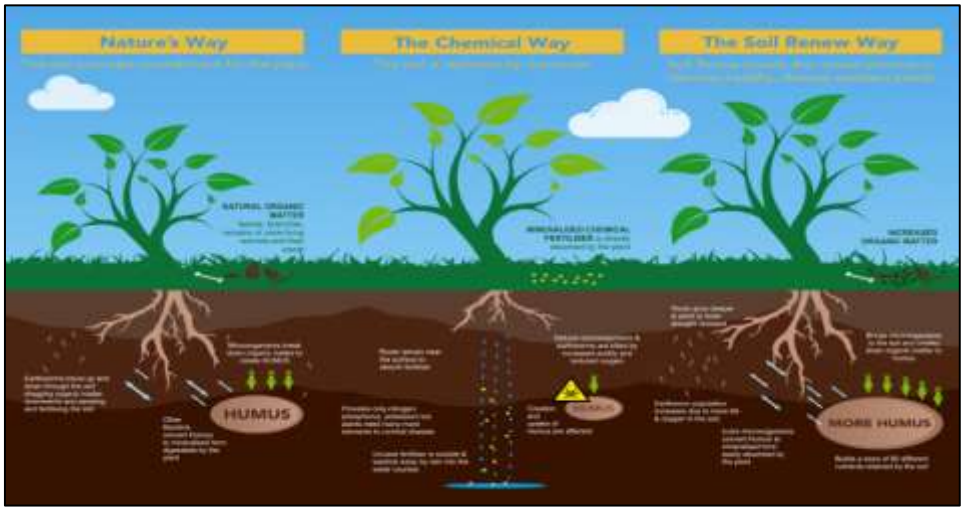
Bijamrita Application as a seed treatment :
Add Bijamrita to the seeds of any crop: coat them, mixing by hand; dry them well and use them for sowing. For leguminous seeds, just dip them quickly and let them dry.

3. Acchadana (Mulching): Mulching is practised to conserve soil moisture.
There are three types of mulching:
Soil Mulch: This protects topsoil during cultivation and does not destroy it by tilling. It promotes aeration and water retention in the soil. Palekar suggests avoiding deep ploughing.
Straw Mulch: Straw material usually refers to the dried biomass waste of previous crops it provide dry organic material which will decompose and form humus through the activity of the soil biota which is activated by microbial cultures.
Live Mulch (symbiotic intercrops and mixed crops)

4. Whapasa (Moisture)
Whapasa is the condition where there are both air molecules and water molecules present in the soil, and he encourages reducing irrigation, irrigating only at noon, in alternate furrows ZBNF farmers report a significant decline in need for irrigation in ZBNF.

Effect Of Natural, Organic And Conventional Farming on Soil Health.

Continuous use of synthetic inputs in conventional can lead to soil degradation over time. Excessive tillage may result in soil compaction, erosion, and loss of organic matter. The reliance on chemical fertilizers can disrupt the soil microbiome and reduce microbial diversity. Organic farming generally has a positive impact on soil health but soil disturbance due to tillage is seen in this farming system. Practices such as crop rotation enhance biodiversity, reduce erosion, and improve water retention. The use of organic matter helps build soil structure and supports a diverse microbial community. Natural farming seeks to promote sustainable and regenerative practices. By minimizing external inputs and disturbance on soil, natural farming can contribute to improved soil structure, increased water retention, and a balanced microbial community.



CONCLUSION

Natural farming, with its emphasis on minimal external inputs, avoidance of synthetic chemicals, and alignment with natural processes, stands out as a sustainable approach to maintaining soil health. By fostering biodiversity, reducing soil disturbance, and promoting a balanced microbial community, natural farming helps enhance soil structure and fertility. This method prioritizes long-term sustainability by working in harmony with nature, contributing to improved water retention, and supporting resilient ecosystems. This approach is also economically beneficial to small and marginal farmers.

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