

Natural Farming in India: A Pathway to Sustainable Agriculture

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Introduction:

India's agricultural evolution has been shaped by the pressing need to ensure food security for a growing population. The Green Revolution of the 1960s and 70s was a turning point, ushering in high-yielding varieties, chemical fertilizers and pesticides that transformed the nation from food-deficient to food-secure. While this shift brought immediate gains in productivity, it also set in motion a series of environmental and socioeconomic challenges. The intensive use of synthetic inputs gradually degraded soil health, depleted groundwater reserves, reduced onfarm biodiversity and increased the financial burden on farmers, especially smallholders who became reliant on expensive external inputs. In response to these growing concerns, natural farming is gaining momentum as a viable and sustainable alternative. Rooted in India's indigenous agricultural traditions, this approach emphasizes harmony with nature over external dependency. Rather than relying on chemicals, natural farming regenerates soil fertility using locally available organic inputs like cow dung, cow urine, compost and crop

residues. This low-input model not only revitalizes agro-ecosystems but also reduces production costs, making it especially relevant for marginal farmers.

One of the most prominent models in this space is Subhash Palekar's Zero Budget Natural Farming (ZBNF), which seeks to eliminate the need for purchased inputs entirely. ZBNF techniques including *Jeevamrit* (a fermented microbial solution), Beejamrit (seed treatment), Waaphasa (soil aeration through/, moisture balance) and mulching promote soil microbial activity, moisture retention and pest resistance, all without the use of synthetic agrochemicals. These practices not only restore soil health and biodiversity but also enhance resilience against climate-induced stresses like drought and erratic rainfall.

The benefits of natural farming extend well beyond the farm gate. Environmentally, it reduces pollution and conserves resources by cutting out synthetic inputs. Agronomically, it improves soil structure and supports nutrient cycling, leading to better yields over time.

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E-ISSN: 2583-5173



Economically, farmers benefit from reduced input costs and can potentially access niche markets that value chemical-free, organic This is produce. particularly empowering for small and marginal farmers, for whom lower risk and debt-free cultivation can make a significant difference. From a health perspective, crops grown through natural methods are free from harmful residues, contributing to safer, more nutritious food for consumers and improved public health outcomes. Recognizing its multifaceted potential, the Government of India has initiated policy support through programs like the National Mission on Natural Farming (NMNF) and Bharatiya Prakritik Krishi Paddhati (BPKP). These schemes aim to mainstream natural farming by providing financial incentives, training and technical support. States like Andhra Pradesh have taken R climate Change—making it the lead with large-scale implementation models such as Rythu Sadhikara Samstha (RySS), while grassroots movements in Maharashtra, Himachal Pradesh and Rajasthan are further demonstrating its scalability and adaptability.

In essence, natural farming represents more than a shift in practice, it is a reimagining of agriculture that aligns traditional wisdom with the pressing need for sustainability. By reducing ecological damage, lowering economic risk and producing safer

food, it offers a holistic approach to agricultural development. As India grapples with climate change, land degradation and the need for equitable rural livelihoods, natural farming emerges as a practical and inclusive solution reviving time-tested methods to build a resilient agricultural future.

Core Principles of Natural Farming: A Path to Sustainable Agriculture

Natural farming is an agricultural approach that seeks to minimize human intervention while harnessing the natural processes that sustain life. This method of farming goes beyond simply avoiding chemical fertilizers and pesticides; it is rooted in ecological principles that work in harmony with nature. The guiding principles of natural farming are designed to restore soil health, conserve water and increase resilience to an essential solution for sustainable agriculture, particularly in India.

1. Bijamrita (Seed Treatment): In natural farming, the treatment of seeds is an important first step in ensuring healthy crops. Known as Bijamrita, this process involves coating seeds with a mixture of cow dung, cow urine, lime and soil. This natural blend helps protect the seeds from harmful soil-borne diseases, boosting germination and giving plants a healthier start. The microbial coating also



contributes to the overall health of the soil, increasing its biodiversity and supporting the long-term fertility of the land.

- 2. Jiwamrita (Soil Inoculant): Jiwamrita is a unique, fermented microbial solution that acts as a soil inoculant. Made from cow dung, cow urine, jaggery, pulse flour and soil, Jiwamrita is applied to the soil every two weeks. This potent mixture fosters beneficial microbial activity in the soil, which helps break down organic matter and makes nutrients more available to plants. By promoting microbial activity, Jiwamrita improves soil fertility, reduces the need for synthetic fertilizers and enhances the overall health of the soil ecosystem.
- 3. Mulching (Acchadana): Mulching is one of the simplest yet most effective practices in natural farming. By covering the soil with crop residues, straw, leaves, or other organic materials, mulching helps conserve moisture, regulate soil temperature and suppress weed growth. In drought-prone regions, mulching is especially valuable, as it reduces water evaporation, conserving precious soil moisture. Additionally, as the organic matter decomposes, it enriches the soil, improving its fertility and structure over time.
- **4. Waaphasa (Soil Aeration):** Waaphasa focuses on maintaining the ideal balance of

moisture and air in the soil two crucial elements for plant health. Achieved through minimal tillage and careful irrigation practices, this principle ensures that plants have the right conditions for healthy root growth. Proper soil aeration supports the development of robust root systems and encourages a thriving microbial community in the soil. This practice reduces the need for heavy machinery and minimizes soil compaction, leading to healthier crops and a more sustainable farming system.

Practical Practices in Natural Farming

Natural farming is not just about theory; it is also about practical, hands-on methods that farmers can easily implement to improve their land and livelihoods. These practices are deeply rooted in indigenous knowledge and rely on locally available resources, reducing dependency on costly external inputs.

Seed Treatment (Bijamrita): The preparation and application of Bijamrita offer a natural alternative to chemical pesticides and seed treatments. By using a simple mixture of cow dung, cow urine, lime and soil, farmers can protect seeds from diseases and enhance plant health from the outset. This practice helps ensure that plants grow strong and disease-free,



- Soil Inoculation (Jiwamrita): Jiwamrita is a powerful tool for enhancing soil fertility. By applying this microbial concoction to the soil, farmers promote nutrient cycling and organic matter decomposition. This not only boosts the soil's ability to retain nutrients but also improves its overall health. Over time, soil inoculation with Jiwamrita can reduce the need for chemical fertilizers, saving money and promoting long-term soil fertility.
- ⇒ Mulching: In regions with unpredictable rainfall or where water is scarce, mulching is a game-changer. By covering the soil with organic material, farmers can reduce the need for frequent irrigation, helping conserve water and protect the soil from erosion. Mulching also regulates soil RE Minoculation, pest temperature, protecting plants from extreme heat in summer or cold in winter soil and improves structure it as decomposes.
- Soil Aeration (Waaphasa): One of the main benefits of natural farming is its ability to foster healthier soil. Minimal tillage, combined with proper irrigation, allows air to circulate freely in the soil, preventing compaction and ensuring that roots have access to both moisture and oxygen. By encouraging a balanced

microclimate, Waaphasa enhances crop growth and increases yields in the long term.

- ⇒ Role of Indigenous Cows in Natural Farming: At the heart of natural farming is the role of indigenous cows. In Subhash Palekar's Zero Budget Natural Farming (ZBNF), the dung and urine of indigenous cows are used as the foundation for many of the practices that promote soil health. These local cows are preferred over exotic breeds because their waste contains a greater beneficial varietv of microorganisms that are essential for soil fertility. An indigenous cow's contribution goes beyond just providing inputs for natural farming practices. One cow can support up to 30 acres of land, supplying resources for the necessary soil control and plant nutrition. This makes indigenous cows
 - a valuable asset for farmers, particularly in rural areas where resources may be limited.

Government Initiatives Supporting Natural Farming

To further promote sustainable agricultural practices, the Indian government has launched several initiatives aimed at supporting natural farming.

National Mission on Natural Farming (NMNF): Launched in 2022 with a ₹2,481



crore budget, NMNF promotes chemicalfree farming by improving soil health and lowering input costs. The mission targets the formation of 15,000 clusters and aims to reach one crore farmers by 2025-26 through financial aid and technical training.

➡ Bharatiya Prakritik Krishi Paddhati **(BPKP):** of А component the Paramparagat Krishi Vikas Yojana, BPKP natural farming supports based on traditional practices like biomass recycling and cow-based formulations. It excludes synthetic inputs and provides farmers with training and resources to adopt ecofriendly methods.

Conclusion

Natural farming is more than just a H. H. 202 trend—it is a holistic approach to agriculture Farming sa that seeks to restore balance to the land and RE Subsidies? empower farmers. By relying on traditional knowledge and ecological principles, it offers a path forward that benefits the environment, supports farmer livelihoods and provides healthier food for consumers. With ongoing government support and growing awareness, natural farming is poised to play a critical role in shaping the future of Indian agriculture.

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