



Opportunities of Natural Farming in Present Scenario

^{*}Sanjana Mali¹, Pavan Nitharwal¹ and Nitin Bajja²

¹Ph.D. Scholar, Department of Agronomy, Agriculture university, Jodhpur, RAJ, India

²Ph.D. Scholar, Department of Agronomy, CSKHPKV, Palampur, HP, India

^{*}Corresponding Author's email: malisanjana51@gmail.com

Natural farming is becoming increasingly important in today's agricultural scenario because it promotes sustainable and eco-friendly farming practices. It reduces dependence on chemical fertilizers and pesticides, lowers cultivation costs, improves soil health, and protects the environment. Growing demand for healthy, chemical-free food and government support have created better opportunities for farmers. Natural farming also helps agriculture become more resilient to climate change, making it a sustainable and profitable approach for the future. Additionally, it encourages biodiversity, conserves water resources, and improves the long-term productivity of land. By promoting healthier food and rural employment, natural farming contributes to both economic and environmental development.

Introduction

Agriculture today stands at a critical crossroads due to the long-term impacts of input-intensive farming systems. Although chemical-based agriculture boosted food production during the Green Revolution, its prolonged and indiscriminate use has resulted in declining soil fertility, rising cultivation costs, environmental pollution, and health risks from chemical residues—raising serious concerns about the sustainability of the current agricultural model. Natural farming has emerged as an alternative approach that works in harmony with natural processes, emphasizing soil biological activity, use of local resources, and minimal external inputs. It aims to achieve sustainable crop production while conserving the environment and improving farmers' livelihoods, making it vital for building resilient agricultural systems.

Kumawat et al. (2013) conducted an experiment on the high pH soils of arid zone of India to test the efficacy of *Panchgavya* solution as an organic means to ameliorate sodic soil under irrigated condition and they determined that the soil application of *Panchagavya* solution @ 3 l/m² significantly increased soil organic carbon content by 50 per cent and availability of P, Fe, Cu, Zn and Mn in the rhizosphere by 17 per cent over the control throughout the crop growth stages.

Panchal et al. (2017) concluded that the foliar spray of *panchagavya* @ 4% at branching and flowering stage showed its superiority by producing the highest plant, number of nodules per plant, fresh and dry weight of nodules/plant, seed and stover yield of chickpea along with maximum net return and benefit cost ratio.

Pathania and Spehia (2024) surveyed of three blocks in Solan District of Himachal Pradesh during 2020-2021 to evaluate the soil quality and plant nutrient contents under Zero Budget Natural Farming (ZBNF) and Conventional farming systems. They determined that the higher viable microbial count (45.72×10⁵ cfu g⁻¹ bacteria, 6.73×10³ cfu g⁻¹ fungi and 9.28×10³ cfu g⁻¹ actinomycetes) was recorded under ZBNF compared to the conventional farming system.

Mali et al. (2025) observed that the application of *Ghanjeevamrit* (10 q/ha) and *Jeevamrit* (20 %), recorded higher growth parameters, such as plant height, dry matter

accumulation, and primary and secondary branches as well as yield parameters like seed yield, straw yield and harvest index.

Climate Change Resilience as an Opportunity of Natural Farming

One of the major opportunities of natural farming in the present scenario is its ability to increase climate change resilience. Natural farming improves soil fertility and water-holding capacity, helping crops survive droughts and irregular rainfall. It also promotes biodiversity and stronger plant health, which reduces the impact of pests, diseases, and extreme weather conditions. By using natural inputs and sustainable practices, natural farming helps farmers adapt to climate change while ensuring stable and long-term agricultural productivity.

Enhancement of Soil Health and Soil Organic Matter -: Natural farming enhances soil physicochemical and biological properties through the application of organic inputs such as farmyard manure, compost, mulching, and microbial formulations. Increased soil organic carbon improves soil structure, aggregation, aeration, and nutrient cycling, thereby enhancing the resilience of agroecosystems under climatic stress conditions.

Improved Soil Moisture Retention and Water Use Efficiency -: The accumulation of organic matter in naturally managed soils increases water infiltration, field capacity, and moisture-holding ability. Mulching practices reduce surface evaporation and maintain optimum soil temperature. These mechanisms improve water use efficiency and help crops withstand drought and irregular precipitation patterns associated with climate change.

Increased Tolerance to Abiotic Stress -: Natural farming strengthens plant physiological and metabolic processes through balanced nutrient availability and enhanced rhizospheric microbial activity. Healthy crops exhibit improved tolerance to abiotic stresses such as heat stress, water scarcity, salinity, and temperature fluctuations, thereby reducing yield instability under adverse climatic conditions.

Promotion of Agro-Biodiversity and Ecological Balance -: Natural farming supports diversified cropping systems, intercropping, mixed farming, and the conservation of beneficial flora and fauna. Enhanced agro-biodiversity stabilizes ecosystem functions and naturally regulates pest and disease populations, reducing vulnerability to climate-induced pest outbreaks and pathogen incidence.

Strengthening of Soil Microbial Activity -: The avoidance of synthetic agrochemicals preserves beneficial soil microorganisms, including nitrogen-fixing bacteria, phosphate-solubilizing microbes, mycorrhizae, and decomposers. These microorganisms improve nutrient availability, stimulate plant growth, and increase ecosystem resilience against environmental stressors.

Reduction in Greenhouse Gas Emissions -: Natural farming minimizes the use of synthetic nitrogen fertilizers and chemical pesticides, which are major contributors to greenhouse gas emissions such as nitrous oxide and carbon dioxide. Sustainable management practices reduce the carbon footprint of agricultural systems and contribute to climate change mitigation.

Carbon Sequestration Potential -: Continuous addition of organic biomass and conservation-oriented farming practices enhance carbon sequestration in soil. Increased soil organic carbon acts as a carbon sink, helping reduce atmospheric carbon dioxide concentration and contributing to the mitigation of global warming.

Sustainable Resource Management -: Natural farming promotes efficient utilization of locally available biological resources and minimizes dependence on external chemical inputs. This reduces ecological degradation, conserves natural resources, and improves the adaptive capacity of farming systems under changing climatic scenarios.

Long-Term Agroecosystem Sustainability -: By maintaining ecological integrity, improving nutrient recycling, and conserving biodiversity, natural farming ensures long-term agricultural sustainability. Such resilient agroecosystems are better equipped to maintain productivity and food security under the uncertainties of climate variability and global climate change.

Conclusion

Natural farming presents significant opportunities in the present agricultural scenario by promoting sustainable, cost-effective, and environmentally friendly practices. It reduces dependence on chemical inputs, improves soil health, and supports biodiversity while meeting the rising demand for safe and chemical-free food. With growing government support and global interest in organic products, natural farming offers a viable pathway for enhancing farmer income, environmental protection, and long-term agricultural sustainability.

References

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