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Role of Natural Farming in Climate-Resilient Agriculture

*Kiran¹, Ashutosh Kumar², Ramanand Patel³ and Rajnish Kumar⁴

¹Assistant Professor, Department of Genetics and Plant Breeding, CSKHPKV, Palampur HP, India

²SMS, Horticulture (Vegetables), KVK-Narkatiyaganj, RPCAU, Pusa, Bihar, India

³Scientist (Agrometeorology), Regional Research Station Zone-II, Agwanpur-852202, Saharsa, Bihar, BAU, Sabour, India

⁴Asst. Prof., School of Agriculture, Gyanveer University, Sagar, Madhya Pradesh, India

*Corresponding Author's email: kiranpathania@gmail.com

Climate change creates a serious threat to agriculture because it leads to rising temperatures which produce unpredictable rainfall patterns and frequent droughts and floods and increased pest and disease outbreaks that harm crop yield and food security. Natural farming presents a promising method because it enables climate-resilient agriculture through its ability to reduce chemical input needs and its dedication to restoring soil health and ecological stability. Natural farming functions as an agro-ecological system which uses natural resources found in the area through its use of cow dung and cow urine and crop residues and biological formulas while it avoids all synthetic fertilizers and pesticides to create sustainable and profitable farming methods.



Principles of Natural Farming

Natural farming uses ecological balance as its main principle because it processes soil without using chemical substances from outside sources. The system practices pure zero external chemical input because it handles soil as a biological entity which contains living soil bacteria and vital microorganisms. Heejaamrit and Beejamrit indigenous microbial cultures serve as soil fertility and microbial activity boosters which farmers should adopt according to better soil practices. Mulching techniques function as moisture conservation systems because they protect soil from evaporation while maintaining soil temperature at consistent levels. The system uses intercropping and crop rotation practices which lead to increased biodiversity and system stability to create farming systems that can resist climatic conditions.

Concept of Climate-Resilient Agriculture

The concept of climate-resilient agriculture describes farming systems which maintain their productive capacity when facing changing weather patterns while experiencing long-term climate shifts and their operations produce fewer greenhouse gas emissions. Natural farming supports these three goals through its ability to improve soil health and protect natural resources while implementing sustainable farming methods that decrease environmental harm and boost future agricultural output.



Role of Natural Farming in Climate Resilience

Natural farming functions as an essential method which boosts agricultural climate resilience because it strengthens soil health through its ability to increase organic matter content and improve soil structure and stimulate microbial growth. Natural farming improves drought and nutrient stress resistance in crops through its soil health improvements which create better water retention and nutrient access. The system achieves water efficiency through its mulching and reduced tillage methods which protect soil moisture and cut down evaporation in areas that depend on rain and experience drought conditions. Natural farming practices eliminate synthetic fertilizers which produce nitrous oxide emissions thus creating lower greenhouse gas emissions while increasing soil organic carbon content which enables carbon sequestration and climate change mitigation. The system promotes biodiversity conservation through mixed cropping and crop rotation and reduced chemical use which establish an ecosystem balance that boosts pest and disease and climate extreme resistance. Natural farming systems produce crops which demonstrate higher climate extreme resilience because the improved root systems and soil conditions enable them to withstand droughts and floods and temperature fluctuations. The system results in diminished needs for chemical fertilizers because natural farming methods foster increased soil health through enhanced organic matter content. His research European Union mandatory reporting system investigates actual changes related to climate impact which develop between established climate boundaries and future climate thresholds. The system enables researchers to track greenhouse gas emissions from European Union member nations through its complete monitoring system which captures all emissions from all sectors in every country.

Key Practices in Natural Farming

Natural farming requires its fundamental methods which entail using Jeevamrit and Beejamrit for better microbial growth and soil improvement and using organic and live mulching to maintain moisture levels and control weeds and intercropping and crop diversification to boost biodiversity and system resilience and using native plant seeds which suit the local environment and using methods that create minimal disturbance to soil environments and biological systems which protect natural agricultural methods. The agricultural system adopts these methods which result in sustainable environmental management and operational efficiency.

Advantages of Natural Farming

Natural Farming provides multiple benefits through its environmentally friendly practices which eliminate chemical waste while protecting the environment and its capacity to enhance soil quality without chemical fertilizers and its ability to decrease operating expenses through the use of local materials and its capacity to maintain farm productivity and sustainability and its ability to maintain environmental harmony and its particular suitability for small farmers who need affordable farming solutions.

Challenges and Limitations

Natural farming provides several benefits but it encounters challenges which include reduced crop yield during the initial period between conventional agricultural practices and natural farming and different environmental conditions which limit scientific research and the establishment of standard agricultural practices and farmers who lack basic agricultural knowledge and skills and natural products to reach markets and obtain certification and the need for professional management to achieve reliable outcomes.

Future prospect

The future of natural farming in India shows great potential because people now understand sustainable farming methods and climate change solutions and the Paramparagat Krishi Vikas Yojana (PKVY) and Zero Budget Natural Farming programs create national and state adoption pathways for this farming method which becomes more effective through its partnership with climate-smart agriculture and digital advisory services and farmer training

programs. Researchers need to develop specific models for different regions which will help them increase agricultural yields while learning how to adapt to climate changes and determining economic feasibility which will help farmers accept new technologies.

Conclusion

The natural farming method helps create climate-resilient agricultural systems through its ability to improve soil health and water conservation and biodiversity development and environmental pollution reduction which together create sustainable agricultural practices. Natural farming exists because of current obstacles yet its future agricultural potential shows high promise through sustainable practices which reduce costs and enable climate adaptation. Natural farming requires research and policy backing in order to create an agricultural system that withstands climate change while maintaining sustainability.

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