

Importance of Practicing Natural Farming and Future Prospects in West Tripura District

Nagaraju M C^{1*}, Ganesh Das², Mandira Chakraborti¹, Maibam Baby Devi¹, B. U. Choudhury³, A.K Mohanty⁴ and G Kadirvel⁵

¹SMS, ICAR KVK West Tripura,

²Senior Scientist and Head, ICAR KVK West Tripura,

³Head and Principal Scientist ICAR RC for NEH Regional Center, Tripura

⁴Director ATARI Zone VII, Umiam, Meghalaya

⁵Director ICAR RC for NEH Region, Umiam, Meghalaya

Corresponding Author

Nagaraju M C

Email: nagaent93@gmail.com



Keywords

Natural farming, West Tripura, Sustainable Agriculture, Chemical-Free Farming, Soil Health, Organic Farming.

How to cite this article:

Nagaraju, M. C., Das, G., Chakraborti, M., Devi, M. B., Choudhury, B. U., Mohanty, A. K. and Kadirvel, G. 2026. Importance of Practicing Natural Farming and Future Prospects in West Tripura District. *Vigyan Varta* 7 (10): 114-118.

ABSTRACT

Natural farming is emerging as a sustainable alternative to conventional agriculture, particularly in ecologically sensitive regions like Tripura. West Tripura district has witnessed a gradual shift toward natural farming practices due to rising concerns over soil degradation, environmental pollution and health hazards associated with chemical inputs. Recent reports indicate that Tripura has already developed over 25,000 hectares under organic and natural farming and aims to expand up to 50,000 hectares in the coming years. This article highlights the importance of natural farming, current adoption trends in Tripura, problems associated with chemical-based agriculture and sustainable solutions. It also discusses the future potential of natural farming in West Tripura for ensuring ecological balance, economic viability and improved human health.



INTRODUCTION:

Agriculture is the backbone of Tripura's economy, where more than 70% of the population depends on farming for livelihood. The state is characterized by small and marginal farmers, accounting for nearly 95% of the farming community. Despite having only about 40% cultivable land, agriculture remains the primary source of income and sustenance. In recent years, natural farming has gained momentum in Tripura as a sustainable alternative to chemical-intensive agriculture. The Government of Tripura has initiated various programmes to promote natural and organic farming practices. According to recent data, natural farming has already been introduced on approximately 5,000 hectares initially, with further expansion underway (Nath, 2025). Moreover, over 25,000 hectares have been developed under organic farming and the state aims to expand this area to 50,000 hectares (Nath, 2025).

In districts like West Tripura, training programmes conducted by Krishi Vigyan Kendras have empowered farmers to adopt natural farming techniques. For example, about 1250 farmers were trained in natural farming practices under the National Mission on Natural Farming. These initiatives indicate a growing awareness and acceptance of sustainable farming methods among farmers.

Importance of Practicing Natural Farming

Natural farming plays a vital role in achieving sustainable agricultural development by improving soil health, reducing production costs, protecting the environment, ensuring food safety, and enhancing climate resilience. Continuous use of chemical fertilizers and pesticides has led to the deterioration of soil structure, depletion of beneficial microorganisms, and declining soil fertility. In contrast, natural farming restores soil health by

increasing organic matter and microbial activity through practices such as mulching, application of bio-inputs, and the use of locally available organic resources, thereby improving soil aeration and water-holding capacity (Joshi *et al.*, 2024). It also significantly reduces the cost of cultivation by eliminating dependence on expensive synthetic fertilizers and pesticides. Farmers in Tripura have reported lower input costs and improved profitability by utilizing locally available materials such as cow dung, cow urine, and botanical extracts (Dey, 2025).

Furthermore, natural farming promotes environmental sustainability by minimizing soil, water, and air pollution while conserving biodiversity, including beneficial insects, earthworms, and soil microorganisms. Agroecological practices such as mixed cropping and crop diversification strengthen ecosystem stability and reduce pest outbreaks. Another important advantage is the production of safe, residue-free food, which helps protect human health from the harmful effects of chemical residues in food and water (FAO, 2018). Additionally, natural farming enhances climate resilience by improving soil moisture retention, reducing irrigation requirements, increasing carbon sequestration, and enabling farming systems to better withstand droughts, erratic rainfall, and other extreme weather events. Thus, natural farming serves as a sustainable, economically viable, and environmentally friendly approach that supports long-term agricultural productivity while safeguarding natural resources and public health.

Current Scenario of Natural Farming in Tripura

Natural farming is gradually expanding across Tripura. Success stories from villages like Champamura show that more than 232

families have adopted natural farming practices, cultivating crops such as rice, vegetables, pulses, and millets (Tripura Times, 2025). Farmers have reported improved soil fertility, reduced pest attacks, and better market demand for their produce. The state government is actively promoting natural farming through training, subsidies, and certification programmes. Organic products from Tripura, including rice, ginger, turmeric, and pineapple, have already been exported to various markets, generating significant income (Nath, 2025).

Problems Associated with Chemical Inputs

The excessive and indiscriminate use of chemical fertilizers and pesticides, although initially responsible for increasing agricultural productivity, has led to several adverse consequences for agriculture, the environment, and human health. Continuous application of synthetic chemicals has degraded soil quality by reducing organic matter, disrupting beneficial microbial populations, and creating nutrient imbalances, ultimately resulting in declining soil fertility and productivity. Chemical runoff from agricultural fields contaminates rivers, ponds, and groundwater, causing environmental pollution and posing serious threats to aquatic ecosystems and drinking water quality.

Excessive pesticide use has also accelerated the development of pest resistance and pest resurgence, forcing farmers to apply higher doses or more toxic chemicals to achieve effective control. Moreover, livestock consuming chemically contaminated fodder may experience health disorders, reduced productivity, and impaired reproductive performance. Human exposure to pesticide residues through food, water, or direct contact has been associated with various health problems, including respiratory ailments, skin disorders, neurological complications, and other chronic diseases. In addition,

dependence on costly chemical fertilizers and pesticides has substantially increased the cost of cultivation, placing a greater financial burden on farmers and reducing their overall profitability. These challenges underscore the urgent need for sustainable and eco-friendly farming practices, such as natural farming, to restore ecological balance and ensure long-term agricultural sustainability (Münster, 2018).

Solutions through Natural Farming

Natural farming offers sustainable and eco-friendly solutions to many of the challenges associated with conventional chemical-based agriculture. It emphasizes the use of bio-inputs such as Jeevamrit, Neemastra, Dashparni Ark, and other indigenous formulations prepared from locally available materials, which effectively manage pests and diseases without causing harm to the environment or beneficial organisms. By enhancing organic matter content and stimulating beneficial microbial activity, natural farming promotes soil regeneration, restores soil fertility, and improves long-term productivity. The adoption of integrated farming systems, involving the integration of crops, livestock, fisheries, and other complementary enterprises, enhances resource recycling, increases farm resilience, and improves overall farm income. Indigenous practices specific to plant protection have a promising role in current agriculture. They are eco-friendly, low-cost technology and can play a significant role in sustainable pest management (Singh *et al.*, 2021)

Water conservation is another major advantage of natural farming, as practices such as mulching, cover cropping, and the application of organic amendments improve soil moisture retention, reduce evaporation losses, and lower irrigation requirements. Furthermore, natural farming encourages community-based approaches through farmer groups, self-help groups (SHGs), and farmer producer



organizations (FPOs), which facilitate knowledge exchange, collective learning, input sharing, and better marketing opportunities. Together, these practices contribute to environmentally sustainable, economically viable, and socially inclusive agricultural development while ensuring long-term food and livelihood security.

Future Prospects in West Tripura

West Tripura possesses immense potential to emerge as a leading hub for natural farming owing to its favorable agro-climatic conditions, rich biodiversity, abundant natural resources, and strong traditional knowledge systems practiced by local farming communities. The growing awareness among farmers regarding the adverse effects of chemical-intensive agriculture, coupled with increasing institutional support through government schemes, research organizations, and extension services, is accelerating the adoption of natural farming practices in the district. Looking ahead, significant opportunities exist for expanding the area under natural farming, particularly in line with the Government of Tripura's target of bringing nearly 50,000 hectares under natural farming, with West Tripura expected to play a major role in achieving this objective (Nath, 2025).

The rising consumer demand for organic and chemical-free agricultural products in domestic and international markets offers farmers the potential to earn higher incomes through premium pricing and export opportunities. Furthermore, natural farming promotes labour-intensive activities such as compost preparation, mulching, bio-input production, and enterprise diversification, thereby generating additional employment opportunities in rural areas. The adoption of sustainable and eco-friendly farming practices can also encourage greater participation of rural youth by providing profitable and environmentally responsible livelihood

options. Moreover, natural farming is well aligned with the principles of climate-smart agriculture, as it enhances soil health, conserves natural resources, improves resilience to climate variability, and contributes to sustainable food production. Consequently, the widespread adoption of natural farming in West Tripura can strengthen agricultural sustainability, improve farmers' livelihoods, and support long-term environmental conservation.

CONCLUSION

Natural farming is not just an alternative but a necessity for sustainable agriculture in regions like West Tripura. It addresses critical issues related to soil health, environmental degradation, and human health while ensuring economic viability for farmers. With strong institutional support, increasing awareness, and favorable policies, natural farming has the potential to transform West Tripura into a model district for sustainable agriculture.

The transition from chemical-based agriculture to natural farming represents a paradigm shift toward ecological harmony and long-term sustainability. By embracing natural farming, West Tripura can ensure food security, environmental conservation, and improved livelihoods for future generations.

REFERENCES

- Dey, A. (2025). Natural farming success in Tripura villages. Tripura Chronicle. <https://northeasttoday.in/.../tripura-sets-25200-hectare>.
- FAO (2018). Agroecology for sustainable agriculture. <https://www.fao.org/agroecology/en>
- Joshi, A. K., Shamim, M., Ansari, M. A., Singh, R., Raghavendra, K. J., Swarnam, T. P., & Singh, R. (2024). Science of natural farming: Proven

- practices and their role in soil health and sustainability. *Special issue on in commemoration of*, 151.
- Münster, D. (2018). Performing alternative agriculture: Critique and recuperation in zero budget natural farming, South India. *Journal of Political Ecology*, 25(1).
- Nath, R. L. (2025). Expansion of natural farming in Tripura. <https://share.google/E87Cvxj2MJcHII0c7>
- Singh, S., Das, B., Das, A., Majumder, S., Devi, H. L., Godara, R. S., & Sahoo, M. R. (2021). Indigenous plant protection practices of Tripura, India. *Journal of ethnobiology and ethnomedicine*, 17(1), 50.
- Tripura Times (2025). Natural farming adoption in Champamura village. <https://share.google/91uVUOKDunPtWobka>