

Natural Farm Products and Diversified Farming through Natural Farming

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Farmers Details

Mr. Bhanu Kumar Singh, a progressive farmer from a village, Amni Lokipur from district Kaushambi, Uttar Pradesh, owning 4.0 Acres of cultivable land. After completing his Post graduation he chose to adopt farming as his profession. He shifted from conventional chemical farming to Natural Farming (NF) in 2023 after realizing the long-term damage of chemicals on soil fertility, crop quality, and farmer income. Motivated by the vision of reducing dependency on costly external inputs and restoring soil health, he gradually diversified his farm into an integrated system encompassing horticulture, vegetables, and livestock. His family actively participates in farming operations, especially in preparing bio-inputs, making his farm a model of family-driven sustainable agriculture.

During one of the awareness programmes of the KVK Kaushambi, he came to know about the Natural Farming which motivated him in this direction and he started gathering information about natural farming. Motivated by the vision of reducing dependency on costly external inputs and restoring soil health, he gradually diversified his farm into an integrated system encompassing horticulture, vegetables, and livestock. He has successfully transformed his small landholding of 1.0 acres into a model natural farming enterprise. Natural farming is generally adopted by the farmers as cultivation. Farmer was linked with the Department of Agriculture for getting financial support.

Mr. Bhanu Kumar Singh set an example by growing Paddy-Wheat- Moong using Subhash Palekar Natural Farming approach. He is producing quality natural Paddy-Wheat- Moong of excellent quality. His efforts and accomplishments have also been appreciated by Department of Agriculture.

Uniqueness of work related to NF

- Transitioned from chemical farming to natural farming due to declining soil fertility and high cost of fertilizers.
- Developed a self-sufficient farm ecosystem where crop, horticulture, livestock, and bio-input preparation are integrated.
- Promotes climate-resilient and low-cost farming with local resources.
- Acts as a lead farmer, training 50+ farmers in his village.

Major practices of NF adopted: Details

- Crops – Paddy-Wheat-Moong
- Horticulture – Vegetable Pea
- Intercropping - Wheat and Mustard
- Mulching - Practices both live mulching (cowpea/green gram between rows) and dry mulching (crop residues).
- VAPASA - Avoids excessive irrigation; irrigates only at critical growth stages.
- Integration of animals - Maintains 2 indigenous cows and these Cow dung and urine used in Jeevamrit, Beejamrit, Ghanjeevamrit, and bio-pesticide formulations.

Details of area renovation center developed at farm –

A Natural Farming Resource Center has been developed on 1.0 Acres of land. It includes:

- A shed for preparation of bio-inputs like Jeevamrit and Panchagavya.
- Demonstration plots for NF crops and horticulture.
- Training space for visiting farmers.
- Storage of crop residues for mulching.

This center acts as a learning hub and promotes peer-to-peer training.

Methodology of preparation of concoctions/bio-inputs /bio-pesticides (For 1.0 acre)

Beejamrit: It is a microbial paste made using 5 kg of fresh dung from desi cows, 5 liters of desi cow urine, 50-100 g of virgin soil (preferably from forests, banyan trees, or termite mounds), 50 g of calcium chloride, and 20 liters of water. The mixture is thoroughly stirred and fermented for 24 hours. It is used for seed dressing or dipping seedling roots. Seed dressing involves coating seeds with beejamrut before sowing and drying them in the shade.

Ghan-Jeevamrit : Ghan Jeevamrit is solid in form and is prepared using ingredients such as desi cow dung (150 kg), jaggery (1 kg), pulse flour (2 kg), virgin fertile soil for microbial culture (50-100g), native/desi cow's urine as required. Mix well cow dung, jaggery, pulse flour and soil. Add a little bit of cow urine to it as needed. Dry the mixture in shade for 2-4 days. Use in the field after drying and grinding well into small aggregates. It can be stored and used for 6 months.

Jeevamrit: Jeevamrit is a fermented microbial culture made from on-farm ingredients: 10 kg of fresh dung from desi cows, 10 liters of aged desi cow urine, 1.5 kg of cane jaggery (sugar) or sweet fruit pulp, and 1.5 kg of pulse flour mixed in a barrel with 180 liters of water. A handful (50-100 g) of virgin soil from banyan tree areas, forests, or termite mounds is added as a local microflora inoculant. The mixture is stirred daily and fermented for 48 hours in the shade. During fermentation, aerobic and anaerobic bacteria in cow dung and urine multiply as they decompose the organic ingredients. Cane jaggery enhances fermentation, and pulse flour provides protein energy. Jeevamrit is ready after 3-4 days in summer and 6-7 days in winter and is applied to soil twice a month at a rate of 200 to 600 liters per acre depending upon crops and soil conditions, either through irrigation water or as a foliar spray.

Agniastra: It is made by mixing 20 liters of cow urine with crushed tobacco powder (500 g), green chili (0.5 kg), garlic (0.25 kg), and neem leaves (5 kg). In a pot, add 20 liters of local cow urine, stir well, boil, cool, and ferment for 48 hours. After fermentation, filter the solution with cloth. Agniastra spray effectively controls pests like leaf roller, stem borer, fruit borer, and pod borer. Take 6-8 liters of filtered solution and dissolve it in 200 liters of water and spray it on one acre crop. It should be used within 3 months.

Brahmastra uses 10 liters of desi cow urine and a paste of neem, Pongamia (karanj), custard apple, castor, and datura leaves (2 kg each). The manually crushed paste is boiled until frothing appears, filtered, and fermented for 48 hours in shade, stirred twice daily. Brahmastra is sprayed at 6-8 liters per 200 liters of water for one acre and effectively controls sucking pests, fruit borer, and pod borer. After preparation, it should be used within one month.

Neemastra involves mixing 5 liters of desi cow urine, 1 kg of fresh cow dung, and 5 kg of neem leaf paste in 100 liters of water. Ferment the mixture for 48-96 hours, stirring twice daily, and filter with cloth. Neemastra is effective against sucking pests and leaf-eating caterpillars. Prepared material is sufficient for one acre.

Dasparni ark: Dashparni ark preparation involves ingredients of water (200 liters), urine of native cow (20 liters), dung of native cow (2 kg), leaves of ten plants (Neem, Karanj, Castor, Sitaphal, Bael, Marigold, Tulsi, Dhatura, Mango, Aak etc.) 2.0 kg each, turmeric, asafoetida powder 500 g, ginger chutney 500g (heeng) powder 10 gm, dry ginger powder 200 gm, tobacco powder 1.0 kg, hot green chilli chutney 1.0 kg and desi garlic chutney 1.0 kg. Dissolve cow dung and cow urine well in water and keep it for 2 hours. Mix turmeric powder, ginger chutney and asafoetida powder well and keep it in the shade for 24 hours. Stir this mixture, mix dry ginger 40 powder, tobacco powder, hot green chillies and deshi garlic chutney well and keep it for 24 hours. Crush the leaves of plants and press them in this mixture. Cover the mixture with a gunny bag and keep it for 30-40 days and stir it for 2-3 minutes in the morning and evening. Mix 6-8 liters of extract of this solution in 200 liters of water and spray it on one acre crop. Dashparni ark is used for control of borers, maggots/ caterpillars.

Sonthastra: Ingredients for using in one acre includes dry ginger 200 gm, desi cow's milk 5 liters and water 200 liters. Grind dry ginger and make powder. Mix it in 2 liters of water and boil it. Cool it when one liter is left. Boil 5 liters of indigenous cow's milk in a pot once. Cool the milk. Remove the cream of milk and use it domestically. Sieve the ginger water and boiled milk with the help of a cloth. After mixing in 200 liters of water, spray it on one acre crop. It is used for the control of fungus.

Khatti lassi (Sour butter milk): Ingredients for one acre include water 100 liters, khatti lassi (3-5 days old) 5 liters, a small piece of copper, turmeric

powder 50 gm. Keep the small piece of copper dipped for 3-5 days in khatti lassi Mix water and khatti lassi well and spray it on the crop after dissolving 50g turmeric powder in it. This is used to control fungal diseases. Also found to be virus killer.

Marketing Strategy of Production

- Direct marketing to consumers through weekly farmer markets.

- Digital Marketing to Stakeholder – e-NAM, APEDA, Amazon, Flipkart, Bigbasket, Blinkit etc.
- Supplies to Natural food outlets in Kaushambi Headquarter, Prayagraj and Fatehpur, Pratapgadh and Lucknow.
- Uses social media- Facebook, Instagram, Linkedin and WhatsApp groups to connect with urban buyers.
- Labels produce as “Naturally Grown – Chemical Free.”

Economic Analyses

Details of field Demonstration									
Natural farming					Farmer's Practice				
Name of Crop	Variety	Area (Acre)	Yield (Q/ha)	Total Cost of Cultivation (Rs./ha)	Name of crop	Variety	Area (ha)	Yield (Q/ha)	Total Cost of Cultivation (Rs./ha)
Wheat	DBW-187	1.0	26.52	24700	Wheat	DBW-187	1.0	40.65	34500
Paddy	CO-51	1.0	29.25	24400	Paddy	CO-51	1.0	47.56	31800

Input cost reduction: 40–60% compared to chemical farming.

Net returns increased due to premium price (25–30% higher).

Diversification in horticulture and livestock provides round-the-year income.

Influence on other farmers

Farm of Mr. Bhanu Kumar Singh has become a Model Farm and a large number of farmers and agricultural professionals often visit his fields to see the production technology used by him under natural farming of crops. He has been playing an instrumental role in the dissemination of this technology to the fellow farmers who are also getting adequately benefitted from his scientific temperament. He has active participated on several platforms.

Mr. Bhanu is not only an important resource person, as a Farmer Master Trainer on natural farming in the district but his services are being used by fellow farmers across the district. His farm is now being used as an important destination for exposure visits by the KVKs and Department of Agriculture of Kaushambi. As a Farmer Master Trainer, he is always willing to go extra mile in the process of training/helping his fellow farmers to achieve success in natural farming.

Impact

Farmer is happy because natural farming has not only reduced the expenditure on chemicals but also enriched the soil with beneficial microorganism. Above all he has immense feeling of satisfaction that he is feeding his family and consumers with safe and healthy food.

- Improvement in soil fertility, water holding capacity, and biodiversity.
- Reduction in chemical pesticide usage → healthier ecosystem.
- Increased household nutrition diversity due to mixed cropping.
- Better profitability and reduction in farmers' indebtedness.
- Boost in community confidence towards sustainable agriculture.
- Increased the net income compared to Conventional & Organic farming.

How KVK can help in promotion of NF

Krishi Vigyan Kendras, Kaushambi can play a crucial role in scaling natural farming practices. KVKs can organize regular capacity-building programs on preparation and application of bio-inputs, mulching, and intercropping systems. They can establish demonstration plots at KVK Farm field and farmer fields. KVKs should also conduct soil health testing, economic

analysis, and documentation of success cases for wider dissemination. Through training of rural youth, Farm Fairs, exposure visits, and ICT-based advisories, KVKs can motivate more farmers to adopt Natural Farming. Additionally, by

collaborating with local Institutions, and government schemes, KVKs can create a strong ecosystem for scaling natural farming and reduce farmers' dependence on chemicals, thereby moving towards sustainable agriculture.



Distribution of Inputs



Training on Farmer's Field by KVK Scientist



Spraying Of Jeevamrit



Field Day of Crop –Rice



Field Day of Crop –Wheat



Media Coverage

