

Natural farming in India

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Natural farming also known as prakritik krishi is a low input and climate resilient traditional farming system which completely eliminates the use of synthetic chemical agro-inputs such as chemical fertilizers and pesticides. India has achieved food security by application of chemical fertilizers, pesticides and by using high yielding crop varieties. These methods have increased the production from agricultural fields but have damaged the environment very drastically. Continuous use of chemical based inputs in agriculture contaminates soil, water and air. Run off of chemicals from fields in water bodies pollutes them affects the water ecosystem. So there is urgent need of some alternatives to these chemical based agricultural processes. Prime Minister Narendra Modi said during a conclave on natural farming in December 2021 that “We have to take our agriculture out of the chemistry lab and connect it to the lab of nature” and emphasized the use of natural ecofriendly methods of agricultural farming.

Natural farming is a system where farming or agriculture is practiced by applying laws of nature. Natural farming comes under the agro ecological practices where focus is on the use of bio inputs which are produced on farm only instead of purchasing them. Reduction in purchase of farm inputs not only decreases the expenditure but also minimizes the environmental damage. Natural farming encourages the farmers to use locally sourced and low cost inputs such as jaggery, cow dung, cow urine, mulch, crop covers and pulse flour. The main aim of these natural approaches is to enhance soil quality by maintaining organic matter and its microbial community. Natural farming allows a wide range of ecofriendly practices such as composting, mulching, crop rotation, intercropping, green manuring and livestock integration which creates a holistic system of farming which is self-regulating and sustainable. Among various the most popular method of natural farming is ZeroBudget Natural Farming (ZBNF). ZBNF was introduced in India by agriculturist Padma Shri

Subhash Palekar in mid 1990s. He introduced this method as an alternative to methods of green revolution which were chemical fertilizers pesticides and intensive irrigation. The word zero budgets refer to the zero cost of production for crops. ZBNF means raising crops without any external input as a farm is capable to produce almost all the inputs required by a crop to grow. Data from National Sample Survey Office (NSSO) show that more than 50% of the farmers are in debt due to the high cost of farm inputs such as fertilizers and pesticides. To realize the goal of increasing farmers income, the farm expenditures are need to be brought down and natural agricultural practices such as ZBNF have to be encouraged to reduce dependence of farmers on the external expensive inputs.

Main elements of Zero Budget Natural Farming.

Use of bio stimulants is an integral part of natural farming to enhance soil microbial community. The four main elements or bio stimulants used in ZBNF are:

- 1. Beejamrita:** This includes coating of seeds with formulations prepared by using cow dung and cow urine. This coating on seeds protects them from various fungal and other soil borne diseases.
- 2. Jeevamrita:** Jeevamrita is mainly a mixture of cow dung and cow urine. Few other elements added to this mixture are jiggery, pulse flour and uncontaminated soil. This solution turn into a fermented microbial culture which when applied to soil it adds nutrients to soil and enhanced microbial activities and nutrient availability to plants. Jeevamrit also increases the carbon content of soil and protect the crop from soil pathogens.
- 3. Mulching:** The practice of mulching includes addition of a protective covering or a layer of organic matter such as plant residues, leaf, hay, wood products or compost on the field soil. This layer prevents the water loss from soil through evaporation, prevent field from heat and pest attack. The process of mulching also help in weed suppression. The mulch contributes to soil humus formation and increases its fertility.
- 4. Waaphass:** Waaphasa is a method to aerate soil through a favorable microclimate and aeration of soil is necessary for plant growth and development.

**Jeevamrit****Beejamrit****Mulching**

ZERO BUDGET NATURAL FARMING (ZBNF)

**Waaphasa****Fig A: Four Pillars of Natural Farming**

Insect and pest management in natural farming includes the use of farm based pesticides such as neemastra and kashayam (water decoction of herbs).

Principles of natural farming

- Synthetic agro-inputs such as chemical fertilizers, pesticides and herbicides should not be used.
- The soil should be covered for the entire year with crops.
- The farm should be based on polycropping
- local seeds should be used as these are less costly and more resilient than hybrids
- Minimal or no tillage
- Bio stimulants should be used as catalyst to enhance microbial activities of soil
- Introduction of livestock in the farming
- Pest management should be through biological extracts.

Natural farming: A brief context in India

As per NITI Ayog report it is estimated that about 2.5 million farmers in India are practicing natural farming. The area under natural farming is estimated to be 4 lakh hectares

and area of about 3.8 million hectares which makes about 2.7% of total area sown in India under organic or natural methods of farming. Andhra Pradesh is the leading state of India with maximum area in terms of natural farming. In 2018 Andhra Pradesh government put a plan forward to become India's first state to practice 100% natural farming by 2024. Other states like Chhattisgarh, Kerala and Himachal Pradesh also practice natural farming methods in agriculture. In Andhra Pradesh over 6.30 lakh farmers have registered for natural farming in 2.9 lakh hectares in 2021-22, said the chief minister Y S Jagan Mohan Reddy during a national workshop on natural farming organized by NITI Ayog. As on 31 October, 2021, 1,46,438 farmers are practising Zero Budget Natural in Himachal Pradesh.

Promotion of natural farming

Natural farming is promoted in India as Bhartiya Prakritik Krishi Paddhati Programme (BPKP) or India Natural Farming Scheme introduced during 2021 as a sub scheme of centrally sponsored scheme Prampragat Krishi Vikash Yojana (PKVY) which started in 2015. Under BPKP a financial assistance of Rs 12200/ hectare is provided for 3 years for capacity building, cluster formation, organizing conferences, and continuous handholding by trained personnel and certification. The government released a fund of Rs 4980.99 lakh under BPKP to 8 states namely, Andhra Pradesh, Chhattisgarh, Himachal Pradesh, Kerala, Madhya Pradesh, Odisha, Tamilnadu and Jharkhand.

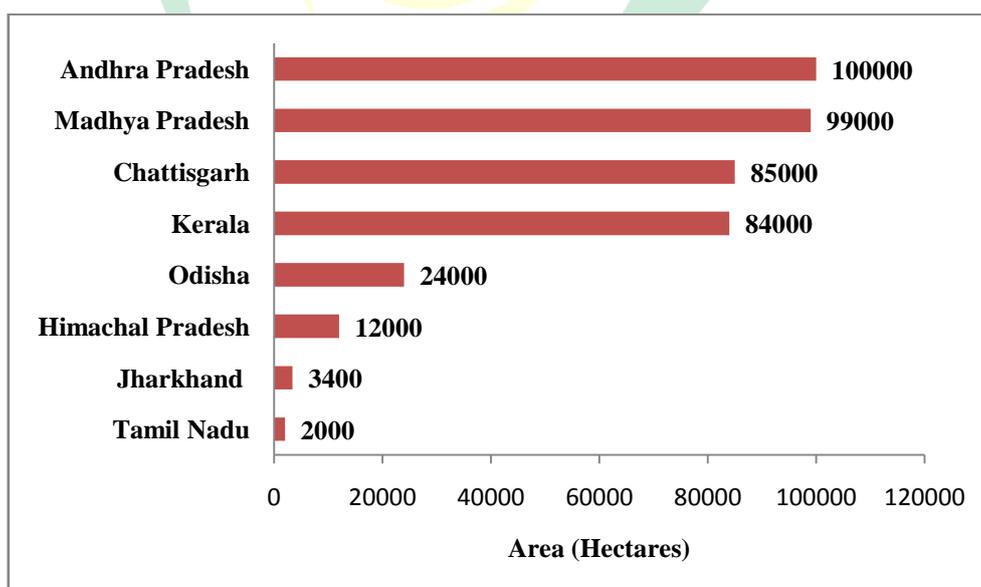


Fig B: State wise Area covered under Bhartiya Prakritik Krishi Paddhati (BPKP)



Himachal Pradesh state government launched a scheme Prakritik kheti khushhal Kisan Yojana by adopting Zero Budget Natural Farming

Budget 2022

According to economic survey 2021 the main objective of natural farming is to eliminate the use of chemical farm inputs, the use of which pollute environment and to promote the good economic practices by using science and technology. In Budget 2022 speech the finance minister Nirmala Sitaraman announced that “throughout the country, chemical free natural farming will be promoted with a focus on farmer’s land in 5km wide corridor along Ganga River at the initial stage”. The government of India announced that it will constitute a committee to promote Zero Budget Natural Farming which will make suggestions and strategies to introduce natural farming to farmers and in Universities curriculum.

Benefits of Natural farming

- Minimizes the cost production
- Improves yield
- Reduce environmental pollution
- Improve soil organic matter and overall health
- Improve human health
- Reduce water consumption in farming
- Builds a resilient agriculture system
- Reduces subsidy burden and arrest growing needs of chemical fertilizers and pesticides