

Natural Farming: Zero Budget Farming

Hansa Baradwal* and Vikram Baradwal**

* Department of Soil Science and Agriculture Chemistry, Institute of Agriculture Science
Bundelkhand University, Jhansi, UP

** Department of Plant breeding, Institute of Agriculture Science Bundelkhand
University, Jhansi, UP

ARTICLE ID: 52

Introduction: -

Natural Farming is a chemical-free farming system rooted in Indian tradition enriched with modern understanding of ecology, resource recycling and on-farm resource optimization. It is considered as agroecology based diversified farming system which integrates crops, trees and livestock with functional biodiversity. It is largely based on on-farm biomass recycling with major stress on biomass mulching, use of on-farm cow dung-urine formulations; maintaining soil aeration and exclusion of all synthetic chemical inputs. Natural farming is expected to reduce dependency on purchased inputs. It is considered as a cost-effective farming practice with scope for increasing employment and rural development.

Concept of NF: -

It is a diversified farming system that integrates crops, trees and livestock, allowing the optimum use of functional biodiversity. Natural Farming if done effectively enhances farmers' income while delivering many other benefits, such as restoration of soil fertility and environmental health, and mitigating and/or reducing greenhouse gas emissions. Natural Farming builds on natural or ecological processes that exist in or around farms.

Features of Natural Farming

- ✓ According to natural farming principles, plants get 98% of their supply of nutrients from the air, water, and sunlight. And the remaining 2% can be fulfilled by good quality soil with plenty of friendly microorganisms. (Just like in forests and natural systems)
- ✓ The soil is always supposed to be covered with organic mulch, which creates humus and encourages the growth of friendly microorganisms.
- ✓ Farm made bio-cultures named 'Jeevamrit, Beejamrit etc.' are added to the soil instead of any fertilizers to improve microflora of soil. Jeevamrit,

Beejamrit are derived from very little cow dung and cow urine of desi cow breed.

- ✓ It holds the promise of enhancing farmers' income while delivering many other benefits, such as restoration of soil fertility and environmental health, and mitigating and/or reducing greenhouse gas emissions.
- ✓ The system requires cow dung and cow urine (Gomutra) obtained from Indian breed cow only. Desi cow is apparently the purest as far as the microbial content of cow dung, and urine goes.
- ✓ In natural farming, neither chemical nor organic fertilizers are added to the soil. In fact, no external fertilizers are added to soil or given to plants whatsoever.
- ✓ In natural farming, decomposition of organic matter by microbes and earthworms is encouraged right on the soil surface itself, which gradually adds nutrition in the soil, over the period.
- ✓ In natural farming there is no plowing, no tilting of soil and no fertilizers, and no weeding is done just the way it would be in natural ecosystems.
- ✓ Natural, farm-made pesticides like Dashparni ark and Neem Astra are used to control pests and diseases.
- ✓ Weeds are considered essential and used as living or dead mulch layer.
- ✓ Multi-cropping is encouraged over single crop method.

Natural Farming Practices: -

Natural farming aims at restoring soil health, maintenance of diversity, ensure animal welfare, stress on efficient use of natural/local resources and promote ecological fairness. Natural farming is an ecological farming approach where farming system works with the natural biodiversity, encouraging the soil's biological activity and managing the complexity of living organisms both plant and animal to thrive along with food production system. Important practices, essential for adoption of natural farming includes:

- ✓ No external inputs,
- ✓ Local seeds (use of local varieties),
- ✓ On-farm produced microbial formulation for seed treatment (such as bijamrita),
- ✓ On-farm made microbial inoculants (Jivamrita) for soil enrichment,

- ✓ Cover crops and mulching with green and dry organic matter for nutrient recycling and for creating a suitable micro-climate for maximum beneficial microbial activity in soil.
- ✓ Mixed cropping,
- ✓ Managing diversity on farm through integration of trees
- ✓ Management of pests through diversity and local on-farm made botanical concoctions (such as neemstra, agniastra, neem ark, dashparni ark etc);
- ✓ Integration of livestock, especially of native breed for cow dung and cow urine as essential inputs for several practices and
- ✓ Water and moisture conservation.



Objectives and Aims for Natural Farming Promotions: -

Preserve natural flora and fauna

- Restore soil health and fertility and soil's biological life
- Maintain diversity in crop production
- Efficient utilization of land and natural resources (light, air, water)
- Promote natural beneficial insects, animals and microbes in soil for nutrient recycling and biological control of pests and diseases
- Promotion of local breeds for livestock integration
- Use of natural / local resource-based inputs
- Reduce input cost of agricultural production
- Improve economics of farmers

Principles for Natural Framing: -

- Adoption of diversified cropping system-based agriculture
- Recycling of naturally available nutrients in fields
- Recycling of on-farm generated biomass
- Use of locally developed and refined practices based on plant, animal and microbial source as raw materials
- Innovative practices continuously evolve on the field of farmers based on the cropping pattern, local climatic conditions, altitude, soil quality, severity and variability of insects and pests etc.

Scope of Natural Farming

There are many working models of natural farming all over the world, the zero budget natural farming (ZBNF) is the most popular model in India. Natural Farming improves soil fertility, environmental health as well as helps in the reduction of greenhouse gas emissions and also promises the enhancement of farmer's income. In broad terms, Natural Farming can be considered as a prominent strategy to save the planet Earth for future generations. It has the potential to manage the various farmland practices and hence sequester the atmospheric carbon in the soils and plants, to make it available for plants.

Importance of Natural Farming

Several studies have reported the effectiveness of natural farming in terms of increase in production, sustainability, saving of water use, improvement in soil health and farmland ecosystem. It is considered as a cost-effective farming practices with scope for raising employment and rural development. Natural Farming offers a solution to various problems, such as food insecurity, farmers' distress, and health problems arising due to pesticide and fertilizer residue in food and water, global warming, climate change and natural calamities. It also has the potential to generate employment, thereby stemming the migration of rural youth. Natural Farming, as the name suggests, is the art, practice and, increasingly, the science of working with nature to achieve much more with less.

Benefits of Natural Farming

- ✓ **Improve Yield Farmers practicing** Natural Farming reported similar yields to those following conventional farming. In several cases, higher yields per harvest were also reported.

- ✓ **Ensures Better Health:** - As Natural Farming does not use any synthetic chemicals, health risks and hazards are eliminated. The food has higher nutrition density and therefore offers better health benefits.
- ✓ **Environment Conservation:** -Natural Farming ensures better soil biology, improved agro-biodiversity and a more judicious usage of water with much smaller carbon and nitrogen footprints.
- ✓ **Increased Farmers' Income:** - Natural Farming aims to make farming viable and aspirational by increasing net incomes of farmers on account of cost reduction, reduced risks, similar yields, incomes from intercropping.
- ✓ **Employment Generation**



Current Scenario of Natural Farming in India

There are several states practicing Natural Farming. Prominent among them are Andhra Pradesh, Chhattisgarh, Kerala, Gujarat, Himachal Pradesh, Jharkhand, Odisha, Madhya Pradesh, Rajasthan, Uttar Pradesh and Tamil Nadu. Till now 6.5 lakh ha. area is covered under natural farming in India. Different State governments are promoting natural farming through various schemes.

Rajasthan: -

Honourable Chief Minister of Rajasthan during the budget speech of FY2019-20 declared support to natural farming to reduce input costs with a view to empower farmers through remunerative agriculture – Kheti Mein Jaan Toh Sashakt Kisan. The scheme in the form of a pilot project was initiated in three districts of the State viz. Tonk, Sirohi and Banswada. Under the scheme, 18,313 farmers were trained in a two-day long workshop conducted by master-trainers of the Department. 10,658 farmers were provided with drums, buckets, jugs and sprayers at a subsidy of up to 50% of their costs but limited to Rs 600 per farmer for preparing the organic inputs.

Reference: -

<http://naturalfarming.dac.gov.in/>

<https://ncof.dacnet.nic.in/>

<https://blog.bijak.in/>

<https://www.niti.gov.in/>

