



## Benefits of Organic Farming and Natural Farming: A New Revolution in Agriculture

(\*E. Jeevana Sai, Dr. Rajeev and M. Siyon Kumari)

Division of Agronomy, Lovely Professional University, Jalandhar -144411

\*Corresponding Author's email: [gvansai3@gmail.com](mailto:gvansai3@gmail.com)

### Indian Scenario Regarding Organic Farming

- ❖ India ranks 1<sup>st</sup> in number of organic farmers and 9 in terms of area under organic farming.
- ❖ Sikkim became the first State in the world to become fully organic in 2016.
- ❖ Northeast India has traditionally been organic and the consumption of chemicals is far less than the rest of the country.
- ❖ The major organic exports from India have been flax seeds, sesame, soybean, tea, medicinal plants, rice and pulses.
- ❖ There was an increase of nearly 50% in organic exports in 2018-19, touching Rs. 5151 crores.
- ❖ Commencement of exports from Assam, Mizoram, Manipur and Nagaland to UK, USA, and Italy have proved the potential by increasing volumes and expanding to new destinations as the demand for health foods increases.

### Principles of Organic Farming

- ✚ Principle of health
- ✚ Principle of ecology
- ✚ Principle of fairness
- ✚ Principle of care

### Aims of organic farming

- ✚ Maintain soil health.
- ✚ Maintain Ecological balance.
- ✚ Avoid Ground water and air pollution.
- ✚ Maintain soil and crop productivity.

**Organic farming** as a system of crop production is to feed the soil rather than feed the plant.

- Use of on-farm residues
- Use of off-farm residues
- Use of organic waste
- Use of animal manures
- Use of crop rotation
- Intercropping with legumes
- Biological pest control
- Bio-herbicides
- Integrated Plant Nutrition (IPN)
- Integrated Farming System (IFS)

## Natural Farming

- ✓ Natural farming is environment-friendly and sustainable. It is **low cost in production** with high **productivity/profitability**.
- ✓ Urine based farming system that does not involve any external Chemical or Organic Fertilizers
- ✓ It is known by various names like **Zero Budget Natural Farming, Prakrithik Krishi, Cow Based Natural Farming, Shashwat Kheti, Chemical Free Agriculture**, etc.
- ✓ GoI is promoting Natural Farming through a scheme named **Bhartiya Prakrit Krishi Padhti (BPKP)**

### Importance of Desi Cow in ZBNF

- ✓ One gram of desi cow dung contains **300 to 500 crores** of beneficial effective microbes.
- ✓ Cow urine and dung are **antibiotics, antiseptic, anti-fungal and antioxidant**. It is disinfectant and it improves soil fertility.
- ✓ These micro-organisms decompose the **dried biomass on the soil and make available nutrients** to the plants.
- ✓ All Indian cow breeds are suitable for ZBNF.
- ✓ Dung and urine from one desi cow are sufficient to cultivate **30 acres** of land in ZBNF.
- ✓ Cow dung is a **natural growth promoter** for the plant.
- ✓ Cross bred Jersey & Holstein Friesian cows are not suitable for ZBNF, there are **more pathogens** in their dung and urine.

### Basic Pillars of Natural Farming

Sr No.	Methods	Preparation	Benefits
1	Jivamrita	For (1acre) It is made from cow-dung (10 kg), urine (5-10 litre), jaggery (1kg) and flour (1kg) and is applied to crops with each irrigation cycle.	It provides nutrients and promotes <b>activity of microorganisms</b> in soil, as well as increases earthworm activity. It also helps to prevent fungal and bacterial diseases.
2	Bijamrita	For (10Kg Seed) it is basically made up of water (2litre), cow dung (500gm), urine (500ml), lime (5gm) and a little quantity of soil.	It is used for <b>seed treatment</b> , protecting young roots from fungus as well as from soil and seed-borne diseases.
3	Acchadana Mulching	It can be done by soil mulch or straw mulch.	It conserves <b>soil moisture</b> , by <b>reducing evaporation</b> .
4	Whapasa moisture	The irrigation should be reduced, and irrigation should be practiced at noon in alternate furrows.	It is an appropriate proportion of <b>air and water molecules</b> present in soil.

### Pest Management in ZBNF

Sr No.	Name of Pest Management Formulae	Composition	Benefits
1	Agniastra	It composed of 20 litres Local cow urine, 500 gm Tobacco, 500 gm of Green Chilli, 500gm of Local Garlic, 5kg Neem leaves pulp (crushed in urine). For 1acre spraying, 6-8 litres Agniastra left after boiling is taken in 200 litres water.	It is effective against the pests like <b>leaf roller, stem borer, fruit borer, and pod borer</b> .

2	<b>Brahmastra</b>	It is composed of 10 lit local cow urine, 5 kg Neem leaves, Guava, Mango, Neem and Castor (Eranda) leaves pulp crushed (2-2 kg each). It is prepared by crushed and boiled in desi cow urine. For 1acre 2.5-3 litres solution mix in 200 lit water and use as spray.	It is used to <b>control all sucking pests, fruit borer, and pod borer.</b>
3	<b>Neemastra</b>	It is made up of local cow urine (5 litres), cow dung (5 kg) and neem leaves (5 kg) water (100 litres). It is prepared by mixing all materials and used after 48-72 hours for 1acre.	It is used for <b>sucking pests and mealy bugs.</b>
4	<b>Dashparni ark</b>	It composed of 200 liters Water, 20 liters local cow urine, 2 kg Cow Dung, 500 gm Turmeric powder, 500gm ginger paste, 200 gm Asafoetida (Heeng) Powder, 1kg Tobacco powder, 1 kg of Green Chilli paste, 1 kg Garlic paste, 2-2 kg Leaves of 10 plants Castor (Eranda), Neem karang, Custard apple, Bael, aak, datura, mango, guava, marigold, turmeric. Then mix all material then use this solution for 1acre after 28 days.	It is used to <b>control all sucking pests and borers.</b>

**Benefits perceived by NF adopter-farmers.**

- Reduced cost of cultivation
- Freedom from chemicals
- Better taste and product quality
- Premium product price
- Better crop during dry spell
- Improved soil quality
- No exposure to pesticide

**Perception of non-NF farmers for not adopting NF**

- Non-availability of readymade Jeevamritha
- Fear of poor yield
- Not owning indigenous cow
- More engagement in farming
- No guarantee of premium price
- Possibility of crop failure

Farming System	Specific inputs used	Advantages & Disadvantages
<b>Organic farming</b>	<ul style="list-style-type: none"> <li>▪ Farm Yard Manure(FYM)</li> <li>▪ Vermi composting</li> <li>▪ Bio-fertilisers</li> <li>▪ Panchagavya</li> <li>▪ HYV/ Hybrid seeds</li> <li>▪ Biological pest and diseases management</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Chemical free</b></li> <li>▪ <b>Eco friendly</b></li> <li>▪ <b>Assured market for contract farmers</b></li> <li>▪ <b>Premium price</b></li> <li>▪ Huge quantity of FYM</li> <li>▪ Yield reduction during conversion period</li> <li>▪ Expensive for consumers</li> </ul>
<b>Natural farming</b>	<ul style="list-style-type: none"> <li>▪ Indigenous cow centric</li> <li>▪ Jeevamritha &amp; FYM</li> <li>▪ Ghanajeevamritha</li> <li>▪ Beejamritha</li> <li>▪ Mulching Inter-/ mixed/ poly-crops</li> <li>▪ Local cultivars seeds</li> <li>▪ Home made materials (Kasayams)for pests &amp;diseases control</li> <li>▪ Agneyastra, Neemastra, etc.</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Regular &amp; better farm income from intercrop</b></li> <li>▪ <b>Lower production cost</b></li> <li>▪ <b>Less use of FYM/Inputs</b></li> <li>▪ <b>Improved family health- non use of pesticides &amp; food diversity</b></li> <li>▪ <b>Improved soil health</b></li> <li>▪ Need of indigenous cow dung &amp; urine</li> <li>▪ Possibility of lower yield</li> <li>▪ More farm engagement</li> <li>▪ No established market/certification</li> </ul>

## Conclusion

Finally organic and natural farming both have many positive aspects that help with sustainable agriculture and caring for the environment. There are many benefits for the environment, farmers, and consumers from these practices, which emphasize soil health, decrease synthetic input consumption, and enhance biodiversity. Certified organic farms are well-known and respected all over the world for their commitment to natural agricultural practices that do not use synthetic pesticides. Natural farming, in contrast, is more all-encompassing; it builds resilient, self-sustaining agricultural systems by integrating indigenous microbes and harmonizing with local ecosystems.

## References

1. <https://naturalfarming.niti.gov.in/benefits>
2. Nandan, Neelesh & Gami, Attika. (2015). Organic Farming: A new revolution in agriculture.
3. Ponti de T, Bert rijk, Martin K Van Ittersum (2012) The crop yield gap between organic and conventional agriculture; agriculture systems 108:1-9