

ZERO BUDGET NATURAL FARMING – need of the hour

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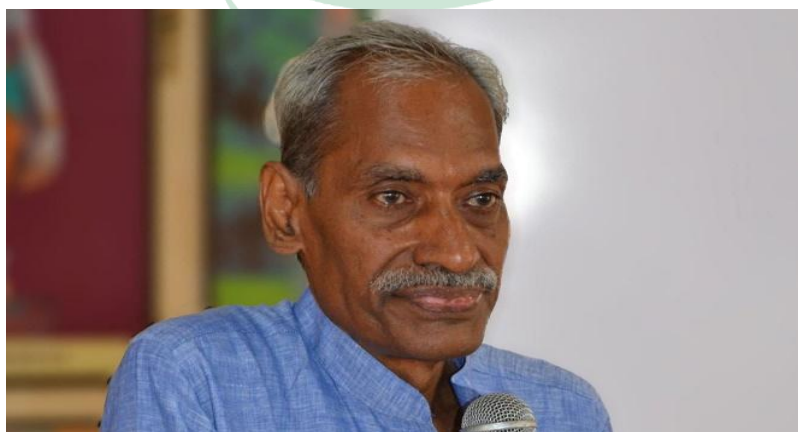
Introduction:

The modern agricultural techniques relies heavily on chemicals and machines causing undesirable side-effects in the soil and aerial environment. The usage of agricultural chemicals as well as antibiotics and/or hormones leave carcinogenic residues in the food. With heavy reliance on machines the rate at which soil and energy resources are being depleted is unsustainable.

This challenge of sustainable farming is being addressed with Zero Budget Natural Farming (ZBNF). Zero Budget Natural Farming (ZBNF) as the name implies, is a method of farming where the cost of cultivation of crops is almost zero.

Consequently, farmers are liberated from purchase of pesticides and fertilizers to maintain or increase their produce yields. By providing this opportunity to reduce the burden of agricultural cost for the farmers, ZBNF has potential to double their income.

The creator of Zero Budget Natural Farming in India is Padamshri Subhash Palekar.





He has been bestowed with the title “**Krishi ka Rishi**” by farming communities across the country. Palekar's passion in farming grew as a result of his upbringing in an agricultural family. He earned bachelors degree in agriculture from Nagpur College of Agriculture and returned to his birthplace in 1972 to continue farming with his family. The use of pesticides and artificial fertilisers increased crop productivity for more than a decade, as projected. As a result, the negative effects of these technologies began to emerge, resulting in lower crop yields. Chemical pesticides and fertilisers, according to Palekar, are a source of environmental damage as well as long-term health consequences. From 1989 until 1995, he experimented with sustainable alternatives. As a result, numerous ways were certified, culminating in the Zero Budget Natural Farming technique. The Government of India honoured him with the coveted Padamashri Award for his contributions.

Present Status of Zero Budget Natural Farming:

The ZBNF approach is gaining popularity in various states, and it has become a grassroots peasant movement with success in Maharashtra, Rajasthan, Kerala, Madhya Pradesh, Andhra Pradesh, Kerala etc. and now spreading to other parts of the country at a faster speed and large number of farmers are showing their interest in this farming. At the national level, ZBNF leaders claim that numbers could run into millions. This has been achieved without any formal movement organization, paid staff or even a bank account. ZBNF inspires a spirit of volunteerism among its peasant farmer members, who are the main protagonists of the movement. Among Indian states, the Government of Andhra is the only state officially promoting ZBNF among its farmers. However, efforts are also a foot in Himachal Pradesh to follow the Andhra model so that ZBNF activities are undertaken successfully.

Key points of Palekar's ZBNF:

Plant fertilisers should be used judiciously. Because plants only get 1.5 to 2% of their nutrients from the soil, and the rest is taken through water and air, utilising fertilisers is not a good idea.

Usage of fertilizers and pesticides is not a necessity. Huge trees in forests are loaded with the countless fruits without the fertilizers and pesticides, are proof that plants do grow healthily

without any chemical help. This is because the microorganisms help to convert nutrients present in soil to the available form to the plants.

Microbes are essential for plant growth. Heavy chemical use destroys soil microorganisms, limiting farm growth, which can be regenerated by employing local cow dung. One gram of cow dung from the local cows is having 300-500 crores beneficial microorganisms as against about 70 million only in the dung from Jersey and Holstein cows.

One cow (Sahiwal/Gir/Tharparker) can fertilize 30 acres of land.

Urine, jaggery, and pulse flour can be used as additives.

The four pillars of ZBNF:

Jeevamrita, Beejamrita, Acchadana (Mulching) and Whapasa (Moisture)



- 1. Jeevamrita:** A fermented microbial culture formed from cow dung and urine that not only offers nutrients but also acts as a catalytic agent for stimulating microbial activity in the soil, stimulates earthworm activity, and prevents fungal and bacterial plant diseases. To inoculate native microbial species, a small amount of soil is added to the mixture. The fermentation process takes 48 hours, during which time the bacteria found in cow dung and urine multiply rapidly, devouring the organic materials (pulse flour).

Preparation of Jeevamrita:

Put 200 liters of water in a barrel

Add 10 kg cow dung and 10 liters cow urine.

Add 2 kg jaggary

Add 2 kg of pulse four and a handful of soil from the bund.

Stir the solution well and let it ferment in shade for 48 hours.

- 2. Beejamrita:** Beejamrita is effective in protecting young roots from fungus as well as from soil borne and seed borne diseases. Add Beejamrita to the seeds of any crop, coat them mixing by hand and dry the seed in shade and use then for sowing.

The ingredients of Beejamrita are: Cow dung - 5.0 kg, Cow urine - 5.0 liters, Lime - 250 g, Soil - 50 g and water – 20 litres.

- 3. Acchadana (Mulching):** It is important to produce a micro-climate in which micro-organisms can thrive, i.e. 25 to 32 degree celsius and 65 to 72 percent humidity. It produces both shade and warmth in the soil. Mulching encourages humus development, inhibits weeds, and keeps crop water requirements stable. Mulches used are soil mulch, straw mulch, and live mulch (Symbiotic intercrops and mixed crops).

- 4. Whapasa (Moisture):** According to Palekar, what roots need is water vapor. Whapasa is the condition where there are both air molecules and water molecules present in the soil and encourages reduced irrigation, irrigation only at noon in attenuate furrows.

Other important principles of ZBNF includes intercropping, formation of contour and bunds to help preserving rain water, revival of local deep soil earthworms through increased organic matter is most recommended, use of deshi cow dung.

Insect pest management in ZBNF: Various preparations like Neemastra, Bramhastra, Agniastraetc. are used initially and later stages there is very little or no need of these preparations.

- 1. Neemastra:** Take 100L water add 5L of cow urine + 2kg cow dung + 5kg crushed neem leaves and ferment for 24-48 hrs. Stir the solution twice a day by any stick. Filter using a cloth. It is ready for spray for sucking pests & mealy bugs.
- 2. Bramhastra:** Take 100L water in a pot and add 10L cow urine + 5kg crushed neem leaves + 5kg Ipomoea leaves + 2kg Datura leaves + 2kg Pongamia leaves + 2kg castor leaves. Boil this solution 5 times. Filter using cloth, fermented for 24 hrs. Ready to spray for controlling sucking pests, pod borer, fruit borer etc.



3. **Agniastra:** Take 10L of cow urine + 1/2Kg tobacco +500gm green chili +500gm local garlic+5kg crushed neem leaves. Boil solution well 5 times continuously. Filter using cloth & ferment for 24hours Ready to spray on pests like leaf roller, stem borer, fruit borer etc.

Scope of Zero Budget Natural farming:

Farmers welfare

- reducing cost and risks
- increasing yields both short term and long term
- regular streams of income throughout the year
- Climate change resilience (tolerant to drought and heavy rains)

Freedom from hunger and improved health

- more food, safe food and nutritious food

Protect soil health and environmental health

- Enhanced soil organic matter, soil microbiota and fauna, better water holding capacity, better bio-diversity and better mineral absorption etc.

For Governments

- Accelerate achievements of SDGs, compete better in agriculture markets, savings in fertilizer subsidies and savings in health expenditure.

Safeguarding our collective future

- Survival, prosperity and sustainability of future generations.