

# ZERO BUDGET NATURAL FARMING

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Zero Budget Natural Farming (ZBNF) means raising crops without using any fertilizers and pesticides or any other external materials. The word Zero Budget refers to the zero cost of production of all crops. ZBNF guides the farmers towards sustainable farming practices thus helps in retaining soil fertility, to ensure a chemical free agriculture and ensure low cost of production (zero cost) and thereby enhancing the farmers income.

In short, ZBN, is a farming method that believes in growing crops in tune with nature.

The concept was promoted by an agriculturist, Padmashri. Subhash Palekar, in the mid-1990s as an alternative to the Green Revolution's methods driven by chemical fertilizers and pesticides and intensive irrigation.

## **Principles of ZBNF:**

- No external inputs.
- Local seeds (use of local varieties)
- Microbial Seed treatment.
- Microbial inoculants for soil health.
- Cover crops for biomass mulching and bio-mass incorporation for creating a suitable micro-climate for maximum beneficial microbial activity.
- Mixed cropping.
- Integration of trees into the farm.
- Integration of livestock, especially of native breed for cow dung and cow urine as essential inputs for several practices.
- Water and moisture conservation.

## **Four main Elements and Model of ZBNF :**

### **1. Bijamrita -Seed Treatment using local cow-dung and cow urine**

The seeds are treated with formulations prepared using cow dung and cow urine from native cow species as they have higher adaptability to our local climatic conditions and easy to maintain by the small and marginal farmers. While Bijamrita is used for seed treatment, extracts of neem leaves and pulp, tobacco and green chillies are used for insect and pest management.

**Benefits:** The seeds sown in the field may be affected by fungus and other seed born/soil born diseases. The seed treatment using "Bijamrita" protects the seeds from diseases.

## 2. Jiwamrita/Jeevamrutha

Cow dung is a natural source used to revive the fertility and nutrient value of soil. One gram of cow dung may have between 300 to 500 crore beneficial micro-organisms. These micro-organisms assist in decomposing the biomass present in the soil and convert it into available/ready-to-use nutrients for crop.

Jiwamrita is prepared using Cow dung and cow urine. It is used as an input for the plants. It is a fermented microbial culture obtained from cow dung, urine, jaggery, pulse flour and uncontaminated soil. This fermented microbial culture when applied to soil, adds nutrients to the soil besides acting as a catalytic agent to promote the activity of microorganisms and earthworms in the soil. About 500 litres of jeevamrutha should be sprayed twice a month per hectare of land; after three years, the system is supposed to become self-sustaining. One indigenous cow is sufficient for 30 acres of land.

**Benefits:** This culture will be applied in soil instead of chemical fertilizers. This culture stimulates microbial activity in the soil and enhances nutrient availability for the plants, protects the crops against soil pathogens and increases carbon content of the soil.

## 3. Mulching

Mulching is the process of covering the top soil with crop wastes/organic waste or with cover crops

**Benefits:** Mulching materials decompose and produce humus which conserves top soil, increases water retention capacity of the soil, decreases evaporation loss, encourages soil fauna besides enriching soil nutrient status and controlling weed growth.

## 4. Waaphasa (Soil Aeration).

Good aeration is required in the soil for plant growth and development. ZBNF concept opposes the use of vermi compost as it introduces the most common composting worm the European Red Wiggler to Indian soil, which absorbs toxic metals and poisons ground water and soil.

**Benefits:** Due to the application of Jiwamrita and mulching, the aeration of the soil increases, thus improves humus content, water availability, water holding capacity and soil structure which is most suitable for crop growth especially during drought periods.

## ZBNF- Cropping Model

The model is based on raising poly crops i.e., growing short duration and long duration crops (main crop) together so that the cost of raising the main crops will be recovered from the income generated from the short duration crops resulting in “zero” expenditure for the main crop. Hence the term “Zero Budget Natural Farming” is used for this farming model.

## **Why ZBNF ?**

National Sample Survey Office (NSSO) data indicates that more than 70 % of the agricultural households spend more than they earn and more than 50 per cent of all farmers are in debt due to increased cost of farm inputs like fertilizers and chemical pesticides.

In order to achieve the Central Government aim to double the farmers income by 2022, the farm expenditure is to be brought down and natural farming like ZBNF has to be encouraged to reduce the dependence of the farmers on external inputs like chemical fertilizers and pesticides, which they cannot afford. Moreover, intercropping also increases the farm returns.

Zero budget farming model brings down farm expenditure to a greater extent and ends dependence on farm loans. It also reduces dependence on purchased inputs as it encourages use of own seeds and locally available natural fertilizers and farming is done in synchronization with nature.

## **Government Initiatives to support ZBNF:**

Government of India has been encouraging organic farming through various schemes like Paramparagat Krishi Vikas Yojana (PKVY) since 2015-16 and also through Rashtriya Krishi Vikas Yojana (RKVY).

In the revised guidelines of PKVY scheme during the year 2018, various organic farming models like Natural Farming, Rishi Farming, Vedic Farming, Cow Farming, Homa Farming, Zero Budget Natural Farming (ZBNF) etc. have been included and flexibility is given to state governments to adopt any model of Organic Farming including ZBNF depending on farmer's choice.

In June 2018, Andhra Pradesh Government rolled out an plan to become India's first state to practice 100 % natural farming by 2024 by converting state's 60 lakh farmers to ZBNF method.

To take this further, Union Finance Minister Nirmala Sitharaman also announced a proposal of zero budget farming in her first Budget speech , which she said is like "going back to basics". She said " We need to replicate this innovative model to help the farmers in doubling the income by 2022'.

## **Constraints :**

- Agricultural scientist opined that multi location studies are needed to scientifically validate the long term impact and viability of ZBNF Model before it is promoted country wide in a large scale.
- Large scale adoption of ZBNF may have serious impact on farmers income and food security. Hence a proper scientific validation regarding success of ZBNF has to be done.

## Way Forward :

- Few state Governments in our country started supporting this concept . Andhra Pradesh Government has recently announced several plans to assist 3000 farmers to adopt ZBNF .
- NITI Aayog is also one of the foremost promoters of ZBNF method.
- The Andhra Pradesh Government experience is also being monitored closely to judge the need for further public funding support for ZBNF.
- The Indian Council of Agricultural Research is also studying the ZBNF method practiced by basmati and wheat farmers in some parts of India, evaluating the impact on productivity, economics and soil health including soil organic carbon and soil fertility.
- If found to be successful, an Institutional Mechanism is to be created to promote the technology across the farming community.

Though it is the need of the hour to move towards chemical free farming and no doubt ZBNF, an environmentally sustainable farming method is the right way to achieve that, enough studies to be conducted to conclusively prove that ZBNF is an excellent solution to improve the farmers income and to achieve food security of the country.

For many years our farmers are involved in natural farming but slowly move towards latest technologies which resulted in improving our country's food security position as well as improvement in farmer's income. Therefore, necessary trials to be conducted for a reasonable period before implementing methods, which are unproven scientifically.

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