



Zero Budget Natural Farming: A Road to Sustainable Farming

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Agriculture is the pillar of the Indian economy, yet in the last few decades it has been hit by a crisis as input prices increased, and farmers became chemical-dependent, led to soil erosion, and incurred debts. Zero Budget Natural Farming (ZBNF), developed by Subhash Palekar, has become a new-age game changer that focuses on re-establishing sustainability in farming and saving farmers' expenses. Through removal of the use of chemical fertilizers, pesticides, and market seeds, ZBNF encourages cultivation practices based on natural processes, microbial life, and diversity. The four pillars on which ZBNF stands—Jeevamrutha, Beejamrutha and Whapasa—are easy-to-use, affordable, and eco-friendly solutions for the cultivation of crops by farmers. This article talks about Zero Budget Natural Farming philosophy, principles, methods, advantages, disadvantages, and future potential, emphasizing its capability as a paradigm for ecological sustainability and farmer empowerment.

Keywords: Zero Budget Natural Farming (ZBNF), Sustainable Agriculture, Jeevamrutha, Beejamrutha, Whapasa, Mulching, Organic Farming, Farmer Empowerment, Soil Health, Subhash Palekar.

Introduction

Indian agriculture has witnessed a revolutionary change during the past decades. The Green Revolution of the 1960s introduced new high-yielding varieties, chemical fertilizers, and pesticides, which enabled the nation to become self-sufficient in food production. But at a tremendous cost: decline in soil fertility, overexploitation of groundwater, loss of biodiversity, and farmer indebtedness.

Through the National Sample Survey Office (NSSO), it is found that large numbers of Indian farmers are caught in a debt trap, with increasing costs for seeds, fertilizers, and pesticides being one of the prime reasons. It becomes challenging for these small and marginal farmers to maintain their livelihood. Innovative farming methodologies have therefore emerged, with Zero Budget Natural Farming (ZBNF) being one of the most viable options.

ZBNF is not just a farming method but a revolution in agricultural thinking, with stress on harmony with nature, less reliance on external inputs, and self-sufficiency. It promotes farmers to utilize locally available natural resources to enhance soil fertility and defend against pests. Policymakers, environmentalists, and farmer communities alike have noted this practice as a sustainable substitute for chemical-intensive farming.

Key section

1. Origin and Philosophy of ZBNF: Zero Budget Natural Farming was evolved by Indian agriculturist Subhash Palekar in the late 1990s. Being worried about the ill effects of chemical farming, Palekar experimented with classical Indian agricultural wisdom and natural inputs. He introduced ZBNF as a system in which agriculture may be practiced with "zero budget," i.e., without relying on expensive inputs.

The principles behind ZBNF are four:

1. Agriculture must follow nature.
2. Soil health relies on living organisms and microbes.
3. Farmers need to minimize reliance on the market for inputs.
4. Production of food needs to save nature as well as human health.

2. Four Pillars of ZBNF

(a) Jeevamrutha: Jeevamrutha is a fermented microbial liquid made from cow dung, cow urine, jaggery, pulse flour, and farm soil. It serves as a soil inoculant, enhancing microbial activity, nitrogen fixation, and availability of nutrients. Jeevamrutha is sprayed on the soil or used as a foliar spray by farmers to enhance crop growth.

(b) Beejamrutha: Beejamrutha is a natural seed coating that prevents seeds from getting infected by fungi and bacteria. Beejamrutha is prepared with cow dung, cow urine, lime, and soil. By applying

Beejamrutha coating to seeds before sowing, farmers get higher germination and immunity against soil-borne pathogens.

3. Other ZBNF Practices

Other than the four pillars, ZBNF also incorporates:

Agroforestry (multi-layer cropping): Placing several crops together in a forest ecosystem-like environment.

Intercropping and crop rotation: Providing diversity, resistance to pests, and soil fertility.

Natural pest control: Utilizing neem extracts, cow urine, and other plant-derived formulations.

4. Advantage of ZBNF

(a) Economic Advantage

Reduces reliance on costly chemical inputs.

Reduces farmer debt and loan pressure.

(c) Social and Health Advantages

Fosters community-based sharing of farming knowledge.

5. Challenges and Criticisms

Even with its potential, ZBNF has some challenges:

Yield Issues - Some research indicates reduced yields in the early years of adoption as opposed to chemical agriculture.

6. ZBNF in Policy and Practice

The Government of India has acknowledged the significance of ZBNF and included it in sustainable agriculture policies. Andhra Pradesh and Karnataka have led the way by initiating large-scale ZBNF projects. Andhra Pradesh has particularly targeted the conversion of six million farmers to ZBNF by 2030, making it the first natural farming state.

International bodies, such as the United Nations Food and Agriculture Organization (FAO), have recognized ZBNF as a solution to climate change and food security problems.

Conclusion

- Zero Budget Natural Farming is a powerful move in the direction of climate-resilient and sustainable farming.
- It assists farmers in saving their expenses by not using chemical fertilizers and pesticides and instead adopting natural practices.
- ZBNF benefits farmers, conserves the environment, and provides safe food for everyone.
- ZBNF can be a successful example in India and other nations, resulting in a self-sufficient and sustainable future in agriculture.

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