

ZERO BUDGET NATURAL FARMING IN INDIA

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INTRODUCTION

In India, zero budget natural farming (ZBNF) was first time initiated by Subhash Palekar in Maharashtra. The word “budget” refers to credit and expenses, thus the phrase “zero budget” means without using any credit or money on purchased inputs. “Natural farming” means farming with nature and without chemicals. Zero budget natural farming or holistic agriculture is a method of agriculture that counters the commercial expenditure and things required for the growth of plant are present around the root zone. Subhash Palekar studied the natural system and verified the natural processes of the forest on his farm for six years from 1989 to 1995. There were about 154 research projects during these six years of research work, he got the package of technique about zero budget natural farming, which he is giving to the farmers throughout the nation. Subhash Palekar received fourth highest civilian award of Padma Shri in 2016 from the Government of India thus becoming the first active farmer to do so. This farming model eliminates the cost of fertilizers, pesticides and seeds and greatly reduces the incentive to borrow, one of the chief causes for farmer suicide in the country. Hence, it is evocative title ZERO BUDGET NATURAL FARMING. He believes in a method of cultivation that makes the already existing nutrients in the soil such as phosphate, potash, zinc and calcium available in absorbable form by the plants. In this farming method, nothing has to be purchased from outside. All things required for the growth of the plant are available around the root zone of the plants. According to this farming model, plants undertake about 98 to 98.5% of nutrients from air, water and solar energy. The remaining 1.5% nutrients are taken from the soil, which is also available free of cost as it is taken from the prosperous soil, enriched with this nutrients. It has attained wide success in Southern India, especially the Southern

Indian state of Karnataka where it first evolved. Now, this farming model is implemented in several states of our country.

1. Jeevamrutha/jivamrita:

It is a fermented microbial culture. It provides nutrients, but most importantly, acts as a catalytic agent that promotes the activity of microorganisms in the soil, as well as increases earthworm activity. During the 48-hour fermentation process, the aerobic and anaerobic bacteria present in the cow dung and urine multiply as they eat up organic ingredients (like pulse flour). Jeevamrutha also helps to prevent fungal and bacterial plant diseases. Palekar suggests that Jeevamrutha is only needed for the first 3 years of the transition, after which the system becomes self-sustaining.

The four important pillars of ZBNF



How to prepare jeevamrutha:

Put 200 litres of water in a barrel; Add 10 Kg of fresh local cow dung and 5 to 10 liters aged cow urine; Add 2 Kg of Jaggery (a local type of brown sugar), 2 Kg of pulse flour and a handful of soil from the bund of the farm. Stir the solution well and let it ferment for 48 hours in the shade. Now, jeevamrutha is ready for application. 200 liters of jeevamrutha is sufficient for one acre of land.

Jeevamrutha Application

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Apply the jeevamrutha to the crops twice a month in the irrigation water or as a 10% foliar spray.

2. Bijamrita/beejamrutha:

It is a treatment used for seeds, seedlings or any planting material. Bijamrita is effective in protecting young roots from fungus as well as from soil-borne and seed-borne diseases that commonly affect plants after the monsoon period. It is composed of similar ingredients as jeevamrutha- local cow dung, a powerful natural fungicide, and cow urine, a strong anti-bacterial liquid, lime and soil.

Bijamrita Application as a seed treatment

Add Bijamrita to the seeds of any crop: coat them by mixing with the hand; dry them well and use them for sowing. For leguminous seeds, just dip them quickly and let them dry.

3. Acchadana/Mulching: According to Palekar, there are three types of mulching:

- a. Soil Mulch: This protects topsoil during cultivation and does not destroy it by tilling. It promotes aeration and water retention in the soil. Palekar suggests avoiding deep ploughing.
- b. Straw Mulch: Straw material usually refers to the dried biomass waste of previous crops, but as Palekar suggests, it can be composed of the dead material of any living being (plants, animals, etc). Palekar's approach to soil fertility is very simple – provide dry organic material which will decompose and form humus through the activity of the soil biota which is activated by microbial cultures.
- c. Live Mulch (symbiotic intercrops and mixed crops): According to Palekar, it is essential to develop multiple cropping patterns of monocotyledons (monocots; Monocotyledons seedlings have one seed leaf) and dicotyledons (dicots; Dicotyledons seedlings have two seed leaves) grown in the same field, to supply all essential elements to the soil and crops. For instance, legumes are of the dicot group and are nitrogen-fixing plants. Monocots such as rice and wheat supply other elements like potash, phosphate and Sulphur.

4. Whapasa/moisture:

Palekar challenges the idea that plant roots need a lot of water, thus countering the



over reliance on irrigation in green revolution farming. According to him, what roots need is water vapor. *Whapasa* is the condition where there are both air molecules and water molecules present in the soil, and he encourages reducing irrigation, irrigating only at noon, in alternate furrows ZBNF farmers report a significant decline in need for irrigation in ZBNF.

CONCLUSION

ZBNF works not just in agronomic terms, but also brings about a variety of social and economic benefits. A majority of respondents reported that by adopting ZBNF, over time they saw improvements in yield, soil conservation, seed diversity, and quality of produce, household food autonomy, income, and health. Most experienced reduced farm expenses and a reduced need for credit, one of the major problems plaguing Indian farmers.

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