

Zero Budget Natural Farming - An Innovative Sustainable Agricultural Practice in India

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Abstract: *This paper is attempting to describe the methods and benefits of Zero Budget Natural farming (ZBNF) in India. It's a chemical free sustainable farming practice invented by Mr. Subhash Palekar in the year in 1995. Zero Budget Natural farming is an alternative low input farming practice have emerged in India and across the globe likely to reduce input costs and higher yields and income for farmers. It also increases the farmer's competence in the international market, through the production of low cost, high quality organic food. ZBNF protect bio diversity and promote eco - friendly farming technical. It enriches soil fertility and ensuring safe food through indigenous technology. All over India, more than 1.6 lakh's of farmers are practising natural farming methods and also considered as a solution for all types of agriculture problems in India. ZBNF was first practised in Karnataka, where it adopted as a movement by a state farmers association. In June 2018, Andhra Pradesh rolled out an ambitious plan to become India's first state to produce 100 per cent natural farming by the year 2024, hence it is considered as self - sufficient sustainable farming practice for the food security of India.*

Keywords: Zero Budget, natural farming, sustainable, eco - friendly, agriculture.

1. Introduction

Zero Budget Natural farming is a 'Back to Nature' movement. It is a set of farming methods that involve zero credit for agriculture and a non - violent approach to nature. ZBNF reduces dependence on purchased inputs and it encouraging the use of traditional seeds, fertilizers and pest control methods. In ZBNF naturally available materials are used for preparing fertilizers and pesticides. Padma shri winner Mr. Subhash Palekar was the inventor of this farming technique, six years of his research work and practice he proved it as successful method of farming. Zero budget farming first practiced in Karnataka, 30 lakhs of farmers were practiced all over India. Karnataka state farmers association taken it as movement for escaping farmers from the debt and suicide and ZBNF is also considered as an alternative to the globalization problems of agriculture. Finance minister Nirmala Setharaman announced 500 crore rupees for the development of traditional farming practice. Natural farming methods are low cost, safe and eco - friendly in nature. ZBNF support multi cropping and biodiversity. Farmer's sovereignty in seed's and fertilizer's get back through this method and it also prevent market exploitation. ZBNF also ensure good quality food product and desirable price to their natural product. In this farming practice Indian farmers get a monopoly in their product. ZBNF commodities become highly competent in international market to its very low cost production. All over the world people are aware about the problems of chemical farming and concern about the natural food that would increase the demand of natural food. In such a situation natural farming is hopeful things to the farmers group. Natural farming is working in the Gandhian philosophy of Village Swaraj, Swadesi, Bread labour etc. . Zero budget farming give more importance to the swadesi concept for eg. in the case of native variety cows such as Kasaragod Kullana, Vechoor variety etc. these bread are used for preparing Jeevamrutha and Beejamrutha and it is basically for the microbial growth and increasing soil fertility. In natural farming there is no need of fertilizers and pesticides. But our soil has lost its fertility by long period of chemical farming. Green revolution and globalization destroyed our traditional

farming system. Thousands of natural plant varieties are losses by this mono crop cultivation and destroyed the biodiversity. ZBNF take back our traditional and sustainable farming system. Abundant use of chemical and pesticides created our food as a poisonous one, it is seriously affected by Kerala and Punjab, Punjab is considered as the cancer capital of India, in this state 90 cancer patient for every 100, 000 population and the national average is 80 (Jyotsna, 2013). It is one of the impacts of Green revolution in India.

Natural Farming

Natural farming is a type of eco - friendly farming and it was established by Mansannobu Fukuoka (1913 – 2008). He was a Japanese philosopher and farmer as well as author of several books. Among one of his famous work 'The One – Straw Revolution', In this book he described his method of farming. Zerobudget farming has some relation to Natural farming, in this farming give more priority to natural variety seeds, animals and multi cropping patterns. ZBNF increased fertility of the soil and focusing on bio diversity, agro forestry and sustainable agricultural.

Fukuoka had a vision. about the natural farming that was a spiritual approach to life and means of producing food. Fukuoka claimed that his approach prevents biodiversity loss, soil erosion and water pollution, while providing ample amount of food. The ultimate goal of natural farming was "the cultivation and protection of human beings". 'Natural farming' means farming with naturally available materials and without using chemicals. It is a sustainable farming practice and it makes all inputs from natural materials regards the rights of live stock, crops and observes the law of the nature. This farming heals the soil slashed by herbicide, chemicals and machines. Where this farming is practiced the water and soil became clean and ecology is restored. It respects life and opposes human exploitation on life. It prevents several diseases rather than curing with medicines, crops and livestock to foster by natural farming are very healthy (Palaker 2012).

Natural farming products have good taste, high quality, better yield and higher nutritional contents. Amino Acid,

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Protein, fat and other essential nutrients were identified to be 300 percent higher than ordinary products. This farming does not use pesticide, vermi compost and chemicals fertilizer. Phosphorous, Potassium, Calcium, Nitrogen and all other elements would be generally available in the form of chemicals fertilizer. They are substituted with natural farming inputs. Egg shells give calcium; fish give amino acid it provides Nitrogen and animals bones are good source of Phosphoric Acid (Palaker 2012).

ZBNF farming input is highly effective and does not bring pollution in the ecology. Farming inputs are made by farmers such as Jeevamritha, Bhijamritha etc. it increased the Soil fertility. Fertilizers and pest controllers methods were made by the farmers and also only using natural materials. Their preparation is based on the nutritive cycle theory [Subash Palekar: 2012]. Our important inputs include Fermented Plant Juice (FPJ), Indigenous Micro - organism (IMO), Lactic Acid Bacteria (LAB), Oriental Herbal Nutrient (OHN), Water – soluble Calcium (WCA), Insect Attractant (IA), and Water Soluble Calcium Phosphate (WCP). All are produced at home easily and cheaply.

In the case of food safety “Indians are daily eating food laced with some of the highest amounts of toxic pesticide residues found in the world. In the process, they are exposed to the risk of heart diseases, Brain, Kidney and Liver damage and Cancer. more recently even the standard authority of Indian Union Ministry of Agriculture and Food Safety reported that chemicals and the toxic pesticides contained in the foods are generally in intemperance of permissible limits to disclosing consumers to unacceptable hazard to myriad diseases.

To avail poison less food, pollution free air, water, soil, environment, pleasant, wealthy and prosperous life is the birth right of each and every living things This birth right has been too confiscated off by this violent, inhuman, non scientific, ferocious Green Revolution. Globalization and chemical farming; these two demons have brought whole living world standing on the brink of destruction and death. All these factors lead us to save our earth from global warming, destruction, from the unnatural death; to save our earth from global warming; destruction, pollution, unnatural deaths and suicides then only our next generations will be happy, wealthy and creative. Zero budget spiritual farming is an alternative method for these globalized and liberalized policies [Subhash Palekar: 2012].

Zero Budget Natural Farming, as the name indicates is a method of farming where the input cost of plants is zero. It means that farmers do not need to purchase pesticides and fertilizers in order to ensure the healthy growth of crops. Zero budget natural farming has two meanings in India:

- a) Pure zero budget that mean no input to the land. In this method pet animals and others are not used in agricultural field.
- b) Homemade natural materials or fertilizer used method [Subash Palekar; 2012].

This type of farming is helpful as the grasses that grow and to treat again into agricultural land makes a natural fertilizer. Zero Budget natural farming or Spiritual Farming is conducted with the help of cow dung and urine. Zero Budget

Spiritual Farming is a four – wheeler car called as *Rathchakra* of spiritual farming. Total spiritual farming is based on the four technique i. e. *Chakras*. If the car has to be movable, all four wheels should have been in correct fit position (Subash Palekar; 2012).

Following are the four - wheeler of zero budget natural farming.

1) *Bijamitra*: (seed treatment)

Bijamitra protect the seeds from harmful pathogens, fungus and bacteria. It protects the crops from soil born diseases. *Bijamitra* has alkaloids and hormones which increase the sprouting, neutralizes the anti germinating chemicals in the embryo, to bestow the protection power to the seedlings.

Preparation of *Bijamirta* for cultivation

Take seeds of paddy, take the 50 liter water, add 5 liters *Bijamirta* in that water stir it well, let it to stable and add these seeds of paddy in that water, and stir it well. Let it stable for an hour. Damaged and insect infected seeds will float on the surface of the water. Remove these floating seeds and use for mulching. Then this rest of the best quality sunken seeds in the bottom are to be removed from the water. Keep that seeds to dry for sometime in the shadow. After that treat these seeds with *Bijamirta* and now sow it. [Subash Padlkar; 2012]

2) *Jivamrita*

It is a mixture of cow urine, dung, pulses, flour, jaggery and soil from bund. This mixture is spread on the land to serviceable the process of the earth worm generations. It is a miracle fermented microbial culture. It too gives nutrients, but act as a catalytic substitute that encourages the increase of earth worm and microorganisms in the soil. During the 48 hours of fermentation process the anaerobic and aerobic bacteria present in the cow urine and dung multiply, as they eat up organic component parts. In this preparation, a handful of undistributed soil is added as inoculate of native species of organisms and microbes. It helps to prevent bacterial and fungal diseases.

3) Preparation of *Jivamrita*

Put 200 liters of water in a barrel; add 5 to 10 liters cow urine and 10 kg fresh local cow dung; add 2 kg of pulses flour and 2 kg of jaggery 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 *jivamrita* is ready for application. 200 liters of *jivamrita* is suitable for one acre of land. It is applied to the crops twice a month in the irrigation water (interaction with farmers on 9.02.2015)

4) Mulching

Mulching is a cover of dried materials from farm. Following are three types of mulching.

- a) **Soil mulch**: This protects upper soil during farming and does not undo it by tilling. It promotes water retention and aeration in the soil. It avoids deep ploughing of soil.
- b) **Straw Mulch**: it usually refers to the dried biomass waste of prior crops, but as Palekar proposes, it can be a dead material of any living being. The soil fertility by any dried organic material which will decompose and

form humus through the activity earthworm [The Hindu: 2016]

- c) **Live Mulch:** It is essential to develop multiple cropping methods of dicotyledons and monocotyledons grown in the same field to provide all essential elements to the crops and soil. Rice and wheat are monocots that supply other elements like Potash, Sulphur and Phosphate.
- d) **Wapsa:** This method is pouring water into the trees. Following methods are used to overcome the pest and insects.
- **Agniastra:** This is primarily the mixture of Garlic, Neem, Cow urine and Chilli and used to control insects.
 - **Brahmastra:** The mixture of Pomegranate, Guava, Custard apple, Neem etc. With cow jseedwine. It is used to spray the leaves of the plant.
 - **Neemastra:** The mixture of cow urine, dung, neem etc. It is used for leave sucking insects. [Subhash Palekar: 2012]

Benefits of Zero budget farming

Zero budget farming reduced the cost of production by using indigenous technology and naturally available materials such as cow dungs, urine etc. It is a sustainable farming method and eco - friendly in nature. There is no need of chemical fertilizers, pesticides and hi - tech machines. Mulching preventing soil hardening and drying and it provide moisture to the soil. In Natural farming ploughing is taken place with the help of earth worms. Soil has enough minerals needed for a plant growth, earth worms are call as 'natural plough machine'. It helps digging the minerals' into the soil surface and synthesis it in plant absorbable form such as 'Humus'. Humus contained all essential plant nutrients. Natural Growth of plant is ensured by the presence of local earth worm in the soil. By this natural process plants are healthy and larger in size and these high quality natural food products are highly competent in international market. Natural farming ensures safe and good quality food. It increase soil fertility and multi cropping, it promote biodiversity. In Zero budget natural farming the first three year were only needed the plant boosters such as Jeevamrutha etc. it is only for helping the creation of a natural ecosystem or increasing soil fertility, the soil fertility will increase and then it maintains itself such as in the case of forest ecosystem.

Impotence of earth worms in Zerobudget Natural faming

Vermi casting of local earth worms, there is five time more nitrogen than the soil, seven time more than the potash, doubled Calciam and Magnesium and all other micronutrient (Palekar, 2012). Root of the crops can absorbed these nutrients very easily with the help of Auxin existed in the local earth worm castings. In the local earth worm casting, there are Actinomycetes microorganisms, which secretes the antibiotic fluid called actinomycetene fluid is absorbed by the root of the plants, by which the resistant power is developed in the plant body and the plant body is protected from the insects and diseases. Simultaneously, there is Adenine protein in the local earth worm castings, by which the cells of the plant body grows well. the local eathworm eat harmful bacteria and destroy them, but the same time they eat beneficial microorganisms like nitrifying bacteria, denitrifying bacteria, sulphur solublealizing bacteria and all

other beneficial bacteria, charge them, motivate then and active them. if we activate earthworms in the soil there is no need of any fertilizer. These all beneficial microorganisms keep the soil healthy disease less and prosperous. While up and down movement of earth worms in the soil they secrete one sticky fluid, by which they can move forward. This secretion has the capacity to fix the nitrogen and so increase the oxygen content of soil. The nitrogen content in the vermicasting stay for long period and get available to the crop.

Problems of Vermi Composting

In organic farming vermi compost is used as manure, but in natural farming vermicast is used for plant growth. Vermicast is the casting of local earth worm which are naturally excreted on the soil. Vermicaste is not a vermi compost and it is prepared by the surface feeder worms i. e. Eisenia Foetida which are not actual earth worms, these worms do not eat soil, but they eat straw and dung of the animals, that means vermi compost stop the creation of humus and soil become barren. When these surface feeder worms eat straw, that means mulching and dung, they stop the process of Humus maintenance. This is very dangerous and when we add vermic compost to the soil it is totally decomposed matter, the oxidation process of organic carbon from the vermicompost occurs speedily. When all carbon is oxidized as carbon dioxide from that in the vermicompost, as a result Global Warming is increased and also some very dangerous and poisonous element like cadmium, Lead, Arsenic and Mercury are remained on the surface of the soil, by which the soil become poisonous. These poisons elements are taken by the roots of the crops, deposit in the fruits, grains and vegetables, finally it reached human body, it resulting in the imbalance of human body and destroyed the resistance power of human body, then it lead to the serious disease like Cancer, Diabetes, Heart attack. (Paleker, 2012)

Gandhi advocated Non - violence is in the form of natural farming, bread labour in the form of agriculture work and village Swaraj through food sovereignty and sustainability. Swadesi movement is in the form of native breeding and natural seed protection. So Zero Buget Farming gives more impotence to the natural bred cows and earthworms and not supporting the vermi composting and foreign cow dong. Natural farming also considered as spiritual farming because in this farming practices is completely un exploitative and eco - friendly. Simple living and high thinking also needed for these practice. Zerobudget Natural farming is one of such practice. We can consider ZBNF as a Swadeshi movement and also an alternative model for the current globalization problems in India. In such a situation zero budgets farming is a hope to the farmers.

2. Conclusion

Agriculture is facing numerous problems in the present world. WTO agreement played a vital role in the present agrarian disaster in India. Increased input cost and low price created a non - remunerative nature in our agriculture sector. Indian farmer's competence was also challenged by this liberalized policy. High competence of developed nation creates a big threat to the poor countries, especial In India.

About fifty percentage of our population depending on agriculture as their livelihood. Developed countries industrialized agriculture production allowing mass production, prize fall of the commodity in the international market is badly affected the competence of Indian farmers. In such backdrop, Gandhi was predicted and suggested production by mass in the place of mass production. He know that exploitation of natural resource through industrialized agriculture production will create unemployment and poverty in our country. In a high populated country like India, agriculture was the main livelihood. So it is very important to protect our livelihood and the village system, otherwise India will become a food dependent country in the future. So Health is the wealth of our Nation, so Zero budget farming ensures the wealth and health of our country.

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