

Role of Zero Budget Natural Farming in Tea Plantation

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Tea, a conventional drink initially from China, is the most seasoned, most prevalent, non-alcoholic caffeine containing refreshment on the planet, and its imbue ment is set up by fermenting of handled leaves of the tea plant, *Camellia sinensis* (Kumar and Shruthi, 2014). Tea, *Camellia sinensis*, is one of the oldest and non-alcoholic beverages used in the world. It is available for consumption in six main variants, based on the oxidation/fermentation technique applied during processing. Black and green tea is the most common form of made tea. Basically commonly known but completely ignored problem of tea i.e. the effect of different packaging material (Flipovic. et al., 2009) on the shelf life (Debnath *et. al* 2012) of the Kangra tea and seasonal impact on tea. This study proves to be quite useful in respect of variety, durability, cost, production and economic status of the tea.

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, ZBNF, is a farming method that believes in growing crops in tune with nature.

Four main elements of ZBNF:

1. Bijamrita:

The seeds are treated with formulations prepared using cow dung and cow urine from native cow species.

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

2. Jiwamrita/Jeevamrutha:



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.

Benefits: 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. **Acchadana/Mulching:**

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

Benefits: Mulching materials decomposes and produces 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/Moisture (Soil Aeration):**

Good aeration is required in the soil for plant growth and development.

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.

Zero budget natural farming in Tea plantation

Impact of farm chemicals in the form of chemical fertilizers, pesticides, insecticides and herbicides necessitates investigating into alternate farm supplementation techniques especially in plantation crop like tea, where, the quality is the major concern. Unfortunately, the impact of these farm chemicals has impacted the soil fertility and quality of produce in a serious manner. The immediate need of the hour is to initiate appropriate remediation measures along with soil enrichment strategies with suitable renewable soil nutrients.

One of the ways by which we can amend the ill-effects of conventional agriculture and reduce the input cost of manures in organic farming and make technology feasible for adoption by economically poor farmers is by adopting zero budget natural farming



(ZBNF). Zero Budget Natural Farming (ZBNF) is set of natural farming methods where cost of growing of particular crop is zero. It is a farming practice that believes in natural growth of crops without adding any fertilizers and pesticides or any other foreign elements. The word 'budget' refers to credit and expenses, thus the phrase 'Zero Budget' means without using any credit, and without spending any money on purchased inputs. 'Natural farming' means farming *with* Nature and *without* chemicals. This means that farmers have no need to purchase fertilizers and pesticides in order to ensure the healthy growth of crops. The inputs used for seed treatments and other inoculations are locally available in form of cowdung and cow urine. It requires almost no monetary investment and envisages use of 'Beejamrit', 'Jeevamrit', 'Ghanjeevamri', 'Agniastra', 'Bhramasta' etc. made from own farm inputs/resources.

There is good scope of such type of farming in Tea gardens, as the majority of tea planters which are small and marginal are letting their gardens abundant due to high production/management cost involved in meeting out the inputs like fertilizers, insecticides, weedicides, fungicides and taking tea as enterprise is not remunerative to them. If opt for organic farming then production cost of manures is too high and not viable option for resource poor planters. So by curtailing the production/protection cost by use of low/zero cost natural farming products made from own farm resources and good agronomic practices, sustained production level with improved quality can be achieved. Beside this, this system protects soil from degradation and helps in retaining soil fertility by enhancing beneficial plant micro organisms.

Thus there is need to study the impact of such type of farming (ZBNF) first in our real Tea farm situation before disseminating the technology to the farmers.

For the said purpose an area of about 3 ha Tea farm near TCP Camp Holta has been earmarked for practising natural farming practices.

In this area there are established tea gardens and also new plantations. The different natural farming products like Jeevamrit, Ganjeevamrit which supplement nutrition and mulching and Waaphsa for soil moisture retention etc. will be applied round the year at different intervals in both situations along with good agronomic practices.

Also, the management of all pest and diseases will be done through different natural farming plant protection products *viz.* Dashparni ark, Bhramastra, Neemastra, Agniastra etc.,

For filling up the infills in new plantation, new nursery plants raised by application of bijamrit will be transplanted in vacant places and jeevamrit will be applied at different intervals through drenching and spraying. Application of waaphsa and ghanjeevamrit in dry condition will also be practiced.

As quality is important aspect in tea, it will be determined from different flushes obtained during tea plucking seasons and comparative advantage over conventional and organic practices will be determined.

Benefits

A study – “Life Cycle Assessment of ZBNF and Non-ZBNF” - reports the following benefits:

- ZBNF processes require 50–60 per cent less water and less electricity (than non-ZBNF) for all the selected crops.
- ZBNF reduces methane emissions significantly through multiple aeration. It also has the potential to avoid residue burning by practicing mulching.
- The cost of cultivation is lower in ZBNF.

References

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