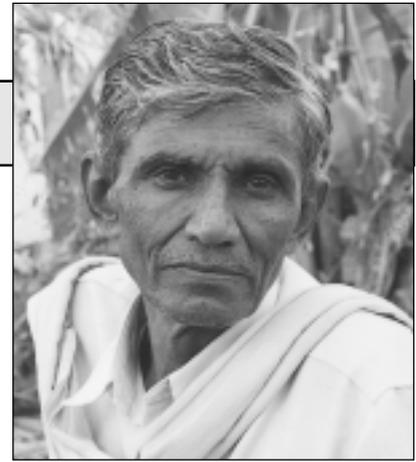


# Eco-agriculture



Introduction of green revolution technologies during 1960s, necessitated use of high cost external inputs like machinery, high yielding and hybrid seeds, agro-chemicals and popularising practices like monocropping. Even small scale or household (backyard) animal rearing has been displaced by huge specialised (industrial type) poultry and dairies, resulting in the use of only external inputs on the farm. Thus, the benefit of recycling is discontinued and farmers are forced to incur losses; both ecologically and economically.

In fact, we are blessed with huge bio-diversity in vegetation. Indian rural folk had a very good knowledge of the various plant species and were using them very efficiently and effectively. Polyculture and integrated tree cropping, animal husbandry and crop cultivation were the practices since the beginning of civilization, which was eco friendly, interdependent, self-sustainable and cost effective. Practices like application of tank silt, organic manure and plant based sprays have been traditionally followed by farmers, since ages.

Vermicomposting provides about 4 tonnes of rich manure from 100 square feet area in one year, with 200 to 240 man hours of work. One kilo of earthworms can convert or digest 50 kilograms of any bio-degradable bio-mass into five nutrients in 45 days enriching Nitrogen by 5 times, phosphorous by 7 times and potash by 11 times, adding calcium with each bite through calcium glands near their mouth. Apart from enriching with various micro-nutrients, hormones and enzymes are necessary not only for crops but also for the soil organisms. The present system of providing roof and building tanks for vermicomposting is very expensive and also unaffordable. The earthworms get very little air, that too from the top of the tanks only. Farmers have found it more easier to maintain 1 m wide X 1 m height heaps, with 85% of bio-mass and 15% of any animal excreta under shade and 75% of moisture. These are very comfortable and cheaper too.

Similarly, promoting the use of *Panchagavya* and its use as a nutrient and a hormone, can help in getting better yields at a very cheap cost. To make 20 litres of *Panchagavya* one needs 5 kg fresh cowdung, 4 litres fresh cow's urine, 3 litres fresh cow's milk, 2 litres cow's curds and 1 or ½ litre cow's ghee. It can be further improved by adding 250 ml honey, 1 litre tender coconut water, ½ kg sweet fruits (not sour). These are mixed in 20 litre capacity plastic drum and allow the preparation to aerobic fermentation for 12 to 15 days with daily stirring with a bamboo stick. Tie a cotton cloth to the mouth to avoid houseflies breeding on the preparation. Spray 1 to 3 days before full moon day, at 30 ml in 1 litre water. It is proved that plant absorbs more foliar sprays during 1 to 3 days before full moon day. This 20 litre *Panchagavya* is enough for one hectare area, when the crop is in its full vegetative growth. Two sprays are necessary for good vegetative growth.

Similarly, we can use Fish amino acid as plant nutrient particularly as a rich source of nitrogen and many micronutrients. Collect fresh fish thrash 2 kgs from fish market or any fish canning industry and add 2 kgs of raw jaggery and

mix them without adding any water (since the fish thrash has enough moisture) and allow to ferment in a suitable plastic container with a lid under shade in a suitable plastic container with a lid in dark cool place for 10 days. Surprisingly you do not breathe any bad odour. The meat gets dissolved in jaggery with the help of microbial activity and honey like syrup can be strained (about 800 ml). This syrup can be sprayed at 5 ml in one litre water during 1 to 3 days earlier to full moon day. This fish amino acid can also be sprayed along with *Panchagavya*. Similarly, we can spray effective micro-organism solution at one ml in a litre water to introduce Actinomycetes (Streptomycin) photosynthetic bacteria, Lactic Acid bacteria, and 72 other species of various beneficial micro-organisms at about Rs. 5 per acre.

Thus, organic farming is not too difficult to practice economically by small land holders. Organic production can create plenty of employment opportunities for rural people in their own villages to the extent of 20 crore jobs.

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