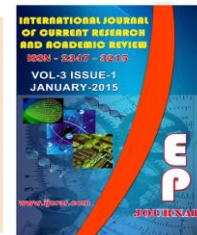




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### Farmers of Central part of India turned to adopt vermicomposting for organic farming in villages of Aligarh district, Uttar Pradesh and Bhopal, Madhya Pradesh, India

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#### KEYWORDS

Organic farming, vermicomposting, chemical fertilizer, biofertilizers, rural entrepreneurship.

#### A B S T R A C T

Vermicomposting activity was implemented successfully in many villages of Aligarh District of Uttar Pradesh in India with the assistance of the Department of Biotechnology, Government of India. A regular farmer's meet was organized for creation of awareness on the production and application of vermiculture as well as establishment of entrepreneurship among the rural people. The project implemented with the technical assistance of leadership of author in five panchayat blocks namely Lodha, Jawa, Khair, Tappal and Dhanipur. With the implementation of this project in all six blocks of Aligarh District, 6284 compost units have been established for the benefit of SC/ST, women and farmers. Similarly, farmers of village Parvalia Sadak Phanda development block of Bhopal district also turned to adopt vermicomposting for organic farming. The cost of single unit varies between US\$ 75-250 and it can be easily affordable by the farmers' as stated by the beneficiaries.

#### Introduction

In underdeveloped countries, green revolution has resulted in boosting the production due to intensive agriculture. Although it has resulted good harvests and productivity by reaping three crops in a year with good irrigation facilities, there was no thought about its adverse impact in the long run on the soil conditions and the environment, particularly during the last four decades. With the extensive use of chemical fertilizer and improper irrigation, productivity of the soil is getting reduced

considerably. The permanent and cheapest solution to overcome the dangerous effects of modernized agriculture is to develop a farming system which is economically productive and long-lasting is sustainable farming/natural farming by simple and inexpensive vermibiotechnology. Thus the old agricultural system/biological/organic/ecological/regenerative/natural/biodynamic/low input agriculture are the need of the hour. Vermi-biotechnology is an ecofriendly, socially sound and

economically viable innovative type of technology to manage the organic waste resources on low capital input basis, which does not call for expensive laboratories or sophisticated industrial instruments. It can provide employment to millions of youth, can eliminate the dependence on chemical; can convert wastes into fertilizers; can bring waste-land under cultivation, can feed hungry citizens and can make a country green and prosperous in a span of just a few years.

### **Vermicomposting Techniques Adopted by Farmers**

It is basically composting with earthworms (*Eisenia foetida*; *Eudrilus eugeniae*; *Perionyx excavatus*) in native all organic matters eventually decomposes. It can be done virtually anywhere either indoor or outdoor conditions. Organic wastes used for composting are animal dung (cattle dung, sheep dung, horse dung, goat dung and poultry droppings), agricultural waste (after harvesting and threshing of the produce), forestry wastes (wood-sawings, peels sawdust and pulp), city leaf litter (mango, guava, oranges etc, from residential areas) and paper and cotton clothes (if are not being recycled for other useful products, can be recycled with this technology) etc.

Usually 2 kg of earthworm recycled 1 kg of organic wastes in 24 hrs in absolutely ideal conditions of comfort and group up. Moist food, the herd recycled their own weight in waste in every 24 hours.

Vermicomposting is simple and no special training is required. It can be started with very low startup cost and can be done with available infrastructure and space and has no turning or odour. The earthworms perform all processing naturally and resulting product provides stable organic matter, which causes moisture and improves soil

conditioning, pH of soil and triggers soil biological activities and improves soil productivity in subsequent years.

### **Case Study of Farmers of Uttar Pradesh**

Vermicomposting activity was implemented successfully in many villages of Aligarh District of Uttar Pradesh in India with the assistance of the Department of Biotechnology, Government of India. A regular farmer's meet was organized for creation of awareness on the production and application of vermiculture as well as establishment of entrepreneurship among the rural people. The project implemented with the technical assistance of Vermiculture Research Station, Dharma Samaj College, Aligarh (UP) in five panchayat blocks namely Lodha, Jawa, Khair, Tappal and Dhanipur.

In the Barola Hagi village of Lodha block (about 20 kms away from the city), a cooperative society of SC/ST people have cattle but not much agricultural land and managing a vermiculture unit with around more than hundred vermicomposting beds. Most of its vermicompost is being sold in local market or to near town US\$ 50 per tonne. The society is actively associated in collecting and selling the vermicompost produce and earned more than US\$ 5000 during last two years.

In Rajpur village of Tappal Block, a progressive farmer is producing the vermicompost in bulk and applying upto 50-60 mt per month in the fields of paddy and vegetable crops. More than hundred farmers of Aligarh District have applied vermicompost in their fields and are not only saving upto fifty per cent of chemical fertilizer but also got 10-15% more yield.

According to the farmers' self-assessment through their farming, vermicompost is 4-5

times more effective than the conventional compost and has developed competition among the farmers to produce more and more through vermicomposting.

A progressive farmer of Khushal Gari village, Atrauli Block owns a nursery of horticulture plants and has earned an income of around US\$ 2500 through production and sell of earthworms and vermicompost besides meeting his own nursery requirements.

Also experimented the use of vermicompost in grafting of horticulture plants and observed a major change in accelerating the rooting of grafted plants.

Some of the enterprising graduate students have established their own units, which enable them to meet their contingency requirements. Realizing the success of this programme, rural banks of district authority have come forward to associate themselves to the rural community to work for the technology dissemination and to encourage more and more farmers to adopt vermicomposting.

Self help group approach is developing in a major way in vermicomposting in all the blocks of Aligarh District and village banking institutions are highly impressed with the micro-credit system established by the village community. Good linkages have been developed in the village cluster for marketing the worms and compost produced through cooperative building and self help groups.

Trained beneficiaries are being financed for the establishment of vermicompost units and vermiculture to propagate the activity in the village at large scale. This approach would help in developing a biovillage cluster. The country has no dearth for organic wastes,

congenial climatic conditions and required manpower.

### **Case Study of Farmers of Madhya Pradesh**

The story of an organic farmer Shri Manohar Patidar resident of village Parvalia Sadak in Phanda development block of Bhopal district, has carved out a distinct image through continuous involvement in agriculture development activities.. He was felicitated by Hon'ble Prime Minister Shri Narendra Modi for organic wheat production at large scale in 2015.. Patidar, had shifted to chemical-free organic farming in the year 2000. He achieved 98 quintal and 880 gram of wheat from one hectare land during 2014-2015 through organic measures and prior to that his production had reached 75 quintal per hectare. The organic ways bring about drastic decline in agri-production cost and the input cost is slashed by almost half. Patidar revealed that last year his average production of wheat per hectare from chemical farming was only 68 quintal. Saying that organic farming helps in keeping the health of the soil intact and offers safe produce, Patidar is also encouraging farmers of nearby area for organic farming. He has formed a group of 25 local farmers in his village, and trained for chemical-free farming. His endeavours are not going unnoticed as farmers and research scholars usually visited his organic farms from far-flung places. Author with co-workers visited his organic farm during 2014-2015 for sharing experience of vermicomposting.

According to organic farmers required marketing facilities for the organic produce are missing and hoped that state government would soon implement its announcement of establishing dedicated kiosks at grain market for the procurement of organic food grain. Farmers of the area lauded the organic

farming with the use of vermicompost as a component of organic farming. Presently farmers have reduced 50 % application of chemical fertilizer with application of vermicompost and also recorded 10-15% more yield. According to the farmer, self

assessment through their farming, vermicompost is 4-5 times more effective than the conventional compost and has developed competition among the farmers to produce more and more through vermicomposting.



Vermiculture Unit, Village Badhola Hazi, Block Lodha, District Aligarh



Vermiculture Unit, Village Rajpur, Block Tappal, District Aligarh

In conclusion, establishment of hatcheries and making available suitable earthworm quantity are the key factors for awareness building and popularization of vermicomposting in rural areas. Mass rearing and maintaining worm cultures and tapping of organic wastes for their maintenance has a good scope for developing it as a cottage industry in developing country like India to mitigate the problem of affecting crop diversity due to intensification and use of inorganic fertilizer and pesticides. The tapping of this resourceful technology is of utmost importance for the present day “as soil is the placenta of life” to meet the requirement of rural India.

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