



Vermicompost Production-A Profitable Enterprise: A Success Story

(*Shish Ram Jakhar, Sarvesh Tripathy and Chatra Ram Kantwa)

Krishi Vigyan Kendra, Jaora, Ratlam-457340, Madhya Pradesh, India

*Corresponding Author's email: soilshish1993@gmail.com

Vermicomposting is the process of producing compost by utilizing earthworms to turn the organic waste into high-quality compost that consists mainly of worm cast in addition to decayed organic matter (Ismail 2005; Devi and Prakash 2015). Vermicastings are the excreta of earthworms, rich in bacteria and plant nutrients. Vermicastings have beneficial effect on plant growth due to presence of micro and macro nutrients. Today vermicomposting is an important component of organic farming systems, because it is easy to prepare, excellent properties and is harmless to plants. Vermicompost improves the physical, chemical and biological properties of the soil as well contribute to organic enrichment (Chauhan and Singh 2013). Research on vermicomposting will provide farmers with an environment-friendly manure and assist in promoting the agriculture sector towards a Greene future. The use of such technology will help in cost management in agriculture which is increased in the recent years and has added to the burden of farmers in terms of chemical fertilizers and chemical pesticides.

Consequently, the cost of production has increased many folds. Use of organic source of fertilizers like vermicompost could be an effective solution to the problem where it could substitute the chemical inputs in crop productivity and reduce the economic cost and on the other hand may also lead to organic produce which fetches higher price in the market. The increase in living standards around the world has created a growing demand for such organic produce, or cultivation using only natural pesticides and fertilizers, which are perceived to be healthier for consumers and environment friendly (Kaplan 2016). Keeping in view the above facts and properties of vermicompost **Shri Pushkar Dhakad s/o Anokhilal Dhakad**, a progressive farmer, adopted as an occupation for his livelihood and generated employment for numerous agog farmers of nearby areas.

Farmer's Background

Shri. Puskar Dhakad s/o Anokhilal Dhakad (31) who is higher school education is from Riyawan Village, Block-Piploda, Ratlam district of Madhya Pradesh, India. He owns 4.0 ha of land and his main occupation is agriculture. He also owns a tractor and other important farm machinery and he always believe to do innovations in the field of agriculture so as to make agriculture a profitable enterprise. He came in contact with KVK Ratlam, in the year 2020 during Skill development training programme. Till then he has been cultivating traditional crops like wheat, Lentil, Garlic, Chick pea and some vegetables on a usual basis and use chemical fertilizers and has 6 cows.

Institutional Involvement for the farmers

After coming in contact with KVK Ratlam, he started his own Vermicompost unit. In the meantime he undertook training on Vermicompost production and the KVK Scientist provide all the technical help on the following points- 1. Site selection for construction of vermipit, 2.

Species of earthworms to be used, 3. Avoid using fresh cow dung, 4. Maintain proper aeration, 5. Optimum moisture level (50-60%) and temperature (25-32°C).



Preparation & Method adopted for vermicomposting

The types of vermicomposting depend upon the amount of production and composting structures. Small-scale vermicomposting is done to meet the personal requirement and farmer can harvest 5-10 tons of vermicompost annually.

Shri Dhakad started vermicomposting 40 units (size 12x4x2 feet) was established in a cool, moist and shady place. Number of units increased according to availability of raw materials and requirements. Cow dung and chopped dried leafy materials were mixed in the proportion of 3:1 and kept for 15–20 days for partial decomposition. During this period, heap kept moist by sprinkling of water so that temperature can be favorable to worms. A layer of 15-20cm of chopped dried leaves/grasses kept as bedding material at the bottom of the bed. Each bed contained 15 - 20q of raw material. Now 1.5-2.0 kg earthworms released on the upper layer of the pit/bed and covered with gunny bags/ straw so that worms can be saved from predators. Water sprinkled immediately after releasing worms and kept it moist by frequent sprinkling as per need. Bed turned once after 20-30 days for maintaining aeration and proper decomposition. A reddish colour liquid, with an alkaline reaction having dissolved nutrients, called vermiwash collected in the small chamber connected through drainage pipes fitted at the bottom of the tank. By this way vermicompost was ready in 60-70 days and amounting by weight $\frac{3}{4}$ th of the raw materials used. Moreover, vermiwash was additional product which was abandoned in nutrition having plant growth hormones, micronutrients and organic acids. For enriched of vermicompost, trichoderma, PSB, rock phosphate, azolla added accordingly.

Table-1 Economics of vermicompost production

Cost of vermicompost production (Rs.)	Gross income(Rs.)	Net income(Rs.)	B.C. Ratio	Total - 40 units working, 12 q/unit were produce, total compost produced - 480q, sale of vermicompost@1250/q
232000	600000	368000	1.58	

Conclusion

By this study it can be concluded that dashing people like Mr. Pushkar Dhakad are selecting vermicompost production, enhancing their livelihood status, improving soil health and conserving beneficial soil micro-organisms. Moreover, he is encouraging interested farmers to prepare this multifunctional quality product on their own farms so that farming community can be benefitted. Data collected from farmer's field indicated that benefit and cost ratio (1.58) is significantly higher and can boost-up ecofriendly Indian economy which is today's essential need.

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