Knowledge Level of Vermiculture Technology among Tribal People

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ABSTRACT

The study was carried out in five villages of two blocks in Kandhamal district of Odisha, which were adopted by Krishi Vigyan Kendra, Kandhamal (OUAT-Bhubaneswar). Sample consisted of 60 rural youth who had under gone training through KVK and had adopted the technology. Result depict that majority of the respondents had good knowledge about vermin-enterprise as 58.33 per cent possessed good knowledge and 41.33 per cent had fair knowledge level. Further, results highlights that majority of the respondents had good knowledge of advantages of vermin enterprise, essential raw materials, processing and care. Thus the training given by KVK had shown good impact on rural youth and they were running the enterprise successfully.

Key words: *Entrepreneurship, Rural Youth, Vermicompost.*

In India about one third of population lives under extreme poor condition and a large majority of them live under rural areas. In rural areas, most of the young people after basic education are in want of employment in their areas. Entrepreneurship is a major component of our economic development. The economic prosperity of any country depends on the entrepreneurial competence. In order to improve their living condition and to increase their income and knowledge, developing the capabilities of rural youth for self-employment becomes essential. There are a number of enterprises, which can be taken up by rural youth to improve their economic status.

Krishi Vigyan Kendra, Kandhamal, O.U.A.T., Bhubaneswar (Odisha) has started vocational unit of vermicompost in 2012-13 to encourage self-employment for rural youth through entrepreneurial activity. Knowledge is one of the most important component behavior and play an important role in the covert and overt behavior of human beings. Once knowledge is acquired, it helps to develop favourable attitude towards improved practices and thereby motivate an individual to take certain action in accepting an innovation or any practices. Considering this the study was planned with specific objectives to find out knowledge of tribal people about vermiculture technology promoted by Krishi Vigyan Kendra.

METHODOLOGY

Krishi Vigyan Kendra has adopted five villages of Block K. Nuagaon and G Udaygiri since last 2 years. Vermin enterprise was promoted in all five villages covering 60 rural youth. All these beneficiaries were included as the sample in the present study. A structured interview schedule was used for purpose of data collection. The tool was pretested on five members not included in the final sample. The content validity of the tool was judged through panel experts, while the reliability was calculated by using split-half method.

RESULTS AND DISCUSSION

Over all Knowledge : It is encouraging to note from Table 1 that the respondents had either medium or high knowledge about vermicomposting. There was no one in the category of poor knowledge.

Advantages of vermicompost : The data shown in Table 2 reveals that a majority of respondents (83-85 %) received the benefits of vermicomposting enterprise in terms of availability of raw material, the enterprises can be started at local levels. They were running it with their own resources i.e. cow dung, straws, neem leaves, vegetable wastes etc. and does not require any extra material. A good number of them (71.66 - 78.33%) also

Table 1. Overall knowledge of respondents about vermicomposting (N=60)

Knowledge level	No.	%
Poor	00	00.00
Fair	25	41.66
Good	35	58.33

Table 2. Advantage of vermicompost as judged by the respondents

Advantage	No.	%
Availability of raw material in the village	51	85.00
Can be started at village level	50	83.33
Take less time then Deshi Khad	47	78.33
Easy to prepare	43	71.66
Not costly	45	75.00
Simple technology	46	76.77
Less water requirement	41	68.33
Compost can be sold in village	21	35.00
Improve quality of crop	20	33.33
Crop produce is tasty	21	35.00
Save money	20	33.33
Copmpost is free from chemicals	07	11.66

Table 3: Knowledge of respondents about raw material needed

Raw Material	No.	%
Animal waste	60	100
Earth worms	60	100
Sand	60	100
Green neem leaves	60	100
Dry neem leaves	46	76.66
Gunny bags	60	100
Grain straws	5	08.33
Vegetable waste	13	21.66

Table 4. Knowledge of respondents about the process of preparing vermicompost

Advantage	No.	%
Bed should be in shade	60	100
Bed near by water source	19	31.66
Selection of place	26	43.33
Preparation bed 2” above	43	71.66
Collecting waste material	23	38.33
Thick layer of Agriculture waste	4	06.66
Thick layer of Animal waste	58	96.66
Sprinkling water for reducing temperature	43	71.66
Removing unwanted materials from waste	20	33.33
Thick layer of earth worm	60	100
Sprinkling water	60	100
Turning equipments	44	73.33
Covering bed with gunny bags	51	85.00

noticed that the technology is not costly, simple to prepare and use and take less time then deshi khad.

Further data reveals that water requirement is much less in laying vermin beds and the respondents who were involved in it, did not feel any such problem. Further, vermicompost could be prepared only in 45 days where as the *deshi* manure takes 6 to 8 months as said by the respondents. No special care was needed in preparation of vermicompost. Only 33.33- 35.00 % respondents could tell about the marketing of the vermicomposting in their own village. Farmers adopting vermin compost in vegetables, fruits crops and cereals indicate the size, quality, taste, shining were good, hence could perceive this benefit.

Raw material required : The data presented in Table 3 revealed that cent percent respondents had knowledge about important basic materials essential for preparing vermicompost *i.e.* Animal waste, earthworm, sand, green neem leaves, gunny bags for covering the bad. *etc.*, because laying vermicompost bed all these materials are essential for preparing vermicompost and being used by the respondents themselves.

However 76.66 per cent respondents had knowledge about keeping of dry neem leaves layer inside, which can be used as a substitute for green neem leaves and as a control over pests. 08.33 and 21.66 per cent respondents used grain straw and vegetable waste respectively. Which minimize pollution hazard and result in better village sanitation.

Process of preparing vermicompost : The recent talks on natural farming, organic farming, eco agriculture, bio dynamics agriculture etc, generate much emotion among some members of general public. Although, all these words differ slightly in precise meaning and emphasis, the under lying conceptual idea in same. Their description and methodologies are derived from a close study of nature. They all agree principle of least interference in natural system to raise healthy plants and animals. They all aims at quality and nutrition of the farm produce. Care must be taken to prepare good quality vermicompost.

The data presented in Table 4 clearly shows that 70 to 100 per cent respondents were aware about most of the basic and important steps in preparing vermin compost beds like bed should be in shade, require thick layer of cow dung or animal waste, sprinkle water on bed daily, laying thick layer of earthworms, turning equipments, preparing bed 2” above, gunny bags for covering the vermicompost beds and sprinkle water to reduce the temperature. Only 31.66 to 43.33 per cent

respondents had knowledge about selection of place, collecting waste materials, removing unwanted things from materials and preparing bed nearby water source. There were only 6.66 per cent respondents who had knowledge about the use of agriculture wastes.

Table 5. Knowledge of respondents about preparing vermicompost and proper storage of vermicompost

Process	No.	%
Care needed while preparing vermin compost		
Stop watering when compost is prepared	51	85.00
Removes worms from compost	45	75.00
Don't dry the compost in direct sunlight	57	95.00
Empty the bed	43	71.66
Storage of vermin compost		
Safety from moisture	35	58.33
Properly sieve the compost	25	41.66
Using cement bags for storing compost	28	46.66

Care needed during storage of vermicompost : The data presented in Table 5 clearly indicates that 95.00 per cent respondents were aware about drying of prepared vermicompost. The respondents answered that the vermicompost should not dry in direct sunlight because it may deteriorate colour and quality of the vermicompost. About 71-85 per cent respondents could tell about not to sprinkle water on prepared compost. Removing worms from prepared compost and emptying the bed so that it can be used further. About 41-58 per cent respondents had knowledge about proper storage of vermicompost such as safety from moisture, use of cement bags for storage and sieving before packing.

Feature of prepared vermicompost : Table 6 depicts that 85-91 per cent respondents had knowledge about granular from compost, odorless and dark brown in colour, because all these features were observable and easily understandable to entrepreneurs, nearly 73 per cent respondents were able to answer about the non-sticky features of vermicompost that can be known by touching the compost. 38.33 per cent respondents answered regarding penetration of earth worms inside the prepared compost because from the upper side of the compost.

Table 6: Knowledge of respondents about feature of vermicompost

Features	No.	%
Granular from compost	53	88.33
Dark brown in colour	55	91.66
Odorless compost	51	85.00
Non sticky compost	44	73.33
Earth worms penetrates inside compost	23	38.33

CONCLUSION

Vermi composting is an eco-viable technology becoming popular as it is simple and involves low investment. The technology does not need sophisticated infrastructure. For composting yards all that is required some area, bricks & roof. The method is also simple and can be easily understood by rural youth. The present study led to conclude that a majority of the respondents had a very good knowledge about various aspects of vermin composting such as advantages, raw material, process of running the enterprise and care needed in the enterprise.

REFERENCES

Bhawalkar, U.S. (1990). Bio conversion of wastes into resources, *4th International Symposium On Earthworm ecology*, June 10-14, 1990, Avignum, France.

Gupta, P.K. (2003). Vermicomposting for sustainable agriculture, *Agrobios* (India), Agro house, Jhodpur, Rajasthan.

Liu T, Ren ZL, Zhang C, Chen XF, Zhou B and Dai J. (2012). Effects of composting with earthworm on the chemical and biological properties of agricultural organic wastes: a principal component analysis. *Ying Yong Sheng Tai Xue Bao*. Mar;23(3):779-84.

Pathma J and Sakthivel N (2012). Microbial diversity of vermicompost bacteria that exhibit useful agricultural traits and waste management potential. *Springerplus*. 2012 Oct 4;1:26

Shields, Earl, B. (1982). Raising Earthworms for profit, Shields Publication, Wasconsin, 128.

Singh D and Suthar S (2012). Vermicomposting of herbal pharmaceutical industry waste: earthworm growth, plant-available nutrient and microbial quality of end materials. *Bioresour Technol*. May; 112:179-85

Zhang ZJ, Liu M and Zhu J. (2013). Organic waste treatment by earthworm vermincomposting and larvae bioconversion: review and perspective. *Huan Jing Ke Xue*. May;34(5):1679-86.

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