Adoption of vermiculture technology by tribal farmers in Udaipur district of Rajasthan

Karan Singh
Ph. D. Scholar
Department of Extension Education
RCA, Udaipur

B.S. Bhimawat
Training Organiser
KVK
Dungarpur

N.K. Punjabi
Associate Prof.
Dept. of Exten'n Ed
RCA, Udaipur

Introduction

Vermiculture is the science of cultivating earthworms which feed on waste material and soil and release digested food material back into the soil, thereby producing compost rich in nutrients. Worms are natural ploughers of the soil throughout the day and night, maintaining the fertility and porosity of the soil. Vermiculture is considered a proven technology for increasing production and productivity of different crops. The use of vermicompost is of recent origin and thus many farmers are not even aware of its advantages. One of the major goals of extension is to get new and profitable technology adopted by farmers. Agencies such as SAUs, ICAR institutes**,** NGOs and voluntary agencies are working to disseminate and popularize vermiculture technology among the farming community. The technology is not intricate and involves a simple procedure of compost preparation, skills which can be easily learned and mastered by users. There may be some factors like lack of skill in making compost, poor economic conditions or lack of knowledge about operations and use, which restrict farmers. Therefore the present study was undertaken to learn the extent of adoption of different practices of the technology recommended by scientists and find the adoption gap in various practices. The specific objective was to find the extent of adoption of vermiculture technology.

Research Methodology

The study was conducted in purposely selected Jhadol Panchayat Samiti in Udaipur district of Rajasthan. Four villages of Panchayat Samiti were selected on the basis of maximum work done in vermiculture by various organizations. The respondents were then selected from a list of vermicompost unit holders of each selected village by following the proportionate sampling procedure. Thus the study sample comprised of 120 respondents. Data were collected from the respondents through a well structured interview schedule by employing face to face interview technique. Thereafter, data were analyzed and tabulated and inferences were drawn in the light of the study objective.

Results and Discussion

Table 1 Distribution of respondents on basis of adoption of vermiculture technology

Level of Adoption	Adoption Score	F	%
Low	25.74	30	25
Medium	25.75-34.70	72	60
High	>34.70	18	15
Total		120	100

It is clear from the data recorded in Table1 that more than half of the total respondents (60 %) fell in the category of medium level of adoption of technology. One-fourth had a low level of adoption, while 15% came from the high adoption group of vermiculture technology. Based on data in Table 1, it can be safely concluded that the majority of respondents were medium level adopters of vermiculture technology and there was a tremendous adoption gap among farmers which needed to be bridged by various means of extension.

Table 2 Adoption of scientific recommendations regarding preparation of beds and raw material for composting

n=120

Practice	MPS	Rank	Adoption Gap %
Raised Beds	55.91	3	44.09
Beds under natural shade	64.76	1	35.24
Beds near water source	62.50	2	37.50
Preparation before treatment of beds	48.33	6	51.67
Treatment of raw materials	52.67	4	47.33
	49.16	5	50.84

MPS= Mean Percent Score

An observation of data in Table 2 reveals that a comparatively higher number of respondents (MPS 64.76) adopted the scientific recommendation of making beds under natural shade. This was followed by nearly the same number of respondents (MPS 64.50) who constructed beds near a water source as per the recommendation. It is encouraging to note that more than half of respondents (MPS 55.91) followed the recommendation and prepared beds 2 inches above ground level.

The data further indicates that the maximum adoption gap (51.37%) was found in following the practice of preparing beds without treatment. Similarly 50 per cent of respondents did not follow recommendations regarding preparing raw material free from plastics, glass pieces and hard sticks.

Table 3 Adoption of scientific recommendations regarding process of filling beds

Practice	MPS	Rank	Adoption Gap %
Pre-treatment of beds before filling	57.91	5	42.09
Use of mild insecticide or neem leaves for pre-treatment	50.83	8	49.17
Use of 2" layer of agricultural waste on beds	66.63	3	33.67
Use of thick layer of cow dung to cover agricultural waste	69.79	1.5	30.21
Sprinkling water on beds regularly	69.79	1.5	30.21
Keeping beds moist for 2-3 days	49.81	9	50.19
Placing thick layer of earthworms on one side of bed	61.25	4	39.75
Covering surface of bed with waste material	55.83	6	44.17
Sprinkling beds with clean water	51.25	7	48.75

N + 120 MPS = Mean Percent Score

It can be seen from the data in Table 3 that respondents had the maximum level of adoption of scientists' recommendation regarding covering agricultural waste with a thick layer of cow dung and sprinkling water on the bed at regular intervals. Both these aspects were accorded first rank with an adoption gap of 30.21 per cent each. This was followed by the practice of using a 2 inch thick layer of agriculture waste with MPS 66.63 leading to an adoption gap of 33.67 percent. Similarly the recommendation of placing a thick layer of earthworms on one side of the bed was adopted by a considerable number of respondents (MPS 61.25). Consequently the adoption gap in this aspect was reported to be 39.75%. It is discouraging to note that nearly half respondents did not use mild insecticide or neem leaves for pre-treatment of beds. Similarly the recommendation of sprinkling clean water on the beds with fixed periodicity for maintaining moisture was adopted by barely half of the respondents (MPS 51.25), leading to a gap of 48.75%.

Table 4 Adoption of scientific recommendations for proper maintenance of beds n=120

Practice	MPS	Rank	Adoption Gap %
Watering beds to maintain temperature & humidity	54.16	1	45.84
Filling beds to a recommended level	37.91	4	62.09
Keeping beds free from unwanted plants	47.90	3	52.10
Keeping beds and surroundings clean	50.83	2	49.17

MPS = Mean Percent Score

It is clear from data in Table 4 that an adoption gap of 45.84% existed for the recommended

practice of regular watering for maintaining temperature and humidity in the bed. It is alarming to note that filling of beds to a recommended level was the area with the highest adoption gap i.e. 62.09%. Likewise an adoption gap of nearly 50% was observed for the practices of keeping beds free from unwanted plants and keeping beds and their surroundings clean.

Table 5 Adoption of scientific recommendation regarding care before using vermicompost

N = 120

Practice	MPS	Rank	Adoption Gap %
Stop watering over prepared vermicompost at appropriate time	55.33	4	44.67
Separating earthworms	68.37	2	31.63
Putting vermicompost on pukka/ plastic / rocky floor	48.05	8	51.95
Keeping vermicompost away from sunlight 4-5 hours for separation of earthworm	49.16	7	50.84
Re-filling of beds same day	00	9	
Using vermicompost in different crops including vegetables and fruits	70.43	1	27.57
Drying of vermicompost for 3-4 days before storage	50.08	6	49.92
Storage of vermicompost in cold place or under shade	59.64	3	40.36
Watering and giving soft organic feed to earthworms during transportation	52.83	5	47.17

MPS = Mean Percent Score

It can seen from the data in Table 5 that respondents had the maximum adoption for the recommendation of using vermicompost in vegetable and fruit plants which was accorded first rank with MPS 70.43, leading to an adoption gap of 27.57%. This was followed by the practice of separating earthworms from vermicompost with MPS of 68.67 and consequent adoption gap of 31.63%. Similarly the recommendation of storing prepared vermicompost in a cold place or under shade was adopted by a considerable number of respondents (MPS 59.64). It was further noted that more than half of the respondents followed the recommendation and stopped watering prepared vermicompost at the appropriate stage. The adoption gap in this aspect was 44.67%. It is discouraging to note that nearly 50% of respondents did not keep vermicompost on a pukka / plastic / rocky floor after its preparation, as suggested by scientists.

Conclusion

Keeping in view the data in the Tables 1 to 5 regarding adoption of different aspects of vermiculture technology, it can be concluded that there is a significant adoption gap in almost all the practices. This may be due to farmers' poor knowledge or lack of skills in performing different practices recommended by scientists. It is therefore suggested that the knowledge and competencies of farmers who are using vermiculture technology should be improved by various means of transfer of technology.

References

Kaur, P (2002) Evaluation of vermiculture technology transfer programme among rural women in terms of knowledge and adoption. M.Sc. Thesis (Unpublished) MPUAT, Udaipur Campus H.Sc., Udaipur

Saxena, K.K. Singh, R. (1997) Adoption of organic farming practices by farmers of Malwa Region, Maharashtra Journal of Extension Education, Vol. XIX :53-55.

Thyagarajan, S. and Ramanath, N. (2001) Adoption of bio-fertilizers in rice cultivation. Indian Journal of Extension Education. Vol. XXXVII (3 & 4): 179-182.