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Impact of training programme on adoption of vermicomposting practices in Saharsa district of Bihar

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Abstract
The present study was carried out in Saharsa district of Bihar state to explore the impact of training programme on adoption of vermicomposting practices among the farmers of Saharsa district of Bihar. 120 number of respondent were randomly selected from 12 villages of three blocks of Saharsa district. 68.33 percent respondents had medium level of knowledge regarding practices of vermicomposting. Uses of vermicomposting ranked I with mean score 2.52 followed by filling of vermibed ranked II with mean score 2.50.

Keywords: training programme, impact, adoption, vermicomposting

Introduction

With growing population and shrinking resources, the challenges to increase agricultural production on a sustainable manner is indeed a formidable one synthetic fertilizer, which have made the green revolution possible have the limitation of higher costs and causing environmental pollution.

Production of NPK fertilizer in India is less than required amount and it is estimated that about 5-7 million metric tonnes of NPK fertilizer would be the shortfall in the next two decades (Bhagyaraj, 2004) [3]. Organic manure such as vermicompost, green manure and biofertilizer would found the source to bridge the gap. To adopt alternate agricultural system for sustainable production, vermicomposting could a play great significance. Vermicompost is the product of the composting process using various species of earthworms. It is a heterogeneous mixture of decomposing vegetables or food wastes bedding animals, vermicast and worm humus. It is the end product of the breakdown of organic matter by an earthworm (Allen, 2016) [1]. Containing water soluble nutrients, vermicompost is an excellent nutrient rich organic fertilizer and soil conditioners (Sherman, 2003) [9]. The process of producing vermicompost being a stable fire granular organic manure when added to clay soil loosens the soil and improve the passages of the entry of air. The mucus associated with the cast being absorbs water and improves water holding capacity of the soil. The soil enriched with vermicompost provides additional substances that are not found in chemical fertilizers (Kale, 1998) [6]. Recycling of wastes through vermicomposting reduces the problem of dumping of huge quantities of wastes and it has economic value compared with compost desired from traditional method (Chauhan *et al.*, 2010) [4]. It also saves water, energy, landfills and helps rebuild the soil (Arora *et al.*, 2012) [2]. The current production we are facing is declining production year after year. What we require today is to sustain present production and then increase slowly. Sustainability is lacking and key to sustainability is organic farming. Vermicompost is a component of organic farming. Training is an important input in which we helps farmers to practice techniques scientifically. A training may be described as an actual condition different from a desired condition in the "people aspect of organization performance or more specifically when change in present human knowledge skill and attitude (Das and Mishra, 2002) [5]. Mandan Bharti Agriculture College, Agwanpur, Saharsa conduct training on vermicompost production to the farmers in its jurisdiction. The present study was designed to study the knowledge level and adoption behaviour of trained farming towards vermicomposting.

Materials and Methods

Since the study aims at measuring the knowledge and adoption of trained farmers by Mandan Bharti Agriculture College, Agwanpur, Saharsa, it was necessitated to conduct the study in the jurisdiction of MBAC, Agwanpur, Saharsa. Saharsa district was purposively selected as there was merge information related to impact of training programme of vermicompost is available and particularly related to the effectiveness of training imparted. The list of trainees who obtained from the Mandan Bharti Agriculture College, Agwanpur, Saharsa. A multi stage purposive cum simple random sampling was followed for selection of three blocks namely: Sattar Kataiya, Nauhatta and Kahra of Saharsa district of Bihar. Ten trained farmers from for villages of each three blocks were selected. The total sample of the study constituted 120 respondents. Keeping in view the objectives of the study, a structured interview schedule was prepared by reviewing the previous research studies, consulting and discussing with the experts and professional workers in the field of agricultural extension. The data were collected by personal interview cum questionnaire method. The statistical tolls such as mean, frequency and percentage were employed whereas found appropriated and data were analysed to draw valid inference. In this study practice statements were prepared based on the actual performance of a respondents in use of an idea in making vermicompost. Based on the statements prepared, the 3 point continuous was used i.e. fully apply, sometime apply and

not apply with respective weightage of 3, 2 and 1. On the basis of the total score obtained respondents were categorized into three classes i.e. low, medium and high level of practice.

Result and Discussion

The data on the existing practices of vermicomposting adopted by farmers has been presented in table-1. Practice was assessed in vermibed preparation, raw materials, earthworms, processes of filling vermibed, maintenance of vermibed, harvesting of ready compost care taken during its transportation and its uses most of the respondent (70.83 per cent) had medium practice level followed by (12.50 per cent) had high and only (16.67 per cent) had high practice level. It might be due to the lack of scientific knowledge regarding vermicomposting. These finding are in the confirmatory of the findings of Subhashini *et al.* (2017) [12], Tyagi (2016) [13] and Sharma *et al.* (2013) [8]. Yadkikar (1991) [14] also found that 67.50 per cent of respondents show their level of adoption at the medium level while 16.50 per cent and 16 per cent of the respondent fall under low and high levels of adoption respectively. Similarly Single (1997) [11] found that about 55.00 per cent of the trained farmers were located in medium adoption level while 3168 of the trained farmers in high level of adoption. The data in the table 2 reveals that uses of vermicompost ranked I with mean score 26.52 followed by filling of vermibed ranked with a mean score 26.50. Similarly moisture management and watering ranked III with a mean score 2.48 followed by earthworms which ranked IV with mean score 2.44. Another practice statement such as maintenance of vermibed and raw material ranked V and VI with a mean score of 2.40 and 2.32, respectively. Bed preparation and harvesting of ready compost ranked VII and VIII with mean score of 2.28 and 2.2, respectively. Care during the transportation of the ready product ranked II with a mean score of 2015. Similar finding was also reported by Kalita *et al.* (2018) [7]. Arrangement of training would pave way of high perception of beneficial effect of vermicompost (Shiduzzaman *et al.*, 2018) [10].

Table 1: Distribution of respondents according to existing practices of vermicomposting

		N = 120
Category	**Frequency**	**Percentage**
Low	15	12.50
Medium	85	70.83
High	20	16.67

Table 2: Ranking of parameters statements according to their mean score

Sl. No.	Statement	Mean Score	Rank
1.	Vermibed preparation	2.28	VII
2.	Raw materials	2.32	VI
3.	Earthworms	2.44	IV
4.	Moisture management and watering	2.48	III
5.	Filling of vermibed	2.50	II
6.	Maintenance of vermibed	2.40	V
7.	Harvesting of ready compost	2.22	VIII
8.	Care during transportation	2.15	IX
9.	Uses	2.52	I

Conclusion

The higher level of knowledge and adoption of trained farmers with regard to vermicomposting implied that the higher knowledge may be attributed to the training component. Thus there is a need for organizing training programme effectively on improved vermicompost practices for the benefit of large number of farmers. The results also indicated that the trained farmers can be considered ad special group of clientable by the local extension agency to promote diffusion of technology.

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