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Knowledge of rural people of Haryana regarding compost

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Abstract

Vermicompost is used for providing nutrients N, P and K to plant which is beneficial for the growth of plants. Vermicompost is cost-effective as compared to inorganic fertilizers. So the study was conducted to assess the knowledge of respondents regarding vermicompost. The study was conducted in four villages of two districts i.e. Sirsa and Hisar of Haryana state. Total 240 respondents (30 males and 30 female from each village) were taken for the study. The result shows that rural people have low knowledge regarding vermicompost. Not a single statement covers 50.00 percent of respondents regarding the compost. Only 40.00 percent of respondents have knowledge about correct method of preparing the compost. Overall knowledge of the rural people regarding different aspects of compost is low.

Keywords: Vermicompost, knowledge, beneficial, cost- effective

Introduction

Compost contains different amounts of N, P and K, and is a beneficial source of plant nutrients. It is used for providing nutrients to plant, bio-fertilizers and different composts are used. Among numerous sources of organic matter, vermicompost have been recognized as having considerable potential as soil amendments (Arancon *et al.* (2005)) [1]. Because the earthworms increase the nutrients amount in the compost as compared to simple compost. Vermicompost contains nutrients for plants in easily available forms such as nitrates, phosphates, and exchangeable calcium and soluble potassium.

Inorganic fertilizers are very expensive and sometimes they are not available in the market due to which the farmers fail to apply the fertilizers to the fields at right time. On the other hand, the organic manure is easily available to the farmers and its cost is low as compared to that of inorganic fertilizers. Application of vermin-compost is one of the most economical and attractive methods of solving the other problems like waste disposal and the requirement to increase the organic matter content of soil. The present study was conducted to assess the knowledge of respondents regarding compost.

Review of Literature

Oliveira *et al.* (2001) [3] revealed that the use of vermi-compost with 29 ton/ha increases the yield of cabbage.

Samawat *et al.* (2001) [4] found that vermi-compost had a positive effect on the number of fruits in tomato. By 100 percent vermicomposting treatment, fruit numbers were four times more than the control treatment.

Singh *et al.* (2002) [5] explained that under Indian conditions, collective composting of the manure slurries with plant residues was more viable and profitable than its separate composting. During rice wheat rotation joint application of FYM and green manure sustain high levels of Zn, Fe, Cu, and Mn.

Watson *et al.* (2002) [6] reported that to fulfill nutrients need of crops, legumes for adding nitrogen and some acceptable supplementary nutrients were used. Manures and crop residues recycle the nutrients. Soil organic matter management improved the soil structure, biological activity, health and production of crops.

Datta *et al.* (2006) [2] explained that the soil bunch with FYM one week before sowing of rajmash increased yield. FYM increases Nitrogen fixation with net positive balance of 42 and 84kg Nitrogen, respectively. It showed positive impact on growth stages of rajma.

Methodology

The study was conducted in two districts of Haryana state viz. Sirsa and Hisar districts. Two blocks, Nathusari Chopta from Sirsa and Adampur from Hisar were selected randomly. From each block, two villages were selected randomly. Thus, the study was conducted in four villages i.e. Rupana Khurd, Nathusari Kalan, Chuli Khurd and Chuli Kalan by selecting sixty respondents (30 males and 30 females) from each village through random selection. Total 240 respondents were taken for the study. The data were collected through pretested questionnaire and analyzed by applying frequency and percentage tools.

Results

Plant nutrients provided by organic manure

Data in table 1 pinpointed that 15.8 percent respondents had knowledge that sorghum/rice/maize straw can be expected to add 26 kg nutrients/ton followed by 108 Percent respondents knowledgeable about farmyard manure provides 12 kg nutrients/ton, compost provided 40 kg nutrients/ton (7.5%) and legume green manure provides 20 kg of nitrogen/ton (5.4%) respectively. Majority of respondents (75.0%) had no knowledge about nutrients provided by organic manure.

Table 1: Knowledge of respondents about plant nutrients provided by organic manure

Sr. No.	Plant nutrients	Sirsa F (%) (n = 120)	Hisar F (%) (n = 120)	Total F (%) (N= 240)
1	FYM provides 12 kg nutrients/ton	12 (10.0)	14 (11.6)	26 (10.8)
2	Compost provided 40 kg nutrients/ton	11 (9.1)	7 (5.8)	18 (7.5)
3	Legume green manure provides 20 kg of nitrogen/ton	5 (4.1)	8 (6.6)	13 (5.4)
4	Sorghum/rice/maize straw add 26 kg nutrients/ton	17 (14.1)	21 (17.5)	38 (15.8)

Multiple response table

Knowledge of respondents about preparation of organic manure

Material required

Table 2 revealed that 42.5% respondents had knowledge that grass clippings, weeds, leaves and garden waste, animal dung could be used for compost, top soil and sod, fruits and vegetables waste (39.1%) and tree fruits, berries, branches, waste fodder (32.0%) respectively.

Steps for preparing good compost

Majority of the respondents (40.8%) had knowledge that after six months compost is ready to apply in the fields, repeating the layering process till the pit is full (33.7%), prepare the layers of organic waste- plant residues, sweeping from the cattle shade, waste fodder, dried plant stalks and leaves and sprinkle the water to just moist it (32.5%), cover the layers with cattle dung slurry (28.7%), close the pit with waste fodder and then heap the soil till it gets convex shape

(25.83%) respectively. Approximately 24.1 percent respondents had knowledge of adding 5 to 10 kg of super phosphate for every 10 tons of organic waste and make slurry of the cattle dung with water (23.3%) respectively.

Super phosphate addition in compost

Table 2 presented that 33.7 percent respondents had knowledge that super phosphate addition increases the phosphate content of compost, decreases nitrogen losses (28.3%) and nitrogen in the organic waste will be less due to volatilization (20.0%) respectively.

Advantages of compost

Majority of the respondents (40.4%) had knowledge that compost increased healthy soil building followed by reduces the amount of waste by landfill, reduces pollution (22.0%) and conserves resources (17.0%) respectively.

Table 2: Knowledge of respondents about preparation of organic manure

Sr. No.	Statements	Sirsa F (%) (n = 120)	Hisar F (%) (n = 120)	Total F (%) (N = 240)
1	Material required			
1	Grass clippings, weeds, leaves and garden waste, animal dung	49 (40.8)	53 (44.1)	102 (42.5)
2	Waste fodder, fruits and vegetables waste	41 (34.1)	36 (30.0)	77 (32.0)
3	Soil from field	45 (37.5)	49 (40.8)	94 (39.1)
2	Steps for preparing good compost			
1	Make slurry of the cattle dung with water	23 (19.1)	33 (27.5)	56 (23.3)
2	Prepare the layers of organic waste	36 (30.0)	42 (35.0)	78 (32.5)
3	Cover the layers with cattle dung slurry	29 (24.1)	40 (33.3)	69 (28.7)
4	Add 5 to 10 kg of super phosphate/10 tons of organic waste.	31 (25.8)	27 (22.5)	58 (24.1)
5	Repeat the process till the pit is full	44 (36.6)	37 (30.8)	81 (33.7)
6	Close the pit with waste fodder and then heap the soil till it gets convex shape	33 (27.5)	29 (24.1)	62 (25.8)
7	Compost will be ready after 6 months	44 (36.6)	54 (45.0)	98 (40.8)
3	Super phosphate addition in compost			
1	Nitrogen in the organic waste will be least due to volatilization	26 (21.6)	22 (18.3)	48 (20.0)
2	Addition of super phosphate decreases nitrogen losses	29 (24.1)	29 (24.1)	68 (28.3)
3	It increases the phosphate content of compost	42 (35.0)	39 (32.5)	81 (33.7)
4	Advantages of compost			
	Reduces the amount of waste by landfill	44 (36.6)	53 (44.1)	97 (40.4)
2	Conserves resources	23 (19.1)	18 (15.0)	41 (17.0)
3	Reduces pollution	26 (21.6)	27 (22.5)	53 (22.0)
4	Builds healthy soils	54 (45.0)	57 (47.5)	111 (46.2)

Multiple response table

Advantages of vermicompost

Table 3 revealed that 44.1 percent of respondents had knowledge that vermicompost improves soil performance and crop yield followed by increases flavor and shelf-life of food

(35.0%), environmental friendly (30.4%) and Increases nitrogen uptake up to 30-50% (25.4%) respectively. Only 18.5 percent respondents had knowledge about increases root length and number and shoot length.

Table 3: Knowledge of respondents about advantages of vermicompost

Sr. No.	Advantages	Sirsa F (%) (n = 120)	Hisar F (%) (n = 120)	Total F (%) (N= 240)
1	Environment friendly	31 (25.8)	42 (35.0)	73 (30.4)
2	Improve soil performance and crop yield	59 (49.1)	47 (39.1)	106 (44.1)
3	Increases nitrogen uptake up to 30-50%	29 (24.1)	32 (26.6)	61 (25.4)
4	Increases in root and shoot length, root number	21 (17.5)	23 (19.1)	44 (18.5)
5	Increases flavor and shelf-life of food	46 (38.3)	38 (31.6)	84 (35.0)

Multiple response table

Table 4: Knowledge of respondents about advantages of organic manure

Sr. No.	Advantages	Sirsa F (%) (n = 120)	Hisar F (%) (n = 120)	Total F (%) (N = 240)
1	Increases the organic matter in soil	40 (33.3)	46 (38.3)	86 (35.8)
2	Increases the water holding capacity of soil	45 (37.5)	52 (43.3)	97 (39.1)
3	Increases the drainage in the clay soil	29 (24.1)	23 (19.1)	52 (21.6)
4	Provide organic acids to dissolve soil nutrients make them available to crop	61 (50.8)	49 (40.8)	110 (45.8)

Multiple response table

Advantages of organic manure

Data presented in table 4 revealed that 45.8 percent respondents had knowledge that organic manure provides organic acids to dissolve soil nutrients and make them available for crop followed by increases the water holding capacity of soil (39.1%), increases the organic matter in soil (35.8%) and increases the drainage in the clay soil (21.6%) respectively.

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