

## AWARENESS OF FARMERS OF PUNJAB (INDIA) REGARDING VERMICOMPOST

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**Abstract.** A study was conducted with 108 farmers in different district of Punjab with the objectives to ascertain their level of awareness about vermicompost, sources of information used and constraints faced by them in adopting the technology of vermicomposting. Data had been collected randomly. This study revealed that the majority of farmers were having very low level of awareness and usage of vermicompost. Study concludes that social media and other informational sources can be utilized to create awareness in this regard. The major constraints noticed were the non availability of worms in nearby market, lack of money and knowledge about vermicompost preparation. Removing all these constraints need organized efforts from all government and non government agencies.

**Keywords:** Vermicompost, information sources, awareness, economy, farmers, Punjab

### 1 Introduction

The ill effects of the excessive use of fertilizers and pesticides on the soil and human health are well documented and scientists have now become aware of the grave dangers of inorganic farming (Nagnur et al. 2012). Indiscriminate use of chemical fertilizers causes several problems on farm. Chemical fertilizers deteriorate the fertility of soil and leads to health hazards (Kale et al. 2011). It is seen that farmers have made use of modern technology, fertilizers, insecticides, pesticides, micronutrients and growth promoters. But, the use of organic matter is specially ignored (Crane, 1993). If farmers can be educated and trained in using organic wastes effectively and efficiently it would help agriculture to go the organic way (Nagnur et al. 2012).

Vermicompost is the potential alternative to chemical fertilizer because of significant change in crop production system, reasonable cost and environmental soundness. It is helpful for proliferation and survival of beneficial microorganisms in the soil (Pagaria, 2014).

Vermicast is popularly known as Black gold because of rich in nutrients, growth promoting substances, beneficial soil micro flora (Kumar et al. 2017). Vermicompost technology

is affordable for farmers because of its low cost and marketing of its available plant nutrient like nitrogen and phosphorus (Pandey and Pandey, 1995). For accelerating the use of vermicompost,

It is essential to train the farmers, encourage them to use Vermicompost in their field for crop production (Pagaria, 2014). The use of vermicompost helps in environmental balance, bio diversity, improves ecosystem, reduces pollution as chemicals are not used and also lowers risk of diseases due to pesticide use. The crops grown by using organic fertilizers fetch higher prices in the market than the crops, vegetables and fruits produced from chemical fertilizers (agritech.tnau.ac.in).

Vermicompost is the richest natural manure high in nitrogen, phosphorus and micronutrients with no harmful chemicals. However earnest efforts have not been made by the state government to promote the use and preparation of vermicompost<sup>1</sup>. Vermicompost, an organic fertilizer recycled by red worms can halt the indiscriminate use of chemical fertilizers in Punjab and can also generate additional income for the farmers, but unfortunately not much awareness has been generated in this direction<sup>2</sup>. Therefore, there is a need to assess the level of awareness of farmers about vermicompost and to inculcate interest in them in this regard.

## **2. Objectives of the Study**

The present study is designed with the following objectives:

- To assess awareness level of farmers of Punjab regarding vermicomposting.
- To find out the sources of information from where farmers get awareness regarding the techniques of preparation and use of vermicompost.
- To ascertain the obstacle faced by respondents in the use of vermicompost.
- To give suggestions to promote the usage of vermicompost among farmers.

## **3. Materials and Methods**

Kisan melas (Farmers' fairs) are regularly held biannually at Punjab Agricultural University (PAU), Ludhiana (India) in the months of March and September. These fairs attract 0.1 million farmers every session (<http://web.pau.edu>). For this study, a structure interview schedule in Punjabi language was prepared to collect information from the farmers. During the

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<sup>1</sup> <http://www.oneindia.com>

<sup>2</sup> <http://news.webindia123.com>

kisan mela of March 2016, information was collected randomly from 108 farmers regarding their awareness about vermicomposting.

**Statistical Analysis:** The data obtained were analyzed for percentage and Chi test standard procedures.

#### **4. Results and Discussion**

The demographic characteristics of farmers such as gender, age and qualification are presented in Table 1. It is clear from the above table that out of 108 respondents, 78.70 were males and 21.30 were females. Majority of the farmers have completed (40.74 percent) secondary level education. About 22.22 percent of them were matriculate and 13.89% were graduates. Only 2 male farmers were illiterate. A large number of farmers (33.33 percent) was in age group of 35-39, followed by (17.59) in age group of 30-34. Only 1.85 percent was in age group of 60-64.

The awareness of farmers about vermicompost is shown in Table 2. It is clear from this table that the largest proportion of farmers was not aware of vermicompost. From chi square test, it has shown that awareness of male and female are not associated to each other significantly. Kale et al. 2011 also found that majority of farmers have medium level of knowledge about vermicompost, which indicates that there is a scope for improvement. Similar were the observation of Chothe (1999) with regard to knowledge of farmers about bio-fertilizers

The table no. 3 shows that all the 39 farmers came to know about vermicomposting from television. Majority of them informed that Mere Pind Mere Kheth (My Village My Farms) programme telecasted on Delhi Doordarshan, Jalandhar created much awareness among them regarding the various aspects of vermicomposting. Kisan Melas (Farmers' Fairs) organized by Punjab Agricultural University also helped to create awareness among 79.48 percent farmers. About 46.15 percent respondents came to know about vermicompost from their friends/neighbors/relatives. Social media like Whatsapp and Facebook also improved farmer's knowledge about vermicomposting. From chi square test, it has shown that awareness of male and female are not associated to each other significantly with respect to sources of awareness.

It is clear from this table that shortage of funds is a major obstacle faced by 76.92% farmers in using vermicompost. About 56.41% respondents reported difficulty in procuring/getting earthworms and 25.64% of them indicated lack of training for preparation of

vermicompost as obstacle in making use of vermicompost in farming. Kaur and Kalra (2005) also found lack of vermicompost and lack of open market for organic farming as obstacles pointed out by all the respondents. Similar findings were observed by Ranganatha et al. (2001), Bhole and Borker (2002) and Nirmala et al. (2002). Each and every people as well as Government machinery in India have to be serious to remove constraints mentioned above and to spread Vermicomposting Technology at grass root level (Sannigrahi AK, 2016)

## 5. Conclusions and Suggestions

From the finding of this study, it can be concluded that there is very less knowledge about vermicompost among the farmers of Punjab. Training programmes, awareness workshops, kisan melas, can be helpful to increase the usage of vermicompost among farmers. Social media can also be utilized for creating awareness among farmers regarding vermicompost. Hence extension efforts should be directed to overcome these constraints in order to increase the adoption level by the farmers. The findings of this study would be helpful to generate interest among the farmers about vermicompost and improve their economy.

*Suggestions* to promote the use of vermicompost among farmers

- Small training centers for preparation of vermicompost should be established at village level.
- A common vermicomposting unit needs to be established for a small village.
- Farmers should be made aware about the better nutrient contents of vermicompost as compared to chemical fertilizers.
- By providing knowledge of vermicomposting to females, economy of the country can be improved.

## 6. References:

- R.K. Crane, "Estimating Risk for Earth-Satellite Attenuation Prediction," Proc. IEEE, vol. 81, pp. 905-913, June 1993.
- S.Nagnur , V. Hosamani and A. Shapur, "Training on organic farming practices for women : An impact study". Karnatka J Agri Sci , vol. 25(2),pp 235-255,2012.
- T.M. Kale, S.M. Ekatpure, H.D. Bodake, and P.N. Antwal , "Study of knowledge of farm women in production of vermicompost" . Agri Update .vol.6(1),pp78-80,2000.
- "Organic Farming: Frequently asked questions". [agritech.tnau.ac.in/ta/org\\_farm/orgfarm\\_farm/orgfarm\\_faq's.html](http://agritech.tnau.ac.in/ta/org_farm/orgfarm_farm/orgfarm_faq's.html).

“Punjab farmers don't know about vermicompost” (2006). <http://www.oneindia.com/2006/05/09/punjab-farmers-lack-awareness-on-vermicompost-use-1147147359.html>

“Punjab Farmers lack awareness on vermicompost use”.  
<http://news.webindia123.com/news/articles/India/20060509/328253.html>

“PAU”. [http://web.pau.edu/index.php?\\_act=manageLink&DO=firstLink&intSubID=36](http://web.pau.edu/index.php?_act=manageLink&DO=firstLink&intSubID=36)

J. Kaur, and R.K. Kalra, “Reaction and problem of farmers regarding organic farming in Punjab. Agriculture: towards a new paradigm of sustainability”. ISBN: 978-93-83083640 ,pp 192-199,2005.

V.P. Pandey, and M.P. Pandey, “Biofertilizers as a Cheapest Source of Nitrogen. Farmers and Parliament”, vol.XXX (8), pp 9-10,1995.

A.D. Ranganatha, V. Veerabhadria and K.C.Lalitha, “Adoption of organic farming Practices by small farmers”. Agril.Extn. Rev.vol 13,pp. 3-6,2001.

R.S. Bhople and R.D. Borkar, “ Biofertilizer farmers’ Attitude and Adoption”. Agril. Extn. Rev. vol.14, pp.18-21,2002.

G.D.Chothe , “ Knowledge and doption of biofertilizer by farmers”. Thesis, Dr. Punjab Rao Deshmukh Krishi Vidya Peeth, Akola, 1999.

L. Nirmala , G. Ranganathan and M.Asokhan, “Constraints of Biofertilizer adoption”. Agril. Extn. Rev.vol.14,pp. 30-31,2002.

P. Pagaria, “Knowledge and attitude of farmers towards vermicompost technology”. J Krishi Vigyan.vol. 3(1), pp. 42-44, 2014.

O.A.Kumar , P. Birendra , R.S.Singh and K. Basanti, “Vermicomposting : success story of farmer for revenue and employment generation” . International Journal of Agricultural Science, vol.9(41),pp. 4664-66,2017.

A.K. Sannigrahi , “Major constraints in popularizing vermicompost technology in Eastern India” . Moderen environment science and technology. Vol. 2(2), pp.123-133, 2016.

**Table 1 Demographic Characteristics**

<b>Gender</b>	<b>No. of farmers</b>	<b>Percentage</b>	
Male	85	78.70	
Female	23	21.30	
Total	108		
<b>Age</b>			
<b>Age</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
20-24	3 (3.53)	3 (13.04)	6 (5.56)
25-29	4 (4.71)	2 (8.69)	6 (5.56)
30-34	16 (18.81)	3 (13.04)	19 (17.59)
35-39	31 (36.47)	5 (21.74)	36 (33.33)
40-44	4 (4.71)	9 (39.14)	13 (12.04)
45-49	13 (15.29)	1 (4.35)	14 (12.96)
50-54	8 (9.42)	-	8 (7.41)
55-59	4 (4.71)	-	4 (3.70)
60-64	2 (2.35)	-	2 (1.85)
<b>Qualification</b>			
<b>Qualification</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
Under matric	3 (3.53)	5 (21.74)	8 (7.41)
Matric	20 (23.53)	4 (17.39)	24 (22.22)
High Secondary	34 (40.00)	10 (43.48)	44 (40.74)
Graduate	13 (15.29)	2 (8.69)	15 (13.89)
Postgraduate	8 (9.42)	1 (4.35)	9 (8.33)
Sign. literate	5 (5.88)	1 (4.35)	6 (5.56)
Illiterate	2 (2.35)	-	2 (1.85)
Total	85	23	108

**Table 2 Awareness of vermicompost**

	<b>Male</b>	<b>Female</b>	<b>Total</b>
Yes	34 (40.00)	5 (21.74)	39 (36.11)
No	51 (60.00)	18 (78.76)	69 (63.89)
Total	85	23	108

$$\chi^2 = 0.105, \text{ d.f} = 2$$

**Table 3 Sources of awareness about vermicompost**

	<b>Male</b>	<b>Female</b>	<b>Total</b>
Radio	8 (23.53)	4(80.00)	12 (30.77)
Television	34 (100.00)	5(100.00)	39 (100.00)
Mobile	6 (17.65)	2 (40.00)	8 (20.51)
Kisan Call Centre	11 (32.36)	1 (20.00)	12 (30.77)
University Teachers/Experts	6 (17.65)	-	6 (15.38)
Friends/Neighbours/Relatives	15 (44.12)	3 (60.00)	18 (46.15)
Kisan Mela (Farmers' Fair)	28 (82.35)	3 (60.00)	31 (79.48)
Department of Animal Husbandry	9 (26.47)	1(20.00)	10 (25.64)
Internet	5 (14.70)	1(20.00)	6(15.38)
Advertisement	3 (8.82)	-	3(7.69)
Progressive Farmer	24 (70.59)	-	24 (61.54)
Facebook	2 (5.88)	1(20.00)	3 (7.69)
Whatsapp	4 (11.76)	2 (40.00)	6(15.38)

(Multiple responses allowed)  $\chi^2 = 0.226$ , d.f= 2

**Table 4 Obstacles faced in use of vermicompost**

<b>Obstacles</b>	<b>No. of Respondents</b>	<b>Percentage</b>
Money/ shortage of funds	30	76.92%
Difficulty in procuring/getting earthworms	22	56.41%
Lack of training for preparation of vermicompost	10	25.64%