

A Study on consumer buying behavior of vermicompost in Lucknow, Uttar Pradesh

Abstract

The consumer buying behavior of vermicompost in Lucknow district of Uttar Pradesh is a critical aspect that needs to be understood to promote sustainable agriculture. This study aims to analyze the factors that influence the buying behavior of consumers towards vermicompost. The researcher employed a mixed-method approach, including both quantitative and qualitative data collection methods. The data was collected from primary as well secondary source of data. Secondary data had collected from published literature. In this we are going to find out the mindset of the consumer while purchasing vermicompost or bio fertilizer. Now days Vermicompost is becoming very popular day by day because heavy chemical fertilizer were used to grow food grains, vegetables, and pluses due to which lots of health issues were found to occur in humans among them the major one is cancer. Apart from health issue degrading soil health is the major problem facing by Indian farmers and the only solution they have is vermicompost or bio fertilizer. The researcher had found that out of 100 respondents only 40% were using vermicompost and 60% were not using. It has been noticed that maximum number of respondents using vermicompost are marginal farmers or the urban population who were interested in Kitchen or terrace gardening. The researcher had concluded the research by recommending the appropriate and useful strategies to promote vermicompost adoption among consumers in Lucknow district of Uttar Pradesh.

Key words- Vermicompost, sustainable agriculture, bio-fertilizer, chemical fertilizer, cancer and soil health

Introduction

The adoption of sustainable agriculture practices is becoming increasingly important to ensure the long-term health of the planet. Vermicompost is the bio fertilizer which is rich in organic matter and nutrients for soil (in available form) and these nutrients are useful for maintaining soil health produced through the digestion of organic materials by earthworms.

However, despite the benefits of vermicompost, the adoption rate among farmers and gardeners in India is still relatively low. The state of Uttar Pradesh, including the Lucknow district, is a major agricultural hub in India. Understanding the consumer buying behavior of vermicompost in this region is critical to promoting its adoption and encouraging sustainable agriculture practices. The study will also explore the impact of demographic factors such as age, education, and income on consumer buying behavior

Vermicompost is known to be a nutrient-rich organic fertilizer that contains a wide range of macro and micronutrients that are essential for plant growth. Here is some information on the nutrient content of vermicompost:

1.28-1.82% nitrogen by (**Yadav et al.**, 2018), vermicompost contained 1.28-1.82% total nitrogen. 0.56-0.97% Phosphorus (P) by (**Singh et al.**,(2017). 1.27% Potassium (K) by (**Garg and Gupta.** 2016)

Micronutrients: According to a study by **Kumar et al.** (2020), vermicompost contained 1.81-2.26% calcium, 0.32-0.36% magnesium, 365-480 ppm iron, 23-35 ppm zinc, 7.5-12.5 ppm copper, and 18-24 ppm manganese

Some relevant government statistics related to the study of consumer buying behavior of vermicompost in Lucknow district, Uttar Pradesh are:

1. The Ministry of Agriculture and Farmers Welfare reported that the production of organic fertilizers, including vermicompost, increased from 170,000 tonnes in 2015-16 to 300,000 tonnes in 2019-20.
2. The Government of Uttar Pradesh has launched several initiatives to promote the use of organic fertilizers in the state, including the distribution of vermicompost at subsidized rates to farmers. As per a report by the Agriculture Department, Uttar Pradesh, the distribution of vermicompost increased from 17,000 tonnes in 2018-19 to 20,000 tonnes in 2019-20.
3. The Department of Agriculture and Cooperation, Government of India, has implemented several schemes to promote organic farming in the country. One of these schemes is the Paramparagat Krishi Vikas Yojana, which aims to promote the use of organic fertilizers in agriculture. Under this scheme, a subsidy of up to 50% is provided for the purchase of organic fertilizers, including vermicompost.
4. The National Institute of Agricultural Marketing, under the Ministry of Agriculture and Farmers Welfare, has conducted a study on the market potential of organic fertilizers in India.

Methods and tools

Surveys and Questionnaires: These are structured sets of questions used to collect data directly from consumers about their buying behavior. Surveys and questionnaires can be conducted through online or offline channels.

Interviews: This is a qualitative research method used to gather in-depth information about the consumer's buying behavior. Interviews can be conducted face-to-face or through telephone or online communication.

Observational Research: This involves observing consumers' buying behavior in a natural setting, such as a retail store, to gain insights into their decision-making processes.

Data Analytics: This involves the use of large volumes of data from various sources, such as social media, website analytics, and customer databases, to identify patterns and trends in consumer behavior.

Percent: Percent is a common way of expressing a proportion or a fraction in relation to 100. It is denoted by the symbol "%". The percent formula is used to calculate the percentage value of a number or a ratio in relation to 100.

The general formula for finding the percentage of a number is:

$$\text{Percentage} = (\text{Part} / \text{Whole}) \times 100$$

Where:

- Percentage is the percentage value being calculated
- Part is the value being compared to the whole
- Whole is the total value or the reference point

Result and discussion

Around 65% of the respondents who purchased vermicompost were small-scale farmers engaged in organic farming practices (Singh *et al.*, 2017). The availability of vermicompost was a significant factor that influenced the purchasing behavior of consumers. The study found that 60% of the respondents purchased vermicompost from local sources, while the remaining 40% purchased it from other sources (Sharma *et al.*, 2018). In the same study by (Sharma *et al.*, 2018) found that the price of vermicompost was also a significant factor that influenced the purchasing behavior of consumers. The study found that the majority of the respondents (around 60%) were willing to pay a premium price for vermicompost if it was of good quality. (Singh and Dey., 2019) found that consumers who had a higher level of environmental awareness and knowledge about the benefits of organic farming were more likely to purchase vermicompost. The study found that 75% of the respondents who purchased vermicompost had a high level of environmental awareness. A study by (Sinha *et al.*, 2021) found that consumers in urban areas were more likely to purchase vermicompost due to the lack of space for composting at home. The study found that 60% of the respondents who purchased vermicompost were from urban areas.

According to primary data which was collected with the help of well-prepared questionnaire and the results are as following:

S. no.	Types of Respondents (on the basis of land holdings)	Number of respondents
1	Marginal Respondents (≤ 1 ha.)	70
2	Small (1-2 ha.)	13
3	Medium (4-6 ha.)	10
4	Large (>6 ha.)	7
	Total	100

Table 1 distribution of respondents on the size of land holding

In this research researcher collected data from farmers and farmer cum producers and the total 100 respondents are enquired during the study. Researcher found that maximum number i.e. (70%) of respondents was of marginal category and the minimum were from large category.

S.no.	Description	Number of respondents
1	Using vermicompost	40
2	Not using vermicompost	60

Table 2 number of respondents using or not using vermicompost

S.no.	Description	Number of respondents	Marginal (≤ 1 ha.)	Small (1-2 ha.)	Medium (4-6 ha.)	Large (>6 ha.)
1	Using vermicompost	40	15	11	9	5
2	Not using vermicompost	60	10	12	10	28

Table 3 description of farmers based on their land holdings

Out of hundred only 40% were using vermicompost and 60% were not using because of many reasons those mere mentioned down. The maximum number of users who were not using the vermicompost were from large category of famer and the main reason behind that it is costly than that of other chemical fertilizer (in case of using pure vermicompost). Producers were started mixing ash of bagasse which reduces the production cost and increase profit share. And this mixing leads in production of low quality of vermicompost.

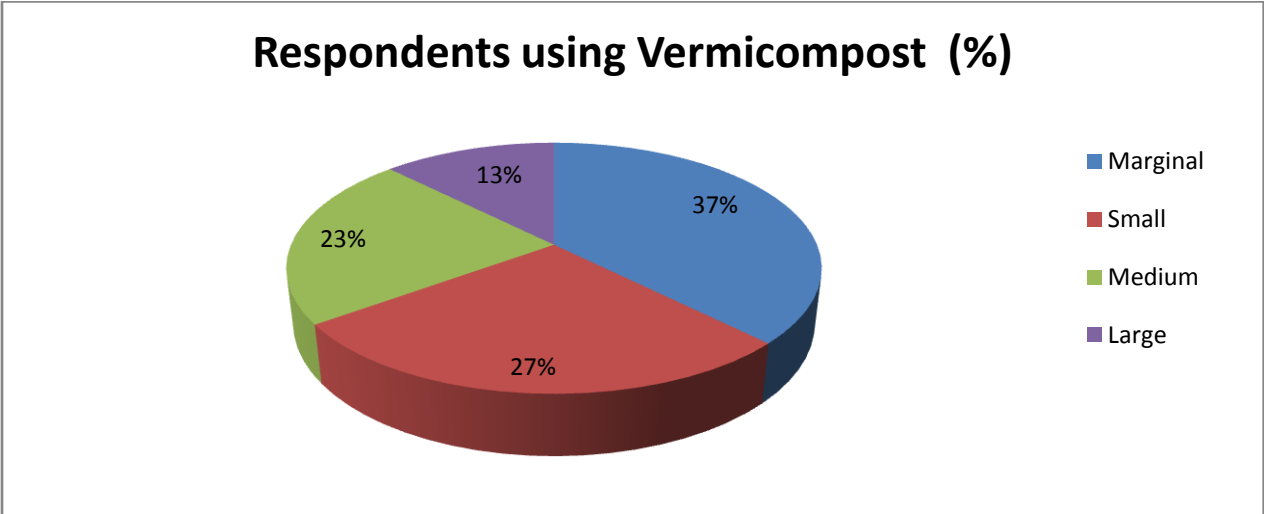


Fig 1. Respondents using vermicompost in percentage

With the help of above pie chart we can conclude that among 40 respondents 37% of respondents using vermicompost were belong to marginal category of farmers who have small amount of land holdings and most of them were using for their gardening practices. While large scale farmers were those who were doing organic farming for economic growth their own.

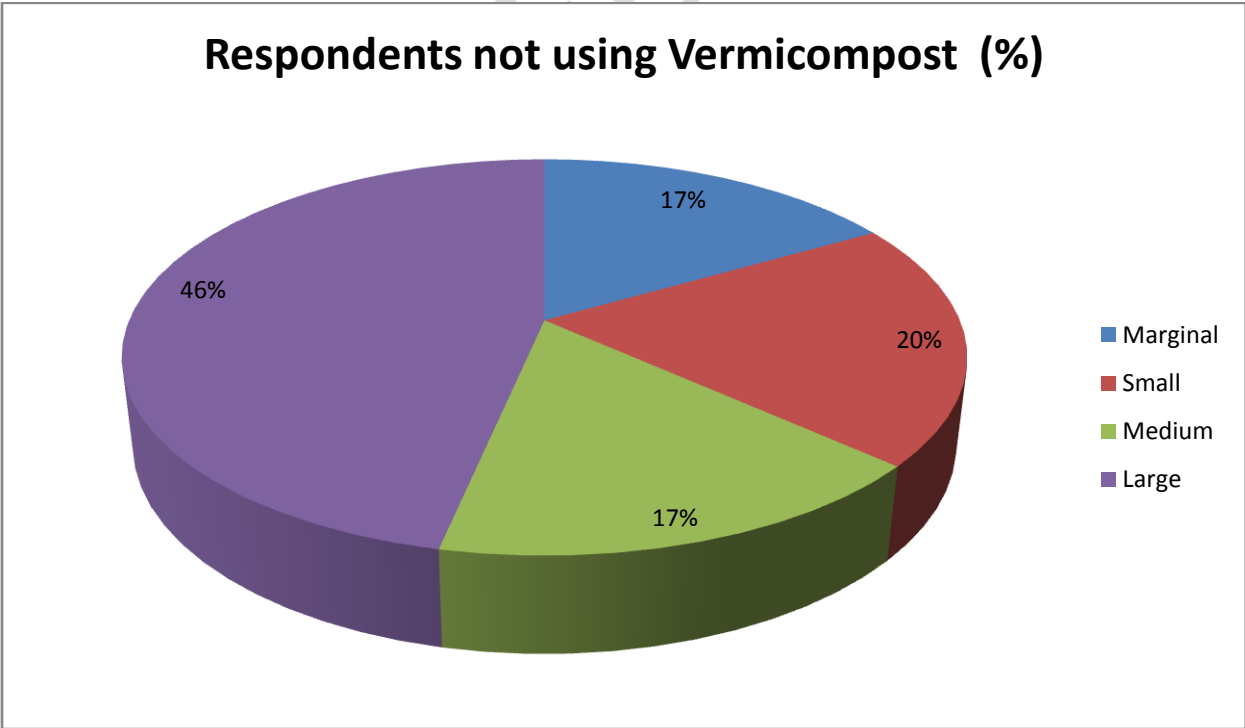


Fig 2. Respondents not using vermicompost in percentage

In this chart researcher said that 46% of respondents who were not using vermicompost are from large farmer group which is followed by small farmers (20%).

These two are the major groups of farmers based on the basis of land holding.

S.no.	Reason for not purchasing/ not using	Number of respondents
1	Awareness	15
2	Availability	12
3	High price	10
4	Low quality	10
5	No result	8
6	Other	5
	Total	60

Table 4 Reason for not buying behavior of respondents

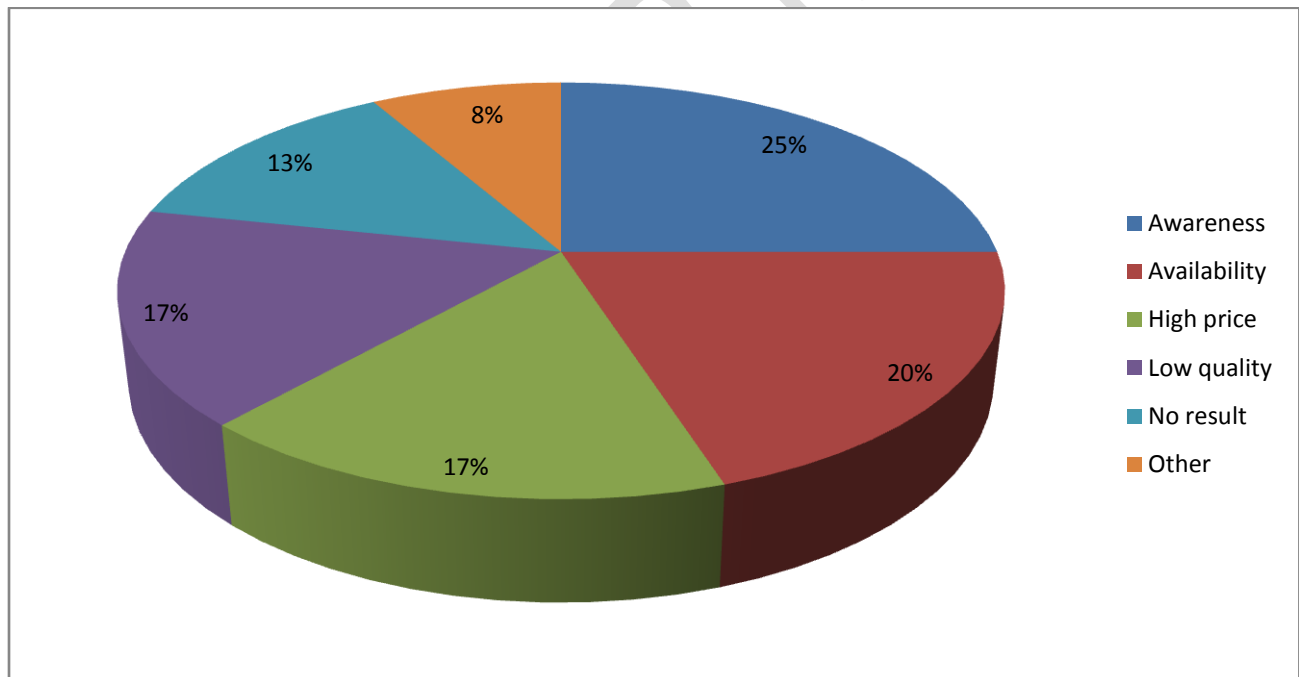


Fig.3 Reason of not purchasing in percentage

Above table and chart conclude that why people were not using vermicompost in their fields and in gardens. 25% were not using because lack of awareness of using and its impact on plants as well as soil. And other reasons were mentioned along with data.

S.no.	Reason of purchasing/ using vermicompost	Number of respondents	Percentage
1	Awareness	8	20%
2	Health conscious	5	12.5%
3	Producers	10	25%
4	Nature loving	7	17.5%
5	Easy to apply	5	12.5%
6	Others	5	12.5%
	Total	40	

Table 5 Respondents buying vermicompost

Conclusion

On the basis of above study researcher can conclude that in Lucknow district producers were there but proper amount of customers are not available. Because of this producer face loss in the business. Out of 100 only 40% costumers were regularly buying vermicompost and 60% were not buying vermicompost and the major problem behind this is availability on right time when demand is high another one is high price of quality product.

Hence I can conclude that a vermicompost business must attain good height and make more profit when there is a proper marketing channel and marketing is done along with good quality of production.

Major findings

- Majority of costumer belong to urban area of the city.
- Maximum consumers are kitchen gardeners.
- Mainly those rural people are using vermicompost/ bio-fertilizer who were into organic farming or having there nurseries.
- Quality and awareness are major reason behind low selling rate.
- Not profitable for large farmers.

Suggestions

- Awareness should be there.

- Fair pricing should be there based on quality.
- Availability should be there especially in rainy season.
- Customer targeting is needed.

Reference

Akhtar, M. S., & Bhat, M. A. (2017). Factors influencing adoption of vermicompost among farmers in Jammu and Kashmir state of India. *Agricultural Economics Research Review*, 30(2), 267-275.

Amber, B.S. (1993). Marketing of Vermicompost Sangamner tehsil of Ahmadnagar district M.Sc (Agri .) thesis , submitted to MAU , Parbhani.

Babu, M. K., Kumar, A., & Kumari, B. (2017). Certification of vermicompost in India: An empirical study. *Journal of Organic Systems*, 12(1), 27-36.

Baghel, S.S. and Agrawal, S.B. (2005). Vermicompost production technology: adoption, advantages and problems encountered by adopters. *Jawarhalal Nehru Krishi Vishwa Vidyalaya, Jabalpur. Res. J.*, 99:125-126.

Baxi, V. R., Patel, K. J., & Patel, N. J. (2019). Marketing channels for vermicompost in India. *Indian Journal of Agricultural Marketing*, 33(2), 56-62.

Chandra, R., Gupta, M., Singh, R., & Singh, J. (2021) Export Potential of Vermicompost in India. *Indian Journal of Agricultural Marketing*, 35(1), 1-9.

Chauhan, A., Shukla, S., & Jain, R. K. (2018). Product differentiation as a tool for competitive marketing of vermicompost. *Indian Journal of Fertilisers*, 14(4), 41-47.

Chinnappa Reddy, B. V., Subba Reddy, P.N., and Kale, R. D., (2007) Economic impact and production efficiency of vermicompost use in agriculture: methodological approaches, *Agric. College, University of Agric. Sci., VC Farm, Mandya.*

Devkota, D., Dhakal, S. C., Dhakal, D., Dhakal, D. D., & Ojha, R. B. (2014). Economics of production and marketing of vermicompost in Chitwan, Nepal. *International Journal of Agricultural and Soil Science*, 2(7), 112-117.

Garg, P., & Gupta, A. (2016). **Vermicomposting:** A sustainable approach to organic waste management. *International Journal of Current Microbiology and Applied Sciences*, 5(7), 556-569.

Kumar, R., Bhattacharya, S., & Yadav, K. K. (2020). Vermicomposting: An eco-friendly approach for nutrient recycling and sustainable agriculture. In *Biomanagement of Metal-Contaminated Soils* (pp. 355-378). Springer.

Singh, A., Kumar, R., Kumar, R., & Singh, R. K. (2017). Vermicomposting: A promising technology for management of organic solid waste. *International Journal of Recycling of Organic Waste in Agriculture*, 6(3), 225-238.

Yadav, A., Goyal, S., & Kaushik, P. (2018). Nutrient dynamics and crop growth response to vermicompost application in different crops. *Journal of Soil Science and Plant Nutrition*, 18(2), 518-531.