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RESEARCH PAPER

Analyzing the cost of production and farmers' perception of Jeevamrut: An insight into an organic farming solution

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Abstract: The study was conducted in the Uttar Kannada district of Karnataka, India. The farmers practicing Jeevamruta production and its application were purposively selected for the study. A total of 50 farmers, comprising 25 from Sirsi and 25 from Yellapura talukas, were selected for the study. The major components in the production of a drum of Jeevamrut of 200 liters were cow dung (10 kg), cow urine (10 liters), jaggery (2 kg), pulse flour (2 kg), bio-agent (1 kg), labor (1) and water (200 liters). The study found that the cost of production of 200 liters of Jeevamrut was ₹ 900, which was sufficient to cover an acre of land. Farmers opined that they apply Jeevamrut for 4 times in the case of cereals and 8 times for vegetable crops. The majorityof the farmers were of the opinion that Jeevamrut was cost-effective compared to chemical fertilizers and pesticides, environmentally friendly, enhanced soil health, and promoted microbial activity. Regular use of Jeevamrut resulted in an increase in crop yields and better management of pests and diseases.Constraints faced by farmers in marketing organic produce were lack of consumer trust, absence of a specific market for organic produce, inadequate price premiums for organic produce, absence of Minimum Support Price (MSP) for organic produce, and lack of information regarding organic products price.

Key words: Cost of production, Jeevamrut, Organic produce, Price premium, Soil health

Introduction

The agricultural sector is the primary source of livelihood for 58% of India's population (Chaitra *et al*., 2020). The decreasing employment opportunities in the agricultural and allied fields worldwide underline the need for diversifying farm enterprises (Patil *et al*., 2020). The overreliance on chemical fertilizers and pesticides in agriculture poses risks to food products and the environment, thereby necessitating a shift towards more sustainable farming practices (Sharma and Patil, 2018).The unrestricted use of chemical inputs in agriculture has led to significant health risks for humans, according to Sharma *et al*. (2023). This has raised concerns about the environmental and health implications of intensive chemical use and has sparked interest in alternative agricultural practices such as natural and organic farming. These methods aim to reduce or eliminate external agricultural inputs, particularly synthetic ones, by emphasizing ecosystem management. As a result, they are gaining popularity, as noted by Suja *et al*. (2021).

Organic farming is becoming increasingly popular as a viable alternative to chemical-based agriculture (Sharma & Patil, 2018). It is gaining worldwide appeal due to its potential to diversify agricultural production systems, leading to increased productivity, higher farm income, safer food, and improved environmental stewardship (Suja *et al*., 2021). Organic farming is essential in managing on-farm waste, which plays a critical role in waste recycling and ensures the production of healthy, high-quality food. Key components include green manure, compost, crop rotation, and biological pest control (Epule, 2019). Shri. Subhash Palekar's Zero Budget Natural Farming (ZBNF) method advocates for the use of locally available natural biodegradable materials combined with scientific insights into ecology and modern technology along side traditional farming practices rooted in naturally occurring biological processes (Badwal *et al*., 2019).

Jeevamrut is a natural liquid fertilizer widely known for being an excellent source of carbon, nitrogen, phosphorus, potassium, and other essential micronutrients vital for crops. It is a key component of organic farming methods (Somdutt *et al*., 2023). The fertilizer is made by combining 10 kg of cow dung, 10 liters of cow urine, 2 kg of jaggery, 2 kg of gram flour (a mixture of ground chickpea, mung bean, black gram, and cowpea), 1 kg of fertile live soil (hence the name 'Jeevamrut,' where 'Jeev' signifies 'Live'), and 200 liters of water (Sharma *et al*., 2022). There is a dearth of research on the cost of production of Jeevamrut and how farmers perceive it. Although Jeevamrut is a component of ZBNF, some costs are still involved in its production if someone would like to take this as an enterprise. Therefore, this study aims to analyze the production cost of Jeevamrut and farmers' perceptions of it.

Material and methods

The study was conducted in Uttar Kannada district of Karnataka state of India. The farmers who were practicing Jeevamruta production and its application were purposively selected for the study. A total of 50 farmers, comprising 25 from Sirsi and 25 from Yellapura talukas, were selected for the study. This study was conducted in the year 2023. The study was based on primary data which was collected through a well-structured questionnaire. Frequency, percentage, Likert scale

Table 1. Cost of production of Jeevamrut (200 litre)

Particulars	Quantity	Price per unit	Total cost (₹)
Cow dung	10 kg	5	50
Cow urine	10 lit	10	100
Jaggery	2 kg	80	160
Pulse flour	2 kg	70	140
Bio-agent	1 kg	150	150
Labour cost	1	300	300
Water	200 litres	-	-
Soil	1 kg	-	-
		Total cost	900

and Garette ranking techniques were used for the study. Garrett's ranking technique was adopted for analyzing theconstraints faced by farmers in the marketing of organic produce. In this method, farmers were asked to rank their constraints in the marketing of organic produce according to their preferences. The orders of merit given by respondents were converted into ranks by using the following formula.

Percent position = $100 (R_{ij} – 0.5) / N_j$

Where,

Rij= Rank given for ith item by jth individual

N_j = Number of items ranked by jth individual

Results and discussion

Table1 presents the cost of producing 200 liters of Jeevamrut. The results show that cow dung, a primary component, was acquired at ₹ 5 per kilogram. To produce 200 liters, 10 kilograms of cow dung was necessary, resulting in a total cost of ₹ 50. Similarly, cow urine, priced at ₹ 10 per liter, required 10 liters for production, totaling ₹ 100. Jaggery was priced at ₹ 80 per kilogram, with 2 kilograms needed, amounting to ₹ 160. Pulse flour, another essential ingredient, was procured at ₹ 70 per kilogram, costing ₹ 140 for 2 kilograms. Additionally, a bio-agent for enhancing microbial activity was obtained at ₹ 150 per kilogram, resulting in a total cost of ₹ 150 for 1 kilogram. Farmers reported that initially, labor was required to prepare Jeevamrut, and subsequently, the mixture needed to be rotated three times a day for five days. The labor cost was ₹ 300. The total cost, including raw materials and labor, amounted to ₹ 900 to produce 200 liters of Jeevamrut, which was sufficient for one acre of land. Food and Agriculture Organization (2016) also reported that Jeevamrut is highly cost-effective for farmers.

Table 2 represents farmers' perceptions of the usage of Jeevamrut. The majority of respondents strongly agreed (78%) that Jeevamrut was cost-effective compared to chemical fertilizers and pesticides, suggesting a growing awareness of the economic benefits associated with organic inputs. Furthermore, an overwhelming majority (90%) perceived Jeevamrut as environmentally friendly, emphasizing its role in reducing chemical inputs and pollution, underscoring the increasing importance of sustainable agricultural practices. Additionally, the perception that Jeevamrut enhanced soil health and promoted microbial activity was strong, with 80% of respondents in agreement, indicating a recognition of the importance of soil health in sustainable agriculture. Moreover, a significant portion (70%) of respondents believed that regular use of Jeevamrut led to increased crop yield, particularly in the long term, highlighting the potential of organic inputs to improve agricultural productivity over time. The majority of respondents (82%) also perceived Jeevamrut as effective in pest and disease management, suggesting a potential alternative to chemical-based methods. Further more, a notable portion of respondents (68%) believed that Jeevamrut helped reduce dependence on external inputs, indicating a desire for greater self-sufficiency among farmers. The majority (84%) of respondents who believed in the market acceptance of produce cultivated using Jeevamrut highlighted the perceived value-added aspect of organic farming, potentially encouraging more farmers to adopt organic practices.Somdutt *et al*. (2023) revealed that the use of Jeevamrut positively impacted the growth and yield of crops. This resulted in increased profitability for farmers. In another study, Saharan *et al*. (2023) reported that the application of Jeevamrut not only improved the chemical and microbial properties of soil but also had a positive effect on the microbial community structure and soil biology.

Table 3 presents the challenges that farmers encounter when marketing organic produce. These challenges are ranked based on their Garette scores. The highest Garette score of 71.00 was obtained by the lack of trust among consumers. This constraint highlights the difficulty of gaining consumer confidence in the authenticity and quality of organic products. To address this problem, it is necessary to improve communication and transparency in organic farming practices. The second highest constraint was the lack of a specific market for organic produce with a Garette score of 64.70. This constraint underscores the need for the establishment of dedicated market channels for organic products to streamline distribution and increase accessibility for both producers and consumers. The third-

Table 2. Perception of farmers about Jeevamrut

Particulars	Strongly	Agree	Agree	Neutral	Disagree
Strongly Disagree					
Jeevamrut is cost-effective compared to chemical fertilizers and pesticides	78	22	0	0	0
Jeevamrut enhances soil health by promoting microbial activity and increasing organic matter content	80	20	0	0	0
Regular use of Jeevamrut increases crop yield, especially in the long-term	70	24	6	0	0
Jeevamrut application helps in pest and disease management	82	14	4	0	0
Jeevamrut is an environmentally friendly product as it reduces chemical inputs and pollution	90	10	0	0	0
Jeevamrut helps reduce dependence on external inputs	68	20	10	2	0
Market acceptance of the produce cultivated using Jeevamrut is high	84	16	0	0	0

Table 3. Constraints faced by farmers in marketing of organic produce

Constraint	Garette	Rank
Lack of trust among consumers	71.00	1
Lack of a specific market for organic produce	64.70	2
Lack of trust in organic certification	63.53	3
Lack of price premium for organic produce	61.50	4
Absence of Minimum Support Price (MSP) for organic produce	57.96	5
Lack of information regarding the prices of organic produce	54.30	6

ranked constraint was the lack of trust in organic certification. This constraint indicates concerns regarding the reliability and credibility of organic certification processes. Addressing this constraint requires efforts to strengthen certification standards and procedures to instill greater trust among stakeholders. The absence of a price premium for organic produce emerged as the fourth most significant constraint, with a Garette score of 61.50. This implies that despite the perceived advantages of organic farming, the lack of price differentiation undermines the economic feasibility of organic production for farmers. Furthermore, the choice of a specific commodity primarily relies on the consumer's income, the necessity of the product to the individual, and other demand factors (Chaitra and Kerur, 2018). Farmers may need to take into account the income of consumers in their area. Additionally, the lack of a Minimum Support Price (MSP) for organic produce, which is ranked fifth, and the insufficient information about the prices of organic produce, which is ranked sixth, pose significant challenges in ensuring that organic farming is fair and transparent when it comes to market returns. Developing customer relationships may help farmers secure premium prices in the long run because the sole objective of a business should not be limited to merely selling the product; it is more about fostering customer relationships (Chaitra and Kerur, 2020).

Conclusion

The study revealed that the production of 200 liters of Jeevamrut requires 10 kg of cow dung, 10 liters of cow urine, 2 kg of jaggery, 2 kg of pulse flour, 1 kg of bio-agent, 200 liters of water, 1 kg of soil, and labor. It was found that producing Jeevamrut was cost-effective, with a total cost of ₹ 900 for 200 liters, making it a practical substitute for chemical inputs.The farmers' perspective indicates that they were increasingly recognizing the advantages of Jeevamrut, such as its eco-friendliness, positive impact on soil health, and its potential to increase crop yields. However, there are challenges in marketing organic produce, including consumer trust issues, lack of dedicated markets, and concerns regarding certification processes and market information. Overcoming these obstacles requires collaborative efforts from different stakeholders to promote organic farming and ensure fair returns for farmers. Therefore, while Jeevamrut holds promise for sustainable agriculture, it is essential to address market barriers for its wider adoption and to realize its full potential in contributing to resilient food systems.

References

Badwal, D P S, Kumar M, Singh H, Simran and Kaur S, 2019, Zero budget natural farming in India–A review. *International Journal of Current Microbiology and Applied Science*, 8(12): 869-873.

Chaitra G B and Kerur N M, 2020, Brand Preferences and factors influencing for purchase of Branded Ready-To-Eat food products in Belgaum City of Karnataka State, India. *International Journal of Current Microbiology and Applied Sciences,* 9(2): 540-545.

Chaitra G B, Patil C and Yeledhalli R A, 2020, Attracting and Retaining Youth in Agriculture – A Case of Agriclinics and Agribusiness Centres (ACABC) Scheme in India. *International Journal of Current Microbiology and Applied Sciences,* 9(2): 1109-1115.

Chaitra G B and Kerur N M, 2018, Brand awareness and alternative purchase plans towards ready-to-eat products in Belgaum city of Karnataka state. *Journal of Pharmacognosy and Phytochemistry,* 7(5): 802-806.

Epule T E, 2019, Contribution of organic farming towards global food security: An overview. (In) *Organic Farming: Global Perspectives and Methods,* pp 1-16. Chandran, S., Unni, M.R. and Thomas, S. (Eds). Woodhead Publishing, India.

Patil C, Sakshi S and Chaitra G B, 2020, Analyzing the Factors Influencing Consumer Willingness on Agri-tourism: An Evidence from Hungary. *Research Journal of Agricultural Sciences,* 11(3): 589-593.

Saharan B S,Tyagi S, Kumar R, Vijay, Om H, Mandal B S, Duhan J S, 2023, Application of Jeevamrit Improves Soil Properties in Zero Budget Natural Farming Fields. *Agriculture,* 13(196): 1-20.

Sharma C, Khare N K, Naberia S and Raut A, 2022. Identification and Documentation of Organic Farming Practices in Wheat Crop in Jabalpur District. *Asian Journal of Agricultural Extension, Economics and Sociology,* 40(4): 47-53.

Sharma S K, Ravisankar N, Jain N K and Sarangi S K, 2023, Natural farming: current status, research and case studies. *Indian Journal of Agronomy,* 68(22): 1-15.

Sharma M and Patil C, 2018, Recent trends and advancements in agricultural research: An overview. *Journal of Pharmacognosy and Phytochemistry,* 7 (2): 1906-1910.

Somdutt, Bhadu K, Rathore R S, and Shekhawat P S, 2023, Jeevamrut and Panchagavya's Consequences on Growth, Quality and Productivity of Organically Grown Crops: A Review. *Agricultural Reviews,* 44(4): 451-459.

Suja G, Harishma S J, Byju G, Neeraja C R and Sheeba B S, 2021, Geo-tagged characterization of organic growers in Kerala. *Indian Journal of Agronomy,* 66(3): 272-278.