



To Study The Existing Situation Of Farm Wastes In Ayodhya District

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Abstract

Farm waste management is a significant challenge in modern agriculture, particularly in regions like Ayodhya district, where farming serves as a primary livelihood source. This study assesses the current status of farm waste generation and management practices among farmers in the district, based on data collected from 120 respondents. The survey focused on socio-economic conditions, farm types, crop and livestock patterns, and the types and quantities of waste generated. The findings reveal that crop residues are the most commonly produced waste, followed by animal waste. Wheat is the dominant crop, grown by (50%) of respondents, and cattle are the major livestock. Most farmers generate between 100–200 kg of waste per month, and manual harvesting remains prevalent, with most farmers relying on traditional methods. In terms of waste management practices, the majority of respondents use farm waste as fodder (65.8%), making it the most common approach, while composting is the second most adopted method, reflecting some engagement with organic recycling. Overall, the study underscores the need for increased awareness, technical support, and infrastructure development to support more sustainable and diversified farm waste management strategies in the region.

Keywords: farm waste, farm waste management, current scenario of farm waste

1. Introduction

Farm waste management has become a critical issue in modern agriculture as the volume of waste produced continues to rise in line with increasing agricultural activities. Farm waste includes a wide range of by-products such as crop residues, animal manure, plant debris, unused fertilizers, and pesticide containers, among others. These wastes, if not managed properly, can lead to significant environmental and health concerns, such as soil degradation, water pollution, and greenhouse gas emissions. At present, farm waste management practices vary significantly depending on the region, type of farming, and available technologies. **Oladipo et. al (2017)** stated that farmers with greater education and agricultural experience are more likely to make effective use of their farm waste. According to **Sharma & Iqbal (2022)** revealed agricultural byproducts are not the main goods, they are typically referred to as "farm waste." These wastes are mostly in the form of animal waste (manures) and crop residues (remaining stalks,

straw, leaves, roots, husks, shells, etc.). In many parts of the world, especially in developing countries, farm waste is often left uncollected or disposed of in ways that exacerbate environmental problems. Burning crop residues, for example, is a common but harmful practice that contributes to air pollution and the release of carbon dioxide into the atmosphere. Similarly, improper storage and treatment of animal manure can lead to nutrient runoff into water bodies, contributing to eutrophication and contamination of drinking water sources. On the other hand, in more developed agricultural regions, farm waste is increasingly being viewed as a resource rather than a problem. Farmers are adopting sustainable practices such as composting, converting organic waste into bioenergy, and utilizing manure as a natural fertilizer. However, challenges persist, including high costs of advanced waste management systems, lack of awareness, and limited access to proper waste disposal infrastructure, particularly in rural areas.

Studying the existing situation of farm waste management in Ayodhya district is, therefore, not only timely but also essential. It helps to identify the current practices, gaps in awareness, and infrastructural limitations. Such a study can provide critical insights that inform the development of practical, locally-adapted strategies for sustainable agricultural waste management.

Objective

1. Existing situation of farm waste in Ayodhya district

2. Review & literature

Akhter et al. (2016) assessed agricultural waste management practices among farmers in Trishal Upazila, Mymensingh district, Bangladesh. Data was collected from 70 farmers and 5 farms using structured interviews. The study examined the relationship between farming types and agricultural waste generation. It found that the amount of agricultural waste, particularly straw and husk, was closely linked to cropland size. For example, 36.62% of farmers produced ≤ 1000 kg of straw, and 54.92% produced ≤ 10000 kg, with similar trends observed for husk production. Dairy and poultry waste correlated with the number of cows and birds, with an average of 8.87 kg of dung per day and 46.36 kg of used litter per 800 birds. The study suggested biogas, composting, and fish culture as potential waste management solutions, though only a small percentage of respondents favoured these methods. The study concluded that effective agricultural waste management could be enhanced through awareness programs and farmer training on the economic benefits of waste utilization.

Oladipo et. al (2017) The study examined the use of agricultural waste by farmers in Kwara State, Nigeria's Irepodun Local Government Area. 120 farmers in the research region were surveyed using a structured interview schedule to gather data. The results showed the majority of respondents (58.4%) were crop farmers who mostly cultivate cassava and maize for livelihood. The primary agricultural wastes produced in the region were cassava peels and stalks (60%) and maize cobs, husk, and stalk (62.5%). While over half of the respondents do not use the garbage they create from their farms, the majority of farmers burned their waste to get rid of it. According to the study's logistic regression modelling, farmers with greater education and agricultural experience are more likely to make effective use of their farm waste. Based on findings its support more effective and environmentally friendly farm waste utilization activities in the region, it is recommended that extension agencies launch education campaigns and provide farmers with training on a variety of creative farm waste utilization techniques.

Wang et al. (2020) conducted a study in Shandong Province, China, to investigate livestock and poultry waste disposal methods and the factors influencing farmers' disposal behaviours. Using the UTAUT theoretical framework and a disordered multi-class logit model, the study analysed data from farmers across 30 counties in six cities. The results revealed that economic performance expectancy, subjective norms, farming population, and the number of livestock and poultry significantly impacted waste recycling methods, including direct return, compost fermentation, biogas fermentation, and fresh-packed sale. The study emphasized that the most crucial factors influencing waste disposal methods were subjective norms, farming scale, economic performance expectancy, and farming population. The authors recommended policies to promote resource utilization of livestock waste, such as raising awareness, providing subsidies, improving training content, and strengthening laws and regulations.

Farradinna et al. (2023) investigated efforts to improve waste management practices within the Wong Cilik Animal Husbandry Group, which had been relying on traditional methods that polluted air and soil. The initiative aimed to educate and empower the group to proactively manage and utilize cow manure waste. Experts from machinery, agriculture, and psychology facilitated the program, which included pre- and post-tests to assess the participants' knowledge. Results showed a significant increase in understanding of livestock waste management, with the community becoming aware of the potential to convert cow manure into valuable products, such as manure from biogas residual waste. This socialization strengthened the group's capacity to transform waste into high-value resources, marking progress toward sustainable livestock waste management practices.

Shayaa et al. (2024) conducted a study in Al-Ghat, Saudi Arabia, to explore farmers' attitudes towards agriculture and the environment, particularly in relation to sustainable farming practices. The research aimed to assess the level of awareness among farmers regarding agricultural practices that could potentially harm the environment and identify areas for improvement in agricultural extension programs. A random sample of 110 farms was surveyed using a pre-tested questionnaire administered through face-to-face interviews. The data were analyzed using percentages, arithmetic averages, standard deviations, and the Pearson correlation coefficient. The results showed that 87.3% of farmers expressed interest in continuing farming, though 77.3% did not consider it their primary occupation. About 55.5% of the farmers were aware of the environmental impacts of agricultural practices, and 57.3% understood the potential benefits of better utilizing agricultural organic waste. The study revealed a significant positive correlation between farmers' main profession and farm employment with their attitudes toward agriculture, while a negative correlation was found between education levels and their attitudes toward farming. Furthermore, education was positively correlated with the farmers' awareness of the environmental implications of agricultural practices and the potential for optimizing the use of organic residues. The findings emphasize the importance of improving education and awareness to foster more environmentally sustainable farming practices.

Kaushal et al. (2021) investigated the environmental impacts and causes of agricultural crop residue (ACR) burning in the northwest region of India, focusing on the Panipat district of Haryana. The study evaluated sustainable management alternatives for ACR and examined the policy and functional challenges preventing their widespread adoption. A three-month field study was conducted, including semi-structured interviews with state and local administration officials and focus group interviews with farmers. The atmospheric emissions from ACR burning were estimated using the UN's Intergovernmental Panel on Climate Change (IPCC) guidelines. The results showed significant air pollution due to ACR burning, with high levels of particulate matter and greenhouse gas emissions, which adversely impacted public health and soil fertility. The study suggested measures for reducing environmental damage, including offering upfront financial support, or direct benefit transfers for eco-friendly equipment like happy seeders. Promoting rental services and raising awareness, particularly among small and tenant farmers, can enhance accessibility.

Dukuziyaturemye et.al (2020) Stated that due to socioeconomic and demographic considerations, the use of organic manure has always been crucial among farmers worldwide, particularly in India. The study focuses on examining the variables influencing farmers' opinions on the production and use of organic manure in Dakshina Kannada. Farmers' information was gathered via a questionnaire-based survey, which yielded quantitative data. The information reveals that 3.2% of farmers have been farming for more than 30 years, and their experience has impacted their understanding and opinions on using organic manure. 86% of both males and females expressed a good opinion of making organic manure, while 14% expressed a negative opinion. 16.1% of all respondents cited good yield/crop production as their main incentive for farms to make organic manure from municipal solid wastes. The study shows that farmers in Dakshina Kannada, India, had a positive attitude and were willing to employ organic manure made from organic waste. In order to promote excellent practices, a strategy that involves farmers in the production of organic manure from organic waste might be implemented in place.

Shi et al. (2018) addressed the significant challenges of crop straw management in China, particularly its environmental impacts, through an integrated assessment framework incorporating greenhouse gas (GHG) emissions data. Using field surveys and literature reviews, the study tracked changes in straw utilization from predominantly open burning in the 1950s to increased retention in fields by the 2010s. Despite these shifts,

straw utilization-induced GHG emissions rose from 100 Mt/yr in 1950 to 446 Mt/yr in 2021. The study demonstrated that converting inefficient uses of straw, such as open burning and traditional cooking or heating, into bioenergy could prevent 122 Mt of GHG emissions. These findings underline the potential of bioenergy development as a sustainable strategy for mitigating GHG emissions and enhancing crop straw utilization in China's agriculture sector.

Veeresh et.al (2011) studied on socioeconomic standing of the farmers in Bhadravathi Taluk as well as the production and handling of agricultural waste. In order to ascertain the scope of agricultural bio-waste generation/utilization technologies and the state of vermiculture practice, a survey was conducted in the rural regions of Bhadravathi Taluk in 2006–07. A pre-tested interview and questionnaire were used to gather data. During that time, 1.11 MT of agricultural bio-waste were produced. Although they were aware of Vermiculture, the majority of farmers in the study region managed their biowaste in a traditional manner.

Shaibur et al. (2021) investigated cow dung management and biogas production in Ziala Village, Satkhira District, Bangladesh, to assess its socio-economic and environmental impacts. The study, based on interviews with dairy farmers and data from 12 biogas plants, highlighted that biogas systems successfully converted cow dung into energy and nutrient-rich organic fertilizer, reducing reliance on chemical fertilizers. The use of biogas as fuel improved cooking conditions and reduced the need for firewood collection, promoting forest preservation. These practices enhanced livestock management, elevated environmental quality, and improved socio-economic profiles through better occupational distribution and education. However, improper management of agricultural waste and cow dung by some households caused water and air pollution, indicating a need for better waste management practices.

Reetsch et.al (2020) Examined how smallholder farmers in the Karagwe and Kyerwa districts of the Kagera area of northwest Tanzania use organic agricultural waste and maintain damaged banana-coffee-based farming systems. According to an expert-based typology, a study of 150 farm families identified three different groups: high, moderate, and low, depending on their levels of biomass output. The result indicates those families in Groups A and B show a great deal of promise for increasing biomass production and attaining food security. On the other hand, unless specific measures increase their resources and resilience, households in Group C—which are distinguished by their small land size (less than one hectare) and poor socioeconomic standing—are probably going to continue to be at risk of food insecurity.

Devi et al. (2017) analysed the significant volumes of agricultural residues generated by crops and their potential uses for sustainability and economic gains. The study highlighted that these residues, often wasted, represent a missed opportunity to enhance farmers' income, particularly with the rising demand for bio-energy, animal feedstock, and organic agriculture. Using government data and SWOT analysis, the study estimated that India produced 516 million tons of agricultural residues in 2014–15, with cereals and sugarcane as the primary contributors. The energy potential of these residues was substantial, with paddy rice straw contributing 486,955 megawatts and coarse cereals 226,200 megawatts. The research also examined successful case studies in India and globally, emphasizing the need to optimize residue utilization for sustainability and environmental care.

3. METHODOLOGY

To achieve the objectives of the present study, Ayodhya district in the state of Uttar Pradesh was purposively selected as the study area. Respondents were selected randomly for the study. A total of 120 farmer respondents were selected for the present study. A self-structured questionnaire was prepared to collect information relevant to the study's objectives. For the collection of offline data, a structured interview schedule was prepared to obtain responses from the respondents.

4. Result and Discussion

After statistical analysis of the data collected the findings of the present study, “**Farm Waste Management in Ayodhya district of Uttar Pradesh**” have been presented and discussed in this chapter. Results have been divided under the following heads:

Table 1: Distribution of respondents according to their socio-economic status of the respondents

N=120

Sr. No.	Distribution of Respondents According to	Frequency(n)	Per cent%
	Age		
	25-30	16	13.33
	30-35	19	15.83
	35-40	26	21.67
	Above 40 years	59	49.17
	Gender		
	Male	80	66.67
	Female	40	33.33
	Education		
	Illiterate	24	20
	Primary	35	29.17
	Secondary	39	32.5
	Higher secondary	13	10.83
	Graduate	09	7.5
	Postgraduate	0	0
	Religion		
	Hinduism	107	89.17
	Islam	13	10.83
	Buddhism		
	Christianity		
	Caste		
	General	41	34.17
	OBC	52	43.33
	SC	19	15.83
	ST	08	6.67
	Occupation		
	Farmer	103	85.83
	laborer	10	8.33
	Business	04	3.33
	Government	03	2.5
	other	00	00
	Monthly Income		
	<20,000	84	70.0
	20,000-50000	30	25.0
	50,000- 100,000	06	5.0
	>100,000	00	00
	Family Type		
	Nuclear Family	50	41.67
	Joint Family	49	40.83
	Extended Family	21	17.5
	Location		
	Urban	39	32.5
	Rural	81	67.5

Category 1 Presents the age distribution of the respondents, 49.17 per cent of respondents were above 40 years old, followed by 21.67 per cent of respondents aged between 35-40 years old, 15.83 per cent of respondents aged 30-35 years old, and only 13.33 per cent respondents belong to the age group of 25 – 30 years.

Category 2 reveals that 66.67 per cent of the respondents were male and 33.33 per cent of the respondents were female, highlighting a higher male representation

Category 3 Displays the educational qualifications of the respondents. The highest proportion, 32.5 per cent of respondents, had attained secondary education, followed by 29.17 per cent of respondents had completed primary education. Additionally, 20 per cent of respondents were illiterate, highlighting a significant portion without formal education. A further 10.83 per cent of respondents had achieved higher secondary education, while only 7.5 per cent of respondents held a graduate degree. Notably, none of the respondents had attained postgraduate qualifications. This distribution indicates that most respondents had only basic or intermediate levels of education, which may have implications for their access to opportunities and the depth of insight they could offer in the study.

Category 4 shows the religious composition of the respondents. Most of respondents 89.17 per cent of identified as Hindu, while only 10.83 per cent of respondents followed Islam. No respondents belonged to Buddhism or Christianity.

Category 5 reports the caste distribution of the respondents. The largest segment 43.33 per cent of respondents belonging to the Other Backward Classes (OBC), indicating their dominant presence within the sample. Followed by 34.17 per cent of respondents from the General category. And 15.83 per cent of respondents were from the Scheduled Castes (SC), only 6.67 per cent of respondents reported belonging to the Scheduled Tribes (ST).

Category 6 shows the occupation of the respondents. The largest group, 85.83 per cent of respondents, reported working as farmers, indicating a strong agricultural presence within the sample. This was followed by 8.33 per cent of respondents who worked as laborers. A smaller percentage, 3.33% of respondents, were engaged in business, while only 2.5% of respondents held government jobs. Interestingly, no one reported working in other occupations.

Category 7 examines the monthly income levels of the respondents, revealing that the majority, 70 per cent of respondents, earned less than ₹20,000 per month. About 25 per cent of respondents had an income between ₹20,000 and ₹50,000, while only 5 per cent of respondents earned between ₹50,000 and ₹100,000. Notably, no respondents reported earning above ₹100,000.

Category 8 shows the family type of the respondents. A slight majority, 41.67 per cent of respondents, belonged to nuclear families, followed closely by 40.83 per cent who reported living in joint families. Additionally, only 17.5 per cent of respondents were part of extended families. The data indicates a fairly balanced distribution between nuclear and joint family structures, with a smaller proportion of respondents living in extended family settings.

Category 9 shows the geographical location of the respondents. A significant majority, 67.5 per cent of respondents, were from rural areas, while only 32.5 per cent of respondents resided in urban areas.

4.2 Existing situation of farm waste in Ayodhya district

Table 2: Distribution of respondents according to their farm type they have

N=120

Farm Type	Frequency(n)	Per cent%
Small(<2acres)	31	25.83
Medium(2-5acres)	62	55.83
Large(>5acres)	27	18.34

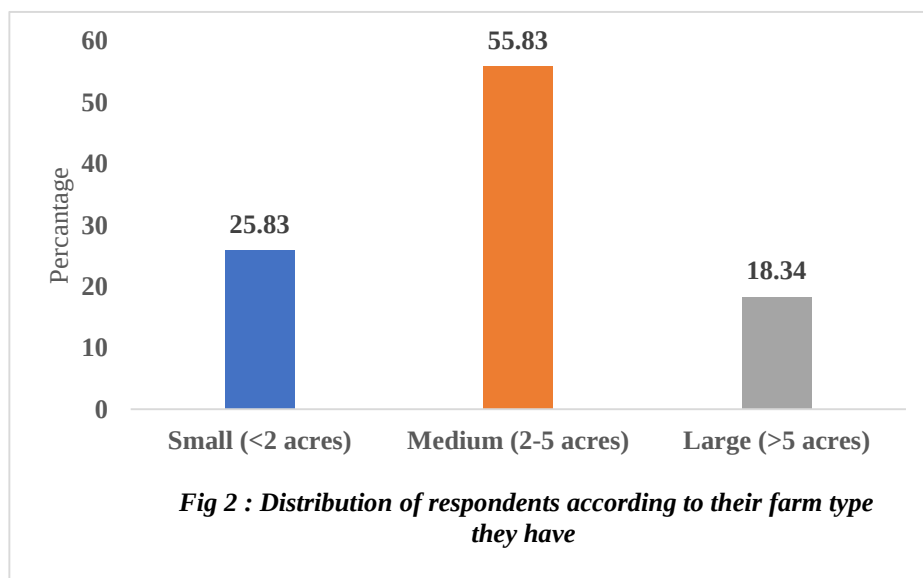


Table 2 shows that 55.83 per cent of the respondents owned medium-sized farms ranging from 2 to 5 acres. This was followed by 25.83 per cent of respondents who had small farms of less than 2 acres, while only 18.34 per cent of the respondents managed large farms exceeding 5 acres. The findings indicate that medium-sized farms were the most common among the respondents, suggesting a relatively balanced pattern of land distribution. Similarly, **Singh et al. (2020)** reported that 60 per cent of farmers in their study owned small farms <2 acres, suggesting a higher prevalence of small landholdings in their research area compared to the present study.

Table 3: Distribution of respondents according to their primary crops they grow

N=120

Primary crops	Frequency(n)	Per cent%
wheat	60	50.00
Rice	31	25.83
Maize	18	15.00
Millets	08	6.67
Sugarcane	03	2.5

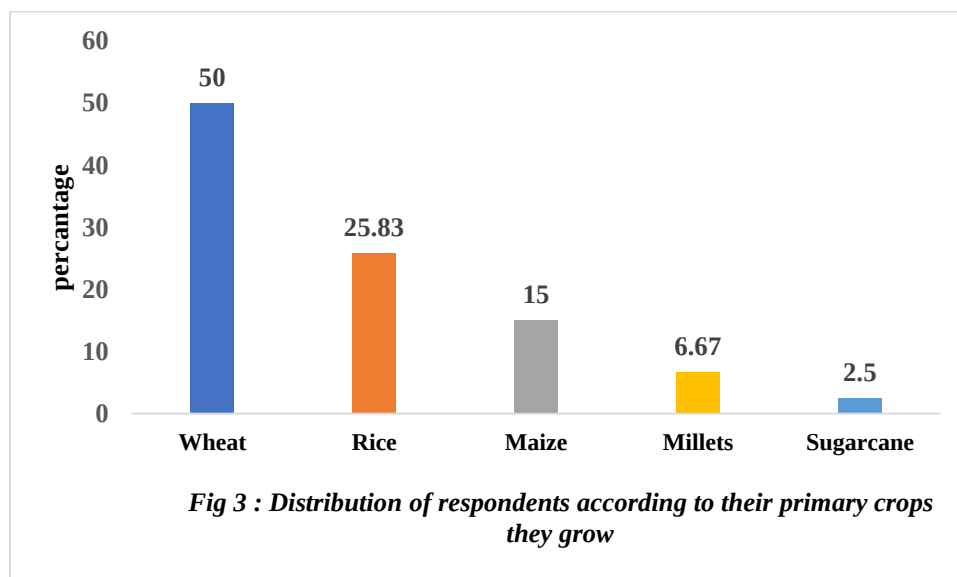


Table 3 shows the distribution of respondents based on the primary crops they grow. 50.00 per cent of respondents reported growing wheat, making it the most commonly cultivated crop in the study area. This was followed by 25.83 per cent of respondents who grew rice, and 15.00 per cent who cultivated maize. A smaller proportion, 6.67 per cent, grew millets, while only 2.50 per cent of respondents reported growing sugarcane. The findings indicate that wheat is the dominant crop among respondents, with rice and maize being the next most common crops. **Sharma et al. (2019)** found that 45 per cent of farmers in their study primarily cultivated wheat, which is slightly lower than the 50% recorded in this study, indicating variations in wheat production across different regions.

Table 4: Distribution of respondents according to livestock they have

N=120

Primary livestock	Frequency(n)	Per cent%
Cattle	89	74.16
Oxen	12	10.00
Goats	16	13.34
Hen	03	2.50

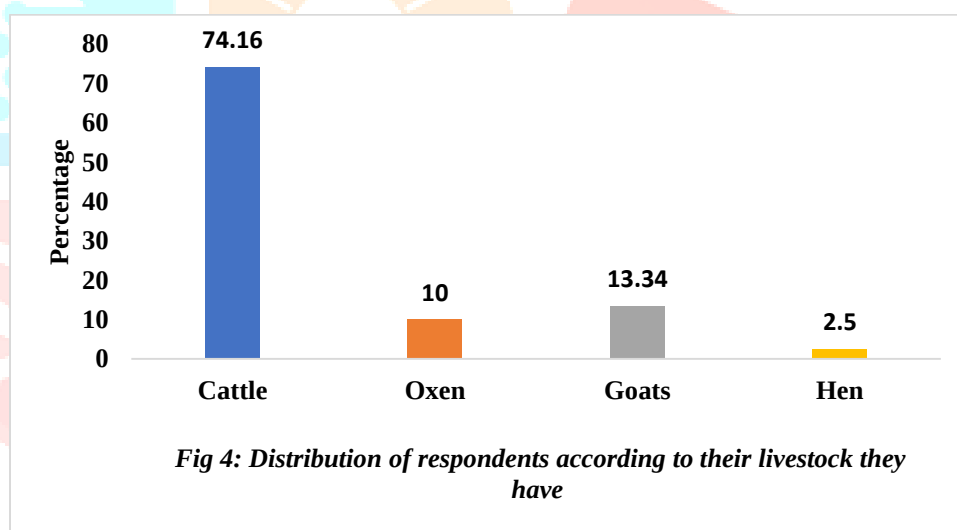


Table 4 reveals the distribution of respondents according to the livestock they own. The majority of respondents, 74.16 per cent, owned cattle, making it the most common livestock among the respondents. This was followed by 13.34 per cent of respondents who raised goats, and 10.00 per cent who kept oxen. Hens were the least commonly owned livestock, with only 2.50 per cent of respondents managing them. The findings indicate that cattle are the most prevalent form of livestock ownership in the study area. **Yadav et al. (2021)** found that 65% of farmers in their study primarily owned goats, which contrasts with the current study, where cattle ownership is dominant.

Table 5: Distribution of respondents according to their number of family members working their farm**N=120**

Family members working their farm	Frequency(n)	Per cent%
1-3	11	9.24
3-5	72	60.50
5-8	29	24.36
Above 8	07	5.89

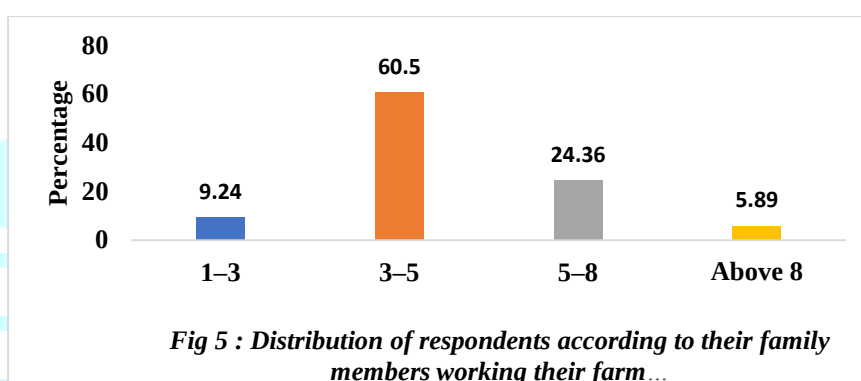


Table 5 presents the distribution of respondents based on the number of family members working on their farms. With the majority of respondents, 60.50 per cent, families having 3 to 5 members involved in farm activities. This was followed by 24.36 per cent of families were 5 to 8 members working on the farm. A smaller proportion, 9.24 per cent, had 1 to 3 family members engaged in farming, while only 5.89 per cent of respondents reported having more than 8 family members contributing to farm activities. These findings suggest that most farms in the study area rely on a moderate level of family labor.

Table 6: Distribution of respondents according to type of farm waste generated on their farm**N=120**

Type of Waste Generated from Farm	Frequency(n)	Per cent%
Crop residues	105	87.5
Animal waste	15	12.5
Pesticide waste	00	00
Plastic waste	00	00

Fig 6 : Distribution of respondents according to type of farm waste generated from farm

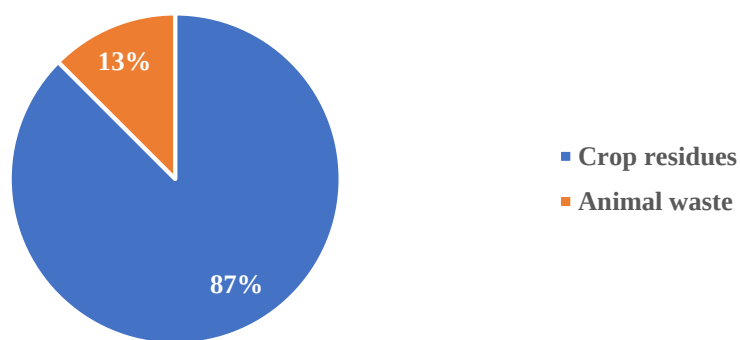


Table 6 presents the distribution of respondents according to the type of farm waste generated on their farms. The majority of respondents, 87.5 per cent, reported the major farm waste generated as the form of crop residues after harvesting the crops. followed by 12.5 per cent of respondents reported that waste generated by livestock. no respondents reported farm waste generated from use of pesticides and as plastic waste. while **Obi et al (2016)** Additionally, studies indicate that 80 per cent of maize processing results in waste, reinforcing the idea that crop residues remain a major component of agricultural waste.

Table 7: Distribution of respondents according to their farm waste generation monthly

N=120

Monthly Farm Waste Generation	Frequency(n)	Per cent%
<100	30	25.00
100-200kg	76	63.40
>200kg	14	11.66

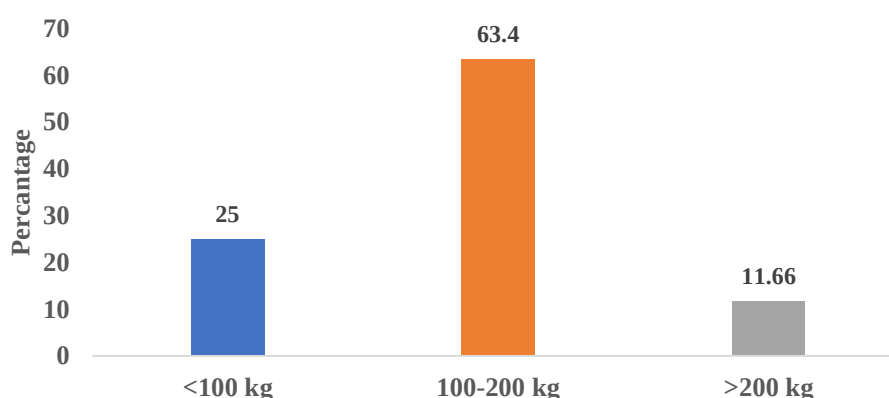


Fig 7 : Distribution of respondents according to their monthly farm waste generation

Table 7 presents data on farm waste generation per month among respondents. 63.33 per cent of respondents produce between 100 and 200 kg of waste, indicating that this is the most common range of waste generation. This is followed by 25.00 per cent of respondents who generate less than 100 kg of waste per month, while only 11.66 per cent of respondents produce more than 200 kg of waste monthly. The findings suggest that most farms fall within a moderate waste generation range, with only a small proportion contributing to higher

waste output. This trend aligns with findings by Singh et al. (2018), who reported that small to medium-scale farms typically generate 100–250 kg of waste monthly, with larger farms exceeding 200 kg due to increased agricultural activities.

Table 8: Distribution of respondents according to harvesting method they use for crop harvesting

N=120

Crop harvesting Method	Frequency(n)	Per cent%
Manul harvesting	89	74.10
Mechanized harvesting	31	25.90

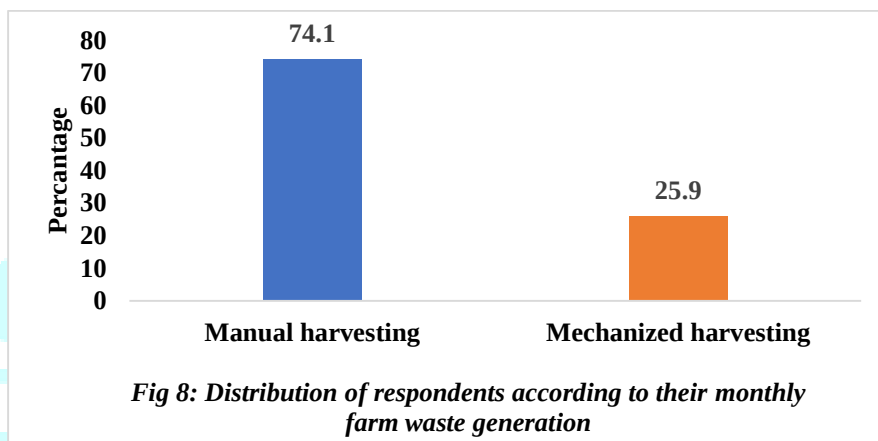


Table 8 The data on crop harvesting methods reveals that a significant portion of farmers, 74.10 per cent of respondents depend on manual harvesting, whereas only 25.90 per cent of respondents utilize mechanized harvesting. This indicates that traditional harvesting methods remain prevalent, potentially due to factors such as cost, farm size, or the type of crops grown. The lower adoption of mechanized harvesting suggests limited access to advanced machinery or a preference for manual techniques to ensure better handling of crops, in comparison, studies such as Benaseer et al. (2018) highlights that manual harvesting, while common, can lead to significant crop losses due to delays and inefficiencies. They report that harvest losses can range from 5 per cent to 16 per cent for rice and 8 per cent to 18 per cent for various cereal crops, often attributed to factors like shatter loss during delayed harvesting. Similarly, research by Kumar et al. (2019) focuses on optimizing operational parameters for mechanized harvesting of pigeon-pea using combine harvesters. Their findings indicate that proper adjustment of machinery settings can achieve threshing efficiencies exceeding 98 per cent, with grain damage kept below 1 per cent under optimal conditions.

Table 9: Distribution of respondents according to satisfaction level with their current farm waste management

N=120

Level of Satisfaction	Frequency(n)	Per cent%
Very dissatisfied	00	00
dissatisfied	24	20.0
Neutral	32	26.6
Satisfied	39	32.5
Very satisfied	25	20.83

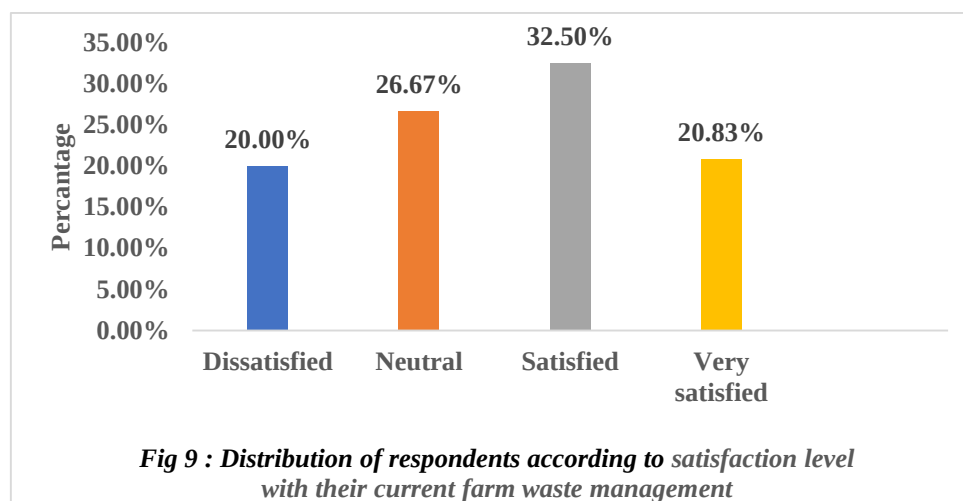


Table 9 presents data on the satisfaction level of respondents with their current farm waste management. A majority, 32.5 percent of respondents, expressed satisfaction with their current farm waste management practices, making it the most common level of satisfaction. This is followed by 26.6 percent of respondents who reported a neutral stance on the issue. 20.0 percent of respondents expressed dissatisfaction, while 20.83 percent were very satisfied. Only a negligible proportion, 0.0 percent of respondents, were very dissatisfied.

Table 10: Distribution of respondents according to their current management practice of farm waste

N=120

Current Farm Waste Management Method	Frequency(n)	Per cent%
Composting	37	30.80
Vermicomposting	00	00
Fodder	79	65.80
Other's	04	3.4

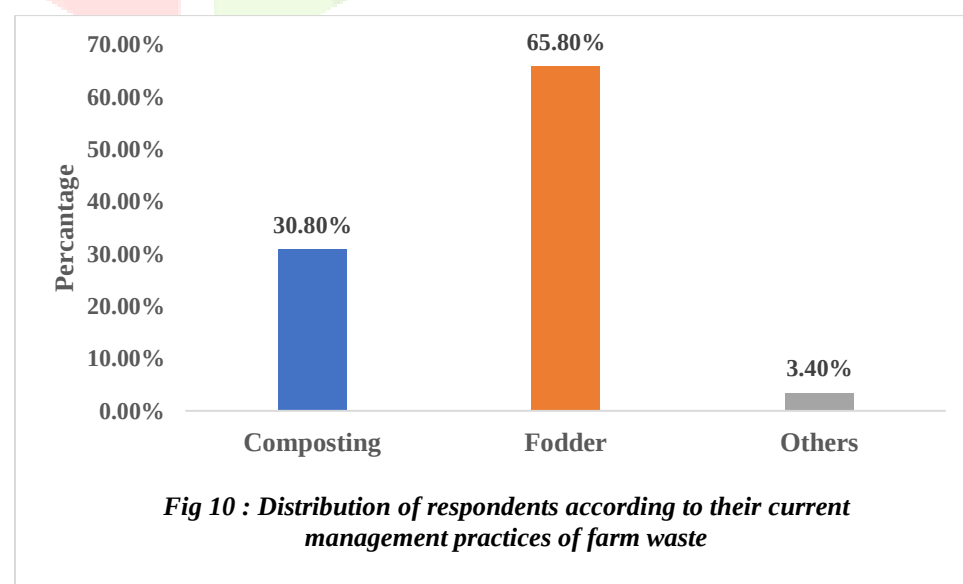


Table 10 The data on respondents' current farm waste management practices highlights that the majority, 65.80 per cent of respondents utilize farm waste as fodder, making it the most common management method. Composting is the second most preferred approach, adopted by 30.80 per cent of respondents indicating a focus on organic waste recycling. Interestingly, vermicomposting is entirely absent 0 per cent, suggesting a

lack of awareness, resources, or infrastructure for this method. Only 3.4 per cent of respondents reported using other waste management practices, which could include burning, landfill disposal, or alternative recycling methods. This distribution indicates a strong reliance on repurposing waste for animal feed while composting remains a secondary yet notable practice. In comparison, **Singh et al. (2024)** highlighted the effectiveness of vermicomposting in recycling organic solid waste, emphasizing its role in sustainable waste management. The absence of vermicomposting in the current study suggests a lack of awareness or infrastructure, contrasting with findings where vermicomposting has been successfully adopted as an eco-friendly waste disposal method.

Conclusions

This study concludes that farm waste management practices in Ayodhya district remain predominantly traditional, with most respondents engaged in wheat cultivation and producing considerable amounts of crop residues. Although the overall scale of waste generation is moderate, the use of advanced waste management techniques is minimal, and manual labor continues to be the primary method of farming. A significant portion of respondents utilize farm waste as fodder, marking it as the most widely practiced management approach, while composting emerges as the second most commonly adopted method. These findings highlight the pressing need for enhanced awareness and improved infrastructure to support more efficient and sustainable waste handling. To address these gaps, it is recommended that farmers in the region be equipped with better access to information on eco-friendly practices and supported through improved waste management solutions, aiming to minimize environmental impacts and boost agricultural productivity.

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