INTERNATIONAL JOURNAL FOR INNOVATIVE RESEARCH IN MULTIDISCIPLINARY FIELD
ISSN(O): 2455-0620 [Impact Factor: 9.47]
Monthly, Peer-Reviewed, Refereed, Indexed Journal with IC Value : 86.87
Volume - 10, Issue - 10, October - 2024

DOIs:10.2015/IJIRMF/202410015 --:-- Research Paper / Article / Review

Impact on environment through generated agricultural waste

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Abstract: *Agricultural wastes define to waste produced from agricultural operations, including waste from farms, poultry houses, and slaughterhouses. Agricultural waste can represent a risk to workers' health and the environment by exposing them to biological dangers. The risks connected with storing agricultural waste can increase because the trash can emit toxic gasses during storage. The major components of crop wastes are leaves, stems, and branches (after pruning). It is estimated that, on average, 80% of the plant of such crops consists of agricultural waste. Over 1,500 tons of food grains wasted at FCI godown during lockdown: government data. Ministry of New and Renewable Energy (MNRE), Government of India envisioned that approximately 500 Mt of crop residue is generated each year. The World Health Organization (WHO) identifies smog because of agricultural waste burning as certainly considered one among the most important reasserts of ambient air pollution. Every year, 7 million people die from air pollution, including 650,000 children. The study aims overall practice of farmers regarding agriculture waste generation, types and agriculture waste management techniques. An interview schedule method was used for data collection. This Study reveals that the highly significant overall practice in different topics of agriculture waste management through different technologies. Study concluded that after training farmers had high practice regarding agriculture waste management through different technologies.*

Key Words: *agriculture waste, waste management, practice, technology, etc.*

1. INTRODUCTION:

Agriculture is the livelihood of almost 70% of India's population and billions of families across the world. India generates on an average 500 Million tons (Mt here after) of crop residue per year.[1] Globally about 1.3 billion tons of food products for human consumption gets wasted or lost every year and about one-third of biodegradable municipal solid waste mainly comprise of domestic kitchen waste generated from households.[2] Various studies reveal that about 90% of MSW is disposed of unscientifically in open dumps and landfills, creating problems to public health and the environment.[3] Waste management is essential to reducing the environmental impact of waste. Waste control is essential to put off threats of waste additionally upscaling, & adjust the waste & to lessen the microbial load.[4] The 5 R'S techniques (refuse, reduce, reuse, repurpose, and recycle) are basically used in various types of waste management.[5] But the most important technique (vermicompost) is used in organic waste management.[6] Vermi-compost improves soil aeration, texture, & water retention capacity of soil, & also promotes better root growth & nutrient absorption.[7] This technique is less expensive and has more benefits. Other techniques are used of waste management, like aerobic and anaerobic; zero waste, etc. [8]

2. Objective of the study was overall practice of farmers in chomu block, Jaipur District regarding agriculture waste management through different technologies and problems & challenge of agriculture waste.

3. Methods and materials :

This section deals with the practice of selected farmers regarding agriculture waste management through different technologies. 115 villages were selected purposively. As per the objective three day training program was developed

on agriculture waste management and vermicomposting technology from rural farmers each village. The assessment criteria were three point rating scale like always, sometimes, and never. The practice score of each respondent was calculated by assigning marks for the positive statements 3, 2, 1, and negative statements 1, 2, 3. The data obtained from the interview schedule was tabulated and analyzed using frequency distribution and the percentages were calculated.

4. Results and discussion :

Table 1 show that only 3.3% of farmers had high practice regarding agriculture waste management through different technologies before training which changed later after training to 61.6%. Initially maximum farmers had low practice regarding agriculture waste management through different technologies that is 80.8% but they also showed a shift to higher side. According to **Han, Z. et al. (2018)**[9] similar results found that the factors that influence public awareness of domestic waste characteristics and management in rural areas most of the 83.9% of the respondent agreed that domestic waste management is highly necessary. Also results were significant positive influence on awareness and practice of pollution created by domestic waste.

There was an overall improvement in mean practice scores significantly (p=0.000) with score of 48.87±13.845 in pre-test to 87.79±12.986 in post-test

Significance test of practice change after training shows (Table -2) 't' value which is highly significant in difference of overall practice of farmers regarding agriculture waste management through different technologies. (t = -19.103, P = 0.000). Study same results reveals that public awareness of waste treatment necessity had significantly positive effect by **Han, Z. et al. (2018).** [9]

5. Conclusion :

In conclusion, study was reveals that different types of wastes generated or produced from agricultural preparations, mulching, burning, gardening, cutting, etc. and creating problems of human or animal's health. The risks connected with storing agricultural waste can increase because the trash can emit toxic gasses during storage. Agricultural waste management is essential to reducing the environmental impact or human health diseases of agro-waste. Studies conclude that post training farmers had high practice regarding agriculture waste management through different technologies. There was a highly significant difference. Seem in the improved of practice towards agriculture waste management through different technologies.

6. Recommendations :

1. Promote composting agricultural waste to recycle nutrients back into the soil.
2. Encourage crop rotation and use of organic fertilizers to restore soil health.
3. Use cover crops and green manures to prevent erosion and add organic material.
4. Evaluation of practices by farmers and based on results management is to be done to improve the practices.

Table – 1: DISTRIBUTION OF PRACTICE LEVEL AND GAIN IN PRACTICE OF RESPONDENTS (OVERALL)

n = 150						
LEVEL (Total Score = 40)	Pre-Test		Post-Test		Gain	
	Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
Low (36-60)	122	80.8	6	4.0		
Average (61-85)	23	15.9	51	33.8		
High (86-108)	5	3.3	93	61.6		
Total	**150**	**100**	**150**	**100**	88	58

Figure 1 overall practice levels and gain in practice

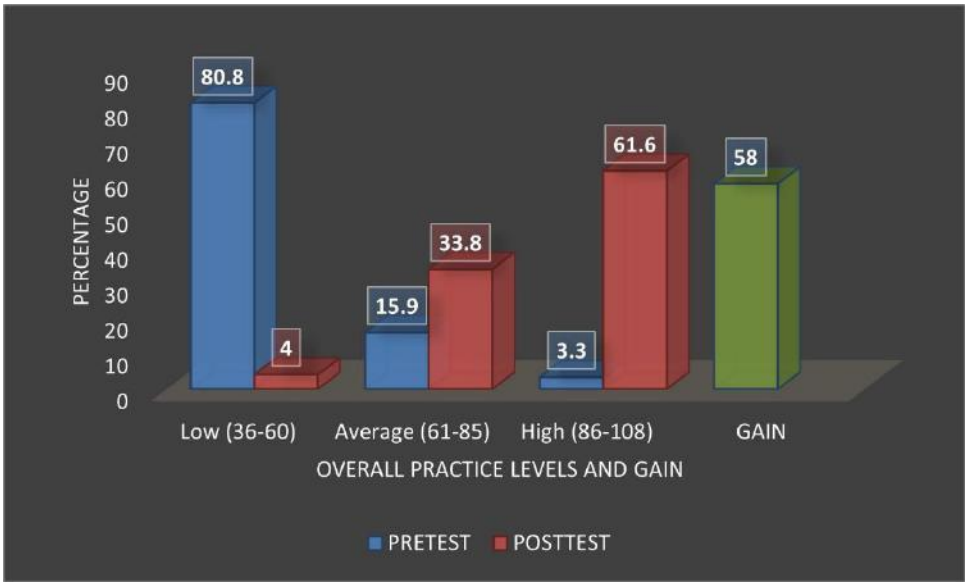
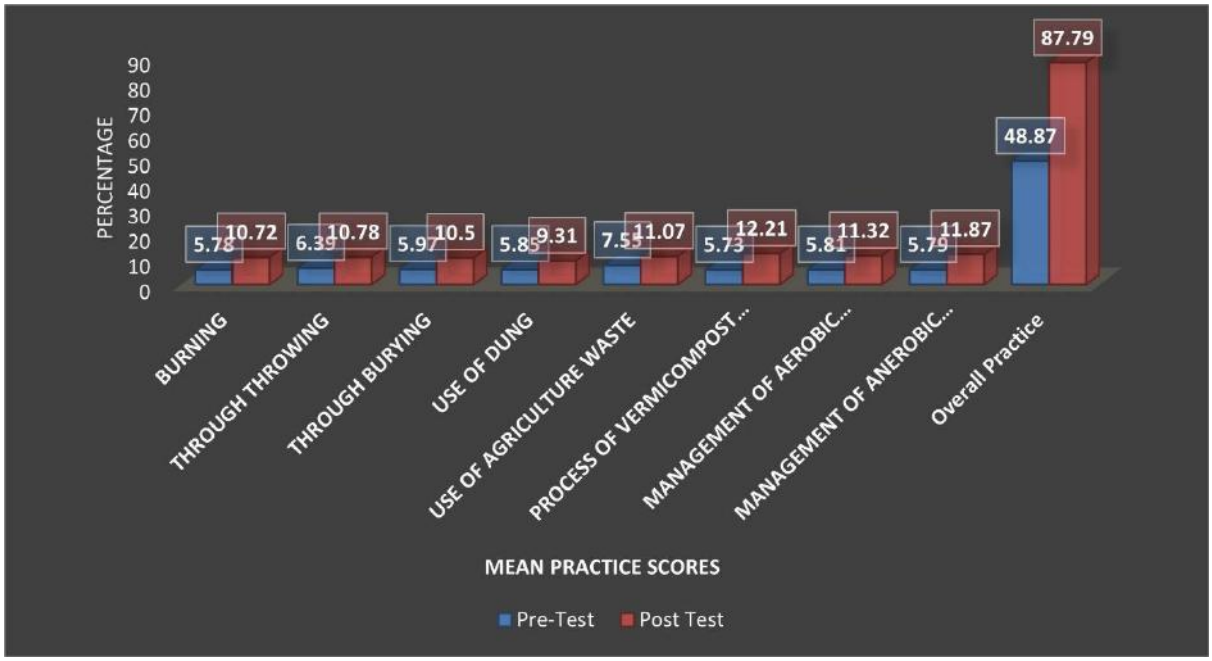


Table 2: GAIN IN PRACTICE (OVERALL)

								n = 150
	Pre-Test		Post Test		SE	t value	P value	HS/S/NS
	Mean	SD	Mean	SD				
Overall Practice	48.87	13.845	87.79	12.986	2.037	-19.103	0.000	HS

FIGURE 2 MEAN PRACTICE SCORES



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