Original Research Article

A Comparative Study on Knowledge Level of Paddy Growers about Natural Farming and Conventional Farming practices

ABSTRACT

The study was conducted in natural and conventional crop fields in the Nellore district of Andhra Pradesh spanning one block and involving 120 sample respondents., Sixty 60 of farmers whom practised natural farming and the other 60 practised conventional farming. practises. To select 30 farmers from each hamlet, a purposive sample strategy was used. The data was collected using a well-structured interview schedule, with the primary goal of determining paddy growers' knowledge of natural and conventional farming approaches. In the Naidupeta block, paddy is a key crop. The study found that the majority (48.3 percent) of respondents had a medium level of knowledge on of natural farming practices, followed by high and low levels of knowledge on of conventional farming practices, and that the majority (60.0percent) of respondents had a medium level of knowledge on natural farming practices, followed by low and high levels of knowledge on conventional farming practices. Farmers' understanding of natural and conventional paddy farming methods would aid in the development of appropriate measures to strengthen the practices.

*KEY WORDS**Keywords**: Conventional farming practices, Crop nature, Green manure crops, Knowledge level, Natural farming practices, Paddy growers, and Soil condition.*

INTRODUCTION

The purpose of this study is to examine present farming practices in the Nellore district of the region. Zero budget Natural farming is a relatively new practise practice in Andhra Pradesh, where it is widely used for important crops such as paddy, sugarcane, groundnuts, and vegetable crops. Natural farming adheres to the values of ecology, care, and health for all, including the land, with the goal of promoting human happiness without endangering the environment. By 2024, the Andhra Pradesh government hopes to reach more than 6 million farmers with its innovative programme on climate-resilient, natural farming. Paddy is the most common crop in which farmers use both natural and conventional farming methods. Hhence, the current study was undertaken among paddy growers. Farmers' knowledge of natural and conventional paddy farming approaches would aid in the development of appropriate measures to further strengthen the practices. With this in mind, the current investigation was conducted in the Nellore district of Andhra Pradesh as a pioneering effort to examine paddy farmers' understanding of approved natural farming and conventional farming practices. In 2015, the Government of Andhra Pradesh instituted the

Comment [m1]: Need to decide what English you use English UK or American??? Consistency is important
The Verb: Practise UK; Practice USA!!!
The Noun: Practice

Formatted: Font: Bold

Rythu Sadhikara Samtha (RYSS)–, a ~~state – owned~~ state–owned, ~~non- profit~~ non-profit organization to introduce ZBNF practices to all farmers in the Indian state of Andhra Pradesh (Amitendu and Paraparakath, 2019).

MATERIALS AND METHODS

~~In this~~This study used an ex-post facto research design to achieve this goal. The research was carried out in the Andhra Pradesh district of Nellore. Four villages from the Naidupeta block, namely A~~a~~nnamedu, C~~c~~hilamaturu, K~~k~~uchivada, and K~~k~~apuluru were chosen for this study based on the same criteria as the other 46 blocks. A total of 120 farmers were included in the study, with 60 practi~~c~~ing natural farming practices and the other 60 following conventional agricultural practices**.** We selected 30 farmers from each hamlet using a deliberate purposive sample method. A well-structured interview schedule was used to obtain data. To get a meaningful interpretation of the results, descriptive statistics were used in the form of frequencies and percentages (Hejase and Hejase, 2013) ~~percentage analysis was used~~. Based on respondents' knowledge levels (low, medium, and high), the cumulative frequency approach was also used. Accordingly, a “Teacher made Test” was developed and adopted as advocated by Deepika (2018).

RESULTS AND DISCUSSIONS

Knowledge Level of Paddy Growers about Natural Farming and Conventional Farming practices.

Twelve knowledge items were selected for assessing the knowledge level of respondents (Palekar, 2015). Table 2~~.~~ shows the results of paddy growers' understanding of natural framing procedures, while T~~t~~able 4 shows the effects of conventional farming practices.

Table 1. Scoring procedure followed to assess the Knowledge Level

S. No	Respondents	Score
1.	Correct	2
2.	Incorrect	1

In general, the responses were categorised as "correct" or "incorrect." As shown in Table 1, e~~E~~ach correct response received two scores, while each incorrect response received one score. The respondents were divided into low, medium, and high knowledge levels using a percentage method based on overall scores.

Table 2. Knowledge Level of Paddy Growers on Natural Farming Practices (n= 60)

		Frequency	Awareness, %
1.	Jeevamrutha is prominently adopted for field preparation.	43	71.6
2.	Pre-monsoon dry sowing is an adopted practice for field preparation.	35	58.3
3.	Panchagavya is adopted for seed treatment.	36	60.0
4.	Beejamrutha is a prominently used practice for seed treatment.	44	73.3
5.	Agni astra is adopted to control yellow stem borers.	47	78.3
6.	Spraying of needed seed kernel extract is most prominently adopted practice to control yellow stem borers.	48	80.0
7.	Neem extracts and Datura extracts are prominently used to control sucking pests.	39	65.0
8.	Hand weeding, puddling and flooding were the most prominently used practices for weed management.	36	60.0
9.	Sesamum, finger millet ~~were~~ was the intercrops adopted along with paddy.	33	55.0
10.	Pulse crops like Black-gram and Green-gram were prominently used intercrops.	36	60.0
11.	Sun hemp, Diancha and wild indigo were prominently used in green manures.	49	81.6
12.	Mechanical harvesting is most profitable harvesting method.	47	78.3

Formatted Table

According to the findings, 81.6 percent of the respondents were aware ~~about~~ of the benefits of green manure crops in paddy grown using natural farming methods. This clearly shows that respondents understand the importance of planting green manure crops in paddy because it is a great way to increase soil fertility. An overwhelming majority of respondents (80.00 percent) correctly identified the use of neem seed kernel extract spraying to control yellow stem borers. This could be due to extensive farming knowledge. Only slightly more than 78 percent of respondents were aware of the use of Agniastra for the control of yellow stem borers (78.3 percent).

The most widely used approach for seed treatment is beejamruthum, which helps to protect seeds from soil-borne and seed-borne illnesses. As a result, 73.3 percent of respondents correctly identified this seed treatment. Around 71% (71.6%) of respondents were aware of the Jeevamruthum field preparation application, which aids in the prevention

of fungal and bacterial illnesses. Because neem and datura extracts are commonly used to control sucking pests in rice, 65.0 percent of respondents correctly identified this method of sucking pest control.

Around 60.00 percent of farmers have knowledge of profitable intercrops with black gram and green gram practiced in paddy under natural farming. This demonstrates unequivocally that the respondents understood the significance of the protection of the soil from moisture exhaustion and the year-round providing of a sufficient income. The information in the table above indicates that 60.0% of respondents were aware of weed control strategies such as hand weeding and puddling. Sixty percent of those questioned had heard of panchagavya, a seed remedy for the Helminthosporium leaf spot disease that affects rice.

According to the results of Table 2~~the above table~~, 58.3 percent of the respondents had a correct understanding ~~about~~ of pre-monsoon dry sowing practices for paddy field preparation to improve soil fertility. About half of the respondents (55.0 percent) were aware of the advantages of intercropping finger-millet and sesamum with paddy to reduce the likelihood of crop failure. The above findings are in conformity with the findings of Naresh et al.~~,~~ (2018).

Table 3. Overall Knowledge Level of Paddy Growers on Natural Farming Practices

S. No.	Category	Number	Percentage
1.	Low	9	15.0
2.	Medium	29	48.3
3.	High	22	36.6
	Total	**60**	**100**

The findings of an evaluation of paddy growers' general knowledge of natural farming methods are presented in Table 3. A medium degree of knowledge was observed in 48.3% of respondents, whereas 36.6 percent showed a high level of knowledge. Only 15.0 percent of the remaining respondents knew much about natural paddy growing approaches. These findings could be attributed to a wealth of natural farming expertise, attendance at a greater number of ~~trainings~~ pieces of training, and a favourable attitude toward natural farming**.** The study's findings support the conclusions made by Prabhu and Jahanara (2018).

Table 4. Knowledge Level of Paddy Growers on Conventional Farming Practices. (n=60)

S. No	Conventional farming practices	~~Number~~Frequency	Percent
1.	Zinc sulphate application is prominently adopted for	32	53.3

	field preparation to restore soil fertility.		
2.	Ferrous sulphate is used for field preparation to restore soil fertility	38	63.3
3.	Carbendazim is prominently used practice for seed treatment	37	61.6
4.	Captan is used for seed treatment.	31	51.6
5.	Carbofuran 6%G is used to control yellow stem borers.	33	55.0
6.	Chloropyripos 2ml/lit of water is the most prominently adopted practice to control yellow stem borers.	32	53.3
7.	Imidachloprid@ 1ml per 2.5 lit of water is used to control sucking pests.	30	50.0
8.	Cypermethrin 10EC is most prominently used to control sucking pests.	36	60.0
9.	Butlachlor 400-600 lit/ha is the most prominently adopted practice for weed management.	34	56.6
10.	Pendimethalin 2.5 lit–/ha is an adopted practice for weed management.	33	55.0
11.	Pretilachlor +Safner 0.3kg/ha is adopted practice for weed management.	26	43.3
12.	Mechanical harvesting is the most profitable harvesting method.	53	88.3

It was found that 88.3% of the respondents were aware of a practical paddy harvesting technique using traditional farming techniques. This clearly indicates that the respondents recognize the benefits of utilizing a mechanical harvester to remove grains from rice plants, reduce labour demand, and speed up the threshing process. The significant majority of respondents (63.3%) were knowledgeable about the proper usage of ferrous sulphate for managing soil nutrients and preparing the area.

Cypermethrin 10EC is most frequently used in paddy to control sucking pests. This sucking pest control was accurately identified by 60.0 percent of respondents. Carbendazim is a widely used seed treatment method that helps to protect seeds from soil-borne and seed-borne illnesses. As a result, 61.6 percent of respondents correctly identified this seed treatment. According to the results of the above table, 60.0 percent of respondents knew that Imidachloprid @ 1ml in 2.5 lit of water is used to combat sucking pests.

Butlachlor (400-600 lit/ha) is the most widely used weed control method. As a result, 56.6 percent of respondents possessed accurate knowledge about weed management control. About 55.5 percent of the respondents were correctly informed about the use of Pendimethalin 2.5 lit/ha for weed control. About 55.00 percent of farmers are familiar with the use of carbofuran 6 percent G in the management of yellow stem borers in paddy.

According to the results of ~~the above table~~Table 4, 53.3 percent of respondents had correct knowledge about how to control yellow stem borers using Chloropyripos 2ml/lit of water. A little more than half of the respondents (51.6%) were aware of the use of captan fungicide for seed treatment to reduce bacterial and fungal infections.

Table 5. Overall knowledge level of paddy growers on Conventional farming practices

S. No.	Category	Number	Percentage
1.	Low	15	25.0
2.	Medium	36	60.0
3.	High	09	15.0
	Total	**60**	**100**

Table 5 shows ~~that~~ the results ~~on~~ of the assessment of rice growers' overall understanding of conventional farming practices. A total of 60.0 percent of respondents had a medium level of knowledge, while 25.0 percent had a low level of understanding. The remaining 15.0 percent of respondents had a high level of expertise ~~of~~ in paddy growing procedures. These findings could be the result of extensive expertise in conventional farming, attendance at a greater number of training~~s~~, and a better attitude~~s~~ toward conventional farming.

CONCLUSION

The vast majority of paddy growers had a medium degree of knowledge about natural farming and conventional farming approaches, according to the findings. They have a high level of competence in the procedures of growing green manure crops, spraying Neem seed kernel extract, and applying Agnistra to combat yellow stem borers. Seed treatment with Beejamrutha is one of the procedures. Weed control methods include hand weeding and inundation. To control sucking pests, neem and Datura extracts are commonly employed.

Pulse crops such as Black-gram and Green-gram were widely intercropped, with black-gram and green-gram possessing a medium level of expertise. Finger millet was used as an intercrop alongside paddy in the methods, such as seed treatment with Panchagavya Sesamum. They had a limited degree of understanding ~~about~~ of pre-monsoon dry sowing, which is a common method for field preparation.

Cypermethrin 10EC is used to suppress sucking pests in techniques such as mechanical harvesting. They had a higher level of knowledge about seed treatment with carbendazim. Zinc sulphate and ferrous sulphate treatment are two procedures used for field preparation to restore soil fertility. Butlachlor (400-600 lit/ha) is the most widely used weed control method. Yellow stem borers are controlled with carbofuran 6 percent G. For weed

control, pendimethalin 2.5 lit/ha is commonly used. They have a medium level of knowledge. Pretilachlor + Safner 0.3kg/ha for weed control is one of the methods.

Captan is a seed treatment agent. Controlling yellow stem borers using Chloropyripos 2ml/lit of water. They had little knowledge about ~~Imidachloprid~~ Imidacloprid, which is used to suppress sucking pests at a concentration of 1 ml per 2.5 litres of water. Field visits and demonstrations on the aforesaid techniques, in which the respondents with poorer knowledge are identified, would aid in closing the knowledge gap.

~~REFERENCES~~References Review carefully the write-up for consistency and matching the Journal's requirements

Barbieri, P., Pellerin, S., & Nesme, T. (2017). Comparing crop rotations between organic and conventional farming. Scientific reports, 7(1), 1-10

De Ponti, T., Rijk, B., & Van Ittersum, M. K. (2012). The crop yield gap between organic and conventional agriculture. Agricultural systems, 108, 1-9.

Ferdous, Z., Zulfiqar, F., Datta, A., Hasan, A. K., & Sarker, A. (2021). Potential and challenges of organic agriculture in Bangladesh: a review. Journal of Crop Improvement, 35(3), 403-426.

HALSTEAD, J., & GRIFFIN, T. Zero Budget Natural Farming in Andhra Pradesh: A Review of Evidence, Gaps, and Future Considerations SABRINA ROSE.

Hejase, A. J., & Hejase, H. J. (2013). Research Methods: A Practical Approach for Business Students (2nd edition). Philadelphia, PA, USA: Masadir Incorporated.

Lotter, D. W. (2003). Organic agriculture. Journal of sustainable agriculture, 21(4), 59-128

Nemes, N. (2009). Comparative analysis of organic and non-organic farming systems: A critical assessment of farm profitability. Food and Agriculture Organization of the United Nations, Rome.

Palekar, S. 2015 .htpp: //www.palekar zero budget spiritual farming.org

Reganold, J. P., & Wachter, J. M. (2016). Organic agriculture in the twenty-first century. Nature plants, 2(2), 1-8.

Tal, A. (2018). Making conventional agriculture environmentally friendly: moving beyond the glorification of organic agriculture and the demonization of conventional agriculture. Sustainability, 10(4), 1078.