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A study on critical analysis of natural farming practices followed by farmers in Parvathipuram Manyam district of Andhra Pradesh

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Abstract

Natural Farming is a chemical free farming system based on livestock and locally available resources and rooted in Indian tradition. Natural farming, a sustainable and ecologically friendly approach to agriculture, is gaining increasing recognition globally as a means to mitigate the harmful effects of chemical-intensive farming systems. The study evaluated the extent of adoption and farmers' perception of natural farming on the basis of primary data collected from 60 farmers. Majority (68.33%) of the farmers had medium perception followed by low (18.34%) and high (13.33%) level of perception towards Natural farming. Major practices like Pre-monsoon Dry Sowing (PMDS), Beejamrutham, Ghanajeevamrutham, Dhravajeevamrutham, Neemasthrum, Sour butter milk have been adopted by the farmers. Lack of certification for products, Lack of better marketing for natural farming products were the major constraints expressed by the farmers.

Keywords: Natural farming, perception, adoption

Introduction

There is no doubt that, green revolution technologies have revolutionized the food production scenario and transformed the Indian agriculture from subsistence to surplus generating enterprise. But indiscriminate use of chemical inputs and over-exploitation of natural resources led to decline in soil health and fertility, depleting natural resources and contamination in environment, water and food. All these concerns have underscored the need for exploring alternative agricultural systems, that are sustainable, environment friendly, non-degrading, non-contaminating and offer better income opportunities to the farmers along with safe and healthy food to citizens. Agriculture is at epicentre of the country's journey towards Atma Nirbharta (Self-reliance) with farmers at its core. The efforts of our government have consistently focused upon upliftment, empowerment and stability of farmers in the technical, economic and social realm. It is in this endeavor that we continuously explore various methods to achieve ecologically sustainable and economically viable methods. Natural farming is one such method that holds potential to realize all these goals. Natural Farming mainly relies on adoption of diversified multi-cropping systems, desi cow based on-farm inputs for nutrient and soil enrichment and various botanical concoctions for plant protection. These

were initially thought to be main pillars and promoted as components of Natural Farming. However, the practices have evolved with time and farmers are also using innovations like Pre Monsoon Dry Sowing, Green manuring and applying Farm Yard Manure, vermi-compost, etc. along with the desi-cow based components of Natural Farming. It offers an alternative to conventional farming methods that rely heavily on synthetic fertilizers, pesticides, and intensive irrigation, all of which have detrimental effects on the environment, soil health, and biodiversity. Despite the numerous benefits associated with Natural Farming, the adoption of these practices remains a challenge for many farmers. Several factors, including the lack of awareness, inadequate training, resistance to change, and the perceived risks associated with transitioning from conventional to natural farming methods; contribute to the slow uptake of these practices (Devarinti, 2016) ^[1]. Farmers' Perceptions play a crucial role in determining the success of Natural Farming adoption. The adoption of Natural Farming practices is also closely linked to the socio-economic context of farmers. In this context, the study of farmers' perceptions of Natural Farming becomes essential, as it helps to understand the factors that influence their decision to adopt or reject these practices. The objectives of this study are to study the farmer's perception and extent of

adoption of Natural farming practices and constraints in adoption of NF practices.

Methodology

The present investigation was undertaken in Parvathipuram Manyam district of Andhra Pradesh. The study was conducted in kurupam, gummalaxmipuram areas of the district with a sample size of 60 members. Primary data for the study were collected through a field survey using a structured questionnaire that included farmers' socio-

economic factors, perception, adoption and constraints faced by farmers. The simple statistical tools like frequency, percentage, mean were adopted to interpret the data in a meaningful way.

Results and Discussion

It is evident from table 1 that majority (68.33%) of the farmers had medium perception followed by low (18.34%) and high (13.33%) level of perception towards Natural farming.

Table 1: Perception level of farmers towards Natural Farming (n=60)

S. No	Statements	Perception						Rank
		A		DA		Undecided		
		F	%	F	%	F	%	
1	Natural farming facilitates the population of natural enemies	51	85.0	7	11.66	2	3.34	3
2	NF promotes the growth of micro-organisms, natural enemies and earthworms in soil	49	81.66	9	15.0	2	3.34	4
3	NF helps in sustainable soil fertility and productivity by way of organic waste recycling	54	90.0	6	10.0	0	0	2
4	Quality production is possible with natural farming	56	93.3	4	6.66	0	0	1
5	Weed management is difficult in Natural Farming	48	80.0	12	20.0	0	0	5
6	Buying and owning desi cows is difficult	42	70.0	8	40.0	10	16.66	6
7	Preparation of kashyas is difficult	38	63.33	13	21.67	9	15.0	9
8	Adopting Natural farming is complicated	40	66.7	16	26.6	4	6.66	7
9	Availability of indigenous seeds is difficult	46	76.8	10	16.66	4	6.66	8
10	It is possible to follow natural farming under current agricultural conditions	34	56.6	14	23.4	12	20.0	10
11	Natural farming is relatively more profitable than chemical farming	28	46.6	21	35.0	11	18.34	13
12	Large-scale adoption of natural farming is possible	25	41.6	20	33.4	15	25.0	14
13	Natural farming is difficult	33	55.0	19	31.6	8	13.34	11
14	Natural farming yields sustainable yields	22	36.6	32	53.4	6	10.0	15
15	Natural farming decreases the cost of cultivation to an extent	31	51.6	18	30.0	11	18.34	12
16	Natural farming yields higher net returns	24	40.0	28	46.6	8	13.34	16
17	It is possible to follow natural farming under current agricultural conditions	34	56.6	14	23.4	12	20.0	10
18	Natural farming is relatively more profitable than chemical farming	28	46.6	21	35.0	11	18.34	13

Table 2: Overall adoption level

S. No	Perception level	F	%
1	Low level (<42.53)	8	13.33
2	Medium level (42.53-48.16)	41	68.33
3	High level (>48.16)	11	18.34
	Total	60	100.00

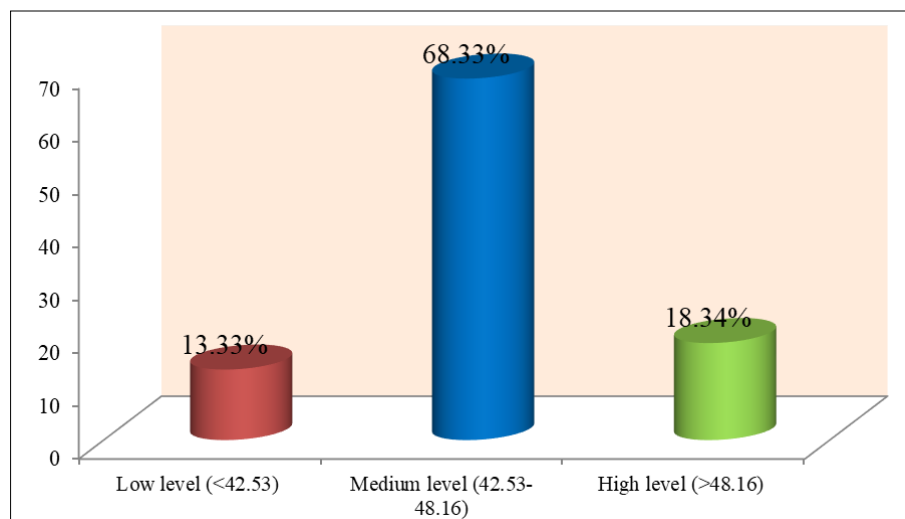


Table 3: Adoption level of NF Practices

S. No	Natural farming practices	NF practices adoption level						Rank
		Full (3)		Partial (2)		Non adoption (1)		
		F	%	F	%	F	%	
I	Land preparation							
1	Light tillage - No tillage	44	73.33	12	20.0	4	6.66	2
2	365 days different crops	12	20.0	19	31.6	29	48.34	3
3	PMDS	51	85.0	8	13.34	1	1.66	1
II	Seed treatment							
1	Beejamrutham	56	93.33	4	6.67	0	0	1
2	Rhizobium	4	6.66	9	15.0	47	78.34	4
3	Pseudomonas	10	16.66	6	10.0	44	73.34	3
4	Trichoderma	22	36.66	26	43.34	12	20.0	2
III	Nutrient management							
1	FYM	38	63.3	12	20.0	10	16.66	4
2	Jilledu kashyam	47	78.33	8	13.34	4	6.66	3
3	Vermicompost	31	51.6	13	43.3	16	26.6	6
4	Biofertilizers	9	15	4	6.67	47	78.33	7
5	Ghanajeevamrutham	55	91.6	5	8.34	0	0	1
6	Dhravajeevamrutham	51	85.0	9	15.0	0	0	2
7	Panchakavya	33	55.0	9	15.0	18	30.0	5
IV	Pest management							
1	Agniasthram	51	85.0	7	11.66	2	3.34	2
2	Bhramasthram	49	81.6	6	10.0	5	8.34	3
3	Neem asthram	54	90.0	6	10.0	0	0	1
4	Dashaparni kashyam	46	76.6	10	16.67	4	6.67	4
5	Vepaginjala kashyam	36	60.0	14	23.3	10	16.67	6
6	Vavilaku kashyam	32	53.3	9	15.0	19	31.6	7
7	Tutikoda kashyam	44	73.33	6	10.0	10	16.67	5
V	Disease management							
1	Sour butter milk	55	91.6	5	8.34	0	0	1
2	Dung, urine, inguva dhravanam	28	46.66	13	21.66	19	31.6	2
VI	IPM							
1	Crop rotation	52	86.6	5	8.34	3	5.0	1
2	Coverage with different crops	44	73.33	10	16.67	6	10.0	3
3	Border crops	49	81.6	6	10.0	5	8.34	2
4	Bird perches	39	65.0	14	23.33	7	11.67	4
5	Pheromone traps	24	40.0	15	25.0	21	35.0	6
6	Sticky traps	31	51.6	18	30.0	11	18.34	5
VII	Weed management							
1	Inter crops	42	70.0	14	23.34	4	6.67	2
2	Mixed crops	48	80.0	10	16.67	2	3.34	1
3	Achadhana	37	61.66	9	15.0	14	23.34	3
4	Removal of weeds	28	46.6	14	23.34	18	30.0	4

Table 4: Constraints faced by farmers

S. No	Constraints	Frequency	%	Rank
Constraints faced by farmers (n=60)				
1	Low yield in initial years	26	43.3	9
2	Lack of better marketing for natural farming products	49	81.6	2
3	Non availability of NF products	39	65.0	6
4	Weed management is difficult	46	76.6	4
5	Lack of skill in preparation of ashthras and kashyas	34	56.6	7
6	Labour requirement	43	71.6	5
7	Unavailability of indigenous cow	48	80.00	3
8	Preparation of kashyas is difficult	29	48.3	8
9	Lack of organic certification for products	51	85.00	1

Table 5: Suggestions elicited by farmers (n=60)

S. No	Suggestions	Frequency	Percentage	Rank
Suggestions (n=60)				
1	The government should create adequate certification and marketing facilities for agricultural products so that the produce gets a good price	52	86.6	1
2	More awareness and training programmes should be conducted on Natural farming	45	75.0	3
3	Availability of inputs in locally available markets	40	66.6	4
4	Certification for organic produce should be increased	49	81.6	2
5	Availability of local indigenous cow	34	56.6	5
6	Price for organic produce should be increased	29	48.3	6

Conclusion

Natural Farming is an eco-friendly approach and some of its features make it useful to the farmers and environment. Natural Farming has emerged as a promising agricultural paradigm in India offering a sustainable and environmentally friendly alternative to conventional farming practices.

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