

Perception of the Farmers on Zero Budget Natural Farming in Prakasam District of Andhra Pradesh

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ABSTRACT

The study investigated farmers' perception on Zero Budget Natural Farming (ZBNF) in Prakasam District of Andhra Pradesh with the specific objectives of assessing over all farmers' perception, the determinants of their perception, sources of information for ZBNF, constraints in practicing ZBNF and suggestions for sustainable ZBNF adoption. Sixty farmers practicing ZBNF were purposively selected from ten ZBNF clusters of Prakasam District. The data collected were analyzed using frequency counts, percentages and correlation analysis. Majority (65.00%) of the farmers had medium perception on ZBNF followed by high (18.33%) and low (16.67%). Great majority (86.67%) of the farmers agreed that soil will be enriched with ZBNF, quality production is possible with ZBNF, ZBNF increases micro organisms and earth worms in soil (80.00%), facilitates natural enemies population (68.33%), is complex to adopt (63.33%), weed management is difficult (55.00%) and ZBNF is difficult to practice (53.33%). But they have disagreed that adoption of ZBNF on large scale is possible (55.00%) and purchasing and maintaining traditional cows is difficult (51.67%). The major sources of information were trainings attended on by the farmers on ZBNF (91.67%), Community Resource Persons (90.00%), Department of Agriculture (88.33%), practicing farmers (73.33%) and through television (51.67%). Trainings undergone, ZBNF experience, innovativeness, education and extension contact were the variables having highly significant positive relation with farmers' perception at 0.01% level. The major constraints expressed by the practicing ZBNF farmers were non availability of ZBNF inputs (81.67%), lack of information on preparation and use of asthras (76.67%), low yields in initial years (75.00%), weed management (68.33%), preparation of asthras is difficult (63.33%) and intensive labour requirement (53.33%). The ZBNF farmers have suggested that creating awareness among farmers (78.33%), application of asthras through fertigation (71.67%), making ZBNF inputs locally available (63.33%) providing market support for ZBNF produce (58.33%) and giving wide publicity on the benefits of ZBNF (51.67%) would facilitate its large scale adoption.

INTRODUCTION

Before 1940's, when the population was smaller than it is today, it was common for farmers throughout the world to grow organic food, and yields were similar to that of prehistoric times. The farmers focus was on growing enough food to feed themselves and their families. However, as the world's population increased, growing organic food was no longer a feasible way to feed the society. This had led to the introduction of intensive technologies, including more efficient ways to feed the population that had almost doubled in size. Fertilizers, mechanized cultivation, biocides such as pesticides and herbicides, helped in producing greater yields for the larger population. These farming practices became integral part of what we know as

conventional farming (Melissa, 2003). The Green revolution promoted use of new and high yielding varieties of crops that depend on agrochemicals to produce higher yields. These new varieties were often susceptible to insect pests and diseases and hence insecticides and fungicides had to be introduced to combat them.

The consequences of green revolution were reviewed and found that it has led to reduced genetic diversity, increased vulnerability to pests, enhanced soil erosion and water shortages, reduced soil fertility, micronutrient deficiencies, increased soil contamination, reduced availability of nutritious food crops for the local population, the displacement of vast numbers of small farmers from their land, rural impoverishment and increased

tensions and conflicts. The beneficiaries of the green revolution have been the agrochemical industries, large petrochemical companies, manufacturers of agricultural machinery, dam builders and large landowners (Greenpeace, 2003). Therefore, an alternative agriculture and agro ecological methods could apply which can function in an ecosystem friendly while sustaining and increasing the crop productivity and also concerning about health promotion in the community. In this search for eco friendly and farmer friendly alternate systems of farming, Subhash Palekar's Zero Budget Natural Farming is increasingly becoming popular among the farming community. The state government of Andhra Pradesh made considerable efforts in this regard with cluster approach to demonstrate and train farmers on Zero Budget Natural Farming through the Department of Agriculture. In each district 10 clusters were identified to train farmers on ZBNF with selected Community Resource Persons (CRPs). However, some farmers succeeded in shifting to ZBNF, while others remained in chemical based farming systems. This might be due to low levels of perception and adaptation to ZBNF. Therefore an attempt was made in the present study to analyze the perception of the practicing farmers on ZBNF with the following specific objectives,

1. To analyze the perception of the Zero Budget Natural Farming farmers on
2. To study the ZBNF sources of information for the farmers
3. To assess the relationship between profile characteristics of farmers and their perception on ZBNF.
4. To elicit constraints and offer suggestions for ZBNF

MATERIALS AND METHODS

The present investigation was carried out in Prakasam district of Andhra Pradesh during the year 2016-17. About Sixty ZBNF practicing farmers from 10 different clusters identified by the Department Of Agriculture were purposively selected for the study purpose. From each cluster 6 farmers who were fully adopting ZBNF

recommended package were selected, thus making the final sample size 60. To analyze the perception of the farmers on ZBNF, a schedule was constructed with 16 statements on three point continuum i.e., Agree, Undecided and Disagree and scores of 3, 2 and 1 were assigned to the responses accordingly for positive statements and for negative statements 1, 2 and 3 scores were given. Correlation analysis was carried out to assess the relationship between profile characteristics of farmers and their perception on ZBNF. Each ZBNF practicing farmer was also interviewed by posing open ended questions so as to unearth sources of information, constraints he/she has experienced and suggestions for sustainable ZBNF adoption. The data were collected by using pre tested schedule employing personal interview method. The responses were scored, quantified, categorized and tabulated using mean, standard deviation, frequencies and percentages.

RESULTS AND DISCUSSION

Perception of farmers on Zero Budget Natural Farming

The perception of the farmers on Zero Budget Natural Farming (ZBNF) was analyzed in terms of overall perception of the farmers and item analysis of their perception and the results presented in Table 1 & 2.

Majority (65.00%) of the farmers had medium perception followed by high (18.33%) and low (16.67%) on Zero Budget Natural Farming. This is because majority of them agreed that soil will be enriched with ZBNF (86.67%), quality production is possible with ZBNF and it increases micro organisms and earth worms in soil (80.00%), ZBNF facilitates natural enemies population (68.33%), it is complex to adopt (63.33%), weed management is difficult in ZBNF (55.00%), ZBNF is relatively advantageous over chemical farming and is difficult to practice (53.33%), ZBNF reduces cost of cultivation to a greater extent (45.00%), gives more net returns and preparation of astras is difficult (40.00%). Majority (61.67%) of the farmers were undecided about getting sustainable yields through ZBNF. More than half of the farmers disagreed that

adoption of ZBNF on large scale is possible (55.00%) and purchasing and maintaining traditional cows is difficult (51.67%). Similar results were reported by Dipeolu *et al.* (2006), Tratnik *et al.* (2009), Oyesola *et al.* (2011) and Suresh and Himansu (2015) with respect to farmers perception on organic farming. Perception of the farmers on ZBNF clearly indicated that even though there were lot many advantages of ZBNF, few aspects like preparation of ZBNF inputs, weed management and inability to practice on large scale need to be addressed to facilitate its large scale adoption by the Government through line departments

Source of Information for ZBNF farmers

It could be inferred from table 3 that trainings on ZBNF were the major source of information for great majority of the farmers (91.67%). This is because the identified cluster farmers were trained through department of Agriculture on a regular basis. Majority (90%) of the farmers had information from community resource persons as they were available locally. The Department Agriculture officials trained the farmers on ZBNF (88.33%), practicing farmers (73.33%) and television (51.67%) were the other major sources of information followed by newspaper (43.33%).

Relationship between profile characteristic of ZBNF farmers and their perception

The perusal of table 4 revealed that trainings undergone, innovativeness, ZBNF experience, education and extension contact were found to have significant positive relation with farmers perception at 0.01% level, whereas farming experience had significant positive relation at 0.05% level. The reason behind this trend may be the trainings undergone on ZBNF, ZBNF experience, innovativeness, education and extension contact facilitated the farmers to gain good knowledge on ZBNF, skills in preparation of asthras and overcoming practical difficulties in ZBNF. Farm size was the variable which had no significant relation with the perception.

Constraints expressed by ZBNF farmers

From Table 5, it could be observed that majority (81.67%) eighty two per cent of the ZBNF farmers felt non availability of required inputs was the major constraint for ZBNF. This might be due to risk involved in preparation of various asthras and their preservation. More than three fourth (76.67%) of farmers expressed lack of information on preparation and use of asthras was another constraint hindering them to extend ZBNF on a large scale. Other major constraints expressed by the farmers were low yields in initial years (75.00%), difficulty in weed management (68.33), difficulty in preparation of asthras (63.33%), and intensive labour requirement for preparation of asthras (53.33%). Almost fifty per cent (48.33%) of the farmers felt lack of skills in preparation of asthras was another difficulty. Even though farmers were theoretically trained on ZBNF, they were lacking practical experience in preparation of asthras. Non availability of labour was another threat hindering farmers to adopt ZBNF on large scale.

Suggestions of ZBNF farmers

Suggestions of the farmers for sustainable adoption of ZBNF were presented in table 6. It could be inferred from the table that creating awareness among farmers (78.33%), application of asthras through fertigation (71.67%), making ZBNF inputs available locally (63.33%), providing market support for ZBNF produce (58.33%), giving wide publicity on the benefits of ZBNF (51.67%) and providing trainings to the farmers (43.33%) would facilitate the farmers to adopt ZBNF continuously.

Based on the findings of the study, it can be concluded that the majority of the farmers had medium perception on ZBNF. The farmers had access to information on ZBNF through trainings, Community Resource Persons, departmental officers, practicing farmers and through television. Trainings undergone, innovativeness, ZBNF experience, education and extension contact were found to have significant and positive relation with their perception on ZBNF. The major constraints expressed were non availability of ZBNF inputs,

lack of information on preparation and use of farmers with continuous support through series of asthras, low yields in initial years and weed trainings on technical knowhow to adopt ZBNF. management. Hence efforts are needed to facilitate

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Table 1
Overall perception of the farmers on Zero Budget Natural farming

N=60

Perception category	Frequency	%
Low (< Mean-SD)	10	16.67
Medium (Mean+/-SD)	39	65.00
High(>Mean+SD)	11	18.33
	60	100.00
Mean= 34.67, SD=3.86		

Table 2
Perception of the farmers on ZBNF

N=60

S.No	Perception	Agree		Undecided		Disagree	
		Fre	%	Fre	%	Fre	%
1.	ZBNF is relatively advantageous over chemical farming	32	53.33	5	8.33	23	38.33
2	ZBNF gives more net returns	24	40.00	14	23.33	22	36.67
3	ZBNF reduces cost of cultivation to a greater extent	27	45.00	25	41.67	8	13.33
4	ZBNF is feasible to adopt in present farming situation	28	46.67	20	33.33	12	20.00
5	ZBNF is complex to adopt	38	63.33	14	23.33	8	13.33
6	Soil will be enriched with ZBNF	52	86.67	5	8.33	3	5.00
7	ZBNF gives sustainable yields	16	26.67	37	61.67	7	11.66
8	ZBNF facilitates natural enemies population	41	68.33	17	28.33	2	3.33
9	Quality production is possible with ZBNF	48	80.00	10	16.67	2	3.33
10	ZBNF is difficult to practice	32	53.33	13	21.67	15	25.00
11	Preparation of asthras is difficult	24	40.00	16	26.67	20	33.33
12	Adoption of ZBNF on large scale is possible	5	8.33	22	36.67	33	55.00
13	Availability of traditional varieties seed is difficult	21	35.00	19	31.67	20	33.33
14	Weed management is difficult in ZBNF	33	55.00	7	11.67	20	33.33
15	Purchasing and maintaining traditional cows is difficult	22	36.67	7	11.67	31	51.67
16	ZBNF increases micro organisms and earth worms in soil	48	80.00	12	20.00	0	0.00

Table 3
Distribution of ZBNF farmers based on their sources of information

N=60

S.No	Information Source	Frequency	Percentage
1.	Training on ZBNF	55	91.67
2	Community Resource Persons	54	90.00
3	Department of Agriculture	53	88.33
4	Practicing farmers	44	73.33
5	Television	31	51.67
6	News Paper	26	43.33

Table 4
Relationship between profile characteristics of farmers and their perception on ZBNF

N=60

S.No	Variable	Correlation coefficient (r)
1.	Age	0.18NS
2	Education	0.56**
3	Farming experience	0.21*
4	ZBNF experience	0.67**
5	Farm size	0.10NS
6	Extension contact	0.38**
7	Innovativeness	0.59**
8	Trainings undergone	0.72**

** - significant at 0.01%

Table 5
Constraints expressed by ZBNF farmers

N=60

S.No	Constraint	Frequency.	%
1.	Non availability of ZBNF inputs	49	81.67
2.	Lack of information on preparation and use of asthras	46	76.67
3	Low yields in initial years	45	75.00
4	Weed management is difficult	41	68.33
5	Preparation of asthras is difficult	38	63.33
6	Intensive labour requirement	32	53.33
7	Lack of skills in preparation of asthras	29	48.33

Table 6
Suggestions of ZBNF farmers

N=60

S.No	Suggestion	Freq.	%
1.	Creating awareness among farmers	47	78.33
2.	Application of asthras through fertigation	43	71.67
3.	Making ZBNF inputs available locally	38	63.33
4.	Providing market support for ZBNF produce	35	58.33
5.	Giving wide publicity on the benefits of ZBNF	31	51.67
6.	Providing trainings to the farmers	26	43.33