

# In Depth Adoption of Organic Farming Practices by Tribal Women

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**Abstract:** This research paper attempts to bring together adoption of organic farming by tribal women in the light of recent developments in organic farming. The after effects of green revolution have encouraged the farmers to take up organic farming. This paper has researched the adoption scenario with reference to organic farming. The study was conducted in four villages of Jhadol, Gogunda and Kotra Panchayat Samities of Udaipur district. The sample consisted of randomly selected 100 respondents. Findings of the study reveal, that majority of the respondents were from 18-30 years of age, all respondents belonged to scheduled caste (tribe) and adopted farming as main occupation. Findings reveal that all the respondents had medium to high extent of adoption. Over all it can be concluded that, good adoption of organic farming practices among respondents but it can be improved to very high extent of adoption this will definitely help in agriculture production.

**Keywords:** Organic Farming, Adoption, Vermicompost, Compost, Mulching

## 1. Introduction

Green Revolution (GR) technologies, supported by policies, and fuelled by agrochemicals, machinery and irrigation, are known to have enhanced agricultural production and productivity. Modern agricultural farming practices, along with irrational use of chemical inputs over the past four decades have resulted in not only loss of natural habitat balance and soil health but have also caused many hazards like soil erosion, decreased groundwater level, soil salinization, pollution due to fertilizers and pesticides, genetic erosion, ill effects on environment, reduced food quality and increased the cost of cultivation, rendering the farmer poorer year by year (Ram, 2003). Farmers do not find agriculture a viable proposition any more and in fact, a large number of farmers have committed suicides (Deshpande, 2002). It is in this context that alternative farm techniques and strategies for growing crops ought to be found in the larger interest. The principle of organic cultivation is attracting farmers world over due to its various advantages over modern agricultural practices. Sustaining crop production, productivity without damaging the resources and environment are big challenge and this problem can be overcome by several ways but the first and foremost way is organic farming. Organic farming system in India is not new and is being followed from ancient time. It is a method of farming system which primarily aimed at cultivating the land and raising crops in such a way, as to keep the soil alive and in good health by use of organic wastes (crop, animal and farm wastes, aquatic wastes) and other biological materials along with beneficial microbes (biofertilizers) to release nutrients to crops for increased sustainable production in an eco friendly pollution free environment.

### Tribal women in agriculture

They are the pivot of tribal agriculture performing many household and agriculture jobs, without them tribal welfare in agriculture is meaningless. They are involved in most of the farming related activities. Almost 70 – 80 percent of the agricultural operations are efficiently performed by them. Tribal women do manure application, sowing, weeding,

thinning, irrigation and harvesting up till storage. Woman's participation in agriculture is highest among tribal followed by scheduled caste. With the increasing pressure like globalization, water scarcity, increasing poverty, less income from agriculture, etc. male heads and male members are increasingly leaving agricultural operations to other family members to seek non farm employment on a seasonal or semi permanent basis. In this situation women become defacto house hold heads with the increasing responsibilities as farm managers and workers. Every individual reacts differently to different technologies indifferent situation. Some people adopt the new technology while other resists it. Adoption depends on the fact that what is once perception regarding technology and attitude or opinion towards it.

## 2. Objective of the Study

To study the extent of in depth adoption of organic farming among tribal women

## 3. Review of Literature

- 1) Dangi and Jain (2007) depicts that of total 106 respondents, 33 and 73 beneficiary and non-beneficiary respectively were observed in the category of low level of adoption. Where as, only 2 non-beneficiaries and 39 beneficiary respondents were found under high level of adoption group. It is also revealed that more than 97 percent of non-beneficiary respondents fall under the category of low level adoption regarding vermicompost and NADEP compost practices.
- 2) Vyas (2007) reported that majority of respondents (79.25%) had high adoption level regarding vermiculture technology while 20.75 percent had medium adoption and none of the respondents were in the category of low adoption level.
- 3) The analysis depicts that majority of the farmers of girwa tehsil (86.67%) were in the medium category of adoption of organic farming practices, where as in case of farmers of Jhadol tehsil 49.17 percent were also observed in medium adoption category. It was also noted that 44.17 percent farmers of jhadol tehsil and only 5.83 percent

farmers of girwa tehsil were in the low adoption group. Where as, 8 farmers from Jhadol tehsil and farmers from girwa tehsil were noted in high adoption group. (Rathore, 2008) The study further indicated that 67.92 percent of the total respondents were in the medium adoption group and 25 percent respondents in the low adoption group, while 7.08 percent farmers were in the high adoption group of organic farming practices.

- 4) A survey conducted by the scientists of institute of organic farming, University of agriculture sciences, Dharwad in 13 districts of north Karnataka has revealed that quite a good number of farmers (Several hundreds) are using organic liquid manures in the organic crop production. Though many farmers are getting better yield by using organic liquid manures, scientist validation has not been carried out so far. Hence an attempt has been made to analyze these organic liquid manures at the institute of organic Farming, University of agricultural sciences Dharwad to ascertain the nutrient status and microbial load (Sreenivasa,2010)

#### 4. Methodology

Organic farming was promoted in two panchayat samiti namely kotra and Jadol by voluntary organisation Gandhi Manav Kalyan Society since 1985. Four villages were selected purposively namely Kantharia, Jambua, Dhoya and Basaria where maximum numbers of tribal beneficiaries were reported in the organic farming programme. From each of the village, 25 beneficiaries of the organic farming programme were selected randomly. In total the sample consisted of 100 tribal women. Frequency, percentages and MWS were calculated to find out the overall adoption. Interview method was used for collecting data.

#### 5. Results and Discussion

The in depth study of organic farming practices adopted by respondents as presented in table-

**Table 1:** Distribution of respondents by their level of adoption of organic farming practices, N=100

Sr.	Organic farming practices	Level of adoption			
		Full f/%	Partial f /%	Not at all	MWS
I	Vermicompost				
i)	Bed preparation				
a	Bed 3" above ground level	61	27	12	1.49
b	Bed under natural shade	56	44	0	1.56
c.	Bed near water sources	28	27	45	0.83
ii)	<b>Raw material</b>				
a	Making raw material free from plastic, glass pieces, hard sticks etc.	18	73	9	1.09
iii)	<b>Process of filling bed</b>				
a	Putting 2" thick layer of agricultural waste.	57	43	0	1.57
b.	Then thick layer of cow dung.	72	28	0	1.72
c.	Leaving the bed for 2-3 days in moist condition	41	48	11	1.3
d.	Placing a thick layer of earthworms in one side of bed	46	44	10	1.36
iv.)	<b>Maintenance of bed</b>				
a.	Watering the bed daily.	57	31	12	1.45
b.	Keeping bed and surrounding area neat and clean	41	39	20	1.21
v)	<b>Care taken before using prepared vermicompost</b>				
a.	Separating earthworms from prepared vermicompost	46	46	8	1.38
b.	Using vermicompost in different crops, vegetables and fruit plants.	69	26	5	1.64
II	<b>Compost</b>				
i.	Preparing recommended size of pit	27	31	42	0.85
ii	Using material like cow dung, biomass	92	8	0	1.92
iii	Using required amount of material	31	42	27	1.04
iv	Using appropriate method of filling pit	31	40	29	1.02
v	Application of water at time of compost making	100	0	0	2
vi	Application of water after preparation of pit	72	13	15	1.57
vii	Following turning for making compost	29	30	41	0.88
viii	Covering pit from top	45	23	32	1.13
ix	Application of compost in monsoon crop	49	27	24	1.25
III	<b>Mulching</b>				
i	Use mulch in field	89	0	11	1.78
ii	Use of saw dust, leaves, hay and straw.	85	15	0	1.85
IV	<b>Green Manuring</b>				
i	Uses recommended seed rate.	42	58	0	1.42
ii	Seed is treated before sowing	0	0	100	0
iii	Follows broad casting method sowing	89	8	3	1.86
iv	Line sowing is a regular feature	0	5	95	0.05
v	Follow in rainy season	45	35	20	1.25
vi	Follow in a winter season	65	26	9	1.56
vii	Irrigation for decomposition	55	45	0	1.55
viii	Turning soil for decomposition	48	46	6	1.42
ix	Keeps the field fallow in present season	0	0	100	0

x	Regular ploughing is adopted	29	25	46	0.8
xi	Choose fast growing crop	87	13	0	1.87
<b>VI Liquid Manure</b>					
i	Use urine, cow dung	100	0	0	2
ii	Use urine, cow dung and jaggery	0	0	100	0
iii	Sprinkle manure through pot	0	76	24	0.76
iv	Keep mixture 7 days for dilution	0	0	100	0
v	Do irrigation with the mixture of manure	100	0	0	2
<b>VII River bed soil</b>					
i	Use field	27	73	0	1.27
ii	Extract unwanted elements before use	31	69	0	1.31
iii	Use river bed soil in every crop	23	77	0	1.23

### Adoption of vermicompost by respondents

Data presented in Table 1 shows the adoption of different aspects related to vermicompost i.e. Bed preparation, Raw material, Process of filling bed, Maintenance of bed and Care taken before using prepared vermicompost. It was revealed from the data in table- 1 in Bed preparation 61 percent respondents prepare Bed 3" above ground level, 56 percent respondents fully prepare Bed under natural shade. However Bed near water sources was not adopted by 45 percent of respondents but 28 percent fully adopt it and the MWS 1.49, 1.56 and .83 of Bed 3" above ground level, Bed under natural shade and Bed near water sources respectively. These findings are because of the reason that Bed above 3" ground level and natural shade is necessary so that earthworms are protected from the sunlight and rain water. Regarding Raw material it was found that majority of respondents (73%) were partially making raw material free from plastics, glass pieces, hard sticks etc. and it was fully adopted by 18 percent of respondents. The MWS found to be 1.57 indicating high adoption. The reason being that undegradable material affects worms functioning and vermicompost making. Without agricultural waste and sprinkling water good quality of vermicompost cannot be prepared. Further an effort was made to find out the adoption of practices related to care of prepared vermicompost and using it. It was found that 69 percent of respondents fully followed the practices i.e. Using vermicompost in crops, fruits and vegetable plants and MWS 1.64 because of the reason that vermicompost used in all crops, fruits and vegetables provides balanced nutrients to plants for good growth.

### Adoption of Compost making by respondents

Data in Table 1 depicting the adoption of compost by the respondents reveals that all the respondents applied water at the time of compost making; and MWS 2 was indicating high adoption this may be due to the reason that to maintain 30-35 percent of moisture in for compost making water application is essential. Further all the respondents who were making compost (92%) used different type of material for compost making i.e. biomass, cow dung and agriculture waste (weeds, wastage of crops, dried leaves, fodder). This might be due to the reason that more emphasis was given on this aspect by the functionaries of GMKS and MWS was found to be 1.92 which is very high. Data in the table further depicts that 40 percent of respondents partially adopted the appropriate method of filling pit and 31 percent partially adopting it. Appropriate method of compost are filling the pit is First layer of agricultural waste, second layer of cow

dung slurry, then putting layer of soil which should be free from pebbles etc. and for moisture content sprinkling some water. With regard to following turning for making compost in 4 months was adopted partially by 30 percent of respondents and 29 percent respondents fully adopted. Over all it can be said that in the compost making adoption was medium to high extent. Adoption of mulching by respondents: Data presented in the table indicate that use of mulching in field was adopted to full extent i.e. 89 percent of respondents as indicated by MWS 1.78 reflecting high adoption. This may be due to the reason that it is an easy technique to follow and raw material is easily available. The raw material for mulching was saw dust, leaves, hay and straw adopted by 85 percent of respondents adopted fully and the MWS 1.85. Mulching was adopted to high extent.

### Adoption of Green manuring by respondents:

The various crops used for green manuring such as Sunhemp, Dhaincha, Cluster bean and cowpea. Data in Table 1 depicts the adoption of green manuring by the respondents. The Table further shows that 87 percent respondents adopted green manuring fully and MWS found to be 1.87 reflects high extent of adoption they use sump only as it is fast growing crop as they are growing the crop long back and they have more knowledge about this than any other green manuring crop. It was found that majority of respondents (89 %) follows broad casting method of sowing Green manuring and MWS was 1.86 as it consumes less time and easily to follow. So, it reflects high extent of adoption. It was found that 65 percent of the respondents fully followed green manuring in winter season and MWS 1.56 reflecting just high extent of adoption. The reason might be that maturity of green manure crop respondents grow wheat crops so follow this practice in winter mostly. However 45 percent of respondents also fully followed growing of green manuring crop in rainy season.

### Adoption of liquid manure by respondents

Data in table 1 indicated that all the respondents were using urine and cow dung in their field as liquid manure and doing irrigation with the mixture of manure, this full adoption due to the reason that all respondents possess livestock so raw material is available, does not cause any more efforts and can follow easily. The Table further shows that only 76 percent of respondents partially sprinkling manure in field through pot and MWS (.76) as it is more time consuming process. It was discouraging to note that none of the respondents were using mixture of urine, cow dung and jaggery and keeping the mixture 7 days for dilution as it is scientific method and provide good manure to the field,



agency must give emphasis on this knowledge among their beneficiaries for better result of field.

### Adoption of River bed soil by respondents

Respondents River bed soil removal of unwanted elements before using soil in the field was partially adopted by 69 percent respondents and 31 percent respondents adopt it fully. MWS was found to be 1.31 reflecting medium extent of adoption may be due to the reason that they are taking things for granted. Table 1 indicates that majority of respondents (72%) partially use river bed soil in field and only 27 percent use it in field fully. The MWS was found to be only 1.27, this medium MWS due to the reason that it is seasonal process and river bed soil not is available as there is only two or three anicuts and one dam near by their village (bansaria). Table further indicate that deepploughing was follows by 76 percent respondents partially and fully by 24 percent respondents with MWS 1.25. This reflect medium extent of adoption. Using river bed soil in every crop was adopted partially by 77 percent respondents and fully by 23 percent respondents, and MWS was 1.23 they said that whenever they have this soil they use in crops and they less irrigate the crop when they use this.

### 6. Conclusion

The changing agro-ecosystem environment has put up a question mark before us on agricultural crop production and productivity without damaging the resources and environment. In the face of these agricultural and food production challenges, organic farming provides viable methods of maintaining and building healthy soil. Organic farming rely on crop rotations, crop residues, animal manures, legumes, green manures, off farm organic wastes, and aspects of biological pest control to maintain soil productivity and tilt, to support plant nutrient and to control insects, weeds and other pests. Vermicompost was found to high extent of adoption. Compost was found to be under medium level of adoption. Mulching was found to high extent of adoption. Green manuring reflecting medium extent of adoption. Liquid manure reflection medium extent of adoption. River bed soil reflecting medium extent of adoption of respondents are found to be adopters.

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