

## Knowledge of Tribals Regarding Vegetable Development Service under Tribal Area Development Program

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**Abstract** The present study was undertaken with the objectives to find out the knowledge of improved practices promoted under vegetable development program of TADP among the beneficiaries. The study was conducted in purposively selected block of Udaipur district namely Lasadiya considering 2 villages for beneficiaries and 2 villages for having non-beneficiaries. The sample consisted of 60 respondents (30 beneficiaries and 30 non-beneficiaries) selected on the basis of random sampling method. The interview schedule was developed by the researcher on the basis of objectives of the study covered the program service viz. knowledge of agricultural practices among the respondents in Vegetable Development Program. Personal interview technique was used for collecting data from the respondents. For the analysis of data, frequency and percentage were used. Findings of the study reveal that Tribal

Area Development Program is in operation under Tribal Area Development Department since 1964. Agricultural services of the program were implemented in seven tribal blocks of Udaipur district. Service wise knowledge of respondents reveals that the knowledge of beneficiaries in the vegetable development service, beneficiaries had good knowledge with MPS 71.87 and non-beneficiaries were falling in average knowledge with MPS 59.00.

**Keywords** Knowledge, Tribals, Vegetable, Tribal area.

### Introduction

Tribals are most primitive people living in isolation and constitute 8.61% of the total population of the country, numbering 104,281,034 millions, out of which 93,819,162 residing in rural area and 10,461,872 living in urban area. The countrys 15% of the total geographical area are covered by tribal population. They reside mainly in forests, hills and undulating inaccessible terrain in plateau areas, rich in natural resources (India census 2011). Tribal areas and tribal communities were expected to get benefits of general development efforts in the normal course because it was assumed that special attention was being given to the problems of tribes at all levels. But still different tribal groups are at different levels of deveolpment and change in the outlook of people required efforts, time, infrastructure and administrative arrangement.

Attempts have been made to make the sched-

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uled tribes to develop socially, educationally, economically, politically and culturally. For the development of tribes, various models, approaches and theories of development have been propounded in different five-year plan periods. With the view to bring the tribal areas or people of the country in the mainstream of economic development and accelerating the pace of socio-economic development, the State Government has made significant efforts to uplift the tribal people and started various activities for their social and economic development. A special program known as Tribal Area Developmental Program (TADP) was taken up, on a pilot basis under a central sector plan scheme of the Ministry of Agriculture in 1964. The agricultural service provided under TADP is Vegetable Development Program among many other programs.

Vegetables are grown in India since thousands of years but now a day it has become an important enterprise at national and international levels. In recent years, the vegetable has now become an essential requirement of the daily human diet, because of its nutritional value. Regular uses of vegetables provide us most of the essential health building and protecting substances, such as vitamins and minerals in India, where vegetarianism has been a way life. Since the early days of recorded history, the problem is under nutrition and malnutrition and can only be solved through balanced diet for which vegetables are essential component of the daily diet. Vegetables are grown by many tribal farmers but growing with correct practice is another challenge which will directly lead to the high productivity. Thus, knowledge is core concept and farmers must be aware of the aspects. Knowledge in the present study referred as to the amount of information possessed by the beneficiaries of the service and non-beneficiaries respondents.

### Materials and Methods

The study was conducted in Udaipur district of Rajasthan as for the development of tribals a separate department i.e. Tribal Area Development Department (2011—2012) is in function. The department implements various schemes or programs for tribal development along with agricultural services. Veg-

etable development program was implemented in Lasadiya block of Udaipur district. For agricultural service, two villages were selected randomly for the beneficiaries from program implementing villages and similarly two villages were selected for non-beneficiaries from non program villages. Thus there were 2 villages for beneficiaries and 2 villages for non-beneficiaries for the six agricultural services. Thus in total 4 villages were selected for the study purpose. For selection of sample, 30 beneficiaries were selected randomly, for assessment of impact of agricultural services of TADP on knowledge and adoption, a comparable matching sample of 30 non-beneficiary tribals was selected randomly. Thus the total sample for the study comprised of 60 respondents. The scoring of the schedule was finalized in consultation with the researchers advisory committee members. The scoring in part of the interview schedule was as follows : Knowledge test— Each correct answer was assigned one score. However in few questions, scores were assigned in view of the relative importance of the information covered. The personal interview method was used by the researcher for the purpose of data collection. After establishing good rapport with the respondents, data were collected by the researcher with the help of developed interview schedule in an informal manner using local dialect.

### Measurement of knowledge

Knowledge test—Knowledge test included questions for Vegetable development program. There was variation in number of components, questions and scores given in Table 1.

Since the maximum scores varied for service, the scores obtained by the respondents were converted into Mean Percent Scores (MPS). The respondents were then categorized into three categories based on equal interval as follows (Table 2) .

**Table 1.** Service wise details of the knowledge test.

Sl. No.	Agricultural services	Number of components	Number of questions	Total scores
1	Vegetable development	14	16	30

**Table 2.** Knowledge categories of the respondents.

Sl. No.	Categories	Score range
1	Good	66.67—100
2	Average	33.34—66.66
3	Poor	0—33.33

### Statistical analysis of data

After collecting data it was necessary to analyze with the help of statistics to derive proper and adequate conclusion. Therefore, obtained data were coded, tabulated and analyzed with the help of statistical tools and techniques. Frequency and percentages were used to analyze knowledge and adoption.

## Results and Discussion

### Knowledge regarding vegetable development service

In vegetable development service, minikits are provided to the beneficiaries. Each minikit consists of hybrid variety seeds of four vegetables viz onion, okra, tomato and brinjal with fertilizers, (Urea, Diamonium phosphate, Murate of potash) and plant protection chemicals. Knowledge of the respondents about improved cultivation practices related to all the four vegetables was studied and presented in Table 3 to 6 (Bora and Deka 2008).

### *Knowledge regarding improved practices of onion cultivation*

It is apparent from data presented in Table 3 about

**Table 3.** Distribution of the respondents by knowledge of improved practices regarding onion cultivation. (n=60).

Sl. No.	Components	Knowledge									
		Beneficiaries $n_1 = 30$				Non-beneficiaries $n_2 = 30$					
		Good	f (%)	Average	Poor	MPS	Good	f (%)	Average	Poor	MPS
1	Type of soil	30 (100)	0	0	100	24 (80)	0	6 (20)	80		
2	High yielding varieties	15 (50)	14 (46.66)	1 (3.33)	73.30	0	12 (40)	18 (60)	20		
3	Seed rate	24 (80)	0	6 (20)	80	18 (60)	10 (33.33)	2 (6.66)	60		
4	Time of sowing	27 (90)	0	3 (10)	90	20 (66.66)	0	10 (33.33)	70		
5	Planting distance	17 (56.66)	10 (33.33)	3 (10)	73.30	11 (36.66)	10 (33.33)	9 (30)	53.33		
6	Irrigation	21 (70)	8 (26.66)	1 (3.33)	83.30	10 (33.33)	8 (26.66)	12 (40)	46.7		
7	Fertilizers	9 (30)	11 (36.66)	10 (33.33)	48.30	7 (23.33)	2 (6.66)	21 (70)	18.30		
8	FYM	24 (80)	0	6 (20)	80	13 (43.33)	0	17 (56.67)	43.30		
9	Weedicides	5 (16.66)	14 (46.66)	11 (33.33)	40	3 (10)	11 (33.33)	16 (53.33)	28.30		
10	Insecticides	19 (63.33)	8 (26.66)	3 (10)	76.70	6 (20)	11 (33.33)	13 (43.33)	38.30		
11	Pesticides	13 (43.33)	10 (33.33)	7 (23.33)	60	2 (6.66)	11 (33.33)	17 (56.66)	25		
12	Harvesting	25 (83.33)	0	5 (16.66)	83.30	18 (60)	0	12 (40)	63.30		
13	Yield	22 (73.33)	0	8 (26.66)	73.30	12 (40)	0	18 (60)	40		
	Over all	19 (63.33)	11 (36.66)	0	70.83	1 (3.33)	22 (73.33)	7 (23.33)	40.83		

onion cultivation practices that the overall knowledge of beneficiaries and non-beneficiaries was found to be good and average as depicted by MPS 70.83 and 40.83, respectively. This is also revealed in distribution of the respondents in knowledge categories as 63.33% of the beneficiaries were falling in good knowledge category while, 73.33% of the non-beneficiaries were falling in average knowledge category. Component wise distribution indicates that in 10 out of 13 components of onion cultivation, beneficiaries had good knowledge as depicted by high MPS values in type of soil (100), high yielding varieties (73.33), seed rate (80), time of sowing (90), planting distance (73.30), irrigation (83.30), FYM (80), insecticides (76.70), harvesting (83.30) and yield (73.30). Category wise distribution of the respondents in these components also reveals that 50—100% of the beneficiaries were falling in good

knowledge category. In rest three components viz. fertilizers, weedicides and pesticides, beneficiaries possessed average knowledge with MPS 48.33, 40 and 60 respectively and good number of beneficiaries were falling in average (33.33—46.66%) and poor knowledge categories (23.33—33.33%).

Non-beneficiaries were having good knowledge in two components i.e. type of soil with MPS 80 and time of sowing with MPS 70 and in these components majority of non-beneficiaries were falling in good knowledge category i.e. 80 and 66.66% respectively. In other seven components 33.33—66.66% non-beneficiaries possessed average knowledge i.e. in seed rate (60 MPS), planting distance (53.33 MPS), insecticides and pesticides (38.30 MPS) harvesting (63.30 MPS) and yield (40 MPS). In rest four components, 38.30—70% non-benefi-

**Table 4.** Distribution of the respondents by knowledge of improved practices regarding okra cultivation. n=60.

Sl. No.	Components	Beneficiaries n <sub>1</sub> = 30			Knowledge				
		Good	Average f (%)	Poor	MPS	Good	Average f (%)	Poor	MPS
1	Type of soil	30 (100)	0	0	100	22 (73.33)	0	8 (26.66)	73.33
2	High yielding varieties	9 (30)	17 (56.66)	4 (13.33)	58.33	7 (23.33)	12 (40)	11 (33.33)	46.66
3	Seed rate	21 (70)	0	9 (30)	70	14 (46.66)	0	16 (53.33)	46.7
4	Time of sowing	26 (86.66)	0	4 (13.33)	86.67	17 (56.66)	0	13 (43.33)	56.7
5	Planting distance	14 (46.66)	13 (43.33)	3 (10)	68.3	11 (33.33)	5 (16.66)	14 (46.66)	46.7
6	Irrigation	23 (76.66)	6 (20.00)	1 (3.33)	86.7	12 (40)	13 (43.33)	5 (16.66)	61.66
7	Fertilizers	11 (33.33)	10 (33.33)	9	53.3	4 (13.33)	10 (33.33)	16 (53.33)	30
8	FYM	20 (66.66)	0	10 (33.33)	66.7	11 (33.33)	0	19 (63.33)	36.7
9	Weedicides	5 (16.66)	15 (50)	10 (33.33)	40	2 (6.66)	5 (16.66)	23 (76.66)	16.66
10	Insecticides	10 (33.33)	10 (33.33)	10 (33.33)	63.33	7 (23.33)	7 (23.33)	16 (53.33)	35
11	Pesticides	19 (63.33)	7 (23.33)	4 (13.33)	70	8 (26.66)	3 (10)	19 (56.66)	31.66
12	Harvesting	26 (86.66)	0	4 (13.33)	86.66	16 (53.33)	0	14 (46.66)	53.3
13	Yield	24 (80)	0	6 (20)	64	12 (40)	0	18 (60)	40
	Over all	18 (60)	11 (36.66)	1 (3.33)	68.5	6 (20)	18 (60)	6 (20)	42.16

ciaries were in poor knowledge category viz. high yielding varieties (60%), fertilizer (70%), weedicides (53.33%) and pesticides (56.66%) with MPS 20, 18.33, 28.30 and 25, respectively depicting poor knowledge.

*Knowledge regarding improved practices of okra cultivation*

In okra cultivation practices, the overall knowledge of beneficiaries was 68.5 MPS indicating good knowledge and of non beneficiaries 42.16 MPS indicating average knowledge as showed in Table 4, (Dave et al. 2011, Lad et al. 2010, Singh and Agrawal 2013).

According to category wise distribution, 60% of the beneficiaries were found in good knowledge

category, while 60% of the non-beneficiaries were in average knowledge category. In depth perusal of the table further reveals the knowledge of beneficiaries in various components that beneficiaries had good knowledge in eight components i.e. type of soil (100 MPS), seed rate (70 MPS), time of sowing (86.67 MPS), planting distance (68.33 MPS), irrigation (86.66 MPS), FYM application (66.66 MPS), pesticides (70 MPS) and harvesting (86.66 MPS) with 46.66-100% beneficiaries falling in good knowledge category. While in these components non-beneficiaries had average knowledge with MPS ranging between 31.66 -61.66 and 10- 43.33 of non-beneficiaries were falling in average knowledge category and 16.66-63.33% of the non-beneficiaries were falling in poor knowledge category except in type of soil suitable where non-beneficiaries had good knowledge with MPS 73.33 and according

**Table 5.** Distribution of the respondents by knowledge of improved practices regarding tomato cultivation. n=60.

Sl. No.	Component	Beneficiaries n <sub>1</sub> =30				Non-beneficiaries n <sub>2</sub> =30			
		Good	Average	Poor	MPS	Good	Average	Poor	MPS
1	Type of soil	28 (93.33)	0	2 (6.66)	93.33	20 (66.66)	0	10 (33.33)	66.77
2	High yielding varieties	12 (40)	17 (56.66)	1 (3.33)	68.33	6 (20)	8 (26.66)	16 (53.33)	30
3	Seed rate	26 (86.66)	0	4 (13.33)	86.77	12 (40)	0	18 (60)	40
4	Time of sowing	30 (100)	0	0	100	17 (56.66)	0	13 (43.33)	56.77
5	Planting distance	20 (66.66)	10 (30)	0	83.3	11 (33.33)	6 (20)	13 (43.33)	46.7
6	Irrigation	21 (70)	6 (20)	3 (10)	80	12 (40)	13 (43.33)	5 (16.66)	61.7
7	Fertilizers	19 (63.33)	7 (23.33)	4 (13.33)	73.3	7 (23.33)	8 (26.66)	15 (50)	35
8	FYM	23 (76.66)	0	7 (23.33)	76.7	12 (40)	0	18 (60)	40
9	Weedicide	16 (53.33)	3 (10)	11 (33.33)	58.3	2 (6.66)	15 (50)	13 (43.33)	31.67
10	Insecticides	17 (56.66)	5 (16.66)	8 (26.66)	65	8 (26.66)	11 (33.33)	11 (33.33)	45
11	Pesticides	17 (56.66)	6 (20)	7 (23.33)	66.7	9 (30)	3 (10)	18 (60)	31.7
12	Harvesting	28 (93.33)	0	2 (6.66)	93.3	17 (56.66)	0	13 (43.33)	56.7
13	Yield	23 (76.66)	0	7 (23.33)	76.7	11 (36.66)	0	19 (63.33)	36.7
	Over all	24 (80)	6 (20)	0	76.7	2 (6.66)	20 (66.66)	8 (26.66)	43

73.33 non-beneficiaries were falling in good knowledge category. In rest of the five components viz. high yielding varieties, fertilizers use, weeding, insecticides and yield, the beneficiaries had average knowledge with MPS 58.33, 53.33, 40, 63.33 and 64 respectively where as non-beneficiaries had average or poor knowledge with MPS 46.66, 30, 16.66, 35 and 40 respectively also depicted in distribution as 33.33 - 76.66% of the non-beneficiaries were falling in poor knowledge category.

*Knowledge regarding improved practices of tomato cultivation*

With regard to tomato cultivation under vegetable development service, the mean per cent scores of beneficiaries and non-beneficiaries along with the category wise distribution has been presented in Table 5 regarding knowledge of the respondents depict that, majority of the beneficiaries (80%) were in good knowledge category with MPS 76.7 while 66.66 of the non-beneficiaries of tomato cultivation exhibited average knowledge with MPS 43. (Jat et al. 2011).

Data presented in the table further depict that beneficiaries of tomato cultivation had MPS between 68.33 - 100 in all the components depicting good knowledge viz. type of soil suitable (93.33 MPS), high yielding variety (68.33 MPS), seed rate (86.77 MPS), time of sowing (100 MPS), planting distance (83.33 MPS), irrigation (80 MPS), fertilizer use (73.33 MPS), FYM application (76.7 MPS), insecticides (65 MPS), pesticides (66.7 MPS), harvesting (93.3 MPS) and yield (76.7 MPS) except weedicides use in which MPS was only 58.3 indicating average knowledge.

The non-beneficiaries had average and poor knowledge with MPS ranging between 35 - 56.77 and MPS 30 - 31.7 respectively in these components except in type of soil suitable (66.77 MPS) in which 66.66% non-beneficiaries. Further category wise distribution of respondents in these components also shows that 53.33 - 100% beneficiaries were in good knowledge category and 16.66 - 56.66% beneficiaries were in average knowledge category and only 3.33 - 26.66% beneficiaries were in poor

knowledge category. In contrast to this , 10-50% of the non-beneficiaries were in average knowledge category followed by 33.33 - 63.33% non-beneficiaries in poor knowledge category and only 6.66 - 66.66% of the non-beneficiaries were in good knowledge category of improved practices of tomato cultivation. The findings of the study are in consonance with earlier research who studied knowledge of farmers about improved technologies in cultivation of vegetable crops and revealed that majority of the farmers had medium to high level of knowledge about improved technologies of tomato cultivation.

*Knowledge regarding improved practices of brinjal cultivation*

In vegetable development service, data related to knowledge of the respondents about brinjal cultivation practices are presented in Table 6. The overall knowledge of the beneficiaries in brinjal cultivation was good as depicted by MPS 72.3 and majority of the beneficiaries (66.66%) were falling in good knowledge category and 33.33% beneficiaries were falling in average knowledge category. In case of non-beneficiaries, MPS 48.7 indicates average knowledge and majority of the non-beneficiaries (83.33%) had average knowledge category of brinjal cultivation.

Component wise data in the table further reveal that majority of the beneficiaries were falling in good (46.66 - 90%) or average (3.33 - 26.66 %) knowledge category in all the components with good MPS viz. type of soil (83.33 MPS), high yielding varieties (65 MPS), seed rate (76.77 MPS), time of sowing (90 MPS), planting distance (70 MPS), irrigation (76.7 MPS), fertilizer use (68.3 MPS), FYM application (80 MPS), weedicides use (55 MPS), insecticides (66.7 MPS), pesticides (70 MPS), harvesting (90 MPS) and yield (83.31 MPS).

However in case of non-beneficiaries, 30 - 60% were in average knowledge category, 13.33 - 60% were in poor knowledge category and 13.33 - 70% non-beneficiaries in good knowledge category, also reflected in MPS where except in type of soil good knowledge with MPS 70 and poor knowledge in high yielding variety with MPS 33.33 while in rest of the

**Table 6.** Distribution of the respondents by knowledge of improved practices regarding brinjal cultivation. n = 60.

Sl. No.	Component	Knowledge							
		Beneficiaries n <sub>1</sub> =30				Non - beneficiaries n <sub>2</sub> =30			
		f (%)			MPS	f (%)			MPS
		Good	Average	Poor		Good	Average	Poor	
1	Type of soil	25 (83.33)	0	5 (16.66)	83.33	21 (70)	0	9 (30)	70
2	High yielding varieties	14 (46.66)	0	16 (53.33)	65	1 (3.33)	18 (60)	11 (33.33)	33.33
3	Seed rate	23 (76.66)	0	7 (23.33)	76.77	17 (56.67)	0	13 (43.33)	56.77
4	Time of sowing	27 (90)	0	3 (10)	90	16 (53.33)	0	14 (46.66)	53.3
5	Planting distance	16 (53.33)	0	14 (46.66)	70	11 (33.33)	9 (30)	10 (33.33)	51.7
6	Irrigation	19 (63.33)	8 (26.66)	3 (10)	76.7	12 (40)	14 (46.66)	4 (13.33)	63.3
7	Fertilizers	20 (66.66)	1 (3.33)	9 (30)	68.3	2 (6.66)	10 (33.33)	18 (60)	43.3
8	FYM	24 (80)	0	6 (20)	80	16 (53.33)	0	14 (46.66)	53.3
9	Weedicide	14 (46.66)	5 (16.66)	11 (33.33)	55	4 (13.33)	15 (50)	11 (33.33)	40
10	Insecticides	18 (60)	4 (13.33)	8 (26.66)	66.7	7 (23.33)	9 (30)	14 (46.66)	40
11	Pesticides	19 (63.33)	4 (13.33)	7 (23.33)	70	7 (23.33)	12 (40)	11 (33.33)	43.3
12	Harvesting	27 (90)	0	3 (10)	90	18 (60)	0	12 (40)	60
13	Yield	25 (83.33)	0	5 (16.66)	83.3	15 (50)	0	15 (50)	50
	Over all	20 (66.66)	10 (33.33)	0	72.3	2 (6.66)	25 (83.33)	3 (10)	48.7

components MPS ranged between 40 and 60 indicating average knowledge of non-beneficiaries in brinjal cultivation practices.

## Conclusion

In vegetable development service, beneficiaries had good knowledge with MPS 71.87 and majority of the beneficiaries (73.33%) were falling in good knowledge category. While in case of non-beneficiaries 80.00% of the non-beneficiaries were falling in average knowledge category and MPS 59.00 also depict the average knowledge in the service. It can be concluded that, majority of the beneficiaries possessed good or average knowledge and non-beneficiaries possessed average or poor knowledge in

various components of the vegetable development program.

## References

- Annual administrative report (2011-2012) Published by Tribal Area Development Department, Govt of Rajasthan.
- Bora M, Deka MD (2008) Information needs of farm women of Assam related to cultivation of vegetable crops. *Asian J Home Sci* 3 : 101—105.
- Dave R, Godawat A, Soni RL (2011) Adoption of okra production technologies in tribal women promoted under NAIP. *Rajasthan J Extn Educ* 19 : 117—125.
- Jat JR, Sangram S, Lal Hanuman, Choudhary LR (2011) Knowledge level of farmers about improved tomato production technology. *Rajasthan J Extn Educ* 19 : 139—143.
- Lad AS, Bedre VS, Wangikar SD (2010) Knowledge of the okra growers about recommended cultivation practices of okra. *Agric Sci Digest* 30 : 296—298.
- Singh G, Agrawal RP (2013) Impact of front line demonstration of improved okra cultivation technology. *J Commun Mobil and Sustain Develop* 8 : 291—293.