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[https://doi.org/10.54986/irjee/2022/dec\\_spl/307-309](https://doi.org/10.54986/irjee/2022/dec_spl/307-309)**SOCIETY OF  
EXTENSION  
EDUCATION****RESEARCH ARTICLE****Extent of Adoption of Improved Production Technology of Ajwain by Tribal and Non-Tribal Farmers of Rajasthan****Surbhi Jangir<sup>1</sup> and B.S. Badhala<sup>2</sup>**

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**ABSTRACT**

*The present study was conducted to find out the difference in extent of adoption of improved production technology of Ajwain between the tribal and non-tribal farmers of Rajasthan. Pratapgarh and Chittorgarh districts of Rajasthan were selected among tribal and non-tribal districts of Rajasthan, respectively as they have the highest area and production of Ajwain. One tehsil from each of the selected districts were selected purposively due to highest area and production of Ajwain. From each of the selected tehsils 5 villages were selected randomly. 13 farmers were selected from each selected villages in this way a sample of 130 respondents (65 tribal and 65 non-tribal farmers) was selected randomly. Data was collected using interview schedules in year 2022. From the study it was concluded that majority 51 (78.46 %) of tribal farmers were in medium adoption category followed by low 10 (15.38%) and 04 (6.16%) high extent of adoption categories. Further, majority 52 (80.00%) of non-tribal farmers were having medium extent of adoption followed by 08 (12.31 %) farmers having high and 05 (07.69 %) farmers having low extent of adoption. It was found that the tribal farmers had maximum adoption of "Harvesting" (76.92 MPS) and least adoption of "Fertilizer application" (51.23 MPS). While, in case of non-tribal farmers "Time of sowing" (87.69 MPS) was maximum adopted and "Plant protection measures" (59.23 MPS) was least adopted.*

**Key words:** Adoption; Tribal and Non tribal farmers; Ajwain.

**A**jwain is an annual herbaceous plant belonging to the highly valued medicinally important family, Apiaceae. The origin of Ajwain is Mediterranean region in Egypt. Ajwain is widely distributed and cultivated in various countries in the world such as India, Iran, Egypt and Afghanistan. Ajwain is categorized under minor seed spices and cultivated mainly for its seed and volatile oil and is widely grown in arid and semi-arid regions. In India, Rajasthan, Gujarat, Madhya Pradesh, Uttar Pradesh, Punjab, Haryana, Maharashtra, Andhra Pradesh, Karnataka and Tamil Nadu are major seed spices cultivating states. In, Rajasthan Ajwain is mainly cultivated in Chittorgarh, Udaipur, Jhalawar, Baran, Rajsamand, Pratapgarh, Bhilwara and Kota. It has multiple uses- it not only improves the taste of vegetable but also enhances its digestibility. Besides vegetables, Ajwain is also used in various Ayurvedic medicines.

The requirement of the Ajwain in the country

is rapidly increasing due to increasing population. Ajwain is widely used as an essential component of food and medicine and also as an immediate source of farmer's income.

The criteria for adoption of improved production technology of Ajwain are technical and practical knowledge, skills and a positive attitude towards the technology. With this in mind, the study was carried out with the aim to assess the extent of adoption of improved production technology of Ajwain by the tribal and non-tribal farmers of Rajasthan.

**METHODOLOGY**

The present investigation was an "ex-post facto" research design and was carried out in Rajasthan. Out to 33 districts of Rajasthan, Pratapgarh and Chittorgarh districts were selected purposively based on maximum area and production of Ajwain. One tehsil from each districts was purposively selected and

5 villages from each tehsil were selected randomly using simple random sampling method thus making a total of 10 villages (5 tribal and 5 non-tribal). 13 farmers were selected randomly from each selected village in this way 65 tribal and 65 non-tribal farmers were selected thus making a total of 130 respondents.

The data were collected using personal interview method with the help of pre tested interview schedules. Appropriate statistical measures were used for the analysis of data. The dependent variables were measured with the help of the scales and indices developed by the past researchers as well as structured schedules which were framed for the purpose.

## RESULTS AND DISCUSSION

*Distribution of tribal and non-tribal farmers according to the extent of adoption* : Table 1 indicated that majority 51 (78.46%) tribal farmers belonged to medium extent of adoption category followed by low extent of adoption 10 (15.38%). Only 04 (6.16%) tribal farmers were found in the category of high extent of adoption about improved production technology of Ajwain. Further, majority of non-tribal farmers, 52 (80.00%) were having medium extent of adoption about improved production technology of Ajwain followed by 08 (12.31 %) farmers having high extent of adoption and 05 (07.69 %) farmers having low extent of adoption level. The findings are in conformity with the findings of Meena (2006), Yadav et al. (2006), Meena (2010) and Badhala (2012).

*Package of practice-wise extent of adoption* : The data presented in Table 2 shows that the tribal farmers had higher adoption of “harvesting” with 76.92 MPS. Hence, it was ranked first. The adoption about “seed rate

**Table 2. Package of practice-wise extent of adoption of tribal and non-tribal farmers about improved production technology of Ajwain (N=130)**

Package of practices	Tribal Farmers		Non-tribal Farmers	
	MPS	Rank	MPS	Rank
Field preparation	74.92	3	84.92	2
Improved varieties	58.46	7	70.77	8
Seed treatment	60.00	6	75.38	5
Time of sowing	73.85	4	87.69	1
Seed rate & spacing	76.67	2	82.78	4
Fertilizer application	51.23	10	60.15	9
Irrigation management	64.04	5	72.50	7
Weed management	56.15	8	73.85	6
Plant protection measures	51.54	9	59.23	10
Harvesting	76.92	1	83.23	3
Overall	64.38		75.05	
**Significant at 1% level		$r_s = 0.82^{**}$ ; $t = 4.02$		

and spacing” occupied second rank with MPS 76.67. The extent of adoption of “field preparation” came out to be third with MPS 74.92. Followed by “time of sowing”, “irrigation management”, “seed treatment”, “improved varieties” and “weed management”, with MPS 73.85, 64.04, 60.00, 58.46 and 56.15; which were placed at fourth, fifth, sixth, seventh and eighth position respectively. While the “plant protection measures” and “fertilizer application” was adopted to the least extent as indicated by MPS 51.54 and 51.23 and ranked ninth and tenth respectively.

Further, in case of non-tribal farmers had high adoption about “time of sowing” was found maximum with MPS 87.69. Hence, it was ranked first. The adoption of “field preparation” occupied second rank with MPS 84.92. The extent of adoption of “harvesting” come out to be MPS 83.23 and ranked third followed by “seed rate and spacing”, “seed treatment” and “weed management” with 82.78, 75.38 and 73.85, which were placed at fourth, fifth and sixth position respectively. The extent of adoption of other practice like “irrigation management” and “improved varieties”, with 72.50 and 70.77 MPS were occupied the seventh and eighth rank, respectively. Surprisingly, poor adoption was found in case of “fertilizer application” and “plant protection measures” and with 60.15 and 59.23 MPS which were ranked ninth and tenth, respectively.

The overall extent of adoption for improved production technology of Ajwain by the tribal and non-tribal farmers was 64.38 and 75.05 MPS, respectively.

The value of calculated rank order correlation

**Table 1. Distribution of tribal and non-tribal farmers according to their extent of adoption (N=130)**

Categories of farmers	No.	%
<i>Tribal Farmers (<math>n_1 = 65</math>)</i>		
Low (less than 33.83 score)	10	15.38
Medium (from 33.83- 39.59 score)	51	78.46
High (more than 39.59 score)	04	06.16
Total	65	100
Mean =36.71, SD= 2.88		
<i>Non-tribal Farmers (<math>n_2 = 65</math>)</i>		
Low (less than 38.90 score)	05	07.69
Medium (from 38.90- 44.58 score)	52	80.00
High (more than 44.58 score)	08	12.31
Total	65	100
Mean =41.74, SD= 2.84		

(rs) was 0.82 which is positive and significant, leading to conclusion that there is correlation with extent of adoption of improved production technology of Ajwain by the tribal and non-tribal farmers, though there is significant correlation were found between rankings of tribal and non- tribal farmers. The findings are in conformity with the findings of Meena (2006), Meena (2010) and Badhala (2012).

*Package of practice-wise comparison of extent of adoption production technology of Ajwain* : It is clear from the data in Table 3 that calculated 'Z' value was greater than its tabulated value at 1 per cent level of significance for "Field preparation", "Seed treatment", "Time of sowing", "Fertilizer application", "Weed management" and "Harvesting" of improved production technology of Ajwain. While, calculated 'Z' value was greater than its tabulated value at 5 per cent level of significance for "Improved varieties", "Seed rate & spacing", "Irrigation management" and "Plant protection measures", of improved production technology of Ajwain. Thus, conclusion that there was significant difference in extent of adoption between tribal and non- tribal farmers about all the 10 practices of improved production technology of Ajwain recommended in the study area.

The overall calculated 'Z' value was also greater than that of its tabulated value at 1 per cent level of significance. This indicates that there was a significant difference between the overall adoption of improved production technology of Ajwain between tribal and

non- tribal farmers. There is significant difference between tribal and non- tribal farmers about adoption of improved production technology of Ajwain.

The findings are in conformity with the findings of Meena (2006), Meena (2010) and Badhala (2012).

## CONCLSION

The comparative study to assess the difference in the extent of adoption of improved production technology of Ajwain by tribal and non-tribal farmers of Rajasthan revealed that majority 51 (78.46 per cent) tribal and 52 (80.00 per cent) non-tribal farmers fallen in medium adoption group followed by low and high knowledge group, respectively. Tribal farmers possessed maximum adoption of "Harvesting" (76.92 MPS) and least adoption of "Fertilizer application" (51.23 MPS) of improved production technology of Ajwain. While, non-tribal farmers possessed maximum adoption of "Time of sowing" (87.69 MPS), and least adoption of "Plant protection measures" (59.23 MPS). There were practice wise as well as overall significant differences in existing extent of adoption of improved production technology of Ajwain by the tribal and non-tribal farmers of Rajasthan.

## CONFLICT OF INTEREST

He authors have no conflict of interest.

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**Table 3. Package of practice-wise comparison of extent of adoption between tribal and non-tribal farmers about production technology of Ajwain (N=130)**

Package of practices	Tribal Farmers		Non-tribal Farmers		'Z' value
	Mean	SD	Mean	SD	
Field preparation	7.49	1.14	8.49	1.29	4.68**
Improved varieties	1.17	0.80	1.42	0.55	2.05*
Seed treatment	1.20	0.66	1.51	0.50	2.99**
Time of sowing	1.48	0.66	1.75	0.43	2.84**
Seed rate & spacing	4.25	1.04	4.58	0.72	2.16*
Fertilizer application	5.12	1.06	6.02	0.94	5.09**
Irrigation management	5.12	1.98	5.80	1.03	2.45*
Weed management	1.12	0.64	1.48	0.50	3.50**
Plant protection	2.06	1.01	2.37	0.71	2.01*
Harvesting	7.69	0.55	8.32	1.22	3.81**
Overall	3.67		4.17		3.16**

\*Significant at 5% level of significance, \*\*Significant at 1% level of significance