

# Adoption Level of Farmers about Henna Production Technology in Pali District of Rajasthan, India

Mamta Meena<sup>1</sup>, R.S. Rathore<sup>2</sup>, S.S. Sisodia<sup>3</sup>, F.L. Sharma<sup>4</sup>,  
B. Upadhyay<sup>5</sup> and Jitendra Kumar Meena<sup>6</sup>

<sup>1&6</sup>Department of Extension Education, RCA, MPUAT, Udaipur, Rajasthan, India

<sup>2&4</sup>Department of Extension Education, RCA, MPUAT, Udaipur, Rajasthan, India

<sup>3</sup>Department of Extension Education, RCA, MPUAT, Udaipur, Rajasthan, India

<sup>5</sup>Department of Statistics, RCA, MPUAT-Udaipur, Rajasthan, India

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## ABSTRACT

Agriculture sector is the heart of India's social development. India is agriculture dependent country because 2/3<sup>rd</sup> of its population depends upon agriculture for their survival and it contributes approximately 14% to India's GDP. Henna (*Lawsonia inermis* L.), is a plantation crop native to tropical and subtropical regions of Africa, Asia, and Australia and is found in arid and semi-arid zones. From its leaves a red orange dye agent is extracted which has an affinity for bonding with proteins, and thus is used to dye human body parts (skin, hair, fingernails), as well as leather, silk and wool. The present study was conducted purposively selected Pali district in arid zone of Rajasthan State of India. One hundred and twenty beneficiaries were selected purposively who have obtained training on improved henna production technologies and 120 non-beneficiaries were selected randomly in same number from same villages of study area. Thus, a total of 240 farmers was selected from 20 villages for the present investigation. it was found that more than half (57.91%) of respondents belong to medium level of adoption category followed by 27.08 percent of respondents belong to high level of adoption category. Only 15 percent of respondents belongs to low level of adoption category of improved henna production technologies.

**Key words:** Agriculture, Beneficiaries respondents

## Introduction

Agriculture in India is Diversified and location specific due to different agro climatic conditions. Different states of India have different cropping pattern and different cash crop cultivation for production. In India, henna is mostly cultivated in Rajasthan, Gujarat, Madhya Pradesh and Punjab. Henna cultivation occupies about 44000 hectare area in India and Rajasthan occupies around 40134 hectare areas (Anonymous, 2017). In Rajasthan, cultivation is currently concentrated in the arid borders of

Rajasthan's Pali District, particularly parts of the Sojat, Marwar Junction and Jaitara area and is valued at Rs.1000 crore (The Times Of India 25 Jan, 2022). Which account for over 90% of henna production in India. There are 160 factories making mehndi in Pali area engaging over 20,000 people. In the year 2012 trade of henna leaves was 18752 metric tons which increased to around 22422 metric tons in year 2017.

GI Status accorded to Sojat Mehndi for its entrancing, deep burnt-red stain, due to the soil and rain conditions of the region. The principal colouring

(<sup>1&6</sup>Research Scholar, <sup>2&4</sup>Retd. Prof., <sup>3</sup>Prof., <sup>5</sup>Prof.)

content of henna is lawsone. According to Bureau of Indian Standards (BIS), for ordinary mehndi, lawsone content should be 1. Sojat mehndi's lawsone content is more than 2.5, high lawsone content has made it special and unique (The Times of India 25 Jan, 2022). Due to these reasons the world famous Sojat Mehndi of Rajasthan received the geographical indication (GI) tag from the Government on September 14, 2021. Mehndi has been lifeline of Sojat people for generations and the new GI (Geographical Indication) status for Sojat Mehndi has increase its brand value and the customer's faith in them. The crop is cultivated in around 40,000 hectares and much of the produce goes to Middle East countries. About 30% of total production is exported, making India the major exporter of henna (Singh *et al.*, 2019). Pali district in Rajasthan alone contributes to 90% henna production in India and produce best quality internationally renowned 'Sojat brand' of henna.

### Research methodology

The present study was conducted purposively selected Pali district in arid zone of Rajasthan State of India. Pali is situated between 25.7543° N latitude, 73.5594° E longitude. The major part of the district has elevations ranging from 200 to 300 m above mean sea level, but in the east toward the Aravalli Range the elevation increases and the average is nearer 600 m and at some places, the elevations exceed 1000 m.

The Pali districts comes under Agro-climatic Zone RJ4, which is characterised as Transitional Plain of Luni basin zone. Major crops grown here are pear millet, cluster bean and pulses in kharif season and mustard and gram in in rabi season (DoA, *Govt of Rajasthan 2021*).

Pali district has one Regional Research Station and one Krishi Vigyan Kendra under Central Arid Zone Research Institute (CAZRI), Jodhpur. Pali district of Rajasthan, are the most intensive henna cultivation areas in India. Up to 90 percent of Rajasthan's commercial henna production is in this area (Anonymous, 2017). Farmers in this region have produced henna for generations, and regard it as a desirable crop, as well as part of their heritage. A family can often manage their own cultivation and harvest. Henna will survive a drought season that would ruin other crops, and is therefore highly attractive to farmers. Therefore, Pali district has been selected for present investigation.

**Selection of District:** The study was conducted in Pali district of arid Rajasthan. The district has gradually increasing and extensive work on henna plantation. Keeping in mind this background, Pali district was purposively selected by the researcher due to following reason:

1. The district has commercial and extensive work under henna plantation in the state of Rajasthan.
2. The area of the study lies under the jurisdiction of Krishi Vigyan Kendra under Central Arid Zone Research Institute (CAZRI), Jodhpur
3. No systematic efforts were made earlier to study improved henna plantation in Pali.
4. The researcher was facilitated in easy accessibility to the respondents as she was studying in MPUAT, Udaipur.

**Selection of Tehsils:** The present investigation was carried out in purposively selected Sojat and Marwar junction out of 10 tehsils of Pali district. Maximum work under henna plantation was the criterion in selection of tehsil.

**Selection of the villages:** A complete list of all the villages from the selected tehsils where the henna cultivation is being done by the farmers was prepared with the help of personnel of the Department of Agriculture. From the list so prepared, 10 villages from each tehsil were selected on the basis of maximum number of henna growers. Hence total 20 villages from two tehsils were selected for the present study.

### Selection of Respondents

For respondent's selection, a complete list of beneficiaries was obtained from records available to KVK. From the obtained list, 12 farmers from each village (6 beneficiaries who obtained training on improved henna production technologies and 6 non-beneficiary, those who have not participated in said training programme) was selected randomly. Thus, a total of 240 farmers was selected from 20 villages for the present investigation.

### Results and Discussion

Table 1 reveals that more than half (57.91%) of respondents belong to medium level of adoption category followed by 27.08 percent of respondents belong to high level of adoption category. Only 15 percent of respondents belongs to low level of adoption category of improved henna production technologies.

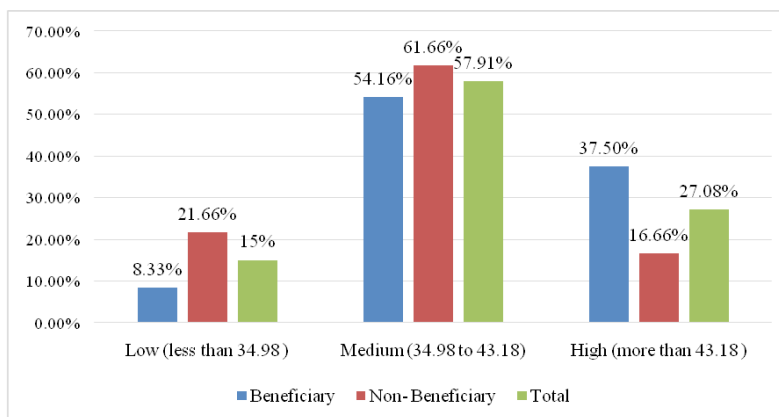
Further it was found that 54.16 percent of beneficiary respondents and 61.66 percent of non-beneficiary respondents belong to medium level of adoption category and 37.5 percent of beneficiary respondents and 16.66 percent of non-beneficiary respondents belong to high level of adoption category of improved henna production technologies. On the other hand, 8.33 percent of beneficiary respondents and 21.66 percent of non-beneficiary respondents belong to low level of adoption category of improved henna production technologies.

It can be seen from the above table that farmers had adopted improved henna production technologies

in different degrees. The reason behind medium adoption of improved henna production technologies might be due to their increased level of knowledge and awareness during various trainings towards new and scientific improved henna production technologies along with the traditional practices.

**Aspect wise distribution of beneficiary and non-beneficiary farmers about adoption of improved henna production technologies**

Table 2 depicts that extent of adoption between beneficiary and non-beneficiary farmers regarding har-



**Fig. 1.** Distribution of farmers based on extent of adoption of improved henna production technologies

**Table 1.** Distribution of beneficiary and non-beneficiary farmers based on extent of adoption of improved henna production technologies

S. No.	Adoption level	Beneficiary respondents		Non- Beneficiary respondents		Total	
		f	%	f	%	f	%
1.	Low (less than 34.98 )	10	8.33	26	21.66	36	15
2.	Medium (34.98 to 43.18)	65	54.16	74	61.66	139	57.91
3.	High (more than 43.18 )	45	37.5	20	16.66	65	27.08
	Total	120	100	120	100	240	100

f = frequency, % = percentage

**Table 2.** Aspect wise distribution of beneficiary and non-beneficiary farmers about adoption of improved henna production technologies (n=240)

S. No.	Aspects	Beneficiary Respondents (120)		Non- Beneficiary Respondents (120)	
		MPS	Rank	MPS	Rank
1.	Nursery Raising	65.64	IV	60.37	II
2.	Planting Practices	71.38	II	58.63	III
3.	Cultural Practices	66.20	III	43.61	IV
4.	Harvesting and Marketing	94.55	I	86.98	I

MPS= Mean percent Score

vesting and marketing practices were 94.55 MPS and 86.98 MPS with first rank, respectively. In case of planting practices extent of adoption were 71.38 MPS and 58.63 MPS with Second and third rank, respectively. In case of nursery raising, extent of adoption among beneficiary and non-beneficiary farmers were 65.64 MPS and 60.37 MPS with fourth and second rank, respectively. Extent of adoption between beneficiary and non-beneficiary farmers regarding cultural practices were 66.20 MPS and 43.61 MPS with third and fourth rank, respectively.

It can be concluded from the above results that adoption of harvesting and marketing and nursery practices is more due to the reason that farmers have acquired more knowledge and become more aware about these practices by attending trainings regularly. Adoption of planting and cultural practices were quite low due to the lack of awareness or may be due to the adoption of more traditional methods of henna cultivation.

### Conclusion

It was concluded that the that more than half (57.91%) of respondents belong to medium level of adoption category followed by 27.08 percent of respondents belong to high level of adoption category. extent of adoption between beneficiary and non-beneficiary farmers regarding harvesting and marketing practices were 94.55 MPS and 86.98 MPS with first rank respectively. In case of nursery raising, extent of adoption among beneficiary and non-beneficiary farmers were 65.64 MPS and 60.37 MPS respectively with second rank. Whereas in planting practices extent of adoption were 71.38 MPS and 58.63 MPS with third rank. Extent of adoption between beneficiary and non-beneficiary farmers regarding cultural practices were 66.20 MPS and 43.61 MPS.

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