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Problems in Henna Production and Marketing in Pali District of Rajasthan

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ABSTRACT

This study was conducted to identify the major constraints associated with production and marketing of henna in Pali, Rajasthan. Data was collected from 60 henna farmers and five market intermediaries each form processors, village traders, wholesalers and retailers, selected from Sojat Mehndi Mandi in the year 2022-23. A detailed questionnaire was prepared listing all the possible constraints pertaining to technical, infrastructural, marketing related and other general problems. The rankings given by all the stakeholders to these constraints were then analysed using Garrett Ranking Score method. The findings indicated that lack of skilled labour and unavailability of quality planting materials were major production problems while low prices in market was major marketing problem faced by henna farmers. Market intermediaries also faced hurdles like insufficient market information and lack of storage facilities. To address these issues, targeted solutions such as skills related specialized training programs for transplanting and harvesting to the farmers are needed. In addition to this, integrating Sojat Krishi Upaj Mandi (Mehndi Mandi) into the E-NAM platform could enhance market access and transparency.

Keywords: Henna, production, marketing, problems, intermediaries

Henna plant *(Lawsonia inermis* L.) is a perennial flowering plant that is used to make henna. It is grown as a hedge plant and an annual ratoon crop because of its fast regenerative capacity. Generally, it has an average lifespan of 25-years. Henna, a traditional product with religious associations has been widely used over the centuries for medical and cosmetic purposes in Africa, Asia, the Middle East and many other parts of the world. At present time, henna is commercially cultivated in Afghanistan, India, Iran, Libya, Morocco, Pakistan, Somalia, Sudan and Yemen.

In India, henna primarily thrives in the arid and semiarid regions of Rajasthan, Punjab, Madhya Pradesh and Gujarat. Currently, the Pali district in Rajasthan stands out for its extensive cultivation and high production of henna. Rajasthan boasts a total cultivation area of 40,669 hectares with the Pali district alone occupying 39,248 hectares (95%) of this area (Department of Agricultural Statistics, Government of Rajasthan, 2021-22). The Sojat, Marwar Junction and Jaitaran areas within the Pali district contribute to approximately 90 percent of India's henna output. In the Pali district there are around 160 factories both small and large employing over 20,000 individuals in the henna industry (District Industry and Commerce Department, Pali, 2022). Sojat tehsil within the Pali district leads in both cultivation area and production. In the fiscal year

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2022-23, Sojat tehsil recorded a henna cultivation area of 24,466 hectares yielding 14,612 metric tonnes of henna (Land Revenue Department of Pali, 2022-23).

Henna being a drought-tolerant crop with minimum water requirements creates an opportunity for farmers in arid and semi-arid areas in India to enhance the farmers' way of living. Once henna plantation, it can give returns for a longer period with minimum maintenance. It can also withstand harsh climatic situations. Hence, it is a win for arid region farmers to grow henna, when arable crops fail due to unfavorable environment conditions. This is also a reason for spurt in henna farming in the drought prone condition in Pali district of Rajasthan.

There are many problems faced by small land holding henna farmers often encounter problems when attempting to access broader markets, primarily due to the limited infrastructure and poor transportation options available in rural areas. Consequently, they may become dependent on local intermediaries, who might not offer reasonable and remunerative prices for their goods, thereby diminishing the farmers' profitability in henna cultivation. The pricing of henna can be volatile, influenced by various factors such as supply and demand, weather conditions, and global market trends, all of which can negatively impact the income of henna growers. Moreover, the absence of real-time market information in rural villages can result in missed opportunities for securing better prices and timing the market effectively. It is crucial for henna farmers to maintain consistent high-quality products to establish a reputable brand. However, achieving quality control and standardization poses challenges for small-scale farmers lacking sufficient resources or training.

Henna produced in Sojat is renowned for its excellent quality. However, this produce is often either sold at lower prices in the local market or exported as neutral henna, depending on demand. For farmers involved in henna export, adhering to international regulations and quality standards can be both complex and costly, presenting additional hurdles for small-scale producers. Such types of problems in production and marketing also faced by various market functionaries in perennial plantation crops (Chand *et al.* 2002, Ganga *et al.* 2007, Ahmed *et al.* 2008).

Traditional methods of henna processing require big, open, shaded places and are inexpensive but labour-intensive (Khandelwal, 2002). Farmers do not adopt easily due to lack of knowledge and unavailability of infrastructure, mechanization. There is limited literature available that can fully explain this situation. Moreover, there is no much more study in India which covers problems faced by stakeholder in production and marketing of henna, with only one or two studies is addressing its cultivation costs and returns.

Henna is an important source of livelihood for its growers in Sojat City of Rajasthan. Therefore, this study was undertaken to develop a comprehensive understanding of the challenges faced by all the stakeholders of henna production and marketing and generate empirical base so that effective strategies against the factors, which hinder the efficiency and profitability of henna farming operations could be devised for the study area.

MATERIALS AND METHODS

In Rajasthan, the Pali district was selected due to its prominent position in both henna cultivation area and production. Among its ten tehsils, Sojatcity and Marwar Junction were chosen for having the highest cultivated henna acreage. Four villages— Bilawas and Kharia from Sojatcity and Kharchi and Hemkhurd from Marwar Junction were further selected for investigation. Sixty experienced henna growers were chosen using the snowball sampling method along with five market intermediaries from each category viz., processor, village trader, wholesaler and retailer assisted by the Sojat Mehndi Mandi in Sojatcity. Primary data was gathered through personal interviews using a pre-structured questionnaire during the 2022-23 period. The problems encountered by various stakeholders in the study area were classified into subsets such as input availability, technical knowledge, infrastructure facilities and marketing and general problems. These problems were analyzed and ranked utilizing Garrett's ranking technique.

Garrett's ranking technique

In this method respondents were asked to rank all the problems faced by producers and the responses

of such ranking was converted into score value with the help of the following formula:

$$Percent\ position = \frac{100 \times \left(R_{ij} - 0.50\right)}{N_j}$$

Where,

R_{ij} = Rank given for the i^{th} variable by j^{th} respondents and

N_j = Number of variables ranked by j^{th} respondents

The percent position was converted into scores by referring to the table given by Garett and Woodworth (1969).

RESULTS AND DISCUSSION

Problems faced by henna growers

Table 1 illustrated the problems faced by henna growers in production and marketing of henna. Problems were categorized into five subgroups *i.e.*, input availability, technical knowledge, infrastructure facilities, problems in marketing of henna and general problems.

Input availability

Table 1 revealed that the foremost problem related to input availability was shortage of skilled labour required in planting, pruning, harvesting of henna with 68.26 mean score, hence this problem was assigned first rank. It may be due to the fact that henna cultivation entailed skilled labour operations during transplanting to ensure appropriate plant spacing and it was to be done in a time-bound manner so that farmers can take full advantage of soil moisture. The next major problem reported by the farmers was unavailability of quality planting materials with 67.23 mean score which was mainly due to low level of quality water. Unavailability of labour for common practices *i.e.*, weeding, threshing, assembling etc. was ranked third position with 58.06 mean score. It was because at peak period of these operations and due to fear of rainfall at the time of harvesting and threshing, labour demand grows exponentially within a limited time. Some other least problems were as lack of irrigation facility, unavailability of harvesting equipment and unavailability of intercultural equipment on rent basis and unavailability of plant protection.

Technical knowledge

Table 1 depicted that the major problem reported by farmer was lack of knowledge about appropriate PPC measures and doses with 55.68 mean score; therefore, it was assigned first rank. It was observed that farmers didn't receive any on-farm training or demonstration from government or private agencies, hence were not aware about the correct dosage of PPCs. The problem of lack of market information and news was assigned second rank with 55.11 mean score. Farmers opined that there was no systematic market information system from where they could get henna related information. Unawareness about the right time of transplanting and confusion about timing of harvesting were reported as some other least serious problems by henna.

Infrastructure facilities

Table 1 further revealed that the lack of storage infrastructure was major infrastructure facilities related problem reported by the farmers with 61.90 mean score followed by unavailability of farm subsidies related henna cultivation was ranked second with 60.70 mean score. The reason for the former was that henna leaves required large space for different post-harvest operations before taken to market. The major reason for unavailability of subsidy for henna may be that the henna plant is neither considered as agronomy crop nor as horticultural plant because of this, there are no government schemes announced for henna. Lack of cleaning, grading and leaf-drying facility were assigned third and fourth rank by farmers with 58.08 and 50.65 mean score, respectively. Other problems like lack of soil testing facility, access to financial institutions and lack of training institutions were other problems reported by growers.

Problems in Marketing of Henna

It is evident from the Table 1 that low prices of henna leaves particularly at the time of peak production were given the first rank with mean score of 65.65. Harassment by traders was reported second major problem by the henna growers with mean score of 51.25. Farmers informed that 5kg to 6kg or more quantity of henna was seized by commission agent and traders during quality assessment process.

Delayed payment, transportation and lack of connectivity to the market were ranked at third, fourth and fifth positions with mean score 39.18, 31.15 and 24.76, respectively.

Table 1: Problems faced by growers in production & marketing of henna leaves

Sl. No.	Problems	Mean score	Rank
(A)	**Input availability**		
1	Shortage of skilled labour required in planting, pruning, harvesting etc.	68.26	I
2	Unavailability of quality planting materials	67.23	II
3	Unavailability of labour for weeding, threshing etc.	58.06	III
4	Lack of Irrigation facility	55.35	IV
5	Unavailability of harvesting equipment on rent	36.81	V
6	Unavailability of intercultural equipment on rent	33.71	VI
7	Unavailability of plant protection measures	33.18	VII
(B)	**Technical knowledge**		
1	Lack of knowledge about appropriate PPC measures and doses	55.68	I
2	Lack of market information and news	55.11	II
3	Unawareness about the right time of transplanting	47.05	III
4	Confusion about timing of harvesting	43.15	IV
(C)	**Infrastructural Facilities**		
1	Lack of storage infrastructure	61.90	I
2	Unavailability of farm subsidies related to henna	60.70	II
3	Lack of cleaning and grading facility	58.08	III
4	Lack of leaf-drying facility	50.65	IV
5	Lack of soil testing facility	45.95	V
6	Lack of access to financial institutions	38.35	VI
7	Lack of training institutions	37.36	VII
(D)	**Problems in Marketing of Henna**		
1	Low prices of henna leaves	65.65	I
2	Harassment by traders	51.25	II
3	Delayed payment	39.18	III
4	High transportation cost	31.15	IV
5	Lack of connectivity to market	24.76	V
(E)	**General problems**		
1	Incidence of insect and disease	54.16	I
2	Poor Germination and growth	53.90	II
3	Damage due to wild animals	42.93	III

General problems

Table 1 also highlighted few general problems faced by the henna growers of the study area. The incidence of insect and disease at the time of establishment and maintenance was ranked first with mean score of 54.16 followed by poor germination and growth at the time of water scarcity or inadequate rainfall with mean score of 53.90. Wild animal damaging the crop was reported as third major problem with mean score of 42.93.

At an overall level, the major problems faced by farmers in production of henna were shortage of skilled labour, unavailability of quality planting material and in marketing of henna, farmers faced problems like low prices of henna, harassment by traders etc. Similar problems were reported by Ahmad *et al.* (2008), Bhat *et al.* (2015), Mungalpara *et al.* (2017), Rede and Bhattacharyya (2018), Sharma *et al.* (2022).

Problems faced by market intermediaries

The major marketing problems faced by the market intermediaries namely village trader, processor, wholesaler and retailer in the marketing of henna have been discussed as below:

Marketing problems faced by village traders

It is evident from the table 2 that low prices of henna leaves were the major marketing problem faced by village traders with 71.80 mean score and it was mainly at the time of peak arrival of henna leaves in the market and mandi. The lack of quality henna leaves was ranked second by the village traders in terms of severity with 67.40 mean score. According to village traders' opinion, sometime farmers filled the gunny bags with poor or rotten quality henna leaves. Third rank was assigned to lack of storage facility with 56.80 mean score. This problem was because harvested henna requires large storage

space, in want of which the quality of henna tend to get deteriorated. Other problems like high transportation cost and lack of market information and news, quantity losses during marketing were least in nature.

Table 2: Marketing problems faced by village trader

Sl. No.	Particulars	Mean score	Rank
1	Low prices of henna leaves	71.80	I
2	Lack of quality henna leaves	67.40	II
3	Lack of storage facility	56.80	III
4	High transportation cost	39.60	IV
5	Lack of market information and news	36.00	V
6	Quantity losses during marketing	30.40	VI

Problems faced by processors

Marketing problems

Table 3 depicted that major marketing problem reported by the processors was lack of market information and news with mean score of 71.80 followed by lack of quality henna leaves with mean score of 69.20. It was due to absence of online records and public access market information system such as websites or web-applications etc. regarding real-time price and arrivals of henna. High commission charges, high transportation cost, lack of storage facility and low prices of processed henna were ranked at third, fourth, fifth and sixth positions with mean score of 51.40, 43.20, 40.60 and 25.80, respectively.

Table 3: Problems faced by processors

Sl. No.	Particulars	Mean score	Rank
(A)	**Marketing problems**		
1	Lack of market information and news	71.80	I
2	Lack of quality henna leaves	69.20	II
3	High commission charges	51.40	III
4	High transportation cost	43.20	IV
5	Lack of storage facility	40.60	V
6	Low prices of processed henna	25.80	VI
(B)	**Processing problems**		
1	High wastes & Spoilage of henna	71.80	I
2	Lack of skilled labour for processing	67.40	II
3	Lack of lawsone testing facility	53.20	III
4	High cost of labour in processing	41.40	IV
5	High interest rate on loan amount	39.60	V
6	High cost of machinery equipment	28.60	VI

Processing problems

Table 3 further revealed that high wastes & spoilage of henna during marketing and processing was the most important processing problem with mean score of 71.80 followed by lack of skilled labour with mean score 67.40. Problems like lack of lawsone testing facility, high cost of labour in processing, high interest rate on loan amount and high cost of machinery equipment were ranked at third, fourth, fifth and sixth positions, respectively with corresponding mean score of 53.20, 41.40, 39.60 and 28.60.

Marketing problems faced by wholesalers

Table 4 depicted the marketing problems faced by wholesalers in the study region. A perusal of the table showed that lack of market information and news was the most important marketing problem reported by wholesalers as similar to processors and retailers. There was lack of facility of market information platform like Agmarknet, etc. of price trend of products, market demand and supply of henna. The lack of storage facility was ranked at second position with 64.80 mean score. High transportation, lack of market connectivity and quantity losses of henna were ranked at third, fourth and fifth positions with mean score of 52.30, 38 and 28, respectively.

Table 4: Marketing problems faced by wholesalers

Sl. No.	Particulars	Mean score	Rank
1	Lack of market information and news	70.00	I
2	Lack of storage facility	64.80	II
3	High transportation cost	52.30	III
4	Lack of market connectivity	38.00	IV
5	Quantity losses of henna	28.00	V

Marketing problems faced by retailers

Table 5 presented the problems faced by retailers in the marketing of henna in the study area. The high transportation cost was the most important problem with mean score of 70 and it was due to longer distance travel by retailers to buy smaller quantities. The next problem was unavailability of market information and news with mean score of 67 as also reported by wholesaler and processor. There was lack of facility of market information platform like Agmarknet, etc. of price trend of products, market demand and supply of henna. Lack of local demand of henna was ranked third position with 50 mean score which was due to demand saturation of henna in study area. Low prices of henna and lack of storage facility were ranked at fourth and fifth positions by retailers with mean score 40 and 25, respectively.

Table 5: Marketing problems faced by retailer

Sl. No.	Particulars	Mean score	Rank
1	High transportation cost	70	I
2	Lack of market information and news	67	II
3	Lack of local demand of henna	50	III
4	Low prices of henna	40	IV
5	Lack of storage facility	25	V

The market intermediaries faced the problems like lack market information and news, lack of storage facility, low prices of henna etc. The above findings are in close conformity with Kavitha (2014), Rede and Bhattacharyya (2018), Selvakumar *et al.* (2022).

The study highlighted key challenges encountered by farmers in both production and marketing aspects, including shortages of skilled labour, lack of quality planting materials, and low henna prices coupled with trader harassment. Market functionaries also faced obstacles such as insufficient market information, high transportation costs, and processing wastage. Addressing these problems require targeted solutions such as skills related specialized training programs for transplanting, harvesting to the farmers, the establishment of custom hiring centers in nearby areas of village for agricultural equipment, and the implementation of pricing and insurance schemes by the government to ensure fair returns and protection from trader exploitation. Moreover, integrating Sojat Krishi Upaj Mandi (Mehndi Mandi) into the E-NAM platform could enhance market access and transparency.

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