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Constraints faced by the farmers in production and marketing of watermelon in Haryana and Karnataka

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Abstract

The present study was based on constraints faced by the farmers in the production and marketing of watermelon. The study was carried out during 2021-22 agriculture year. For the study, 120 farmers were selected randomly from the study area. The respondent farmers from Haryana reported that, the most significant constraint was the lengthy procedures involved in obtaining subsidies followed by breakage of electricity wires from the electric poles due to rain. Whereas, major marketing constraints encountered by the respondents from Haryana were, high price fluctuations during the harvesting period. This was followed by the non-availability of minimum support price (MSP) for watermelon. Conversely in Karnataka, the most significant constraint reported was the high cost of labour. Following closely was the high cost of plant protection chemicals. The primary marketing constraints encountered by respondents from Karnataka, were high fluctuation in prices during the harvesting period. This was closely followed by the high cost of transportation from the field to the market.

Keywords: Constraints, watermelon, production and marketing

Introduction

The *Citrullus lanatus* (watermelon) is one of the most important fruit crops grown in tropical regions and eaten around the world. In many regions of India, the word "watermelon" is also known as "tarbuj," "tarmuj," "kalingad," and "kalindi.". The fruit is consumed more widely than any other cucurbit in the world. According to FAO (2019) statistics, China, Turkey, India, and Brazil are the world's largest producers of watermelon. Watermelon was grown on 110 thousand acres of land in India in 2021-2022, with a production of 2,787 thousand tonnes. In terms of watermelon production, Uttar Pradesh is in the lead with 16.86 thousand ha, followed by Andhra Pradesh (15.18 thousand ha).

Watermelon production in the state of Haryana was 147.76 thousand tonnes, with 6.23 thousand ha area under cultivation. Sonipat district was the highest producer, with 2.55 thousand ha under cultivation, followed by Jhajjar (0.95 thousand ha) and Karnal (0.4 thousand ha).

Watermelon production in the state of Karnataka was 298.39 thousand tonnes, with 7.13 thousand ha under cultivation. The top producer is Koppal district, with 1.10 thousand ha of watermelon planted there, followed by Chitradurga (0.63 thousand ha.).

West Africa is where the watermelon was first cultivated. It is a fruit that is very beneficial to the health system and is extremely medicinal. Watermelon has 46 per cent calories yet offers 20 per cent vitamin C and 17 per cent vitamin A. It has significantly more lycopene than tomatoes to combat free radicals. It soothes tight muscles and is healthy for body hydration. The minerals included in watermelon seeds prevent cancer and lower levels of harmful cholesterol in the body. Water melon's economic viability is influenced by its multiple uses. It has 91 per cent water and around 6 per cent sugar. It is low in fat and sodium, also a good source of vitamin C, just as other fruits.

Many people around the world like fresh watermelon as a fruit. The watermelon is the cucurbitaceous plant with the highest concentration of iron. Lycopene can be found in high amounts in watermelons with red flesh. The flat, brown seeds are more nutritious than the flesh and have a pleasant, nutty flavour. They are a good source of minerals, lipids, and vitamin C. They can be used in flour mixtures and consumed raw or roasted. A study has demonstrated that the seeds pulp is utilised to thicken soups. The fermented seeds are used to make a sweetener known as "ogiri" in the area, or they can be boiled with leaves to make "igblo", another type of sweetener. *Citrullus lanatus* seeds are increasingly

employed in the cosmetic and pharmaceutical industries in addition to being used for their oil. Seeds are utilised to promote baby feeding because of their high protein and fat content. Watermelon is well recognised for having little calories and for containing vitamins C and A that aid with dry skin, dermatitis, and psoriasis as well as night blindness. Comparative studies conducted in two separate areas can be very beneficial in providing alternate solutions that farmers, marketers, and policymakers may choose to implement. As a result, both consumers and producers will gain. This is another approach to connect more farmers, to lessen spatial variations in the plan of production and selling, and to reduce spatial pricing inequalities.

Materials and Methods

For the study, Haryana and Karnataka states are selected purposively. In Haryana state, the study is carried out in Sonipat and Jhajjar districts. These districts are purposively selected because both the districts are having highest area under watermelon production as per statistical abstract of Haryana (2020-21). From the Sonipat district, two blocks i.e., Rai and Murthal were selected randomly and one village from each block namely, Khedwa and Asadpur were selected randomly to collect the data on watermelon cultivation. From Jhajjar district, two blocks i.e., Jhajjar and Machhrauli were selected randomly and one village from each block namely, Kheri hoshdarpur and Neola were selected randomly. Further, fifteen (15) farmers were chosen from each selected village. Thus, a sample of 60 farmers were interviewed in Haryana for an investigation on watermelon production and marketing aspects.

Similarly, in Karnataka state, Koppal and Chitradurga districts are selected purposively for the study based on highest area under watermelon cultivation as per the secondary data published by the Department of Horticulture (2020-21), Govt. of Karnataka. From the Koppal district, two blocks i.e., Koppal and Yalaburga are selected randomly and two villages from each block namely, Hanumanahatti and Vadparvi were selected randomly. From Chitradurga district, two blocks i.e., Chitradurga and Challakere were selected randomly and two villages from each block namely, G R halli and Neralagunte were selected randomly to study watermelon cultivation. Further, fifteen farmers were chosen from each selected village. Thus, total 60 farmers were interviewed on watermelon production and marketing aspects in Karnataka.

The study was conducted using primary data collected directly from the farmers. The data was related to the agricultural year 2021-22 and was obtained through personal interviews using a carefully crafted and pre-tested questionnaire designed specifically for this study.

Constraints can be described that any condition or situation which impede, restrict or limit the adoption of any practices or activity. A schedule was developed to measure the constraints after paid a deep discussion with advisory committee, experts and professionals. Available research-based literatures were also reviewed for the preparation of the interview schedule. The responses of farmers were obtained on three-point continuum scale as ‘very serious’ ‘serious’ and ‘not so serious’ and weightage were given as 3, 2 and 1, respectively. Aggregate total weightage score was calculated for each statement about constraint separately and on the basis of calculated score, total weighted score and weighted mean score were obtained. Constraints were ranked from high to low based on weighted mean score (s). Any other specific constraints faced by the farmers in the production and marketing of a crop also considered and included in the schedule.

Results and Discussion

1. Production constraints faced by the farmers in Haryana

The results of table.1 showed the primary production constraints encountered by farmers of Sonipat and Jhajjar from Haryana. It is evident that the most significant constraint, with a weighted mean score of 2.67, was the lengthy procedures involved in obtaining subsidies. Following closely was the disconnection of electricity wires from the electric poles due to rain, scoring 2.57, and the lack of access to modern technology, with a weighted mean score of 2.55. Conversely, farmers of both the districts faced fewer constraints in terms of knowledge about the latest packages and practices, as indicated by a weighted mean score of 2.42. Additionally, the high cost of labour during the peak season received a score of 2.25, while the scarcity of labour during peak season was the least significant constraint with a weighted mean score of 2.23.

2. Marketing constraints faced by the farmers in Haryana

From table.2 we can observed that, major marketing constraints encountered by the respondents of Sonipat and Jhajjar from Haryana were, high price fluctuations during the harvesting period, with a weighted mean score of 2.58. This was followed by the non-availability of minimum support price (MSP) for watermelons, with a score of 2.50, and a relatively lower availability of market information, scoring 2.40. On the other hand, the farmers in Haryana faced fewer constraints regarding the lengthy credit procedure from government institutions, which had a weighted mean score of 2.40. Additionally, the high cost of transportation from the field to the market was found to be the least significant marketing constraint faced by these farmers, scoring 1.42.

3. Production constraints faced by the farmers in Karnataka

The results of table.3 presents the primary production constraints encountered by the respondents of Koppal and Chitradurga from Karnataka. The most significant constraint reported was the high cost of labour, which received a weighted mean score of 2.42. Following closely were the high cost of plant protection chemicals (2.33) and limited knowledge about the latest agricultural practices (2.18). On the other hand, adverse weather conditions such as low/high temperatures, frost, and untimely rain (1.83) as well as the lack of credit facilities (1.80) and the prevalence of insect-pests and diseases (1.80) were identified as the least challenging factors for farmers in Karnataka.

4. Marketing constraints faced by the farmers in Karnataka

From table.4, it becomes evident that the primary marketing constraints encountered by respondents in Koppal and

Chitradurga from Karnataka, were as follows: the most significant challenge was the high fluctuation in prices during the harvesting period, with a weighted mean score of 2.58. This was closely followed by the high cost of transportation from the field to the market, which scored 2.47, and the absence of a cooperative marketing system in the village, with a score of 2.37. On the other hand, the least prominent marketing constraints faced by farmers in Karnataka were lengthy procedure for pursuing credit from government institutions with a score of 2.23, insufficient market information availability, scoring 2.25, and payment delays, scoring 2.23.

Table 1: Production constraints faced by the farmers in Haryana

SI. No	Constraints	Very serious (3)	Serious (2)	Not so serious (1)	Total weighted score	Weighted Mean score	Rank order
1	Lengthy procedures for getting subsidy	45	10	5	160	2.67	I
2	Disconnection of electricity wires from the electric poles due to rain	42	10	8	154	2.57	II
3	Lack of modern technology	40	13	7	153	2.55	III
4	High cost of plant protection chemicals (>1000 Rs. /ltr)	38	15	7	151	2.52	IV
5	Less availability of credit	36	18	6	150	2.50	V
6	Less availability of extension personnel	33	20	7	146	2.43	VI
7	Adverse weather/ climate (low/high temperature/ frost)	34	18	8	146	2.43	VII
8	Lack of knowledge about latest packages and practices	40	5	15	145	2.42	VIII
9	High cost of labour in peak season	30	15	15	135	2.25	IX
10	Scarcity of labour in peak season (Dibbling, picking etc.)	31	12	17	134	2.23	X

Table 2: Marketing constraints faced by the farmers in Haryana

SI. No.	Constraints	Very serious (3)	Serious (2)	Not so serious (1)	Total weighted score	Weighted mean score	Rank order
1	High fluctuation in prices during harvesting period	40	15	5	155	2.58	I
2	Non-availability of MSP in watermelon	40	10	10	150	2.50	II
3	Less availability of market information	33	18	9	144	2.40	III
4	Lengthy procedures for pursing credit from government institutions (20-30 days)	35	14	11	144	2.40	IV
5	High cost of transportation (From field to market- 7-8 Rs. to transport 1 qtl of produce)	5	15	40	85	1.42	V

Table 3: Production constraints faced by the farmers in Karnataka

SI. No.	Constraints	Very serious (3)	Serious (2)	Not so serious (1)	Total weighted score	Weighted mean score	Rank order
1	High cost of labour	35	15	10	145	2.42	I
2	High cost of plant protection chemicals (>1000 Rs. /ltr)	30	20	10	140	2.33	II
3	Lack of knowledge about latest packages and practices	28	15	17	131	2.18	III
4	Scarcity of labour in peak season	25	20	15	130	2.17	IV
5	Less availability of extension personnel	18	25	17	121	2.02	VI
6	Adverse weather/ climate (low/high temperature/ frost/ untimely rain)	20	10	30	110	1.83	VII
7	Lack of credit facilities	16	16	28	108	1.80	VIII
8	Attack of insect- pests (Aphids, whiteflies) and diseases (Anthracnose, powdery mildew)	14	20	26	108	1.80	IX

Table 4: Marketing constraints faced by the farmers in Karnataka

SI. No.	Constraints	Very serious (3)	Serious (2)	Not so serious (1)	Total weighted score	Weighted mean score	Rank order
1	High fluctuation in prices during harvesting period	40	15	5	155	2.58	I
2	High cost of transportation (From field to market-10-12 Rs. to transport 1 qtl of produce)	36	16	8	148	2.47	III
3	Non-availability of Cooperative marketing system in village	32	18	10	142	2.37	III
4	Malpractices in weighing (default weighing machine/commission charges)	30	20	10	140	2.33	IV
5	Lengthy procedure for pursuing credit from government institutions (30-40 days)	30	20	10	140	2.33	V
6	Less availability of market information	25	25	10	135	2.25	VI
7	Delay in Payment (30-40 days)	26	22	12	134	2.23	VII

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