



Constraints faced by Soyabean cultivators in Jhalwar district of Rajasthan

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Abstract

The present study was carried out the constraints faced by soyabean cultivators in Jhalwar district of Rajasthan. Two tehsils namely Khanpur and Pachphar of Jhalawar district were selected purposively for the study. A sample of 100 soyabean growers was selected. Primary data were collected for agriculture year 2022-23 for analysis the constraints related to soyabean cultivation in study area. Garrett's ranking technique was used to analyse the constraints faced by soyabean cultivators. The major findings revealed that lack of knowledge about IPM training, lack of knowledge about recommended seed rate and lack of knowledge about chemical weed control were major technical constraints faced by soyabean farmers. Miscellaneous constraints like availability of inferior quality seed by the agencies, high cost of improved seed and unavailability of short duration varieties were faced by soyabean farmers. To sound the production of soyabean, there should be timely availability of good quality seed and HYV varieties seed in study area. Government agencies should provide superior quality seeds to the farmers and, to enhance the production, farmer should adopt scientific package of practices of soyabean cultivation.

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1. Introduction: Agriculture is one of the most important sectors of the Indian economy. The agriculture and allied sectors have significantly contributed to the country's overall growth and development by ensuring food security. The Indian agriculture sector has been growing at an average annual growth rate of 4.6 per cent during the last five years. The share of the agriculture sector in India's Gross Value Added (GVA) was 18.4 per cent during the year 2024–25 (Economic Survey, 2025–26). The share of the agriculture sector in Rajasthan's Gross Value Added (GVA) at current prices was 27.13 per cent during the year 2024–25 (Rajasthan Aarthik Samiksha, 2025–26).

Soyabean (*Glycine max*) plays an important role in edible oil economy and is the fastest growing oilseed crop globally. Soyabean has been emerged as golden bean of 21st century and it is largely used as oilseed. It is the single largest oilseed grown in the different agro-climatic conditions. Soyabean is looked upon not merely as a means to supply food for humans and

animals, but it also improves the soil fertility by fixing atmospheric nitrogen (Jaiswal and Hugar, 2011).

In India, area under the crop was 129.52 lakh hectares with production of 152.68 lakh tonnes and productivity of 1179 kg/hectares and production was mainly confined to Madhya Pradesh, Maharashtra, Rajasthan, Karnataka, Telangana etc. during 2024-25 (Directorate of Economics & Statistics, DAC & FW 2024-25). Rajasthan has 10.79 lakh tonnes of production from 11.75 lakh hectares area with productivity of 1089 kg/ha in the year 2024-25. The major growing districts in the state are Jhalawar, Baran, Kota, Pratapgarh etc. under soyabean. Jhalawar district has an area of 2.86 lakh hectare with production of 3.26 lakh tonnes with productivity of 1140 kg per hectare during 2024-25 (Rajasthan Statistics at a Glance, 2024-25, Jaipur). Soyabean has largely been responsible in uplifting farmer's economic status in many pockets of the country. It usually fetches higher income to the farmers owing to the huge export market for soyabean de-oiled cake. During the study period, it was observed that there were certain major problems responsible for low returns to farmers. If these are eliminated, the yield and returns of soyabean can be accelerated many folds.

2. Materials and Methods: The primary data was collected from the selected soyabean growers through personal interview method with the help of pre-structured schedules during 2022-23. At first stage Jhalawar district in Rajasthan was selected purposively as it occupies first rank in terms of area of soyabean crop in Rajasthan. Two tehsils namely Khanpur and Pachpahar was selected purposively on the basis of highest area of soyabean crop. Two villages were selected purposively from Khanpur thesil namely Jarga and Golana and two villages were selected from Pachphar thesil namely Sooliya and Misroly. From selected villages, 100 soyabean growers were selected randomly in proportion for detailed study. Constraint faced by Soyabean farmers encountered in growing the soyabean were examined using Garrett's ranking technique. Garrett's ranking technique as follows:

$$\text{Per cent Position} = [100(R_{ij}-0.5)] \div N_j$$

Where,

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

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

By using the Garrett and Woodworth table (1969), the percent position of each rank was translated to scores.

3. Results and Discussion: The farmers were asked to rank the variables that affect soyabean crop productivity. These merit orders had one more conversion to become a unit of score. In this section, constraints were divided into two major sections like technical constraints and miscellaneous constraints. This major section also divided into sub groups that are discussed below.

The technical constraints faced by soyabean farmers in the study area have been depicted in table 1. The table reveals that out of 9 technical constraints, lack of knowledge about IPM (Integrated Pest Management) training was a major constraint for soyabean grower with Garrett Score 69.92 and ranked first followed by lack of knowledge about recommended seed rate with garret score 66.93 and ranked Second, lack of knowledge about chemical weed control (Garrett score 62.56) which ranked third, lack of knowledge about cultivation of HYVs (Garrett score 57.04) ranked fourth, less knowledge about dose of chemical fertilizer (Garrett score 52.77) which

ranked fifth, technical guidance unavailable at the time of sowing (Garrett score 48.40) and ranked sixth, lack of knowledge about seed treatment (Garrett score 45.18) ranked seventh, less knowledge about irrigation management (Garrett score 38.02) which ranked eight, and lack of knowledge about crop insurance (Garrett score 32.57) with least problem faced by soyabean farmers among technical constraints. Similar results were also found by Bhupendra and Kumar (2020), Singh et al. (2022), Barman et al (2026) and Lavale et al., (2026).

Table 1: Technical constraints faced by soyabean farmers in Jhalawar district of Rajasthan

S. N.	Constraints reported by the farmers	Total Score	Garrett score	Rank
1.	Lack of knowledge about IPM (Integrated Pest Management) training	6992	69.92	I
2.	Lack of knowledge about recommended seed rate	6693	66.93	II
3.	Lack of knowledge about chemical weed control	62.56	62.56	III
4.	Lack of knowledge about cultivation of HYVs	5704	57.04	IV
5.	Less knowledge about dose of chemical fertilizer	5277	52.77	V
6.	Technical guidance unavailable at the time of sowing	4840	48.40	VI
7.	Lack of Knowledge about seed treatment	4518	45.18	VII
8.	Less knowledge about irrigation management	3802	38.02	VIII
9.	Lack of knowledge about crop insurance	3257	32.57	IX

As presented in Figure 1, a radar plot for the perceived constraints to soyabean cultivation was executed. The radar plot was found to be asymmetrical, with heavy skewness toward the top right quadrants. The strongest concerns—lack of knowledge about IPM (Integrated Pest Management) training (69.92) and lack of knowledge about recommended seed rate (66.93)—stand out clearly, showing that seed quality are key inputs in soyabean production. In contrast, benefits like less knowledge about irrigation management (38.02) and lack of knowledge about crop insurance (32.57) scored low, suggesting limited constraints in these aspects.

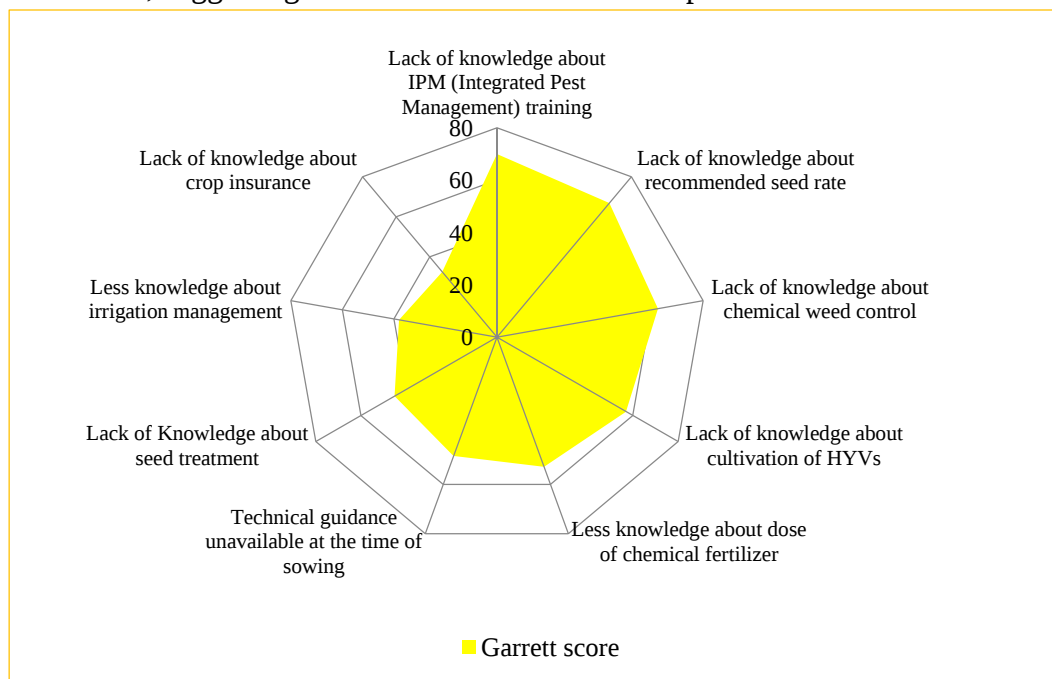


Fig 1: Relative strength of technical constraints faced by soyabean farmers

The miscellaneous constraints faced by soyabean farmers in the study area have been depicted in table 2. The table reveals that out of 10 miscellaneous constraints, availability of inferior quality seed by the agencies was a major constraint for soyabean grower with Garrett Score of 74.94 and ranked first followed by high cost of improved seed (Garrett score 66.52)

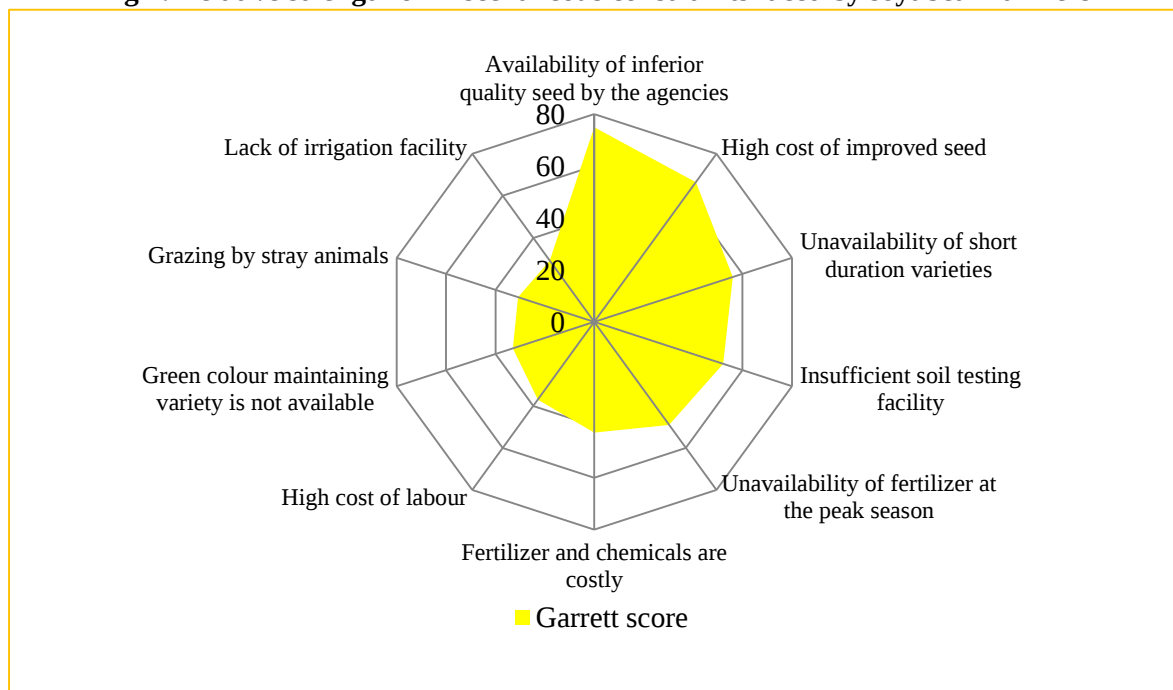
which ranked second, unavailability of short duration varieties (Garrett score 56.08) ranked third, insufficient soil testing facility (Garrett score 52.22) which ranked fourth, unavailability of fertilizer at the peak season (Garrett score 48.94) and ranked fifth, fertilizer and chemicals are costly (Garrett score 42.59) ranked sixth, high cost of labour (Garrett score 36.98) which ranked seventh, green colour maintaining variety is not available (Garrett score 33.00) which ranked eighth, grazing by stray animals (Garrett score 30.91) which ranked ninth and lack of irrigation facility (Garrett score 29.13) with least problem faced by soyabean farmers among miscellaneous constraints. Similar findings are found by Sovanee and Pathak (2016) and Ashoka et al. (2021).

Table-2: Miscellaneous constraint faced by soyabean cultivating farmers in Jhalawar district of Rajasthan

S. No.	Constraints reported by the farmers	Total Score	Garrett score	Rank
1.	Availability of inferior quality seed by the agencies	7494	74.94	I
2.	High cost of improved seed	6652	66.52	II
3.	Unavailability of short duration varieties	5608	56.08	III
4.	Insufficient soil testing facility	5222	52.22	IV
5.	Unavailability of fertilizer at the peak season	4894	48.94	V
6.	Fertilizer and chemicals are costly	4259	42.59	VI
7.	High cost of labour	3698	36.98	VII
8.	Green colour maintaining variety is not available	3300	33.00	VIII
9.	Grazing by stray animals	3091	30.91	IX
10.	Lack of irrigation facility	2913	29.13	X

As presented in Figure 2, a radar plot for the perceived constraints to soyabean cultivation was executed. The radar plot was found to be asymmetrical, with heavy skewness toward the top right quadrants. The strongest concerns—availability of inferior quality seed by the agencies (74.94) and high cost of improved seed (66.52)—stand out clearly, showing that seed quality are key inputs in soyabean production. In contrast, benefits like grazing by stray animals (30.91) and lack of irrigation facility (29.13) scored low, suggesting limited constraints in these aspects.

Fig 2: Relative strength of miscellaneous constraints faced by soyabean farmers



Conclusion: Studies on soybean cultivation in Jhalawar reveal that despite high yield potential, farmers face significant constraints across multiple operational domains. Addressing these

bottlenecks is critical to bridging the yield gap between potential field capacity and actual farm realization.

The study highlights that soybean farmers in the Jhalawar district of Rajasthan face both technical and input-related hurdles that hinder optimal production. The primary technical challenges faced by cultivators include a lack of knowledge regarding Integrated Pest Management (IPM) training (Garrett score 69.92), recommended seed rates (66.93), and chemical weed control methods (62.56). The main operational and resource constraints include the supply of inferior quality seeds by agencies (Garrett score 74.94), the high cost of improved seeds (66.52), and the unavailability of short-duration crop varieties (56.08). Given the aforementioned constraints, in order to increase soybean production in this region and maximize profits from cultivation, it is essential for the government to agencies must ensure the timely availability of high-yielding, superior-quality seeds at accessible costs. Extension services should focus on training farmers to adopt scientific packages of practices—particularly regarding IPM, chemical weed control, and precise seed rates.

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