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## A study on knowledge and adoption of recommended maize production technology among farmers of Seoni district, Madhya Pradesh

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### Abstract

Corn is one of the most important crops in India. Very efficient. Corn is a versatile crop grown in many agro-climatic zones. Corn is primarily a monsoon crop, but grows in all three seasons: summer, rabbi and summer. In a country like India, where most of the population adheres to a vegetarian diet, corn provides good energy. Farmers have a good understanding of land preparation and 79.88% understand new farming practices. The second largest number of farmers obtained high yielding cultivars (HYV) (78.71), followed by seeds, row spacing and depth (75.26). The lowest adoption rate was seed treatment (65.50%), followed by plant protection (66.56%). Most breeders have very little adoption (64.58%), followed by very little adoption (20.41%) and high adoption (15.00%). Most respondents had little knowledge of maize breeding technology (47.08%), followed by knowledge of maize breeding technology (32.50%) and a high level of understanding (20.83%). Corn growers have the highest level of knowledge about planting and land preparation, up to 79.88%, and rank first among farmers. Most survey respondents know the type of land required for cultivation, the amount of FYM added per hectare, and the plows required for field preparation. Knowing when and how to plant seeds is 75.66% of breeders consider this to be the second most important factor among respondents.

**Keywords:** Knowledge, adoption, maize, technology, agriculture Madhya Pradesh

### Introduction

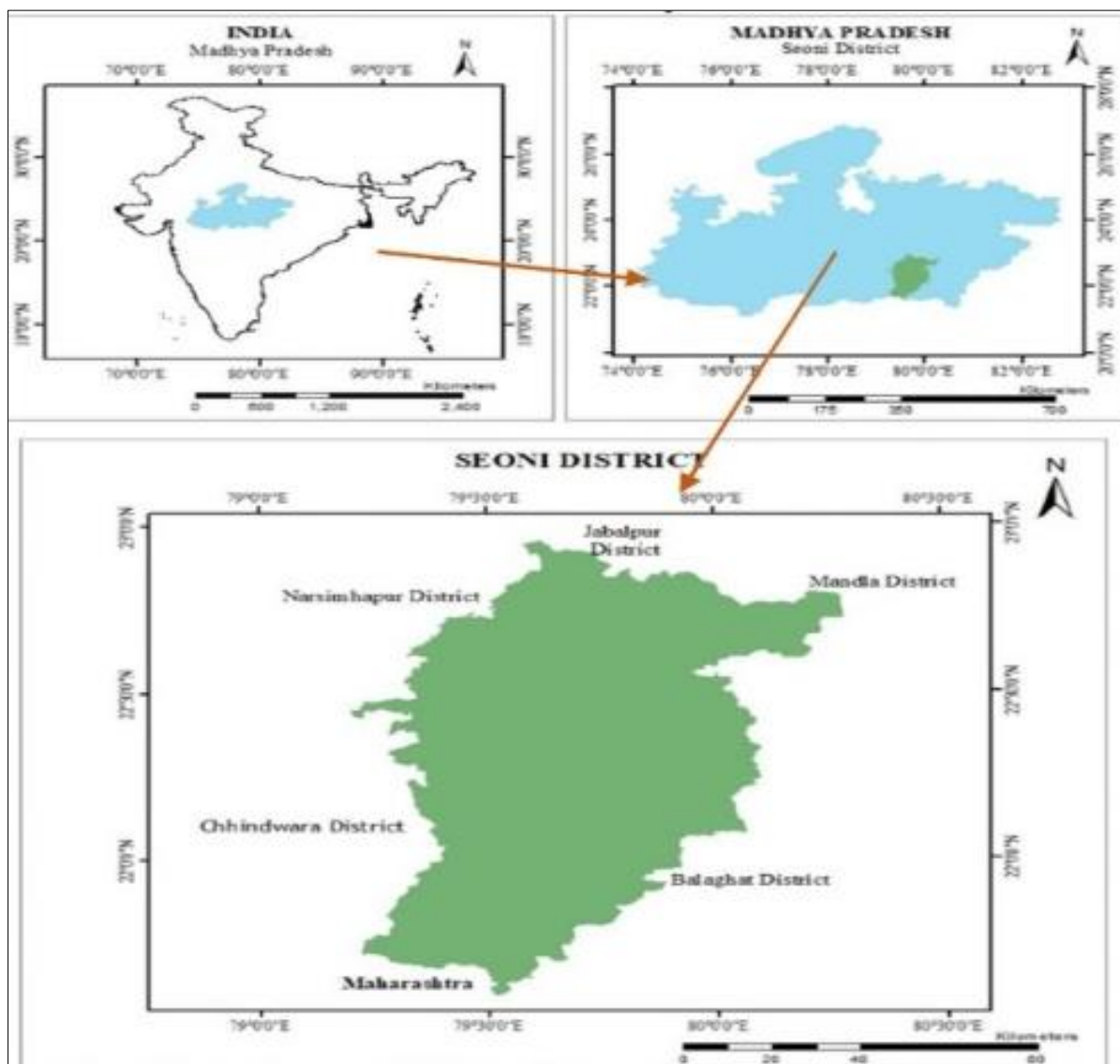
Corn is the third most important crop in India after wheat and rice. There is an increasing demand in domestic and foreign markets due to the use of corn in many ways such as human food, animal feed and raw materials. India, which accounts for 4% of the world corn production and 2% of the total production, ranks fourth in terms of area and seventh in terms of production among corn growing countries. Corn area in India reached 9.2 million hectares in 2018-19 (DACNET, 2020). India's corn production, which was 1.73 million tons in 1950-51, rose to 27.8 million tons in 2018-19, an increase of approximately 16 times. During the period, the average production increased 5.42 times from 547 kg/ha to 2965 kg/ha, while the area almost tripled. Although India's production is almost half the world's, the average daily production of Indian maize is comparable to many major maize producing countries. To replace traditional maize with high yielding hybrid maize, RKVY launched the "Hybrid Corn Promotion" in 2011-12. Corn is the only grain that can be grown each year during the Sharif, Rabbi, and Zayd seasons. The cultivated area is 1,537,090 hectares and the average yield is 4,489.58,000 tons with a production of 2,92 tons/ha (2019-20). (Madhya Pradesh Economic Survey, 2020-21). It is cultivated only in Kharif in the Chhindwara, Seoni, Betul, Barwani and Dhar districts of Madhya Pradesh. These regions account for more than 60 percent and more than 70 percent of the state's corn production, respectively. Cultivation has become important for its many uses as food, fodder, and food.

### Materials and Methods

A multistage random sampling technique was used to select the block, village and respondents. This study was conducted in Seoni district of M.P. The district includes a total of 08 blocks namely Seoni, Lakhnadone, Chhapara, Kurai, Keolari, Barghat, Dhanora, and Ghansor. In first stage, out of these blocks only two Dhanora and Keolari blocks were selected purposively due to well-known area by the researcher. There are about 107 villages in dhanora tehsiland 168 villages in keolari block out of these villages only 04 villages were selected purposively. The list of maize growers was taken from KVK Seoni.

From this list, 60 respondents were randomly selected from each village. In this way, a total of 240 maize farmers were selected as respondents for data collection for this study. Data

were collected by personal interview with the help of a schedule and analyzed with appropriate statistical tools.



**Fig 1:** Location of study area

**Results and Discussion**

**Table 1:** Participants were divided according to the proposed maize production technology.

S. No.	Knowledge level	Frequency	Percent
1.	Low (score below 20)	68	28.33
2.	Medium (score between 21 to 45)	122	50.83
3.	High (score above 45)	50	20.84
Total		240	100

It is Clearly mentioned that the Table-1 out of 240 respondents 122 (50.83%) had medium knowledge about recommended maize production technology followed by (28.33%) farmers having low knowledge and (20.84%) respondents have high knowledge level regarding recommended maize production technology.

**Table 2:** The extent of farmers' knowledge of maize production technology

S. No.	Maize cultivation practices	Knowledge level	Rank
1.	Soil and field preparation	79.88	I
2.	Soil treatment	30.93	XII
3.	High yielding varieties	47.55	IX
4.	Seed treatment	51.73	VII
5.	Time and method of sowing	75.66	II
6.	Seed rate and spacing	54.23	VI
7.	Fertilizer application	67.88	IV
8.	Irrigation method & management	58.66	V
9.	Earthing up	68.12	III
10.	Weed management	37.95	XI
11.	Plant protection measure	40.19	X
12.	Harvesting and storage	47.10	VIII

The data presented in Table - 2 shows that maize farmers had the maximum knowledge of land and field preparation practices for maize cultivation to the extent of 79.88 percent and they were the top farmers. This was followed by the knowledge of the time and method of sowing among maize growers at 75.66% and this aspect was attributed by the respondents as the second. The extent of knowledge of this practice was very good as almost all respondents had full knowledge of the appropriate time and method of sowing and the benefits of early sowing of maize. The level of knowledge about earthing for maize cultivation was 68.12 percent among the respondents. Most of the corn growers were familiar with the appropriate time of sowing seeds, recommended doses of fertilizers. The low level of farmers' knowledge showed that soil treatment 30.93 and subsequent weed management with chemicals 37.95 percent, respectively. It means that the farmers had poor knowledge about the use of chemicals to control weeds and soil diseases and insects present in the soil. The division of respondents into different categories was done by working out the mean and SD. The mean adoption score obtained by the farmer was (1.94) and the standard deviation (0.5933) were calculated to classify the level of adoption into three categories, namely low level, medium and high level of adoption, in this way the groups are as follows.

1. Farmers who achieved an adoption score below 72.00 were classified as low adoption.
2. Farmers who obtained an adoption score between 73.00 and 80.00 were classified as medium adopters.
3. Farmers who achieved an adoption score above 80.00 were classified as high adopters.

**Table 3:** Distribution of farmers based on the level of adoption of recommended maize cultivation practices

S. No.	Adoption level	Frequency	Percentages
1.	Low adopter (score below 72.00)	49	20.41
2.	Medium adopter (score from 73 to 80)	155	64.58
3.	High adopter (score above 80)	36	15.00

From the data in Table 3, it can be seen that most of the maize farmers had medium level adoption (64.58%), followed by low level adoption (20.41%) and high-level adoption (15.00%).

**Table 4:** Extent of farmers' adoption of maize production technology

S. No.	Maize cultivation practices	Adoption index	Rank
1.	Soil and field preparation	80.26	I
2.	High yielding varieties	78.71	II
3.	Time of sowing	74.64	IV
4.	Seed treatment	65.50	X
5.	Seed rate, spacing, and depth of sowing	75.26	III
6.	Fertilizer application	69.52	VII
7.	Weed management (Herbicide)	68.13	VI
8.	No. of irrigation	72.16	V
9.	Plant protection measures	66.56	IX
10.	Harvesting	67.55	VIII

The data presented in Table 4 shows that land and field preparation had the highest (80.26) level of acceptance and therefore this practice was ranked first. This may be because farmers have a high knowledge of field preparation practices and were familiar with new tillage practices. The second highest percentage of farmers had the level of adoption (78.71) of high yielding varieties (HYVs), followed by seed rate, display distance and depth (75.26) and sowing time (74.64) which were ranked third and fourth respectively. the

adoption of recommended maize cultivation practices such as irrigation, weeding, fertilizer application and harvesting was slightly known among farmers as they were 72.16, 68.13, 69.52, 67.55 and ranked fifth sixth, seventh and eighth respectively. The lowest acceptance was found for seed treatment (65.50%) followed by plant protection measures (66.56%).

### Conclusion

The majority of maize farmers possessed maximum knowledge of land and field preparation procedures for maize cultivation at 79.88 percent and ranked first among farmers. Most of the respondents knew the type of soil needed to grow maize, the amount of FYM/ha added to the soil, the number of plowings that need to be done to prepare the field. The level of knowledge about the time and method of sowing was 75.66% among the maize farmers and this aspect was ranked second by the respondents. The extent of knowledge of this practice was very good as almost all the respondents had complete knowledge about the appropriate time method of sowing and the benefits of early sowing of maize, the low knowledge of the farmers showed that soil treatment 30.93 and weed follow-up with chemicals 37.95 percent respectively. Soil and field preparation had the highest level of acceptance (80.26) and therefore this practice was ranked first. This may be because farmers have a high knowledge of field preparation practices and were familiar with new tillage practices. The second highest percentage of farmers had adoption level (78.71%) on high yielding varieties (HYVs) followed by seed rate, distance and display depth (75.26). The lowest adoption was found for seed treatment (65.50%) followed by plant protection measures (66.56%).

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