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# Impact of Training and Demonstration on Adoption of Maize (*Zea mays* L.) Production Technology by the Farmers of District Chittorgarh, India

**Ratan Lal Solanki*, Deepa Indoria, Priyanka Swami, S. K. Agarwal and Rajesh Jalwania**

*KVK, Chittorgarh, (MPUAT, Udaipur) Rajasthan, Maharana Pratap University of Agriculture and Technology, Udaipur (Rajasthan), India*

**Corresponding author*

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**A B S T R A C T**

Maize (*Zea mays* L.) is the most important cereal Indian food crops and known as queen of cereal due to unparallel productivity among cereal crops in India, Maize occupies third position both in area and production after Rice and Wheat. The Bhilwara region occupies a place of pride in production of Maize, contributing about 48.0 percent of the total production and more than 38.47 percent area of the Rajasthan state. Krishi Vigyan Kendra in Chittorgarh district is engaged in transfer of technology in all major crops in its operational areas. Therefore, an attempt has been made to assess the impact of technologies transferred. The present investigation was based on the experiment design of social research considering beneficiary as experimental group and non - beneficiaries as a control group. It can be concluded there is significant role of KVK Chittorgarh in promotion of improved production practices of Maize and ensuring their adoption. Substantial impact of trainings over the existing knowledge and adoption of the beneficiary farmers than the non -beneficiary farmers was observed.

## Introduction

Maize (*Zea mays* L.) is an important cereal crop of India and plays a vital role in agricultural economy both as stable food for larger section of population, raw material for industries and feed for animals (Solanki *et al.*, 2016). Maize is one of the major Indian food crops. With a raise in the demand of the recent era the production of maize as a food crop is also increasing. Rajasthan has the largest area of maize in India i. e. 0.86 million ha with production of 1.74 million tones and productivity of 2033 kg $ha^{-1}$. If contributes about 09.19 percent and 05.71 percent of national area & production (Anonymous, 2017-18).

The crop is predominantly cultivated under rain fed conditions in *kharif* season. In winter, cultivation is done in assured irrigated condition of early maturing hybrids and

improved composite varieties. Maize is mainly used as food crop in the district and state and the productivity can be enhanced with cultivators. Maize is an important crop for Mewar Bhilwara region in Rajasthan. The Mewar Bhilwara region occupies a place of pride in production of maize, contributing about 38.47 percent of the total production and more than 39.0 percent area of the Rajasthan state.

The acreage of Maize in Chittorgarh district was 1.06 million ha in year 2017-18 (Anonymous, 2017-18). This district has greater potential of Maize production due to favourable climatic and soil condition. KVK Chittorgarh is engaged in transfer of technical knowhow of agriculture in its operational area. Therefore, an attempt has been made to assess as how far KVK has been able to promote improved production practice of maize in the area.

## Materials and Methods

Maize is the stable food crop of the Chittorgarh district. It accounts about 60 to 65% of the kharif cropped area. Crop is sown with the onset of mansoon particularly from end of June to mid-July. The present investigation was based on the experimental design of social research considering beneficiary as experimental group and non-beneficiaries as a control group. The investigation is confined to purposely select Chittorgarh district of Rajasthan because it is the jurisdiction areas of KVK.

For the selection of respondents, 35 trainees (beneficiary) for knowledge level and 11 beneficiaries for adoption level were selected randomly from the list of trainees who participated in training programmes on maize production technology and cultivated the crop during 2014-15. After selecting beneficiaries, equal number of non-beneficiaries (35+11) was also selected randomly as control group to measure the knowledge and adoption level. Thus in all 84 farmers constituted the sample for this study. In the present investigation the role of KVK was assessed in terms of gain in knowledge and adoption by the beneficiary farmers as a result of demonstration and training imparted to them in comparison with non- beneficiary as controlled group. The role was measured in terms of impact index with the help of following formula.

$$\text{Impact index} = \frac{[\text{MIK of beneficiary} - \text{MIK of non-beneficiary}] + [\text{MIA of beneficiary} - \text{MIA of non-beneficiary}]}{2}$$

MIK = mean index of knowledge, MIA = mean index of adoption

$$\text{Impact (\%) change} = \frac{\text{Sum of difference of index of knowledge} + \text{Sum of difference of adoption}}{2}$$

## Results and Discussion

To measure the knowledge and adoption level about improved production of Maize, ten important Maize cultivation practices were identified and data were collected accordingly.

### Knowledge and adoption of maize production technology by the farmers

The data presented in Table 1 revealed that all the beneficiary farmers had knowledge about high yielding verities, spacing, intercultural operations and irrigation stage. Whereas, the 65.71 per cent non - beneficiary farmers had knowledge about these practices. The beneficiary farmers having knowledge about improved Maize production practices viz. recommended seed rate, timely sowing, spacing and recommended fertilizer was 85.71 percent.

Whereas, the percentage of non–beneficiary farmers having knowledge about above practice was 60.00, 62.85, 65.71 and 65.71 respectively. Table 1 showed that the 77.14 percent beneficiary farmers had knowledge about seed treatment and chemical weed control whereas, 57.14 and 51.42 percent non – beneficiary farmers, had knowledge about these practices. The close observation of table showed that the maximum knowledge gap between beneficiary and non- beneficiary was about plant protection measures. Similar results have also been reported by various worker Singh *et al.,* (2004) and Meena and Gupta (2016).

In case of adoption, cent percent beneficiary farmers had adopted high yielding varieties, intercultural operations and irrigation stage whereas, 54.54, 63.63 and 36.36 percent non-beneficiary had adopted these practices. The 85.71 percent beneficiary farmers had adopted the improved practices viz. recommended seed rate, timely sowing and spacing.

The percentages of non-beneficiary farmers adopting these practices were 27.27, 36.36 and 45.45 respectively. The 72.72 percent beneficiary farmers had adopted the improved practices viz. seed treatment, and recommended fertilizers. The percentage of non –beneficiary farmers adopting these practices was only 18.18. The Table 1 also shows that maximum adoption gap between beneficiaries and non- beneficiaries exit regarding chemical weed control and plant protection measures. These finding of studies were agreements with Singh *et al*., (2005) and Kothari *et al*., (2010).

**Table.1** Knowledge and adoption of maize production technology by the beneficiary and non-beneficiary farmers

| S.No. | Improved Technology | Knowledge | | | | Adoption | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Beneficiary n=35 | | Non Beneficiary n=35 | | Beneficiary n=11 | | Non Beneficiary n=11 | |
| | | F | % | F | % | F | % | F | % |
| **1.** | HYV- High yielding varieties | 35 | 100.0 | 23 | 65.71 | 11 | 100.0 | 6 | 54.54 |
| **2.** | Seed treatment | 27 | 77.14 | 20 | 57.14 | 8 | 72.72 | 2 | 18.18 |
| **3.** | Recommended seed rate | 30 | 85.71 | 21 | 60.00 | 9 | 81.81 | 3 | 27.27 |
| **4.** | Timely sowing | 30 | 85.71 | 22 | 62.85 | 9 | 81.81 | 4 | 36.36 |
| **5.** | Spacing | 30 | 85.71 | 23 | 65.71 | 9 | 81.81 | 5 | 45.45 |
| **6.** | Intercultural operation | 35 | 100.0 | 22 | 62.85 | 11 | 100.0 | 7 | 63.63 |
| **7.** | Recommended fertilizers | 30 | 85.71 | 23 | 65.71 | 8 | 72.72 | 2 | 18.18 |
| **8.** | Chemical weed control | 26 | 74.28 | 18 | 51.42 | 7 | 63.63 | 1 | 09.09 |
| **9.** | Irrigation stage | 35 | 100.0 | 23 | 65.71 | 11 | 100.0 | 4 | 36.36 |
| **10.** | Plant protection measures | 22 | 62.85 | 15 | 42.85 | 7 | 63.63 | 1 | 09.09 |

**Table.2** Impact of trainings in the terms of knowledge and adoption

| S.No | Particular | Beneficiary | Non Beneficiary | Differences |
|---|---|---|---|---|
| **1.** | Mean Knowledge of Index (MIK) | 65.71 | 59.99 | 25.72 |
| **2.** | Mean Adoption of Index (MIA) | 81.81 | 31.82 | 49.99 |
| | Total | 167.52 | 91.81 | 75.71 |
| **3.** | Impact change (Percent) = (Some of differences of Index/2)= 75.71/2=37.86 | | | |

## Impact of trainings in terms of knowledge and adoption

The impact of KVK trainings as a whole computed as the sum total of the differences of both the indices i.e., mean index of knowledge and mean index of adoption divided by two. The data thus obtained have been presented in Table 2. It is evident from Table 2 that there was an impact of trainings and demonstration was up to the extent of 37.86 percent over the existing knowledge and adoption by the beneficiary which was found to be substantial over the non – beneficiary which was found to be substantial over the non –beneficiary farmers.

Therefore, it could be stated that there was a remarkable impact of the trainings and demonstrations on those farmers who attended the trainings programmes and participated in demonstrations conducted by KVK Chittorgarh in terms of the knowledge about maize production technology and its adoption by them as compared to their counterparts i.e., the farmers who did not participated in the trainings programmes and demonstrations.

The findings are in line with Lakhera *et al.*, (2002), Dheshmukh *et al*., (2004), Kumawat (2008) and Mahdik *et al*., (2016) were reported the significant impact of KVK trainings & demonstrations on their beneficiaries.

It can be concluded from this investigation that it is significant role of KVK in promotion of improved. Production practices of Maize and ensuring their adoption. It is also could be ascertained that there is substantial impact of trainings and demonstrations over the exiting knowledge and adoption of the beneficiary farmer than the non- beneficiary farmers about improved Maize production technology.

## References

Anonymous, 2017-18. Rajasthan Statistics at a Glance. Commissionrate of Agriculture, Rajasthan, Jaipur pp. 240.

Dheshmukh, V., Shinde, P.S. and Bhopal, R.S. 2003. Impact of training imparted by Krishi Vigyan Kendra on Cotton Growers. *Maharashtra Journal of Extension education* 22 (1): 106.109

Kothari, G.L., Intodia, S.L. and Sharma, F.L. 2010. Knowledge and adoption of Maize production technology by the farmers, Raj. J. of Ex. Edu. 17&18:48-51.

Kumawat, S.R. 2008. Impact of frontline demonstration on adoption of improved caster production technology. *Raj. J. Extn. Edu* 16: 143- 47

Lakhera, J.P. and Sharma, B.M. 2002. Impact of frontline demonstrations on Adoption of improved mustard production technology. *Raj. J. ext. Edu*. 14: 43 -47.

Mahadik, R.P. and Talathi, M.S. 2016. Impact of front line demonstrated organized by Krishi Vigyan Kendra, Roha. *Indian J. Ex. Educ. & R.D*. Vol. 24: 162-175

Meena, K. C. and Gupta, I. N. 2016. Impact of KVK training programmes on adoption of garlic production

technology. *J. Krishi Vigyan*, 124- 136.

Singh, Navab and Sharma, F.L.2004. Impact of front line demonstration on gain in knowledge about mustard production technology among farmers. 2nd National ext. Edu. Congress, May 22 – 24, 2004, society of Extension Education, Agra & MPUAT, Udaipur: 56

Singh, N and Sharma, F.L. 2005. Impact of FLD on gain in knowledge about mustard production technology among farmers of Bharatpur district. *Indian Res. J. Extn. Edu*. 5 (1): 41 -43

Solanki, R.L. and Indoria, Deepa 2016. Effect of Integrated Nutrient Management on yield of Maize (Zea *mays* L.). *IJEAB.* Vol. 1(4): 827-830

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