

Adoption of Improved Production Practices of Maize in Bheemadevarapalli Vangara Block of Warangal District, Telangana

Dandu. Snigdha, Dipakkumar Bose, Jahanara

Department of Agricultural Extension and Communication Naini Agricultural Institute,

Sam Higginbottom University of Agriculture, Technology and Sciences,

Prayagraj, Uttarpradesh, 211007 India

Abstract:- Maize is a cereal grain belonging to the family Gramineae/ Poaceae. Maize is widely cultivated throughout the world, and a greater weight of maize is produced each year than any other grain. The study was conducted purposefully in Block Bheemadevarapalli vangara of Warangal district. Total 120 respondents were selected randomly from 10 villages and the results of descriptive study revealed that Adoption level improved production practices of maize enterprise were medium. The analysis showed that majority (69.16%) of the respondents had medium level of Adoption followed by low (25.83%) and high (5.00%) respectively towards improved production practices of maize enterprise. Correlation analysis of Adoption with other independent variables results revealed that the age and extension contact were found to be positive and significant at the 0.05 level. The variables like education, occupation, land holding, annual income, mass media exposure, market orientation and economic motivation were found non-significant both 0.01 and 0.05 level of significance.

Keywords:- Correlation Analysis, Enterprise, Adoption, Production Practice.

I. INTRODUCTION

Maize (*Zea mays* L) or corn is a cereal grain belonging to the family Gramineae/ Poaceae. Maize is widely cultivated throughout the world, and a greater weight of maize is produced each year than any other grain. It was first adopted and cultivated by the Latin American countries and was first introduced in India by the Portuguese during the 17th century. According to All India Report on Agriculture Census 2005-06, more than 12 million farmer-households are cultivating maize in India, thus directly influencing their food and livelihood security. In India, maize is traditionally grown in monsoon (Kharif) season, which is accompanied by high temperature (<35° C) and rainfall. However, with the development of new cultivars and appropriate production technology, winter cultivation of maize has emerged as a viable alternative. In India, maize is grown in an area of 8.17 m. ha with a production around 19.33 m. tons and productivity 2414 kg/ha. It ranks next to rice, wheat, sorghum and pearl millet. It is the main staple food in hilly and sub mountain tracts of northern India and consumed all over the country as a fodder and grains. Major shift in global cereal demand

is underway: by 2020, demand for maize in developing countries will surpass the demand for both wheat and rice. This shift will be reflected in a 50 per cent increase in global maize demand from its 1995 level of 558 million tonnes to 837 million tonnes by 2020. Maize requirements in the developing world alone will increase from 282 million tonnes in 1995 to 504 million tonnes in 2020 (IFPRI 2000). Maize crop is predominantly grown in Telangana state. This crop accounted for 11.71 percentage of the total cropped area in the state during 2015-16. The maize is large extent grown in the districts of Mahbubnagar, Medak, Karimnagar, Warangal, Rangareddy and Nizamabad districts and these districts together accounted for 92.22 percentage of the total area under the crop. The area under Maize was 5.73 lakh hectares during 2015-16 as against 6.92 lakh hectares in 2014-15, showing a decrease of 17.20 percentage over 2014-15 year. The production of Maize was estimated at 17.51 lakh tonnes during 2015-16 as against 23.08 lakh tonnes in 2014-15, showing a decrease of 24.13 percent over [revious year due to decrease in the area and also decrease of average yield per hectare during 2015-16. The average yield rate of Maize was 3057 kgs/hect in 2015-16 as against 3338 kgs/hect in 2014-15, showing a decrease of 8.42 percentage over previous year (source: AGRICULTURAL STATISTICS AT A GLANCE TELANGANA 2015-16)

II. MATERIALS AND METHODS

For the present study, Warangal district of Telangana has been purposively selected for the because of the availability of both the highly irrigated and dry land cultivable areas and also more area under maize production. Ten villages (Jeelugula, Musthapoor, Koppur, Kothakonda, Manikyapoor, Gantlansingapoor, Kothapally, Vangara, Mulkanoor and Bheemadevarapally) were selected randomly. A well structured interview schedule was prepared and pre-tested for the study. The sample population of 120 maize farmers has been selected based on random sampling method from the selected 10 villages. Relevant questions on maize include production practices were collected with well structured interview schedule to understand the Adoption levels of the respondent and answers were recorded with 3 point scale as fully adopted(3), partially adopted(2) and non adoption(1). The data was tabulated, analyzed and interpretation's were drawn on the basis of percentage analysis and coefficient of correlation test using SPSS software and Microsoft excel.

III. RESULTS

➤ *Adoption of farmers towards improves maize production practices*

The (Table-1) presented the distribution of respondents based on their level of Adoption towards improved maize production practices. The majority of the respondents had full adoption about Integrated pest management (66.66%), Manures and chemical fertilizers (65.83 %), Irrigation management (60.83), Seed treatment (57.50 %), Seed rate (53.33 %), Method of sowing (53.33%), Yield (53.33%), Method of weed control (51.66 %), Harvesting method (50.00 %) and Seed treatment (43.33 %) respectively. The (Table-2) presented the distribution of respondents based on their level of adoption towards improved maize production practices. About 69.16 percent of the respondents were having medium level of adoption towards improved maize production practices followed by low (25.83 %) and high level of adoption (5.00 %) respectively.

➤ *Factors influencing the Adoption of farmers towards improved maize production practices*

The (Table-3) presented that the relationship between the independent variables with Adoption towards improved maize production practices. The variables like age and extension contact were found significant at the level of 0.05. The variables like education, annual income, livestock possession, occupation, land holding, material possession and mass media exposure, market orientation, economic motivation were found no significant relationship with adoption towards improved maize production practices.

IV. DISCUSSION

From the above interpreted results, it was found that there is a medium level of adoption towards improved maize production practices in farmers of bheemavarapally mandal. The age of farmers were found to be negatively and significantly correlated with the level of adoption of maize producers. With the increase in age (years) leads to increase adoption to farmers. The variable like extension contact was found negatively and significantly correlated with adoption level. The variables like occupation, land holding, material possession, mass media exposure, annual income, livestock possession , market orientation , economic motivation were found no significant relationship with level of adoption towards improved maize production practices.

SN	Statement	Adoption level		
		FA	PA	NA
1	Soil testing	52(43.33)	49(40.83)	19(15.83)
2	Deep ploughing	48(40.00)	59(49.16)	13(10.83)
3	Varieties	56(46.66)	56(46.66)	8(6.66)
4	Time of sowing	53(44.16)	53(44.16)	14(11.66)
5	Seed treatment and fungicides	69(57.50)	44(36.66)	7(5.83)
6	Seed rate	64(53.33)	54(45.00)	2(1.66)
7	Method of sowing	64(53.33)	44(36.66)	12(10.00)
8	Spacing	46(38.33)	54(45.00)	20(16.66)
9	Recommended Fertilizers	79(65.83)	37(30.83)	4(3.33)
10	Irrigation management	73(60.83)	35(29.16)	12(10.00)
11	Method of weed control	62(51.66)	48(40.00)	10(8.33)
12	Use of integrated pest management	80(66.66)	35(29.16)	5(4.16)
13	Harvesting	60(50.00)	49(40.83)	11(9.16)
14	Yield	64(53.33)	45(37.50)	11(9.16)

Table 1:- Adoption of farmers towards improved maize production practices. (n=120)
 Parenthesis shows in percentage, FA=Fully Adopted, PA=Partially Adopted, NC=Not Adopted

SN	Level of adoption	Frequency	Percentage
1	Low	31	25.83
2	Medium	83	69.16
3	High	6	5.00
	Total	120	100.00

Table 2:- Level of adoption of farmers towards improved maize production practices n=(120)

SN	Independent variables	Correlation (r) value
1	Age	-0.166*
2	Educational	-0.002 NS
3	Occupation	0.085 NS
4	Land holding	0.128 NS
5	Annual Income	0.027 NS
6	Mass media exposure	0.005 NS
7	Extension contact	-0.168*
8	Market orientation	-0.029 NS
9	Economic motivation	-0.113 NS

Table 3:- Relationship of independent variables with adoption towards improved maize production practices **= Significant at the 0.01 level (2-tailed)

*=Significant at the 0.05 level (2-tailed)

NS=Non Significant

V. CONCLUSION

The present study revealed that the level of adoption of farmers towards improved maize production practices are medium. The study established farmer's adoption in improved maize production as low, medium, high respectively. Correlation table above shows the significant relationship between their adoption and variables like age and extension contact. The reasons which could contribute to medium adoption level may be the medium extension contact and medium age group which might have stagnant in overall adoption level. The farmer should increase their occupation, land holding, material possession, mass media exposure, land holdings, will give rise to increase in improved maize production practices. Therefore, high level of interventions are needed to enhancing productive capacity of maize growers and this would help to improve the existing medium level adoption to high level of adoption towards improved maize production practices.

Application of research:

This research can be applied for better policy makers, extension workers and researchers to work in line of farmer's perspective for improving productivity and minimizing the gap in extent of adoption, knowledge and friendly technologies.

Research Category: Agriculture Extension

Abbreviations:

FAO= Food and Agriculture Organization

IFPRI= International Food Policy Research Institute

SPSS= Statistical Package for Social Sciences

REFERENCES

- [1]. Badal P.S. and Singh, R.P.(2001) Adoption gap in the improved maize technology. *Agric. Econ. Res.*, 14:121-133.
- [2]. Chand, S.; Dangi, K.L. and Bansal, V. (2002). "Constraints in adoption of improved mustard technology". *Indian J. Ext. Edu.* Vol. XXXVIII No. 1&2: 91-92.
- [3]. Food F.A.O (2018) Food and Agricultural Organization of the United Nations (2013)Food Outlook; biannual report on global food markets.
- [4]. Kafne. B. (2010). Determinants of adoption of Improved maize varieties in developing countries: A review. *International Research Journal of Applied and Basic Sciences.* Vol., 1 (1): 1-7, 2010.