

Original Research Article

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Knowledge of Farmers about Pest Management in Maize Crop in Panchmahals District

C. B. Damor^{1*}, D. M. Rathod², G. D. Hadiya¹ and R. G. Machhar¹

¹Agricultural Research Station, Anand Agricultural University, Derol, India

²Main Maize Research Station, Anand Agricultural University, Godhra, India

*Corresponding author

ABSTRACT

Keywords

Level of Knowledge, Pest management, Maize

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The study was conducted to know the level of knowledge of the maize farmers regarding pest management of maize crop in Panchmahals district. Gujarat state has 33 districts and out of these Panchmahal district purposively selected for this study. Panchmahals district comprises seven talukas out of them three talukas viz. Godhra, Kalol, and Halol, were selected purposively. There are four villages were selected randomly. After selection of villages 10 maize farmers from each village were selected randomly. Thus, in all 120 maize farmers were constitute the sample for this investigation. The data of this study were collected by arranging personal interview. Vast majority of the maize farmers had knowledge about manual weed management (95.00 per cent). Majority of maize farmers had knowledge about fertilizer management in FYM (70.00 per cent), university recommended improved varieties (68.33 per cent), seed rate and time of sowing (65.83 per cent), knowledge of occurrence of *Helicoverpa armigera* (64.16 per cent), knowledge of occurrence of hairy caterpillar (62.50 per cent), seed treatment as well as knowledge of occurrence of aphid (60.83 per cent) and spacing in composite varieties (60.00 per cent).

Introduction

Maize (*Zea mays L.*) is one of the most versatile emerging crop shaving wider adaptability under varied agro-climatic conditions. Globally, maize is known as queen of cereals because it has the highest genetic yield potential among the cereals. It is cultivated on nearly 190 m ha in about 165 countries having wider diversity of soil, climate, biodiversity and management practices that contributes 39 % in the global grain production. The United States of

America (USA) is the largest producer of maize contributes nearly 36% of the total production in the world and maize is the driver of the US economy (Anonymous). In India, Maize is grown throughout the year. It is predominantly a *kharif* crop with 85 per cent of the area under cultivation in the season. Maize is grown as main crop in Panchmahals districts of Gujarat state and it is cultivated in approximately 2.70 lakh hectare area in *kharif* season. Research scientists, extension workers and farmers have responsibilities to maximize the production

and productivity of maize in per unit area. The productivity of maize in Gujarat is 1478 kg/h and national average productivity is 2965 kg/ha (ICAR- Indian Institute of Maize Research 2018-19). The low productivity in maize was due to lack of scientific cultivation knowledge, poor nutrient management and lack of knowledge on insect pests and disease management. Hence, the experiment was conducted to study knowledge of farmers about pest management in maize crop in Panchmahals district.

The main objectives of this include to know the level of knowledge of the maize farmers regarding pest management

Materials and Methods

Gujarat state has 33 districts and out of these Panchmahal district purposively selected for this study. Panchmahals district comprises seven talukas out of these three talukas viz., Godhra, Kalol and Halol were selected purposively. There are four villages were selected randomly. After selection of villages 10 maize farmers from each village were selected randomly, Thus, in all 120 maize

farmers were constitute the sample for this investigation. The data of this study were collected by arranging personal interview. The data was analyzed and interpreted with frequency and percentage.

Results and Discussion

The main purpose of the present investigation was to study the level of knowledge of the maize farmers regarding pest management in Panchmahals district. The results are presented as under.

The data in table 1 indicated that vast majority of the maize farmers had knowledge about manual weed management (95.00 per cent). Majority of maize farmers had knowledge about fertilizer management in FYM (70.00 per cent), university recommended varieties (68.33 per cent), seed rate and time of sowing (65.83 per cent), knowledge of occurrence of *Helicoverpa armigera* (64.16 per cent), knowledge of occurrence of hairy caterpillar (62.50 per cent), seed treatment and knowledge of occurrence of aphid (60.83 per cent), spacing in composite varieties (60.00 per cent).

Table.1 Distribution of maize farmers according to their knowledge level (n=120)

Sr. No	Particulars	Frequency	Percentage
1.	Time of sowing	79	65.83
2.	Improved varieties		
	University recommended	82	68.33
	Private company	78	65.00
3.	Seed rate	79	65.83
4.	Seed treatment	73	60.83
5.	Spacing		
	Composite	72	60.00
	Hybrid	69	57.50
6.	Fertilizer Management		
	1. FYM	84	70.00
	2. Chemical fertilizers dose		

	Composite		
	Recommended dose of N ₂	68	56.66
	Recommended dose of P ₂ O ₅	55	45.83
	Recommended dose of K ₂ O	00	00.00
	Hybrid		
	Recommended dose of N ₂	54	45.00
	Recommended dose of P ₂ O ₅	50	41.67
	Recommended dose of K ₂ O	00	00.00
7.	Fertilizer requirement at different stage	61	50.83
8.	Insect control in Maize		
	1. Maize stem borer		
	Knowledge of occurrence of Maize stem borer	81	67.50
	Knowledge of name of chemical to control Maize stem borer	62	51.66
	Knowledge of recommended dose of chemical to control Maize stem borer	49	40.83
	2. <i>Helicoverpa armigera</i>		
	Knowledge of occurrence of <i>Helicoverpa armigera</i>	77	64.16
	Knowledge of name of chemical to control <i>Helicoverpa armigera</i>	59	49.16
	Knowledge of recommended dose of chemical to control <i>Helicoverpa armigera</i>	37	30.83
	3. Fall armyworm		
	Knowledge of occurrence of Fall armyworm	69	57.50
	Knowledge of name of chemical to control Fall armyworm	51	42.50
	Knowledge of recommended dose of chemical to control Fall armyworm	34	28.33
	4. Hairy caterpillar		
	Knowledge of occurrence of Hairy caterpillar	75	62.50
	Knowledge of name of chemical to control Hairy caterpillar	59	49.16
	Knowledge of recommended	28	23.33

	dose of chemical to control Hairy caterpillar		
	5. Aphid		
	Knowledge of occurrence of Aphid	73	60.83
	Knowledge of name of chemical to control Aphid	57	47.50
	Knowledge of recommended dose of chemical to control Aphid	39	32.50
9.	Disease name		
	1. Maydis leaf blight (MLB)		
	Knowledge of occurrence of Maydis leaf blight	64	53.33
	Knowledge of name of chemical to control Maydis leaf blight	37	30.83
	Knowledge of recommended dose of chemical to control Maydis leaf blight	25	20.83
	2. Late wilt		
	Knowledge of occurrence of Late wilt	71	59.16
	Knowledge of name of chemical to control Late wilt	53	44.16
	Knowledge of recommended dose of chemical to control Late wilt	32	26.67
10.	Weed management		
	Manual	114	95.00
	Name of herbicide	56	46.66
	Recommended dose	35	29.16

More than half of maize farmers had knowledge of occurrence of late wilt disease (59.16 per cent), knowledge of occurrence of fall armyworm (57.60 per cent), spacing in hybrid varieties (57.33 per cent), recommended dose of N_2 (56.66 per cent), knowledge of occurrence of maydis leaf blight (53.33 per cent), name of chemical to control stem borer (51.66 per cent), fertilizer requirement at different stage (50.83 per cent).

Less than half of maize farmers had

knowledge about name of chemical to control *Helicoverpa armigera* (49.16 per cent), name of chemical to control fall armyworm (47.50 per cent), herbicide (46.66 per cent), recommended dose of P_2O_5 in composite varieties (45.83 per cent), for hybrid varieties recommended dose of N_2 (45.00 per cent), name of chemical to control late wilt (44.16 per cent), name of chemical to control fall armyworm (42.50 per cent), recommended dose of P_2O_5 in hybrid varieties (41.67 per cent), knowledge of recommended dose of

chemical to control maize stem borer (40.83 per cent) and name of chemical to control aphid (37.50 per cent).

Slightly greater than one third of maize farmer had knowledge about recommended dose of chemical to control aphid (34.16 per cent), name of chemical to control maydis leaf blight (30.83 per cent), recommended dose of herbicide (29.16 per cent), recommended dose of chemical to control fall armyworm (28.33 per cent), recommended dose of chemical to control late wilt (26.67 per cent). Slightly less than one fourth recommended dose of chemical to control fall armyworm (23.33 per cent) and recommended dose of chemical to control maydis leaf blight (20.83 per cent).

In conclusion the vast majority of the maize farmers belonged to middle to young age group, more than half of maize farmers had secondary to higher secondary level of education, high level of extension contact, medium level of mass media exposure and small to medium size of land holding. Vast majority of the maize farmers had knowledge about manual weed management, majority of maize farmers had knowledge about fertilizer management in FYM, university

recommended improved varieties, seed rate and time of sowing, knowledge of occurrence of *Helicoverpa armigera* and hairy caterpillar, seed treatment as well as knowledge of occurrence of aphid and spacing in composite varieties.

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