

Adoption of improved weed management practices by vegetable growers of Jabalpur in Madhya Pradesh

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ABSTRACT

Adoption of improved practices by vegetable growers was studied in Jabalpur district of Madhya Pradesh during 2006-07. Forty nine per cent peripheral respondents were found to be having low level of adoption of improved weed management practices in vegetable cultivation, while 33% respondents belonged to medium adoption group. In the case of distant respondents, 60 per cent had low level of adoption, whereas 40% respondents belonged to the medium adoption group. There was no significant difference in adoption between both the categories of respondents regarding three improved practices i.e. weed management in nursery (traditional method), weed management in standing crops (hand weeding) and manure and fertilizers application.

Key words : Adoption of technology, Vegetable growers, Weed management

Vegetables occupy an important place in diversification of agriculture and have played pivotal role in food nutritional security of ever growing population of our country. India is the second largest producer of vegetables in the world and accounts for about 15% of the world's vegetable production (Alam 2001). The current production level is over 90 MT and the total area under vegetable cultivation is around 6.2 million hectares, which is about 3% of the total cultivated area in the country. Potato, tomato, onion, cabbage and cauliflower account for around 60% of the total vegetable production in the country (Verma *et al.* 2002).

Productivity of vegetable crops in Jabalpur is very low as compared to the national and world levels of productivity. Of the several factors responsible for the low productivity of vegetable, lower adoption of effective weed management technology is most important. Weeds compete with crop plants for light, moisture and nutrients and reduce the vegetable yields and quality. Many of the weeds provide shelters to insects and diseases. In vegetable farming, weeds quickly capture the space and suppress young seedlings of vegetables and also rob the soil nutrients and water efficiently. Proper weed management is the only way to get rid of these problems, especially when the crop is young. The present study was, therefore, planned to find out the farmers' knowledge and adoption of improved weed management practices in vegetable crops.

MATERIALS AND METHODS

The study was undertaken in Jabalpur of Madhya Pradesh during 2006-07. Five villages were selected based on maximum area under vegetables and nearness (15 km) from the headquarters. Similarly, another five villages with maximum area under vegetable were selected beyond the radius of 15 km from the headquarter. From each village a proportionate sample of vegetable growers was drawn randomly. Each category of villages consisted half of the sample size i.e. 75 respondents. Thus, the total sample size constituted of 150 respondents from whom the data were collected with the help of well-structured interview schedule. The farmers were interviewed at their farms or homes.

It was felt imperative to analyze the difference between peripheral and distant respondents with regard to their adoption level of weed management in vegetable cultivation. For this purpose, the mean score and standard deviation was computed for each practice in both the categories of respondents and 'Z' test was applied.

To compare the level of adoption of possible practices of vegetable growers of the two categories, 10 practices were taken into account.

RESULTS AND DISCUSSION

The distribution of the respondents according to their level of adoption of weed management practices has been presented in Table 1. To get an overview of the respondents with respect to level of adoption, the vegetable growers were grouped into three strata *viz.*, (i) low (ii) medium

Table 1. Level of adoption of improved weed management practices by vegetable growers

Level of adoption	Peripheral (N=75)		Distant (N=75)		Total (N=150)	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Low (<47)	37	49	45	60	82	54
Medium (47-70)	25	33	30	40	55	37
High (>70)	13	17	0	0	13	9

and (iii) high adoption group. This stratification was based on the calculated mean and standard deviation of the adoption scores obtained by the respondents.

Results revealed that 37 peripheral respondents (49%) were having low adoption level about improved weed management practices for vegetable cultivation. While 25 respondents (33%) belonged to medium adoption group and only 13 peripheral respondents (17%) were placed in the high adoption group. In case of distant respondents regarding their level of adoption, it was found that 45 respondents (60%) had low level of adoption, whereas 30 respondents (40%) belonged to the medium adoption group. It was remarkable that the high adoption group was absent in distant category of response.

In case of both categories of respondents, it was found that 82 respondents (54%) belonged to low level of adoption group, whereas 55 respondents (37%) were found to be under medium adoption group and only 13 respondents (17%) were placed in the high adoption group. Thus, it is evident that the majority of the respondents belonged to low adoption group in both the categories of respondents.

It is evident from Table 2 that there was no significant

difference in adoption between both the categories of respondents regarding three practices i.e. weed management in nursery (traditional method), weed management in crop (hand weeding) and manures and fertilizer application. However, in case of other weed management practices, i.e. weed management in nursery by improved method, chemical weed management in crop, mechanical weed control, time of weed management, seed rate and spacing, irrigation and plant protection management, there exists a significant difference between respondents of both categories (Table 2).

Peripheral respondents had slightly high adoption as compared to distant respondents regarding improved weed management practices in vegetable cultivation. This might be due to the fact that most of the peripheral farmers had more land and technical knowledge facilities under vegetable cultivation than distant farmers (Chadha and Ramphal 1993). Vegetable is a perishable commodity and hence requires easy access to the market and timely selling. Peripheral farmers can do this easily. On the other hand, distant farmers faced the lot of problems regarding technical know-how, timely availability of herbicides and other inputs and marketing. Thus, the peripheral respondents had more adoption about improved weed

Table 2. Comparison of level of adoption of weed management between peripheral and distant farmers

Practices	Maximum marks	Peripheral		Distant		Z value
		MS	SD	MS.	SD	
Weed management in nursery (traditional method)	5	3.96	0.662	3.84	0.731	1.090 ^{NS}
Weed management in nursery (improved method)	19	12.2	1.888	9.96	2.295	6.588 ^{**}
Weed management in crops (traditional method)	8	6.00	1.138	5.88	0.999	0.705 ^{NS}
Weed management in crops (chemical method)	14	8.60	1.335	6.68	1.296	8.936 ^{**}
Weed management in crops (mechanical method)	14	6.60	1.624	5.28	1.287	5.739 ^{**}
Weed management during critical period (time)	9	6.40	0.825	5.24	1.487	5.888 ^{**}
Seed rate and spacing	8	4.08	1.183	3.20	0.986	4.949 ^{**}
Irrigation	6	3.40	0.697	2.60	0.805	6.509 ^{**}
Manure and fertilizer application	8	6.00	1.138	5.88	0.999	0.705 ^{NS}
Plant protection	6	2.80	0.979	2.40	0.800	2.741 ^{**}

NS=Non-significant at 1% L.S. **= Significant at 1% L.S. : MS = Mean score, SD = Standard derivation.

management technology for vegetable cultivation as compared to distant respondents.

It is apparent that more emphasis should be given on training programmes on weed management aspects, which has direct impact on enhancement of productivity and quality of vegetables.

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