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FARMERS' AWARENESS AND ADOPTION OF RECOMMENDED AGRONOMIC PRACTICES REGARDING POTATO PRODUCTION

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This paper reports the situation regarding awareness and adoption of recommended potato production practices by the growers. Majority of the respondents had partially adopted the recommended tillage practices. Other agronomic practices such as plant to plant distance, sowing methods and fertilizer application were not adopted by majority of the respondents as per recommendations.

Keywords: agronomic practices, awareness and adoption, potato production

IN1RODUcnON

Potato is one of the most important food crops both in the developing and developed countries of the world. Thirty percent of world's potato production is from developing countries and it is expanding more rapidly than most of the other food crops. It is also becoming an important source of rural employment and income for growing population (Hort, 1987). It produces 74.5 and 58.0% more food energy and 54.0 and 77.6% more protein per unit area than wheat and rice respectively (Lisinska and Leszezynski, 1989). It contains high quality protein only second to egg and beef but better than thatin all cereals. It is a good source of water soluble vitamins, including some of the B group and vitamin C (Malik, 1995).

Potato is a leading vegetable of Pakistan with a total area of 104.7 thousand hectares, total production 142.5.5 thousand tonnes with an average yield of 13.6 tonnes per hectare (Anonymous, 1998). Average yield per hectare is about 42% lower than India and' 280,265 and 190% lower when compared with North American, Oceanic and European countries (FAO, 1994 as cited in Malik, 1995). Low yield of-potatoes could be due to several reasons. Lack of awareness about the production technologies on the part of growers and non-adoption by them seemed to be the most important reasons to be investigated. The present paper reports the situation with regard to awareness and adoption of improved potato growing practices by the farmers.

MATERIALS AND METHODS

The study was conducted in district Lahore since it is one of the most important potato producing areas of the Punjab (Pakistan). Of total 225 farmers who had grown autumn crop, 145 farmers with at least one acre of potato crop, were selected for the study. Of these, 10 were used for pretesting the interview schedule while the remaining 135 were taken as study respondents. The respondents were, personally interviewed by the second author for data collection.

RESULTS AND DISCUSSION

Tillage. Practices: The tillage operations facilitate conditions for plant growth, eradication of weeds, increasing aeration, water absorption, improved water holding capacity of soil and restoration of soil fertility. The information given in Table 1 revealed that all the respondents were aware of the recommended tillage practices. Only a fraction (2.96% and 7.4%) of the respondents had adopted the use of disc plough one time and rotavatorone time as recommended tillage practices, whereas an overwhelming majority of the respondents had partially adopted tillage practices. These findings are in line with those of Baig (1983), Recommended Seed Rate and Sowing Time: These are essential for obtaining the recommended plant population in the field and consequently higher crop yield. A majority (74% and 66.60%) of the respondents was aware of recommended seed rate and sowing time respectively. All the respondents who were aware of the recommended seed rate, had adopted it, whereas only 14% of the respondents had sown their crops according to the recommended sowing time.

Interculture and Earthing up: Interculture facilitates the aeration and weeds eradication from the crop, whereas earthing up provides a support to the plant, provides soil covering and nutrients to the developing tubers and facilitates their growth. An overwhelming majority (98.52% and 88.88%) of the respondents was aware of the recommended intercultural and earthing up practices. However, only 3~.33% and 25.92% of the respondents had applied these practices.

Sowing Method: Adoptionofrecommended sowing method is essential for getting proper germination of seed and required plant population which ultimately lead to higher crop yield. The data presented in Table 2 indicated that an overwhelming majority of the respondents was aware of most of the steps involved in potato sowing, except undershading of seed for sprouting and recommended plant to plant distance. All the respondents had prepared beds with marker and whole tubers were used as seed. Majority (74%) of the respondents had adopted recommended bed to bed distance and about 60% of the respondents planted seed manually with spade. Deep sowing

by hand with Jandra, ridger with tractor, sowing with automatic potato planter and plant to plant distance (18-20 cm) were the methods adopted by a meager percentage of the respondents.

Use of Fertilizers: An appropriate and balanced use of fertilizers is essential for getting higher crop yield. A great majority (96.20. 92.59 and 88.80%) of the respondents was aware of the recommendations regarding green manuring, farm yard manuring and dose of potash respectively. Majority (74.40%) of the respondents had applied farm yard manure according to the recommendations, whereas only 40.70% of the respondents had given recommended dose of potash. Green manuring was adopted only by 2.96% of the respondents. The recommendations regarding nitrogen and phosphorus were known to only 1L 11% and 7.40% of the respondents respectively. An overwhelming majority (91.22 and 97.04%) of the respondents had not adopted and used the recommended quantities of nitrogen and phosphorous.

Conclusions: An overwhelming majority (87.04%) of the respondents was aware of the recommended tillage practices, but only partially were these adopted. Seventy-four percent of the respondents were aware of the recommended seed rate and had adopted it. Only 14% of the respondents had sown their crop at proper time. An overwhelming majority of the respondents was aware of earthing up and intercultural practices but only one-third had adopted these operations. An evident awareness of important steps involved in potato sowing was found among the respondents. Bed to bed distance (75 cm) and sowing manually with spade were adopted by 74% and 59.25% respectively. The recommended doses of nitrogen and phosphorus were known to and adopted by only a small percentage of the respondents. Deep sowing by hand with Jandra, ridger with tractor, sowing with automatic potato planter, and plant to plant distance (18-20 cm) were the methods which were adopted by a meager percentage of the respondents.

Table 1. Farmers' awareness and adoption of different agronomic practices

Practice	Awareness		Adoption	
	(No)	(%)	(No)	(%)
Rotavator (one time)	135	100.00	10	7.40
Disc plough (one time)	135	100.00	4	2.96
Planking (5-6 times)	135	100.00	90	66.60
Cultivator/plough (10-12 times)	135	100.00	80	59.25
Recommended seed rate	100	74.00	100	74.00
Recommended sowing time	90	66.60	20	14.00
Interculture after 2nd and 3rd irrigations	120	88.88	35	25.92
Earthing up	133	98.52	45	33.33

Table 2. Farmers' awareness and adoption of recommended sowing methods

Method	Awareness		Adoption	
	(No.)	(%)	(No.)	(%)
Undershading for sprouting	40	29.60	35	24.92
Whole tuber used	135	100.00	135	100.00
Beds determined by marker	135	100.00	135	100.00
By hand with Jandra	135	100.00	15	11.11
By hand with spade	135	100.00	80	59.25
Ridger with tractor	135	100.00	4	2.96
Sowing with automatic potato planter	125	92.59	2	1.48
Bed to bed distance (75 cm)	100	74.00	100	74.00
Plant to plant distance (18-20 cm)	4	2.96	3	2.22

Table 3. Farmers' awareness and adoption of recommended doses of fertilizers

Fertilizer dose	Awareness		Adoption	
	(No.)	(%)	(No.)	(%)
Green manuring	130	96.20	4	2.%
FYM (30 tonnes/ha)	125	92.59	100	74.40
Nitrogen (25 kg/ha)	15	11.11	12	8.88
Phosphorus (100 kg/ha)	10	7.40	4	2.96
Potash (125 kg/ha)	120	88.80	55	40.70

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