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# Adoption of Recommended Practices of Soybean Cultivation by Farmers

MUHAMMAD TARIQ KHALID
*Department of Agriculture Education and Extension, University of Agriculture, Faisalabad–38040, Pakistan*

## ABSTRACT

This study was conducted in Tehsil Lodhran (Punjab, Pakistan) to assess the extent of awareness and adoption of the improved and advanced technology by farmers for the cultivation of soybean crop. The results showed that majority of the farmers (n=100) was aware of the recommended practices of land preparation, seed rates, method of sowing, dose of N and P, hoeing and chemical control measures. Regarding recommended irrigation practices, majority of farmers were unaware. Majority of farmers adopted the recommended practices of land preparation, variety of soybean, seed rate and method of sowing. Majority of farmers did not adopt recommended practices of inoculation, nitrogen and phosphorus doses and 1st and 2nd hoeings. It was observed that output of this oil seed crop in comparison with its cost of production is not satisfactory due to financial constraints.

**Key Words**: Soybean; Inoculation; Hoeing; Adoption

## INTRODUCTION

Soybean is considered miracle crop owing to its good quality vegetable protein and edible oil. Its seed contains about 40% digestible protein and 22% edible oil so it can play a significant role in making up protein deficiency in our diet. More than 400 different products such as ghee, biscuits, soap, paints, cheese, plastic etc. are prepared from soybean. Soybean being a leguminous crop, replenishes nitrogen in the soil. It has been estimated that soybean seed yield is 1.30 tonnes/hectare in Pakistan (Hussain, 1986). Developed countries are getting 4-6 times higher average yield as compared to Pakistan (FAO, 1987). In order to overcome the problem of low yield, application of modern technology in soybean cultivation can paly a pivotal role. The present study was, therefore, conducted to explore the extent of adoption of the recommended soybean growing practices and to identify the problems faced in its production.

## MATERIALS AND METHODS

The study was conducted in Tehsil Lodhran, District Multan with an objective to evaluate the behaviour of the farmers regarding the adoption of recommended practices of soybean cultivation. There were only 100 farmers who were growing soybean crop. Thus the study sample consisted of 100 respondents belonging to different age groups i.e. 30= < 25 years; 55= 25–50 years; 15= > 50 years, and educational levels i.e. 21= illiterate, 29= up to middle, 30= up to matric, 20= above matric. The respondents were interviewed with the help of an interview schedule. The data collected were tabulated and percentages were worked out for interpretation and discussion of the results, drawing of conclusions and making pertinent recommendations to make the soybean cultivation more remunerative.

## RESULTS AND DISCUSSION

The analysis of the data (Table I) regarding awareness and adoption of recommended practices of land preparation revealed that 60, 100 and 100% of the respondents were aware (i.e. ploughing, cultivation and planking). About the reason for non-adoption by the aware respondents, it was explored by the aware non-adopters that they could not prepare soil for soybean sowing according to the recommendations because less time was left with them due to picking of cotton crop.

**Table I. Awareness and adoption of the recommended operations of soybean cultivation by the respondents**

| Recommendation | AW No.(%) | AD No.(%) | NA No.(%) |
|---|---|---|---|
| One ploughing with chisel plough | 60(60) | 22(37) | 78(63) |
| 4-5 ploughing with cultivator | 100(100) | 90(90) | 10(10) |
| Plankings (2 ploughings) | 100(100) | 100(100) | – |

AW= Awareness; AD= Adoption; NA= Non-adoption

Sowing of the recommended soybean varieties i.e. William, William 82 and Imp. Palican by the farmers is an important and basic factor for high production. It is evident from the data (Table II) that 100 and 100% of the respondents had the knowledge

about William and William 82 variety of soybean, respectively. However, out of them 35% had adopted William and 65% adopted William 82. Third variety named Imp. Palican was not imported during the season. Sowing time of any crop is a key factor in realizing the maximum potential. Results revealed that the aware non-adopters of both recommended sowing time could not act upon the recommendations because of non-availability of proper moisture and late provision of seed from the A.D.B.P. (Table II). These findings are in consonance with those of Beg (1986).

**Table II. Awareness and adoption of the respondents regarding different parameters of soybean crop (n=100)**

| Parameters | AW (%) | AD (%) | NA (%) |
|---|---|---|---|
| **Varieties of soybean** | | | |
| William | 100 | 35 | – |
| William 82 | 100 | 65 | – |
| Imp. Palican | 100 | – | – |
| Total | – | 100 | – |
| **Time of sowing** | | | |
| Spring crop | 100 | 87 | 13 |
| Autumn crop | 30 | 5 | 95 |
| Seed rates | | | |
| Spring crop | 100 | 85 | 15 |
| Autumn crop | 28 | 6 | 94 |
| **Methods of sowing** | | | |
| Single row cotton drill (30 cm apart rows) | 100 | 12 | 88 |
| Drilling (30 cm apart rows) | 100 | 88 | 12 |
| Recommended doses of fertilizers | | | |
| Nitrogen | 85 | 75 | 25 |
| Phosphorus | 85 | 75 | 25 |
| **Intercultural operations (Hoeings)** | | | |
| Before Ist irrigation | 100 | 24 | 76 |
| After Ist irrigation | 100 | 19 | 81 |

AW= Awareness; AD= Adoption; NA= Non-adoption

The use of adequate seed rate is a pre-requisite for raising optimum number of plants and also for getting maximum yield. The results (Table II) indicate that all the respondents were aware of the recommended seed rate of spring crop but out of them 85% had used the recommended seed rate. Studies regarding seed treatment showed that 20% respondents were aware of it but none of them had adopted the recommended practices like inoculation mainly due to lack of knowledge and interest. All the respondents were aware of single row cotton drill and rabi drill (Table II), however, 80% adopted the rabi drill method and only 12% used the single row cotton drill. Fertility of the soil is one of the controllable factors affecting the plant growth and soil quality. Results (Table II) revealed that 85% of the respondents were aware of the recommended doses of nitrogen and phosphorus. However, 75% of them had adopted the recommended doses. The major reason for non-adoption of the recommended fertilizer was high cost and their non-availability at proper time (Table III). These results are in line with those of Khan (1987). It was found that 100% respondents were aware of hoeing recommended but only 24 and 19% adopted it (Table II).

**Table III. Reasons for non-adoption of the recommended doses of fertilizers for soybean crop by the aware respondents (n=25)**

| Reasons for non-adoption | Nitrogen No.(%) | Phosphorus No.(%) |
|---|---|---|
| High Cost | 13(52) | 13(52) |
| Non-availability at required time | 12(48) | 12(48) |

## REFERENCES

Beg, A., 1986. General status of Groundnut in Pakistan. *Proc. National Groundnut Workshop,* NARC, Islamabad, Pakistan. pp. 15–9.

F.A.O., 1986. *Production Year Book,* 40: 111–2.

Hussain, S.A., 1986. *Progressive Farming,* 4: 3, Published by Pakistan Agriculture Research Council, Islamabad.

Khan, A.M., 1987. A study into the adoption of improved farming practices with special reference to gram cultivation in Mianwali District. *M.Sc. (Hons.). Thesis*, Univ. Agric., Faisalabad.

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