

**RESEARCH ARTICLE :**

Extent of adoption of recommended soybean cultivation practices by the farmers

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ARTICLE CHRONICLE :

Received :
22.01.2018;
Revised :
17.03.2018;
Accepted :
03.04.2018

SUMMARY : The present investigation was conducted in Kota region of Rajasthan purposively because this region stands first in area 822329 hectare and production 1197758 tonnes of soybean cultivation among all ten agriculture regions of Rajasthan. Kota region comprises four districts viz., Kota, Baran, Bundi and Jhalawar. Out of these two districts viz., Kota and Jhalawar were selected purposively for this study because of highest area and production. Kota and Jhalawar districts comprise five and seven tehsils, respectively. Out of which two tehsil from Kota (Degod and Ramganj Mandi) and two tehsil from Jhalawar (Khanpur and Manohar Thana) (as per the data of 2014-15) district were selected randomly. Out of these 6 villages were selected from each selected tehsil on the basis of random sampling method. Thus, the total 24 villages, were selected. List of all the soybean cultivators was prepared from each of the selected village, with the help of Patwari and agriculture supervisor, eight to twelve farmers were selected by using proportionate random sampling technique as per availability so as to make the sample size 220. More than half of the respondents were medium adopters of recommended soybean cultivation practices. The good adoption was about recommended soybean cultivation practices like “Soil and field preparation” “High yielding varieties (HYVs)” and “Seed rate, spacing and depth of sowing” . While minimum adoption about “Plant protection measures” and “Seed treatment”.

KEY WORDS :

Extent of adoption,
Mean per cent score,
Recommended
soybean cultivation
practices

How to cite this article : Kumar, Surendra, Sharma, N.K., Khan, I.M. and Yadav, J.P. (2018). Extent of adoption of recommended soybean cultivation practices by the farmers. *Agric. Update*, 13(2): 139-142; DOI : 10.15740/HAS/AU/13.2/139-142. Copyright@2018: Hind Agri-Horticultural Society.

BACKGROUND AND OBJECTIVES

Soybean [*Glycine max* (L.) Merril] belongs to family Leguminoceae, sub family Papilionaceae and genus *Glycine*. It is mainly grown in *Kharif* season. Soybean is reported to have originated in eastern Asia or China and has been to man over 5000 years. It was introduced in USA in the year 1804 and has since revolutionized the agriculture of that

country. In India efforts have been made since 1969 to popularize its cultivation and consumption. Soybean has been known by various names in India such as Bhat, Bhatman, Ramkuithi etc. It is called the miracle crop of the twentieth century and is popularly known as “queen of pulses,” wonder crop, farmers friend and agriculture’s Cinderella. It is the cheapest source of high quality protein. It contains 20 per cent oil and 40 per cent

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high quality protein. Its oil is used for manufacturing vanaspati ghee and several other industrial products. The present study was carried out with specific objective, to assess the extent of adoption of recommended Soybean cultivation practices by the farmers.

RESOURCES AND METHODS

Measurement of extent of adoption of recommended soybean cultivation practices :

The extent of adoption of recommended soybean cultivation practices by the farmers was worked out by means of adoption index developed by Chaturvedi (2000). Ten package of practices of recommended soybean cultivation practices were included in the schedule as suggested by the experts of Department of Extension Education, some of the practices were further divided into sub practices. In the adoption test 46 questions were included in the schedule for measuring the adoption level of farmers about recommended soybean cultivation practices. One score was given to every correct answer and zero for wrong answer. The possible maximum score one could obtain was 102. Finally the adoption index was calculated by the following formula:

$$\text{Adoption index} = \frac{\text{Total adoption score obtained by respondents}}{\text{Maximum attainable score}} \times 100$$

The formula was applied for all practices which helped in calculating adoption index.

The mean and standard deviation of all the respondents' adoption scores were computed for classifying the adoption in different category, based on the mean adoption score and standard deviation. The farmers were categorized under three adoption level categories, namely low, medium and high adoption level as follows:

Low adoption level = Score upto (mean adoption - SD)

Medium adoption level = Score from (mean adoption - SD) to (Mean + SD)

High adoption level = Score above (mean adoption + SD)

OBSERVATIONS AND ANALYSIS

The results obtained from the present study as well as discussions have been summarized under following heads:

Extent of adoption of recommended soybean cultivation practices by the farmers :

To measure the extent of adoption a three point continuum scale developed by Chaturvedi (2000) was adopted based on adoption scores obtained by the farmers, the mean (54.18) and standard deviation (4.32) were computed for the purpose of classifying the extent of adoption level into three categories namely low level, medium level and high level of extent of adoption, in this way the groups as follows:

- Farmers who obtained adoption score below 49.86 were categorized as low adopters.
- Farmers who obtained adoption score from 49.87 to 58.50 were categorized as medium adopters.
- Farmers who obtained adoption score above 58.50 were categorized as high adopters.

The statistical data regarding the extent of adoption towards recommended soybean cultivation practices by the farmers have been presented in Table 1.

As it is apparent from the data in Table 1 that the soybean growers of about 66.66 per cent were found to be in medium adoption, while 22.25 per cent farmers were in low adoption and only 11.09 per cent of farmers were high in adoption level.

These findings confirm the findings of Chouhan (2010), who revealed that soybean growers had medium adoption level followed by high and low adoption level about improved cultivation practices of soybean.

Further more, the extent of adoption of recommended soybean cultivation practices was also analyzed separately. The relative adoption of all the ten practices of recommended soybean cultivation was highlighted by ranking their extent of adoption on the basis of mean per cent scores. The mean per cent scores (MPS) were obtained by multiplying total obtained scores of the respondents by hundred and divided by the maximum obtainable score under each practice.

The data presented in Table 2 indicate that farmers had highest (80.98 MPS) adoption about "Soil and field preparation" and hence this practice was ranked first. The second highest percentage of farmers had adoption level of (79.77 MPS)" about "High yielding varieties (HYVs)" followed by "Seed rate, spacing and depth of sowing (76.11 MPS) " and "Time of sowing (75.64 MPS)", which were ranked third and fourth, respectively.

The extent of adoption of the recommended soybean cultivation practices like "Irrigation management", "Weed

management”, “Manure and fertilizer application” “Harvesting, threshing and storage”, were moderately known by the farmers as they were having 73.18, 70.83, 70.30, 68.85 MPS which were ranked fifth, sixth, seventh and eighth, respectively.

Lowest adoption was found in “plant protection measures (69.09 MPS)”, and “seed treatment (66.51 MPS)” hence last ninth and tenth ranks were assigned to them, respectively.

It was found that majority of the respondents (66.66 %) were in medium adoption, 22.25 per cent respondents in low adoption and only 11.09 per cent of the respondents were in high adoption category of recommended soybean cultivation practices. It might be due to the fact that various extension activities like demonstration, training etc. are frequently organized by the extension field functionaries in the villages, which may have helped in convincing the farmers about recommended soybean cultivation practices, which have resulted in increasing the adoption of recommended soybean cultivation practices. But still there is an increasing recognition of the need to convert their medium adopters into high adopters and low adopters into medium adopters. Therefore, all the essential supplies and services for transfer of technology through extension activities may be made available to the farmers and intensive efforts by all concerned to convince the farmers about

recommended soybean cultivation practices are needed.

In case of high extent of adoption of recommended soybean cultivation practices the farmers had highly adopted the recommended practices like”, “Soil and field preparation”, “High yielding varieties”, “Seed rate, spacing and depth of sowing”, “Time of sowing”, such practices were highly adopted by farmers as they had good return due to adoption of these practices. Also these practices neither require any extra investment, nor complicated in using.

The probable reason for medium adoption of “Irrigation management”, “Weed management”, “Manure and fertilizer application”, and “Harvesting, threshing and storage”, may be lack of proper technical guidance provided to them by the State Department of Agriculture.

The reason for low adoption of “Plant protection measures”, “and “Seed treatment” may be lack of knowledge about these practices.

The findings of the study are in conformity with the findings of Nagar (2006); Meena (2010); Chouhan (2010) and Jat (2011).

Conclusion:

It was found that the majority of the farmers (106) about 66.66 per cent of farmers were found to have medium adoption, while 22.25 per cent farmers had low adoption and only 11.09 per cent of farmers were having

Table 1 : Distribution of farmers under different adoption levels of recommended soybean cultivation practices (n=220)

Sr. No.	Adoption level	Frequency	Percentage
1.	Low (score below 49.86)	67	22.25
2.	Medium (score from 49.87 to 58.50)	106	66.66
3.	High (score above 58.50)	47	11.09
	Total	220	100.00

$\bar{X} = 54.18$ $\sigma = 4.32$

Table 2 : Practice wise adoption level of farmers about recommended soybean cultivation practices (n = 220)

Sr. No.	Package of practices	Mean per cent score (M PS)	Rank
1.	Soil and field preparation	80.98	I
2.	High yielding varieties (HYVs)	79.77	II
3.	Time of sowing	75.64	IV
4.	Seed treatment	66.51	X
5.	Seed rate, spacing and depth of sowing	76.11	III
6.	Manure and fertilizer application	70.30	VII
7.	Weed management	70.83	VI
8.	Irrigation management	73.18	V
9.	Plant protection measures	69.09	IX
10.	Harvesting, threshing and storage	68.85	VIII

high adoption level, respectively. It was also found that the respondents possessed maximum extent of adoption of “Soil and field preparation”, (80.98 MPS) and was higher than the other adopted practices of soybean and it was ranked first. The second highest percentage of farmers (79.77MPS) was having adoption about “high yielding varieties”, which was ranked second. Similarly, they possessed lowest adoption about “Plant protection measures”, and “Seed treatment”, (69.09 MPS) (66.51 MPS) were ranked ninth and tenth, respectively

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