

## Extent of Adoption of Recommended Cultivation Practices of Mungbean in Nagaur District of Rajasthan

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### ABSTRACT

*Mungbean is native of India and central Asia. It is grown in these areas since pre historic period. Mungbean is widely cultivated throughout southern Asia including India, Pakistan, Bangladesh, Shri Lanka, Indonesia, Malasia, south china and Taiwan. In India mungbean is cultivated in all three seasons i.e. kharif, rabi and zaid. The major mungbean growing states are Orrisa, Maharashtra, Andhra Pradesh, Rajasthan, Madhya Pradesh, Bihar, Uttar Pradesh and Karnataka. Among the various legume crops grown in India mungbean occupies an important place because of its excellent protein quality and high digestibility due to low flatulence. Mungbean is the main source of quality protein and amino acids for predominately vegetarian population of India next to calorie deficiency. The present study was carried out in Nagaur district of Rajasthan. The Nagaur district consists of 10 tehsils. Out of which two tehsils namely Degana and Makrana were selected by randomly. Among these, 3-villages from Degana tehsil and 2-villages from Makrana tehsil were selected by simple random sampling technique and a sample of 120 respondents was selected from these villages by using simple random sampling with proportion by SRS to the size of sample in the selected villages. The study indicated that in case of marginal respondents education, social participation, irrigation potentiality and source of information utilized were positively and significantly associated with their extent of adoption of recommended cultivation practices of mungbean, while in case of small respondents education, social participation, irrigation potentiality and sources of information utilized were positively and significantly associated with their extent of adoption of recommended cultivation practices of mungbean.*

**Key words:** Mungbean; Quality protein; Irrigation potentiality; Source of information;

**M**ungbean is native of India and central Asia. It is grown in these areas since pre historic period. Mungbean is widely cultivated throughout southern Asia including India, Pakistan, Bangladesh, Shri Lanka, Indonesia, Malasia, south china and Taiwan. In India mungbean is cultivated in all three seasons i.e. *kharif*, *rabi* and *zaid*. The major mungbean growing states are Orrisa, Maharashtra, Andhra Pradesh, Rajasthan, Madhya Pradesh, Bihar, Uttar Pradesh and Karnataka. Among the various legume crops grown in India mungbean occupies an important place because of its excellent protein quality and high digestibility due to low flatulence. Mungbean is the main source of quality protein and amino acids for predominately vegetarian population of India next to calorie deficiency. Mungbean is used to prepare food products at both the industrial and household levels and supplement the nutritional

deficiency to a considerable extent. The grains (whole or split) are used as dal or to make flour. The straw and husk are used as fodder for cattle. The germinated grains are also used as sprouts. Unlike other pulses, it does not produce heaviness or flatulence. The present study was carried out with specific objective “*To find out the association of selected independent variables with extent of adoption of recommended cultivation practices of mungbean by farmers*”.

### METHODOLOGY

The present study was carried out in Nagaur district of Rajasthan. The Nagaur district consists of 10 tehsils. Out of which two tehsils namely Degana and Makrana were selected by Simple Random Sampling (SRS) technique. Among these, 3 villages from Degana tehsil and 2 villages from Makrana tehsil were selected by

simple random sampling technique. Thus, total five villages viz., Gusali, Chui, Rawant Jaswantpura and Asarwa were selected for the present investigation. List of the mungbean growers, having mungbean in at least one beegha, of all the five selected villages were prepared with the help of patwaries of concerned villages. Listed respondent were categorised as the marginal farmers (a farmer with less than 1 ha of land holding) and small farmers (a farmer with 1 to 2 ha of land holding). Finally 10-15% respondents of each category from each selected village were selected in proportion by SRS such that the sample size is least 120. To measure the association of selected independent variables with extent of adoption of recommended cultivation practices an interview schedule was prepared by the investigator. This test was applied to determine the relationship between the ranks assigned by the two categories of respondents:

$$r_s = 1 - \frac{6 \sum d_i^2}{n(n^2 - 1)}$$

Where,

$r_s$  = Relationship between the ranks

$d_i$  = Difference of rank small and marginal farmer of mungbean growers

$N$  = Number of items / observation

For repeated values of an item the formula of  $r_s$  was used as given under :

$$r_s = 1 - \frac{[6 \sum d_i^2 + \frac{1}{12} (t^3 - t) + \frac{1}{12} (t^3 - t) + \dots]}{n(n^2 - 1)}$$

Where

$t$  = Number of items, an items values was repeated, thus if measurement 'x' is repeated two items then the value of 't' will be 2, if repeated three items then the value of 't' will be 3.

The significance of Spearman's rank correlation coefficient was tested by calculating the t-test as follows by using formula :

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

The value of 'r' always lies between - 1 to + 1. The positive value of 'r' indicate a tendency of 'x' and 'y' to increase together. Where 'r' is negative, large value of 'x' are associated with small value of 'y'. For test of significance 'r' tabulated is located (n-2) degree of freedom.

## RESULTS AND DISCUSSION

The extent of association between adoption of revealed production technology of mungbean with selected independent variables. For this purpose Spearman's rank correlation coefficient was calculated. The results have been presented in Table 1.

*Association between selected independent variables with adoption level of marginal farmers about various cultivation practices of mungbean:* The data in Table 1 reveal that education was associated significantly with the adoption of marginal farmers about various cultivation practices of mungbean at 1 per cent level of significance.

**Table 1. Association between selected independent variables with adoption level of marginal farmers about various cultivation practices of mungbean**

Independent variable	Correlation coefficient (rs)
Education	0.430**
Social participation	0.391**
Size of family	0.226
Market distance	0.253
Irrigation potentiality	0.306*
Source of information utilized	0.507**

\* Significant at 0.05 level of probability

\*\* Significant at 0.01 level of probability

These findings are in accordance with the findings of Naruka (2000) and Khan and Chouhan (2005) they highlighted that education was associated significantly with adoption level of farmers about various cultivation practices of mungbean.

*Social participation and adoption :* The data in Table 1 depict that there was a significant association between social participation and the adoption of marginal farmers about various cultivation practices of mungbean at 1 per cent level of significance.

It could be inferred that adoption was associated significantly with the social participation of marginal and small farmers. This might be due to the fact that the marginal farmers had more exposure by virtue of being member in different rural institution like gram panchayat, block panchayat, village cooperative society, kisan mandal etc. leading to their active participation in social activities.

These findings are in accordance with the findings of Naruka (2000) and Khan and Chouhan (2005), they reported that social participation was associated

significantly with adoption level of farmers about various cultivation practices of mungbean.

*Size of family and adoption* : The data in Table 1 reveal that size of family was having non-significant association with the adoption of marginal farmers about various cultivation practices of mungbean at 1 per cent level of significance.

It means that the size of family had not exerted its influence on the adoption level of marginal farmers about various cultivation practices of mungbean. This might be due to the fact that although farming was such a business in which all the family members contributed equally but the decision power was vested with the head of family. These findings are supported by *Naruka (2000)*.

*Market distance and adoption* : As the data shows in Table 1 indicated that market distance was associated non-significantly with the adoption of marginal farmers about various cultivation practices of mungbean at 1 per cent level of significance. This might be due to the fact that the markets are far away from the production area and higher transportation cost and quality of the produce. These results are in accordance with findings of *Jangid (2001)*.

*Irrigation potentiality and adoption* : The data in Table 1 reveals that irrigation potentiality was associated significantly with the adoption of marginal farmers about various cultivation practices of mungbean at 5 per cent level of significance. It could be inferred that adoption found significant association with their irrigation potentiality. This might be contributed due to the fact that the mungbean crop was not profitable at high irrigation facility and resulting in to economic losses.

Therefore, the farmers having high irrigation potentiality shift to the cultivation of other crops like tomato, brinjal, cauliflower, cabbage etc. to maximize the profit and resulting farmer's adoption of improved cultivation practices of mungbean decreases as the irrigation potentiality increases. These findings are in accordance with finding of *Naruka (2000)* and *Singh (2001)*.

*Source of information utilized and adoption* : The data in Table 1 reveal that source of information utilized was associated significant with the adoption of marginal farmers about various cultivation practices of mungbean at 1 per cent level of significance.

This might be due to the fact that VLWs, AAOs, relatives, farm literatures, friends, newspapers, radio and

televisions were usually used by most of the farmers as their source of farmers might have convinced about the improved cultivation practices of mungbean which will lead to the adoption of these practices. It also helped in farming the positive attitude of farmers towards the mungbean cultivation practices.

It might also be due to the fact that the farmers having more contact with information sources can better manage the problems and hence can get more profit resulting in higher adoption of improved production technology of mungbean cultivation. These findings are in conformity with the findings of *Naruka (2000)* and *Meena (2002)*.

*Association between selected independent variables with adoption level of small farmers about various cultivation practices of mungbean:*

*Education and adoption* : The data in Table 2 reveal that education was associated significantly with the adoption of small farmers about various cultivation practices of mungbean at 1 per cent level of significance.

**Table 2. Association between selected independent variables with adoption level of small farmers about various cultivation practices of mungbean**

Independent variable	Correlation coefficient (rs)
Education	0.535**
Social participation	0.455**
Size of family	0.244
Market distance	0.241
Irrigation potentiality	0.419**
Source of information utilized	0.729**

\* Significant at 0.01 level of probability

\*\* Significant at 0.05 level of probability

These finding are in accordance with the findings of *Naruka (2000)* and *Khan and Chouhan (2005)* they highlighted that education was associated significantly with adoption level of farmers about various cultivation practices of mungbean.

*Social participation and adoption:* The data in Table 2 depict that there was a significant association between social participation and the adoption of small farmers about various cultivation practices of mungbean at 1 per cent level of significance.

It could be inferred that adoption was associated significantly with the social participation of marginal and small farmers. This might be due to the fact that the marginal farmers had more exposure by virtue of being member in different rural institutions like gram pranchyat,

block panchayat, village cooperative society, kishan mandal etc. leading to their active participation in social activities. These findings are in accordance with the findings of *Naruka (2000)* and *Khan and Chouhan (2005)*, they reported that social participation was associated significantly with adoption level of farmers about various cultivation practices of mungbean.

*Size of family and adoption* : The data in Table 2 reveal that size of family was having non-significant association between with the adoption of small farmers about various cultivation practices of mungbean at 1 per cent level of significance.

It mean that the size of family had not exerted its influence on the adoption level of marginal farmers about various cultivation practices of mungbean. This might be due to the fact that although farming was such a business in which all the family members contributed equally but the decision power was vested with the head of family. These findings are supported by *Naruka (2000)*.

*Market distance and adoption* : As the data shows in Table 2 indicated that market distance was associated non-significantly with the adoption of small farmers about various cultivation practices of mungbean at 1 per cent level of significance. This might be due to the fact that the markets are far from the production area and higher transportation cost and quality of the produce. These results are in accordance with findings of *Jangid (2001)*.

*Irrigation potentiality and adoption* : The data in Table 2 reveals that irrigation potentiality was associated significantly with the adoption of small farmers about various cultivation practices of mungbean at 1 per cent level of significance. Therefore, the farmers having high irrigation potentiality shift to the cultivation of other crops like tomato, brinjal, cauliflower, cabbage etc. to maximize the profit and resulting farmers adoption of improved

cultivation practices of mungbean decreases as the irrigation potentiality increases. These findings are in accordance with finding of *Naruka (2000)* and *Singh (2001)*.

*Source of information utilized and adoption*: The data in Table 2 reveal that source of information utilized was associated significant with the adoption of small farmers about various cultivation practices of mungbean at 1 per cent level of significance. This might be due to the fact that VLWs, AAOs, relatives, farm literature, friends, newspapers, radio and televisions were usually used by most of the farmers as their source of farmers might have convinced about the improved cultivation practices of mungbean which will lead to the adoption of these practices. It also helped in farming the positive attitude of farmers towards the mungbean cultivation practices. It might also be due to the fact that the farmers having more contact with information sources can better manage the problems and hence can get more profit resulting in higher adoption of improved production technology of mungbean cultivation. These findings are in conformity with the findings of *Naruka (2000)* and *Meena (2002)*.

## CONCLUSION

The findings of marginal respondents' education, social participation, irrigation potentiality and source of information utilized were positively and significantly associated with their extent of adoption of recommended cultivation practices of mungbean, while in case of small respondents education, social participation, irrigation potentiality and sources of information utilized were positively and significantly associated with their extent of adoption of recommended cultivation practices of mungbean.

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## REFERENCES

- Jangid, N.L. (2001). Analysis of constraints in the adoption of recommended cultivation practices of Chilli by the farmers of panchayat samiti Sambhar lake of Jaipur district. M.Sc. Ag. Thesis (Unpub.), S.K.N. College of Agriculture, Jobner.
- Khan, P.M. and Chauhan, J. (2005). Adoption pattern of farmers towards new farm technology. *Indian Res. J. of Ext. Edu.*, **5**(1): 1-3.
- Meena, R.K. (2002). Adoption of improved cultivation practices of tomato by the farmers of Bassi panchayat samiti of Jaipur district, (Rajasthan). M.Sc. (Ag.) Thesis, Rajasthan Agricultural University, Bikaner, Campus : Jobner.
- Naruka, P.S. (2000). A study on adoption of biofertilizers in Jaipur district of Rajasthan. M.Sc. Ag. Thesis (Unpub.), S.K.N. College of Agriculture, Jobner, Jaipur (Rajasthan)
- Singh, G. (2001). Impact of farm mechanization on agricultural development. Ph.D. Thesis, Bikaner, Campus-Jobner.

