

## **EXTENT OF ADAPTABILITY OF MODERN AGRICULTURAL TECHNOLOGIES BY RURAL FARM WOMEN**

**Kumari Pooja and Kumari Arunima**

Department of Home Science Extension and Communication Management,  
College of Home Science, Dr. RPCAU, Pusa, Samastipur (BIHAR)-848125  
E-mail: [pspoojasingh32@gmail.com](mailto:pspoojasingh32@gmail.com) (\*Corresponding Author)

**Abstract:** The prosperity and growth of a nation depends on the position and development of its females, as they not only constitute nearly half of its population but also positively influence the growth of remaining half of population. Over the years there is a gradual realization of the key role of women farmer in agricultural development and their vital contribution in the field of agriculture and allied activities. This study aims to find out the adoption of modern technology in agriculture by women farmers and the factors influencing the adoption of technology. The present study was conducted in Samastipur district of Bihar with 100 respondents. The study revealed that rural women were adopting post-harvest technologies more than the pre-harvest technologies and their adoption was affected by their knowledge level, caste, education, size of land holding and family income.

**Keywords:** Adaptability, technology, women farmer, agriculture, constraints.

### **Introduction**

Agriculture is one of the largest enterprises of India which plays an important role in the country by contributing about one fifth of the national income, providing large employment opportunities, supplying adequate food grains to the growing population and giving a scope for earning foreign exchange through export, providing a base for industrial development. According to the 2011 census, 56.7 percent of the main workers labour force was employed in the agriculture and allied activities which reflect the predominance of agriculture in the matter of employment opportunity. The importance of technology in agricultural development is widely accepted. Agricultural technology can provide a potential means of increasing production and subsequently raising incomes of farmers as well as their standard of living.

Indian women are the backbone of farming community. Women in agriculture are often physically visible but conceptually are invisible and remain marginalised. Rural women, besides their normal household responsibilities play a very significant role in agriculture and allied activities. Female as agricultural cultivators and labourers constitutes 24.92 and 18.56

percent. Women are involved in pre-sowing, post-sowing, harvesting and post-harvesting operations as well as allied activities through physical participation and supervision.

Despite their important role, women farmers face several disparities in different areas of agriculture. Despite the important role played by women in agricultural production, their contribution is often termed as 'supplementary' in the society. Woman as farmers face constraints such as lack of accessibility to skills, trainings, information, technology, access to inputs, credits, financial incentives, market and control over farm income. Woman farmers are less likely than men to use modern inputs such as improved seeds, fertilizers, mechanical tools etc., They use conventional tools with little efficiency and face drudgery while working in the field and home. There is lack of knowledge and skill in rural women. The adoption of the improved technology by woman farmers is believed to be affected directly or indirectly by different socio-economic factors. Women can be more successful and effectively adopt and use the technology than their male counterparts if they are provided with the opportunities and resources. Keeping these views in mind, present has been taken up with the following specific objectives:

To ascertain the rate of adaptability of modern agricultural technologies by rural farm women in agriculture.

### **Research Methodology**

The study was undertaken in Samastipur district of Bihar. The selection of this area was based on the assumption that these were having maximum number of farm women involved in agricultural activities. A total of 100 respondents were taken for the present study. Keeping in view the objective of the study, well structured interview schedule was developed. The data was collected by personally interviewing the respondent in an informal atmosphere either at home or at farm.

### **Result and Discussion**

Adoption of improved technologies is pre-requisite for bringing change into the family and is indicator of change in any society. An attempt has been made in this section to analyse the adoption of selected improved agricultural technology by the respondents. The percentage distribution of women by adoption of improved technologies in the given areas has been presented in Table 1. Table1 revealed that substantial percentage of respondents were adopting the agricultural technologies in the area of study. The respondents adopting various technologies were, land preparation (30%) ,Variety of seed used (47%), Line sowing (35%), Seed rate (41%), Seed treatment (24%), Irrigation management (54%), Time period of

irrigation (51%), Chemical fertilizers (47%), Plant protection measures (46%), Harvesting of crops (63%), and storage management (56%). Adoption of agricultural technologies followed an increasing trend with increase in land holding status of the respondents. Hence, it can be concluded that land holding status of the respondents has direct bearing on the adoption of improved practices. Rate of adoption of improved technologies may be attributed as the extent of adoption presented in percentage of adoption of technologies. Adoption of various improved technology of HYV wheat were affected by the respondents knowledge level, land holding size, education and social participation. Also, the adoptions of various technologies were different in terms of percentage adoption. Post-harvest technologies were adopted by more number of respondents than the pre-harvest technologies. The findings were supported by Krishnamurthy et al. (1998), Kumbhare and Singh (2011).

**Table 1: Extent of adoption of improved technologies by rural farm women**

| SI. No | Technology                | Landless (N=33) |      | Marginal (N=45) |       | Small (N=11) |       | Medium (N=11) |       | Pooled (N=100) |       |
|--------|---------------------------|-----------------|------|-----------------|-------|--------------|-------|---------------|-------|----------------|-------|
|        |                           | f               | P    | f               | P     | f            | P     | f             | P     | f              | P     |
| 1.     | Land preparation          | 0               | 0.00 | 19              | 42.22 | 5            | 45.46 | 6             | 54.55 | 30             | 30.00 |
| 2.     | Variety of seeds used     | 0               | 0.00 | 28              | 62.22 | 9            | 81.82 | 10            | 90.91 | 47             | 47.00 |
| 3.     | Line sowing               | 0               | 0.00 | 18              | 40.00 | 6            | 85.71 | 11            | 100   | 35             | 35.00 |
| 4.     | Seed rate                 | 0               | 0.00 | 20              | 44.45 | 10           | 90.91 | 11            | 100   | 41             | 41.00 |
| 5.     | Seed treatment            | 0               | 0.00 | 11              | 24.45 | 4            | 36.36 | 9             | 81.82 | 24             | 24.00 |
| 6.     | Irrigation mgt.           | 0               | 0.00 | 33              | 73.33 | 10           | 90.90 | 11            | 100   | 54             | 54.00 |
| 7.     | Time period of irrigation | 0               | 0.00 | 31              | 68.88 | 9            | 81.81 | 11            | 100   | 51             | 51.00 |
| 8.     | Chemical fertilizers      | 0               | 0.00 | 27              | 60.00 | 9            | 81.81 | 11            | 100   | 47             | 47.00 |
| 9.     | Plant protection measures | 0               | 0.00 | 28              | 62.22 | 8            | 72.75 | 10            | 90.91 | 46             | 46.00 |
| 10.    | Harvesting of crops       | 0               | 0.00 | 42              | 93.33 | 10           | 90.91 | 11            | 100   | 63             | 63.00 |
| 11.    | Storage mgt.              | 0               | 0.00 | 35              | 77.78 | 10           | 90.91 | 11            | 100   | 56             | 56.00 |

Table 2 revealed that the extent of adoption of improved technology was correlated with the socio-economic characteristics. The independent variables caste ( $r = 0.677$ ), education (self) ( $r = 0.738$ ), education (male-head) ( $r = 0.614$ ), occupation (self) ( $r = 0.727$ ), occupation (male-head) ( $r = 0.462$ ), size of land holding ( $r = 0.726$ ), family income ( $r = 0.781$ ), agricultural implements ( $r = 0.738$ ) and knowledge-level ( $r = 0.651$ ) were positively and significantly

correlated. The variable, marital status was negatively and significantly influenced the extent of adoption of improved technology. This means that the respondents with male heads of family were more adopting the improved technology. Other variables were not significant but positively correlated except age and size of family. This means that with the incensement in independent variables of caste, education, land holding and knowledge-level, the extent of adoption of improved technology by woman farmers increases. The findings were supported by Kaur (1981), Reddy *et al.*, (1989), Singh and Sharma (1990), Singh and Singh (2002), Subodh (2003), and Snehlata (2006).

**Table 2: Coefficient of correlation between extent of adoption of improved technology (wheat) by woman farmers and selected independent variables**

| Variables   | Value of 'r'(adoption) |
|---|------------------------|
| Age (X <sub>1</sub> )                             | -0.140                 |
| Caste (X <sub>2</sub> )                           | 0.677 <sup>**</sup>    |
| Marital status (X <sub>3</sub> )                  | -0.229 <sup>*</sup>    |
| Education (respondent) (X <sub>4</sub> )          | 0.738 <sup>**</sup>    |
| Education (Respondent Husband) (X <sub>5</sub> )  | 0.614 <sup>**</sup>    |
| Total family members (X <sub>6</sub> )            | -0.105                 |
| Type of family (X <sub>7</sub> )                  | 0.018                  |
| Occupation(respondent) (X <sub>8</sub> )          | 0.727 <sup>**</sup>    |
| Occupation (respondent husband) (X <sub>9</sub> ) | 0.462 <sup>**</sup>    |
| Size of land holding (X <sub>10</sub> )           | 0.726 <sup>**</sup>    |
| Family Income (X <sub>11</sub> )                  | 0.781 <sup>**</sup>    |
| Social participation (X <sub>13</sub> )           | 0.131                  |
| Knowledge level (X <sub>14</sub> )                | 0.651 <sup>**</sup>    |

### Conclusion

With rapid expansion of India's economy, we closely observe a phenomenon of 'feminization of agriculture' where women play an increasingly important role in agriculture and work spanning, from cultivating field crops, to livestock rearing, gardening, gathering, and fishing. These women are important drivers of economic and ecological sustainability. Adoption of agricultural technologies by rural farm women followed an increasing trend with increase in land holding status of the respondents. The study revealed that rural women were adopting post-harvest technologies more than the pre-harvest technologies and their adoption was

affected by their knowledge level, caste, education, size of land holding and family income. The best way to make use of natural and potential capabilities of rural women is to provide them with opportunities for self development and self employment. Results of the study indicate that there is need to create still more awareness among women farmer on the adoption of agricultural technologies to improve production and productivity.

### References

- [1] Ani, A.O., Ogunnika, O., and Ifah, S.S. (2004). Relationship between socio-economic characteristics of rural women farmers and their adoption of farm technologies in southern Ebonyi state, Nigeria. *International Journal of Agriculture and Biology*. Vol6(5).
- [2] Deshmukh, P.R., Kadam, R.P. and Shinde, V.N. (2007). Knowledge and adoption of agricultural technologies in Marathwada. *Indian Res. J. Ext. Edu.* Vol7(1): 41-43.
- [3] Kaur, S. (1981). Role of farm women in selected agricultural operations in five villages of Ludhiana district. Unpublished M.Sc. Thesis, Punjab Agricultural University, Punjab.
- [4] Krishnamurthy, B., Mahadevaiah, D., Laxminarayana, M.T., and Manujnath, B.N. (1998). Extent of adoption of recommended practices of sugarcane cultivation by farmers. *J. Extn. Edu.* 9: 2033-2036.
- [5] Kumbhare, N.V. and Singh, K. (2011). Adoption behaviour and constraints in wheat and paddy production technologies. *Indian. Res. J. Extn. Edu.* 11(3): 41-44.
- [6] Okunade, E.O. (2006). Factors influencing adoption of improved farm practices among women farmers in Osun state. *J. Hum. Ecol.* Vol 19(1): 45-49.
- [7] Singh, M. and Chahal, S.S. (2009). A study on the extent of adoption of various recommended technologies in wheat cultivation in Punjab. *Agricultural Economics Research Review*. Vol22: 349-354.
- [8] Singh, P. and Singh, K. (2002). Technological gap in rapeseed and mustard cultivation in Bharatpur. *Agricultural Extension Review*, 10-13.
- [9] Singh, S.P. and Sharma, R.K. (1990). Technological gaps in gram production Haryana. *Research and Development Reporter*. 1(1&2): 178-181.
- [10] Subodh, K. (2003). An analysis of technological gap in potato cultivation in Nalandadistricts of Bihar, Unpublished M.Sc.(Ag.) Thesis. Deptt. of Extn. Edu. RAU, Pusa, Bihar.