Journal of Pharmacognosy and Phytochemistry

Available online at www.phytojournal.com

E-ISSN: 2278-4136
P-ISSN: 2349-8234
JPP 2019; 8(1): 1139-1142
Received: 08-11-2018
Accepted: 11-12-2018

Yogendra Shriwas
Ph. D. Scholar, Department of Agricultural Extension, Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh, India

HK Awasthi
Professor, Department of Agricultural Extension, Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh, India

KK Shrivastava
Professor & Head, Department of Agricultural Extension, Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh, India

Ajay Kumar Verma
Professor, Faculty of Agriculture Engineering, Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh, India

Correspondence
Yogendra Shriwas
Ph. D. Scholar, Department of Agricultural Extension, Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh, India

Constraints faced by the rice growers and their suggestions to overcome the constraints in adoption of farm machineries in Chhattisgarh plains

Yogendra Shriwas, HK Awasthi, KK Shrivastava and Ajay Kumar Verma

Abstract
This study was carried out in Dhamtari, Mahasamund, Janjgir-Champa, Raigarh and Raipur; five selected districts of Chhattisgarh plains because these districts have highest farm machineries. The study aimed to assess the constraints faced by rice growers and their suggestions to overcome them. The information was obtained with help of interview schedule by personal interview. Collected data were analyzed by using suitable statistical tools. Multiple responses were taken to ascertain the constraints faced by the rice growers in adoption of recommended farm machineries. So far as the constraints faced by the rice growers in adoption of farm machineries are classified in different categories which are as: Personnel constraints, Socio-Economic Constraints, Psychological Constraints, Information related Constraints, Resources related Constraints and other constraints. The findings of this study revealed that incase of resources related constraints, the majority 88.00 percent of the respondents faced that non availability of hired farm machineries at time of operations at village level followed by (86.00%) of the respondents in personnel constraints category reported Small farm size. Incase of suggestions Majority 87.66 percent of the respondents suggested that Bank Loan or credit should be available in marginal and small land sizes followed by (82.00%) Desired farm machines should be available easily in time of operations as hired bases at village level.

Keywords: Constraints, suggestions, farm machineries, rice, Chhattisgarh plains

Introduction
Rice is the most important cereal and staple food consumed in Chhattisgarh and India. Farm mechanization implies the use of various power sources, improved farm tools and equipment, with a view to reduce the drudgery of the human beings and draught animals, thereby increasing crop production and productivity. Farm mechanization is an important element of modernization of agriculture. Farm Productivity is positively correlated with the availability of farm power coupled with efficient farm implements and their judicious utilization. Agricultural mechanization not only enables efficient utilization of various inputs such as seeds, fertilizers, plant protection chemicals and water for irrigation but also it helps in poverty alleviation by making farming an attractive enterprise.

Agricultural mechanization which entails the use of machines to perform several activities on the farm in order to save time, money spent on hiring of labour and most importantly increases the level of production which will automatically lead to a simultaneous increase in the farmer's income. The agricultural mechanization is an important support of modernity and development. The choice of machinery and equipment to be used depends on several factors including the size of the farm, the relationship of complementarity or substitutability of the labour force and its price, the expected increase in production and the availability in markets of machinery and equipment for rental.

Objective
To identify the constraints faced by the Rice growers and their suggestions to overcome the constraints in adoption of farm machineries in Chhattisgarh plains.

Material and methods
1. Location of the study area: The study was carried out in Dhamtari, Mahasamund, Janjgir-Champa, Raigarh and Raipur districts of Chhattisgarh. These districts having highest farm machineries.

2. Selection of blocks: From each selected district 2 blocks (2X5 = 10) were selected purposively for the study on the basis of highest area covered under farm mechanization.

3. Selection of villages: From each selected block, 3 villages (Total 3 X 10 = 30) will were selected on the basis of maximum availability of farm machineries in the villages. the list of farm maximum availability of farm machineries were developed with the help of Government Agricultural Engineers, Surveyors and Rural Agricultural Extension Officers.

4. Selection of respondents: From the list of farm machinery owners, total 10 farmers were selected randomly. In this way a total of 300 farmers were considered as respondents for the study.

5. Collection of data and Statistical analysis: Primary data from beneficiaries were collected through personal interview with the help of pre-tested structured interview schedule. Collected data were tabulated and processed by using appropriate statistical tools.

Constraints faced by the rice growers in adoption of recommended farm machineries in rice production technology

To measure the constraints faced by the rice growers in adoption of recommended farm machineries in rice production technology, simple ranking technique was applied, each farmer was asked to mention his constraints in adoption of recommended farm machineries in rice production technology in order of degree of difficulties.

Suggestions given by the rice growers for minimizing the constraints

Considering the constraints faced by the respondents regarding adoption of farm machineries in rice production technology and to overcome the same in adoption farm machineries in rice production technology successfully, farmers were asked to give their valuable suggestions. The suggestions offered were summed up then converted into percentage and then ranked on the basis of number and percent of respondents who reported for the respective suggestions.

Result and discussion

Table 1: Constraints faced by the rice growers in adoption of farm machineries

Sr. No.	Constraints	Frequency	Percentage	Rank
	A. Personnel constraints			
1	Family disagreement	30	10.00	II
2	Busy in other occupation	12	4.00	III
3	Small farm size	258	86.00	I
	B. Socio-economic constraints			
1	High cost of farm machines	18	6.00	IX
2	Unavailability of credit at proper time and time of operations	122	40.66	I
3	High cost of farm labours	42	14.00	III
4	Unavailability of farm machineries at cheaper price	116	38.66	II
	C. Psychological constraints			
1	Non adoption of mechanized farming in rice by the farmers	36	12.00	IX
2	Low social motivation towards farm machineries	58	19.33	III
3	Unavailability of proper inducer for improvement in mechanized rice crop production	123	41.00	I
4	High risk in repayment of bank loan	83	27.66	II
	D. Information related Constraints			
1	Lack of training facilities regarding farm machineries in rice crop	163	54.33	I
2	Non availability of information related to farm machineries at right time	42	14.00	II
3	Low contact with extension officer	18	6.00	XI
4	Insufficient information related to farm machineries	22	7.33	X
5	Lack of communication facilities	29	9.66	III
6	Non availability of rice specific recommended machineries	26	8.66	IX
	E. Resources related constraints			
1	High cost of fuel and non availability of electricity at time of operation	36	12.00	II
2	Non availability of hired farm machineries at time of operations at village level	264	88.00	I
	F. Other constraints			
1	Non availability of bank loan in marginal and small land size	152	50.66	I
2	Inadequate knowledge in operating of most of the machines and implements	35	11.66	III
3	Complexity in repairing of farm implements and machines	60	20.00	II
4	The initial price of the implements and farm machines are too high	22	7.33	IX
5	Lack of suitable government policies regarding mechanized rice crop production	31	10.33	X

*frequency based on multiple responses

Multiple responses were taken to ascertain the constraints faced by the rice growers in adoption of recommended farm machineries which are presented in Table 1.

So far as the constraints faced by the rice growers in adoption of recommended farm machineries are classified in different categories which are as: Personnel constraints, Socio-Economic Constraints, Psychological Constraints, Information related Constraints, Resources related Constraints and other constraints.

It was found that majority (86.00%) of the respondents in personnel constraints category reported Small farm size followed by 10.00 percent faced family disagreement and 4.00 percent of the respondents busy in other occupation.

In the cases of socio economics constraints, most (40.66%) of the respondents reported unavailability of credit at proper time and time of operations followed by 38.66 percent of the respondents faced Unavailability of farm machineries at cheaper price, 14.00 percent of the respondents faced High cost of farm labours and only 6.00 percent of the respondents faced high cost of farm machines.

In the cases of Socio –psychological constraints most (41.00%) of the respondents faced unavailability of proper inducer for improvement in mechanized rice crop production followed by 27.66 percent of the respondents faced High risk in repayment of bank loan and 19.33 percent of the respondents reported that low social motivation towards farm machineries.

In the cases of Information related Constraints majority (54.33%) of the respondents reported that lack of training facilities regarding farm machineries in rice crop followed by 14.00 percent of the respondents faced non availability of information related to farm machineries at right time, 9.66 percent of the respondents faced lack of communication facilities, 8.66 percent of the respondents reported non availability of rice specific recommended machineries, 7.33 percent of the respondents faced insufficient information related to farm machineries and 6.00 percent of the respondents reported low contact with extension officer.

In resources related constraints the majority (88.00%) of the respondents faced non availability of hired farm machineries at time of operations at village level and rest only 12.00 percent of the respondents faced high cost of fuel and non availability of electricity at time of operations.

In the cases of other constraints just half (50.66%) of the respondents reported non availability of bank loan in marginal and small land size followed by 20.00 percent of the respondents reported complexity in repairing of farm implements and machines, 11.66 percent of the respondents faced inadequate knowledge in operating of most of the machines and implements and rest 10.33 percent of the respondents reported that lack of suitable government policies regarding mechanized rice crop production.

Table 2: Suggestions given by the respondents to overcome the constraints in adoption of farm machineries

Sr. No.	Suggestions	Frequency	Percentage	Rank
1.	Bank Loan or credit should be available in marginal and small land sizes	262	87.66	I
2.	Loan should be available on proper time and time of operations	180	60.00	VI
3.	Farm machines should be available in cheaper price	208	69.33	V
4.	Regular extension services should be available to create awareness and provide the technical knowledge about improved farm machineries	165	55.00	VII
5.	Credit facilities should be available on low interest bases for purchase of improved farm machineries	225	75.00	III
6.	Desired farm machines should be available easily in time of operations as hired bases at village level	246	82.00	II
7.	Complete information should be provided by the government officers at right time about farm machineries	130	43.33	IX
8.	More extension methods like Exhibition, Demonstration and Kisan Melas etc. should be organized at various levels	210	70.00	IV
9.	Skill oriented, regular, timely and specific training programme should be organized on use of different farm machineries	146	48.66	VIII
10.	Government should make strong policies regarding purchase and repair of farm machineries in low cost	112	37.33	X
11.	Spare parts and repairing facilities should be available easily and timely at village level	80	26.66	XII
12.	Fuel and electricity should be available at low price	96	32.00	XI
13.	Recommended farm machines and implements should be available easily and timely	58	19.33	XIII

*frequency based on multiple responses

There are many suggestions given by the rice growers to overcome the constraints which are mentioned bellow:

Majority (87.66%) of the respondents suggested that Bank Loan or credit should be available in marginal and small land sizes followed by 82.00 percent of the respondent suggested that desired farm machines should be available easily in time of operations as hired bases at village level, 75.00 percent of the respondent suggested that credit facilities should be available on low interest bases for purchase of improved farm machineries, 70.00 percent of the respondent suggested that more extension methods like Exhibition, Demonstration, and Kisan Melas etc. should be organized at various levels, 69.33 percent of the respondent suggested that farm machines should be available in cheaper price, 60.00 percent of the respondent suggested that loan should be available on proper time and time of operations, 55.00 percent of the respondent suggested that regular extension services should be available to create awareness and provide the technical knowledge about improved farm machineries, 48.66 percent of the respondent suggested that skill oriented, regular, timely and specific training programme should be organized on use of different farm machineries, 43.33 percent of the respondent suggested that complete information should be provided by the government officers at right time about farm machineries, 37.33 percent of the respondent suggested that Government should make strong policies regarding purchase and repair of farm machineries in low cost, 32.00 percent of the respondent suggested that Fuel and electricity should be available at low price, 19.33 percent of the respondent suggested that recommended farm machines and implements should be available easily and timely.

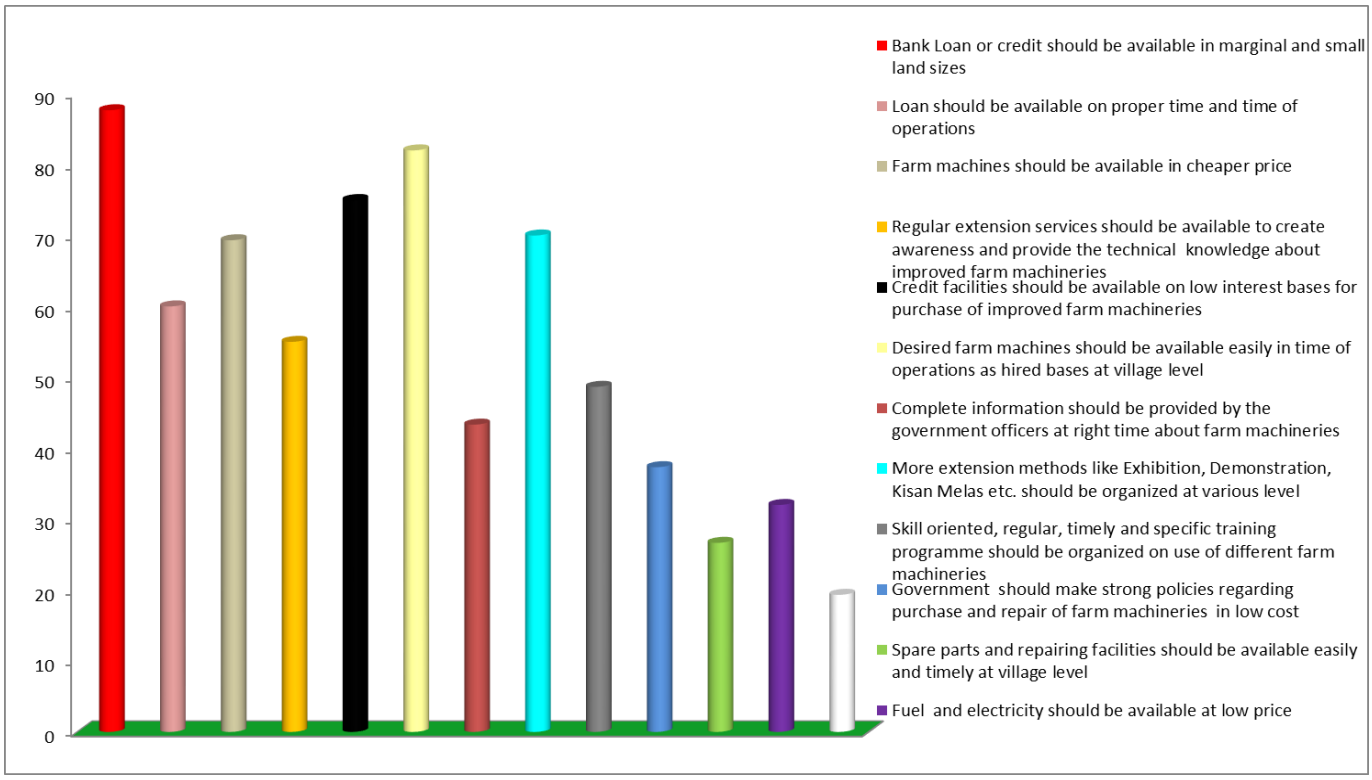

Fig 1: Graphical view of Suggestions given by the respondents to overcome the constraints in adoption of farm machineries

Acknowledgment
The author is thankful to Dr. H. K. Awasthi (Professor), Department of Agricultural Extension, I.G.K.V., Raipur (C.G.), Dr. K. K. Shrivastava (Professor & Head) Department of Agricultural Extension, I.G.K.V., Raipur (C.G.) and Dr. Ajay Kumar Verma (Professor), Faculty of Agricultural Engineering, I.G.K.V., Raipur (C.G.) for providing proper guidance, encouragement, moral and material support throughout the research work.

Conclusion
From the above findings it can be concluded that the maximum number of rice growers were experienced various constraints, but major constraint was revealed that non availability of hired farm machineries at time of operations at village level and Small farm size and major suggestions offered by the respondents that bank loan or credit should be available in marginal and small land sizes and desired farm machines should be available easily in time of operations as hired bases at village level. So the conclusion is a standard farm machine bank should be made by the government at village level and systematic training programmes should be organize by the government for the maximum adoption of farm machineries for overcome these constraints.

References
1. Nagaraj BMV, Hulagur B, Hanchinal SN. Extent of Adoption of Farm Mechanization Practices by the Paddy Growers. Research Journal of Agricultural Sciences. 2013; 4(3):412-415.
2. Nagaraj PS, Swamy Dhananjaya, Madhushree A, Vidyadhara B. A Study on Knowledge and Adoption of Farm Mechanization by Paddy Grower in Tungabhadra Project Area, Karnataka. International Journal of Agriculture and Food Science Technology. 2013; 4(4):385-390.
3. Nayak VK, Yadaw KN, Jhariya MK. Status of farm mechanization in Durg district of Chhattisgarh. Internat. J agric. Engg. 2012; 5(2):288-291.
4. Oladeji JO, Ogunleye KY, Aderinto A. Attitude of Farmers Towards the Use of Animal Traction Technology in Savannah Zone of Oyo State, Nigeria. Global Journal of Science Frontier Research (D). 2012; 12(8):I.
5. Owombo PT, Akinola AA, Ayodele OO, Koledoye GF. Economic Impact of Agricultural Mechanization Adoption: Evidence from Maize Farmers in Ondo State, Nigeria. Journal of Agriculture and Biodiversity Research. 2012; 1(2):25-32.
6. Pillai Balachandran G. Constraints on Diffusion and Adoption of Agro-mechanical Technology in Rice Cultivation in Kerala. (Discussion Paper) Kerala Research Programme on Local Level Development, 2004.
7. Prakash R. Sequential analysis of constraints in increasing production of rice and coconut in Kerala. Ph.D. Thesis (unpublished.). College of Agriculture, Vellayani, Trivandrum, 1989.
8. Rai DP, Bhupendra Singh. Extent of knowledge and constraints in cotton production technology in Madhya Pradesh. Indian Research Journal of Extension Education. 10 (2), May, 2010.
9. Singh G. Impact of farm mechanization on agricultural development. M.Sc. (Ag.) Thesis, Rajasthan Agricultural University. Rajasthan, 2001.
10. Vanetha KP, Senthil A. A Study on Profile of Farmers in Utilization of Farm Equipments in Tamil Nadu. International Journal of Advanced Research. 2013; 1(5):284-288.