



ISSN (E): 2277- 7695  
ISSN (P): 2349-8242  
NAAS Rating: 5.23  
TPI 2021; SP-10(9): 138-141  
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[www.thepharmajournal.com](http://www.thepharmajournal.com)  
Received: 04-07-2021  
Accepted: 06-08-2021

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## Constraints faced by the farmers in utilization of improved farm implements in Udaipur district of Rajasthan

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### Abstract

The study was undertaken during 2020-21 at Udaipur District of Rajasthan state in order to identify constraints faced by farmers in utilization of improved farm implements. A sample of 120 respondents from two tehsils (Mavli & Salumber) and eight villages (Samchott, Banoda, Joyra, Mahadevkhera, Goverdhanpura, Rahami, Budgaon & Intali) were taken on the basis of proportionate random sampling. The study revealed that most of the farmers face medium level of constraints. From the study, we came to know that, "Low level of education" was the major personal constraints followed by "Lack of training". In case of technical constraints "Lack of demonstration on improved farm implements" is major constraints. Similarly "Poor extension service on improved farm implements" is major communicational constraints. In case of institutional constraints "Poor banking system in rural area" is major constraints and "High initial cost of improved farm implements" is major economical constraints. "Degraded soil structure" is major geographical constraints which faced by the farmers in utilization of improved farm implements. The study shows that respondents were facing "Personal constraints" to maximum severity than other categories of constraints.

**Keywords:** implements, farming, constraints, utilization, agriculture

### Introduction

Farm implement is machinery used in farming or other agricultural operation. There are many types of such equipment, from hand tools and power tools to tractors and the countless kinds of farm implements using in farming. Diverse arrays of equipment are used in both organic and inorganic farming. Especially since the advent of mechanized agriculture, agricultural machinery is an indispensable farming.

Mechanization of agriculture is an essential input in modern agriculture. It enhances productivity, besides reducing human drudgery and cost of cultivation. Mechanization also helps in improving utilization efficiency of other inputs, safety and comfort of the agricultural worker, improvements in the quality and value addition of the produce. Efficient machinery helps in increasing production and productivity.

The overall mechanization level in India is only 40-45 per cent even though 90.00 per cent of the total farm power is contributed by mechanical and electrical power sources. However, all the operations are not uniformly mechanized. Operation-wise level of mechanization varies from 42.00 per cent for soil working and seed bed preparation, 29.00 per cent for seeding and planting, 34.00 per cent for plant protection and 37.00 per cent for

irrigation. In case of harvesting and threshing, the level of mechanization is 60-70 per cent for wheat and rice and less than five per cent for others crops.

### Materials and Methods

The present study was conducted in Udaipur district of Rajasthan state during the year 2020-2021 with a total of 120 respondents selected from two tehsils and eight villages. 15 respondents were selected from each village. In present study, Constraints means hurdle one faces in utilization of improved farm implements. A list of possible constraints was prepared with the help of subject matter specialist of agricultural engineering, review of literature and discussion with the farmers. Data was collected with the help of interview schedule. Face to face interview was used for collection of information from respondents. For identifying constraints, mean per cent score was calculated and accordingly ranks were assigned on the basis of severity of constraints.

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**Results and Discussion**

This part of the dissertation deals with the constraints faced by the farmers in utilization of improved farm implements.

An effort was made to find out the priority wise constraints faced by the farmers.

**Table 1:** Extent of personal constraints

S. No.	Constraints	Mavli (n1=60)		Salubar (n2=60)		Total (n=120)	
		MPS	Rank	MPS	Rank	MPS	Rank
<b>Personal Constraints</b>							
1.	Poor economical condition	75.00	III	73.33	III	74.16	III
2.	Small land holding	86.66	II	80.33	II	83.49	II
3.	Fragmented land holding	61.66	V	58.33	V	59.99	V
4.	Low education level	88.33	I	86.66	I	84.99	I
5.	Type of cropping pattern	65.00	IV	61.66	IV	63.33	IV

MPS = Mean Per Cent Score

Table 1 presents the MPS & ranking of personal constraints in which most important constraint is “Poor economical condition” which ranked I with 84.99 MPS followed by”

Small land holding” ranked II with 83.49 MPS. Rank III, IV & V assigned to “Poor economical condition”, “Type of cropping pattern” & “Fragmented land holding”.

**Table 2:** Extent of technical constraints

S. No.	Technical constraints	Mavli (n1=60)		Salubar (n2=60)		Total (n=60)	
		MPS	Rank	MPS	Rank	MPS	Rank
1.	Implements not suitable for our agri ecological condition	28.33	V	25.00	V	26.66	V
2.	Lack of technical knowhow on farm implements	50.00	III	53.33	III	51.66	III
3.	Lack of training	75.00	II	73.33	II	74.16	II
4.	Lack of demonstration on improved farm implements	76.66	I	75.00	I	75.83	I
5.	No mechanic available in nearby area for repair of farm implements	41.66	IV	45.00	IV	43.33	IV

MPS = Mean per cent Score

Table 2 reveals that most important technical constraints “Lack of demonstration on improved farm implements” ranked first with 75.83 MPS followed by “Lack of training” ranked”, ” Lack of technical knowhow on farm implements”, “No mechanic available in nearby area for repair of farm

implements”, “Implements not suitable for our agri-ecological condition” with II, III, IV, and V rank, respectively. Least important technical constraints is “Implements not suitable for our agri ecological condition” ranked V with 28.33 MPS.

**Table 3:** Extent of communicational constraints

S. No.	Communicational constraints	Mavli (n1=60)		Salubar (n2=60)		Total (n=120)	
		MPS	Rank	MPS	Rank	MPS	Rank
1.	Poor extension service on improved farm implements	75.00	I	76.66	I	75.83	I
2.	Poor access to information resources	65.00	III	61.66	III	63.33	III
3.	Lack of mass media accessibility	68.33	II	66.66	II	67.49	II
4.	Poor listening skill	38.33	IV	41.66	IV	39.99	IV
5.	Information overload	30.00	V	28.33	V	29.16	V

MPS = Mean Per cent Score

Table 3 shows that “Poor extension service on improved farm implements” is ranked I in communicational constraints with 75.83 MPS, followed by “Lack of mass media accessibility” which ranked II with 67.49 MPS , “Poor access to

information” ranked III with 63.33 MPS. And least important “Information overload” ranked V with 29.16 MPS.

**Table 4:** Extent of institutional constraints

S. No	Institutional constraints	Mavli (n1=60)		Salubar (n2=60)		Total (n=120)	
		MPS	Rank	MPS	Rank	MPS	Rank
1.	Non availability of loan	78.33	II	79.16	II	78.99	II
2.	High interest rate on agriculture loans	45.00	V	41.66	V	43.33	V
3.	Complex process of loan approval	75.00	III	76.66	III	75.83	III
4.	Poor banking system in rural area	83.33	I	85.00	I	84.16	I
5.	Lack of availability improved implements in nearby area	33.33	VI	28.33	VI	31.24	VI
6.	No repair workshop for improved farm implements in the nearby area	48.33	IV	50.00	IV	49.16	IV

MPS = Mean Per cent Score

Table 4 presents the MPS & ranking of institutional constraints in which most important institutional constraints is

“Poor banking system in rural area” which ranked I with 84.16 MPS, followed by “Non availability of loan” ranked II

with 78.99 MPS & “Complex process of loan approval” ranked III with 76.66 MPS. Rank IV, V & VI assigned to “No repair workshop for improved farm implements in the nearby

area”, “High interest rate on agriculture loans” & “Lack of availability improved implements in nearby area” respectively.

**Table 5:** Extent of economical constraints

S. No	Economical constraints	Mavli (n1=60)		Salumber (n2=60)		Total (n=120)	
		MPS	Rank	MPS	Rank	MPS	Rank
1.	High initial cost of improved farm implements	78.33	I	75.00	I	76.66	I
2.	High operational cost	63.33	II	66.66	II	64.99	II
3.	Low input efficiency	50.00	IV	45.83	IV	47.91	IV
4.	Less subsidy on improved farm implements	60.00	III	53.33	III	56.66	III

MPS = Mean Per cent Score

Table 5 presents the MPS & ranking of economical constraints in which most important institutional constraints is “High initial cost of improved farm implements” which

ranked one with 76.66 MPS, followed by “High operational cost” ranked second with 63.33 MPS & “Less subsidy on improved farm implements” ranked third with 60.00 MPS.

**Table 6:** Extent of geographical constraints

S. No	Geographical constraints	Mavli (n1=60)		Salumber (n2=60)		Total (n=120)	
		MPS	Rank	MPS	Rank	MPS	Rank
1.	Sloppy land	15.00	III	16.66	III	15.83	III
2.	Soil type	30.00	II	33.33	II	31.65	II
3.	Degraded soil structure	43.33	I	41.66	I	42.49	I

MPS = Mean per cent Score

Table 6 presents the MPS & ranking of geographical constraints in which most important geographical constraints is “Degraded soil structure” ranked one with 42.49 MPS and

least important geographical constraints is “Sloppy land” which ranked third with 15.83 MPS.

**Table 7:** Extent of aspect wise constraints

S. No.	Aspects wise constraints	Mavli (n1=60)		Salumber (n2=60)		Total (n=120)	
		MPS	Rank	MPS	Rank	MPS	Rank
1.	Personal Constraints	75.00	I	73.33	I	74.16	I
2.	Technical constraints	53.33	V	50.00	V	51.66	V
3.	Communicational constraints	56.66	IV	51.66	IV	54.16	IV
4.	Institutional constraints	60.00	III	63.33	III	61.66	III
5.	Economical constraints	65.00	II	68.33	II	66.66	II
6.	Geographical constraints	33.33	VI	26.66	VI	29.99	VI

MPS = Mean Per cent Score

Table 7 presents the MPS & ranking of aspect wise constraints in which “Personal Constraints” ranked first with 73.16 MPS, followed by “Economical constraints” which ranked second with 66.66 MPS. Rank III, IV, V & VI

assigned to “Institutional constraints”, “Communicational constraints”, “Technical constraints” & “Geographical constraints” with 61.66, 54.16, 51.66, 29.99 MPS respectively.

**Table 8:** Aspect wise constraints related to implements

S. No.	Aspects wise implements related constraints	Mavli (n1=60)		Salumber (n2=60)		Total (n=120)	
		MPS	Rank	MPS	Rank	MPS	Rank
1.	Seed cum fertilizer drill	25.00	VI	31.66	VI	28.33	VI
2.	Power weeder	38.33	V	40.00	V	39.16	V
3.	Drip irrigation	56.66	III	61.66	II	59.16	II
4.	Sprinkler system	45.00	IV	41.66	IV	43.33	IV
5.	Plant protection equipment	58.33	II	51.56	III	54.94	III
6.	Post harvesting equipments	75.00	I	81.66	I	78.33	I

MPS = Mean Per cent Score

Table 8 reveals the result of aspect wise constraints which related to implements. The farmers mostly faced constraints in “Utilization of post harvest equipments”, which ranked first with 78.33 MPS, followed by “Drip irrigation” which ranked second with 59.16 MPS. Rank III, IV, V, & VI assigned to “Plant protection equipment”, “Sprinkler system”, “Power weeder” & “Seed cum fertilizer drill” respectively.

## Conclusion

To increase crop production and productivity needs to improve farm mechanization level by utilizing of improved farm implements. Based on the above constraints we can conclude that governments need to increase the subsidy on costly improved farm equipments, awareness should be spread among farmers by mass media & needs to give proper

training to proper maintenance and operation of improved farm implements.

Custom hiring centre should be established nearby area & needs to improve banking system and increase no. of branches of RRBs in rural area. Constraints are hurdle that one faces while using improved farm implements which prevent them from effective utilization. From the result it is cleared that respondents face more personal constraints than other constraints followed by economical constraints. However long term research is required to know about its effect over long time. This study create a way to conduct the related research in other tehsils of Udaipur district as well as in other district of Rajasthan. This may help in knowing more valid and general constraints faced by the respondents in utilization of improved farm implements.

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