



# Adoption of Chemical Weed Control in Rice: Credit Utilization and Preference for Formulation: A Study From Temperate Kashmir

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## ABSTRACT

Farmers don't use credit for the purchase of herbicides in the rice crop and they prefer a particular formulation of herbicide in Kashmir. To know the reasons, a study was conducted in four randomly selected development blocks of district Baramulla. Two villages from each development block were selected randomly. A sample of 200 farmers comprising adopters, partial adopters, and non-adopters was selected from eight sampled villages through stratified random sampling technique proportional to size. The study revealed that financial soundness and the risk of losing their lands in case of untimely repayment of credits were the main reasons for not using credits. It was further revealed that granular formulation was preferred over liquid formulation owing to lesser requirement of labourers and ease of application.

**Key Words:** Adoption, Credit, Herbicide, Rice crop.

## INTRODUCTION

Rice is the staple food as well as one of the major crops of Jammu and Kashmir (Mubarak *et al.* 2012). Weeds are considered as the major constraint in achieving higher yields in rice (Srinivasan *et al.* 2008) and can cause a reduction to the tune of 10-90 per cent in Indian rice fields (Nair *et al.* 2000). In integrated weed management approach, chemical weed control is very important as it is quick, easy, efficient, labour saving and less time consuming. The use of chemicals for weed control in rice in Jammu and Kashmir is slow. In order to speed up the adoption of herbicides, a study was conducted with the objective to examine the extent and level of adoption of recommended herbicides for rice crop by the farmers of Baramulla district of Jammu and Kashmir. Since farmers don't use credits for purchasing herbicides, so it was considered worthwhile to probe reasons for this trend. Moreover, the farmers are using herbicides in granular form. Hence, the investigation was also conducted with the objective that if the farmers are given a free choice, what they would prefer: Granular formulation or liquid formulation of herbicides.

## MATERIALS AND METHODS

The study was carried out during 2006 in Baramulla district of Jammu and Kashmir. Out of 14 development blocks in the district, four development blocks were selected randomly. Two villages from each development block were selected randomly. A sample of 200 farmers comprising adopters, partial adopters, and non-adopters was selected from eight sampled villages through stratified random sampling technique. The size of sample from each stratum was in proportion to the total number of farmers in it. The data was collected through personal interview with the farmers with the help of structural and pretested schedule.

## RESULTS AND DISCUSSION

Data presented in Table 1 revealed that the major reasons, which contributed for not using credits for purchasing herbicides were financial soundness (40.0%), risk of losing land in case of untimely repayment of credits (30.5%) and poor repaying of capacity of credits later on (17.0%). The other reasons pointed out by farmers were high rate of interest, delay in sanctioning credits, lengthy and different procedures involved in

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getting credits sanctioned from banks, hesitation of banks to sanction credits because of small holdings, prevalence of bribery, non-availability of credits, previous bad experience and the tradition of community of not taking credits from banks. Kumar and Jitarwal (2012) also reported that economic status has great role in technology adoption and thus such farmers rarely need credit facility.

From the above findings, it becomes clear that extension personnel have to work for bringing in confidence among the farmers that by taking credits from banks, they will not lose their holdings. They should help the farmers in filling up the forms etc at the nearby banks. The bank people should be invited in the district meetings so that the problems of delaying in sanctioning credits are sorted out amicably.

**Table 1. Reasons for not using credits for purchasing herbicides for rice crop.**

(N = 200)

Reason	Respondents	
	No	Percentage
1. Financial soundness	80	40.0
2. Unwilling to take risk of losing land if credit not repaid back in time	61	30.5
3. Poor repaying capacity	34	17.0
4. High rate of interest charged by bank	27	13.5
5. Delay in sanctioning credits	20	10.0
6. Lengthy and difficult procedure involved in getting credits sanctioned	19	9.5
7. Not knowing the credit facility of banks	17	8.5
8. Hesitation of banks to sanction credits because of small holdings	8	4.0
9. Other reasons like prevalence of bribery, non-availability of credits, previous bad experience, tradition of the community of not taking credits from banks.	8	4.0

A perusal of the data presented in Table 2 revealed that 78.0 per cent of respondents gave preference for granular formation while 21.0 per cent did not give any preference.

**Table 2. Preference for a particular formulation of weedicide.**

Preference	Respondents	
	No	Percentage
1. Granular formulation	156	78.0
2. Liquid formulation	2	1.0
3. No preference	42	21.0

Out of those who preferred granular formulation (Table 3), the reasons were: lesser requirement of labourers (53.2%), ease in application (31.4%), difficulty in handling spraying equipment (23.1%) and long experience of using granular formulation of herbicides (20.5%).

**Table 3. Reasons for preferring granular formulation of herbicides.**

(N = 156)

Reasons	Respondents	
	No	%age
1. Lesser requirement for labourers	83	53.2
2. Ease in application	49	31.4
3. Difficulty in handling spraying equipment	36	23.1
4. Long experience of using granular formulation	32	20.5
5. Conviction about superiority of granular formulation over liquid formulation.	23	14.7
6. Non-availability of spraying equipment	22	14.1
7. Tradition of a community to apply granular formulation	12	7.7
8. Others(Lack of experience in applying liquid formulation, not knowing effectiveness of liquid formulation of herbicides, machinery / spraying equipment not needed, liquid formulation laborious, weeds completely controlled by granular formulation, weedicide in granular formulation can be broadcast effectively).	20	12.8

Other reasons pointed out were: conviction about superiority of granular formulation over liquid formulation, non-availability of spraying equipments, lack of experience in applying liquid formulation and higher efficiency of granular

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formulation. Only two respondents preferred liquid formulation and the reason expressed by them was that liquid formulation of herbicides could be evenly spread to entire field as compared to granular formulation.

### CONCLUSION

From the above findings it was evident that the farmers were not yet aware of the liquid formulation of herbicides. Extension efforts need to be concentrated on educating the farmers regarding liquid formulations through result demonstrations so that farmers become equally convinced about the effectiveness of liquid formulations also. At the same time, the liquid formulation of herbicides should also be made available to farmers at their respective plant protection stores, well in time. It would be worthwhile to mention that quite a good percentage of respondents (23.1) have expressed

that due to difficulty of handling spraying equipment, they prefer granular formulation. Since no spraying equipment is involved in liquid formulations of herbicides, the extension workers should remove this misconception through educational efforts.

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