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Santosh Devi SamotaSMS, Extension Education,
DEE, Sri Karan Narendra
Agriculture University, Jobner,
Jaipur, Rajasthan, India**KL Dangi**Retired Professor, Department of
Extension Education, Rajasthan
college of Agriculture, Udaipur,
Rajasthan, India**RN Sharma**Professor, Department of
Extension Education, Sri Karan
Narendra Agriculture
University, Jobner, Jaipur,
Rajasthan, India

Evaluation of NAIP with special reference to level of knowledge and adoption of HYV of wheat (GW-273) cultivation in Banswara District of Rajasthan

Santosh Devi Samota, KL Dangi and RN Sharma

Abstract

National Agricultural Innovation Project (NAIP) focuses on four components which aimed at ICAR as the catalyzing agent for the management of change in the Indian National Agricultural Research System; research on sustainable rural livelihood security; basic & strategic research in frontier areas of Agricultural Sciences and multiple technology options in holistic and integrated manner in order to increase their productivity and profitability. In Rajasthan, consortia NAIP were in operation in four tribal populated districts namely- Udaipur, Banswara, Dungarpur and Sirohi. Therefore, district Banswara was selected for present investigation based on maximum households covered under the project. Out of Talwara and Garhi Panchayat Samities, Talwara was selected for the study. After having drawn sample of 19 respondents (beneficiaries) each from every beneficiary village, similar size of sample of non-beneficiaries (19) from each of the non-beneficiary villages was drawn with the help of random sampling procedure. Total size of sample was of 152 respondents, combining beneficiaries and non-beneficiaries.

The findings revealed that knowledge level of majority of the respondents of beneficiaries 51 (67.10 per cent) are more than those of non-beneficiaries 25 (32.89 per cent). It means, the knowledge of beneficiaries with regards to GW-273 of wheat was just double than non-beneficiaries. The results showed that a good number, 42 (27.63 per cent) respondents fell under low level of adoption about interventions of GW-273, but it was good sign of the impact of the project (NAIP) that beneficiaries proportion was found to be in tune of 23.69 per cent as against non-beneficiaries' i.e. 31.58 per cent. NAIP reflected good knowledge regarding important aspects of GW-273 of wheat crop advocated to them. These aspects were, "row to row spacing in the crop," "sowing time of GW-273" and "seed rate of GW-273" as ranked first, second and third with their MPS 90.42, 85.11 and 84.33, respectively.

Keywords: NAIP, HYV, GW 273, Knowledge, Adoption, Beneficiary and Non beneficiary

Introduction

The then Union Agriculture Minister of Agriculture, Shri Sharad Pawar launched a 6 year ambitious agricultural research programme- National Agricultural Innovation Project (NAIP) on July 2006 which focuses on innovations in agricultural technology. It would facilitate an accelerated and sustainable transformation of the Indian Agriculture so that it can support poverty alleviation and income generation. The total budget of NAIP was of US \$ 250 million; the World Bank has funded US \$ 200 million as credit, mostly interest free and a part with negligible interest, and US \$ 50 million was borne by the Government of India. The recently concluded National Agricultural Technology Project (NATP) led by the ICAR, aimed to implement the shared understanding of the Government of India and the World Bank on technology-led - pro - poor growth, and it facilitated the public sector reform process for accelerating the flow of agricultural technologies. A key lesson from the NATP was to deliberate investments in partnership building and shared governance required to speed up technology adaptation and dissemination. Various Agricultural Universities in India had been provided with sufficient fund by the ICAR to implement different programmes for increasing income and nutrition through adoption of economically viable integrated farming system. Under component 3 of NAIP, Maharana Pratap University of Agriculture and Technology, Udaipur had also been sanctioned a consortia project entitled "Livelihood and nutritional security of Tribal dominated areas through integrated farming system and technology modules". Good efforts under the project were being made to replace local seeds of wheat with High Yielding Varieties, along with important interventions, such as Integrated Nutrient Management (INM), Integrated Pest Management (IPM) and Integrated Water Management (IWM). So far no evaluation study in the operational area of the project had been conducted

Corresponding Author:**Santosh Devi Samota**SMS, Extension Education,
DEE, Sri Karan Narendra
Agriculture University, Jobner,
Jaipur, Rajasthan, India

regarding the response of farmers about HYV of GW-273 of wheat under NAIP. With this background, present study was conducted with the objective to determine the knowledge level and adoption level of beneficiaries and non-beneficiaries with regards to HYV of wheat crop. The comparison between two sets of respondents depicted the evaluation of NAIP with special reference to HYV of GW-273.

Methodology

The investigation was conducted in Talwara Panchayat Samiti of Banswara district of southern Rajasthan. With the specific objective to evaluate the NAIP with special reference to HYV (Raj-4037) of wheat cultivation. It was performed based on comparison of beneficiaries with those of non-beneficiaries with regard to their knowledge and adoption level of HYV (GW-273) of wheat cultivation. Out of total 52 Gram Panchayats under Talwara Panchayat Samiti, four Gram Panchayats viz. Masotiya, Devlia, Sageta and Jhalo ka Gada (Nokla) were covered under NAIP. Therefore, as such, these four Gram Panchayats were included in the present investigation. Two sets of villages were selected for the present study. (Kumar, Sharma, and Kalash (2008) [9]. These were (a) Beneficiary villages and (b) Non-Beneficiary villages. Headquarters (villages) of Gram Panchayats were treated as selected villages for the study. Hence, Masotiya, Devlia, Sageta and Jhalo ka Gada (Nokla) were the villages

where from required sample size of respondents (beneficiaries) was drawn. Since the knowledge and adoption level of HYV (GW-273) practices in wheat crop had to be compared between beneficiaries and non – beneficiaries of NAIP, a controlled sample of villages was also drawn. Therefore, four villages nearer to the beneficiary villages were selected; where from non – beneficiary farmers were interviewed. Seventy six beneficiaries and non-beneficiaries (19 from each village) were selected for the study. Total size of sample was of 152 respondents, combining beneficiaries and non – beneficiaries. Relevant data were collected from the selected respondents with the help of constructed interview schedule. Face to face interview technique was employed for collecting the data from the respondents. Thereafter, data were analyzed and results were interpreted in the light of the objective of study.

Results and Discussion

Distribution of the respondents according to their knowledge level regarding wheat variety GW-273

The assessment of knowledge level for wheat variety GW-273, the respondents were distributed into three categories viz., high, medium and low levels on the basis of calculated mean per cent score of the knowledge obtained by the respondents. The results are depicted in Table 1.

Table 1: Distribution of the respondents according to their knowledge level regarding wheat variety GW-273 n =152

S. No.	Knowledge level	Beneficiaries (n ₁)	Non-beneficiaries (n ₂)	Total
1	Low (MPS up to 33)	19 (25.00)	21 (27.63)	40 (26.31)
2	Medium (MPS 34-66)	6 (7.90)	30 (39.48)	36 (23.69)
3	High (MPS above 66)	51 (67.10)	25 (32.89)	76 (50.00)
	Total	76 (100)	76 (100)	152 (100)

MPS=Mean per cent score; Figures within the parentheses are percentage to the total, n=n₁ + n₂, n₁=Size of sample for beneficiaries, n₂= Size of sample for non- beneficiaries

Table 1 expressed that the proportion of knowledge level of beneficiaries (67.10 per cent) was more than those of Non-Beneficiaries (32.89 per cent). It means, the knowledge level of beneficiaries with regards to GW-273 of wheat was just double than non-beneficiaries. Therefore, results indicated clear cut impact of NAIP on beneficiaries in the context of imparting knowledge to them regarding GW-273 variety of wheat crop in Banswara district (Talwara Panchayat Samiti). It was concluded that good numbers of beneficiaries were in the high knowledge level category with respect to GW-273 in comparison to non-beneficiaries. The results indicated that 39.48 per cent of non-beneficiaries were from medium level of knowledge about this variety. The beneficiaries' proportion in the medium knowledge level was only one fifth of non-beneficiaries. It also showed positive impact of the project. These outcomes are supported by the findings of Khan *et al.* (2008) [7].

In view of the results, it is strongly recommended that GW-273 of wheat should be popularized under NAIP or similar climatic to that of the study area. These results of Dangi, Singh and Lal (2008) & Kushwaha (1991) [3, 8].

Distribution of the respondents according to their level of adoption regarding wheat Variety GW-273

High yielding variety of wheat (GW- 273) is the forth promising variety, being suggested to the beneficiaries for its adoption. Therefore, its adoption level was also analyzed. Level of adoption is presented in Table 2. Apparently, it is obvious from data that out of total, 92 (60.52 per cent) of the beneficiaries and non-beneficiaries could be recorded under the level of high adoption regarding interventions of GW-273 variety of wheat.

Table 2: Distribution of the respondents according to their level of adoption regarding wheat variety GW-273 n =152

S. No.	Adoption level	Beneficiaries (n ₁)	Non-beneficiaries (n ₂)	Total
1	Low (MPS up to 33)	18 (23.69)	24 (31.58)	42 (27.63)
2	Medium (MPS 34-66)	7 (9.21)	11 (14.48)	18 (11.85)
3	High (MPS above 66)	51 (67.10)	41 (53.94)	92 (60.52)
	Total	76 (100)	76 (100)	152 (100)

MPS=Mean per cent score; Figures within the parentheses are percentage to the total, n=n₁ + n₂, n₁=Size of sample for beneficiaries, n₂= Size of sample for non- beneficiaries

Unhesitantly, it was discouraging to report that a good number, 42 (27.63 per cent) respondents fell under low level

of adoption about interventions of GW-273, but it was good sign of the impact of the project (NAIP) that beneficiaries

proportion was found to be in tune of 23.69 per cent as against non-beneficiaries' i.e. 31.58 per cent. Close view of the data revealed that under high level of adoption of variety interventions of GW-273, beneficiaries were leading with high level of adoption (67.10 per cent) in comparison to non-beneficiaries (53.94 per cent).

It is concluded that as far the adoption of varieties interventions of GW-273 is concerned, the beneficiaries were comparatively in the fore front expressing high adoption level than non-beneficiaries. Evidently, the findings showed positive indications of definite impact of NAIP in Banswara district of Rajasthan.

The present findings are not in agreement with the findings of Sharma and Sharma (2003) ^[10], Badodia, Shrivastava and Lakhera (2002) ^[11].

Data based recommendations suggested that GW-273 should be more popularized where the present investigation was carried out. This variety deserves its due recognition action adoption under the similar conditions of its cultivation.

Aspects wise knowledge level of the respondents regarding HYV GW-273

It is obvious from Table 3 that farmers of both the groups had maximum knowledge about, "sowing time of GW-273" (87.10 MPS) and row to row spacing 79.31 per cent respectively. They were ranked first and second by the farmers of the both the groups.

Table 3: Aspects wise knowledge level of the respondents regarding HYV GW-273 n = 152

S. No	Aspect	Beneficiaries (n ₁)		Non-beneficiaries (n ₂)		Total	
		MPS	Rank	MPS	Rank	MPS	Rank
1.	Sowing time of 273- GW	85.11	II	89.10	I	87.10	I
2.	Row to row spacing	90.42	I	68.20	V	79.31	II
3.	Seed rate of GW-273	84.31	III	67.40	VI	75.91	V
4.	Average plant height	79.36	IV	77.11	III	78.23	III
5.	Crop maturity period of GW-273	75.00	VI	65.23	VII	70.11	VII
6.	Characters of GW-273.	76.01	V	78.10	II	77.05	IV
7.	Average yield	72.01	VII	72.00	IV	72.00	VI

MPS=Mean per cent score, n₁=Size of sample for beneficiaries, n₂= Size of sample for non-beneficiaries

Beneficiary farmers under NAIP reflected good knowledge regarding important aspects of GW-273 of wheat crop advocated to them. (Daipuria, Karan and Sharma 2004) ^[2]. These aspects were, "row to row spacing in the crop," "sowing time of GW-273" and "seed rate of GW-273" as ranked first, second and third with their MPS 90.42, 85.11 and 84.33, respectively. This was remarked that "characters of GW-273 and "duration of this variety" received relatively lower ranks in reference to means, low knowledge about these two aspects of GW-273. Non-beneficiaries too observed possessing remarkable knowledge about all most seven aspects of GW-273

It implied that NAIP was being executed in the study area on the right road map in the context of introducing the scientific

interventions about GW-273 among the beneficiary farmers. The closeness of non-beneficiaries with those of beneficiaries may be due to the fact that other programmes are also being implemented in the study area those might have enhanced their knowledge level.

In view of the outcomes, it is recommended that the NAIP work should be continued for keeping the interventions of GW-273 sustained.

Data given in Table 4 indicates that maximum adoption among both the categories of the respondents was observed in the sub-aspects of row to row spacing regarding HYVs of wheat (GW-273) as it was ranked I (MPS 81.70 per cent).

Table 4: Aspects wise adoption of the respondents regarding HYV GW-273 n =152

S. No	Aspect	Beneficiaries (n ₁)		Non-beneficiaries (n ₂)		Total	
		MPS	Rank	MPS	Rank	MPS	Rank
1.	Last week of November to first fortnight of December as the proper sowing time	77.00	III	70.00	III	73.50	III
2.	22.5 cm row -to- row spacing	78.00	II	85.40	I	81.70	I
3.	120-130 kg/ha seed rate	79.10	I	81.30	II	80.20	II

MPS= mean percent score, n=n₁ + n₂, n₁=Size of sample for beneficiaries, n₂= Size of sample for non-beneficiaries

As observed in case of RAJ-4037, the adoption level among beneficiaries was poor about two sub-aspects of GW-273 viz. time of sowing and row to row spacing. Therefore, here also the researcher has observed reserved expression of interventions of GW-273 which were being suggested to the beneficiaries for wheat crop under NAIP was not being adopted as per expectation. Rather non-beneficiaries were better in adoption of sub-aspects of GW-273 as compared with beneficiaries.

Hence, it is recommended that beneficiaries under project should be educated and persuaded consistently more and more for adoption of row to row spacing and seed rate as per recommendation.

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