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A study on Usefulness of Participatory Newsletter for Potato growers in Udham Singh Nagar district of Uttarakhand

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ABSTRACT: Newsletters have evolved into a vital tool for disseminating information among targeted audiences, serving as an effective means to communicate pertinent, accurate, and appropriate information on specific topics to a captive audience. This research aimed to evaluate the usefulness of a participatory newsletter on potato growers in a purposefully selected block in the US Nagar district of Uttarakhand. Adopting an experimental research design, a newsletter was first developed by the researcher using participatory methodology and then distributed to the selected respondents. The study involved 120 potato growers purposively chosen from three villages in one block (Kashipur). The effectiveness of the participatory newsletter was assessed by measuring knowledge gain through pre- and post- test method, employing a structured interview schedule for data collection. The study findings revealed a significant difference in the knowledge gained by the respondents after being exposed to the newsletter. Further, a substantial majority expressed higher satisfaction with various aspects of the newsletter, including its size, design, content, accuracy, readability, and the utility and accuracy of the information it contained.

Key words: Potato Growers, communication, print media, participatory newsletter

In India, agriculture sector accounts of 15.2 per cent of India's Gross Domestic Product (GDP) and it provide employment to more than half per cent population of the country directly or indirectly. Vegetables in India are counted as an important food crops for food trade. It plays an important role in India's economy by increasing the income of rural people (Neeraj *et al.* 2017). Uttarakhand is primarily a mountainous state. Further 78 % of its total population dependent on agricultural-related activities for livelihood. Vegetable cultivation in Uttarakhand hills, has emerged as an attractive farming option; even in offseason, it has picked up on quite a large scale providing a good source of income. Although it has become quite remunerative but farmers are reportedly facing lots of constraints relating to its marketing and production' (Shah and Ansari, 2020).

Potato (*Solanum tuberosum* L.) is a perennial plant and belongs to the Solanaceae family and it is the fourth most grown crop in the world after paddy, wheat and maize. There are various constraints faced by the farmers in commercial farming of potatoes in Uttarakhand state viz. unavailability of quality seeds, pest management, lack of farm machinery, Field management, lack of post-harvest management techniques, marketing problems, lack of transportation facility, irrigation facility, lack of storage facilities, lack of technical knowledge for scientific cultivation, lack of extension workers and lack of research, technical guidance and sufficient capital. Vegetable cultivation offers a unique opportunity for hill farmers of Uttarakhand due to the favourable climatic conditions.

Therefore, extension workers can empower the potato growers by providing them information, education and knowledge on various aspects. However, the proportion of extension workers per farmer in India is very less, which is a big challenge for the extension system. Keeping this challenge in mind, it becomes important to seek a participatory approach in the process of building strategy to meet the farmers' own information needs. The biggest problem of the farmers in Uttarakhand is the information gap. Ansari and Shweta (2014) observed that information asymmetry at farm level has been identified as one of the main reasons for low agriculture productivity and production. Access to

accurate, timely and reliable information, therefore, plays a crucial role in the adoption of appropriate agriculture technology.

To fill this gap, it is necessary to provide services as per their requirement through the participation of the farmers at the grassroots level. Media can prove to be a good tool to make these services available to farmers. The mass media and agricultural sector are interlinked. (Gorg and Strobl, 2001). Printed media has its own power to disseminate the valuable information. The print media played an important role in agricultural development since the time of independence, and consider on more important than electronic media. Kushwaha (2008) revealed that most communication and development efforts depend on printed materials. People's behavior and attitudes have been changed by print media (Sharma and Kashyap, 2014), which shows that print media can be used as an important tool for behavioral change of the people.

Communication is at the heart of agriculture development and is said to be a steering wheel which drives all the developmental and education interventions in society. The need for informative, educative, and innovative participatory development communications is immense, since a large population lives in rural areas and depends on agriculture and allied sectors. However, 'participants in educational and training paradigms require rich learning environment supported by well designed resources (Khan, 1997; Tamta & Ansari, 2015). According to Sharma (2009), Print media can emerge as an efficient alternative as it is cost effective, portable, and flexible and does not require any other technical knowledge in its use. The main role of media production is need assessment, message designing and use of information through active participation of farmers at the grassroots level, but today most media are ignorant about this essential role. Therefore, it is important to seek a participatory approach to involve them in the building strategy process to meet the farmers' own information needs. Newsletter to be effective and serves as an information communication tool and based on the needs of target audience. Raghuvanshi and Ansari (2018) opined that Newsletters are very much effective in generating the desired social support and drive public participation in development programmes and initiatives. Participatory agricultural communications aimed at encouraging knowledge transfer and promoting technology adoption at the farm level are a novel approach of agriculture extension services as they create a favourable information ecosystem enhancing learning outcomes. It is therefore imperative that before designing newsletter, information needs should be assessed. Participatory communication approaches appear as an alternative tool for development communication.

The present study was undertaken with the objective of assessing the usefulness of participatory newsletter as a development communication intervention for promoting potato growers.

MATERIALS AND METHODS

The present study was conducted in purposively selected Kashipur block of US Nagar district in Uttarakhand. Out of six districts (Nainital, Almora, Bageshwar, Pithoragarh, Champawat, US Nagar), one district (U. S. Nagar) was selected purposively as it is having maximum number of potato growers. All the 120 respondents who were involved in potato production were selected purposively. The study followed experimental research design.

The newsletter was developed and designed with the participation of potato growers according to their information needs which were identified through need assessment exercise done with potato growers. In order to determine the usefulness of newsletter, a knowledge test was developed with the consultation of experts. The knowledge test comprised of 25 Questions related to potato growers. Out of these, 10 questions were of fill in the blanks type, 10 were of true and false type and 5 were of multiple choice type. For the development of newsletter regarding potato cultivation some parameters were selected, viz. size of Newsletter (A4 size of paper was selected), font type, font size (11), language (Hindi) and single line spacing. After the selection of

parameters, name of the newsletter *(Aalu ki Kheti*) was selected after consultation with expert. Headings, photographs and content of the newsletter related to potato cultivation were in consultation with respondents. The newsletter on potato growers was distributed to the selected respondents. A pretest was conducted before distribution of newsletter and after 20 days, another test was completed to find out the gain in knowledge as a result of exposure to the newsletter.

RESULTS AND DISSCUSSION

Usefulness of participatory newsletter in term of gain in knowledge

Effectiveness of the participatory newsletter was measured in terms of gain in knowledge of the respondents accessed by 25 items. Primarily, a knowledge test was given to respondents before the distribution of newsletter that was called pre-test. Pre-test was then followed by a post-test. Paired't'-test was calculated to test the significant difference in pre and post knowledge level of respondents. Data presented in Table 1 depicts the relevant values for driving the conclusion from the paired't'-test.

It is evident from the above table that value of 't' cal is higher than value of 't' tab at 1% level of significance. Thus, null hypothesis that respondents have same knowledge in pre and post knowledge test was rejected and alternate hypothesis that mean knowledge score was significantly higher in post-test than pre-test. Hence, it can be concluded that the intervention of participatory newsletter significant gain in knowledge of respondents.
Initially, potato growers had low knowledge regarding potato cultivation practices as indicated by low score in pre-test (13.96). Significant increase in knowledge was observed after the intervention of participatory newsletter as their post-test score increased from 13.96 to 21.88. The gain in knowledge was 7.91.

Thus, participatory newsletter was found to be effective in terms of gain in knowledge of respondents. Sharma and Kashyap (2014) also reported that participatory newsletter led to significant gains in the knowledge of respondents. Participatory Newsletter as a tool for communication was found to be effective as displayed by the significant gains in knowledge of respondents. Hence, the intervention of participatory newsletter can be used as an effective medium to enhance the level of knowledge of potato growers. It can also be concluded that when newsletter is designed based on needs of the respondents, positive results can be obtained in not only bridging the information and knowledge gap but in other possible aspects also.

From the above data it can be concluded that majority (71.4 %) of the respondents were found to be most satisfied followed by 25.6 per cent satisfied and only 3 per cent respondents were least satisfied regarding the size of the newsletter. Majority (79.6 %) of the respondents were found most satisfied followed by 18.4 per cent satisfied and only 2 per cent respondents were least satisfied regarding the Design of newsletter. Majority (95 %) of the respondents were found most satisfied followed by 5 per cent satisfied and none of the respondents were least satisfied regarding the Name of the newsletter. Majority (92 %) of the respondents were found most satisfied followed by 8 per cent satisfied and none of the respondents were least satisfied regarding the content of the newsletter. Majority (84.3 %) of the respondents were found most satisfied followed by 10 per cent satisfied and only 5.7 per cent respondents were least satisfied regarding the Need based information. Majority (64.6 %) of the respondents were found most satisfied followed by 35.4 per cent satisfied and none of the respondents

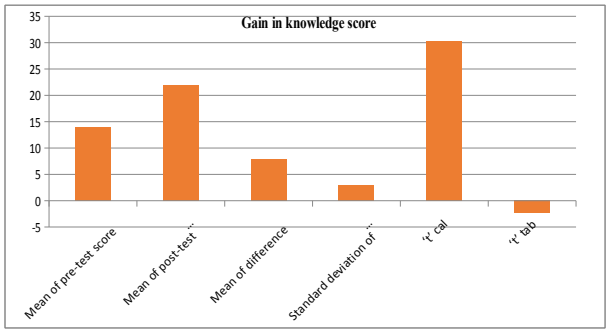

Fig. 1: Paired 't' test for relative effectiveness of participatory newsletter (n=120)

Table 1: Effectiveness of participatory newsletter in term of gain in knowledge

S. No.	Statements	Pre-test score	Post-test score	Difference
1	Potato is known as king of vegetables.	112	116	4
2	Appropriate time for sowing of potato is Mid October	120	120	0
3	For high yield of potato, the size of potato seeds is 3 to 3.5 cm. And the weight should be 25-30 grams.	106	115	9
4	For potato cultivation, the seed rate should be 25-30 quintals/ha.	102	120	18
5	Spacing for potato cultivation should be 25x60cm.	120	120	0
6	Potato crop is ready for harvesting 75–120 days after sowing.	120	120	0
7	The first irrigation should be done after the emergence of the plant in potato fields and the second irrigation should be done after 15 days.	96	104	8
8	7-8 numbers of irrigation are required for good growth, development and good yield of the plant.	104	118	14
9	Earthing up in potatoes is mainly done to keep the soil loose and to destroy the weeds.	114	116	2
10	Insect of potato which infect the tubers in field as well as storage potato tuber moth.	74	114	40
11	White fly mainly acts as a carrier for viruses.	84	118	34
12	Sun light is not essential for potato germination.	119	120	1
13	Weeds in the field are not suitable for potatoes, so weeds should not be allowed to grow in the field.	120	120	0
14	Urea is a phosphatic fertilizer.	96	107	11
15	White fly sucks the sap of leaves, reducing the strength of the plant. After some time, the leaves turn yellow and finally dry up.	96	102	6
16	Pesticides are sprayed to irrigate the crops.	120	120	0
17	Applications of excess chemical fertilizer reduce soil fertility.	78	96	18
18	Commercial fertilizers are available mostly in the form of granules.	105	107	2
19	Earthing up in potato done when plant height gets 15-25cm.	95	97	2
20	Aphid attack can be prevented for 45 days by using 10 kg / ha of Phorate 10G at the time of planting.	84	91	7
21	A common example of stem tuber is potato	120	120	0
22	Potato tuber yield will be 327q/ha, if crop was spaced at 25 x 60 cm.	120	120	0
23	Management of late blight in potato can be done by collecting field residues and burnt before sowing, Use of certified seeds and Spray of 0.3 % copperoxychloride.	84	96	10
24	Black wart disease causes brown-to-black moles like appearance in potatoes.	76	79	3
25	Potato tuber moth can be prevented by Using disease free seeds, doing earthing up at appropriate time and Spraying Fenvelrate 2 percent or Malathion 5 percent on stored potato.	78	86	8

Table 2: Paired 't' test for relative effectiveness of participatory newsletter (n=120)

Mean of pre-test score $\overline{X1}$	Mean of post-test score $\overline{X2}$	Mean of difference $\overline{d}$	Standard deviation of difference Sd	't' cal	't' tab
13.96	21.88	7.91	2.85	30.357	-2.378

**Indicate that value is significant at 1% level of significance; 't' tab (left sided) = - $t_{(n-1, \alpha)}$ = - 2.378

were least satisfied regarding the Utility of the content. Majority (62 %) of the respondents were found most satisfied followed by 38 per cent satisfied and none of the respondents were least satisfied regarding the accuracy of message. Majority (74.7 %) of the respondents were found most satisfied followed by 25.3 per cent satisfied and none of the respondents were least satisfied regarding the Clarity of message. Majority (65 %) of the respondents were found most satisfied followed by 35 per cent satisfied and none of the respondents were least satisfied regarding the Readability of the message.

Table 3: Opinions of respondents regarding newsletter in post test

Sl. No.	Particular	Most satisfactory (%)	Satisfactory (%)	Least satisfactory (%)
1	Size of newsletter	71.40	25.60	3.00
2	Design of newsletter	79.60	18.40	2.00
3	Name of the newsletter	95.00	5.00	0
4	Overall look of the newsletter	92.00	8.00	0
5	Need based information	84.30	10.00	5.70
6	Utility of the content	64.60	35.40	0
7	Accuracy of message	62.00	38.00	0
8	Clarity of message	74.70	25.30	0
9	Readability of the message	65.00	35.00	0

CONCLUSION

The analysis suggests that there was a notable increase in the mean knowledge score from the pre-test to the post-test, indicating a significant improvement. This improvement is attributed to the implementation of the participatory newsletter intervention, showcasing its effectiveness in enhancing the knowledge of the participants. The study highlights the efficacy of the participatory newsletter as a communication tool, evident in the substantial knowledge gains observed among respondents. Further, the findings emphasize the importance of tailoring newsletters to address the specific information needs of the audience. It is concluded that designing newsletters based on identified information needs leads to positive outcomes not only in closing knowledge gaps but also in various other aspects. The research highlights the extensive potential of newsletters as valuable tools for agricultural extension, particularly when adopting a participatory approach.

Additionally, the study sheds light on the role of print media in agricultural development. The participatory newsletter, by disseminating need-based information, is shown to bring about a significant transformation in the awareness and knowledge levels of farmers. This underscores the broader impact of print media in contributing to agricultural knowledge dissemination and development.

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