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Audience response pattern through farm field schools approach in term of change in knowledge, skill and attitudes (KSA)

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Abstract

Studies on Audience response pattern through farm field schools approach in term of change in knowledge, skill and attitudes (KSA) was carried out during 2015 in the Durg district of Chhattisgarh state. This study was conducted in Borenda village block Patan. The aim of this study was Show Farmers the benefits of working in groups and encourage group activities. Investigate the problems faced by the farmers under the FFSs methodology and the impediments in implementation of FFSs approach. Helping farmers learn how to organize themselves and their communities Farmers know the technique of taking a soil sample. Farmers are aware about the assistance available under FFS and the message is disseminated through these farmers to other farmers in the area. Farmers know how to select healthy seed. Farmers observe the field for insect, pest and diseases and discuss the major insect pests and diseases present in the area and their control measures. Farmers are aware of adverse effect of excessive nitrogenous fertilizer particularly during flowering. Farmers are aware of the concept of IPM The field school offers farmers an opportunity to learn by doing, by being involved in experimentation, discussion and decision-making. This strengthens the role of farmers in the research-extension-farmer chain. It also improves the sense of ownership of technological packages and new knowledge and skills.

Keywords: Farmer field school, integrated pest management, soil sample and flowering

Introduction

Lot of scientific information is being generated by the State Agricultural Universities (SAUs), Indian Council of Agricultural Research (ICAR) Institutes and other public and private organizations to serve millions of farm families in different agro-ecological regions of the country. Some of this information find ready acceptance of the farmer while most are not adopted. It is estimated that about 70% of the available technologies are not adopted by the farmers. The common alleged causes for the observed gaps are: Inadequate/ineffective extension; Inadequate input supplies; Inadequate credit support; Inadequate market infrastructure; and Farmers' lethargy/ indifference. In addition to the above mentioned causes the more important reasons for low acceptance of technologies is due to technology being: Not economically viable; Not operationally feasible; Not stable; Not matching with the farmers' needs; and Not compatible with the farmers' overall farming system. The technology, therefore, is required to be fine tuned better to fit the requirements of the farmers in a given farming situation.

It is a participatory approach to disseminate and fine tune the production technology in such a way that adoption rate becomes high. Fine-tuning of the production technology based on the location specific conditions and resources available with the farmers enhances the adoption rate. The Farmers' field school (FFS) approach is a direct response to the needs of the farmers. Unlike other extension tools FFS is a season long two-way communication between the farmers and the facilitator who may be an extension or research worker. The term FFS has its origin in Indonesia. The first FFS were designed and managed by the Food and Agriculture Organization (FAO) of the United Nations in Indonesia in 1989 to train the trainers and farmers in Integrated Pest Management (IPM) in a participatory mode. The term 'Farmers' Field School' comes from the Indonesian 'Sekolah Lapangan' meaning simply 'field school'. The first field schools were established in Central Java during the pilot phase of the Food and Agriculture Organization (FAO) assisted National Integrated Pest Management (IPM) programme. This Programme was prompted by the devastating insecticide-induced outbreaks of Brown Plant Hoppers (*Nilaparvata lugens*) that were estimated to have destroyed 20,000

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hectares of rice in Java alone (Godrick, 2004) [5]. During 1986 the response of the Government of Indonesia was to launch an emergency training project aimed at providing 120,000 farmers with field training in IPM, focussing mainly on reducing the application of the pesticides that were destroying the natural insect predators of the Brown Plant Hopper (Braun *et al.*, 2006) [6]. In reaction to these conditions, the Integrated Pest Management Farmers' Field Schools (IPM-FFS) were developed, in which farmers become "experts" in managing the ecology of their fields for bringing better yields, increased profits and less risk to their health and environment. Training techniques were used to achieve learning objectives, which are not limited to those of the work domain alone, but also include interactive and empowerment domains. The approach is integrated and organized in such a way so that farmers are not the objects of training but are able to use their experience as the subject of training. FFS is a group-based learning process that includes hands-on training methods in which farmers test management methods/production technologies for themselves and learn concepts directly. Training also includes communication skills, skills in identification and problem solving, in leadership, in interaction and discussion methods. Training in the field school follows the season long cycle and the field is the primary learning venue. Farmers learn by carrying out themselves the various activities related to the particular farming practice they want to learn/evaluate. The field school offers farmers an opportunity to learn by doing, by being involved in experimentation, discussion and decision-making. This strengthens the role of farmers in the research-extension-farmer chain. It also improves the sense of ownership of technological packages and new knowledge and skills. It is flexible, non-lecture based field study using a field that allows the "field to be the teacher". It has strong emphasis on observation, analysis, discussion and debate, which allows new ecological concepts to be combined with local knowledge; Technically competent facilitator leads group activities, but is not seen as the "all knowing source" of the "right information" and a focus on farmers becoming "experts" and "farmer facilitators" in their own communities. The main source of facilitator and technical experts is from Department of Agriculture (DOA), State Agricultural Universities, (SAU), Krishi Vigyan Kendra, (KVK), and Non-Government Organizations (NGO) etc. However, Department of agriculture and unit of ATMA be the main actors. These centres are already conducting FFS on IPM in different states on various crops including. These centres can provide some manpower as well as technical guidance and martial for the conduct of FFS. State Department of Agriculture should get in touch with these centres in their respective states to establish cooperative mechanism.

Methodology

Description of the study areas: The present study is for Borenda village is located in Patan Tehsil of Durg district in Chhattisgarh, India.

Selection of area

With the help of Department of agriculture district Durg government of Chhattisgarh state we conduct the FFS programme on Chick Pea production and I.P.M. techniques in

village name Borenda, block Patan district Durg Chhattisgarh followed by the guidelines of Extension Reforms Agricultural Technology Management Agency (ATMA). Borenda village is located in Patan Tehsil of Durg district in Chhattisgarh, India. It is situated 16 km away from sub-district headquarter Patan and 55km away from district headquarter Durg 37.0 M from State capital Raipur. Borenda is surrounded by Patan Tehsil towards north, Abhanpur Tehsil towards East, Dhamtari Tehsil towards South; Gunderdehi Tehsil towards west. This Place is in the border of the Durg District and Raipur District. The total geographical area of village is 718.18 hectares. Village is situated near Kharun basin.

Selection of Farmers for FFS

The farmers participating in each FFS are to be selected by the rural agriculture extension officer (R.A.E.O.) with the guidance from office of the Senior Agriculture Development Officer (S.A.D.O.) block Patan district Durg Chhattisgarh in consultation with ATMA and village Panchayat bodies Farmers selected for FFS should be as far as possible within contiguous area in a village. The selection of farmers should be done well in advance so that other modalities/arrangements for the conduct of FFS are made in consultation with the farmers on whose field FFS is to be conducted. The knowledge of specific assistance being provided to the farmer for the conduct of Field demonstration is essential so that the facilitator knows what other inputs and arrangements are to be made for the conduct of this school throughout the season.

Selection of Site for FFS and Expectations from Contact Farmer

One of the sites selected for demonstration is to be selected for the conduct of FFS. Care should be taken that this site is a central point for other participant in the FFS for easy access. Cooperation of this farmer is key to success of the FFS. Some inputs are to be stored and some logistic arrangements such as provision of tea/snacks are to be made with his assistance. Some activities are to be planned well in advance of the scheduled day for FFS. Some of the operations are to be carried out within 2-5 days of the first operation that will not fit in the schedule. Similarly the use of some of the inputs like seed treatment, application of herbicides and micronutrients may preclude the opportunity to demonstrate some of the situations like disease symptoms, appearance of weeds and symptoms of micronutrient deficiency which are otherwise important for hands on activities and knowledge for the farmers. Therefore, it is important to have a plot of about 1acre or so adjoining the demonstration plot (site of FFS) where such situations will develop and can be used for observation as well as hands on activities.

Arrangements for the Conduct of FFS

Arrangements for the conduct of these schools such as, soil testing of this piece of land, provision of inputs, equipments and implements; participation of experts from the SAU/KVK/ICAR institutes/Government of India and other organizations; stationary and other training material such as posters & charts, manuals, other preparation like multiplication of structured questionnaire; and the arrangements for tea and snacks during the conduct of these

schools are to be made by the facilitator beforehand. Tentative list of field visits/demonstration, inviting some progressive farmers to deliver a talk on his success story should also be arranged well in advance. Similarly some of the activities are to be carried out at a time when the FFS is not held; arrangements to carry out such activities is to be made so that the contact farmer undertake these activities on behalf of FFS and explain to other farmers in the subsequent session. As per order by Deputy Director Agriculture, S.A.D.O. schedule the programme which is executed in village which shown in table no. 1

Results and Discussion

Activities in Week I

We make a attendance sheet for farmers to assure the presence in FFS which is shown in table no. 2.

Output:

- Farmers know the technique of taking a soil sample.
- Farmers are aware about the assistance available under FFS and the message is disseminated through these farmers to other farmers in the area.
- Facilitator has gathered the information regarding socio-economic profile of the farmers and existing practices of rice production.
- Farmers are aware of the type of demonstrations being organized in their vicinity.

Activities in Week-II

- Group Discussion and presentation.
- Results of the soil analysis are available.
- Farmers observe the field for insect, pest and diseases and discuss the major insect pests and diseases present in the area and their control measures.

Output

- Farmers have identified the existing insect pest and diseases and know how to control them.
- Farmers are aware of insect pests and diseases of national and regional importance and means to control them.
- Farmers have practiced the preparation and spray of micronutrients.

Activities in Week-III

Farmers discuss the concept of IPM which shown in Fig. 2.

Output

- Farmers are aware of common insect pest and diseases, their nature of damage and control measures.
- Farmers are aware as to at what population of insects the chemicals are to be applied.
- They are aware of the concept of ETL.

Activities in Week-IV

- Field Visit: May arrange a visit to some demonstrations. Even a visit to the progressive farmer who gave presentation in the previous week may be organized.

Output

- Farmers are aware of adverse effect of excessive nitrogenous fertilizer particular during flowering.
- Farmers are aware of the concept of IPM.
- Farmers know how to use the insect net.
- Farmers know how to control rodents.
- Farmers are able to identify insect, pest and diseases and the nature of damage done by them.
- Farmers are also aware of useful insects.

Activities in Week-V

Group Discussion, Field observations and Presentation

- Discussion on IPM continues.
- Discussion on method of seed multiplication continues.
- Farmers observe the field for IPM activities.
- Some activities of IPM may take place. Pheromone traps are examined which shown in Fig 4.

Activities in Week-VI

A Field day is organized for farmers to make a conversation between farmers and scientist and had discussion about all the implementation in field before five weeks and what are the benefits of all the implementation in field and try to solve all the problems faced by the farmers which is shown in Fig. 5 and Fig. 6.

- Discussion on Harvesting and Threshing may take place.
- Actual Harvesting and Threshing takes place. (Crop should have been harvested.)

Table 1: Programme schedule for conducting FFS

S. N.	Trainer name	Cast	Crop Name	Name of village	Date of training						Name of R.A.E.O.			Mob. No.	
					1 st	2 nd	3 rd	4 th	5 th	6 th					
1	Mr. Devendra Sahu	OBC	Chick Pea	Borenda	20/112015	11-12-15	03-01-16	29-01-16	12-02-16	01-03-16	R.A.E.O.	Hemant Kumar Bhuarya	A.D.O.	Mr. Y. K. Verma	9893114801

Table 2: Attendance sheet for farmers

S. No.	Name of Farmers	Caste	Category	Date					
				20-11-15	11-12-15	03-01-16	29-01-16	12-02-16	01-03-16
1	Parmanand Sahu	OBC	BIG	P	P	P	P	P	P
2	Devendra Sahu	OBC	BIG	P	P	P	P	P	P
3	Panna Lal Sahu	OBC	SMALL	P	P	P	P	P	P
4	Punit Ram	OBC	SMALL	P	P	P	P	P	P
5	Lokeshwer Sahu	OBC	SMALL	P	P	P	P	P	P
6	Narayan Yadav	OBC	BIG	P	P	P	P	P	P
7	Mahendra Sahu	OBC	SMALL	P	P	P	P	P	P
8	Prahalad Sahu	OBC	SMALL	P	P	P	P	P	P
9	Bhukhan Lal Sahu	OBC	SMALL	P	P	P	P	P	P
10	Khorbahara	OBC	SMALL	P	P	P	A	A	P
11	Punau	OBC	SMALL	P	A	P	P	P	P
12	Hiruram	OBC	SMALL	P	P	A	P	P	P
13	Maniram	OBC	SMALL	P	P	P	P	P	P
14	Kishun	OBC	SMALL	P	P	P	P	P	P
15	Komal	OBC	SMALL	P	P	P	P	P	P
16	Chhannu Lal	OBC	SMALL	P	P	P	A	P	P
17	Chatur Sinha	OBC	SMALL	P	P	P	P	P	P
18	Naresh Sinha	OBC	SMALL	P	P	P	P	A	P
19	Dhaneshwer Sahu	OBC	SMALL	P	P	P	A	P	P
20	Krishna	OBC	SMALL	P	P	P	P	P	P
21	Baldau Sahu	OBC	SMALL	P	P	P	P	P	P
22	Resham Lal	OBC	SMALL	P	A	P	P	P	P
23	Puranik Sahu	OBC	SMALL	P	P	P	A	P	P
24	Narendra	OBC	SMALL	P	P	P	P	P	P
25	Nand Kumar Sahu	OBC	SMALL	P	P	P	P	P	P

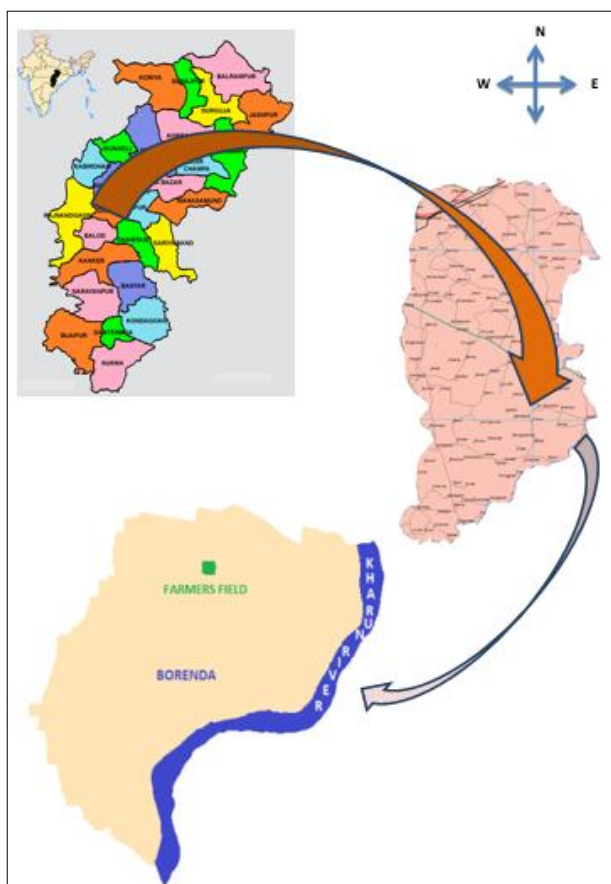


Fig 1: Location of the farmers' field school



Fig 2: Selection of Farmers in Gram Panchayat Building



Fig 3: Collection of Soil Sample



Fig 4: I.P.M. Kit Distribution from S.A.D.O.



Fig 8: Field Day



Fig 5: I.P.M. Fit Demonstration from Expert on Field



Fig 6: Pheromen Traps in Chick Pea Field



Fig 7: Farmer Scientist Interaction in Field

Conclusion

FFS is a group-based learning process that includes hands-on training methods in which farmers test management methods/production technologies for themselves and learn concepts directly. Training also includes communication skills, skills in identification and problem solving, in leadership, in interaction and discussion methods. Training in the field school follows the season long cycle and the field is the primary learning venue. Farmers learn by carrying out themselves the various activities related to the particular farming practice they want to learn/evaluate. The field school offers farmers an opportunity to learn by doing, by being involved in experimentation, discussion and decision-making. This strengthens the role of farmers in the research-extension-farmer chain. It also improves the sense of ownership of technological packages and new knowledge and skills.

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