

## **Evaluation of Farmers Field School on Bengalgram Implemented by KVK Dindigul**

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### **ABSTRACT**

*Farmers Field School is a novel extension approach conducted to enhance the sustainability of Bengalgram production system in Dindigul. To evaluate its outcome on ecological knowledge level and cultivation behavior of Bengalgram growers, the present investigation was carried out in six villages of Rediarchattram Block of Dindigul district in Tamil Nadu, with 60 FFS beneficiaries and 60 non FFS beneficiaries. The study revealed that the FFS farmers had higher decision making score than their counterparts. There were significant changes in the cultivation behavior and livelihood of FFS participants as compared to non participants.*

A notable innovation introduced in the Bengalgram extension system was disseminated through Farmers Field School (FFS) model. The focus of FFS was, and still is, on learning through discovery, experimentation and group or community actions. FFSs thus have social goals beyond mere changes in pest management techniques that seek to promote the empowerment of farmers by building human and social capital (Gallagher, 2000). The FFS is a non formal learner centered education process, intended to empower people to address their field problems actively by fostering participation, interaction, dialogue, joint decision making and collective action (Gopala, 2010). In Bengal gram, initially, it was introduced to promote the adoption of Integrated Pest Management (IPM) techniques with training, demonstrations, making availability of bio control agents, participatory monitoring of

pest incidence and community system approach in village level. Later the same emphasis was made on Integrated Crop Management (ICM) in Bengalgram. Many studies stated that the ICM Farmers Field School conducted for pulse growers in Central and South India, was an effective educational approach to build the essential knowledge and decision making skills among farmers to adopt the technologies. However, the impact of the FFS – an intensive training approach, oriented towards the development of human capital on adoption of Bengalgram technologies and livelihoods of Bengalgram growers is still questionable.

### **METHODOLOGY**

For this study, *expost facto* design was used. A multistage random sampling was followed to select the villages and farmers

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under rainfed condition of Bengalgram. Among the 24 villages from Rediarchatram block in Dindigul district, six Bengal gram growing villages viz., Sriramapuram, Karisalpatty, Kandasampuram, Chinnapuram, Palaniyur and Vanampatty were selected randomly which were under black soil with rainfed Bengalgram growing conditions. Based on the FFS conducted by KVK Dindigul, sixty number of farmers who were benefitted out of FFS were selected as respondents. Also sixty farmers who did not participated in the FFS were also selected randomly as respondents. Taking into consideration, the scope and objectives of the study, a well structured interview schedule was prepared to assess the impact of FFS on Bengalgram growers after perusal of available literature and in consultation with scientists from TNAU and extension workers of State Department of Agriculture. A pre testing in the form of

pilot survey was done in the non- sample area to probe into the relevancy of the schedule to suite the area under study. Based on the results of pre – testing, suitable modifications were made and final interview schedule was prepared. The respondents were personally contacted for collection of data.

## FINDINGS AND DISCUSSION

### Profile characteristics of respondents

In the present study, a clear understanding of the characteristics of the FFS and Non FFS farmers of Bengalgram cultivation would enable the investigator to interpret the data gathered in a meaningful way. For this purpose, 10 variables consisting of socio – personal, socio- psychological and socio – economic characteristics of the Bengalgram farmers were identified and analysed (Table.1).

**Table 1.**  
**Profile Characteristics of FFS and Non FFS Bengalgram Farmers (n = 120)**

Sl.No.	Particulars	FFS (n = 60)	NFFS (n = 60)
1.	Age in years	>45 years	>45 years
2.	Education	Middle school	Primary school
3.	Caste	MBC/BC	BC
4.	Family type	JF/>5	JF/<5
5.	Occupation	Farming	Farming + Labour
6.	Farm size	2.833 acres	2.56 acres
7.	Farming experience	22.63	21.788
8.	Experience in Bengal gram cultivation	19.70	17.7
9.	Annual income (Rs)	26233	19786
10.	Innovativeness score for 3.0	2.7	1.4



Majority of the FFS farmers were more than 45 years old and had middle school level of educational status and belonged to Most Backward Class or Backward Class. Farming was their sole occupation. They owned an average of 2.833 acres of farm land and cultivated Bengalgram in 25 to 50% of the area. Majority of them had more than 20 years

of farming experience and experience in Bengalgram cultivation. Majority of them had an average annual income of more than Rs.25,000 per year, high level of contact with extension agency, mass media exposure and economic motivation. Majority of them had medium level of risk orientation and innovativeness.

**Table 2.**  
**Problem Faced by the Bengalgram Growers before Attending FFS on Bengalgram**

Sl.No.	Problems	No. (%)	Rank
1.	Dependent local input dealers for taking crop and pest management decisions	57(95.00)	I
2.	Do not know to differentiate the pests and defenders of cotton	52(86.67)	II
3.	Neglected by the extension system as small and marginal farmers	41(68.33)	IV
4.	Sought the SDA for input subsidies not for improving knowledge and skill	46(76.67)	III
5.	Did not have the habit of analyzing the crop situation by regular by regular monitoring	37(61.67)	V
6.	Spent high amount for raising for raising the crop and got lesser yield	30(50.00)	VI

Majority of the Non FFS were more than 45 years old, had Primary level of educational status and belonged to Backward Class. Farming was their sole occupation and a part time they worked as agricultural labourers too. They owned an average of 2.56 acres of farm land and cultivated Bengalgram in 25 to 50% of the area. Majority of them had more than 20 years of farming experience and experience in Bengalgram cultivation. Majority of them had an average annual income of more than Rs.19, 000 per year, low level of contact

with extension agency, mass media exposure and economic motivation. Majority of them had low level of risk orientation, progressive ness, credit orientation and innovativeness.

#### **Documentation of the problems faced by Bengalgram growers before attending FFS on Bengalgram**

The problems faced by the Bengalgram growers in the study villages before attending the FFS were documented and presented in

**Table 3.**  
**Knowledge and Decision Making Score of FFS and Non FFS Farmers** (n = 120)

Particulars	Identification Score	Functional Score	Ecological Score	Decision Score
Farmers who have not attended FFS	5.61	4.43	5.83	6.71
Farmers who have attended FFS	6.98	6.82	7.24	8.77

Table 2. Dependency on local input dealers for taking crop management decisions (95.00) was the top most problem faced by Bengalgram growers before attending the FFS on Bengal gram. They were all neglected by the extension system as small and marginal farmers and they used to seek the State Department of Agriculture for input subsidies and not for improving knowledge and skill. They did not have the habit of analyzing the crop situation based on regular monitoring, poor knowledge on pest management and high cost of production were the major problems faced by them before entering into FFS on Bengalgram.

### **Ecological knowledge and decision making scores of FFS and Non FFS Bengalgram farmers**

To find out the changes in the ecological knowledge of FFS farmers, a questionnaire was given to them and they were asked to list the names of the insects commonly found in Bengalgram fields (Identification Score, IS), define whether the listed insects were pests or predators (Functional Score, FS) and to describe the feeding habits of the insects, the plant damage in the case of pests and the predatory capacity in the case of beneficial insects (Ecological Score, ES). Similarly, for

**Table 4.**  
**Cultivation Behaviour Score of FFS and Non FFS Farmers** (n = 120)

Particulars	New Varieties	Weed Management	Irrigation Management	Harvesting Techniques	Marketing Behaviour
Farmers who have not attended FFS	5.35	5.72	5.83	7.68	7.15
Farmers who have attended FFS	4.25	4.05	4.22	3.75	5.43

taking decision on crop management they were asked to select the answer from the continuum, Consulting with dealers/ Consulting with neighbor farmers / Observing pest in field / Performing an agro – ecosystem analysis in own field. The scores were confined to a maximum score of 10. The FFS farmers

had significantly higher identification, functional, ecological knowledge and decision score than the Non FFS counterparts (Table 3). The results revealed that the FFS beneficiaries had higher identification score (6.98) than Non FFS beneficiaries (5.61) and higher functional score (6.82) than non



beneficiaries (4.43). The ecological score (5.83) and decision making score (6.71) of Non FFS beneficiaries were lower than the FFS beneficiaries (7.24 and 8.77 respectively). This findings is in agreement with all previous literature on knowledge gain associated with the participation of FFS (Rola *et al.*, 2002, Feder *et al.*, 2004 and Usha Rani *et al.*, 2011)

### **Cultivation behaviour of FFS Bengal gram farmers and Non FFS Bengalgram farmers**

The results showed that the FFS trained farmers had adopted latest varieties (score 5.35) in Bengalgram than their Non FFS counterparts (4.25) (Table.4.). Their scores on weed management (5.72), Irrigation management (5.83), Harvesting techniques (7.68) and marketing behavior (7.15) were significantly higher than the score of the Non FFS farmers. The Non FFS farmers had lower

score for weed management (4.05), irrigation management (4.22), Harvesting techniques (3.75) and marketing behaviour (5.43) than their counterpart.

### **Inference of FFS as perceived by the Bengalgram growers after attending FFS**

The inference of FFS as perceived by the Bengalgram growers after attending the FFS was given in Table.5. Majority of the FFS beneficiaries (93.33) could learn about harmful, harmless & beneficial pests and their ETL and agro ecology and 81.67 per cent of them could reduce the cost of cultivation and increase in income by new technologies- intercropping. They could also streamlining to take correct crop management decisions at every stage of the crop (73.33) and developed a regular habit of visiting the field and monitoring crop pest and diseases (70.00).

**Table 5.**  
**Inference of FFS as Perceived by FFS Beneficiaries**

(n= 60)

Sl.No.	Problems encountered	No. (%)	Rank
1.	Able to take correct crop management decisions at every stage of the crop	44(73.33)	III
2.	Developed a regular habit of visiting the field and monitoring crop pest and diseases	42(70.00)	IV
3.	Reduction in cost of cultivation and increase the income by new technologies- intercropping	49(81.67)	II
4.	Sensitization by new ways of thinking and problem solving to make critical and informal decisions	38(63.33)	V
5.	Learnt to organize among them in our communities	33(55.00)	VI
6.	Knowledge on harmful, harmless & beneficial pests and their ETL and ago ecology	56(93.33)	I

More than half of them (63.33) were sensitized by new ways of thinking and problem solving to make critical and informed decision and learnt to organize among them in our communities (55.00).

## CONCLUSION

Farmers Field Schools on Bengalgram have shown in this study as an effective extension approach to build up essential knowledge and decision making skills among Bengalgram growers. The FFS participants had experienced significant changes in their knowledge level and cultivation behaviour. They were sensitized to take informed decisions at the critical stages of the crop. Considering the positive impact of FFS on Bengalgram, Zonal Project Directorate of Zone VIII must continue to support the FFS approach with increased financial support covering the potential/major crops of the district in Tamil Nadu, in order to foster the overall production of the state.

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