

# FARMER FIELD SCHOOL FOR WOMEN

An experience of IPM-FFS in Tomato

Jan - May 2006

## Feedback from participants

*I was not knowing which way to go. Now I have gained confidence to cultivate. I could save Rs. 1700 from the cost of seedlings, which was an additional income to me.*

– Ms. Sivarani

*I am confident that I will not lose any money, even if tomato sells for a rupee. Any price fall will not eat into my profits, because now I spend less for growing tomato.*

– Ms. Rani

AME Foundation promotes ecological agriculture among small and marginal farmers in the semi arid areas of the Deccan Plateau by generating farming alternatives, enriching farmers knowledge, linking development agencies and sharing experience.

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### AME Foundation

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Tomato is the major cash crop in Kottur, Seerampatti and Eachampallam villages in Dharmapuri district. Being a highly labour intensive crop, tomato cultivation is also a source of employment in these villages. Farmers in these villages have been practicing tomato cultivation, largely depending on expensive external inputs. Chemical fertilisers and pesticides are being used indiscriminately, resulting in high production costs. To enable these farmers to switch over to eco-friendly ways of farming in general, and reduce the production costs in particular, it was necessary to empower them in alternative farming practices. Farmer Field School (FFS), a discovery learning system was found most appropriate for this purpose.

## The Programme

AME Foundation started working in Dharmapuri district through its Area Unit, for bringing about livelihood improvements. It initiated work during 2005, partnering with the Community Managed Resource Centers (CMRCs), promoted by MYRADA.

CMRCs are collectives, managed by elected representatives of Self Affinity Groups (SAGs), formed with the support of MYRADA. There are 18 CMRCs functioning in this area, each having a membership of 150 – 170 SAGs. AMEF started working with four such CMRCs. Palacode CMRC is one among them, covering three villages, namely, Kottur, Siriapatti and Eachampallam. The three villages lie in the Palacode to Rayakottai belt, which is the second largest tomato producing area in Tamil Nadu.

The FFS programme was unique in two ways. Firstly, FFS was organised exclusively for women from the SAGs. This was apt because most of the activities in tomato cultivation are carried out by women. Secondly, it was a collaboration with CBOs like CMRCs which meant that it was convenient to scale up the process with the organised groups like SAGs, attached to the CMRC.

### FFS Highlights

- The major focus was on reducing chemical usage and thereby the cost of cultivation.
- AMEF collaborated with CMRC, a CBO.
- Participants included members of women Self Affinity Group (SAG).
- Drastic reduction in red spider mite incidence due to mulching.
- Introduction of trap crops and barrier crops for pest management.
- Farmers innovate a local alternative for yellow sticky trap.
- Cost incurred on certain inputs reduced by Rs.13000 per acre.
- Women's knowledge on alternative IPM practices is being recognised for decision making.
- FFS has aroused interest among farmers from neighbouring villages.

The programme was organised during the tomato cropping season, for a duration of 20 weeks beginning from January 2006. Kottur village was the chosen venue as it is easily accessible to farmers of other two villages. In all, 23 farmers from three villages and 6 CMRC staff participated in the programme. Four staff from AMEF facilitated the sessions.

A baseline information from the area was collected to get an understanding of the prevailing operations and the problems related to tomato cultivation. The major problems were centered around high pesticide and fertiliser use. The curriculum was therefore developed focusing on alternatives for pest management as an entry point.

### Agencies and their role

A number of agencies were involved in this FFS. Palacode CMRC, was the major stakeholder in getting its members trained. The CMRC assisted in identifying the village and the group of farm women, and took active part in arranging necessary inputs. AMEF has provided the technical support. The State Department of Agriculture, Senthil Enterprises, Salem and Basarass Biocon India Ltd., helped in supplying inputs. MYRADA and Palacode CMRC helped in scaling up of practices.

## Processes

### Agro Eco System Analysis (AESA)

A practice plot of size 0.64 acres was used as the learning and experiencing ground for the participants. Experiments were laid out for Farmer practice, Standard, Long Term Experiments and IPM alternatives. Intercrops like cowpea and border crops like maize, marigold and bajra, were introduced for pest management and as a source of additional income.

Weekly AESA observations in the plots were basis for discussion in sub groups, enabling sharing of experiences and better decision making. Short studies on nutrient management, insect zoo, mulching and leaf compensation, were taken up to enable participants gain hands on experience.

### Group Dynamics

Group dynamics exercises formed a part of the FFS process for developing team building and problem solving skills.

### Sharing of experiences

FFS participants proactively attended other group meetings in the villages and shared on FFS learnings. A field day was organised at the conclusion of FFS wherein the participants shared their experiences with other tomato growers from five neighbouring villages.

	LTE (Fertiliser) (0.11 ac)	LTE (Spacing) (0.11 ac)
IPM plot (0.16 ac)	Standard plot (0.10 ac)	Farmers Practice Plot (0.16 ac)

## Practices

### Nursery Raising

Raising tomato seedlings in nurseries, particularly through the raised bed method enabled farmers to understand its benefits in combating the soil borne pathogens and producing healthy seedlings. Participants learnt that line sowing in the nurseries helps in proper weeding.

## Use of barrier crops and trap crops

Tomato was always being grown as a solecrop. Prior to FFS, farmers were of the opinion that intercrops competed with tomato crop and attracted pests. Participating in the FFS, participants for the first time, understood the importance of other crops in tomato, clearing their wrong notions. Border crops like maize and bajra served as a barrier to whitefly movement. Marigold as a trap crop attracted fruit borer adults for egg laying, and the cowpea served as a source of food for the predators.

## Mulching yields multiple benefits

Understanding the benefits of mulching was one of the important learnings which the participants gained during the process. Farm residues like sugarcane trash, unusable paddy straw and coconut leaves, were used as mulch in the tomato field. Farmers observed that the mulching practice resulted in maintaining soil moisture levels resulting in –

- i) a drastic reduction in Red spider mite incidence, which was damaging the crop extensively
- ii) reducing the frequency of irrigation (from once in 3-4 days to once in 7 days)
- iii) improving the production parameters, like number of leaves, plant height etc., by 30%
- iv) suppressing weed growth.

## IPM

Several IPM methods such as use of yellow sticky trap, pheromone trap, pitfall trap, release of *Trichogramma* egg parasitoids, *Chrysoperla* predators, spraying of chilli-garlic extract, *Lantana* leaf extract, *Panchagavya*, NPV, *Pseudomonas fluorescens* were the other new learnings in plant protection.

## Yellow sticky trap

Farmers learnt about trapping sucking pests using yellow sticky traps. Farmers discovered that the colour and the height of the trap were important factors in influencing insect trapping, by experimenting with various colors and adjusting the height of the traps periodically.

## IPM decisions - Women are making a difference

Decisions on farming, particularly those related to pest management was always a man's domain in Kottur. But this time, the women participants with their newly gained knowledge through FFS, have followed alternative practices on their field reaping benefits like reduced incidence of red spider mite, which was otherwise damaging the tomato crop extensively. Having seen such benefits, men in the household, though skeptical in the beginning, have started accepting women's decisions on IPM in tomato cultivation. On the other hand, they are also glad that they could save on expensive chemicals.

Men are encouraging women to attend the sessions regularly. Now, women are happy that FFS has enabled them to make positive contribution to farm production through increased knowledge levels. And, men are recognising this.

## Major Outcomes

### Cost Reduction

The production cost reduced by Rs. 13,000 per acre substantially owing to reduced use of certain external inputs. Raising tomato seedlings on their own helped farmers in reducing the seedlings cost by about 68%. Costs on fertilisers and pesticides were reduced by a whopping 75% as compared to the farmers earlier practice. In the absence of weeding on the FFS plot, labour costs reduced by 16%. The total reduction in cost was to the tune of registering 29% drop in the production costs.

Comparative costs and returns (per acre)				
No.	Item	Baseline	FFS plot	Difference (%)
1	<b>Production cost</b>			
	Land preparation	2200	2200	-
	Material	12000	12000	-
	Inputs (seedlings, Organic Manure fertilisers & pesticides)	15590	5125	67%
	Labour	15860	13260	16%
	<b>Total</b>	<b>45650</b>	<b>32585</b>	<b>29%</b>
2	<b>Yield</b>	<b>18420</b>	<b>17800</b>	<b>-3%</b>
3	<b>Gross returns</b>	<b>230250</b>	<b>222500</b>	<b>-3%</b>
4	<b>Net returns</b>	<b>184600</b>	<b>189915</b>	<b>3%</b>

## Increased Income

Farmers realised additional net returns to the tune of Rs. 5315 per acre due to reduced production costs and unusually high farm gate price received during that season. The 3% increase was despite a fall in the yield by 620 kg per acre, in the very first year of transition from chemical farming to LEISA practices.

*"It is not the money or gifts that change our living. Trainings like this FFS could bring development by helping us to learn and improve the way we do farming. I strongly tell all of you to utilise this opportunity and develop, because this is the only way for our future".*

- Smt. Mari, a woman farmer from Seerampatty village, voluntarily sharing during the field day held on 17th June 2006.

## Farmers Innovation - A local alternative to yellow sticky trap

The participants innovated an alternative to the yellow sticky trap. Coconut shell and rachis were collected, painted yellow and were smeared outside with castor oil to trap insects. Smearing of castor oil was repeated every 3-4 days to effectively trap the pests.



Coconut shell used as yellow sticky trap

## Igniting young minds on ecosystem conservation

This was an unique experience in helping children understand the relationships within an ecosystems. Children, during their free time, were involved in certain FFS activities. They participated enthusiastically in activities like field observation, preparation of charts and their presenting. With their new understanding on crops, pests and their relationship, these young children, in turn, shared their knowledge with their school teachers and other students.

## Attracting Visitors

Tomato growers from other villages and a group of NGO representatives from five districts visited the FFS to observe and learn. Opportunities for scaling up FFS to a wider area were created during such interactions.



Nylon nets used to cover nursery



Transplanting tomato seedlings in the field



Participant explaining to a farmer



Women presenting AESA findings



Participant involved in field experiment



Preparation of chilly-garlic extract



Children learning about pests



FFS Participants