

Senthil kumar M

Horticultural Research Station
Yercaud
Salem District
Tamil Nadu
India

Corresponding Author

Senthil kumar M
senthilkumariari@gmail.com

Impact of Farm Field School on Rice Integrated Pest Management in Rice

The role of integrated pest management in rice pest management has obvious advantages in terms of effectiveness, safety to non-target organisms and cost of cultivation with special reference to plant protection cost. The rice pests can be effectively managed using combination of different management tactics. ETL based application of insecticides protects the crop from insect pests and diseases as well as conserves the natural enemy's population and reduces the cost of cultivation. Reduction in pesticidal spray helps in the resurgence of natural enemy's population. LCC based application of Nitrogenous fertilizers reduces the production cost as well as protects them from insect pests and diseases.

INTRODUCTION

A farm field school (FFS) on Rice Integrated Pest Management was conducted at Pudhu Devangudi village of Needamangalam block of Thiruvarur District. The productivity in rice was hampered by the insect pests and diseases occurring during Samba season, since this season is highly conducive for insect pests multiplication and also favourable for fungal and bacterial pathogen sporulation and virulence. To combat this problem farmer's indiscriminately using insecticides and fungicides which results in reduction of beneficial insects, environmental pollution, residues in the food (biomagnifications), ground water contamination, resistance and resurgence in insect pests, poisoning hazards etc. Moreover high usage of chemical pesticides enhances the high production costs and less profit. To advocate the use of IPM as an environmentally friendly form of crop protection the farm field school on rice IPM was started at Pudhu devangudi village with 25 elite farmers who are interested to

Crop	Thematic area	Technology Demonstrated	Season	Area	No. of farmers			Reasons for short fall in achievement
					SC/ST	Others	Total	
Rice	IPM	FFS on Rice IPM	Samba 2011	10 Ha	13	12	25	-

Details of Farming situation

Crop	Season	Farming situation	Soil type	Status of soil			Previous crop	Sowing date	Harvest date	Seasonal rainfall	Rainy day
				N	P	K					
Rice	Samba 2011	Irrigated	Clay loam	L	M	H	Rice	18.9.11 To 20.09.11	03.02.12 To 05.02.12	1214 mm	58

Performance of FFS

Crop	Technology Demonstrated	Variety	No. of farmers	Area (Ha)	Demoyield(Q/Ha)			Local check (Q/Ha)	% Increase
					High	Low	Average		
Rice	<ul style="list-style-type: none"> • Good quality seed selection • Seed treatment with pseudomonas • Seedling root dip with pseudomonas • Soil application of pseudomonas • Spraying of pseudomonas • LCC based N Application • Pheromone trap • Neem oil spraying • ETL based application of Insecticides 	BPT 5204	25	10	51	48	48.8	41	19.0

Economic Impact

Average cost of cultivation (Rs/Ha)		Average gross return(Rs/Ha)		Average net return(Rs/Ha)		Benefit cost ratio	
Demo	Check	Demo	Check	Demo	Check	Demo	Check
24500	27500	58560	49200	34060	21700	2.39	1.79

Analytical review of the component

Parameter with the unit	Demo	Check
YSB catch/pheromone trap	48	-
% Dead heart	2	18
% White ear	1	11
Leaf folder % Leaf infestation		
Vegetative stage	2	26
Flowering stage	1	43
Sheath blight	Grade 1 (less than 1% leaf area)	Grade 7 (26 – 50% leaf area)
Bacterial leaf blight	Grade 1 (less than 1% leaf area)	Grade 7 (26 – 50% leaf area)

Ecological Impact

Natural enemies population	Demo	check
Spiders/hill	4	-
Carabids / m ²	33	12
Coccinellids/m ²	27	9
Mirids/ m ²	72	4
Dragon fly naiads/ m ²	24	-
Ichneumonids / m ²	32	-

Extension and training activities

Sl .No	Activity	No.of activities	Date	No.of participated	Remarks
1	Farmers training	13	12.09.2011 16.09.2011 23.09.2011 30.09.2011 18.10.2011 20.10.2011 28.10.2011 08.11.2011 28.11.2011 01.12.2011 08.12.2011 23.12.2011 25.01.2012	300	Farmers are quite responsive to appropriate technologies which give due weightage to their traditional wisdom, local conditions and socioeconomic conditions
2	Demonstration	8	-	-	
3	Field day	1	29.03.2012	-	
4	Publications	1	-	-	

adopt the rice IPM technology. During this FFS several important eco-friendly plant protection techniques such as selection of good quality seeds, seed treatment, seedling root dip, soil application, spraying with antagonistic bacteria *Pseudomonas fluorescens*, Pheromone trap for yellow stem borer, light trap, LCC based application of Nitrogenous fertilizers, agronomic practices and bio control means of managing the insect pests and diseases and ETL based application of insecticides through

theoretical lecture as well as practical class in the form of demonstration, experimentation, field observation and hands on activities. The farmers were supplied with IPM kit, pheromone trap and yellow stem borer lures, *Pseudomonas*, Neem oil and training material on “Integrated pests and disease management practices in rice”. The crop was harvested and the field day was also conducted on 29.03.2012.

Technical feedback on the demonstrated technologies

Sl.No	Farmers reaction
1	Good seed selection technique improves the germination percentage
2	Seed treatment with pseudomonas protect the crop from important diseases and enhances theyield
3	Pheromone trap fixing reduces the yellow stem borer incidence
4	LCC based application of Nitrogenous fertilizers reduces the production cost as well asprotects the from insect pests and diseases

Technical feedback on specific Technology

Sl.No	Feed back
1	Pseudomonas application protects the rice crop from diseases
2	ETL based application of insecticides protects the crop from insect pests and diseases as well as conserve the natural enemies population and reduce the cost of cultivation
3	Reduction in pesticidal spray helps in the resurgence of natural enemies population
4	Behavioural control approaches helps in controlling the yellow stem borer population

CONCLUSION

The FFS on Integrated Pest Management emphasized on ETL based application of insecticides helps in conservation of natural enemies through reduction in pesticidal sprays and also helps in reduced cultivation expenses. The average net return was higher in demo plot when compare to check. The resurgence in the population of natural enemies well evidenced in this FFS. The non-insecticidal techniques such as seed treatment with biocontrol agents, behavioural control approaches were learned by the farmers in FFS.