

Krishi Vigyan Kendra, Tindivanam

Success stories 2017-18

1. A successful millet grower

1. Background

Mr. Subramani S/o. Kothandapani is a progressive farmer of C. Kallipattur village, Kandamangalam block, Villupuram district. He has 3.5 acre of land and cultivating Millet crop such as Ragi, Thenai, Cumbu and Vargu under rainfed condition. Though he was engaged in regular farming work he got only a minimum profit from millet production and which was insufficient to run his family. He struggled a lot to meet out his regular family needs. Hence, Mr. Subramani thought to do some innovative and a different way of farming activity to earn more income. At this situation, he contacted KVK at Tindivanam and enquired for profitable and sustainable agricultural activities.

2. Plan, Implement and Support

KVK encouraged Subramani to participate in training programmes. He attended millet related training programmes at KVK to gain knowledge and skill on improved production technologies in millet cultivation. Further, KVK supported him with “Initiative for Nutritional Security through Intensive Millet Promotion” (INSIMP) scheme. A millet farmer group was formed in Kallipattu village under the leadership of Mr. Subramani. The group consist of 20 millet farmers and the group was given with a set of millet processing machineries namely, pulvarizer, dehuller, dehusker, flourshifter and packaging machine. Various on and off campus training programmes were organized on the topics of Millet production, Millet processing and value addition. The skill development training on operation and handling of millet processing machineries was also imparted to the group.

3. Output

After attending the training programme, the group started to follow the improved production technologies in millet cultivation viz., adopting of improved high yielding millet varieties, integrated nutrient management, pest and disease management, post harvest technologies and value addition. In earlier days, they were sold the millet as whole grain only for Rs. 20 / kg later they followed the post harvest technologies by utilizing the millet processing unit and sold the millet as rice for an average price of Rs.70-80 which is four time higher than the grain price.

4. Outcome

Now, all the group members has started to follow the post harvest technologies in millets after realizing the profit from selling processed millets. Further, they also started to adopt newly released improved millet varieties particularly in ragi and pearmillet. They also initiated value added millet products like millet based health mix and sell it for Rs. 300 / kg in market.

5. Impact

Area under millet cultivation has been extended in Kallipattu village after the implementation of INSIPM scheme. The other farmers from nearby vicinity visiting the millet processing unit, millet farm for getting improved millet variety seeds and also for millet processing. Mr. Subramani charging Rs.10 / kg for milling grain from other farmers.



Setting up of Millet processing unit under INSIMP scheme

2. **CO (Te) 7 a drought tolerant Tenai variety highly suitable for Villupuram district**

1. Problem analysis:

During kharif season, the pattern of rainfall received from southwest monsoon for the past few years is not encouraging one. Because of the uncertainty of the quantum of rainfall being received, farmers of Villupuram district decided to switch over to some other millet crop which requires minimum amount of water and gives maximum productivity. Tenai is one among them. But still Villupuram district farmers' using traditional varieties with low productivity. So demonstration of high yielding drought tolerant tenai variety CO(Te) 7 was planned and executed in Mandapam village, Vikravandi block, during kharif season 2017.

2. Technical Intervention:

Seeds of CO(Te) 7 Tenai, Biofertilizers for seed treatment and *Trichoderma viride* were distributed to farmers. An off campus training was also conducted to improve the skills on seed treatment with bio fertilizers and biofungicides. Farmers were advised to apply 12.5 t/ha of FYM during last ploughing. Maintaining the proper spacing in the field was emphasized in order to optimize the plant population.

3. Output:

By following the technical instructions of KVK, the demo farmers of Mandapam village got 2014 kg of grain yield. The traditional variety gave only 1437 kg /ha. CO (Te) 7 gave 40.15 % higher yield than the traditional variety with the BCR of 4.93.

Particulars	Grain yield (Kg/ha)	Net income (in Rs)	BCR
Demo (CO(Te) 7	2014	38550	4.93
Control	1437	24060	3.30

4. Outcome:

Because of more number of productive tillers in CO(Te) 7 when comparing traditional variety, it influences farmers of Manadapam village to cultivate Tenai in rabi season also. In order to disseminate the success of CO(Te) 7 to other farmers a Field day was also conducted on 19.9.2017. Extension officials, farmers of Vikravandi block attended the field day. The seeds cultivated by the demo farmers were kept for future use.

5. Impact:

High yielding potential of CO(Te) 7 Tenai variety influences the Mandapam village farmers to cultivate that variety during Rabi season 2017-18. About 20 ha of Tenai crop was cultivated during Rabi season which is an unexpected desire of farmers toward cultivating CO(Te7).



Field view of FLD on CO(Te) 7 Tenai



Field day on CO(Te) 7 Tenai was conducted

3. Mushroom cultivation – High income from low investment

1. Situation analysis/Problem statement

Mr. Moorthy is living in a Venmaniathur village of Mailam block. It is a drought affected village in Villupuram district receiving only a minimum amount of rainfall and he received less income from crop cultivation. Therefore, he was searching for alternate profession and he entered into pharmaceutical sales but which is also pushed him in hopeless. He is searching for other options for regular income.

2. Plan, Implement and Support

At this situation Mr. Moorthy approached Krishi Vigyan Kendra (KVK), Villupuram to learn about remunerative activities. KVK advised him to attend allied agricultural training programmes. Based on this, he attended Mushroom related training programmes at KVK, which imparted knowledge and skill on Mushroom production, Spawn production and Value addition. Following demonstrations were conducted for oyster and milky mushroom cultivation

- Preparation of mother spawn
- Preparation of bed spawn
- Paddy straw sterilization
- Preparation of mushroom beds
- Construction and maintenance of spawn running room and cropping room
- Preparation of casing mixture and casing of mushroom beds
- Harvesting, packing and post harvest techniques
- Value addition

After that, he turned his profession to mushroom production and value addition.

3. Output:

He started the mushroom production and harvested 20 kg/ day. Initially, he sold his produce to nearby shops and leading super markets, Uzhavar Sandhai etc., and obtained more profit. Then, he opened his own stall for sale of mushroom value added products viz., soup @ Rs. 15, bajji @ Rs. 5/No., vada @ Rs. 5/No, pakoda@ Rs. 40/100 g and pickle Rs. 40/100 g with the label of Amudhan Mushroom products.

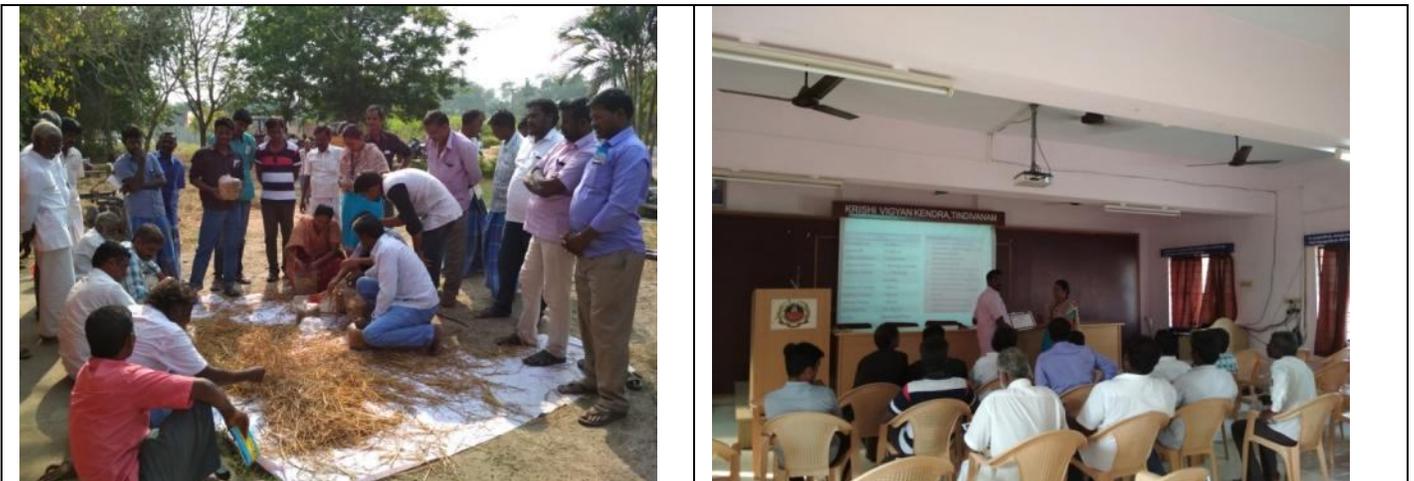
He is earning Rs. 4,50,000/- per annum as a net income from mushroom production and value addition.

4. Outcome

He has been giving training and guidance on mushroom cultivation to farmers, Self Help Groups, NGOs and college students. Farmers from Ariyalur, Trichy district also visited his production unit and got guidance from him to start a unit. He is also being earned money from training @ Rs. 3000/trainee.

5. Impact:

He was satisfied with mushroom production and felt delighted when other farmers visit his farm to see his endeavor. His family income status was improved so much. He is giving employment for 6 persons.



On campus training on Mushroom Production and value addition were conducted at KVK, Tindivanam



Exposure visit to Mr. Moorthy, Mushroom production unit at Venmaniyathur, Mailam block

15. A.4. **Amaranthus – A short duration remunerative crop**

1. Background

Mr. Sivakumar S/o. Subramani, Sithani Village, Mailam Block of Villupuram District is a medium farmer, holding an area of 5 acres. He was cultivating Paddy, Pulses and horticultural crops viz., Chilli, Brinjal and the income from these crops was not sufficient to run his joint family. Income generation for his joint family under this condition was difficult and explored for alternate source.

2. Plan, Implement and Support

Mr. Sivakumar was searching to adopt short duration crops to get income in short period. At this situation, he approached Krishi Vigyan Kendra, Tindivanam and attended training programmes on vegetable cultivation. He discussed with KVK scientists regarding improved vegetable production technologies and he started to cultivate TNAU varieties and technologies

KVK, Tindivanam conducted Front Line Demonstration on “ Introduction of Amaranthus variety PLR 1 in Sivakumar’s field to popularize in Sithani village. In this FLD, improved amaranthus variety PLR 1 was introduced in area of 0.5 acre. Duration of the crop is 25 days, Moderately resistant to white rust, leaf spot and leaf webber. Seed treatment with Azospirillum and soil application of Phospobacteria and *Trichoderma viridea* were also demonstrated. By following these technologies, Mr.Sivakumar could able to obtain high yield.

3. Output

Mr. Sivakumar obtained a yield of 70.30 q/ha. The gross cost of the crop is Rs. 22300/ha, Gross return 84,360 and the net return is Rs.62060/-. BC ratio is 3.78. Now, Mr. Sivakumar leading his joint family successfully with fulfillment of their needs.

4. Outcome

Initially the demo was conducted in an area of 0.5 acre. Now Sivakumar has increased the Amaranthus cultivation for an area of 1 acre. He is also supplying the PLR 1 seeds to other fellow farmers. Farmers of Sithani village highly preferring this PLR 1 to the green colour of the entire plant and suitable for different types of culinary preparations.

5. Impact

Though the amaranthus crop yield in short time the number of farmer adopting the PLR 1 variety has been increased and the area under PLR 1 Amaranthus variety in Sinthani village has been also been increased around area of 30 acres.



Introduction of Amaranthus PLR 1 variety in Villupuram district

5. Management of Anestrus and Silent Heat in Buffaloes

1. Problem analysis:

India's livestock population includes 88 million buffaloes which is 58 percent of the world's population. Like other species of livestock buffaloes are also used for milk, meat, hide skin and bones. In villupuram district as per the livestock census (2012), 16774 nos of buffaloes

are present. Buffaloes are highly resistant and tolerant to adverse situations. However high mortality in young calves, low milk yield, longer duration of postpartum period silent heat and anestrus are the most important factors which discourage the buffalo rearing practice day by day. If this situation continues then buffaloes will be the first extinct species of domestic animals. Postpartum anestrus and silent heat are the major problem in breeding and production of buffaloes. Conception rate of 13% to maximum of 54% and incidence of anestrus in buffalo heifer (56%) and cow buffaloes (36%) was recorded in various studies. Therefore management of anestrus would be the major concern in improving the infertility of buffaloes.

2. Technical Intervention:

To augment the conception rate and treating the anoestrus condition, Progesterone hormone impregnated vaginal sponge (VCRI Namakkal, TANUVAS) was used in the frontline demonstration at Alathur village of Kallakurichi block in villupuram district. Fourteen animals were selected during the animal health camp conducted at the village. Later all the animals were supplemented with TANUVAS mineral mixture for period of two months followed by deworming .Of these, four animals were excluded from the demonstration because of exhibiting the heat signs during mineral mixture supplementation period. The remaining animals were subjected to the following protocol.

Step 1. 0 day- Insertion of vaginal sponge

Step 2. 11 th day- Removal of sponge and injection of Cloprostenol drug

Step 3. 13 th day- Observation of heat signs- if present –First time Artificial Insemination

Step 4. 14 th day- Second Insemination

Step 5. 35 th day- Observation of heat signs

Step 6. 60th day- Pregnancy verification

3. Output:

Induction of heat symptoms was observed in 9 out of 10 animals. Insemination was done twice on 48 and 72 hrs of after removal of vaginal sponge. Pregnancy verification revealed that out of 10 animals four were pregnant with the conception percent of 44.44. whereas the animals in control or untreated group were remain in anestrus condition. The extension of postpartum anestrus period may lead to infertility and low economic value of the animal.

No of animal	Estrus induction %	Conception %	%Change in conception
Demo	90	44.44	66.24
Control	NIL	15.	

4. Outcome:

Vaginal sponge technology is low cost and easy to use under field condition. The animals which were in extended period of postpartum anestrus (more than 8 months) and anestrus heifers were resumed their cyclical activity within a period of 14 day of treatment. Even though 90 percent estrus induction was observed, the conception rate of 44.44 percent only achieved under field condition. Postpartum anestrus period has been reduced from 8-12 months to 3-4 months.

5. Impact:

Demonstration of this technology has created confidence in continuing the buffalo rearing practice successfully. Awareness has created on silent heat anestrus and other infertility related problems of buffalo. Unnecessary slaughter of unproductive animals in their herd is being prevented. It is concluded that in time detection and treatment of anestrus and reproductive disorders, will certainly save the population of buffalo from being sent for slaughter and economics of the farmers.





Pregnancy verification

IMPACT

1. Impact of KVK activities

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in income (Rs.)	
			Before (Rs./Unit)	After (Rs./Unit)
Sustainable Sugarcane Initiative	1086	54	90450	146610

NB: Should be based on actual study, questionnaire/group discussion etc. with ex-participants.

2. Cases of large scale adoption

1. Impact of training on Sustainable Sugarcane Initiative

Introduction

In India, sugarcane is the primary raw material for all the sugar mills as well as for Jaggery producing cottage industries. About 7.5 million people are employed directly or indirectly in sugar mills. Out of 3.82 lakh hectare sugarcane area in Tamil Nadu, Villupuram covers 93,849 ha. The farmers are adopting older/traditional technologies for sugarcane cultivation and they are getting lower yield and have the training on the innovative technologies of sugarcane is the need of the hour. SSI training focused on the introduction of newer varieties, latest technologies, integrated pest and disease management, soil health management to enhance the production. The training ensures remarkable changes in the attitude, knowledge and skills of Villupuram farmers.

Technical Session

The topics handled during the training programme covered creation of awareness on Sustainable Sugarcane Initiative, Latest Sugarcane production technologies for augmenting the yield, Single chip bud method, Nursery preparation in SSI, Land preparation, Weed management, Irrigation management, Nutrient management, Intercropping, Pest and disease management, Harvesting technologies.

Exposure Visit

The farmers were taken to farmers field to view the SSI technology adopted sugarcane cultivation. The resource farmer shared his experience and interacted with the trainees. During this exposure visit the farmers were fully exposed to SSI technology from nursery to harvest.

Methodology

It is important to know the knowledge of the participants, to the measure impact of the training on SSI technology. The understanding level of the sugarcane farmers with SSI technology was measured by using a well structured schedule. The schedule was prepared with the help of experts and administered to the participants. The survey was taken in Uludurpet block among the 30 participants who attended the SSI training programme at KVK, Tindivanam. The schedule was evaluated by assigning scores and cumulative frequency to categorize the understanding level of the participants.

(n=30)

S.No	Item	Pre evaluation score	%	Post evaluation score	%
1	Selection of chip buds	21	70.00	29	96.67
2	Set treatment	20	66.67	26	86.67
3	Nursery preparation	15	50.00	26	86.67
4	Drip irrigation and Fertigation method	18	60.00	27	90.00
5	Use of TNAU sugarcane booster	10	33.33	29	96.67
6	Application of water soluble fertilizer	22	73.33	30	100.00
7	Detrashing	25	83.33	30	100.00
8	Propping	20	66.67	28	93.33
9	Application of Tridemorph to control rust disease	17	56.67	25	83.33
10	Release of egg parasitoid,	18	60.00	26	86.67

	<i>Trichogramma chilonis</i> to control Internode borer				
	Average	18.60	62.00	27.50	91.67

Impact of the training programme

It could be found from the above table that before training, only 10 (33.33 %) participants had knowledge on the use of TNAU sugarcane booster, fifty percent of the people doesn't know about nursery preparation for sugarcane cultivation, and 17, 18 participants had knowledge on pest and disease management practices respectively. After attending the training programme 96.67 percent of the participants gained knowledge on use of TNAU sugarcane booster, 86.67 percent of the participants gained knowledge on nursery preparation and above 80 percent of the participants gained knowledge on pest and disease management practices.

Overall, it was found that before attending the training programme, majority (91.67 %) of the participants had only a medium level of knowledge on SSI and after attending the SSI training programme the participants had medium to high level of knowledge on SSI. The result reveals that the farmers can enhance the productivity of sugarcane crop with the gained knowledge through SSI technology. During the post survey it was noticed that the majority of the participants followed the learned technology in their sugarcane field.



Training on Sustainable Sugarcane Initiative

2. Impact of Initiative for Nutritional Security through Intensive Millet Promotion” (INSIMP) scheme

Millet is one the important crop widely cultivating in Villupuram district mainly under rainfed condition. Pearl millet, Finger millet, Barnyard millet and Little millet are extensively

cultivating millet crop in Villupuram. Millet farmers always go with tradition millet variety they do not follow any improved production technologies in millet cultivation. Further, they are selling their products as raw grain instead of processed millet. Hence, they get only a meager amount for the millet. “Initiative for Nutritional Security through Intensive Millet Promotion” (INSIMP) is a NADP Scheme implemented in Villupuram district through KVK, Tindivanam during 2015. The major objective of the scheme is to increase the millet production and to encourage the millet farmers to practice post harvest technologies and value addition in millets.

Methodology

Based on the maximum area under millet production, four blocks namely, Kandamangalam, Mugaiyur, Thirunavallur, and Mugaiyur were selected from Villupuram district to implement the scheme. A group was formed with 20 -25 millet farmers from each village. Totally four millet groups were formed to implement the scheme. All the groups were given with millet processing unit consist of flour shifter, dehuller, dehusker, pulverizer, packaging machine. Further, on and off campus training programmes were organized for the millet group to impart knowledge and skill on selection of improved millet varieties, integrated nutrient management, pest and disease management, post harvest technologies and value addition.

A study was conducted to the measure the impact of the INSIMP scheme. A well structured schedule was prepared with the help of experts and administered to the participants. The schedule covered with the adoption level of improved practices of millet production before and after INSIMP schem. The answered questionnaire was evaluated by assigning scores . Percentage analysis was used to categorize the knowledge level of the participants.

(n=20)

S.No	Item	Before	%	After	%
1	Selection of HYV seeds	5	25	18	90
2	Seed rate	12	60	18	90
2	Seed treatment	8	40	19	95
3	Spacing	3	15	15	75
4	Thinning	6	30	16	80
5	Weeding	11	55	19	95
6	Plant protection	8	40	19	95
7	Dehuller	13	65	19	95
8	Millet value addition	9	45	18	90
9	FSSAI certification	3	15	15	75
	Average	7.8	39	17.6	88

Result

From the above table it could be found that before the INSIMP scheme less than 10 percent of the participants only knew about the selection of HYV seeds, seed treatment, spacing, thinning, plant protection, FSSAI certification and more than 90 percent of the participants gained knowledge on Millet cultivation & processing. Overall, 39 percent of the participant had knowledge on millet cultivation and the percentage level increased to 88 after the INSIMP programme.



Impact study on INSIMP scheme - Millet processing unit

3. Impact of Cluster FLD – Pulses programme in Villupuram District

Introduction

Pulses are the one of the major crop in Villupuram district. In Pulses, blackgram cultivating in an area of 99085 ha and the production is 68269 Metric tons. It is cultivating both in *kharif* and *rabi* season. The crop is cultivating in all the blocks of Villupuram district under both rain fed and irrigated condition. VBN 3, VBN 5, ADT 5 and T 9 are the major Blackgram variety cultivated by the Villupuram district farmers. The major problem in blackgram is Yellow Mosaic Virus disease incidence which is transmitted by white flies. The blackgram farmers obtaining low yield due to non adoption of Integrated Crop Management practices. Hence, to impart the knowledge and skill on Integrated Crop Management practices Cluster FLD scheme on Blackgram was implemented by KVK in Villupuram during 2015-16.

Cluster FLD – Blackgram

Cluster FLD is a unique project implemented in cluster approach method. Under this Cluster FLD the newly released blackgram variety was demonstrated along with full package of practices were adopted in the selected farmers' fields with a view to demonstrate the potentiality of the technologies. During, 2015-16, 2017 -18 the CFLD – Blackgram was adopted in four villages of Villupuram district namely, Tiruvakkarai Village of Vanur block , Oliyampalayam Village of Tirunavalur block and Paathirapuliyur village of Mailam Block and Kattalai village of Marakkanam block.

During this demonstration, the farmers were given with yielding blackgram variety VBN 6, seed treatment with bio agent and bio fertilizer, application of TNAU pulse wonder and installation on traps and lures. The on and off campus training programmes, demonstration on application TNAU pulse wonder, pest and disease management were also conducted for the cluster FLD blackgram farmers.

Methodology

A study was conducted to know the impact of Cluster FLD programme. For this, an ex post facto research design was used. The study was conducted in Kattalai village village of Marakkanam block with the sample size of 30. An interview schedule was constructed with the help of experts to measure the adoption level of improved blackgram production technologies before and after implementation of the cluster FLD programme. The data was collected with the help of interview schedule and evaluated by assigning scores and cumulative frequency to categorize the adoption level of the participants.

(n=30)

S.No	Item	Before	%	After	%
1	Improved blackgram varieties	12	40	29	97
2	Seed treatment	20	67	27	90
3	Integrated nutrient management	15	50	22	73
4	Integrated pest and disease management	10	33	20	67
5	Post harvest technologies	4	13	20	67
6	Seed storage techniques	4	13	21	70
	Average	11	36	23	77

Impact of the Cluster FLD programme

It could be found from the above table that before implementation of the cluter FLD programme only 12 participants had followed the improved high yielding varieties in blackgram

and about 50 % of the participants were adopted the integrated nutrient management. Only a few participants had knowledge and adopted post harvest technologies and seed storage techniques in blackgram before the cluster FLD programme but after implementation of the cluster FLD programme above 90 percent of the participants adopting the improved high yielding blackgram varieties like MDU 1, VBN 6 and following seed treatment technique to avoid the infestation of soil borne pathogens. About 70 percent of the respondents adopting integrated nutrient management including foliar application of DAP and TNAU pulse wonder to enhance the yield. Overall, it was found that majority (77 %) of the participants adopting improved production technologies in blackgram cultivation after implementation of the cluster FLD programme. Further, the area under high yielding blackgram variety namely VBN 6 has also increased to 12-15 % in Kattalai village.



Cluster FLD on blackgram