1. **KVK KHOWAI BRINING SMILE TO THE FACE OF MR.NIRANJAN DEBNATH**

A. Name of farmer & address, block, contact no.:

Mr. Niranjan Debnath,Vill: Namapara, Block: Khowai PO: Chebri, Pin: 799207,Mobile no: 8794332012

B. . Brief on Background information:

Shri. Niranjan Debnath a farmer of Namapara Village has adopted the Participatory Seed Production Under the Pilot Project on Doubling the Farmers Income Project with the guidance of KVK,Khowai from 2017-18. Initially(2017-18) ,Shri. Niranjan Debnath has associated himself with a farmers club namely "Prabin Krishak Club" of Khowai District of Tripura.At present(2023-24) he is the President of Prabin Krishak Club. Shri Niranjan Debnath contributed a lot to his family and the society through his motivation, sacrifice and hard work after coming out from landless labour family background. He started to earn livelihood through day wages and saved little amount to have his leased land for own cultivation. He associated himself with KVK Khowai and acquired agricultural technologies which he applied in his field. He was exploring income generating activities through the guidance of the KVK and expanded his activities to many folds. Initially they had only a small plot of 0.74 ha but now he own 1.25 ha of land.

Before,the KVK,Khowai intervention Shri. Niranjan Debnath was focusing mainly on Paddy cultivation at an area of only 0.64 ha, during the both Kharif and Rabi Season and from Paddy cultivation he could earn a gross income of Rs. 89700.00 with Net Return of 41,700. 00. Other than paddy he used to grow Mustard, Potato,Bitter Gourd,Okra,Ridge Gourd,Chilli etc by using his traditional knowledge. He was rearing Cattle with local breed along Duck cum Fishery. With all the intervention he could earn a gross annual income of Rs. 279380.00 with net Annual Income of Rs. 159572.00.But, after the intervention of KVK,Khowai he has initially taken training on Scientific Paddy Seed Production Programme on Participatory mode in technical guidance of ICAR RC for NER,Tripura Centre. After the training programme he has started Paddy Seed Production in his plot of 0.32 ha with all the technical and critical input support from KVK,Khowai and ICAR RC for NER,Tripura Centre. With this technical intervention,the Productivity of Paddy var. Gomoti has increased to 6.2 ton/ha from 4.4 to/ha.He has earned an yield of 1984 kg,from his 0.32 ha land,which he has sold as seed to the ICAR RC for NEH Region, Tripura Centre at an higher price of Rs.40.00/kg, as a result he could earn a Gross Income of Rs. 79360.00 with a Gross cost of Rs. 15500.00,Net Profit of Rs. 63860.00.He has earned a bumper BCR of 5.29 with the Seed Production of Paddy.After getting initial success in 2017-18,he has taken some land on lease and started Paddy Seed Production on Buy back basis and earned a very good profit out of it. Now he is producing Seeds of Musatard,Sesamum, Maize etc and selling them to the different Agencies. With all the earnings from Seed Production, he has saved some money and purchased a land of 0.93 ha during the year 2020-21,moreover he has started Dairy farming with 5 no"s of Cattle and Duck cum Fish farming in his 0.08 ha Pond.At present,he is having total area of 1.25 ha,out of which 0.51 ha, he uses for Paddy Cultivation during Kharif as well as during the Rabi season.From,Paddy Cultivation his annual gross return is 140,400.00 with Net Income of 699,00.00, His gross cost of cultivation from Paddy is now 70,500.00 with a BCR of 1.99. Under CFLD On Oilseeds Programme Mr. Niranjan Debnath was provided training on Scientific Cultivation of Sesamum var.Tripura Siphing. After KVK,

Khowai"s intervention Mr. Niranjan Debnath has started Using Soil Health Card in Sesamum , resulting in less input application with high return. He has applied Lime @ 10% of actual LR along with FYM 5 ton^{-1}.Moreover he has also applied Jeevamrita and Ghana Jeevamrita in his plot. Through all the scientific intervention in Sesamum at an area of 0.16 ha area, Mr. Niranjan Debnath could get an yield of 175 kg with a productivity of 10.9 q/ha. The gross cost of Cultivation for his 0.16 ha land was Rs. 4771.00,with a gross return of 14000.00,his net return from Sesamum var.Tripura Siphing was found to be Rs. 9229.00.The benefit cost ratio was found to be 2.93. Mr. Niranjan Debnath has been awarded as the Innovative Sesamum Grower Award by the College of Agriculture, Tripura. Other than Paddy and sesamum, he was also growing Mustard at an area of 0.16 ha with an yield of 2.5 q from which he is getting a gross income of Rs.12500.00 and Net Income of Rs. 8200.00.He is also growing Maize at an area of 0.16 ha and is getting 7 q yield with a gross income of Rs. 21,000.00 and a net income of Rs. 14000.00.Other than Agricultural and Horticultural Crops he has also started rearing Jersey breed of Cattle(5 no"s), from which he is getting a gross income of Rs. 72000.00 and income of Rs. 30000.00.From Duck rearing he was getting a gross income of 43,600.00 and a net income of Rs. 23,000.00.He was also getting Rs. 21,600.00 gross income from Fishery, with a net income of Rs. 14500.00. The farmer used to get annual income of Rs. **153572.00** from Field Crop, Horticulture, Livestock and Fishery etc. He faced problems like High insect and Pest infestation, Lack of Input, varietal changes etc. With DFI interventions like IDM, INM, IFS, etc., he is getting annual income of Rs. **226800.00**

C. Brief on Institutional involvement:

1. Training was provided to the Farmer on Preparation of Jeevamrita and its application and also Soil Health Card was provided to the farmer by KVK, Khowai, Tripura.
2. Seed production on Participatory made was made in joint collaboration mode ICAR RC for NEH Region Tripura Centre & KVK,Khowai.
3. Seeds were procured by ICAR RC for NEH Region Tripura Centre.

D. Brief on Recognition/awards (if any):

Mr. Niranjan Debnath has been awarded as the Innovative Sesamum Grower Award by the College of Agriculture,Tripura

E. Brief on Horizontal spread of technology:

Seed Production of Paddy and Sesamum is now horizontally spread to about 50 numbers of farmers and farm women of Namapara and Batapura Village of Khowai district of Tripura.

F. Brief on Employment Generation:

Mr. Niranjan Debanth is now engaging 2-3 persons /day in his farm for management of his crop land as well as Livestock.

2. INTEGRATED PEST MANAGEMENT IN RICE IN KHOWAI DISTRICT OF TRIPURA – A SUCCESS STORY

Name of the farmer: Priti Das, W/O Suman Das Vill- Namapara, P.O. Chebri, Distt. Khowai-799207 Tripura Mobile Number: 7005687345	
Mail id: NIL	

Age: 46

Educational Qualification: 10th pass

Farming Experience: 20 years

Other crops grown: Potato, Brinjal, Cabbage, Cauliflower, Chilli, Ridge gourd

Crop: Rice

Area: 0.80 ha

Introduction:
The farmers of Namapara Village of Khowai district are engaged in paddy cultivation since time immemorial and as the khowai river is flowing near the village farmers can grow paddy three times in a year. Most of the farmers are following SRI techniques for paddy with high yielding varieties like Gomati, Tripura Chikon etc.

The major biotic factors contributing to yield loss in rice are pests, diseases and weeds. Among diseases rice sheath blight, bacterial leaf blight and blast are the major diseases of rice in irrigated ecosystem while weeds like *Cyperus iria, C. rotundus, Cloeme viscosa, Echinochloa crusgalli, Eclipta alba, E. colona,* and *Fimbristylis dichotomy* are also limiting rice productivity in rice growing areas of Tripura. Yellow stem borer and leaf folder are the major Insect pests of rice here. Yellow stem borer, *Scirpophaga incertulas* (Walker) (Lepidopter: Pyralidae) is a monophagous rice pest and attacking the rice crop at every growth stages of the crop.

For the control of yellow stem borer, many methods have been adopted but insecticides are still playing a key role for its control. Non judicial and repeated application of insecticides at improper doses may causes several problems such as disrupting natural enemy complexes, secondary pest outbreak, pest resurgence, development of insecticide resistance and environmental pollution. There is an urgent need to develop an alternate method/technology which can effectively control the insect pests population below economic threshold level and also enhance the rice production without harming the ecological niche. Integrated Pest Management (IPM) is one of the eco-friendly approach which can be utilized to control the non-judicial uses of insecticides to control rice insect pest.

Considering the merits of rice IPM, efficacy and suitability of IPM modules was evaluated in irrigated ecosystem of Khowai district of Tripura during the year 2023-24 to find out its efficacy in Tripura conditions.

Interventions of KVK

KVK has conducted baseline survey and identified problems associated with rice cultivation. Socio economic status of adopted farmers was also studied before demonstration. The majority of the farmers of study areas are marginal and resource poor. A probable list of interested farmers has been prepared from the survey. Further, KVK scientists

visited the land of the selected farmer in presence of the villagers. Before implementing the programme, the skill training programmes were organized involving the selected farmers. Field days and other extension programmes were also organized inviting the farmers of the said and nearby villages, Soil samples were collected before transplanting from 15 and 30 cm depths. Since the balanced use of these nutrients was essential for realizing the full potential of the variety, fertilizer recommendation on the basis of soil test data was recommended.

The experimental material was consists of two treatment schedules viz IPM and non-IPM (conventionally cultivated farmers' practice). IPM module included seed treatment with carbendazim @ 4 g/kg seed, application of broad spectrum weedicide Pretilachlor 50 EC @ 500 ml/acre 2-3 DAT, pheromone traps with 5 mg lure @ 20 traps/ha against yellow stem borer for mass trapping and need-based spraying of Hexaconazole @ 1 ml/l against sheath blight. Popular rice variety of area 'Gomati' was used as test variety. The observations on pests, diseases and yield data were recorded from IPM and non-IPM demonstrations. The data on stem borer infestation was recorded at vegetative stage as dead heart (DH) and total tillers and per cent incidence was worked out. Similarly, white ear (WE) and panicle bearing tillers were recorded near maturity of crop and percent white ear infestation was worked out. The data on grain yield of each plot were recorded separately.

Output and Outcome:

The data on effect of IPM technologies in frontline demonstrations on rice grain yield presented in Table -1 show that the yield ranged from 24.88 q/ha at non IPM module to 38.36 q/ha at IPM modules and net return was also high at IPM modules than the non IPM modules. Minimum % DH and % WE were observed in the IPM modules (6.35% and 8.20%) than the non IPM modules (13.65% and 15.74%).

Table 1: Evaluation of IPM and non IPM modules

IPM modules			**non IPM modules**			**% Yield increase**
Yield (q/ha)	**Net Return (**Rs.)	**BCR**	**Yield (q/ha)**	**Net Return (**Rs.)	**BCR**	
38.36	75520	1:2.87	24.88	34672	1:1.75	54.08

Table 2: Impact of IPM and non IPM modules against yellow stem borer

Parameters	**IPM modules**	**non IPM modules**
Dead Heart (DH) %	6.35	13.65
White Ear (WE) %	8.20	15.74

Impact:

The demonstration has given a clear picture of minimizing yield loss due to yellow stem borer by following IPM modules. Further, the quality of produce was also improved and the net returns of the farmers have also increased as they are not spraying expensive insecticides frequently. Farmers are encouraged to use various ecofriendly strategies before application of deadly insecticides. This year we have planned to spread the technology horizontally in other parts of the district.

Items	Before IPM	After IPM
No. of Sprays	1 spray/week	1 spray/20 days
Labor Requirement	Increased	Decreased
Farmer's profit margins	Less	High
Production level	Decreased	Increased
Average net return	Rs. 34672/ha	Rs. 75520/ha
Pest damage level	Dead Heart (DH) % 13.65 White Ear (WE) % 15.74	Dead Heart (DH) % 6.35 White Ear (WE) % 8.20

3. The Inspirational Journey from Corporate Employee to an Entrepreneur

Mr. Bijoy Gope, a driven individual who embarked on a remarkable journey of transformation from **being a Insurance Company employee to becoming a thriving entrepreneur.**

Mr. Bijoy Gope started his professional journey at an private insurance company from 2001 , where he has earned various skills like good communication skills, manpower management, marketing etc as a corporate employee. Achievement in this company marked the beginning of his entrepreneurial spirit, as he realized he potential to excel in the competitive world.But during the COVID-19 lock down period, he has to quit the job at the insurance company and has to come back to his native place i.e Khowai, Tripura to be with his family which includes his wife, son and Mother (who has expired in 2021).After coming back home, he came in touch with the officials of KVK,Khowai, Tripura. Motivated by their unique ideas and mindset, **Mr . Bijoy Gope** decided to take a bold step and start his own startup in the name of his mother "**Maya Gope**" and thus beginning of Maya Nursery started.

Within less than a year, he has registered his nursery as the Govt Registered Nursery (Registration no: 0004/Khowai/2020). Besides producing good quality planting materials in his nursery, he has also established one dwarf coconut orchard in an area of 1 ha, one banana var. G-9 orchard at an area of 0.5 ha area,one dragon fruit orchard having an area of 0.25 ha.

In addition to this, he has established one Vermicompost unit with 12 nos of compartments with an initial investment of Rs. 3 lakhs. ,in which Department of Agriculture & Farmers Welfare, Govt of Tripura has provided him a subsidy of Rs. 1 lakhs.

At present, the Vermicompost unit is producing a volume of 25-30 mt of compost, which is being utilized by Mr. Bijoy Gope in his orchards and remaining productions are sold to the

market at an premium price of Rs. 20/kg. He has also started producing strawberry for the last 3 years with adoption of natural farming practices.

All his productions are produced by following the principals of Natural Farming and due to this the quality of his products are far superior than the existent products in the market and as a result of this the products from Maya Nursery are attracting the consumers, not only in Khowai but throughout the state of Tripura.

Mr. Bijoy Gope"s journey from a corporate employee to a successful entrepreneur is a testament to his unwavering determination, strategic vision, and ability to seize opportunities. His story is an inspiration to all aspiring entrepreneurs, reminding us that with the right mindset, passion, and a dedicated team, any dream can be transformed into reality. Due to his hard work and determination he is not only earning an annual return of Rs. 15-18 lakhs but is also giving employment of four numbers of families who are working in his farm.

He has also motivated farmers in the neighbourhood to reduce the usage of chemicals & also to produce high value crops like Strawberry & Dragon fruit. Students of different School, colleges & extension personals like CSP"s of Tripura Rural Livelihood Mission, Input Dealers used to visit his nursery for exposure visit purpose. The nursery has been visited by the Minister of Agriculture & Farmers Welfare, Govt of Tripura & Minister of Fisheries, Govt of Tripura. Moreover, he has Designated as the Member of Scientific Advisory Committee member of KVK,Khowai,Tripura. At present, he is training many youths in Natural Farming. Based on his contribution to the farming community, he was awarded by KVK, Khowai & ICAR Research Complex for NEH Region for significant contributions in Agriculture & allied sector.

Moreover, recently he has been awarded by ICAR ATARI Zone VII & College of Fisheries, Lembucherra under the Central Agricultural University(Imphal) as the best start up for excellent showcasing in the exhibition held during the Annual Zonal Workshop of KVK"s -2024.

Thus Mr. Bijoy Gope has created his own brand, not only in the Khowai district but in the state of Tripura as a whole, with his determination The story serves as a testament to the power of passion, determination, and unwavering belief in chasing one's dreams. With his entrepreneurship skill he is now motivating many unemployed youths of the state of Tripura.

4. **Smt. Manika Debbarma Honored with "Champion Women Farmers Change Maker Award - 2024"**

In a momentous recognition of her remarkable contributions to sustainable agriculture, Smt.Manika Debbarma has been awarded the "Champion Women Farmers Change Maker Award - 2024" by the Outlook Group. The award was presented at the prestigious Outlook Agri-Tech Summit & Swaraj- 2024, held at ICAR- NASC, Pusa, New Delhi on 9 th September, 2024. Smt. Debbarma, belongs to R.S. Para ADC village of Kalayanpur block of Khowai District Tripura, a leading figure in the pride movement of farmers, has been lauded for her exceptional efforts in adopting climate change and smart agricultural practices. Her work has notably focused on integrating climate-resilient technologies into rice cultivation, followed by vegetable farming in water-stressed areas. This innovative approach has been instrumental in promoting sustainable farming practices in these challenging environments. The recognition comes as a testament to her dedication and successful implementation of agricultural technologies that are both eco-friendly and highly effective. Under her leadership, and with support from Krishi Vigyan Kendra, Khowai, Tripura, these practices have not only enhanced productivity but also significantly contributed to the resilience of local farming communities against climate variability. The details of success story are mentioned here. R.S Para, a water stress village of Kalyanpur Block with 100 per cent tribal farmers is under Khowai district of Tripura. Cropping sequence was mainly rainfed rice based mono-cropping system. Unavailability of irrigated water forced the farmers towards practice of Mono cropping of Paddy.Considering this, some climate resilient agricultural technologies were disseminated by KVK, Khowai as a out scaling of NICRA intervention along with very less use of external inputs, during the year 2019- 2023. Mrs. Manika Debbarma, progressive farm woman from R.S Para ADC Village, was provided training on climate smart Agriculture and also on community mobilization by KVK, Khowai ,before the training programme she was growing only Paddy with traditional paddy cultivation practices in her 0.4 ha of land and she used to keep her land fallow during the post kharif paddy cultivation and was earning an gross annual income of only Rs. 30000.00 from Agriculture, but after the KVK Khowai intervention she has started growing Pulses like Garden Pea, Lentil and Vegetables like Bitter Gourd, Cucumber, Ridge Gourd, Chilli by using In Situ Moisture Conservation Technologies as well as with Zero Tillage Practices in her 0.4 ha of area during the Post Kharif Paddy cultivation which was remained fallow during the pre- kvk intervention. In Paddy cultivation also she has started using HYV Varieties of Paddy like Gomoti, Tripura Nirog, Tripura Hakuchuk-2 etc and has started practicing SRI Technology in her 0.4 ha of Paddy land under the guidance of KVK, Khowai. With the Support of KVK, Khowai she also established one farmers club named as Aitorma farmers club in the Village and also have established one Custom Hiring Centre ,from where an around 500 nos of farm families are getting benefitted. The farmers club have received a grant of Farm Machineries worth Rs. 1000000.00 from the Department of Agriculture and farmers welfare, Govt of Tripura for running that CHC in the R.S

Para ADC Village, Based on the inspirational work of Mrs. Manika Debbarma, she has been awarded with Best Farm Woman Award , 2024 by KVK, Khowai, with adoption of various Climate Smart Technologies the Cropping Intensity of Mrs. Manika Debbarma"s farm increased from 100% to 200% and annual income Increased from Rs. 30000.00 to Rs. 2,20,000.00 within a very short Period of time. She is now acting as a motivator for all the Small and Marginal farmers of the Village as well as farmers of the nearby Village of the District.

5. An Integrated Approach to Manage of Tomato Fruit Borer

Name of the farmer:
Pradip Das, S/O Upendra Das
Vill- Batapora, P.O. Chebri,
Distt. Khowai-799207
Tripura

Mobile Number: 9436329465

Age: 59

Educational Qualification: 8th Pass

Farming Experience: 9 years

Other crops grown: Cowpea, Potato, Chilli, Paddy, Sweet potato, Pea

Crop: Tomato

Area: 0.48 ha

Introduction:
Tomato (*Lycopersicum esculentum* L.) is the world's largest cultivated vegetable crop occupying an outstanding place among the important vegetables of the India. Its annual production accounts for 107 million metric tons, with fresh market toma-toes constituting 72% of this total. The susceptibility of tomato plants to insects and pathogens can be high, depending upon the pest species, crop stage, growing season and crop location. This, coupled with factors such as high investment and fruit quality standards, has lead to a high number of pesticide applications, further increasing production costs. In addition to economic challenges, the conventional pest control system has other consequences, such as deleterious effects on the environment. An alternative to conventional pest control is the adoption of integrated pest management (IPM), in which a phytophagous organism is considered as a pest only when it reaches an economic threshold. The goals of the IPM system are to preserve and increase the natural mortality factors of pests by combining various pest management control practices in a compatible manner. The selection of these practices is based on technical, economical, ecological and social parameters.

Therefore, the present success story is written to project the benefits of IPM on the reduction of production losses and the preservation of natural enemies.

Interventions of KVK

In order to reduce the pesticidal load in the environment and to abreast with sustainability, certain IPM modules can be adopted by the farmers. Eco-friendly and effective management of the pest is needed by farmers to reduce their losses and produce good quality vegetables to realize better prices in the market. Keeping this in view KVK, Khowai has assessed and demonstrated this technology during the year 2024 under NCIPM, New Delhi NEH project to find out its efficacy in Tripura conditions and also organized training and field demonstrations. A total of 15 farmers were involved in the trials from R.C. Ghat, Batapora, Krishnapur, Nayanpur, Ganki village. The following technology was followed in the IPM modules: Spray with a mixture of lambacyhalothrin 5EC @ 0.8ml/L(0.04%) and Dithane Z-78 (zineb) @ 2.5g/L (0.25%) after 10 days of appearance of moths in the traps (after 30 days of transplanting) followed by second spray with a mixture of Helicide (Ha NPV) 100 LE @ 0.5ml/L+ Indofil M-45 (mancozeb) @ 2.5g/L (0.25%) + Gur (0.05%) + Tween 80 (0.05%) after 15 days of first spray and third spray with a mixture of lamba-cyhalothrin 5EC @ 0.8ml/L (0.04%) and moximate (cymoxanil + mancozeb) @ 0.25% after 15 days of the second spray + pheromone trap 10nos./ha

Output and Outcome:

The comparative effectiveness of modules against the fruit infestation caused by tomato fruit borer during 2020. Table 1 indicated that IPM module minimized the fruit infestation to a substantial level. Significantly superior control of fruit infestation was observed in the IPM module. It is also observed from the results that (Table 1) the lower pest incidence in the IPM module contributed to higher fruit yield (140 q/ ha) and also highest net return was gained than the non IPM module.

Table 1. Impact of IPM and non IPM modules

Modules	Fruit Damage %	Yield (q/ ha)	Net return (Rs)	B:C Ratio
IPM	10.57	140	107258	1: 3.12
Non IPM	40.52	42	25872	1: 1.25

Impact:

Most of the farmers those have implemented the technology in their field were happy with the technology as first time they have earned a handsome profit and and adopted new technology

with pheromone trap against borer. IPM practice adopted under the demonstration programme not only reduces the cost of production but also decreased the infestation level and increase the fruit yield.

	Before IPM	**After IPM**
No. of Sprays	3-4 spray/fortnight	1 spray/20 days
Labor Requirement	Increased	Decreased
Farmer's profit margins	Less	High
Production level	Decreased	Increased
Average net return	25872	107258
Pest damage level	40.52	10.57

6. Success Story of Mr. Samanta Debbarma

Address: Mr. Samanta Debbarma, Vill-Tuiching gram Bari ADC Village, Sub: Khowai,Block: Kalyanpur , Dist: Khowai, Tripura- 799207 Mobile number:8837409341, **e-MAIL ID: samantadebbarma81@gmail.com**

Introduction:

Samanta Debbarma is associated with a farmers club namely "**Hamkrai Farmers club"** of Khowai District of Tripura. Shri Samanta Debbarma contributed a lot to his village and the society through his motivation, sacrifice and hard work. Besides practicing Agriculture and allied activities in his farm he is also very innovative in tries hard to develop his neighbouring farmers with adoption of new new technologies. Tuichingram ADC Village is remote village of Khowai district of Tripura with 100 % tribal inhabitant farmers. Most of the people of the village are dependent on jhum lands to earn their livelihood,As the Jhum Cultivation is not sustainable so the farmers of the village mostly suffers from Livelihood vulnerability.To reduce the vulnerability and also to make Jhum Cultivation Profitable,Mr. Samanta Debbarma have visited KVK ,Khowai. Considering his problems Scientists of the KVK,Khowai has suggested him to adopt Natural Farming in his own land on pilot basis. He got two days training on Natural Farming from KVK,Khowai. After the training programme he has started following natural farming in his Jhum Land where he has grown mixed crop like Paddy var. Aduma Kitting,Pigeon Pea var. Local,Maize Var. local,Brinjal var. local. He has adopted various components of natural farming like Application of Jeevamrutha & Beejamrita,Ghana Jeevamrita + Use of Paddy Straw as Mulch material + Use of Mixed Cropping +Use of Waaphasa.Earlier he was doing Jhum Cultivation without any input application.Before adoption of natural farming his total annual

income from Jhum land was 5,0000.00 with a gross cost of cultivation of Rs.31,250.00 and a net annual return of Rs.18,750.00.The productivity of the crops which he was growing was: : Paddy- 33 q/ha, Pigeon Pea- 5.5 q/ha, Maize- 20.5 q/ha.

After following the principals of Natural farming in his Jhum land this year he could earn total income of Rs. 65,625.00/ha with a total cost of cultivation of Rs. 34375.00,as a result he could get a net annual income of Rs.31250.00.The productivity of the crops was: Paddy- 37 q/ha, Pigeon Pea- 7.6 q/ha, Maize- 21.6 q/ha.

Now, he is motivating other farmer of the villages to adopt natural farming in their land to make Jhum system sustainable and profitable. Besides economic point of view, the application of different inputs under Natural farming also have a positive influence on post harvest soil fertility parameters.

Table : General physico-chemical properties ofexperimental soil under Pre-adoption and Post Adoption of Natural Farming (After One year of adoption)

Soil Properties	**Pre adoption Values/description**	**Post adoption Values/description**
Soil Texture	Sandy loam	Sandy Loam
Soil P^H	5.6	5.4
Available P by Bray"s method(Kg/ha)	12.84	12.96
Available N_2(Kg/ha)	207.65	209.8
Available K_2O(Kg/ha)	181.58	183.5
Organic Carbon(%)	0.59	0.59

Conclusion:

With his innovative ideas and hard work Mr. Samanta Debbarma is now changing the attitude of many tribal jhumias which is leading them to adopt natural farming in their lands in a big way. After seeing his success many line department officials and Scientists from ICAR has visited his land and appreciated his efforts .

7. IPM modules against tomato fruit borer – a success story

Name of the farmer: Rahul Das, S/O Gokul Das Vill- RC Ghat, P.O. Chebri, Distt. Khowai-799207 Tripura	
Mobile Number: 8974543298	
Age: 30 **Educational Qualification:** 12th Pass **Farming Experience:** 10 years **Other crops grown:** Cowpea, Potato, Chilli, Paddy, Sweet potato, Pea, Brinjal **Crop:** Tomato **Area:** 0.32 ha	

Introduction:

Tomato (*Lycopersicum esculentum* L.) is the world's largest cultivated vegetable crop occupying an outstanding place among the important vegetables of the India. Its annual production accounts for 107 million metric tons, with fresh market toma-toes constituting 72% of this total. The susceptibility of tomato plants to insects and pathogens can be high, depending upon the pest species, crop stage, growing season and crop location. This, coupled with factors such as high investment and fruit quality standards, has lead to a high number of pesticide applications, further increasing production costs. In addition to economic challenges, the conventional pest control system has other consequences, such as deleterious effects on the environment. An alternative to conventional pest control is the adoption of integrated pest management (IPM), in which a phytophagous organism is considered as a pest only when it reaches an economic threshold. The goals of the IPM system are to preserve and increase the natural mortality factors of pests by combining various pest management control practices in a compatible manner. The selection of these practices is based on technical, economical, ecological and social parameters. Therefore, the present success story is written to project the benefits of IPM on the reduction of production losses and the preservation of natural enemies.

Interventions of KVK

In order to reduce the pesticidal load in the environment and to abreast with sustainability, certain IPM modules can be adopted by the farmers. Eco-friendly and effective management of the pest is needed by farmers to reduce their losses and produce good quality vegetables to realize better prices in the market. Keeping this in view KVK, Khowai has assessed and demonstrated this technology during the year 2020-21 under NCIPM, New Delhi NEH project to

find out its efficacy in Tripura conditions and also organized training and field demonstrations. A total of 15 farmers were involved in the trials from R.C. Ghat, Batapora, Krishnapur, Nayanpur, Ganki village. The following technology was followed in the IPM modules: Spray with a mixture of lambacyhalothrin 5EC @ 0.8ml/L(0.04%) and Dithane Z-78 (zineb) @ 2.5g/L (0.25%) after 10 days of appearance of moths in the traps (after 30 days of transplanting) followed by second spray with a mixture of Helicide (Ha NPV) 100 LE @ 0.5ml/L+ Indofil M-45 (mancozeb) @ 2.5g/L (0.25%) + Gur (0.05%) + Tween 80 (0.05%) after 15 days of first spray and third spray with a mixture of lamba-cyhalothrin 5EC @ 0.8ml/L (0.04%) and moximate (cymoxanil + mancozeb) @ 0.25% after 15 days of the second spray + pheromone trap 10nos./ha

Output and Outcome:

The comparative effectiveness of modules against the fruit infestation caused by tomato fruit borer during 2020. Table 1 indicated that IPM module minimized the fruit infestation to a substantial level. Significantly superior control of fruit infestation was observed in the IPM module. It is also observed from the results that (Table 1) the lower pest incidence in the IPM module contributed to higher fruit yield (138 q/ ha) and also highest net return was gained than the non IPM module.

Table 1. Impact of IPM and non IPM modules

Modules	**Fruit Damage %**	**Yield (q/ ha)**	**Net return (Rs)**	**B:C Ratio**
IPM	9.85	138	111345	1: 3.58
Non IPM	42.65	40.5	22456	1: 1.22

Impact:

Most of the farmers those have implemented the technology in their field were happy with the technology as first time they have earned a handsome profit and adopted new technology with pheromone trap against borer. IPM practice adopted under the demonstration programme not only reduces the cost of production but also decreased the infestation level and increase the fruit yield.

	Before IPM	**After IPM**
No. of Sprays	3-4 spray/fortnight	1 spray/20 days
Labor Requirement	Increased	Decreased
Farmer's profit margins	Less	High
Production level	Decreased	Increased
Average net return	22456	111345
Pest damage level	42.65	9.85

8. From Sparse to Bountiful: A Sesame Farmer's Triumph

Name of the farmer : Shri. Niranjan Debnath

Age (Years) : 41

Gender: Male/ Female : Male

Educational Status : VIII Pass

Address : Vill: East RC Ghat, PO: Chebri,Dist: Khowai

Pin: 799207,Mobile no: 8794332012

Enterprise: Value Chain of Sesamum :

Name of the crop and Variety :Crop: Sesamum var. Tripura Siphing

Season:Summer, 2024

Background information of the farmer:

Shri Niranjan Debnath contributed a lot to his family and the society through his motivation, sacrifice and hard work after coming out from landless labour family background. He started to earn livelihood through day wages and saved little amount to have his leased land for own cultivation. He associated himself with KVK Khowai and acquired agricultural technologies which he applied in his field. He was exploring income generating activities through the guidance of the KVK and expanded his activities to many folds. Initially they had only a small plot of 0.74 ha but now he own 1.25 ha of land.Before,the KVK,Khowai intervention Shri. Niranjan Debnath was focusing mainly on Paddy cultivation at an area of only 0.64 ha, during the both Kharif and Rabi Season .Other than paddy he used to grow Mustard, Potato,Bitter Gourd,Okra,Ridge Gourd,Chilli etc by using his traditional knowledge. He was rearing Cattle with local breed along Duck cum Fishery.

Technology/process intervened by KVK (max. 100 words):

On CFLD On Oilseeds Programme Mr. Niranjan Debnath was provided training on Scientific Cultivation of Sesamum var.Tripura Siphing. After KVK, Khowai"s intervention Mr. Niranjan Debnath has started Using Soil Health Card in Sesamum , resulting in less input application with high return. He has applied Lime @ 10% of actual LR along with FYM 5 ton^{-1}.Moreover he has also applied Sulphur @ 50kg/ha in his plot. He has followed line Sowing and also timely weeding in his plot.

Effect of the technology /process:

Through all the scientific intervention in Sesamum at an area of 0.16 ha area, Mr. Niranjan Debnath could get an yield of 175 kg with a productivity of 10.9 q/ha. Earlier also, Mr. Debnath has been awarded as the Innovative Sesamum Grower Award by the College of Agriculture, Tripura. His Net Profit has increased from 33,770.00 Rs/ha to 84,716.00 Rs/ha with increase in BCR ratio from 1.75 to 2.83

Specific Technology	**Yield (q/ha)**	**Gross cost (Rs/ha)**	Gross return**(Rs/ha)**	Net return**(Rs/ha)**	**B:C ratio**
Farmer practices (Variety:)	6.56	44950.00	78,720.00	33770.00	1.75
Demonstration practices (Variety:)	10.9	46084.00	130,800.00	84,716.00	2.83
% Increase	4.34	(-)1134.00	52,080.00	50,946.00	

9. Suitability and adaptability in the existing farming systems (max. 100 words) :

Under Khowai, Tripura condition the variety has recorded 21.69 % yield superiority over B 67 and 63.4% yield superiority over the Siping Borok (Jhum Til) of Tripura. TRC Til -1-8-1-1 also has 1% more oil content (42%) than B 67. The variety also shown high level of tolerance to *Phytophthora* blight. Pod shattering is also very low, reducing the risk of yield loss during harvest.

Acceptance of technology/process in terms of views of the farmers:

In the demonstrations conducted on farmers field the variety received good acceptance due to its high yield, light brown seed coat colour, disease freeness and early maturity.

Out scaling of technology (Horizontal spread):

After initiative taken by Shri Niranjan Debnath,the Seed Production of Sesamum is now horizontally spread to about 60 numbers of farmers and farm women of East and North Ramchnadraghat Village of Khowai district of Tripura.

10. Socio-economic impact:

Farmers are very much happy with initiative from KVK, Khowai as the farmers are getting higher price from seed production, moreover some of the farmers have started to produce sesamum oil commercially as one oil extraction machine is provided to the KVK,Khowai from the College of Agriculture, Tripura.

Marketing network established:

The seeds procured from farmers by the Farmers Producer Organizations after physically inspect for quality parameters. After ensuring requisite quality, farmers are paid as per agreed upon prices. If farmers were willing to keep entire produce and sell on his behalf, he was assisted for safe grain storage.

Establishment of process/ units:

A small oil expeller machine is provided from the College of Agriculture,Tripura to the Community Group for processing the Sesame and also to produce Sesame oil.

Linkage with technology/ development organizations:

Linkage has been established with the College of Agriculture,Tripura for Value Chain Management and also with the ICAR RC for NEH Region,Tripura Centre for quality Seed Production.

Action photographs:

	
Field Visit by the SS Cum Head of KVK,Khowai to the Farmers Field	**Demo Plot of Mr. Niranjan Debnath**
	
Field Day at Mr. Niranjan Debnath"s Field	**Distribution of Oil Expeller Machine to the Community Group.**

9. **Success Story of Mr. Kshitish Das**

In a remarkable recognition of his remarkable contributions to pulse production Mr. Kshitish Das a small farmer of East R.C Ghat Village of Khowai district of Tripura has been awarded with the Certificate of Appreciation by the College of Agriculture, Tripura for cultivation of Black Gram following Good Agricultural Practices according to the guidelines of the Project "Promotion of Pulse in NEH Region" during the National Farmers Day Programme on 23rd Dember,2024 at Lembucherra, organized by the College of Agriculture Tripura .Sri. Das has been lauded for his exceptional efforts in adopting Pulse Cultivation and good agricultural practices. Before KVK intervention Mr. Kshitish Das, used to keep his land fallow during the Post-Kharif Season. Under the Promotion of Pulse in NEH Region Programme funded by:ICAR-IIPR, Kanpur Mr. Kshitish Das, was provided with Seeds and training on Scientific Cultivation of Black Gram var.IPU-10-26 by the College of Agriculture, Tripura and Krishi Vigyan Kendra, Khowai. After the intervention Mr. Kshitish Das has started Using Soil Health Card in Black Gram, resulting in less input application with high return. He has applied Lime @ 10% of actual LR along with FYM 5 ton^{-1}.Moreover Rhizobium was also used as Bio-fertilizer @ 20g/kg of Seed. Through all the scientific intervention in Black Gram at an area of 0.16 ha area,

Mr. Kshitish Das could get an yield of 200 kg with a productivity of 12.5 q/ha. The gross cost of Cultivation for his 0.16 ha land was Rs. 8155.00,with a gross return of 18000.00,his net return from Black Gram var.IPU-10-26 was found to be Rs.9856.00.The benefit cost ratio was found to be 2.20. Many farmers of the particular village along with the farmers from the nearby villages are now interested to grow Black Gram as Seed Under Seed Production Programme ,after seeing the Success of Mr. Kshitish Das.