



Research Article

INTEGRATED CROP MANAGEMENT IN PADDY CHANGING THE INCOME LEVEL OF PADDY FARMERS OF NORTH PULINPUR ADC VILLAGE OF TRIPURA UNDER NICRA

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Received: July 06, 2019; Revised: July 24, 2019; Accepted: July 26, 2019; Published: July 30, 2019

Abstract: North Pulipur, a water stress village with 100 per cent tribal farmers is under Khowai district of Tripura, India. Paddy is the major crop of the village and they used to grow it in *kharif* season. Average Paddy Productivity was very low (3.2 ton/ha) in that particular village. Unavailability of irrigated water forced the farmers towards practice of Jhumming. Considering this, some integrated crop management practices in paddy were disseminated during the year 2018-19 by KVK, Khowai in collaboration with ICAR research complex for NEH region Tripura Centre under the project NICRA funded by CRIDA, Hyderabad. The results indicated that significant increase in productivity of paddy was observed in the ICM demonstrated plots whereas doubling of farmers income could also possible in the demonstrated plots due to the high price obtained with seed production. Moreover many of the tribal farmers were awarded for their significant contribution in adopting and disseminating the technology.

Keywords: Nicra, Paddy, Tripura, Integrated Crop Management

Citation: Dey D., et al., (2019) Integrated Crop Management in Paddy Changing the Income Level of Paddy Farmers of North Pulipur ADC Village of Tripura Under NICRA. International Journal of Agriculture Sciences, ISSN: 0975-3710 & E-ISSN: 0975-9107, Volume 11, Issue 14, pp.- 8762-8767.

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Introduction

North Pulipur is one of the draught prone tribal inhabited ADC villages of the district Khowai under the state Tripura. The total geographical area of the village is 950 hectare with cultivable area of about 250 hectare only among 806 farm families. So, most of the families are holding either small or marginal farms. There was no perennial streams, rivers, ponds and other irrigation facilities in the village. Prevailing temperature ranges from 16°C to 37°C. Annual rainfall ranges from 2050 to 2550 mm, but almost whole amount goes out to neighboring lower elevated village. Agriculture is the mainstay of the people, about 85 percent of them engage in agriculture and its allied activities. Farmers earned their livelihood from rainfed rice based mono-cropped cultivation. Moisture stress during *Kharif* dry spell and winter season which lead to rice based mono-cropping system. Farmers generally grows paddy with *ad-hoc* application of fertilizers in the plot which have resulted in poor paddy yield with less income. Moreover, they were growing paddy by using traditional system of cultivation like old traditional variety, irregular spacing, no seed treatment, continuous flooding, seedling of older age, use of more than 3 nos seedling during transplanting, no plant protection measures etc. After harvesting of paddy the farmers used to get very less return as there was no ready market for paddy and they had to sell their product to the middle man at a very low rate. It has resulted in poor economic condition of the farmers.

KVK Interventions

Under the National Innovations in Climate Resilient Agriculture (NICRA) Project KVK, Khowai has collected soil samples from 62 numbers of farmers before the initiation of *kharif* season for the year 2018-19. After soil analysis at KVK, Soil Testing Laboratory 62 numbers of soil Health Cards were distributed to the farmers of North Pulipur ADC Village. From Soil testing results it was found that the farmers were mostly over or under using the fertilizers in their plots which have

resulted in deficiency or toxicity of many important nutrients. Under NICRA programme HYV of paddy var. Gomoti were supplied to the farmers and those farmers were given training on SRI cultivation which is based on six major principals [1]:

- Young seedlings between 8-12 days old (2-3 leaf stage) are transplanted to preserve potential for tillering and rooting ability;
- Careful planting of single seedlings rather than in clumps that are often plunged in the soil; Transplanting of tender seedlings need care to minimize root trauma.
- Wider spacing at 25 cm x 25 cm. in square planting rather than in rows; this can also be done with the help of rope by marking.
- Use of cono-weeder/ rotary hoe/power weeder to aerate the soil as well as controlling weeds; The first advantage of using the weeder is the control of weeds and also adding organic matter to the soil. This gives the benefits of cultivating a green manure crop. Further, the soil gets aerated and the roots are exposed to air. This results in profuse growth of diverse soil microorganisms which make nutrients available to the plant.
- Alternate wetting and dry method rather than continuous flooding in the field; as the soil is not flooded, the roots of the paddy plants grow healthy, deeply in all directions. The root growth is extensive also due to the wide spacing. As the field is intermittently irrigated and dried, the micro-organisms grow well which make nutrients available to the plants. This method also helps in better growth and spread of roots.
- Use of organic manure or Vermi-compost / FYM.

All the six principals were followed in the field of 62 numbers of farmers with critical input support from KVK, Khowai. Convergence with the ICAR Research complex for NEH region were done to scientific breeder seed production in the farmers field itself.

Regular field visit and monitoring programmes were done by experts from KVK as well from ICAR, Tripura Centre.



Fig-1 Soil Health Card Distribution



Fig-2 Practice of SRI at North Pulinpur ADC Village

Soil Fertility Map of Project Area

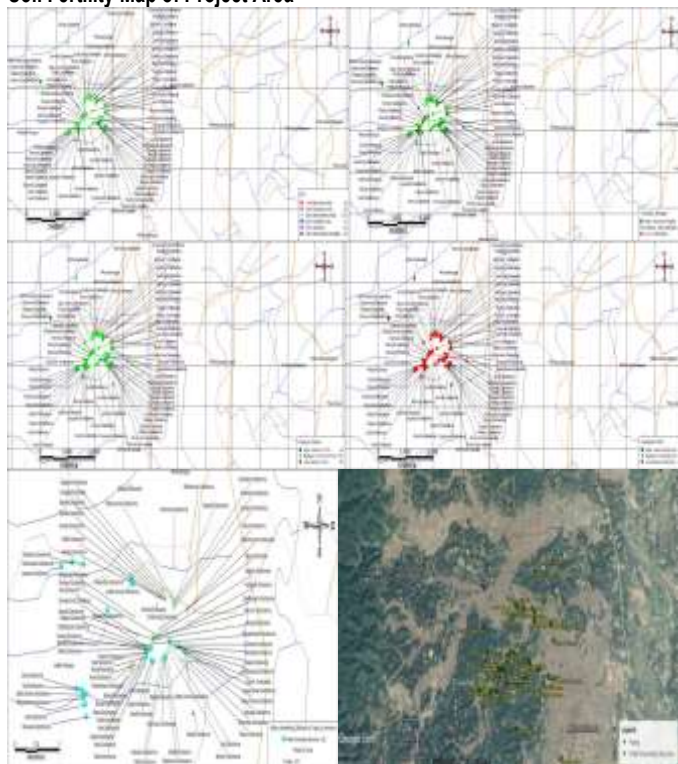


Fig-3 Digital Map of Project Site

SRI in Tripura

Tripura is a state in North-East India which borders Bangladesh, Mizoram and Assam. It is surrounded by Bangladesh on its north, south and west. It shares a 53 km border with Assam and 109 km border with Mizoram. Tripura is a land locked state. Rice is the major staple food of Tripura with 75 percent of cropped area devoted to production of rice. In terms of production, it ranks next to Assam in north eastern states [2]. Department of Agriculture, Government of Tripura and

Krishi Vigyan Kendra's are trying their level best to popularize SRI in Tripura. SRI method of cultivation is having several advantages over the traditional system since the seed and water requirement and incidences of pests and diseases are lower than the traditional system. Despite of several advantages the farmers are facing several problems like timely availability of skilled labour, high cost of labour due to which the practice is not getting enough popularity [3].

Convergence with ICAR Research Complex for NEH region, Tripura Centre

Getting quality seed is a major constrain for the farmers of Tripura. Moreover to produce quality seeds sufficient area is not available in the research stations. To overcome the problem KVK, Khowai in collaboration with ICAR, research complex for NEH region Tripura Centre, Plant Breeding division taken the initiative to produce quality breeder seeds at North Pulinpur ADC Village with 62 above mentioned farmers. All the seed production protocols were followed and regular field visits were done by the Scientists of KVK and ICAR. After harvesting seeds were supplied to ICAR Tripura Centre at a very good price so that farmers can get good return out of paddy cultivation.



Fig-4 Seed Production

Output

On an average they got an average yield of 7.07 t/ha, with a gross return of Rs.12375.00 and net return of Rs. 72725.00. Moreover, after this successful intervention many of the farmers of nearby villages are also coming in huge number to adopt scientific crop management practice in paddy to improve their economic status.

Conclusion

Based on the their dedication and hard work many of the organization including the Krishi Vigyan Kendra Khowai, ICAR research complex for NEH region, Tripura Centre have recognized their efforts and awarded them with many awards. List of the farmers who have received awards under the programme is given below:

Name of award	Award Given to	Award given by
Innovative Rice Farmer Award	Shri Mantu Debbarma	ICAR Research Complex for NEH region, Tripura Centre
Innovative Farmer Award	Shri Mangal Debbarma	ICAR Research Complex for NEH region, Tripura Centre
Best Farmer of the Year Award	Shri Charan Debbarma	Krishi Vigyan Kendra, Khowai

Application of research: This research work will help in policy making for the development of the paddy growers.

Research Category: Crop Production

Acknowledgement / Funding: Authors are thankful to ICAR-Central Research Institution for Dry land Agriculture, CRIDA, Hyderabad, Telangana 500059. Authors are also thankful to Director of Agricultural Technology Application Research Institute (ATARI), Umiam, ICAR Research Complex, Umroi Road, Umiam, 793103, Meghalaya, India for their financial support.

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Research project name: National Innovations in Climate Resilient Agriculture (NICRA)

Table-1 Description of the Intervention

Item	Description
Title of the intervention	Integrated Crop Management in Paddy var Gomoti
Problem to be addressed	To make paddy Cultivation more profitable
Description of the farmers' practice	Conventional paddy cultivation (comparatively long duration variety- Ranjit and MTU 7029) that requires more water and <i>ad-hoc</i> application of fertilizers
Description of the technology	Cultivation of medium duration HYV of paddy (Variety-Gomoti)
	Use of Soil Health Cards
	Adoption of SRI
	Breeder Seed Production
	Seed Treatment with Carbandazim 25%+ Mancozeb 75%
	Need Based PPC application
Area covered under demonstration (ha)	40 ha
No. of farmers covered	62 nos.
Convergence and type of Convergence	Convergence with ICAR Research complex for NEH region, Tripura Centre for paddy seed production

Table-2 Farmer-wise description of interventions

Farmer Name	Item	Crop	Variety	Area (ha)	Date of sowing	Seed Yield (kg/ha)	Cost of cultivation (Rs/ha)	Gross Income(Rs/ha)	Net return (Rs/ha)	B:C ratio ²
Mangal Debbarma	Treatment / demo	Paddy	Gomoti	0.48 ha	15 th to 20 th June,2018	7200 kg/ha	51000	1,26,000.00	75000	2.47
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4200 kg/ha	48000	63000	15000	1.31
Montu Debbarma	Treatment / demo	Paddy	Gomoti	0.64 ha	15 th to 20 th June 2018	7000 kg/ ha	51000	122500	71500	2.4
	Farmer's practice	Paddy	MTU 7029	0.64 ha	15 th to 20 th June, 2018	4000 kg/ ha	48000	60000	12000	1.25
AjoyDebbarma	Treatment / demo	Paddy	Gomoti	0.48 ha	15 th to 20 th June, 2018	7000 kg/ ha	51000	122500	71500	2.4
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June, 2018	4000 kg/ ha	48000	60000	12000	1.25
ChittaranjanDebbarma	Treatment / demo	Paddy	Gomoti	0.8 ha	15 th to 20 th June, 2018	7200 kg/ ha	50090	126000	75910	2.51
	Farmer's practice	Paddy	MTU 7029	0.8 ha	15 th to 20 th June, 2018	4200 kg/ ha	47800	63000	15200	1.31
SabiDebbarma	Treatment / demo	Paddy	Gomoti	0.64 ha	15 th to 20 th June, 2018	6800 kg/ ha	51000	119000	68000	2.33
	Farmer's practice	Paddy	MTU 7029	0.64 ha	15 th to 20 th June, 2018	4000 kg/ ha	48000	60000	12000	1.25
CharanDebbarma	Treatment / demo	Paddy	Gomoti	0.64 ha	15 th to 20 th June, 2018	7100 kg/ ha	51000	124250	73250	2.43
	Farmer's practice	Paddy	MTU 7029	0.64 ha	15 th to 20 th June, 2018	4100 kg/ ha	48000	61500	13500	1.28
Muni Debbarma	Treatment / demo	Paddy	Gomoti	0.48 ha	15 th to 20 th June, 2018	7000 kg/ ha	51000	122500	71500	2.4
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June, 2018	4000 kg/ ha	48000	60000	12000	1.25
Mansi Debbarma	Treatment / demo	Paddy	Gomoti	0.64 ha	15 th to 20 th June, 2018	7000 kg/ ha	50000	122500	72500	2.45
	Farmer's practice	Paddy	MTU 7029	0.64 ha	15 th to 20 th June, 2018	4000 kg/ ha	48000	60000	12000	1.25
BrajabahadurDebbarma	Treatment / demo	Paddy	Gomoti	0.72 ha	15 th to 20 th June, 2018	7000 kg/ ha	51000	122500	71500	2.4
	Farmer's practice	Paddy	MTU 7029	0.72 ha	15 th to 20 th June, 2018	3800 kg/ ha	48000	57000	9000	1.18
Jitendra Debbarma	Treatment / demo	Paddy	Gomoti	0.8 ha	15 th to 20 th June,2018	7100 kg/ ha	51000	124250	73250	2.43
	Farmer's practice	Paddy	MTU 7029	0.8 ha	15 th to 20 th June,2018	4100 kg/ ha	47600	61500	13900	1.29
Bijoy Kumar Debbarma	Treatment / demo	Paddy	Gomoti	0.48 ha	15 th to 20 th June,2018	7000 kg/ ha	50700	122500	71800	2.41
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June, 2018	4000 kg/ ha	47500	60000	12500	1.26
BodulaxmiDebbarma	Treatment / demo	Paddy	Gomoti	0.8 ha	15 th to 20 th June,2018	7000 kg/ ha	51000	122500	71500	2.4
	Farmer's practice	Paddy	MTU 7029	0.8 ha	15 th to 20 th June,2018	4200 kg/ ha	48000	63000	15000	1.31
Badal Debbarma	Treatment / demo	Paddy	Gomoti	0.64 ha	15 th to 20 th June,2018	7100 kg/ ha	50300	124250	73950	2.47
	Farmer's practice	Paddy	MTU 7029	0.64 ha	15 th to 20 th June,2018	3800 kg/ ha	48000	57000	9000	1.18
Bikram Debbarma	Treatment / demo	Paddy	Gomoti	0.64 ha	15 th to 20 th June,2018	7200 kg/ ha	51000	126000	75000	2.47
	Farmer's practice	Paddy	MTU 7029	0.64 ha	15 th to 20 th June,2018	4100 kg/ ha	48000	61500	13500	1.28
Ramani Debbarma	Treatment / demo	Paddy	Gomoti	0.8 ha	15 th to 20 th June,2018	7000 kg/ha	50108	122500	72392	2.44
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	12000	1.25
Ranjan Kumar Debbarma	Treatment / demo	Paddy	Gomoti	0.64 ha	15 th to 20 th June,2018	7000 kg/ha	52815	122500	69685	2.31
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	12000	1.25

BirgumaniDebbarma	Treatment / demo	Paddy	Gomoti	0.48 ha	15 th to 20 th June,2018	7000 kg/ha	50125	122500	37875	2.44
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	12000	1.25
BinataDebbarma	Treatment / demo	Paddy	Gomoti	0.56 ha	15 th to 20 th June,2018	7200 kg/ha	50100	126000	75900	2.51
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	12000	1.25
BinataDebbarma	Treatment / demo	Paddy	Gomoti	1.12 ha	15 th to 20 th June,2018	7200 kg/ha	51664	126000	74336	2.43
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June, 2018	4000 kg/ ha	48000	60000	12000	1.25
RatnaDebbarma	Treatment / demo	Paddy	Gomoti	0.48 ha	15 th to 20 th June,2018	7200 kg/ha	51200	126000	74800	2.4
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	12000	1.25
Sankar Debbarma	Treatment / demo	Paddy	Gomoti	0.64 ha	15 th to 20 th June,2018	7000 kg/ha	51000	122500	71500	2.4
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	12000	1.25
PrateshDebbarma	Treatment / demo	Paddy	Gomoti	0.8 ha	15 th to 20 th June,2018	7100 kg/ ha	52101	124250	72149	2.38
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	12000	1.25
Surjya Kumar Debbarma	Treatment / demo	Paddy	Gomoti	0.64 ha	15 th to 20 th June,2018	7000 kg/ha	51000	122500	71500	2.4
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	12000	1.25
BalendraDebbarma	Treatment / demo	Paddy	Gomoti	0.64 ha	15 th to 20 th June,2018	7000 kg/ha	51000	122500	71500	2.4
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	12000	1.25
Rabi CharanDebbarma	Treatment / demo	Paddy	Gomoti	0.64 ha	15 th to 20 th June,2018	7100 kg/ ha	52160	124250	72090	2.38
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	12000	1.25
SabitaDebbarma	Treatment / demo	Paddy	Gomoti	0.56 ha	15 th to 20 th June,2018	7100 kg/ ha	51010	124250	73240	2.43
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	12000	1.25
Rama Debbarma	Treatment / demo	Paddy	Gomoti	0.32 ha	15 th to 20 th June,2018	7000 kg/ha	53650	122500	68850	2.28
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	12000	1.25
AlenDebbarma	Treatment / demo	Paddy	Gomoti	0.48 ha	15 th to 20 th June,2018	7000 kg/ha	51100	122500	71400	2.39
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	12000	1.25
BadharaiDebbarma	Treatment / demo	Paddy	Gomoti	0.72 ha	15 th to 20 th June,2018	7000 kg/ha	52100	122500	70400	2.35
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	47000	60000	13000	1.27
Tarit Kumar Debbarma	Treatment / demo	Paddy	Gomoti	0.64 ha	15 th to 20 th June,2018	7100 kg/ ha	51810	124250	72440	2.39
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	13000	1.27
Abhijit Debbarma	Treatment / demo	Paddy	Gomoti	0.8 ha	15 th to 20 th June,2018	7000 kg/ha	52200	122500	70300	2.34
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	46700	60000	13300	1.28
RebatiDebbarma	Treatment / demo	Paddy	Gomoti	0.418 ha	15 th to 20 th June,2018	7200 kg/ha	51200	126000	74800	2.46
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	13000	1.27
AnjuraniDebbarma	Treatment / demo	Paddy	Gomoti	1.28 ha	15 th to 20 th June,2018	7200 kg/ha	50166	126000	75834	2.51
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	47600	60000	12400	1.26
HiralalDebbarma	Treatment / demo	Paddy	Gomoti	0.96 ha	15 th to 20 th June,2018	7200 kg/ha	51000	1,26,000.00	75000	2.47
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	13000	1.27
SarubalaDebbarma	Treatment / demo	Paddy	Gomoti	0.8 ha	15 th to 20 th June,2018	7000 kg/ha	51020	122500	71480	2.4
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	13000	1.27
FullaraniDebbarma	Treatment / demo	Paddy	Gomoti	0.41 ha	15 th to 20 th June,2018	7200 kg/ha	51122	1,26,000.00	74878	2.46
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	13000	1.27
Mitra Debbarma	Treatment / demo	Paddy	Gomoti	0.64 ha	15 th to 20 th June,2018	7100 kg/ ha	50130	124250	74120	2.47
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	47000	60000	13000	1.27
Sunil Debbarma	Treatment / demo	Paddy	Gomoti	0.96 ha	15 th to 20 th June,2018	7000 kg/ha	53450	122500	69050	2.29
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	13000	1.27
Shital Debbarma	Treatment / demo	Paddy	Gomoti	0.8 ha	15 th to 20 th June,2018	7100 kg/ ha	51180	124250	73070	2.47
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	46800	60000	13200	1.28
SukuraniDebbarma	Treatment / demo	Paddy	Gomoti	0.8 ha	15 th to 20 th June,2018	7200 kg/ha	51770	126000	74230	2.43
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	13000	1.27
Biswajit Debbarma	Treatment / demo	Paddy	Gomoti	0.64 ha	15 th to 20 th June,2018	7000 kg/ha	50668	122500	71832	2.41
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	13000	1.27
BirajaDebbarma	Treatment / demo	Paddy	Gomoti	0.8 ha	15 th to 20 th June,2018	7100 kg/ ha	51001	124250	73249	2.43
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	47900	60000	12100	1.25
PumimalaDebbarma	Treatment / demo	Paddy	Gomoti	0.64 ha	15 th to 20 th June,2018	7000 kg/ha	51096	122500	71404	2.39
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	13000	1.27

AmrishDebbarma	Treatment / demo	Paddy	Gomoti	0.64 ha	15 th to 20 th June,2018	7200 kg/ha	50196	126000	75804	2.51
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	13000	1.27
Arun Debbarma	Treatment / demo	Paddy	Gomoti	0.64 ha	15 th to 20 th June,2018	7200 kg/ha	50188	126000	75812	2.51
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	13000	1.27
MalenDebbarma	Treatment / demo	Paddy	Gomoti	0.48 ha	15 th to 20 th June,2018	7100 kg/ ha	50296	124250	73954	2.47
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	13000	1.27
BirmohanDebbarma	Treatment / demo	Paddy	Gomoti	0.48 ha	15 th to 20 th June,2018	7000 kg/ha	51600	122500	70900	2.37
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	46900	60000	13100	1.27
SanjitDebbarma	Treatment / demo	Paddy	Gomoti	0.48 ha	15 th to 20 th June,2018	7200 kg/ha	50190	126000	75810	2.51
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	13000	1.27
SampraiDebbarma	Treatment / demo	Paddy	Gomoti	0.48 ha	15 th to 20 th June,2018	7200 kg/ha	50001	126000	75999	2.51
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	47700	60000	12300	1.25
BajjantiDebbarma	Treatment / demo	Paddy	Gomoti	0.88 ha	15 th to 20 th June,2018	7000 kg/ha	52600	122500	69900	2.32
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	13000	1.27
SayatiDebbarma	Treatment / demo	Paddy	Gomoti	0.72 ha	15 th to 20 th June,2018	7100 kg/ ha	54800	124250	69450	2.26
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June, 2018	4000 kg/ ha	48000	60000	13000	1.27
ParendraDebbarma	Treatment / demo	Paddy	Gomoti	0.8 ha	15 th to 20 th June,2018	7000 kg/ha	50100	122500	72400	2.44
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	46800	60000	13200	1.28
Nikhil Debbarma	Treatment / demo	Paddy	Gomoti	0.64 ha	15 th to 20 th June,2018	7200 kg/ha	51000	126000	75000	2.47
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	13000	1.27
BamraiDebbarma	Treatment / demo	Paddy	Gomoti	0.8 ha	15 th to 20 th June,2018	7000 kg/ha	54106	122500	68394	2.26
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	13000	1.27
Srimati Debbarma	Treatment / demo	Paddy	Gomoti	0.64 ha	15 th to 20 th June,2018	7200 kg/ha	51654	126000	74346	2.43
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	47600	60000	12400	1.26
SudhanyaDebbarma	Treatment / demo	Paddy	Gomoti	0.8 ha	15 th to 20 th June,2018	7000 kg/ha	51005	122500	71495	2.4
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	13000	1.27
SulekhaDebbarma	Treatment / demo	Paddy	Gomoti	0.48 ha	15 th to 20 th June,2018	7100 kg/ ha	50169	124250	74081	2.47
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	13000	1.27
AdhinkanyaDebbarma	Treatment / demo	Paddy	Gomoti	0.64 ha	15 th to 20 th June,2018	6800 kg/ha	50100	119000	68900	2.37
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	13000	1.27
AnnaraniDebbarma	Treatment / demo	Paddy	Gomoti	0.64 ha	15 th to 20 th June,2018	7000 kg/ha	51300	122500	71200	2.38
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	47200	60000	12800	1.27
Bishu Kumar Debbarma	Treatment / demo	Paddy	Gomoti	0.64 ha	15 th to 20 th June,2018	7000 kg/ha	52101	122500	70399	2.35
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	13000	1.27
NiranDebbarma	Treatment / demo	Paddy	Gomoti	0.96 ha	15 th to 20 th June,2018	7200 kg/ha	51608	126000	74392	2.44
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	4000 kg/ ha	48000	60000	13000	1.27
SamareshDebbarma	Treatment / demo	Paddy	Gomoti	0.48 ha	15 th to 20 th June,2018	7100 kg/ha	51806	124250	72444	2.39
	Farmer's practice	Paddy	MTU 7029	0.48 ha	15 th to 20 th June,2018	3900 kg/ ha	47000	58500	11500	1.24

Author Contributions: All authors equally contributed

Author statement: All authors read, reviewed, agreed and approved the final manuscript. Note-All authors agreed that- Written informed consent was obtained from all participants prior to publish / enrolment

Study area / Sample Collection: North Pulinpur ADC Village, Tripura

Cultivar / Variety / Breed name: Paddy var. Gomoti

Conflict of Interest: None declared

Ethical approval: This article does not contain any studies with human participants or animals performed by any of the authors.

Ethical Committee Approval Number: Nil

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