

KRISHI RUPANTAR

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APART'S Intervention In Artificial Insemination (AI) And Market Linkage Under Formal Milk Value Chain

The development of the Milk Value Chain is one of the key components of the Assam Agribusiness and Rural Transformation Project (APART), a World Bank and Government of Assam financed project. The activities under the Milk Value Chain are initiated through WAMUL as the implementing agency for the formal milk sector. The value chain approach covers the productivity enhancement of dairy animals to provide the most crucial market linkage 24/7 and 365 days a year for dairy farmers.

Low productivity of animals was identified as one of the most crucial

constraints for dairy development in the state and APART emphasized addressing this issue through its intervention. The Project has introduced professional Artificial Insemination (AI) service at the Farmer's doorstep to enhance the productivity in 13 Milk potential districts of the state. So far, around 5.00 lakhs inseminations and 85000 nos of improved pedigree female calves have been born through this process subsequently increasing the total production of milk in Assam. Besides, feed and fodder advisories and demonstrations are also initiated, resulting in higher yield and better



Commencement of milk procurement facilities under the newly inaugurated BMC at Goalpara

quality of milk and thereby reducing the unit cost of production for the farmers, as well. The practice of silage making as a Pilot project, under the milk value chain, has been initiated in Morigaon and Nalbari districts, to help the farmers during the Monsoons/Floods, when there scarcity of feeds.

Under APART, WAMUL is setting up Bulk Milk Cooling (BMC) centers to reach the far-flung new and potential areas. In recent months, WAMUL has commissioned 3 BMC centers covering Dhing, Kaliabor, and Goalpara and formed 53 new Dairy Cooperative Societies (DCSs) initially, benefitting around 650 farmers. At present, a total of

432 DCSs with an overall Bulk milk cooling capacity of 46000 litres per day are associated with WAMUL through their Cooperatives, with the direct association of around 14000 dairy farmers.

It is significant to note that even during the Covid restrictions; farmers associated with WAMUL could enjoy full market access for their produce. As the latest addition, WAMUL commenced procurement activities in Goalpara district on 22 June 2021 as a part of its expansion programme. These initiatives undertaken by APART have been able to help the farmers in increasing the productivity of milk and formalizing its supply with better and sustainable returns.

APART launches Assam Agribusiness Growth Lab

To promote an enabling agriculture enterprise ecosystem in the State, Assam Agribusiness and Rural Transformation Project (APART) has launched the Assam Agribusiness Growth Lab (AAGL), to foster and accelerate the growth of the agro-processing sector, thereby promoting commercialization of agricultural production, increasing value addition and agricultural incomes.

AAGL will identify growth-oriented entrepreneurs, who are pursuing business opportunities related to postharvest value addition in agriculture and allied sectors

and provide these entrepreneurs with a holistic service offering that accelerates their growth and promotes sustainability.

It is expected that AAGL will have a catalytic effect, encouraging a new generation of entrepreneurs to enter, expand, and advance the industry. The AAGL will also provide technical assistance for Agri-entrepreneurs. This will include, among others, market scanning for business opportunities; conducting market and value chain studies of identified commodities; establishing and operating mentorship programs; scouting new technologies; assisting



Shri Vinod Seshan, SPD, ARIAS Society, lighting the ceremonial lamp during the launch event

small and medium entrepreneurs to prepare business and financial proposals; providing business readiness and business planning support to MSMEs; and providing incubation services to emerging Agri- entrepreneurs

Assam Agribusiness Growth Lab (AAGL) will support and handhold 100 Agri-entrepreneurs in 4 years, encouraging women-led enterprises in the entire process, using the cluster and sector-based approach. The initiative eventually aims to bring about a transformation in the lives and livelihood of the small and marginal farmers, who constitute almost 80% of the overall agricultural sector in Assam.

The launch of this innovative approach hopes to bring about

a paradigm shift in the mindset of the younger generation, who currently perceive agriculture and farming to be an unattractive business opportunity, besides transforming the agricultural economy with inclusive, market-driven, and surplus-generating entrepreneurship models. The program is implemented by the Centre for Innovation Incubation & Entrepreneurship (CIIE.CO) - an incubator under IIM Ahmedabad, in association with Innovative Change Collaborative Services Pvt Ltd (ICCSPL).

Shri Vinod Seshan, State Project Director, ARIAS Society, inaugurated the event and formally launched the programme video, website, and online application portal on 30th June 2021.

36th Governing Body Meeting Of ARIAS Society



36th Governing Body Meeting of ARIAS Society

The 36th Governing Body meeting of the Assam Rural Infrastructure and Agricultural Services (ARIAS) Society was held on 29th June 2021 at the Assam Administrative Staff College, Khanapara. The meeting was chaired by Shri Ravi Shankar Prasad, IAS, Agriculture Production Commissioner (APC), Govt. of Assam, also the Chairman of ARIAS Society. Under the ARIAS Society, the World Bank-funded Assam Citizen-Centric Service Delivery Project (ACCSDP) and the Assam Agribusiness and Rural Transformation Project (APART) are being implemented in the state of Assam.

A presentation on the status of both

APART and ACCSDP was shared with inputs from the implementing departments.

The meeting was attended by Department Heads, Senior Officials, and Nodal Officers of all the implementing departments of APART and ACCSDP. Representatives from International Knowledge Agencies of APART namely - International Rice Research Institute (IRRI), International Livestock Research Institute (ILRI), International Potato Centre (CIP), World Fish and World Vegetable Centre (World Veg), ICAR-NRC (Pig), ICAR- DMR and external Consulting Agencies of APART were also present.

World Environment Day

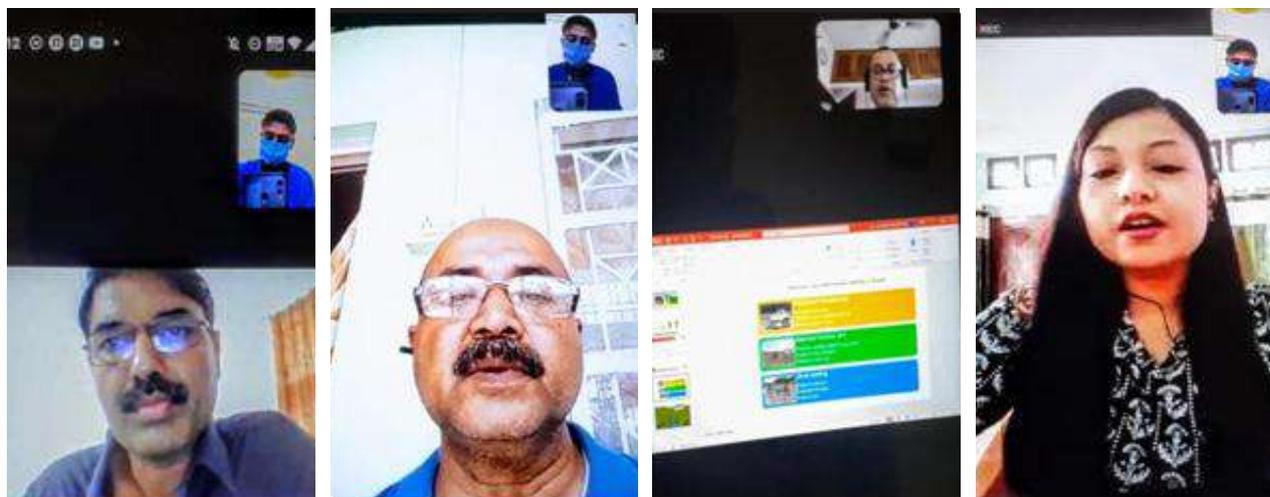
World Environment Day 2021, with the theme "Ecosystem Restoration" was observed by APART on 5th June 2021. Keeping in view the theme, a virtual webinar was conducted on the topic "Restoration of Aquatic Ecosystems by adopting various environmental protection measures - with special emphasis to community management of beel fishery, polyculture, paddy cum fish culture in Assam" with participation from APART, district teams, WorldFish and College

of Fisheries. Dr S.K.Bhagawati, Associate Professor & Head, Aquatic Environment Dept, College of Fisheries delivered a talk on the "Aquatic ecosystem of Assam and its Conservation" and Dr Ramendra Ch, Barman, DFDO, Nagaon discussed on "How to mitigate adverse environmental impact on aquatic environment during implementation of Community management of beel fishries programme under APART.



Virtual seminar on the occasion of World Environment Day 2021

Farmers Too Go In For Virtual Training



Screenshots of virtual training in progress

It is not only the students and teachers who are engaged in virtual activities during COVID-19 to keep themselves academically busy and updated, but even the farmers of Golaghat district have switched over to virtual mode. On June 12, 2021, ATMA-Golaghat organized a virtual training for farmers in collaboration with the office of the District Agricultural Officer, Golaghat. The virtual training was organized on the theme “Training on improved paddy cultivation for farmers of Golaghat”.

The programme was attended by officials from IRRI, ATMA, AAU, and APART. The District Agricultural Officer, Sh. Nabin Ch. Bora while inaugurating the virtual training stated that “Virtual training formats will be the new normal going

forward. As we do not know how fast this scenario is going to change, and we cannot wait for the pandemic to go away, so it’s prudent to shift to a virtual platform through which farmers can continue to gather knowledge with secured measures”.

Different presentation by APART and IRRI experts on Process of Seed Production & Marketing, Rice Varieties & Rice Knowledge Bank, and Plant Protection & Use of Pesticides were shared by the speakers. The panelists also acquainted the farmers with the latest scientific techniques, in the field of improved rice production.

Farmers attending the virtual training were happy with the initiative and expressed their gratefulness.

Compiled by: Abhishek Singha, Research Technician, IRRI- APART: Golaghat.

Hybrid Vs High Yielding Variety (HYV) Of Paddy Seeds: Experience Sharing Of Farmers

The farmers from Niz Dalgaon village of Bechimari Development Block Darrang prefer cultivating hybrid varieties of paddy, because of higher production as they cultivate for commercial purposes. It was a challenging task that the APART-ATMA team had to take up to introduce HYV of paddy in the area.

In the financial year 2020-21, the team organized several training programmes for the farmers to highlight the benefits of cultivating climate-resilient HYVs of paddy in the Boro season. Amongst the farmers was Jehural Islam, a progressive farmer from Niz Dalgaon village of Bechimari Development Block in Darrang district. Jehural, who cultivates Sali Paddy, Boro Paddy, and different vegetables, came forward and accepted an ICMD to cultivate BINA Dhan 11 in his field. The crop was sown in the last week of January 2021 and transplanted on March 5, 2021. On June 14, 2021 the Boro paddy was harvested and crop cutting (5x5 m²) was also done in the presence of ATMA officials and few farmers maintaining Covid



Demonstration plot of BINA Dhan 11

protocol.

The average yield of the crop was recorded as 8.25 tons/ha. After getting the yield, Jehural expressed his satisfaction and shared the difference of hybrid and his present crop (BINA Dhan 11), and added the following disadvantages of Hybrid seed:

- » Hybrid crops need more extra care and more fertilizer
- » Timely application of fertilizer and crop protection is very much necessary
- » In hybrid empty grains are more and incidence of neck blast disease is also more

While with BINA Dhan 11, none of the above issues were found. Jehural, as well as the other farmers, were



Farmers with the harvest

happy with the climate-resilient HYV of paddy and are hoping to cultivate the same in the next Boro season. They expressed their gratitude to ATMA, APART, and IRRI officials for the timely support.

Compiled by :Nitul Kalita, BTM, Bechimari Dev. Block, Darrang

Potential Of Mustard Production With Improved Practices In Golaghat District: A Study

Introduction

Mr. Dharmeswar Kalita, is a progressive farmer from Kuwaripather village, Podumoni cluster in Golaghat district, Assam. He was selected as a beneficiary for rapeseed-mustard crop demonstration conducted under ICAR-DRMR, APART programme (2020-21). Mr Kalita owns four hectares of land, where he grows sali paddy, rapeseed-mustard, potato, summer & winter vegetables, etc. In every rabi season, he has been growing rapeseed (local- toria) in almost one hectare of land. However, production was very low, as he was cultivating using traditional practices.



Technical Trainings on mustard organized for famers

Source of motivation & advisory

He attended the crop growth phase-wise technical training linked to crop demonstration organized by District Agriculture Office, Golaghat under ICAR-DRMR, APART programme (2020-21). The technical training was organized at demonstrated villages for beneficiary farmers where district ATMA & APART officials provided technical advisory support from land preparation, sowing to harvesting, and also on post-harvest management demonstration.

Achievements:

Performance of improved practice (IP) vis-a-vis farmers' practice (FP).

Used Practice	Variety	Yield (q/ha)	Gross cost (Rs/ha.)	Gross income (Rs/ha)	Net Income (Rs/ha)	B:C Ratio
Farmers Practice (FP)	PM-28	10.40	26240	57200	30960	2.17
Improved Practice (IP)	PM-28	14.88	31624	81840	50216	2.58
Yield increase (%)	-	43.07	-	-	-	-

Improved Practices Demonstrated

- » Good tilth of soil for better germination of seed.
- » Seed treatment with Metalaxyl35 SD @ 6 g/kg of seed.
- » Timely sowing of seed i.e 15th of October to 15th of November (Normal sown).
- » Sowing of seed in lines at spacing 30cm x 10cm (R x P).
- » Use of HYV seed with seed rate 6 kg/ha.
- » Application of balanced dose of fertilizers (Urea, SSP, MOP, Borax).
- » Timely thinning & inter-culture operation at 20-25 DAS.
- » Insect-pest management applying agro-ecosystem analysis based IPM.
- » Harvesting at when >75% of siliquae (pod) turn yellow.

Contributing Factor

- » The demonstrated variety PM-28 is a high-yielding variety (HYV). Average no. of branches/plant was more by 5-7 nos. in improved practices (IP) than farmers practices (FP). The average no. of siliquae/inflorescence was 57 nos. in improved practices (IP) where it was 28 nos. in farmers practices (FP).

Influence on other Farmers

- » The demonstrated plot attracted the attention of many fellow farmers for its good crop stand and bumper harvest. Some farmers of the village have already taken this season harvest as seed for cultivating in the next crop season. It is expected that mustard farmers would adopt the improved practices to boost production.



Mustard cultivation by farmers in Kuwaripather village

Contributed by Dr. Bandhan Subba, Research Associate, ICAR-DRMR, APART, Golaghat, Assam

Integrated Pest Management (IPM) Demonstration in Tomato: A Study

Introduction:

Integrated Pest Management (IPM) is an effective and environmentally sensitive approach to pest management that includes the use of different methods of control viz., cultural, physical, chemical, and biological methods in a compatible manner to reduce the insect population level below the Economic Threshold Level (ETL).

Objectives of the Programme:

- » To demonstrate and train farmers how to grow a healthy tomato crop
- » To facilitate farmers become experts in the production and marketing of their produce in a cluster-based approach
- » To demonstrate disease resistance, good quality is preferred by consumers and best for long transport tomato variety
- » To use IPM in sustainable crop production and increase yield by reducing the cost of production
- » To manage insect pests and diseases by not only killing them by chemical method but by preventing feeding, multiplication, and dispersal
- » Use ecofriendly methods, this will maintain the quality of the environment (air, water, animal, and plant life)
- » To make maximum use of natural mortality factors, apply control measures only when needed.

About the Programme :

Integrated Pest Management (IPM) demonstration on Tomato Crop was conducted on a community basis at Gelaidingi Village under ATMA Pub Mangaldai Development Block. The demonstration was carried out on an area of 10 ha i.e five (5) ha of continuous IPM implementation area and another 5 ha of the continuous control area. A total number of forty (40) farmers participated in the programme and they were members and shareholders of a farmer producer company namely, "NEFSA Agro Organic Producer Ltd". At the outset of the programme the IPM plot was verified by the

District Agricultural Officer cum Project Director, ATMA, Darrang, Deputy Project Director, ATMA, Block Technology Manager, District Horticultural Coordinators, and Technical Officer of Word Vegetable Centre, and Business Development Manager of APART State H.Q. The beneficiaries were selected by APART & ATMA team in consultation with the directors of NEFSA Agro Organic Producers Company LTD. All the beneficiaries were participated in the technical training conducted before sowing, transplanting seedlings, and at the critical growth stage.



Initial discussion with farmer in presence of officials from APART, ATMA, FPC and others

Selection of Variety: Varieties like Emarled (Company: Sakata seeds), NS 501 (Company: Namdhari seeds) & Samuridhi (Company: East-West seeds International), were selected as per farmers preference for the IPM demonstration programme in consultation with the Technical Officer of World Vegetable Centre, leading seed dealers of the district and some of the experienced progressive farmers of that locality.

DAO (I/C) cum Nodal Officer, APART, Darrang, BTM of ATMA, Pub Mangaldai Dev. Block and DHC, APART, and TO (WVC) visited the demonstration plots and guided the farmers to follow various practices of IPM i.e use of pheromone trap, use of the sticky card, removal of infected/ diseased plant parts to prevent attacks of insect pest and diseases. The yellow and blue sticky trap cards, used by the farmers help minimize the pest population as well as attack of pest in the demo plot.



Interaction with farmers and on field application of IPM

Farmers view regarding IPM technique and adaptability:

Farmers were satisfied with the use of bio-pesticide/insecticide/fertilizer instead of using chemical fertilizers, such bioagents as vermicompost, Trichoderma viride, PSB, Azotobacter, Neem oil, etc.

IPM farmers were motivated that the growth of different types of crops can minimize the insect/

pest problems, which helps them to reduce the application of chemicals. In the IPM plot crops were grown border crops like Maize, trap crop as African marigold, and intercrop as Amaranthas.

Storability is good compared to other tomatoes, due to less application of chemical composition storage and shelf life of the product increases so that farmers happy to see the results of freshness and quality produce

Post Harvest Management demonstration on Tomato and Marketing:

PHM programme was organized in the IPM tomato plot at village Gelaidingi, FFS members, progressive framers of the village, and NEFSA members were present in the event. Farmers were interested to know about the process of PHM demonstration that how to preserve

the products after harvesting and thereby increasing the shelf life. With betttterposst harvest acitiviiities, the tomatoes can be stored and with proper packaging and branding, will be ableee to find better marrrkets.. The FFS members of IPM tomato also use some of the techniques to sell their produce in collaboration with “NEFSA Agro Organic Producer Ltd”.

Production and Sale status of Tomato under IPM- demonstration Programme :

Demo/ Control	Area (ha)	Total production obtained (in qtls)	Total quantity sold (in qtls)	Minimum Rate (Rs per qtl)	Maximum Rate (Rs per qtl)	Average Rate (Rs per qtl)	B C Ratio
Demo Plot	5 ha	1211.75 qtls	1085.25 qtls	700.00	1500.00	1100.00	2.5:1
Control Plot	5 ha	899.125 qtls	694.87 qtls	600.00	1200.00	900.00	1.79:1

Contributed by: Project Director, ATMA (APART), Darrang District.

Seed To Seed Concept: Success Story

Sri Dilip Kr. Das, a young educated farmer from Talukdarpara village under ChayaniBarduar Development Block of Kamrup district, has been doing paddy seed production for the last 15 years. During this long association with agricultural experts, he came to know two things that paddy cultivation is not much profitable unless quality seeds are not used, and that seed production is more profitable than cultivation of rice for grain. Accordingly, he changed his mind and went ahead with seed production. He prepared a plan for Seed Production Program. Initially, he turned a small part of his paddy field into a paddy seed production plot. After 4-5 years later, he observed that his income has increased significantly for carrying out the Seed Production Program.

Within a short period, he was able to fulfill the all needs of his family members through his decision and hard work. Now, the farmers of the village come to him to understand the process of quality seed production to improve their income from their existing paddy yield.

The local farmers are motivated



Dilip Kr Das in his field

and convinced on seed production program. Replication of seed production has already started in Talukdarpara Village, and already 20 farmers (138 farm families) have taken up rice seed production under the guidance of Dilip Kr. Das.

While interacting with Dilip Kr. Das, he expressed his gratitude to APART for providing useful training on paddy seed production, he had attended in 2019, conducted by APART, CSS –ATMA, at Majkuchi, ChayaniBarduar Dev. Block, Kamrup. He added that this training was a turning point in his life, which changed his mindset, and started growing paddy seed production

more scientifically. He has adopted all the scientific production technologies, including soil testing for estimation of fertility status of soil, for producing different classes of paddy seeds. Based on soil fertility status, he had followed the most suitable cropping sequences and adopted organic farming. He continued to keep close liaison with Assam State Seed Certification Agency, Guwahati.

rice. Last year, the young energetic farmer has produced approx 1500 quintals of certified seed including 250 quintals of foundation seed. Out of the 250 quintals of foundation seed produced, the production of Ranjit-Sub1 variety was 160 quintals and 90 quintals for Bahadur Sub-1. He increased his income/net income /net profit of almost Rs 10 lakhs against an expenditure of Rs 2 lakhs. He has a viable production



Paddy seed production storage of Dilip Das

He had prepared both short-term and long-term plans, and conducted a survey in which he found the requirements of forming a foundation and certified paddy seed for the entire Kamrup District. As per the demand of the farmers of Kamrup district, he produced seed of different varieties such as Ranjit-Sub1 and Bahadur-Sub1, and also a small quantity of scented Joha

and marketing plan, taking care of both forward and backward linkages, which has helped him in his venture. He not only sells his seeds in the local market but the farmers from far and near by areas come to buy paddy seeds from him. This effort from Sri Dilip Das will help in vertical and horizontal spread of the improved quality seed.

Written By : Meriza begum, BTM, Chayani Barduar Dev. Block District : Kamrup

Rice Variety Cafeteria

Opportunity for selection of stress-tolerant and premium quality rice varieties by different stakeholders in Assam during Sali season 2021

Rice variety cafeteria is a replicated trial to promote the diffusion of most prevalent traditionally grown rice varieties, climate-resilient stress-tolerant rice varieties (STRVs), state/national level released varieties, premium quality rice (PQR) varieties, and high yielding rice varieties (HYVs) among the key stakeholders of the rice value chain. The primary objective of hosting a variety cafeteria is to demonstrate a diverse basket of varietal choices for multiple stakeholders to carry participatory observation, own judgment in selecting the rice varieties after making fair comparison suited to their preference in a particular region/ agro-climatic zone, and influence key institutions and actors to uptake new and potential rice varieties. Keeping these points in view, four rice variety cafeterias were

conducted at Regional Agricultural Research Station (RARS), Titabar, Jorhat, RARS, Lakhimpur, RARS, Gossaigaon, Kokrajhar and Krishi Vigyan Kendra (KVK), Nagaon during Sali season 2021 under the **Assam Agribusiness and Rural Transformation Project (APART)**. Many of the rice varieties that are grown in crop cafeteria are introduced in Assam, for the first time and their flowering time is not known as per the local agro-ecological condition. IRRI scientists in consultation with the scientists at RARS, Titabar, Jorhat; RARS, Lakhimpur; RARS, Gossaigaon, Kokrajhar, and KVK, Nagaon decided to raise staggering nursery sown on three dates based on previous reported flowering time. The information of 24 rice varieties grown at different locations are presented below:

Sr. No.	Institution	Type of rice varieties	Date of sowing
1.	RARS, Titabar, Jorhat	3 semi-deep water and deep-water rice varieties, 12 STRVs, 4 premium quality rice varieties, 3 high yielding varieties, and 2 local popular rice varieties (LPVs)	1 st batch: 07-06-2021 2 nd batch: 21-06-2021 3 rd batch: Yet to be sown
2.	RARS, Lakhimpur	10 semi-deepwater and deep-water rice varieties, 9 STRVs, 4 premium quality rice varieties, and 1 local popular rice variety (LPV)	1 st batch: 05.06.2021 2 nd batch: 26.06.2021 3 rd batch: Yet to be sown
3.	RARS, Gossaigaon, Kokrajhar	3 semi-deep water and deep-water rice varieties, 12 STRVs, 4 premium quality rice varieties, 3 high yielding varieties and 2 local popular rice varieties (LPVs)	1 st batch: 08.06.2021 2 nd batch: 11.06.2021 3 rd batch: 26.06.2021
4.	KVK, Nagaon	3 semi-deep water and deep-water rice varieties, 12 STRVs, 4 premium quality rice varieties, 3 high yielding varieties, and 2 local popular rice varieties (LPVs)	1 st batch: 04.06.2021 2 nd batch: 20.06.2021 3 rd batch: Yet to be sown

The representative pictures of the nursery of crop cafeteria at RARS, Lakhimpur, RARS, Titabar, Jorhat, RARS, Gossaigaon, Kokrajhar, and KVK, Nagaon in Sali season 2021 are given below:



RARS, Gossaigaon, Kokrajhar



KVK, Nagaon



RARS, Lakhimpur RARS



Titabar, Jorhat

The technical guidance, seed-source information, and trial implementation plan were shared with the respective research stations/KVK by IRRI and will also monitor the performance at various growth stages. Uniform management practices, including, spacing, fertilizer, irrigation, weedicide, pesticide, and other cultural management will be followed for all the rice varieties in the replicated trial. Based on duration, the rice varieties will be exhibited and evaluated by organizing two participatory varietal evaluation events at each location at crop maturity by inviting a group of stakeholders for their evaluation and selection of rice varieties as per their agro-ecological conditions. It is an effective tool to strengthen the

formal and informal seed system of Assam.

The final results will be submitted to the officials (DoA especially State Seed Certification Agency) as per guidelines. Scorecards (Varietal performance/liking to be ranked by participants in a variety cafeteria events) are endorsed by AAU and DoA and used for future seed indent and introduction /release process of new STRV's and PQR variety in the state. Finally, the combined results of actual agronomic data, farmers' score sheet, and formal seed system stakeholders score sheet (agronomic parameter) would be considered to promote the stress-tolerant rice varieties/premium quality rice variety.

Compiled by, Dr. Kanwar Singh and Dr. Rahul Priyadarshi, IRRI

Seed-Drill Sowing of Maize: A Promising Technology for Increasing Cropping Intensity of Rice-Fallows in Assam

A 150-bigha area of hybrid corn was sown with a multi-crop planter (seed-cum-fertilizer drill) in a chronically flood-affected Sitolmari village in Borsola area of Dhekiajuli block, Sonitpur district. This is located in Bherbheri (26.83, 92.57) and Bengenajuli (26.85, 92.55) village of Misamari, Dhekiajuli Block under the CHC, KVK, Sonitpur. The members of the farmers' group Green Valley Farmers Organization, Bharat Subedi, Amar Gauli, Dipu Newar, Biswanath Biswas, Manoj Sapkota and Dilip Das have used the multi-crop planter in their fields for the establishment of their maize crop.

The farmers of this area have been cultivating rice and maize traditionally. With the inclusion of a short-duration rice variety like BINA Dhan11 which is also a promising STRV, an oilseed crop (mustard/toria) can also be fitted in the cropping sequence to raise the cropping intensity to 300%. The activity was implemented jointly by the Dept. of Agriculture and Krishi Vigyan Kendra, Sonitpur in



technical collaboration with IRRI. This maize demonstration under objective IV of IRRI-APART aims at increasing cropping intensity in rice-based cropping systems by mapping soil moisture availability status through remote sensing with resource-conservation technology. The crop was sown in the last week of December 2020.

Bharat and Biswas revealed with satisfaction that earlier in manual establishment 3 laborers @ Rs 300/- per person could sow 2 bigha maize in a whole day work hour. With the help of the seed-drill machine, it takes only 15 minutes to complete the sowing of 1 bigha with a tractor for Rs 100 and operator charges of around Rs 50 which totals around Rs 150/-. Moreover, the



depth of seeding remains uniform in mechanized seeding which aids in the uniform establishment of the crop.

Story from the field: The total demonstration area is spread over 50 bighas, covering the fields of 13 farmers. The sowing of maize crops was done using seed drills, which was very new to the farmers as they were primarily rice-fallow farmers. With the technical guidance from KVK and IRRI, the management of fertilizer, irrigation, and insect-pest, and diseases were undertaken by the farmers. The cost savings are the same as mentioned above and the average yield per bigha harvest was 12 quintals. It can be summarized

that the maize crop can be taken as a succeeding crop after Sali paddy in rice fallows of Assam by using a multi-crop seed-driller, which reduces the cost of production up



to a great extent. Moreover, in a world with indomitably increasing demand for animal protein, maize is a prerequisite for animal and bird feed. With the establishment of feed mills, maize may get a secured market for the farmers.



Yield details:

25m² cob yield=24.36 kg
 1-hectare yield=9746 kg; 9.74t/ha
 Shelling percentage=81.5%
 Grains/cob=475

Compiled by: Dibyarishi Bhattacharjya (IRRI)

QUALITY FISH SEED PRODUCTION UNDER APART

Quality fish seed is the main input for fish farming practices which determine the overall production scenario of fish. As the quality of fish seed depends on the scientific rearing practices followed in preparation and management of broodstock pond, to make

the fellow farmers of the village and that of neighboring villages, in an appropriate time and also at an affordable cost. Already eight departmental hatcheries under Kamrup, Goalpara, Sivsagar, Nagaon, Cachar, and Lakhimpur Districts has been upgraded and out



availability of quality fish seed in the State, the new concept of development of quality fish seed Farmers Producers Groups are proposed to adopt under World Bank-funded "Assam Agri-business and Rural Transformation Project (APART), wherein a group of trained fish farmers will be involved in the production of quality fish seeds of various cultivable fish species and cater to the needs of the fish of

of these four Fish Seed Multiplication Centre is established to make quality and high yielding variety of fish seed available throughout the year. There are also plans to come up with a fish seed village near the departmental farms.

The fish seed village concept will improve the fish seed production system in an organized manner in a compact area, replacing

poor quality seeds with new high-yielding varieties. It will also increase the quantity and quality of fish seed production to meet the local demand, timely supply at a reasonable cost, and self-reliance of quality fish seed in the village. Another important feature of the fish seed village is that it may unite the farmers of the village for a common cause, enhance confidence in

marketing, and understanding the concept of quality fish seed among the farmers as per norms laid down under the Assam Fish Seed Rule, 2010. Most important of all, because of the known source of fish seeds, the producers will be able to grow big fish within a specific period and at the same time, consumers will be benefited.

Fish Seed Multiplication Centre At J.B.Garh Fish Farm, Nagaon

It is also imperative to mention that the ten Fish Farmers Producers Company under APART is actively associated to bring the high-yielding variety from the National Freshwater Brood Bank, Odisha particularly Amur Carp, Jayanti Rohu and improved Catla. To make it a sustainable way, the FPCs are also planning to raise the brood fish in their farm and by replenishing the old broodstock periodically as per

existing norms. genetic awareness and introduction of new fish variety campaign have already started in a massive way to educate the fish seed producers and growers on the planned breeding programs and they are trained in such a way that they will constantly supply quality seed to the farmers who are engaged in fish seed rearing and table fish production.

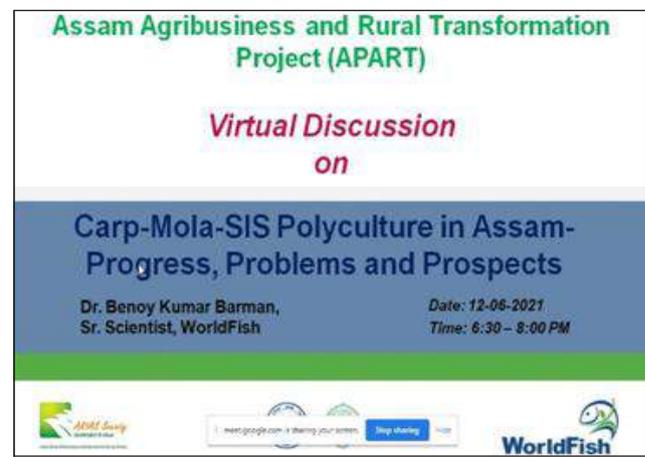


Virtual Meetings conducted by WorldFish

During June 2021 WorldFish conducted 2 virtual meetings on Carp-Mola-SIS Polyculture-Progress, Problems and Prospects in Assam, and Quality Carp Seed Production in Assam under APART on 12th June 2021 and 19th June 2021, respectively. WorldFish Experts Dr. Benoy Kumar Barman, Senior Scientist, WorldFish, Bangladesh, Dr. Manos Kumar Saha, WorldFish, Bangladesh, and Dr. Trinh Quoc Trong, Senior Scientist, WorldFish, Malaysia served as the resource persons for the above virtual meetings. A total of 65 participants participated in the virtual meetings including WorldFish Principal Scientist and Country lead, Dr. Mohan Chadag, WorldFish Experts, Odisha WorldFish team, Bangladesh WorldFish team, DOF officials, COF faculty, ARIAS team, and APART Project staff.

In the virtual meeting conducted on 12th June 2021, the importance of the culture of Mola and SIS in Pond, Beels, and Paddy fields along with Carps, nutritional benefits of Mola-SIS, the process of collection of Mola-SIS live from ponds and large water bodies like Beels, the progress of Mola-SIS culture in different project districts under APART, the problems faced in stocking and farming of Mola-SIS and the prospects of Mola-SIS culture in

Assam were discussed. Process and techniques for live transport of Mola-SIS for stocking and use of grader nets for harvesting of the Mola-SIS for marketing in live condition were also discussed in the meeting.



On 19th June 2021 during the virtual meeting on quality seed production in Assam, the actual problems in producing quality seed in sufficient quantities, the need for better nursery management practices in seed rearing, and other issues in producing quality carp seeds in Assam by private hatchery operators were discussed. Dr. Trinh Trong, WorldFish Expert explained the importance of quality carp broodstock, good breeding practices, tagging, and proper record-keeping for quality carp seed production and the Standard Operating Procedures (SOPs) and BMPs to be followed in the Up-graded Hatcheries and Multiplication Centers developed under the APART Project.

বজাৰ সংযোগী ব্যৱস্থাপনাৰ সহায়ত “এপাৰ্ট”ৰ অভিনৱ পদক্ষেপ

এফালে কোভিড মহামাৰী আৰু আনফালে কৃষকৰ শ্ৰম। সমগ্ৰ ৰাজ্যত এতিয়াও অব্যাহত আছে সাক্ষ্য আইন। এই সময় চোৱাত কৃষক সকলে নিজে উৎপাদন কৰা ফচলৰ উচিত মূল্য নোপোৱাৰ ফলত বিভিন্ন সমস্যাৰ সন্মুখীন হ'ব লগা হৈছে। এই দুৰ্দিনৰ সময়ত ৰাজ্যৰ কৃষক সকলক কিছু সকাহ দিয়াৰ লগতে কৃষক, বজাৰ আৰু গ্ৰাহকৰ মাজত থকা দুৰত্ব হ্রাস কৰি মাৰ্কেট লিংকেজ অৰ্থাৎ বজাৰ সংযোগী ব্যৱস্থাপনাৰ জৰিয়তে, তেওঁলোকৰ উৎপাদিত ফচল সমূহ যাতে বিক্ৰী কৰিব পাৰে তাৰ প্ৰতি লক্ষ্য ৰাখি

“অসম কৃষি বাণিজ্য আৰু গ্ৰাম্য ৰূপান্তৰকৰণ প্ৰকল্প” চমুকৈ এপাৰ্ট’য়ে এক বিশেষ ব্যৱস্থা গ্ৰহণ কৰিছে।

ইতিমধ্যে সৰ্বমুঠ ২৫৪.৫৮ মেট্ৰিক টন বিভিন্ন ধৰণৰ কৃষিজাত সামগ্ৰী অসমৰ বিভিন্ন প্ৰান্তৰ লগতে বহিঃৰাজ্য তথা আন্তঃৰাষ্ট্ৰীয় বজাৰলৈ প্ৰেৰণ কৰিবলৈ সক্ষম হৈছে। এপাৰ্ট’ৰ বজাৰ সংযোগী ব্যৱস্থাপনাৰ জৰিয়তে প্ৰেৰণ কৰা কৃষিজাত সামগ্ৰী সমূহ তলত উল্লেখ কৰা হ’ল :

ক্রমিক নং	কৃষিজাত সামগ্ৰী	পৰিমাণ (মেট্ৰিক টন)
১	মাকৈ	২৯
২	আলু	৩৩
৩	আনাৰস	৩৩.৮৮
৪	তৰমুজ	৩৮.৫০
৫	ৰঙালাউ	১১৯
৬	কাজি নেমু	১.২
সৰ্বমুঠ		২৫৪.৫৮

এই উৎপাদিত ফচল সমূহ ব্যক্তিগত কৃষক, কৃষক আগ্ৰহী গোট (এফ. আই. জি), কৃষক উৎপাদক কোম্পানী (এফ. পি. চি), এপাৰ্ট’ৰ সমূহীয়া প্ৰদৰ্শন ক্ষেত্ৰ, সমূহীয়া কৃষকসকলৰ পৰা সংগ্ৰহ কৰা হৈছিল।



এপাৰ্টৰ সহযোগত বজাৰ সংযোগী ব্যৱস্থাপনাৰ বিভিন্ন ছবি



এই ব্যৱস্থাপনাৰ মূল উদ্দেশ্য বেপাৰীসকলে কোনো মধ্যভোগী নোহোৱাকৈ, কৃষকৰ পৰা প্ৰত্যক্ষ ভাৱে ফচল সমূহ ক্ৰয় কৰিছে, ফলত কৃষক সকলে অধিক মুনাফা লাভ কৰিবলৈ সক্ষম হৈছে।

এপাৰ্ট হৈছে বিশ্ব-বেংকৰ দ্বাৰা ৰূপায়িত হোৱা এটা অসম চৰকাৰৰ প্ৰকল্প, যিয়ে কৃষি আৰু

ৰাজ্যৰ বিভিন্ন কৃষিখণ্ডৰ লগত জড়িত যিকোনো পৰিস্থিতি-তন্ত্ৰক সহজ কৰিবলৈ, কৃষক উন্নত প্ৰযুক্তি, উন্নত বজাৰ সংযোগী ব্যৱস্থাপনা ইত্যাদিৰে বিভিন্ন ক্ষেত্ৰত পথ দেখুৱাই কাম কৰি আছে। এই প্ৰকল্পই কৃষকক ধাৰণাশীল কৃষি আৰু শস্য চপোৱাৰ পিছৰ ব্যৱস্থাপনা সমাধানৰ ক্ষেত্ৰত স্বাৱলম্বী কৰিবলৈ কৃষক উৎপাদক কোম্পানী (এফ. পি. চি) গঠনৰ পদক্ষেপ লৈছে।

যুগুতালে: এপাৰ্টৰ জনতথ্য যোগাযোগ কোষৰ দ্বাৰা

পৰিৱৰ্তনৰ প্ৰথম খোজ

হালকোঁৰ নমৰাকৈ কৰা আলু খেতিৰ সাফল্য:

কামৰূপ (গ্ৰাম্য) জিলাৰ অধীনস্থ হাজো উন্নয়ন খণ্ডৰ অন্তৰ্গত ৰামদিয়া কৃষি চক্ৰৰ, উজানকুড়ি গাঁৱৰ বাসিন্দা মহিলা কৃষক ৰিজুমণি দাস। অতি সামান্য উপাৰ্জনৰে স্বামী আৰু দুই জীয়ৰীৰ সৈতে বহু কষ্টৰে তেওঁ জীৱন সংগ্ৰাম চলাই আহিছে। নিজ উদ্যমৰে ৰিজুমণি দাসে বিভিন্ন বিভাগৰ দ্বাৰা আয়োজিত কৰা বিভিন্ন আঁচনিৰ প্ৰশিক্ষণৰ বাবে চেষ্টা কৰি আহিছে যদিও প্ৰশিক্ষণত লোৱা জ্ঞানখিনি আৰ্থিক অভাৱৰ বাবে সঠিক কামত ৰূপায়িত কৰাত অসুবিধাৰ সন্মুখীন হৈ আহিছিল। অসম চৰকাৰৰ কৃষি বিভাগৰ এপাৰ্ট প্ৰকল্প তথা, আত্মা (ATMA)ৰ বিষয়ববীয়াসকলে কৃষিক্ষেত্ৰত এক বৈপ্লৱিক জাগৰণ অনাৰ বাবে সময়ে সময়ে বিভিন্ন প্ৰশিক্ষণৰ ব্যৱস্থা কৰি আহিছে। যোৱা ২০২০-২১ বৰ্ষত এপাৰ্ট আৰু আত্মা (ATMA)ৰ সহযোগত ৰবি শস্য আলুৰ ওপৰত আন্তঃৰাষ্ট্ৰীয় আলু গৱেষণা কেন্দ্ৰ (চি. আই. পি)ৰ বিভাগীয় বিশেষজ্ঞৰ দ্বাৰা উজানকুড়ি গাঁওত প্ৰশিক্ষণ অনুষ্ঠিত হৈছিল। এই প্ৰশিক্ষণত সৌভাগ্যজনক ভাৱে ৰিজুমণি দাসে হিতাধিকাৰী হিচাপে নিৰ্বাচিত হৈছিল আৰু প্ৰশিক্ষণ ল'বলৈ সুবিধা লাভ কৰিয়ে পোন প্ৰথমবাৰৰ বাবে হালকোঁৰ নমৰাকৈ কৰা আলু খেতি অৰ্থাৎ জিৰ টিলেজ পদ্ধতিৰে প্ৰদৰ্শন ভিত্তিত আলু খেতি কৰি এক ক্ষুদ্ৰ প্ৰয়াস আৰম্ভ কৰে। এপাৰ্ট আৰু আত্মা'ৰ বিষয়ববীয়া সকলে প্ৰশিক্ষণত জিৰ টিলেজ



পদ্ধতিৰ সবিশেষ বাখ্যা কৰিছিল। প্ৰশিক্ষণৰ জৰিয়তে ৰিজুমণি দাসে জানিবলৈ পালে যে শালি খেতিৰ শস্য চপোৱাৰ পিছত সেমেকা মাটিত এই পদ্ধতি কৰিবৰ বাবে উপযোগী। জৈৱিক তথা ৰাসায়নিক সাৰ, কীটনাশক দৰৱ, ধানৰ নৰাৰে আলুবোৰ ঢাকিব লাগে লগতে, আলুবোৰ এটা শাৰীৰ পৰা আনটো শাৰীলৈ কিমান দূৰত্ব হোৱাৰ প্ৰয়োজন, বিভিন্ন প্ৰাকৃতিক পদ্ধতিৰে কেনেদৰে বজাৰ সংযোজন কৰিব পাৰি ইত্যাদি। নিৰ্ধাৰিত সময়ত এপাৰ্টে ৰবি শস্যৰ ঋতুত তেখেতলৈ বুলি ৫০০ কেজি কুফ্ৰী সূৰ্য্য নামৰ আলুৰ জাত যোগান ধৰে আৰু প্ৰয়োজনীয় জৈৱিক সাৰ, কেঁচুসাৰ, অন্যান্য ৰাসায়নিক সাৰ তথা প্ৰয়োজনীয় কীটনাশক ঔষধৰো যোগান ধৰে। প্ৰশিক্ষণত দিয়া সকলো দিহা পৰামৰ্শ অনুসৰি তেখেতে ২০২০ বৰ্ষৰ অক্টোবৰ মাহত

অনুশীলন আৰম্ভ কৰি আলু খেতিৰ বীজ ৰোপণ কৰিছিল। শালি খেতি চপোৱা মাটিত তেখেতে জিৰ টিলেজ পদ্ধতিৰে আলু খেতি কৰিবলৈ মাটি নিৰ্বাচিত কৰি লৈছিল। প্ৰশিক্ষণত শিকোৱা মতে আলু বীজ শাৰী শাৰীকৈ দুৰত্ব বজাই ৰাখি সাৰৰ পৰিমাণ হিচাপ কৰি যোগান ধৰা বীজবোৰ ৰোপণ কৰিছিল আৰু তাৰ ওপৰত ৬ ইঞ্চি মান ডাঠ ধানৰ নৰা ঢাকি দিয়া হৈছিল। বীজ ৰোপণ কৰা পিছৰ পৰাই তেখেতে প্ৰতিদিনেই খেতিডবাৰ সম্পূৰ্ণ তত্ত্বাৱধান কৰি পোক-পৰুৱা বা বেমাৰ আজাৰৰো নিৰীক্ষণ কৰিছিল। সম্পূৰ্ণ ৯০ দিন পাৰ হোৱাৰ ৪-৫ দিন পিছত তেখেতে কম বনুৱাৰে আৰু সহজ পদ্ধতিৰে আলু চপোৱা কাম আৰম্ভ কৰে। চপোৱাৰ ১৫ দিন মান আগতে সেউজীয়া হৈ থকা গছবোৰৰ মধ্য অংশত কাটি দিছিল যাতে বীজৰ বাবে সাঁচি ৰাখিব পাৰে। এইবেলি এপাৰ্ট আৰু আত্মাৰ বিষয়ববীয়া সকলৰ লগতে স্থানীয় কৃষকৰ উপস্থিতত পথাৰ দিৱস উদযাপন কৰি ৫মি. X ৫মি. মাটিকালি হিচাপত তেওঁ কিমান পৰিমাণৰ আলু উৎপাদন কৰিছিল তাৰ সঠিক মাপ লোৱা হৈছিল। মাপ অনুযায়ী লোৱা আলুৰ পৰিমাণ আছিল প্ৰায় ৬২ কি:গ্ৰাম। হেক্টৰ হিচাপত আলুৰ উৎপাদন প্ৰায় ২৪৮ কুইণ্টল

পোৱা গৈছিল অৰ্থাৎ প্ৰতিবিঘাত পোৱা আলুৰ মুঠ পৰিমাণ আছিল ৩৩ কুইণ্টল। প্ৰদৰ্শনমূলক খেতিৰ মাটি কালি হিচাপত আলুৰ মুঠ উৎপাদন হৈছিল প্ৰায় ৫০ কুইণ্টল। এয়া বিজুমণি দাসৰ বাবে এক ভাবিব নোৱাৰা সাফল্য। এই বৰ্ষৰ মাৰ্চ মাহৰ মাজভাগত আলু চপোৱা হৈছিল আৰু সেই সময়ত আলুৰ দাম আছিল প্ৰতিকেজিত মাত্ৰ ১০ টকা। সেয়েহে তেওঁ ভৱিষ্যতে উচ্চ দৰ পোৱাৰ আশাৰে গোটেই আলুখিনি সাঁচি ৰখাৰ মনস্থ কৰিছিল। সেই মৰ্মে তেখেতে যোৱা মে মাহত প্ৰতি কেজি আলু ১৮ টকা দামত বিক্ৰী কৰে। অশেষ কষ্ট আৰু সাধনাৰ ফলত তেখেতে এই আলু খেতিৰ পৰা এক আশাব্যঞ্জক লাভ উপাৰ্জন কৰিবলৈ সক্ষম হয়। তেখেতৰ এই সাফল্য দেখি স্থানীয় আন বহু কৃষক অনাগত দিনত হালকোঁৰ নমৰাকৈ আলু খেতি কৰিবলৈ আগ্ৰহী হৈ পৰিছে। এপাৰ্টৰ এনে ধৰণৰ প্ৰশিক্ষণ কাৰ্যসূচীয়ে জীৱনৰ মানদণ্ডৰ আৰু অধিক উন্নীত কৰিব বুলি কৃষক বিজুমণি দাসৰ লগতে বাকী কৃষক সকলো এতিয়া যথেষ্ট আশাবাদী। বিজুমণি দাসৰ সাফল্যত এপাৰ্টৰ তৰফৰ পৰাও জনালোঁ অলেখ শুভকামনা।

যুগ্মতালে: অনিল চন্দ্ৰ মেধি
খণ্ড প্ৰযুক্তি প্ৰবন্ধক (হাজো উন্নয়ন ব্লক)

ট্ৰেক্টৰ ব্যৱহাৰ কৰা সময়ত তলৰ নিয়মবোৰ মানি চলিব লাগে :

- » পথাৰলৈ যোৱাৰ আগতে ট্ৰেক্টৰখন আৰু সৰঞ্জাম সমূহ ভালকৈ পৰীক্ষা কৰি ল'ব লাগে।
- » পথাৰলৈ যোৱা পথত পিছৰ চকাৰ ব্ৰেক বা গতি নিয়ন্ত্ৰক ডাল বন্ধ কৰি থ'ব লাগে।
- » পথাৰখন হাল বাবলৈ উপযোগী হৈছেনে নাই ভালকৈ নিৰীক্ষণ কৰি ল'ব লাগে।
- » পথাৰত কাম কৰি থকা সময়ত ট্ৰেক্টৰখন সহজে ঘূৰাবৰ বাবে 'ব্ৰেক-পেডেল' মুক্ত অৱস্থাত ৰাখিব লাগে।
- » চলন্ত অৱস্থাত গিয়েৰ সলনি কৰিব নালাগে।
- » 'পি টি অ' চাফট' ডাল ঢাকি ৰখাৰ ব্যৱস্থা কৰিব। যিহেতু মুক্ত 'পি টি অ' চাফট' দুৰ্ঘটনাৰ প্ৰধান কাৰক হ'ব পাৰে।
- » ৪ হুইল ড্ৰাইভ' ট্ৰেক্টৰৰে পথাৰত কাম কৰোঁতে 'ফ্ৰন্ট ড্ৰাইভ' টো ব্যৱহাৰ কৰিব লাগে।
- » ট্ৰেক্টৰখন ৰাজপথত চলাওঁতে সন্মুখৰ চকাযোৰ মুক্ত অৱস্থাত ৰাখিব নালাগে, নহ'লে গিয়েৰৰ বিজুটি ঘটিব পাৰে।
- » প্ৰয়োজন সাপেক্ষে শুদ্ধ গিয়েৰ বাচনি কৰিব। পথাৰৰ বেছিভাগ কামতে গতিবেগ প্ৰতিঘণ্টাত ৫-৮ কি:মিঃ হলে ভাল। বোকা মাটিত তলৰ গিয়েৰ ব্যৱহাৰ কৰিব লাগে।
- » পথাৰত কাম কৰোঁতে 'হাত গতি নিয়ন্ত্ৰক' ব্যৱহাৰ কৰিব। পৰিবহনৰ ক্ষেত্ৰতহে 'ভৰি গতি নিয়ন্ত্ৰক' ব্যৱহাৰ কৰিব।
- » ট্ৰেক্টৰখনে প্ৰয়োজনীয় গভীৰতালৈ মাটি চহ কৰি থকা সময়ত ট্ৰেক্টৰখনৰ ইঞ্জিনটোৱে যদি 'আৰ পি এম' ৰাখিবলৈ অক্ষম হয় তেতিয়া তলৰ গিয়েৰ ব্যৱহাৰ কৰিব লাগে।
- » এটলীয়া মাটিত ইঞ্জিন হঠাৎ স্তাৰ্ত বা বন্ধ নকৰিব। অসমতল মাটিত ট্ৰেক্টৰখন পথালিকে চলোৱাৰ পৰিৱৰ্তে ওপৰৰ পৰা তললৈ বা তলৰপৰা ওপৰলৈ কাৰ্য্য কৰিব। দিশ সলোৱাৰ সময়ত গতি কমাৰ।
- » ট্ৰেক্টৰখন পিছলি বা বেঁকা হ'ব খুজিলে নচলাব। চলোৱা সময়ত শিল, গাত বা গছৰ মুঢ়াৰ প্ৰতি সজাগ হৈ থাকিব লাগে।
- » ট্ৰেক্টৰখন আপুনি নিৰাপদ অনুভৱ কৰা গতিবেগতহে চলাব।



“এপাৰ্ট’ৰ প্ৰদৰ্শনীমূলক বিলাহী খেতিত সফল গোলাঘাটৰ যুৱক বিনোদ ৰাই”

আত্মবিশ্বাস আৰু পৰিশ্ৰমে যে যি কোনো মানুহকে সফল কৰি তুলিব পাৰে, সেই কথাকে প্ৰমাণিত কৰিছে গোলাঘাট জিলাৰ মৰঙী উন্নয়ন খণ্ডৰ কৰদৈ গুৰি গাঁৱৰ যুৱ কৃষক বিনোদ ৰাইয়ে। অসম কৃষি বাণিজ্য আৰু গ্ৰাম্য ৰূপান্তৰকৰণ প্ৰকল্প চমুকৈ এপাৰ্ট’ৰ অধীনত চলি থকা বিলাহী খেতিৰ প্ৰদৰ্শনীমূলক কৃষিকাৰ্য সম্পাদন কৰি বিনোদ ৰাইয়ে লাভ কৰিছে এক অভাৱনীয় সাফল্য। তেওঁ জনোৱা অনুসৰি, আগতে তেওঁ বিলাহী খেতি কৰি আশানুৰূপ ফল লাভ কৰিব পৰা নাছিল। ২০২০-২০২১ চনত (এপাৰ্ট) প্ৰকল্পৰ অধীনত প্ৰদৰ্শনীমূলক বিলাহী খেতিৰ বাবে বিনোদ ৰাইক হিতাধিকাৰী হিচাপে কৃষি বিভাগ, গোলাঘাট জিলাই নিৰ্বাচিত কৰে। বিলাহী খেতি কৰিবৰ বাবে তেওঁক ১৫ হেক্টৰ (প্ৰায় ১১ বিঘা) মাটিৰ বাবে প্ৰয়োজনীয় ছিনজেন্টা কোম্পানীৰ “অনুপ” নামৰ ৰাসায়নিক সাৰ আৰু নানাবিধ জৈৱিক সাৰৰ লগতে পোক-পতংগ বেমাৰ আজাৰৰ পৰা খেতিডৰা ৰক্ষা কৰিবলৈ কৃষি বিভাগে তেওঁক যোগান ধৰিছিল এজোটো’বেকটাৰ, এজো’স্পিৰিলিয়াম, ছিউডো’মোনাচ, ট্ৰাইকো’ডাৰমা নামৰ জৈৱিক



কীটনাশক, ভেঁকুৰনাশক, ফছফেটত দ্ৰৱণীয় বেঞ্চেৰিয়া, চুণ আৰু নিম অইল।

প্ৰদৰ্শনীমূলক খেতি কৰাৰ বাবে বিনোদ ৰাইক গোলাঘাট জিলাৰ কৃষি বিভাগৰ তৰফৰ পৰা



সম্পূৰ্ণ কাৰিকৰী দিহা পৰামৰ্শ প্ৰদান কৰা হয়। ২০২১ বৰ্ষৰ ১০ জানুৱাৰী তাৰিখে তেওঁ বীজ ৰোপণ কৰে। তেওঁ প্ৰথমে বীজখিনি ছীডলিং ট্ৰে’ত ৰোপণ কৰিছিল। ট্ৰে’ত প্ৰয়োগ কৰা মিশ্ৰণখিনি প্ৰস্তুত কৰি লৈছিল ২৫ কেজি কেঁচুসাৰ, কোকোপিট (নাৰিকলৰ বাকলিৰ আহেঁৰে প্ৰস্তুত কৰা এবিধ মিশ্ৰণ), ২৫ কেজি ধানৰ বাকলি, ১০০ গ্ৰামকৈ ফছফেটত দ্ৰৱণীয় বেঞ্চেৰিয়া, এজোটো’বেকটাৰ, এজো’স্পিৰিলিয়াম, ছিউডো’মোনাচ আৰু ট্ৰাইকো’ডাৰমা নামৰ জৈৱিক কীটনাশকবোৰৰ সংমিশ্ৰণেৰে ছীডলিং ট্ৰে’বোৰত থকা প্ৰতিটো ছিদ্ৰত এটাকৈ গুটি ১ ছে:মি: গাত কৰি ৰোপণ কৰা হৈছিল। ৰোপণৰ পূৰ্বে গুটিবোৰ ট্ৰাইকো’ডাৰমা মিশ্ৰণেৰে শোষিত কৰা হয়, পাতলকৈ পানী প্ৰয়োগ কৰা অতি জৰুৰী। কঠিয়াতলীৰ পৰা মূল খেতিডৰাত

বিলাহীৰ পুলিবোৰ ২১ ফেব্ৰুৱাৰীত ৰোপণ কৰা হৈছিল। মূল খেতিডৰাৰ চাৰিওকাষে (বৰ্ডাৰ শস্য) হিচাপে ৩০ ছে:মি: X ২০ ছে:মি: দূৰত্বত গোমধান লগোৱা হয়। কঠিয়াতলীৰ পৰা পুলিখিনি মূল তলীলৈ অনাৰ পূৰ্বে পানী দিয়াৰ পৰিমাণ কমাই দিয়া হয় যাতে পুলিবোৰ সহনশীল ক্ষমতা বৃদ্ধি পায়, পুলি ৰোপণৰ পূৰ্বে ১৫ কেজি ডি.এ. পি, ১২ কেজি এম.ও.পি, ২৫০ কেজি কেঁচুসাৰ আৰু ১০০০ কেজি শুকান গোবৰ ভালদৰে মিহলাই এটা মিশ্ৰণ তৈয়াৰ কৰি লোৱা হয়। মূল খেতিডৰাত পুলি লগাওঁতে প্ৰতিটো গাতত এই মিশ্ৰণৰ ৩৫০ গ্ৰামকৈ প্ৰয়োগ কৰিব লাগে। (এপাৰ্ট) প্ৰকল্পৰ সহযোগী সংস্থা বিশ্ব শাক-পাচলি কেন্দ্ৰৰ দিহা পৰামৰ্শমতে বিনোদ ৰাইয়ে বৈজ্ঞানিক ভিত্তিত বিলাহী খেতিখিনি কৰিছিল। ১০ জোপা বিলাহী পুলিৰ মাজত শাৰী শাৰীকৈ নাৰ্জী ফুলৰ পুলি ৰোপণ কৰিছিল। নাৰ্জী ফুলবোৰ “ট্ৰেপ ক্ৰপ” হিচাপে ব্যৱহাৰ কৰা হৈছিল। বিলাহী খেতিডৰাত যদিহে পোকৰ আক্ৰমণে দেখা দিয়ে তেন্তে ফ্লুবেন্দামাইড ৭৫ লিটাৰ পানীত ৩৫ মি:লি: বা ইমামেকটিন বেনজোৰেট ৭৫ লিটাৰ পানীত ১১২ গ্ৰামকৈ প্ৰয়োগ কৰিলে সুফল পাব পাৰি। বেমাৰ আজাৰৰ পৰা বিলাহী গছবোৰ ৰক্ষা কৰিবলৈ ৰাইয়ে ক্লৰোথেলোনিল নামৰ দৰব বিধ ৭৫ লিটাৰ পানী মিশ্ৰণত ১৫০ গ্ৰামকৈ প্ৰয়োগ কৰি সুফল পাইছিল। পুলিবোৰ অলপ ডাঙৰ হোৱাৰ পাছতে বাঁহৰ খুটিৰে বান্ধি দিছিল। এনে কৰাত পুলিবোৰ থিয়কৈ থাকে আৰু বিলাহী মাটিৰ সংস্পৰ্শলৈ নাহে। আজিকালি সাঁচৰাচৰ দেখা পোৱা নীলা, হালধীয়া ৰঙৰ আঠায়ুক্ত কাৰ্ড ব্যৱহাৰ কৰিও কীট-পতঙ্গৰ পৰা গছবোৰ ৰক্ষা কৰিব পাৰি। এয়া বিনোদ ৰাইৰ নিজৰ ব্যৱহাৰিক অভিজ্ঞতা।



বিনোদ ৰাইয়ে পৰীক্ষামূলক খেতিডৰাৰ পৰা সৰ্বমুঠ ৭২ কুইণ্টল বিলাহী লাভ কৰে। প্ৰতি কেজি বিলাহী ৰাইয়ে বিভিন্ন সময়ত ৪, ৮, ১০, ১২ আৰু ১৪ টকা দৰত বিক্ৰী কৰে। তেওঁ মুঠ ১১ বিঘা মাটিত বিলাহী খেতি কৰি ৬১,০০০ হাজাৰ টকা উপাৰ্জন কৰিছে।

অসমত সাধাৰণতে কৃষকসকলে বিলাহী খেতি কৰি ১ বিঘা মাটিত ৩-৩.৫ টন উৎপাদন কৰে। তেনেক্ষেত্ৰত বিনোদ ৰাইয়ে উৎপাদন কৰিলে প্ৰতি বিঘা মাটিত ৭.২ টন অৰ্থাৎ গড় উৎপাদনৰ প্ৰায় দুগুণ। তেওঁৰ মতে, এপাৰ্টৰ এই প্ৰদৰ্শনীমূলক খেতিডৰাৰ পৰিচৰ্যা যেনে: বিলাহী সংগ্ৰহ, গছত পানী প্ৰয়োগ, পানী নিকাশ আৰু অন্যান্য সকলোবোৰ কাম সুবিধামতে কৰিব পৰা যায়। ফলত এই পদ্ধতিত বিলাহী খেতি কৰিলে লাভ বেছি পৰিমাণে হ'ব পাৰে। ৰাইৰ এই অভাৱনীয় সাফল্যই অঞ্চলটোৰ যুৱ খেতিয়কসকলৰ মাজত ব্যাপক উৎসাহ আৰু উদ্দীপনাৰ সৃষ্টি কৰিছে, কাৰণ এই নতুন কৃষিপদ্ধতিটোৰ বিষয়ৰ জ্ঞানে যুৱচামৰ সন্মুখত নতুন সম্ভাৱনাৰ উন্মেষ জগাই তুলিছে। বিনোদ ৰাইৰ এই সফলতাৰ বাবে এপাৰ্টৰ তৰফৰ পৰাও জনোৱা হ'ল আন্তৰিক শুভ কামনা।

যুগ্মতালে: ভাস্কৰ পাঠক
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