ISLAND AGRICULTURE

ICAR - CIARI NEWSLETTER

भा.कृ.अनु.प.–केन्द्रीय द्वीपीय कृषि अनुसंधान संस्थान

ICAR-CENTRAL ISLAND AGRICULTURAL RESEARCH INSTITUTE

पोर्ट ब्लेयर - 744 105

Port Blair - 744 105

अंडमान तथा निकोबार द्वीप समूह, भारत

Andaman and Nicobar Islands, India

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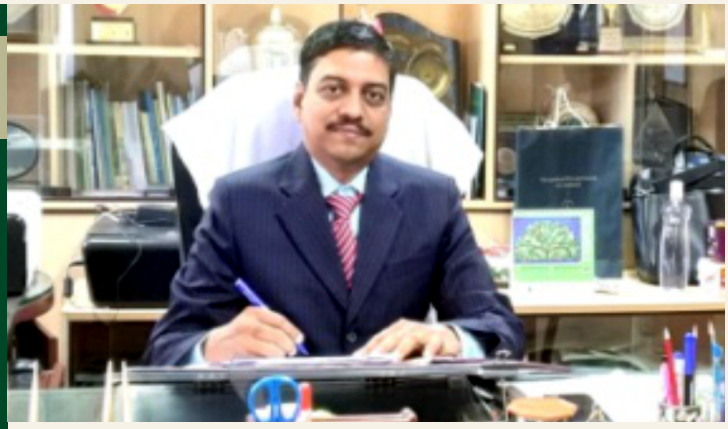
From Director's Desk...



ICAR-CIARI is a unique research institute in the country addressing the researchable issues of island agriculture. Despite the impact of COVID-19, the quarterly period from July to September has witnessed many important events and remarkable research activities. Our Scientists have developed a new technology for cultivation of broad dhania in smaller spaces which would helpful to strengthen the urban horticulture. Through the technique the urban dwellers can get regular supplies from their small available spaces. We have identified occurrence of 'vivipary' a rare phenomenon of precocious germination during the late monsoon months in marigold.

Along with rest of the country, we celebrated the 74th Independence Day, Poshan maah, Swachh bharat Abhiyan during the period. Scientists have conducted number of field days, demonstration, and training on various aspects of agri/horti/animal/fish sectors for the benefit of the farmers throughout the A & N Islands. Due to the COVID-19 restriction, lot of these activities hve taken place through online. Several information on technologies and updates were also shared through social media to enhance the knowledge of farmers and stakeholders.

A unique "Outreach Programme for Island farmers under COVID-19 Arena" was launched on 16th July 2020 marking the 92nd Foundation Day of ICAR, in collaboration with All India Radio, Port Blair to disseminate technical know-how and do-how on various agriculture and allied technologies. The programme included sharing of knowledge by scientists, benefits by farmers and other stakeholders with focus on "Atmanirbhar Bharat" and doubling the income of farmers.

We are in the process of formulating new initiatives such as PMFME, strategic plan preparation for the next five years and strengthening of institute infrastructure. I take this opportunity to thank all the staff members of our institute for their untiring effort and fruitful contribution for progress and development of the institute.

LAUNCHING OF SEED PORTAL

The Honorable Union Minister of Agriculture and Farmers Welfare, Shri Narendra Singh Tomar, Government of India has launched the integration of ICAR-Seed Portal of Indian Horticultural Research Institute, Bangalore with YONO Krishi of State Bank of India on 26.08.2020 at Krishi Bhawan, New Delhi, which will be a great benefit to the farmers.

The Honorable Minister emphasized that the development of new technologies is important and the benefits of these should reach the farmers so that their income can be doubled and they can get quality inputs without any middlemen. He also mentioned that digitization has to be done in all areas, which is a dream of Hon'ble Prime Minister, so that there will be transparency at all areas. He further said that State Bank of India is playing a very important role in implementing various schemes of Government of India, like Jan Dhan Yojana, Pradhan Mantri KisanYojana etc. and also providing monetary benefits to the farmers

during pandemic Covid-19. He said that the integration of Seed Portal with Yono Krishi will help farmers in getting quality seeds and thereby increasing their income. He hoped that more and more farmers would join this portal and would be benefited by the quality assured seeds of the institute. By utilizing this facility, farmers from remote places of A & N Islands can also place order for quality seeds from ICAR-IIHR, Bengaluru.

RESEARCH HIGHLIGHTS

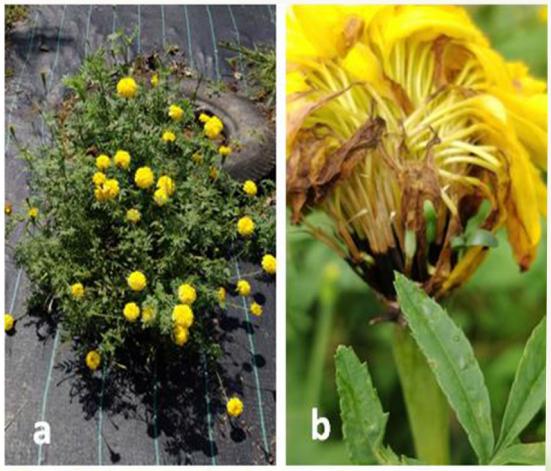
A New Technology for Cultivation of Burmese Coriander to Promote Urban Farming: CIARI-Pro Dhaniya

Broad dhania or Burmese coriander or Burma dhaniya is a popular culinary herb used extensively in the Andaman Islands. The herb is known to give refreshing appeal to cuisines by imparting cilantro (green coriander) - like aroma. Strong aroma, longer shelf life and adaptability to island conditions are the key features of this unique herb. ICAR-CIARI has also released a high yielding broad dhania variety named as CIARI Broad Dhania-1. The broad dhania leaves get very good price in markets around Port Blair. To promote its cultivation in urban and peri-urban areas of the Islands, a new technique called 'CIARI- Pro Dhaniya' was developed.

Pro-trays are small containers that are used for raising seedlings in horticultural nurseries. Pro-trays are filled with soil and organic nutrients and a seedling of 2-3 leaf size is planted in each hole. Plants are watered regularly to maintain desired level of moisture. Advantage of using pro-tray is that the holes/ planting cells are closely spaced but roots of each plant get separate space to grow. In traditional system, plants are spaced 15-20 cm apart thereby requiring more space to cultivate this crop. Considering the restricted space available in urban areas for such cultivation, a small pro-tray of about two square feet size can accommodate fifty seedlings of Burmese coriander. Depending upon the management practices, each pro-tray could produce 500-700 g of fresh produce at the end of nine weeks. For home-consumption, a couple of trays would be sufficient to provide enough of fresh harvest. This technique would be helpful to the urban dwellers for getting regular supplies from their small available spaces.

Occurrence of viviparous germination in *Tagetes erecta* L. (Asteraceae)

Evaluation of identified local marigold accessions at the experimental field showed the occurrence of 'vivipary' a rare phenomenon of precocious germination during the late monsoon months of August to October when flowers have already matured well in selected local accessions. Viviparous germination was also noticed at flowering stage well before petal drying. Range and mean value of number of viviparous seedlings capitutlam-1, number of non-germinated and total seeds capitutlam-1 was widely. In case of % viviparous germination, it was ranged from 19.3 to 56.7 with mean value of 35.9 numbers. Mean survival of these viviparous seedlings (%) under different conditions viz., shade, poly-house and room temperature were observed as 27.4, 62.0 and 3.9, respectively. Comparatively, the mean survival of viviparous seedlings (%) of marigold was better in poly-house than under shade condition with least at room temperature. The finding could be useful in utilization of marigold genetic resources for improvement.



Vivipary in local accessions of Marigold at ICAR-CIARI, Port Blair a) A normal plant with flowering, b) Head with viviparous germination at field in Yellow coloured local accession c) Head with viviparous germination at field in Sulphur yellow coloured local accession, d) Cross section of Head with viviparous germination, e and f) Variation in viviparous germination within single Head

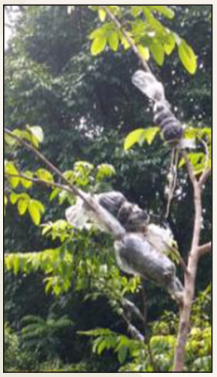
Economics of Andaman Padauk *(Pterocarpus dalbergioides)* Nursery Management

A comparative analysis showed that, nursery for raising 1,000 elite planting material of padauk incurs Rs.7, 300 through air layering, Rs.7, 150 through seedlings and Rs.6,800 through stem cuttings.

As paduak planting material does not have a market per se, an imputed price of Rs.10 for seedlings and Rs.15 for cuttings and layering earns the nursery, a gross income of Rs.10,000 through seedlings and Rs.15,000 through cuttings and layering each. After deducting the costs, the production of 1,000 cuttings earns the highest net income of Rs.8,200 followed by Rs.7,700 from air layering and Rs.2,850 from seedlings. With a B-C ratio of 2.21, cuttings proved to be the most cost-effective and profitable mode of planting material production for Andaman Padauk followed by air layering with 2.05 and seedlings with 1.40.

Padauk seedlings

Padauk stem cuttings

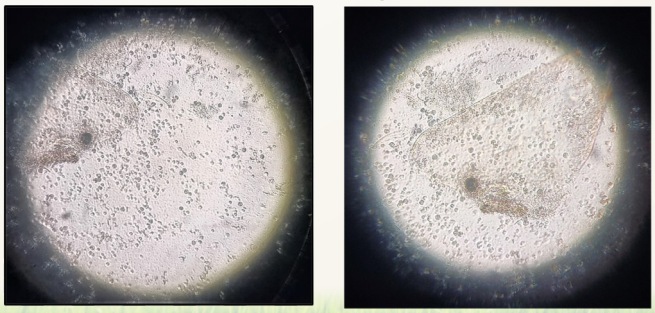


Padauk air layering

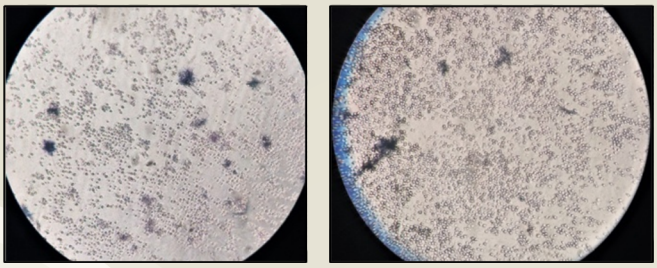
Promising Ethno Veterinary Medicinal plants documented

Eleven ethno veterinary medicinal plants of Nicobarese tribal farming community have been documented for various veterinary ailments such as bone diseases, gastro intestinal problems, dysentery and ophthalmic problems. Aqueous, methanolic and acetone extracts of medicinal plants viz., TöKURòTòNG–*Taberna montanacrispa;* Raneúl – *Crotolaria alata;*Tokiteuny-*Leea indica,* Chamrevo – *Lepis anthesrubiginosa;* KUYAVö –*Psidium gujava;* Hakonpookore-*Ageratum conyzoides;* Pööcho –*Ehretiala evis;*Mufut–*Paederia foetida;* Amra – *Spondias pinnata;* HiNYôYö –*Glochidion calocarpum;* Meuitameuyo – *Sida acuta* were assayed for cell viability index on blood lymphocytes. Methanolic and acetone extracts of EVM plants (studied) of tribal farming community are safe for biological trials for further processing for veterinary herbal products. Aqueous extracts of *Lepis anthesrubiginosa* and *Spondia spinnata*are were found to be not safe. Aqueous extracts of *Taberna montanacrispa*, *Leea indica, Crotalaria alata, Paederia foetida* may be used at limited concentration. *Spondia spinnata, Ageratum conyzoides, Fleugga virosa, Psidium gujava, Morinda citrifolia, Ehreti alaevis, Leea indica, Tabernamontana crispa and Abutilon indicum* may be selected for in-vivo and clinical trials.

Cells after toxicity



Formazan crystal formation in stimulated cells upon MTT dye assay



2. CELEBRATION

Independence Day celebration

74th Independence Day was celebrated by the institute in befitting manner with gaiety and fervor. Dr. B.A. Jerard, Director hoisted the national flag in presence of the staff members of the institute. In compliance to the COVID-19 protocol, limited staff were invited to attend the ceremony. In his speech, Director appreciated the efforts of staff members for their excellent contribution for overall progress of the institute in terms of research, development and extension activities.

Celebration of Poshan Abhiyan -2020

KVK-South Andaman

The ICAR-KVK, South Andaman in collaboration with IFFCO and Directorate of Social Welfare, A & N Administration organized the Poshan Abhiyan on 16th September 2020. A total of 45 participants including Anganwadi workers, farmwomen from different villages of South Andaman district attended the programme. Dr. B.A. Jerard, Director, ICAR-CIARI encouraged the participants to spread awareness about balanced diet, good nutrition for healthy life. He also focused on nutri-gardens, promotion of indigenous products for food and nutritional security. Various events such as nutrition quiz, exposure visit to Climate Resilient Integrated Farming System model and nutri-garden of ICAR-KVK, Sippighat, film show on Poshan Abhiyan, Govt programmes and initiatives for eradicating malnutrition, national nutrition mission, anaemia and infant nutrition were carried out.

ICAR-KVK, Nicobar

KVK, Nicobar Islands celebrated Poshan Abhiyan / Mahila Prashikshan Diwas/ Kisan Goshthi on 17th September 2020 at Big Lapathy, Car Nicobar in which 21 seed kits were distributed for promoting Nutritional kitchen garden among Nicobarese farmers.

ICAR-KVK, N & M Andaman

KVK, N & M Andaman organized poshan Abhiyan & Krishak Gosthi on 17th September 2020 at Basntipur Panchayat. The program focused on Nutri-garden, Nutri-thali and Bio-fortified varieties. In this programme vegetable seed packets were distributed among the 20 participants. Furthermore, KVK, N & M Andaman has also organized programmes in different villages on Poshan Maha to create awareness on Nutri-garden, Nutri-thali and Bio-fortified varieties among 87 participants including Anganwadi Workers, Farm Women & SHGs groups during September 2020.

Celebration of Hindi Pakhwara

Hindi Pakhwara was celebrated from 14-28th September 2020 through virtual mode. Various events like quiz, essay, letter-writing, noting-drafting etc were organized through online mode. During the fortnight celebration various steps were taken to popularize Official Language among the officers and staff and to promote the use of Hindi in the official work of the institute. The winners of the various events were awarded with certificates.

Celebration of Swachhtha Maah

KVK, Nicobar celebrated Swachta Maah on 29th September 2020 at Big Lapathy and Tapoiming village and seed kits were distributed to 58 Nicobari tribal farmers were provided with seeds to promote vegetable cultivation in Car Nicobar.

3. AWARENESS/TRAINING CONDUCTED

Diagnostic and therapeutic service rendered by ICAR-CIARI to control hump sore in cattle

Hump sore caused by a filarial worm is a common problem of cattle in Andaman and Nicobar islands. This disease is chronic in nature and causes loss of milk production. To control the disease, scientists of Animal Science Division, ICAR-CIARI have developed one treatment schedule under the project entitled through a combination of medicine after conducting trials in organized herd and farmers' field. Scientists described the procedure of treatment and showed complete recovery of the diseased animal following treatment from 6th of March to 5th of April, 2020.The required medicines were also distributed to the farmers during the demonstration to continue the treatments.

Field day and awareness programme on Fodder Production at ICAR-CIARI, Port Blair

ICAR-CIARI, Port Blair has organized Field day and awareness programme on fodder production on 18th July, 2020 under National Academy of Science, India (NASI) Programme. A total of 8 Nicobari rural youths and farmers from Nicobar group of islands and 2 farmers from South Andaman District were trained through field visits, lectures, practical demonstration and hands on training on fodder production. Approximately 200 cuttings of Hybrid napier (Co-5), fodder bean seeds (250 g) and mineral mixture supplements were also given to the farmers.

Empowering Rural Women through Preparation of Bakery Products

ICAR-Krishi Vigyan Kendra (CIARI), N & M Andaman organised a three days training programme on “Empowering Rural Women through Preparation of Bakery Products” for farm women and rural youths of N and M Andaman at Gram Panchayat Hall, Hari Nagar from 24th Sept. to 26th Sept.2020. The training was conducted with the objective to develop and enhance the skills of farm women and youths by providing

technical knowledge about Bakery Science. The programme included demonstration of bakery products like cakes, fortified cookies, buns etc. The participants who were members of different SHG's were motivated to set up a small enterprise after gaining expertise in the field of baking. A total of 18 participants from SHGs benefited from the training programme.

ICAR-KVK, Port Blair Distributed Piglets to the NICRA Village

The ICAR-Krishi Vigyan Kendra (KVK) in collaboration with Division of Animal Science, Central Island Agricultural Research Institute (CIARI), Port Blair organized one awareness-cum-critical inputs distribution programme on Pig farming at the AICRP on Pig unit of CIARI, Port Blair, under TDC- National Initiative on Climate Resilient Agriculture (NICRA) Project of ICAR on 28th September, 2020 .

CIARI-AIR Outreach Programme for Island farmers under COVID-19 arena

Keeping in view the MHA guidelines on preventive measures to be adopted while undertaking any activities benefiting the farmers, CIARI has launched an "Outreach Programme for Island farmers under COVID-19 Arena" on 16th July 2020 marking the 92nd Foundation Day of ICAR, in collaboration with All India Radio, Port Blair to disseminate technical know-how and do-how on growing high yielding varieties of paddy in the lowland area and plantation, spices, fruits and vegetables in mid and upland area, Indian Major Carp (IMC) fishes in farm ponds besides rearing livestock. The innovative programme has been designed in a unique way to disseminate the technology through Radio from its own campus, to address the need of the farmers practicing agriculture & allied activities and to guide them to have a good enterprise of crop-livestock-poultry-fish with backward and forward linkage in a systematic manner.

During the reporting period, 54 topics have been covered by 53 experts comprising Scientists, Senior Administrative Officer, Technical Officers, Subject Matter Specialists of KVK – North & Middle Andaman, South Andaman and Nicobar districts and GM, NABARD including 8 progressive farmers of South Andaman. The programme is broadcasted from Wednesday to Saturday at 06.00 PM in Kisan Vani programme at 684 KHz MW, DD free dish radio channel No.25 & live streaming on news on air app which is being appreciated by stakeholders. Mr Shibu George, Programme Executive, AIR, Port Blair has facilitated the recordings at CIARI, Port Blair during the period.

Date	Title	Details of the speaker
15.07.2020	नारियल के नए बागान के लिए उचित किसमे वरोपण	Dr. B.A. Jerard, Director
15.07.2020	Technology for farmers to become Atma Nirbar	Dr. S.K. Zamir Ahmed, Principal Scientist
15.07.2020	Care and management of goats during rainy season	Dr. Jai Sunder, Principal Scientist
15.07.2020	Poultry farming during rainy season in Island	Dr A.Kundu, Head$_{i/c}$ Division of Animal Science
15.07.2020	धान की रोपाई एवं फसल प्रवंधन	Dr. P K Singh, PS &Head$_{i/c}$ DFCI&P
21.07.2020	Mera Gaon Mera Gaurav	Dr. R. Jaya Kumaravaradan Scientist
21.07.2020	Preparation of organic input: A part time entrepreneurship	Dr. A. Velmurugan, Head $_{i/c}$ DNRM
21.07.2020	Establishment of fruits and ornamental nursery - An income generation for the farmers	Dr. L.B. Singh, Head $_{i/c}$ ICAR-KVK, Port Blair
21.07.2020	Round the year marigold cultivation	Dr. V. Baskaran Principal Scientist
21.07.2020	Dragon fruit cultivation – A new crop for Andaman	Dr. K. Abirami , Senior Scientist
21.07.2020	Treatment of hump sore in Cattles (with farmer Shri Ankul Biswas)	Dr. Debasis Bhattacharya Principal Scientist
21.07.2020	Partnership between NABARD & CIARI in demonstrating farm technologies	Shri V. Mashar, General Manager, NABARD
30.07.2020	Fish Pond Management	Shri Benny Varghese, STO
30.07.2020	Advance Rural Duck Production	Dr T. Sujatha , Senior Scientist
30.07.2020	Opportunities in Agriculture Sector for Youth to become Agri-prenuer	Shri Amit Srivastava, ACTO
30.07.2020	Atma Nirbhar Bharat Banana keliye Sarkaar Ki Krishi Sambandihit Yojnanayein Avum Neetiyaan	Shri S.K. Singh, SAO
30.07.2020	Mangosteen: ek labhdayak fasal	Dr. Pooja Bohra, Scientist
30.07.2020	Treatment of iron deficient anemia in piglets	Dr. Arun Kumar De, Scientist
30.07.2020	Mud Crab fattening as Enterprise for youth	Dr S. Dam Roy Ex Director , CIARI
04.08.2020	Black Pepper Production	Dr. V. Damodaran, ACTO
04.08.2020	Daalchini: DweeponkiekUpekshit Masala Fasal	Dr. AjitArunWaman, Scientist
04.08.2020	Soil Health Card : Managing soil fertility into the future and improve income	Mr K.R. Kiran, Scientist
04.08.2020	Product development and value addition of fish catches	Ms. Deepitha R.P. , Scientist
04.08.2020	Pulses from seed to seed	Dr. K Venkatesan , Scientist
04.08.2020	Soil & water Conservation for hilly and undulated areas for enhancing farm Income	Dr. Sirisha Adamala Scientist
04.08.2020	Compost making techniques for tribal Farmers of Nicobar district	Dr. Sanjay Kumar Pandey SMS & I/C Head KVK , Nicobar
04.08.2020	Teressa goat : an alternative business avenue for tribal youth.	Dr. Zachariah George, SMS (AS) KVK , Nicobar
04.08.2020	Prosperity through Noni cultivation	Dr. I. Jaisankar, Scientist
04.08.2020	Freshwater finfish seed production	Ms. Harsha Haridas, Scientist
03.09.2020	Virgin Coconut Oil production at home	Dr. B.A. Jerard, Director
03.09.2020	Fodder management to increase livestock productivity in the Islands.	Dr. P.A. Bala , Senior Scientist
03.09.2020	Value addition from fruit crops and preparation of jam, jelly and pickles	Dr. HarapriyaNayak, SMS
03.09.2020	Rain water harvesting through lined tank	Er. B.K. Nanda, SMS
03.09.2020	Maize production as a profitable crop in Bay Islands	Dr. N. Bommayasamy, SMS
03.09.2020	Mushroom Production an income generation for the landless farmer in Bay Islands	Dr. V.K. Pandey, SMS
03.09.2020	Soilless cultivation of leafy vegetables having immunity boosting ability	Dr T. Subramani , Sr .Scientist
03.09.2020	Genetic improvement in Cattle	Dr. Rafeeque.R.Alyethodi , Scientist
15.09.2020	Good Aquaculture Practices (GAqP) with reference to freshwater aquaculture	K. Saravanan , Scientist
15.09.2020	Experience in enhancement of self-development through training	Smt. Anbumalar Progressive Farm Women & FFA R/o. Shoal bay
15.09.2020	Krishike lie IT anuprayog	Mr. D. Karunakaran , Scientist

15.09.2020	Mitigating impacts of COVID-19 with agricultural interventions	Smt. Meenakshi Progressive Farm Women & FFA R/o. Indira Nagar
15.09.2020	Spawn production as an income generation activity.	Smt. Archana Sharma,Technical Officer
15.09.2020	Shabjio me Nursery Prabandhan	Mr. A.K. Tripathi, ACTO
23.09.2020	Income generation through value addition in fruits and vegetables	Dr. Pooja Kapoor , SMS
23.09.2020	Use of solar energy in agriculture sector	Shri.Manoj Kumar, SMS
23.09.2020	Scope and Management of vegetable cultivation in N & M Andaman	Shri Debabrata Basantia, SMS
23.09.2020	Scientific Management of Diary Cow's and Calfs during and after parturition	Dr. Shardul Vikram Lal, SMS
23.09.2020	Post stocking management in carp culture	Dr. Shailesh Kumar , SMS
25.09.2020	Backyard poultry farming-An experience sharing	Shri Prabir Mazumder, Hasmatabad
25.09.2020	Scientific dairy farming for better livelihood	Shri R Upender Nath, Humfrygunj
25.09.2020	Value addition in agricultural produce as an income generation activity	Smt. Aditi Sharma, Guptapara
25.09.2020	Vermicompost making and kitchen gardening for nutritional and livelihood security	Smt. Sanchita Biswas, Humfrygunj
25.09.2020	Plantation based farming system a better otion for farmers for enhancing income	Smt. Anupriya Das, Humfrygunj

Mera Gaon Mera Gaurav

Team 2 comprising Dr. S.K. Zamir Ahmed, Dr. K. Saravanan, Dr. R. Jaya Kumaravaradan, Dr. K.R. Kiran and Dr. V. Damodaran visited Port Mout and Chouldari and interacted with vegetable, poultry and cattle farmers to know about the impact of COVID-19 on their livelihood wherein 65% opined that the agro advisories given by CIARI through print and electronic media was useful to pursue agricultural operations during lockdown. Moreover, the efforts taken by the Gram Pradhan of Chouldari Panchayat during the lockdown to sustain agriculture *viz.* establishing network between 30 vegetable farmers and pick up van to sell their produce in the nearby villages, arranging poultry feed for 40 farmers from local dealers which saved about 10,000 birds from starvation, arranging milk collection by ANIIDCO was appreciated by the farmers.

Establishment of mini incubation centre for poultry hatching facility – the startup programme

Community based mini hatching unit (Setter cum Hatcher of 120 eggs capacity) was established in Krishi Vigyan Kendra, N&M Andaman. Demonstration and Training programme on incubator operation was conducted among target farmers. Backward and forward linkage was established by this concept among the farmers by producing hatchable eggs and hatching by themselves and chicks were distributed to other farmers. Through cluster approach, the slot was allotted to each farmer to hatch their own eggs at a time. The frequent power fluctuation was controlled by UPS. A total of 32 batches of hatchable eggs of indigenous poultry were successfully hatched out. The mean fertility percent, early and late embryonic death, hatchability on total and fertile eggs basis were 53.02%, 7.83 % 9.96 %, 40.9% and 57.8% respectively. The handling skill of farmers on mini incubator has improved with per cent hatchability of 58.4 based on fertility which is normal hatching per cent of rural poultry eggs in incubators. The establishment of this mini incubator unit has significantly improved the unit size of poultry farm from 420 nos to 1186 nos and augmented chick production through mini incubator. In this ways, self-sustained concept of "by farmers to farmers" is becoming successful. The major constraint in the start of poultry farming was availability of chicks in N&M Andaman and that has been eliminated by this

concept. A total of four farmers have purchase their own mini incubator and have their own source for the chicks. They sell chicks to other farmers @ Rs.40 per chick and 2.82 fold increase in the availability of chicks in N&M Andaman. The success of mini incubation centre for poultry hatching facility has successfully impacted the startup programmes on doubling farmers income. Subsequently, model unit of mini incubator for South Andaman has also been established and inaugurated by Ms. Veditha Reddy, IAS Secretary, Agri & AH and Shri.V.Mashar, General Manager, NABARD which was established with NABARD fund for conducting training and capacity building programmes on mini incubator for farmers of South Andaman. This will be the permanent unit at CIARI for continuous training programmes on use mini incubator technology.

QRT meeting of ICAR-CIARI, Port Blair

For evaluation of extended period of QRT (2017-2020), a virtual meeting was held on 19th August, 2020 under the Chairmanship of Prof. C. Kole. The members Dr. H.K. Senapati, Dr. S. N. S. Randhawa, Dr.A.G. Ponniah, Dr. V. V. Sadamate have participated in the online meeting and discussions. All HODs of ICAR-CIARI presented salient achievements for the reporting period and detailed interaction held on the achievements and the way forward. Dr. Debasis Bhattacharya, Member Secretary coordinated the deliberation. The QRT was satisfied with the progress of work carried out by the scientists and recommended for germplasm management, genetic improvement, development and refinement of production and protection technologies, pre and post-harvest technologies, integrated farming system, food safety, ToT, linkages and management.

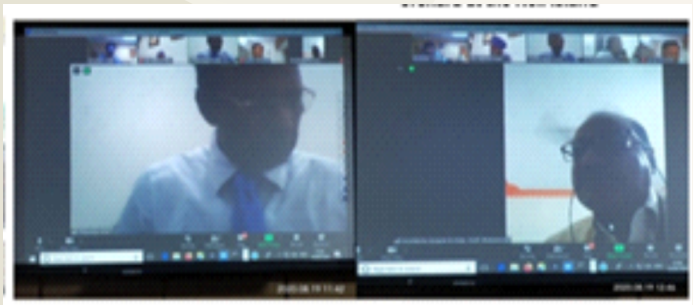


Plate 7: QRT members conducting virtual meeting with the Director and Heads of the

Webinar/meetings attended

Dr. Pooja Bohra attended a Webinar entitled "Underutilized fruits: Converting wastelands into goldmine" organized by Navsari Agriculture University on 30th September, 2020.

Dr. Ajit Arun Waman attended "Improved production technologies in black pepper" organized by Indian Society for Spices, Kozhikode on 27th August, 2020.

Dr. Ajit Arun Waman attended National Webinar on "Abiotic stress in Agriculture: geospatial characterization and management options" organized by ICAR-NIASM, Baramati on 27th August, 2020

Dr. Ajit Arun Waman delivered an invited lecture on 'Unexplored flora of Indian Bay Islands: their Conservation and Utilization' in the ATGC Webinar series organized by Dr. D.Y. Patil ACS College, Pune, Maharashtra on 12th September, 2020.

Dr. I. Jaisankar attended webinar on *Pterocarpus santalinus* cultivation and marketing on 20th August, 2020, conducted by Forest College and Research Institute, TNAU, Mettupalayam, Tamilnadu.

Dr. K Muniswamy attended "Alpha Vision : A Vedioptic tool to improve the reproductive efficiency of cattle herds" organized by Indian Society for Study on animal reproduction from 16th to 18th September, 2020.

Dr. K. Abirami attended One Day Webinar on Farmers' Constraints in DragonFruit Cultivation conducted by NIASM, Baramati on 1st September, 2020.

Dr. K. Saravanan has attended a "Video Lecture on NABL Accreditation of ICAR Laboratories" conducted by ICAR, New Delhi in collaboration with NABL, Haryana on 13th August, 2020.

Dr. K. Saravanan participated in a Webinar on "Advances in Aquatic Animal Health Management" organized by Dr. M.G.R. Fisheries College and Research Institute, Ponneri, Tamil Nadu on 27th July, 2020.

Dr. Pooja Bohra attended online Lecture on 'NABL Accreditation of ICAR Laboratories' organized by NABL on 13/08/2020, Webinar on 'Approaches and strategies for augmenting export of bananas from India' organized by ICAR-NRC for Banana, Trichy on 21st August, 2020 .

Dr. Pooja Bohra attended Webinar on 'Implementation of Access to Plant Genetic Resources and Benefit Sharing' organized by Indian Society of Plant genetic Resources on 27th August, 2020.

Dr. Pooja Kapoor attended National Webinar on "Nutrition and health benefits of Sorghum and other Millets" on 20th September, 2020 .

Dr. Pooja Kapoor attended webinar on "Role of Balance Nutrition in Mitigation Malnutrition" on 26th September.

Dr. Rafeeque R. Alyethodi delivered lecture on "Use of molecular tools for the enhancement of livestock productivity in current scenario" in a National Web Conference on "Enhancing Livestock Productivity for Food Security through Advanced Genetics and Reproductive Techniques" on 30th September 2020.

Dr. S. K. Ravi attended webinar on "ET/IVF/OPU in bovine" on 18th September 2020 organized by Indian Society for Study of Animal Reproduction.

Dr. S. K. Ravi Ravi delivered lecture as a speaker on "Estrus synchronization and AI to enhance livestock productivity" in a National Web Conference on "Enhancing Livestock Productivity for Food Security through Advanced Genetics and Reproductive Techniques" on 30th September 2020.

Dr. S.K. Ravi attended webinar on "Alphavision: A Vedioptic tool to improve the Reproductive efficiency of cattle herds on 17th September, 2020 organized Indian Society for Study of Animal Reproduction.

Dr. S.K. Ravi delivered lecture on "Buffalo cloning: Multiplying black gold" of a lecture series in Biotechnology organized by Department of Biotechnology, Central University of Haryana, Mahendergarh on 28th September, 2020.

Dr. S.K. Ravi delivered webinar lecture on "Waxing and Waning of Corpus Luteum" organized by Indian Society for Study of Animal Reproduction (Bihar Chapter) & NAHEP on 24th September, 2020.

Dr. Shailesh Kumar attended National Webinar on "Role of Balance Nutrition in Mitigation Malnutrition" on 26th September.

Dr. Shardul Vikram Lal attended National Webinar on "Role of Balance Nutrition in Mitigation Malnutrition" on 26th September.

Dr. Shardul Vikram Lal attended webinar on Sustaining agriculture through collectives, cooperatives and farmer producer organizations post COVID-19" on 8th Sept. 2020 by VAMNICON, Pune, a national institute under Ministry of Agriculture and Farmers welfare, Govt. of India.

Dr. Sirisha Adamala attended international webinar on "Achieving Land Degradation Neutrality" organized by Indian Association of Soil Science and Water Conservation in collaboration with Indian Institute of Soil and Water Conservation from 22nd to 24th July, 2020.

Dr. T. Sujatha attended International webinar : "Herbal bio molecules : novel food technologies in the wake of corona pandemic", organized by Tamil Nadu Veterinary and Animal Sciences University, Food Safety and Standards Authority of Indian Association of Food Scientists and Technologists of India on 27th August, 2020.

Dr. T. Sujatha attended International Webinar on "Current scenario on Zoonotic Diseases and their

impact on Animal and Human Health", organized by TNVAS University, Department of Veterinary Public Health and Epidemiology Veterinary College & Research Institute, Thanjavur district from 19th to 20th August, 2020.

Dr. T. Sujatha attended International Webinar: "Natural is future; Importance of immunity for 365 days in poultry", organized by Natural Remedies on 19th August, 2020.

Dr. T. Sujatha attended National Webinar: "Post Pandemic challenges and opportunities in Animal Health", organized by College of Veterinary & Animal Sciences, Meerut, Uttar Pradesh on 14th August, 2020.

Dr. T. Sujatha attended National Webinar: "Topical Nano carrier based formulations; potential strategies of innovative veterinary medicine", organized by ISVM & Zydus Animal Health on 1st August, 2020.

Dr. T. Sujatha attended Webinar on "Microbiome Immunity and Vaccines" organized by Indian Association of Veterinary Microbiologists, Immunologists & Specialists in Infectious Diseases (IAVMI) on 30th August, 2020.

Dr. V. Baskaran attended One Day Webinar on Farmers' Constraints in DragonFruit Cultivation conducted by NIASM, Baramati on 1st September, 2020.

Dr. V. Baskaran attended the webinar on "Boosting immunity through horticulture held from 1st -9th September, 2020 organized by SHRD.

Dr. V. Baskaran attended Webinar on Organic farming on 8th September, 2020 organised by State Organic and natural farming in India: Challenges and possibilities.

Dr.Pooja Kapoor attended webinar on "Farmer's Producers Organizations-the road ahead" organized by ICAR-ATARI ,Kolkata" on 18th Sept,2020.

Dr.Pooja Kapoor attended webinar on "Sustaining agriculture through collectives, cooperatives and farmer producer organisations post COVID-19" on 8th Sept. 2020 by VAMNICON, Pune, a national institute under Ministry of Agriculture and Farmers welfare, Govt. of India.

Dr.Shailesh Kumar attended webinar on "Farmer's Producers Organizations-the road ahead" organized by ICAR-ATARI ,Kolkata" on 18th Sept,2020.

Dr.Shardul Vikram Lal attended wenbinar on "Farmer's Producers Organizations-the road ahead" organized by ICAR-ATARI ,Kolkata" on 18th Sept,2020.

Er. Manoj Kumar attended webinar on "Farmer's Producers Organizations-the road ahead" organized by ICAR-ATARI ,Kolkata" on 18th Sept,2020.

Er. Manoj Kumar attended webinar on "Role of Balance Nutrition in Mitigation Malnutrition" on 26th September.

Er. Manoj Kumar attended webinar on Sustaining agriculture through collectives, cooperatives and farmer producer organisations post COVID-19" on 8th Sept. 2020 by VAMNICON, Pune, a national institute under Ministry of Agriculture and Farmers welfare, Govt. of India.

Shri D. Basantia attended National Webinar on "Role of Balance Nutrition in Mitigation Malnutrition" on 26th September.

Shri D. Basantia attended webinar on "Farmer's Producers Organizations-the road ahead" organized by ICAR-ATARI ,Kolkata" on 18th Sept.,2020.

Webinar/Meetings attended by Dr. B. Augustine Jerard, Director (A)

- Annual zonal workshop of KVKs under Zone V, Kolkata through video conferencing on 01.07.2020
- Webinar on "Agriculture extension priorities during COVID times under rapid rural community response to COVID-19 RCRC on 03.07.2020.
- Training programme on Bamboo straw making inaugurated as Chief Guest on 20.07.2020 at KVK, South Andaman.
- Training programme MEDP on organic spice cultivation, value addition and spice micro farming

inaugurated as Chief Guest and deliberated on importance of spices in Islands a RGCTC, Port Blair on 22.07.2020.

- 29th AGM of AICRP on Palms attended through online and served as panelist/Chairperson of crop production technical session on 11.08.2020.
- National webinar on implementation of access to PGR and benefit sharing on 26.08.2020 organized by ICAR-NBPGR, New Delhi.
- Meeting on implementation of NCDC projects in A & N Islands as expert member from ICAR-CIARI on 07.09.2020 at Secretariat, A & N Administration.
- One day national online workshop by IIFPT, Thanjavur, Tamil Nadu related to implementation of PMFME on 09.09.2020.
- Review meeting of Horticultural Science Division by Hon'ble MoS online along with other ICAR Institutes on 11.09.2020.
- Third party evaluation of ICAR Schemes on 16.09.2020.
- Online national level webinar organized by NASI on 17.09.2020
- World Coconut Day 2020- National level webinar on 18.09.2020 and presented Genetic resources and package of practices for coconut for value addition.
- 38th AGM of AICRP on vegetable crops on 25.09.2020
- Poshan Maah 2020 programme at A & N Administration on 30.09.2020

Publication

- Jerard, B. A., Damodaran, V., and Jaisankar, I. (2020). Promising Coconut Cultivars and Varieties for Andaman and Nicobar Islands, Technical bulletin, CIARI/Bulletin/02/2019, CIARI, Port Blair, India, p.40.
- Jaisankar, I., Srividhya, S., B. Augustine Jerard and Manasseh Moses, E., (2020). Seed microstructures of the Andaman padauk (*Pterocarpus dalbergiodes*). *Current Science*, 119(3): 562-566. (*NAAS rating: 6.76, Journal ID: C195*).
- S. Jeyakumar, Jai Sunder, S.P. Yadav, A.K. De, A. Kundu, M.S. Kundu, T. Sujatha. (2020). Estimation of Genetic Diversity Among Teressa Goat Population of A and N Islands by using Microsatellite Markers. *Indian Journal of Animal Research,* (54):1465-1469.
- Muthian, R., Ponraj, P., Muniswamy, K., Bhattacharya, D., Kundu, A., Sunder, J., De, A.K. & Somvanshi, S. (2020). Zoo chemical profile analysis and cytotoxicity screening of five marine sponge species collected from Andaman & Nicobar Islands. *Indian Journal of Geo-Marine Sciences* 49(8)

Transfer

- Shri. Batti Lal Meena, SMS (Agronomy) transferred from ICAR-KVK, Nimbudera, CIARI to ICAR- KrishiVigyan Kendra, Shikohpur (IARI) Gurgaon, New Delhi .

Promotion

- Mrs. Poonam, LDC to UDC on 7th July, 2020
- Mr. P. Kakesh Rao, LDC to UDC on 9th July, 2020
- Mr. Silbester Dung Dung, SSS to LDC on 24th July, 2020
- Mrs. G. Kantham, SSS to LDC on 3rd August, 2020

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