

# ICAR-CENTRAL ISLAND AGRICULTURAL RESEARCH INSTITUTE

PORT BLAIR – 744 105

## PROCEEDINGS OF THE FOURTEENTH INSTITUTE RESEARCH COMMITTEE MEETING HELD DURING ON 26<sup>TH</sup>, 27<sup>TH</sup> AND 28<sup>TH</sup> APRIL, 2021

The XIV Institute Research Committee (IRC-2021) Meeting for Institute funded projects was held during 26<sup>th</sup> to 28<sup>th</sup> April, 2021 through videoconferencing under the Chairmanship of Dr. B.A. Jerard, Director (Acting), CIARI, Port Blair. All the scientists of the Institute have attended the meeting and deliberated on the presentations made on the progress of ongoing projects.

At the outset Dr Jai Sunder, Member Secretary, IRC welcomed the Chairperson, IRC 2021 and all the scientists. He informed the house that 38 ongoing projects, 4 new projects and 3 technologies will be discussed and reviewed during the meeting. He urged all the scientists for timely submission of the RPPs.

In his opening remarks, Dr. B.A. Jerard, Director emphasized that all the projects should come out with specific technology for the farmers and stakeholders keeping in view of the target of doubling farmers income. He advised all the scientists to disseminate the technologies generated out of the project to the farmers/stakeholders under the banner of Bharat ka Amrit Mahotsav programme, radio, newspaper, TV etc. He emphasized that all the recommendations and specific suggestions given by the QRT and RAC are to be incorporated suitably in the ongoing programmes. He stressed upon the need for multi-disciplinary approach to cater the needs of farmers of the Islands.

Review started with presentation of the projects by Horticulture & Forestry and Field Crops Improvement and Protection on 26th April 2021 followed by Animal Science Division and Natural Animal Science Division on 27th April 2021 and Fisheries Science, Social Science and KVKs on 28th April 2021 respectively. Details of the interaction, comments and recommendations are given in the attached format. Besides the discussion and review on the ongoing and new projects, the issues of transfer of technology through KVKs were also discussed and recommendations were noted.

The presentation started with the ongoing projects as per the schedule:

### **I. Ongoing Projects**

#### **1. Horticulture and Forestry Division**

##### **1. Conservation and utilization of coconut and arecanut genetic resources of Andaman and Nicobar & Lakshadweep Islands for high yield and product diversification**

**PI:** B.A. Jerard, **Co-PIs:** V. Damodaran, I Jaisankar & S.K. Zamir Ahmad

**Period:** 2018-2023, **Project Code:** HORTCIARISIL201800200188

**Presented by:** B.A. Jerard

**Interaction:** The PI informed that characterization of coconut germplasm *viz.* Andaman Green Dwarf and Andaman Yellow Dwarf had been completed and variety release proposals of the same would be submitted to AICRP on Palms in the upcoming annual general meeting for presentation with data from Kasargod. Registration of dwarf arecanut would also be taken up. Further, pink husked coconut had been identified from farmer's field in South Andaman.

He also informed that work on Lakshadweep germplasm and extensive exploration in the islands could not be taken up due to lack of funding and COVID-19 pandemic.

**Action Point:**Registration/variety release proposals work to be taken up.

**Remark:** The house approved the project to be continued.

## **2. Quality planting material production in horticultural crops**

**PI:** B.A. Jerard, **Co-PIs:** V. Baskaran, K. Abirami, I. Jaisankar, Ajit Arun Waman, Pooja Bohra, V. Damodaran & S.K. Zamir Ahmad

**Period: 2018-2024, Project Code:**HORTCIARISIL201800500191

**Presented by:** B.A. Jerard

**Interaction:** ThePI informed that besides the sale of planting material of conventional crops, pandemic era saw an increase in sale of planting material of underutilized fruits, spices and herbs. He also informed about exploratory trial on comparatively quicker method of coir pith composting using cow dung. Biodegradable leaf cups using coconut leaf were also prepared.

**Action Point:** It was suggested to analyse nutrient status of coir pith compost prepared using cow dung method. Further, young entrepreneurs could be promoted to take up leaf cup making enterprise for nursery production. Target based funding could be explored to upscale planting material production for the scientists involved in the project under STC or Institute fund.

**Remark:** The house approved the project to be continued.

## **3. Improvement of vegetable and tuber crops for Andaman and Nicobar Islands**

**PI:** B.A. Jerard, **Co-PIs:** V. Damodaran, I. Jaisankar, S.K. Zamir Ahmad, L.B. Singh & B.L. Kasinath

**Period: 2018-2022, Project Code:**HORTCIARISIL201800500191

**Presented by:**B.A. Jerard

**Interaction:** The PI informed that based on the work conducted, *Spilanthes* could be promoted as a potential vegetable in the islands. Further, in coming time, low cost polyhouse production of vegetables will be promoted, particularly for production during rainy season. The PI requested to remove the name of B.L. Kashinath as Co-PI.

**Action Points:** It was suggested to test improved varieties of commercially valuable vegetables such as spinach for improving the profitability of island horticulture.

**Remarks:** The house approved the project to be continued and to remove the name of B.L. Kashinath as Co-PI.

## **4. Collection, conservation, conservation, evaluation and agro-technique standardization of native and commercial ornamental crops**

**PI:** V. Baskaran, **Co-PIs:** K. Abirami, B. Augustine Jerard, K. Venkatesan, T. Subramani, S.K. Zamir Ahmed & L.B. Singh

**Period: 2020- 2024 , Project Code:**HORTCIARISIL202000200219

**Presented by:** V. Baskaran

**Interaction:** The PI informed that experiments on jasmine pruning gave promising results in terms of flower production. Further, protected cultivation work had been started for inducing off season flowering in jasmine.

**Action Points:** It was suggested to take up registration of unique germplasm identified in the project. Also, per day productivity could be calculated in jasmine and marigold.

**Remark:** The house approved the project to be continued.

## **5. Enriching coconut plantations of Andaman and Nicobar Islands through augmentation of indigenous multipurpose tree resources**

**PI:** I. Jaisankar, **Co. PIs:** B.A. Jerard, T.P. Swarnam&V. Damodaran

**Period:** 2018-2022,**Project Code:** HORTCIARISIL201800600192

**Presented by:**I Jaisankar

**Interaction:** PI informed the house that soil analysis of the experimental plot was done and growth observations of intercrops *i.e.* multipurpose tree (MPT) species were recorded.

**Action Point:** It was suggested to perform complete profiling of soil from the experimental plot and carbon sequestration potential of the species included in the project. The house also suggested conducting experiments and taking up demonstrations on multifarious uses of MPT species for the benefit of island stakeholders. Dr. Zamir Ahmed suggested developing a demonstration block in progressive farmer's field using the MPT species as intercrops in coconut garden. Chairperson instructed the PI to take up intercropping of MPT species in oil palm block of the Institute and to promote cultivation of identified fodder tree species in the campus for Institute animals in collaboration with Animal Science Division.

**Remark:** The house approved the project to be continued.

## **6. Collection, conservation and evaluation of commercial fruits crops of Andaman & Nicobar Islands**

**PI:** K Abirami, **Co-PIs:** V. Baskaran, B.A Jerard, K. Venktesan, D. Basantia& Pooja Kapoor

**Period:** 2018-2023,**Project Code:** HORTCARISIL201800100187

**Presented by:** K. Abirami

**Action Point:**PI informed the house that postharvest packaging and storage studies were conducted in dragon fruit for improving its shelf life. She also informed that some area is required for acid lime varietal evaluation. Further, PI also asked permission to include papaya in the project.

**Remark:** It was suggested to prepare technical bulletin on dragon fruit at the earliest. Chairperson assured to allocate the area for acid lime experiment. He also suggested the PI to take up genome sequencing work on wild mango species through outsourcing in Institute project or as an externally funded project.

## **7. Collection, characterization and utilization of natural diversity of important Spice crops From Bay Islands and evaluation of their improved varieties**

**PI:**Ajit Arun Waman, **Co-PIs:** Pooja Bohra, T. Sujatha & L.B. Singh

**Period:** 2015-2021, **Project Code:** HORTCIARISIL201500500162

**Presented by:** Ajit Arun Waman

**Interaction:** The PI presented the closure report of the project. In the project, woody pepper was identified as a novel spice crop for cultivation in the islands. Konkan Tej variety of cinnamon and IISR Malabar Excel, IISR Girimunda varieties of black pepper were recommended for cultivation in the Islands. Endemic wild nutmeg species were identified as source of phytochemicals such as fatty acids, phenols and antioxidants. Propagation techniques were standardized for cinnamon & tejpat (air layering), *Piper sarmentosum* (stem cuttings) and wild nutmegs (seed germination) and findings were shared with stakeholders. Nutmeg seed borer was identified as a quarantine pest. Quality of island grown spices was evaluated vis-à-vis mainland grown spices. Clove pedicels and leaves were identified as alternative raw material for essential oil production.

**Action Point:**It was suggested to maintain the germplasm of wild nutmeg species in the Institute after the completion of project as well. Extension literature could be developed to disseminate the findings of the project.

**Remark:** The house appreciated the outcomes of the project and approved the project to be closed.

## **8.Collection, characterization, evaluation and mass multiplication of unconventional native and exotic fruit crops for Bay islands.**

**PI:** Pooja Bohra **Co-PIs:** Ajit Arun Waman, T. Bharathimeena& S.K. Zamir Ahmed

**Period:** 2015-2021,**Project Code:** HORTCIARISIL201500800165

**Presented by:** Pooja Bohra

**Interaction:** During presentation of closure report, PI informed the house that all the objectives of the project had been met. In the project, new information was generated about native fruit species of the Islands. Andaman Kokum (*Garcinia dhanikhariensis*), Andaman kauphal (*G. andamanica*) and blood fruit (*Haematocarpus validus*) were identified as novel native crops for the islands. Mangosteen and Malabar tamarind were found as successful introductions for commercial cultivation in the islands. Superior germplasm were identified in Andaman Kokum and Malabar tamarind. Off season air layering technique was developed for multiplication of perennial horticultural species. Nursery techniques were standardized for ten native species and the same are being utilized for production of planting material in Horticultural Plants Propagation Unit of the Institute.

**Action Point:** Chairperson suggested to take up registration of identified superior germplasm and to promote the planting of underutilized fruit species in planting programmes, wherever possible.

**Remark:** The house appreciated the project findings and approved the project to be closed.

## **2. Field Crop Improvement & Protection Division**

### **9. Genetic improvement of rice for higher productivity in Andaman and Nicobar Islands conditions**

**PI:** PK Singh ,**Co. PIs:** Venkatesan, K., T. Bharathimeena& S.K. Zamir Ahmed

**Period:** 2017-2021, **Project Code:** HORTCIARISIL201700700180

**Presented by:** K Venkatesan

**Interaction:** An early duration, dwarf statured, short slender grain with high yielding (5.13 t/ha) rice line (ANR 47) was developed. A total of 269 multi-parental inbred lines of rice were developed. Evaluation of marker assisted introgression lines of both BB resistant and salt tolerant in field and micro-plots was carried out. DUS characterization of 47 BILs (41 from CARI Dhan 5 and 6 from CARI Dhan 8) were completed.

**Action Points:** Since the evaluation of grain quality parameters of identified lines as well as multi-parental/ BILs to be carried out, PI requested the house for one year extension of the project. The house has reiterated that the CDs to be used for control of bird's menace in Bloomsdale farm as suggested during IRC-2020. PI requested to exclude Mr. B.L. Meena.

**Remarks:** The house approved the project to continue for one more year till March, 2022 and also excluded Mr. B.L. Meena as Co-PI from the project as he got transfer.

### **10. Enhancing pulse productivity of Andaman and Nicobar Islands through development and promotion of high yielding and stress tolerant varieties**

**PI:** Venkatesan K., **Co. PIs:** P.K. Singh&S.K. Zamir Ahmed

**Period:** 2018-2021 **Project Code:** HORTCIARISIL201800700193

**Presented by:** Venkatesan K

**Interaction:** PI presented the progress of the project during the period as two-location trials of selected pulses genotypes, evaluation of F<sub>1</sub> seeds, DNA isolated from F<sub>1</sub> individuals and parents, maintenance of pulses genotypes, the occurrence of pest and diseases, training conducted, seed produced and distributed. PI requested to extend the project to one year for evaluation of two-location trials of selected pulses genotypes and also to confirm the F<sub>1</sub> hybridity through SSR marker as well as by growing F<sub>2</sub> population.

**Action Points:** The Chairperson suggested to get the seed materials of short duration and high yielding varieties from ICAR-IIPR, Kanpur by request and the same request copy to be sent to SMD as per RAC recommendation in 2021.

**Remarks:** The house approved the project to continue till March, 2022 and also excluded Dr. Joshitha Vijayan, Scientist as Co-PI from the project as she got transfer.

### **3. Natural Resource Management Division**

#### **11. Valorization of organic wastes for abiotic stress management**

**PI:** A. Velmurugan, **Co-PI:** T. P. Swarnam

**Period:** 2020-2022 **Project code:** HORTCIARISIL202000600223

**Presented by:** A. Velmurugan

**Interaction:** Chairperson appreciated the works carried out. PI informed the availability of organic waste / materials from the islands as well as different sea weed species. He also explained why the use of seaweeds and organic waste from the island is so important for sustainable agricultural production. PI requested for the inclusion of Mrs. Shannon Sangma and Dr. T. Subramani in the project.

**Action Points:** Incharge asked the PI to send a formal request for inclusion of Scientist from ICAR-IISS, Bhopal through PME.

**Remarks:** The house approved the project to continue and also approved to include Mrs. Shannon Sangma and Dr. T. Subramani in the project.

#### **12. Development of novel bioformulations for enhancing crop production under island agro-ecosystem**

**PI:** T. P. Swarnam, **Co-PI:** A. Velmurugan

**Period:** 2020-2023, **Project code:** HORTCIARISIL202000500222

**Presented by:** T. P. Swarnam

**Interaction:** The house appreciated good amount of work carried out in short period of time. It was suggested to come out with some useful products as the RAC also suggested to give due weightage to the stakeholder and tangible results. PI requested dropping of Dr S Swain and Dr. Kiran Karthik Raj from the project as they are transferred / resigned and inclusion of Mrs Shannon Sangma in the project.

**Action Points:** Effect on cropping system and potential of novel products as weedicide should be studied.

**Remarks:** The house approved the project to continue and approved to include Mrs. Shannon Sangma and Dr. T. Subramani in the project.

#### **13. Study of Carbon foot prints in major farming systems of A & N islands**

**PI:** Kiran Karthik Raj, **Co-PIs:** T. P. Swarnam, A. Velmurugan, T. Subramani & Sirisha Adamala

**Period:** 2020-2023, **Project code :** HORTCIARISIL202000400221

**Presented by:** T. P. Swarnam

**Interaction:** It was informed that soil samples were collected and send for isotopic studies. In this project IIFSR model (software based on IPCC Tier – 2 approach) to calculate the carbon sequestration potential will be used. The house suggested to workout carbon storage potential of different island farming systems including agro-forestry component.

**Action point:** It was requested that Dr.T.P. Swarnam will take over the project as PI due to the resignation of Dr. Kiran Karthik Raj. She also requested for the inclusion of Dr. Jaya Kumaravaradan as Co-PI, and Kiran Karthik Raj will continue in the project as Co-PI.

**Remarks:** The house approved the project to continue and also approved to include Dr. Jaya Kumaravaradan as Co-PI. It was suggested to write a request letter to the University through proper channel to include Dr. Kiran Karthik Raj as Co-PI in the project. .

#### **14. Management of moisture stress in vegetable cropping systems**

**PI:** T. Subramani ,**Co-PIs:**A.Velmurugan, T. P. Swarnam, Kiran Karthik Raj & SirishaAdamala

**Period:** 2020-2022, Project Code: HORTCIARISIL202000300220

**Presented by:** T. Subramani

**Interaction:**Chairperson appreciated the establishment of facilities and conduct of experiment. He enquired about the cropping system followed and suggested to come out with crop weather calendar for important vegetable crops. He also suggested recording the climatic window available for crop cultivation for various crops. The Chairperson suggested to estimate the water productivity and per day productivity of different crops under moisture stress management as per the suggestion of RAC.

**Action points:** The PI requested for dropping Dr. Kiran Kararthik Raj.

**Remarks:** The house approved the project to continue also excluded Dr. Kiran Kkarthik Raj from the project.

#### **15. Organic farming studies for sustaining productivity of Island cropping system**

**PI:**Kiran Karthik Raj, **Co-PIs:**A.Velmurugan, T. Subramani &SrishaAdamala

**Period:** 2018-2023, Project Code: HORTCIARISIL201800900195

**Presented by:** T. Subramani

**Interaction:** It was requested that Dr T. Subramani will take over the project as PI due to the resignation of Dr.Kiran Karthik Raj. The Chairperson has suggested revising the last objective to “To analyse the qualities of organically produced produces” only. Partitioning of vermicomposting unit for waste recycling, mass multiplication of earthworms and composting. PI informed that imposing new treatments and planting of Black Pepper seedlings will be done immediately in the field.

**Action Points:** House approved the changes in PI and change of last objective.

**Remarks:** The house approved the project to continue.

#### **16. Study of hydrological response for soil and water conservation in Island ecosystem**

**PI:**Sirisha Adamala, **Co-PIs:** Dr. A. Velmurugan, Dr. Kiran Karthik Raj, Dr. V. Damodaran

**Period:** 2019-2022, **Project Code:** HORTCIARISIL201900200207

**Presented by:** Sirisha Adamala

**Interaction:** The house appreciated the work carried out. It was suggested to come out with suitable conservation practices to minimise the soil and nutrient loss. It was also suggested to record the rainfall, runoff and respect loss and create good datasets as it is the first study of its kind.

**Action Points:** The PI requested the inclusion of Dr T Subramani as Co-PI which was approved.

**Remarks:** The house approved the project to continue.

#### **4. Animal Science Division**

##### **17. Molecular epidemiology of *Rhipicephalus microplus* complexes in A&N complex and screening for its acaricide resistance.**

**PI:** D. Bhattacharya, **Co.PIs:** Jai Sunder, K. Muniswamy, R.R. Alyethodi, Perumal P, Arun K De, S.K. Zamir Ahmed & Zacharia George

**Period:**2018-2021, **Project Code:** HORTCIARISIL201801500201

**Presented by :** D. Bhattacharya

**Interaction:** The Chairperson IRC and house was satisfied with the overall progress of the project. PI informed the house that the remaining part of the study can be completed by August 2021

**Action Points :**The remaining objectives to be completed by August

**Remarks :**The house approved the project to be continued.

##### **18. Prevalence and diversity of antimicrobial resistance in *Enterobacteriaceae* from livestock and its surrounding environment**

**PI:** Jai Sunder, **Co.PIs,** A.K De, S. Bandyopadhyay ( Sr Scientist , IVRI RS Kolkata), T.Sujatha&D.Bhattacharya

**Period:**2019-2022 **Project Code :**HORTCIARISIL201900300208

**Presented by :** Jai Sunder

**Interaction:** The Chairperson IRC and house was satisfied with the overall progress of the project.

**Action Points:**The remaining objectives to be completed by next year

**Remarks :**The house appreciated the project and approved it to be continued.

##### **19. Pharmacological assessment of ethno-veterinary medicinal plants of A&N Island for poultry diseases**

**PI:** T. Sujatha

**Co.PIs: :** Jai Sunder, A. Kundu, D. Bhattacharya &A. K. De

**Period:** 2017- 2021 **Project Code:** HORTCIARISIL201700200175

**Presented by:** Jai Sunder



**Interaction:** Chairperson was satisfied with the progress off the work. PI requested extension of the project till December 2021 to complete remaining objectives.

**Action Points:**It was suggested to consult CSIR-Central Institute of medicinal and Aromatic Plants and the Directorate of Medicinal and AromaticPlants Research (ICAR-DMAPR) with respect to the developing ethno-veterinary medicines under the project.

**Remarks :**The house approved the extension of the project till December 2021 and the final report to be presented in the next IRC.

## **20. Selection and breeding of Nicobari fowl for its immunity and its evaluation under different seasons**

**PI:** T. Sujatha ,**Co.PIs:** Rafeeque.R.Alyethodi, D.Bhattacharya, A.K. De & Jai Sunder

**Period:**2018-2021, **Project Code:** HORTCIARISIL201801600202

**Presented by :**Jai Sunder

**Interaction:** PI informed that sample survey has been done at Nicobar Islands and could collect 90 hatachable eggs and 5 male for multiplication. More survey at Katchal and Kamorta area for better germplasm collection may be needed. Chairperson suggested that the project may be concluded by this year and new project with target of development of Nicobari flock and mass multiplication may be formulated.

**Action Points:**Studies of mRNA expression for immune related genes to be completed. The present study may be finished by this year and a new proposal on nicobari flock and mass multiplication may be proposed by next IRC

**Remarks:**The house approved the project to be continued

## **21. Supplementing Zinc and Chromium to ameliorate heat stress in poultry**

**PI:** P.ABala, **Co.PIs:** Jai Sunder, T.Sujatha, A.K De, M.S Kundu &A.Kundu

**Period:**2018-2021 **Project Code:** HORTCIARISIL201801400200

**Presented by : P.A Bala**

**Interaction:** The house was in the opinion that no significant improvement was made in the project due to multiple constraints faced in the previous years in farm and field. As the work is yet to be started, Chairperson and the house opined to close the project. A new project may be submitted and start as adhoc project

**Action Points:**House approved to close the project. A new adhoc project may be formulated and submitted to thte Chairperson, IRC. Submit the RPP-III of the current project mentioning the constraints and reasons for non-completion of the project

**Remarks:**Project to be closed.

## **22. Development of Molecular Marker for Reproductive Performance and Egg Quality Evaluation in Chicken**

**PI:** Arun Kumar De, **Co-PIs:** D. Bhattacharaya, Jai Sunder, P. Perumal& T. Sujatha

**Period:** 2018-2021, **Project Code:** HORTCIARISIL201801100197

**Presented by :** Arun Kumar De

**Interaction. :** PI informed that all the objectives are completed.

**Action Points:** As all the objectives are met, the project can be closed.

**Remarks:** House approved the project to close.

### **23. Biochemical and molecular mining of hormonal profiles of buck under abiotic stressors and managerial interventions for its mitigation**

**PI:** Ponraj Perumal, **Co.PIs:** S.K. Ravi, Arun Kumar De, Rafeeque. R. Alyethodi, K.Muniswamy & J. Sunder

**Period:** 2018-2021 **Project Code :** HORTCIARISIL201801300199

**Presented by:** Ponraj Perumal

**Interaction:** The Chairperson, IRC and the house was satisfied with the overall progress of the project. As all the objectives are completed, PI requested permission to close the project

**Action Points:** All the objectives are completed.

**Remarks:** The house approved to close the project

### **24. Evaluation of Hormonal and biochemical profiles of indigenous boar under abiotic stressors and melatonin intervention for its mitigation**

**PI:** Ponraj Perumal, **Co.PIs:** A.K. De, R.R. Alyethodi & D. Bhattacharya

**Period:** 2020-2023 **Project Code :** HORTCIARISIL202000100218

**Presented by:** Ponraj Perumal

**Interaction:** The Chairperson, IRC and the house observe that this project is initiated recently and made satisfactory progress.

**Action Points:** Project is initiated recently and to be continued

**Remarks :** The house approved to continue the project

### **25. Molecular characterization of immune system genes of Nicobari fowl**

**PI:** K. Muniswamy, **Co.PIs:** T. Sujatha, A.K.De, Jai Sunder & D. Bhattacharya

**Period:** 2017-2021, **Project Code:** HORTCIARISIL201700300176

**Presented by:** K. Muniswamy

**Interaction:** PI requested for extension of the project for one more year. He also requested for providing sufficient fund to complete the objectives of the work ie. TLR receptor genes sequencing. Chairperson opined that more farmer oriented outputs such as in the form of popular articles, folder and policy brief etc may be generated under the project

**Action Points:** TLR receptor gene characterization of Nicobari fowl to be carried out. Farmer oriented outputs such as popular articles, folders etc to be published

**Remarks:** The house approved the project to be extended for one year.

**26. Physical and biochemical characterization of the semen *vis-à-vis* study on feasibility of artificial insemination in pig breeds of Bay Island**

**PI:** S.K Ravi (till November 2020), P.Perumal (w.e.f November 2020)

**Co.PIs:** Perumal P, D. Bhattacharya, Jai Sunder, Arun Kumar De&Rafeeqe R. Alyethodi

**Period:**2018-2021,**Project Code:** HORTCIARISIL201801200198

**Presented by :** P.Perumal

**Interaction:** The Chairperson, IRC and the house was satisfied with the overall progress of the project. PI requested for extension of the project for one year for the remaining objective

**Action Point:**Continue with the other proposed objectives.

**Remark :**The house approved the project to be extended for one year (March 2022) and final report to be submitted by next IRC.

**27. Identification of Genome-wide molecular signatures responsible for higher fecundity in Andaman Local goats**

**PI:** Rafeeqe.R. Alyethodi, **Co.PIs:** Jai Sunder, Arun Kumar De, Karunakaran, Perumal& P.A Bala,

**Period:**2018-2021 **Project Code:** HORTCIARISIL201801000196

**Presented by :**RafeeqeR. Alyethodi

**Interaction:** The Chairperson, IRC and the house was satisfied with the overall progress of the project. PI requestedfor extension of the project for one year.

**Action Point:**Development of DNA tests for screening of identified SNPs to be studied

**Remark:** The houseapproved the project to be extended for one year

**5. Fisheries Science Division**

**28. Evaluation of suitable aquaponics system incorporating fisheries and agri-components under the Island conditions**

**PI:** Harsha Haridas, **Co PIs:** T. Subramani, K. Saravanan, Benny Varghese & S. Murugesan

**Period:** 2018-2021, **Project Code:** HORTCIARISIL201801700203

**Presented by:** Benny Varghese

**Interaction:** It was suggested that standardized low-cost aquaponics technology can be popularized among the stakeholders for the enhancement of their livelihood in these Islands. The Chairperson, recommended setting up a prototype in the KVK so that the stakeholders can learn and adopt the technology. The Co-PI requested to close the project as all the objectives have completed.

**Action Point:** To establish a prototype in KVK, South Andaman in collaboration with KVK.

**Remark:** The house agreed to close the project.

### **29. Prevalence of parasites of infesting commercial marine and freshwater fishes of Andaman Islands**

**PI:** J. Praveenraj, **Co PIs:** K. Saravanan, R. Kiruba Sankar & Y. Gladston

**Period:** 2019-2022, **Project Code:** HORTCIARISIL201900900214

**Presented by:** J. Praveenraj

**Interaction:** House appreciated the work done by the team. It was suggested to conduct more number of training and awareness programme in collaboration with KVKs and to prepare extension materials similar to popular articles based on the results obtained for the benefit of the stakeholders.

**Action Point:** To prepare the extension folders and conduct more awareness programme for the common people

**Remark:** The house approved to continue the project.

### **30. Seafood quality and safety assessment studies in commercial fish landings of Andaman Islands**

**PI:** SreepriyaPrakasan, **Co PIs:** Deepitha R. P, K. Saravanan, Harsha Haridas & Gladston, Y.

**Period:** 2019-2022, **Project Code:** HORTCIARISIL201900800213

**Presented by:** SreepriyaPrakasan

**Interaction:** House suggested to prepare the folders and other extension materials which will be useful for the common peoples at household levels. Chairperson suggested developing a sensory chart for the identification of fresh and spoiled fishes for the benefit of stakeholders.

**Action Point:** To prepare sensory chart based on colour of the gills for identification of fresh and spoiled fishes

**Remark:** The house approved the project to be continued.

### **31. Assessment of Elasmobranch Fisheries of Andaman Islands**

**PI:** Gladston Y., **Co PIs:** R. Kiruba Sankar, Ajina S. M, Deepitha R. P and Benny Varghese

**Period:** 2019-2022, **Project Code:** HORTCIARISIL201901100214

**Presented by:** Gladston Y.

**Interaction:** Chairperson IRC enquired about the technical programme for the year ahead in the study. PI explained that, for stock assessment and population dynamics of rays the data collection to be continued.

**Action Point:** To complete the objective as proposed

**Remark:** The house approved to continue the project.

### **32. Exploring the post harvest utilization trends and market potential for value added products from commercial fish landings of Andaman**

**PI:** Deepitha R. P., **Co PIs:** Sreepriya Prakasan, Harsha Haridas, Ajina S. M. & T. Sujatha

**Period:** 2019-2022, **Project Code:** HORTCIARISIL201901100216

**Presented by:** Deepitha, R. P.

**Interaction:** Chairperson IRC suggested conducting more skill development programmes in the area of value addition of fish for the benefit of Islanders.

**Action Point:** To conduct more awareness programme

**Remark:** The house approved the project to be continued.

### **33. Biology and Population dynamics of major perch fishes of Andaman Islands**

**PI:** Ajina S. M., **Co PIs:** Gladston, Y., R. Kiruba Sankar, Sreepriya Prakasan & S. Murugesan

**Period:** 2019-2022, **Project Code:** HORTCIARISIL201901100217

**Presented by:** Ajina S. M.

**Interaction:** Chairperson, IRC appreciated the team for developing the field guide on the identification of commercially important fishes of Andaman Islands.

**Action Point:** To prepare the book/manual with color photographs

**Remark:** The house approved to continue the project.

### **34. Biology of Blue Fin Trevally (*Caranx melampygus*) from Andaman Waters**

**PI:** A. K. O. Ratheesh, **Co PIs:** S. Dam Roy & R. Kiruba Sankar

**Period:** 2017-2020, **Project Code:** HORTCIARISIL201700500178

**Presented by:** A. K. O. Ratheesh

**Interaction :** The PI of the project has presented the achievements of the project and raised the issues faced in the data collection as the Pr. Investigator got transferred to ICAR-CIARI, Regional Centre, Minicoy. However, the PI appealed to the house to close the project as all the objectives have completed under the project.

**Action Point:** To submit the RPP-III

**Remark:** The house agreed to close the project.

### **35. Documentation of Indigenous Fishing Practices of Nicobari Tribes**

**PI:** A. K. O. Ratheesh, **Co PIs:** Harsha Haridas, S. K. Zamir Ahmed, S. K. Pandey, Nagesh Ram & S. Dam Roy

**Period:** 2017-2019, **Project Code:** HORTCIARISIL201700400177

**Presented by:** A. K. O. Ratheesh

**Interaction:** The P.I. presented the achievements of the project and explained the indigenous fishing practices of Nicobar Tribes. The PI appealed to the house to close the project as all the objectives have completed under the project.

**Action Point:** To compile all the traditional knowledge in form of a book.

**Remark:** The house agreed to close the project as all the objective of the projects completed.

## **6. Social Science Section**

### **36. Opportunities and challenges of sustaining agriculture in South Andaman district of Andaman & Nicobar Islands: A behavioural perspective**

**PI:** S.K. Zamir Ahmed, **Co-PIs:** R. Jaya Kumaravaradan, & L.B. Singh

**Period:** 3 years      **Project Code:** HORTCIARISIL202000700224

**Presented by:** S.K. Zamir Ahmed

**Interaction:** As the project has just been initiated, the Chairperson opined that the outcome will be discussed in next IRC.

**Action Point:** Nil

**Remarks:** The House approved the project to be continued.

### **37. Indigenous adaptation strategies of tribal *vis-a-vis* non-tribal farmers and impact of CIARI technologies in mitigating climate change effects on agriculture in Andaman & Nicobar Islands**

**PI:** R. Jaya Kumaravaradan, **Co-PIs:** S.K. Zamir Ahmed, B. Augustine Jerard, L.B. Singh, Sanjay Kumar Pandey & Amit Srivastava

**Period:** 2018-2021,      **Project Code:** HORTCIARISIL201801800204

**Presented by:** R. Jaya Kumaravaradan

**Interaction:** The Chairperson opined that a lot of information has been generated with respect to tribal and non-tribal farmers' perception about climate change, which has to be documented and brought out as publications.

**Action Point:** The proposed targets to be completed with the co-terminus of the project.

**Remarks:** The House approved the project to continue and drop Shri Sanjay Kumar Pandey who has been transferred.

### **38. Agricultural Information Sharing and Knowledge Generation towards Sustainable Management of Island Ecosystem with Special Reference to Fishery by Developing Mobile Apps**

**PI:** Shri D. Karunakaran, **Co-PI:** R. Kiruba Sankar

**Period:** 2018-2021      **Project Code:** HORTCIARISIL201801900205

**Presented by:** D. Karunakaran

**Interaction:** It was suggested to coin a catchy name for the App for that the Chairperson requested all the Scientists to suggest a name by first week of May for finalization. PI requested for extension of the project up to March 2022 which has been agreed upon. It was also suggested to bring out a popular article on the developed App for the information of stakeholders in the Islands and also in ICAR web news which has been agreed upon.

**Action Points:** Manual of fish species to be uploaded in App. The App to be published in Google Store. The App to be demonstrated to the stakeholders.

**Remarks:** The House approved the project to continue with the action points and extended the same up to March 2022.

## **II. NEW PROJECTS**

### **Horticulture & Forestry Division**

#### **1. Conservation, bioprospection and utilization of selected underutilized fruit species of Bay Islands**

**PI:** Pooja Bohra, **Co-PIs:** Ajit Arun Waman

**Period:** 2021-2026 **Project Code:** To be allotted by PME Cell.

**Presented by:** Pooja Bohra

**Interaction:** The PI proposed the project with three clearly defined objectives of bioprospection of *Garcinia* species, postharvest management of underutilized fruits and maintenance & enrichment of underutilized fruits germplasm block of the Institute.

**Action Points:** It was suggested to specify the names of species selected for postharvest management experiments in the RPP-1. It was suggested to include Shannon N. Sangma as a Co-PI in the project.

**Remarks:** The house approved the project.

#### **2. Identification and characterization of superior germplasm of cinnamon, tejpat and long pepper under Bay Islands condition**

**PI:** Ajit Arun Waman, **Co-PI:** Pooja Bohra

**Period:** 2021-2026, **Project Code:** To be allotted by PME Cell.

**Presented by:** Ajit Arun Waman

**Interaction:** The PI informed the house that findings of the earlier project suggested potential of native diversity of the genus *Cinnamomum* and *Piper longum*. To tap the potential of this diversity, this project was proposed. Further, suitable variety of cinnamon for intercropping in arecanut plantation will be identified.

**Action Point:** It was suggested to include Shannon N. Sangma as a Co-PI in the project.

**Remark:** The house approved the project.

### **Animal Science Division**

#### **3. Probiotics supplementation as an alternative to in-feed antibiotics and zinc oxide in alleviation of weaning stress in piglet**

**PI:** A.K De , **Co-PIs:** D. Bhattacharya, P.A.Bala

**Period:** 2021-2023 **Project Code:** To be given by PME cell

**Presented by :** A.K. De

**Interaction:** It was suggested to document the weaning stress in Andaman local pigs and Nicobari Pig. Chairperson Suggested to focus the supplementations studies only on Andaman Local Pigs and to include documentation of weaning stress of Nicobari Pigs as one of the objective. Chairperson IRC opined to shorten/modify the project title.

**Action Points:**

- Include documentation of weaning stress in Nicobari Pigs as part/objective of the study.
- Give details of the treatments to be followed in RPP-I
- Include Coconut milk, yoghurt, curd etc as pro-biotic treatment
- Include Dr. Zachariah George (SMS, KVK, Animal Science) as Co-PI
- Include budgetary requirements in the RPP-I

**Remarks:** The house approved the project.

#### **4. Goat improvement through Assisted Reproductive Techniques in Andaman and Nicobar Islands**

**PI:** Dr. P. Perumal, **Co-PIs:** R.R. Alyethodi, A.K. De, Jai Sunder & D. Bhattacharya

**Period:** 2021-2024, **Project Code:** To be given by PME cell

**Presented by:** P.Perumal

**Interaction:** PI informed the house that this is need based project. The Chairperson, IRC and house was in the opinion that the project is useful and very much farmer oriented

**Action Point:** Include semen collection from Teresa goat along with the proposed Andaman local goats in the technical programme of the project

**Remark:** The house approved the project.

### **III. TECHNOLOGY / METHOD**

#### **Horticulture & Forestry Division**

**1.Technology presentation: Hanging structure for cultivation of culantro (CIARI-HanGreens)**

**Developers:** Ajit Arun Waman & Pooja Bohra

**Presented by:** Ajit Arun Waman



**Interaction:** The presenter highlighted the applications of hanging structure for production of culantro in urban households and to add aesthetic appeal of the urban spaces. He also presented growth and yield data of culantro grown in the CIARI HanGreens. The presenter also proposed to disseminate the technology through paid trainings to the interested stakeholders to promote it as a startup venture for island youth.

**Action Points:**It was suggested to popularize the models of different capacity to suit the requirement of customers. To bring awareness about the technology, extension literature and video documentary could be prepared.

**Remarks:** The house appreciated the technology, and it was suggested to promote it through STC of the Institute in addition to the paid trainings. The technology was recommended for popularization.

## **2. Technology presentation: Water circulation system for extraction of phytochemicals (CIARI-Aqua Saver)**

**Developers:** Ajit Arun Waman & Pooja Bohra

**Presented by:**Ajit Arun Waman

**Interaction:** The presenter gave overview of requirement of the laboratory aid for extraction of phytochemicals in research laboratories. The developed aid ‘CIARI-Aqua Saver’ was tested for its efficiency in saving the water during extraction of essential oil, oleoresins and other bioactive molecules.

**Action Point:**It was suggested to initiate the process to protect the intellectual property involved through patenting. Procedure should be taken up through ITMU of the Institute.

**Remark:** The house appreciated the technology, and it was recommended for commercialization.

## **Natural Resource Management Division**

### **3. Method of extraction of Algenic acid from brown seaweed**

It was presented by Dr. A.Velmurugan as a new method. He gave detailed account of importance of calcium alginate as hydrogel. He presented improved procedure for extraction which is improvement over the existing protocol and the procedure also help in preparation of seaweed extracts. He informed that the new method will be patented as it has good potential for getting hydrogel from seaweeds.

**Interactions:** The house approved the work and suggested to submit to ITMU for filing of patent as per the ICAR procedure.

## **Krishi Vigyan Kendra**

Dr. Y. Ramakrishna, Head, KVK, South Andaman/ North and Middle Andaman / Nicobar has made a brief presentation on the technology needs of the farming community in the three districts, the status of technology dissemination and the constraints. The house addressed the technology needs and urged the KVK to contact the scientists at the Institute then and there to get the information as most of the problems enlisted have better technologies. The house suggested that the Institute developed technologies should be disseminated to the stakeholders through ICAR-CIARI KVKs.

### **Concluding session:**

During the IRC 2021 a total of 38 projects were presented by the scientists, of which 08 were closed and 30 recommended to be continued. A total of 04 new projects and 03 technologies were also recommended by the house. During the concluding session, the rapporteurs of the sessions have briefly listed out the recommendations of the IRC and the house deliberated on the final recommendations.

The Chairperson, IRC-2021 and Director, ICAR-CIARI, Dr. B. A. Jerard in his concluding remarks, has congratulated all the scientists for the remarkable achievements and expressed gratitude with the progress of works despite of the impact of lockdown due to COVID-19 pandemic. He has suggested to incorporate the recommendations and comments of IRC in the ongoing and new project activities and urged the scientists to work on target mode for timely achievements. He suggested to fine tune the research work in view of the RAC priorities and recommendations made for the current year. He advised that RAC and IRC meetings should be conducted in the month of March or April every year and the member secretaries to make arrangements accordingly. He informed that all the scientists should go through the proceeding and recommendation of the QRT for preparing any new projects/modification of the existing projects. He emphasized that scientists should work in team mode with positive disposition and a greater number of interdisciplinary projects should be taken up for better output and outcome. He also underlined the need to get exposure to other lead institutes in mainland in particularly important fields to update the latest knowhow and to start collaborative research programmes. He urged the scientists to take all efforts to orient themselves towards multi-disciplinary, inter-divisional, inter-institutional programmes for efficient utilization of expertise and to improve the quality of output. He stressed upon the regenerative agriculture initiatives to support the fragile ecosystems of the Islands which is possible and effective only through multi-disciplinary approach. He stated that the contribution of Co-PIs in the projects are to be justified by the PIs and suggested each scientist to look into their contribution as Co-PIs in each project and if any modification is required, it should be brought to the notice of Chairperson and the IRC by the concerned scientists. He also suggested to have few projects per scientist as per priority so that the output could be better with clear focus. He requested all the members to identify some specific technologies for promoting entrepreneurship development and support startup programmes in line with the requirement of Govt of India through KVK, line departments and stakeholders.

### **Summary of the projects presented and discussed in IRC 2020**

| <b>Division</b>  | <b>Ongoing<br/>2020 -2021</b> | <b>Closed</b> | <b>New institute funded<br/>project</b> | <b>In Hand<br/>2021-2022</b> |
|------------------|-------------------------------|---------------|---|------------------------------|
| Hort. & Forestry | 08                            | 02            | 02                                      | 08                           |
| FCI&P            | 02                            | -             | -                                       | 02                           |
| NRM              | 06                            | -             | -                                       | 06                           |
| Animal Sci.      | 11                            | 03            | 02                                      | 10                           |
| Fisheries Sci.   | 08                            | 03            | -                                       | 05                           |

|              |    |    |    |    |
|--------------|----|----|----|----|
| SSS          | 03 | -  | -  | 03 |
| <b>TOTAL</b> | 38 | 08 | 04 | 34 |

At the end, the Dr. Jai Sunder, Member Secretary, IRC has proposed vote of thanks. He thanked the Chairperson, IRC and all the scientists for their valuable suggestion, remarks and active participation. The meeting ended at around 3.30 pm on 28<sup>th</sup> April 2021.

**The following officials have attended the IRC 2021:**

1. Dr. B. A. Jerard, Director & Chairperson, IRC-2021
2. Dr. Debasis Bhattacharya, Pr. Scientist & Head I/c Animal Science Division
3. Dr. S.K. Zamir Ahmed, Pr. Scientist & I/c SSS
4. Dr. P.K. Singh, Pr. Scientist&Head I/c, FCI&P
5. Dr. A. Velmurugan, Pr. Scientist& Head I/c NRM
6. Dr. R. Kirubasankar, Scientist & Head I/c FSD
7. Dr. V. Baskaran, Pr. Scientist
8. Dr. T.P. Swarnam, Pr. Scientist
9. Dr. Y. Ramakrishna, Pr. Scientist & Head KVKs
10. Dr. T. Sujatha, Sr. Scientist
11. Dr.P.A.Bala, Sr Scientist
12. Dr. K. Abirami, Sr. Scientist
13. Dr. I. Jaisankar, Sr. Scientist
14. Dr. T. Subramani, Sr. Scientist
15. Dr. Arun Kumar De, Scientist
16. Dr. K. Muniswamy, Scientist
17. Dr. Ajit Arun Waman, Scientist
18. Dr. Pooja Bohra, Scientist
19. Shri A. K. O. Ratheesh, Scientist
20. Dr. K. Saravanan, Scientist
21. Mr. J. Praveenraj, Scientist
22. Dr. P. Perumal, Scientist
23. Dr. K. Venkatesan, Scientist
24. Dr. R. Jaya Kumaravaradan, Scientist
25. Shri. D. Karunakaran, Scientist
26. Dr. Harsha Haridas, Scientist
27. Ms. Deepitha, R.P., Scientist
28. Dr. SirishaAdamala, Scientist

29. Dr. Gladston Y., Scientist
30. Mrs. Ajina S.M., Scientist
31. Mrs. SreepriyaPrakasan, Scientist
32. Mrs Shannon N. Sangma, Scientist
33. Mr. Benny Varghese
34. Dr. Jai Sunder, Pr. Scientist, Incharge, PME Cell & Member Secretary IRC 2021



**(Jai Sunder)**

Scientist Incharge, PME Cell &  
Member Secretary, IRC-2021

F.No. 4-4/PMEC/IRC Proceeding/2021

Dated: 12.05.2021

Copy to : All concerned through e-mail for information and necessary action.

P.S. to Director for information to the Competent Authority.