ICAR-CENTRAL ISLAND AGRICULTURAL RESEARCH INSTITUTE
PORT BLAIR – 744 105

MINUTES OF THE PROCEEDINGS OF THE THIRTEENTH INSTITUTE RESEARCH COMMITTEE MEETING HELD DURING ON 7TH, 8TH AND 9TH DECEMBER, 2020

The XIII Institute Research Committee (IRC-2020) Meeting for Institute funded projects was held during 7th , 8th and 9th December, 2020 at Dr. N.T. Singh Conference Hall under the Chairmanship of Dr. B.A. Jerard, Director (Acting), CIARI, Port Blair . All the scientists of the Institute have attended the meeting and presented the progress of ongoing projects.

At the outset Dr Jai Sunder, Member Secretary, IRC welcomed the Director and all the scientists for the IRC meeting 2020. He informed that a total of 48 ongoing projects and 7 new projects will be discussed and reviewed during the meeting. He emphasized the seriousness and importance of submitting the RPPs in time bound manner from all the scientists and urged all the HoDs to facilitate for its timely submission as per the Council's guidelines.

In his opening remarks, Dr B.A.Jerard, Director (A) advised the house that every project should come out with specific technology for the farmers and stakeholders. He also suggested that the ongoing projects may be modified if required in such a manner that the outcome should be in line with the Government policy and recommendations for the stakeholders and farmers incorporating RAC/QRT suggestions. He also suggested to clearly define the role of Co-PIs in each project and if necessary modification could be suggested by the PIs.

Review started with presentation of the projects by Animal Science Division followed by Fisheries Science on 7th December, Horticulture & Forestry and Field Crops Improvement and Protection on 8th December and Natural Resource Management, Social Science and KVKs on 9th December 2020 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.

Concluding remarks and important points suggested by the Chairman, IRC is highlighted below:

- Congratulated all the scientists for successful conclusion of the IRC and suggested to incorporate the recommendations and comments in the ongoing and new project activities.
- FCIP Division in collaboration with KVK may explore the possibility to find suitable entrepreneur for regular supply of mushroom spawn to the needy farmers and stakeholders.
- All the scientists to go through the recommendations of RAC and QRT and accordingly incorporate the suggestion and plan the research activities.
- The technical programme should be very clear and focused towards generation of new technologies.

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

ONGOING PROJECT

Animal Science Division

1. **Prevalence and economic impact of gastro-intestinal parasites of livestock in Andaman and Nicobar Island**

PI: D. Bhattacharya **Co-PIs**: M.S. Kundu, Jai Sunder, T. Sujatha, Perumal P, A. Kundu, Zachariha George and Arun Kumar De

Period: 2017-2020, **Project Code :** HORTCIARISIL201700100174

Presented by : Dr. D. Bhattacharya

Interaction: PI informed that all the objectives have been fulfilled and requested to close the project. During the interaction the PI informed that there is more antibody response in the adult pig compared to the young ones. There is no interspecies transmission of *Trichuris/Ascaris summ*

Action Points:

- Anthlemintic should be given before the onset of monsoon (particularly in the month of June)
- Anticoccidial should be given at the dose rate of 50 mg/kg body weight

Remarks: The house approved the project to close.

2. **Molecular epidemiology of *Rhipicephalus microplus*complex 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, A. Kundu, S.K. Zamir Ahmed and Zacharia George

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

Presented by: Dr. D. Bhattacharya

Interaction: PI informed that all the objectives have been completed, in view of this he proposes to close the project. Some of the salient findings are:

- Ticks have developed partial resistance.
- *R. microplus* belongs to Clad A. This is the first report from the India.
- Ivermectin is the drug of choice for control of tick infestation.

Action Points: House suggested to calculate the economic impact of the ticks infestation on the production and other parameters and benefits of using ivermectin.

Remarks: Since the project is approved till March 2021, it was recommended to close the project after March 2021. House approved to delete the name of Dr A Kundu.

3. Prevalence and diversity of antimicrobial resistance in Enterobacteriaceae from livestock and poultry and its surrounding environment

PI: Jai Sunder **Co-PIs**: A.K De, S. Bandyopadhyay, T.Sujatha, D. Bhattacharya

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

Presented by : Dr. Jai Sunder

Interaction and suggestions:

- More than 200 enteric bacteria comprising of *E.coli, Salmonella* and *Klebsiella spp* have been isolated from cloacal swabs of poultry.
- Characterization and molecular confirmation have been completed.
- Phenotypic antibiotic resistance shows that almost 70 % of the isolates exhibited multidrug resistance to common antibiotics such as penicillin, ampicillin, cloxacillin, tetracycline, chloramphenical.

Action Points: House appreciated the work and suggested to use the generic name of the antibiotics.

Remarks : The house approved the project to continue.

4. Pharmaco assessment of ethno-veterinary medicinal plants of A&N Island for poultry diseases.

PI: T. Sujatha **Co-PIs: :** Jai Sunder, A. Kundu, D. Bhattacharya and A. K. De

Period: 2017-2020, **Project Code:** HORTCIARISIL201700200175

Presented by: Dr T. Sujatha

Interaction: PI informed that due to COVID-19 lockdown some of the activities could not be completed. Hence extension till March 20201 is requested.

Action Points: It was suggested that the ethnobotanical/ ethno veterinary uses of the medicinal plants should be compared with the already published literature by ICMR to arrive at good conclusion. The level of plant status shall be ascertained as per the IUCN guidelines. Safety tests may be done as per the standard guidelines.

Remarks: House approved the project to continue till March 2021.

5. 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 and A.Kundu

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

Presented by : Dr. T.Sujatha

Interaction: Discussion on long shank length and short shank length characteristics of Nicobari fowl held in detail. PI informed that efforts have been made to segregate the pure Nicobari fowl with short shank length.

Action Points: House suggested that Nicobari fowl is the pride of the Institute and focus should be given to conserve the birds at Institute farm, farmers' fields as well as at Animal Husbandry farm. Due to transfer of Dr A Kundu, his name is deleted from the project.

Remarks: House approved the project to continue.

6. 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 and A.Kundu

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

Presented by: Dr. D. Bhattacharya

Interaction: Dr D. Bhattacharya, Head I/c Animal Science Division informed that due to some logistic problems the work could not be initiated at farm. However, efforts were made to initiate the work at farmer's field, but due to outbreak of coccidia in the poultry birds, the experiment could not be continued.

Action Points: It was decided that a Note may be issued to the PI to seek explanation for not initiating the work and non-submission of even RPPI.

Remarks: Since no work has been initiated by the PI and RPPI is also not submitted, the house suggested to close the project.

7. Molecular signatures of eco-sustainability of Indigenous livestock breeds of A&N Island and Lakshadweep

PI: Arun Kumar De **Co-PIs:** Jai Sunder, M.S.Kundu, D. Bhattacharya and A. Kundu

Period: 2017-2019**, Project Code:** HORTCIARISIL201700800181

Presented by: Dr. Arun Kumar De

Interaction: House appreciated the good work done under the project**.** PI informed that all the objectives have been fulfilled. Very good publications have been brought under the project with high NAAS rated journals. Characterization of indigenous livestock viz. Trinket cattle, Andaman local goat, Andaman local duck, Teressa goat, Andaman buffalo, Nicobari pig were done under the project.

Action Points:

- Prepare policy brief on strategies for conservation of livestock and poultry of Andaman & Nicobar Islands
- Application for breed registration should be submitted to NBAGR for recognition of indigenous germplasm of A & N Islands

Remarks: House approved the project to close

8. 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, and A. Kundu

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

Presented by : Dr Arun Kumar De

Interaction: PI informed that Polymorphism of the STAT5B gene was identified by using the Polymerase Chain Reaction-Restriction Fragment Length Polymorphism (PCR-RFLP). The results revealed that No association between genotypes and productive parameters was observed.

Action Points: Genotyping of Nicobari birds based on markers and its association with reproductive performance. House suggested to collect the samples from Nicobar groups of islands also.

Remarks: House approved the project to continue. Due to transfer of Dr A Kundu, his name is deleted from the project.

9. Studies on endocrinological and biochemical profiles of bovine species for enhancing fertility in Bay Islands

PI: Ponraj Perumal **Co-PIs:** M.S Kundu, D. Bhattacharya, Jai Sunder, A. K. De and A. Kundu

Period: 2017-2020 , Project Code: HORTCIARISIL201701300186

Presented by: Dr. P. Perumal

Interaction: House appreciated the good work done under the project.

Action Points: Prepare technical bulletins on common reproductive problems and its remedial measures for the farmers and stakeholders of islands.

Remarks: House approved to close the project.

10. Biochemical and molecular mining of hormonal profiles of buck under abiotic stressors and managemental interventions for its mitigation

PI: Ponraj Perumal **Co-PIs:** S.K. Ravi, Arun Kumar De, Rafeeque. R. Alyethodi, K.Muniswamy, Jai Sunder and A. Kundu

Period: 2018-2021 Project Code : HORTCIARISIL201801300199

Presented by: Dr. P. Perumal

Interaction: The main finding is injection of melatonin improved the FSH, LH, testosterone, TSH and has antioxidant activity. PI proposes to study the effect of melatonin on conduct the walking stress in goat in the coming year.

Action Points:

- It was suggested to compare the study on walking stress with the animals kept under purely on intensive management system

Remarks: House approved the project to continue. Due to transfer of Dr A Kundu, his name is deleted from the project.

11. Molecular characterization of immune system genes of Nicobari fowl

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

Period: 2017-2020**, Project Code:** HORTCIARISIL201700300176

Presented by: Dr. K. Muniswamy

Interaction: PI informed that due to fund constraints the sequencing work is pending and urged the house to extend the project till March 2021.

Action Points:

- House suggested to explore the possibility to have collaborative project with DPR or CARI
- Prepare recommendations to conserve the Nicobari fowl at some specific islands.
- Compile the information on Nicobari fowl and compare with other indigenous birds of the country.
- Comprehensive write up may be prepared on Nicobari fowl highlighting the conservation strategies and way forward.

Remarks: The house approved the project to be extend till March 2021. Due to transfer of Dr A Kundu, his name is deleted from the project.

12. 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, **Co-PIs:** Perumal, P., M.S. Kundu, D. Bhattacharya, Jai Sunder, Arun Kumar De, Rafeeque R. Alyethodi

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

Presented by : Dr. D. Bhattacharya

Interaction: Dr D. Bhattacharya informed that Dr S.K. Ravi has been selected as Associate Professor at BHU and requested to handover the project to Dr.P.Perumal. The main finding of the project is AI in the standing heat of sow or minimum two insemination is required to establish pregnancy. Use of prostaglandin injection reduces the reaction time in boars

Action Points: House agreed to the proposal to handing over the project to Dr P. Perumal

Remarks: House approved the project to continue**.** Due to transfer of Dr M.S. Kundu, his name is deleted from the project.

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

PI: Rafeeque R. Alyethodi, **Co-PIs:** A. Kundu, Jai Sunder, Arun Kumar De, Karunakaran, Perumal, A.P Bala and S.K Ravi

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

Presented by : Dr D. Bhattacharya

Interaction: The main finding of the work is a significantly higher WBC percentage ($p<0.05$) was observed in does with multiple births kidding compared to does which never gave multiple births. The preliminary analysis of whole genome sequencing revealed that different kinds of mutations are detected.

Action Points: As per the future research activity development of fast and economical test for SNPs showing significant association with multiple birth frequency should be done.

Remarks: House approved the project to continue**.** Due to transfer of Dr A Kundu, his name is deleted from the project.

Fisheries Science Division

14. Evaluation of Suitable Aquaponics System Incorporating Fisheries and Agri Components under the Island conditions.

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

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

Presented by: Dr. Harsha Haridas

Interaction: The PI explained in detail about the achievements and works completed under the first objective of the project. Also explained the constraints to set up a marine aquaponics system and unavailability of commercially important halophytes in the Island condition and hence proposed to drop the second objective. As the first objective has been completed, the PI requested the house to close the project. Replying to the query of low yield, PI explained the working principle of the system and informed that no additional source of nutrients was provided for the plants that may be the reason for comparatively less yield. Chairman, IRC appreciated the development of a model for freshwater aquaponics in these Islands and informed that the production of aquaponics system cannot be compared with other terrestrial system which gives high yield.

Action Points: The house agreed to drop the second objective after conducting the follow-up works on an experiment using CIARI broad dhaniya till March, 2021 and to close the project. Since Dr. S Dam Roy is transferred to ICAR-CIFRI, the house suggested to exclude his name from the project team.

Remarks: The house approved to continue the project upto March, 2021.

15. Prevalence of Parasites Infesting Commercial Marine and Freshwater Fishes of Andaman Islands

PI: J. Praveenraj, **Co-PIs**: K. Saravanan, R. Kiruba Sankar, Y. Gladston and S. Dam Roy

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

Presented by: Dr.J. Praveenraj

Interaction: PI explained the progress of the project works. House appreciated the work and suggested to document and disseminates the knowledge among stakeholders. PI replied that the work is not yet completed and once the species level identification is done then the results will be documented.Dr. K. Saravanan also added that under NSPAAD project, awareness programmes are conducted regularly on fish health management for the benefit of stakeholders. Dr. A. Velmurugan enquired about the availability of location specific data of sources of sample. PI replied that GPS location is collected along with the samples. PI appealed to exclude Dr. S. Dam Roy from the project team considering his transfer.

Action points: The house also agreed to exclude Dr. S. Dam Roy from the project team.

Remarks: The house approved the project to be continued.

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16. Seafood quality and safety assessment studies in commercial fish landings of Andaman Islands.

PI: Sreepriya Prakasan, **Co-PIs**: S Dam Roy, Deepitha R P, K. Saravanan, Harsha Haridas and Gladston Y

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

Presented by: Mrs Sreepriya Prakasan

Interaction: Dr. S.K. Zamir Ahmed enquired about the species of fish taken as samples for microbiological study and suggested to list out the commercial fish species available in the Islands. PI replied that selected fish species will be taken for the study from frequently landed fishes. PI appealed the house to exclude Dr. S. Dam Roy from the project.

Action points: The house agreed to exclude Dr. S. Dam Roy from the project team.

Remarks : The house approved the project to be continued

17. Assessment of Elasmobranch fisheries of Andaman Islands.

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

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

Presented By: Dr. Gladston Y

Interaction: PI explained that the study will be helpful to find out major composition, preferred fish species in trade, operation based responsible management for elasmobranchs fishery. The results of the study will help in conservation and formulate region based management of the endangered and vulnerable elasmobranchs. The study suggests the fishers, the way to obtain long term sustainable catch of elasmobranchs. The Chairman enquired about the application of the results obtained and how it will be useful to the stakeholders. Dr. R Kiruba Sankar, I/c FSD explained that elasmobranchs are viviparous and their fecundity is very low thus it's very important to conserve and manage the fishery. Based on the results, fishing efforts can be minimized and the results will be utilized to make policy decisions to protect the fishery in the Islands. The house further suggested to identify and document the market channels of elasmobranchs. PI appealed to exclude Dr. S. Dam Roy from the project team.

Action Points: The house agreed to exclude Dr. S. Dam Roy

Remarks: The house approved the project to be continued.

18. 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:** S.Dam Roy, Sreepriya Prakasan, Harsha Haridas, Ajina S M, T. Sujatha

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

Presented by: Ms Deepitha R. P

Interaction: PI explained about the parameters and facilities available in the Institute to complete the work and other parameters to be analyzed by outsourcing. The Chairman also suggested that the facilities which are not available at our Institute can be accomplished by outsourcing also. He also suggested that list of commercial fish landings of the Andaman Island should be prepared with its vernacular names. PI requested the house to exclude Dr. S. Dam Roy from the project.

Action points: The house agreed to exclude Dr. S. Dam Roy from the project team.

Remarks : The house approved the project to be continued.

19. Biology and population dynamics of major perch fishes of Andaman Islands.

PI: Ajina S. M., **Co-PIs:** S. Dam Roy, Gladston Y, A.K.O Ratheesh, Sreepriya Prakasan, S. Murugesan

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

Presented By: Mrs Ajina S M

Interaction: The PI has presented the progress of the project and appealed the house to exclude Dr. S. Dam Roy and to include Dr. R. Kirubasankar in the team. Also suggested to exclude Mr. A.K.O Ratheesh from the project team.

Action Points: The house also agreed to exclude Dr. S. Dam Roy and Mr. A. K. O Ratheesh from the project team and to include Dr. R Kiruba Sankar.

Remarks: The house approved the project to be continued.

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

PI: A K O Ratheesh, **Co-PIs**: S. Dam Roy, R. Kirubasankar

Period: 2017-2020

Project Code: HORTCIARISIL201700500178

Presented by: Not presented

Interaction: Chairman, IRC enquired about the progress of the project to Head I/c, FSD. Dr. R. Kiruba Sankar, I/c FSD informed the house that no communications were made by PI regarding the progress of the project for IRC. The Head I/c also requested the Chairman, IRC to ensure the presence of Scientist In-charge of Regional Station, Minicoy for scientific deliberations in future and also to send communications for the same. In response to the comments, I/c PME replied that communication has been sent to Mr AKO Ratheesh to send the RPPs and about the IRC, however no reply has been received by PME Cell.

Action points: The Chairman and the house decided to communicate Mr. A. K. O. Ratheesh to obtain the progress of the project with proper explanation through PME cell.

Remarks: House approved to issue a note to ask justification for not submitting the RPPs and not sending the power point presentation and progress since last two IRC

21. 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: Not presented

Interaction : Chairman, IRC enquired about the progress of the project to Head I/c, FSD. Dr. R. Kirubasankar, I/c FSD informed the house that no communications were made by PI regarding the progress of the project for IRC. The Head I/c also requested the Chairman, IRC to ensure the presence of Scientist In-charge of Regional Station, Minicoy for scientific deliberations in future and also to send communications for the same. In response to the comments, I/c PME replied that communication has been sent to Mr AKO Rateesh to send the RPPs and about the IRC, however no reply has been received by PME Cell.

Action points: The Chairman and the house decided to communicate Mr. A. K. O. Ratheesh to obtain the progress of the project with proper explanation through PME Cell.

Remarks: House approved to issue a note to ask justification for not submitting the RPPs and not sending the power point presentation and progress since last two IRC

<u>Horticulture & Forestry Division</u>

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

PI: B.AJerard, **Co-PIs**: V. Damodaran, Soobedar Yadav, I Jaisankar, & S.K. Zamir Ahmad

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

Presented by: Dr. B.A. Jerard

Interaction: Dr. S.K. Zamir Ahmed asked about the commercialization prospects of soap making technology developed in the project. Dr. Ajit A. Waman asked about segregation of characters in Niu Lekha orange progeny. PI informed that orange progenies had been identified and were under evaluation. Dr. L.B. Singh inquired about variations in nut water yield within fruits of the same bunch. PI informed that such variations are common and are due to differential positioning of the fruits in a bunch. PI requested to remove the name of Dr. Soobedar Yadav as Co-PI.

Action Points: Dissemination of soap making technology to prospective entrepreneurs in collaboration with KVK, South Andaman. Explorations to be taken up in collaboration with ICAR-CPCRI, Kasaragod, whenever feasible. Works at Lakshadweep islands to be undertaken depending upon the budget availability for the same.

Remarks: The house approved the project to be continued and to remove the name of Dr. Soobedar Yadav as Co-PI.

23. Quality planting material production in horticultural crops.

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

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

Presented by: Dr. B. A Jerard

Interaction: PI informed that mother gardens of important commercial crops will be developed for which proposal would be submitted to National Horticulture Board for financial assistance. PI requested to remove the name of Dr. Soobedar Yadav as Co-PI.

Action Points: Exploring the option to run the project through revolving fund/external funds mode for better management.

Remarks: The house approved the project to be continued and to remove the name of Dr. Soobedar Yadav as Co-PI.

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

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

Period: 2018-2022, **Project Code:**HORTCIARISIL201800300189

Presented by: Dr. B.A. Jerard

Interaction: Dr. P.K. Singh asked if performance of amaranthus lines received from NBPGR, RS Thrissur was compared with the varieties developed by our Institute, to which PI replied affirmatively. Dr. S.K. Zamir Ahmed asked if any introduced bio fortified variety of sweet potato was resistant to sweet potato weevil. PI replied that no variety is available for its resistance; however, degree of tolerance varies. Dr. Pooja Bohra asked about the feasibility to grow the edible epiphytic fern species by the farmers to which the PI replied that wooden logs could be explored for its cultivation. PI requested to remove the names of Dr. Soobedar Yadav and Dr. B.L. Kashinath as Co-PIs.

Action Points: Seed production of identified lines and their evaluation in farmers' fields in collaboration with KVKs.

Remarks: The house approved the project to be continued and to remove the names of Dr. Soobedar Yadav and Dr. B.L. Kashinath as Co-PIs.

25. Development of production technology for ornamental crops in Bay Islands

PI: V. Baskaran,**Co-PIs**: K. Abirami and A. Velmurugan

Period: 2015-2019, **Project Code**: HORTCARISIL201100400140

Presented by: Dr. V. Baskaran

Interaction: PI informed that the objectives of project had been met and hence requested for closure of the project.

Action Points: It was suggested to include the major findings of all the experiments in numerical form in the RPP-III. Technologies developed under the project should be popularized along with KVKs and administration. Further, four or five well defined recommendations should be brought out and communicated to the line departments. Elite germplasm should be maintained. Entrepreneurship based dissemination and popularization for specialty flowers and acreage increased for commercial crops such as marigold.

Remarks: The house approved the project to be closed.

26. Exploiting endemic and promising orchids of Andaman and Nicobar Islands from crop improvements

PI: V. Baskaran, **Co-PIs:** B. A. Jerard, K. Abirami& K. Venkatesan

Period: 2018-2022 Project **Code:** HORTCIARISIL201800400190

Presented by: Dr. V. Baskaran

Interaction: PI expressed the lack of resources and difficulties to conduct crop improvement programmes in orchids. PI asked for early closure of the project and informed that a new project

will be submitted in the present IRC and remaining work on orchids would be carried out in that project.

Action Points: Chairman suggested exploring the uses of promising orchid species and popularizing those for income generation amongst the stakeholders.It was also suggested that that with available germplasm, crop improvement efforts could be initiated.

Remarks: IRC approved the early closure of project and merger of its remaining work in newly proposed project.

27. 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: Dr. I Jaisankar

Interaction: Dr. D. Bhattacharya asked the PI about purpose of determination of urease and phosphate dehydrogenase activity in soil. PI replied that it further studies are required to understand the mechanism of these enzymes. Dr. P.K. Singh asked about the surprisingly low pH values of soil samples.

Action Points: Chairman suggested bringing out recommendations for selected species to be used for different purposes by the island farmers. Further, documentation of existing usage of different multipurpose tree species being used by the island farmers was suggested to the PI. He further suggested the PI to strengthen the work on bamboo and inclusion of Dr. L. B. Singh as Co-PI. It was suggested to perform soil analysis at frequent intervals and to establish an experimental set up in farmer's field as well. Dr. Pooja Bohra suggested taking up canopy management activities in the multipurpose tree species used in the study.

Remarks: IRC approved the project to be continued and addition of Dr. L.B. Singh as Co-PI in the project.

28. Collection, conservation and evaluation of commercial fruits crops of Andaman & Nicobar Islands

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

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

Presented by: Dr. K Abirami

Interaction: Dr. P.K. Singh inquired if Thai guava germplasm was being maintained in the project. PI replied that a few collections have recently been planted. PI requested for deletion of the name of Dr. S. Swain as Co-PI.

Action Points : Chairman suggested to collect and evaluate the germplasm of acid lime and to receive IC numbers for dragon fruit collections as well as local collections of mango. One technical bulletin on dragon fruit to be brought out for benefit of stakeholders including line departments.

Remarks: The house approved the project to be continued and deletion of the name of Dr. S. Swain as Co-PI.

29. 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 and S.K. Zamir Ahmed

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

Presented by: Dr. Pooja Bohra

Interaction: Dr. Jai Sunder inquired about the range of unconventional exotic fruits maintained in the project. PI replied that it included mangosteen, rambutan, durian, strawberry guava, West Indian cherry, milk fruit *etc*.

Action Points: Process for registration of elite germplasm of *Garcinia* to be initiated.

Remarks: The house approved the project to be continued.

30. Development 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 and L.B. Singh

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

Presented by: Dr. Ajit Arun Waman

Interaction: Chairman inquired about the probable reason for better quality of Nicobar grown spices than that of Andaman grown spices. The PI replied that it could be due to microclimatic variations in growing conditions. PI requested to remove woody pepper from the project as a full-fledged project on woody pepper has been recently received from the DBT, New Delhi.

Action Points: It was suggested to check the feasibility of utilizing wild nutmeg species for product preparation. Pot culture studies in wild nutmeg species could be carried out in the next season.
Remarks: The house approved the project to be continued and removal of woody pepper from the project.

31. Exploration, characterization, micropropagation and agro-technique standardization of an important rhizomatous species-mango ginger from bay islands

PI: Ajit Arun Waman, **Co-PIs**: Pooja Bohra, I. Jaisankar and D. Basantia

Period: 2015-2020, **Project Code**: HORTCIARISIL201500600163

Presented by: Dr. AjitArun Waman

Interaction: Chairman asked about the utility of micropropagation protocol developed under the project. PI responded that the protocol was far more superior and robust than the earlier reported ones and would be very beneficial for researchers or companies working on the species. Dr. Jai Sunder inquired about the non-pharmaceutical uses of the species. PI replied that the rhizomes could be used for preparation of value added products (chutney, pickle *etc*.) and both leaves, rhizomes could be used for essential oil extraction for fragrance industries as they contained superior aroma molecules.PI informed that the objectives of the project has been fulfilled and requested for closure of the project.

Action Points: It was suggested to multiply the planting material of *Curcuma amada* and provide it to the farmers besides *C. mangga*, which is already multiplied in the project. An extension publication to be brought out on *C. amada*.

Remarks: The house approved the project to be closed.

32. Development of protocols for micro-propagation of selected fruit crops for Bay Islands

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

Period: 2015-2020, **Project Code**: HORTCIARISIL201500700164.

Presented by: Dr. Pooja Bohra

Interaction: Chairman asked if the technology for micropropagation of banana varieties Cheena Kela and Korangi were available now, to which the PI responded affirmatively.Dr. Jai Sunder asked about the production capacity of plant tissue culture laboratory of the Institute. PI replied that the laboratory was an R&D scale laboratory and was mandated for development of protocols for ecologically and economically important species. Developed protocols could be licensed to the interested stakeholders for commercial production. PI informed that the objectives of the project has been fulfilled and requested for closure of the project.

Action Points: Dr. S.K. Zamir Ahmed suggested publicizing the plant tissue culture laboratory facility for capacity building of island youth through print media. Chairman suggested submitting the technology details to ITMU of the Institute. He also suggested popularizing the Korangi banana through KVK whenever the hardened plants are ready. Dr. A. Velmurugan and Dr. Jai Sunder suggested taking up the work of developing ANI administration's plant tissue culture laboratory work in consultancy mode.

Remarks: The house approved the project to be closed.

33. Collection, characterization and evaluation of selected economically important aromatic crops in Andaman & Nicobar Islands

PI: Soobedar Yadav **Co-PIs**: K. Abirami, and R.K. Gautam

Period: 2017-2020, **Project Code**: HORTCIARISIL201701000183

Presented by: Dr. K. Abirami

Interaction: Dr. P.K. Singh inquired about the number of *Ocimum* species included in the evaluation.The presenter requested the project to be closed.

Action Points: An extension folder on lemon grass could be brought out.

Remarks: The house approved the project to be closed.

34. Augmenting productivity of turmeric and ginger through better genotype and suitable agro-technique in Island climate.

PI: Soobedar Yadav, **Co-PIs**: A.A. Waman, V. Damodaran, S Swain and K. Shathivel

Period: 2017-2020, **Project Code**: HORTCIARISIL201701100184

Presented by: Dr. V. Damodaran

Interaction: Dr. Ajit A. Waman pointed out the abnormally high values of essential oil in ginger reported under the study. Chairman inquired about the quantity of planting material available of the identified germplasm of ginger in the project. Dr. V. Damodaran replied that quantity was little and could be kept for multiplication in future. The presenter requested the project to be closed.

Action Points: Further testing of identified genotypes of ginger could be taken up in collaboration with KVK, South Andaman.

Remarks: The house approved the project to be closed.

<u>Field Crop Improvement & Protection Division</u>

35. Augmenting rice productivity through varietal purification of popular land races

PI: Dr.RK Gautam(up to December, 2019); Dr. PK Singh (from December, 2019)

Co-PIs: P.K. Singh, S.K. Zamir Ahmed, K. Sakthivel, S. Swain and Pooja Kapoor

Period :2012-2019**, Project Code :** HORTCARISIL201200100146

Presented by: Dr. P.K. Singh

Interaction: PI presented the salient achievements made under the project such as development of two rice varieties, CIARI Dhan 8 & 9; registration of open floret rice line at NBPGR; PPVFRA Genome Savior award for Karen community; registration of traditional rice varieties; the nutrient analysis of popular rice cultivars and CARI varieties; identification of two traditional lines one each in Kushbhuyya and Black Burma etc. Further, works on lines developed under DBT projects were carried out during the current period.

Action Points: The high Zn and Fe content of rice varieties identified are comparable with mainland ones to be promoted as "Bio-fortified rice varieties". PI requested to transfer the lines developed under DBT projects into the project entitled "Genetic improvement of rice for higher productivity in Andaman and Nicobar Islands conditions".

Remarks: The house approved the project to be closed and the lines developed under DBT projects will be carried out in the above said project handled by Dr. PK Singh.

36. Genetic improvement of rice for higher productivity in Andaman and Nicobar Islands.

PI: P.K. Singh, **Co-PIs:** R. K. Gautam, B. Gangaiah, S.K. Zamir Ahmed, K. Sakthivel, T. Bharathimeena and B. L. Meena

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

Presented by: Dr. P.K. Singh

Interaction: Deliberation was made by the PI on the work done during the period as a long duration, photosensitive, short grain, high yielding (5.5 to 6.0 t/ha) rice line developed; total of 345 Multi-parental Inbred lines of rice developed; YET trials of 4 improved elite rice lines conducted at 3 locations; One medium duration rice line ANR 58 identified with average yield of 5.48 t/ha.

Action Points: Grain quality parameters of identified lines should be evaluated. The house discussed about the bird damage and flash flood in Bloomsdale farm and The Chairman suggested the hanging of discarded CDs to be explored as birds scare. PI requested to include Dr. Venkatesan, K., Scientist as Co-PI.

Remarks: The house agreed to exclude Dr. R.K. Gautam, Dr. B. Gangaiah, Dr.K.Sakthivel, Dr. B.L. Meena and include Dr. K. Venkatesan as Co-Pi in the project. The house approved the project to continue.

37. Characterization of Viral diseases of Important Vegetable Crops of Andaman and Nicobar Islands and Development of Eco-friendly Integrated Disease Management (IDM) Modules.

PI: K. Sakthivel, **Co-PIs: R**.K. Gautam, P.K. Singh, K. Venkatesan, V.K. Pandey, V. Baskaran, T. Bharathimeena, Soobedar Yadav

Period : 2018-2021, **Project code :** HORTCIARISIL201800800194

Presented by: Dr. P.K. Singh

Interaction: Dr. P.K. Singh informed that since the PI of the project has been transferred and presently there is no expertise available in the institute to carry out the project activities, in view of this he proposes to close the project.

Action Points: Chairman suggested to keep this project in abeyance till the Scientist belonging to the Plant Pathology join the Institute. Till that time, Dr. V.K. Pandey/HoD, FCIP will maintain the cultures submitted to him by Dr. K Sakthivel.

Remarks: The house approved the project to be kept in abeyance as said above. House also agreed to exclude the names of all the Co-PIs who have been transferred .

38. Evaluation and popularization of native microbial formulations for plant disease management and growth promotion in Andaman and Nicobar Islands.

PI: K. Sakthivel (up to December, 2019); V.K. Pandey (from December, 2019)

Co. PIs: V.K. Pandey

Period :2019-2021 Project Code : HORTCIARISIL201900400209

Presented by: Dr. V.K. Pandey

Interaction: Dr. V.K. Pandey presented the achievements during the period as multiplication of Bio-consortia & Trichoderma and its evaluation at farmer's field. Dr. V.K. Pandey has requested to close the project due to constraints of manpower, space and cost involved in the proposed activities.

Action Points: Considering the request of Dr. V.K. Pandey, house agreed to keep the project in abeyance till the Scientist belonging to the Plant Pathology join the Institute. Till that time, Dr. VK Pandey/HoD, FCIP will maintain the cultures submitted to him by Dr. K Sathivel. The RPP-II has to be submitted by Dr. VK Pandey.

Remarks: The house approved the project to be kept in abeyance as said above.

39. Enhancing pulse productivity of Andaman & Nicobar Islands through development and promotion of high yielding and stress tolerant varieties.

PI: Venkatesan K, **Co-PIs:** R.K. Gautam, K. Sakthivel, P.K. Singh, B. Gangaiah, S.K. Zamir Ahmed and Joshitha Vijayan

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

Presented by: Dr. Venkatesan K

Interaction: PI presented the progress of the project during the period as evaluation & maintenance of pulses genotypes, crosses attempted between mung bean and urd bean with beachpea, training conducted, seed produced and distributed.

Action Points: The Chairman suggested to record the occurrence of pest and diseases even if it is under below economic loss. It was also suggested to explore the possibility to use the *Vigna marina* biomass as livestock fodder.

Remarks: The house approved the project to continue. House decided to exclude the names of Dr R.K. Gautam, Dr.K.Sakthivel, Dr.B.Gangaiah and Dr.Joshita Vijayan in view of the transfer.

40. Evaluation of rice genotypes for high phosphorus efficiency in Andaman and Nicobar Island conditions

PI: Joshitha Vijayan (upto August, 2020)

Co. PIs: R.K. Gautam, P.K. Singh, R. Rakesh B., Srividhya S., Kiran, K.R., B. Gangaiah

Period: 2019-2022 **Project Code:** HORTCIARISIL201900500210

Presented by: Dr. PK Singh

Interaction: Dr. PK Singh presented the achievements as the PI was transferd during the period as one preliminary experiment on evaluation of 10 rice lines under hydroponic condition was conducted, but it could not be continued due to yellowing of leaves of rice seedlings in early stage. Dr. PK Singh requested to close the project due to manpower and cost involved in the proposed activities of the project.

Action Points: Since little and insignificant work has been carried out during the period and the manpower & cost involved in the proposed activities of the project, The Chairman suggested to close the project.

Remarks: The house approved the project to be closed.

41. Development of high yielding and bacterial wilt resistant varieties of Tomato for Andaman and Nicobar Islands

PI: Rakesh B (upto July, 2020)

Co. PIs: K. Sakthivel, P.K. Singh, Joshitha Vijayan, V. Baskaran, and R.K. Gautam

Period: 2019-2022 **Project Code:** HORTCIARISIL201900600211

Presented by: Dr. Venkatesan K

Interaction: Dr. K Venkatesan presented the achievements during the period as collection of six isolates of *Ralstonia solanacearum* and cultured at lab. Dr. K Venkatesan has requested to close the project due to manpower and cost of chemicals etc., involved in the proposed activities of the project.

Action Points: Since little work has been carried out during the period, the PI & most of the Co-PIs got transferred and more manpower & cost involved in the proposed activities of the project, The Chairman suggested to close the project.

Remarks: The house approved the project to be closed.

42. Physiological dissection of submergence tolerance mechanisms under island ecosystem in rice.

PI: S Srividya (up to November, 2019)

Co. PIs: JoshithaVijayan, P.K. Singh, R.K. Gautam and D Vijayalaksmi

Period: 2019-2022 **Project Code :** HORTCIARISIL201900700212

Presented by : Dr. P.K.Singh

Remarks: The house approved the project to be closed (as per vide F. No. 4-4/PMEC/ IRC/ 2019/ Dated : 29.11.2019).

Natural Resource Management

43. Vulnerability assessment andadaptation led mitigation strategies of Andaman and Nicobar Islands farming to climate change

PI: B.Gangaiah,**Co. PIs:** T. Subramani, S. Swain, B.K. Nanda, V. Damodaran, M.S. Kundu and A. Velmurugan

Period: 2015–20 **Project Code:** HORTCIARISIL201500100158

Presented by: Dr. A. Velmurugan

Interaction: RPP-III was submitted by the PI (Dr. B. Gangaiah). Overview of the works done by PI was discussed by Dr. A. Velmurugan. It is discussed that no problem for Silica with the animal feed in A&N Islands as it is trace. It is also discussed that no standing water in water harvesting ponds made in Sippighat due to high infiltration losses. It was also informed that vulnerability and water status could not be done which is admitted in RPP-III.

Action Points: House suggested constituting a committee (HoD, NRM) for visiting the ponds at Sippighat and proposing suitable measures to make it use either for compost pits or any other purpose.

Remarks: The house approved the project to close.

44. Development of production technologies for high value vegetables is soil less culture

PI:T.Subramani ,**Co-PIs:**B. Gangaiah and V. Baskaran

Period:2017-2020, **Project Code:**HORTCIARISIL201700600179

Presented by: T. Subramani

Interaction:

- The varieties used for the study was meant for soil less cultivation or common popular varieties were used.
- Inclusion of CIARI released varieties in soil less cultivation and transfer soil less technology through OFT.
- Inclusion of capital investment cost for different soil less cultivation methods in final report.
- Different combinations of growing media for different crops and varieties may be studied in future.
- The Chairman suggested studying rock wool media for hydroponic, longevity or stability of organic media, and incidence of pests & diseases.
- Project is closed under institute fund. However, concerns and refinements could be taken under NABARD funded project.

Action Points: To popularize the soil less cultivation of high value vegetables under rain-shelter in farmers' fields, NABARD funded project was initiated this year.

Remarks: The house approved the project to close.

45. Organic farming studies for sustaining productivity of Island cropping system

PI: Kiran K. R.,**Co-PIs:** B. Gangaiah, A.Velmurugan and K. Sathivel

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

Presented by: Dr. Kiran K. R.

Interaction: PI requested the house to consider below proposed changes:

- Inclusion of T. Subramani and Sirisha Adamala as Co-PIs due to transfer of Dr. B. Gangaiah and Dr. K. Shakthivel.
- The poor establishment of pepper and clove intercrops in coconut farm due to cattle grazing and prolonged dry spell. PI requested the house to consider the change in cropping system from Coconut + Pepper + Clove to Coconut + Cinnamon.
- PI has revised the objective to "To assess the effect of organic management practices on improving soil quality in coconut based multitier cropping system" as proposed at Divisional level.

Activity: Initiation of CIARI vermi-composting unitfor waste recycling, mass multiplication of earthworms and composting.

Modified treatments:

- T_1: FYM on N equivalent basis + Substitution of P and K by Mineral P Sources
- T_2: FYM + Waste recycling on N equivalent basis + Substitution of P and K by Mineral P Sources

- T_3: FYM + Green Manure on N equivalent basis + Substitution of P and K by Mineral P Sources
- T_4: FYM + Waste recycling + GM on N equivalent basis + Substitution of P and K by Mineral P Sources
- T_5: Absolute control (No external manure application)
- (Recommended nutrient dose for coconut is: 500 g N, 320 g P_2O_5 and 1200 g K_2O per palm per year)
- Director suggested divisional level discussion for deciding quantification of FYM, treatments fixation and with specific green manure type. Land change of terracing is not recommended at present. On natural slope, recommend organic practices can be adapted. As a suggestion, Half moon bunds for pineapple and Gliricidia for fencing can be done. Soil physical properties before and after treatments should also be recorded and documented.
- Dr. S.K. Zamir Ahmed suggested including Pineapple as intercrop and changing CARI vermi-composting unit as CIARI. It was also suggested to include composition of NPK in FYM.
- Dr. A. Velmurugan informed that FYM is used as homogenization treatment for the first year. As Sesbania seed availability is limited, Dr. T. Subramani as Co-PI will help in raising Sesbania & seed production.

Action Points:

- House approved the changes in Co-PI, change of objective, and modification of treatments as proposed.
- House suggested continuing with the existing cropping system (Coconut + Pepper + Clove). Cinnamon plants can also be retained in the experiment. The Chairman suggested fencing the area to avoid cattle grazing.
- House appreciates for taking up CIARI vermi-composting unit activity and suggested to strengthen with external funding proposal.

Remarks: The house approved the project to continue.

46. Study of hydrological responses for augmenting water resources potential in micro-watershed **of South Andaman.**

PI: Sirisha Adamala, **Co-PIs:** B.Gangaiah, A.Velmurugan, B.K. Nanda and Tripti Dubey

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

Presented by: Dr. Sirisha Adamala

Interaction:

- PI requested the house to consider inclusion of Dr. Kiran Karthik Raj and Dr. V. Damodaran as Co-PIs due to transfer of Dr. B. Gangaiah and Dr. B.L. Meena.
- It is discussed that high infiltration rate in Sippighat soils restricting surface storage in ponds. Soil organic carbon (%) was less in forest soils due to loss of surface runoff water.

- PI informed that runoff plots installation at Nimbudera were not taken up due to lockdown, transfer of Co-PI (B.L. Meena) and other logistic issues. Director suggested to include Manoj Kumar as other Co-PI on completion of his study leave. However, HoD informed that validation of soil loss model will be done by verification data at Nimbudera with the qualitative assessment.

Action Points: House of approved the change of Co-PIs as per PI request.

Remarks: The house approved the project to continue.

Social Science Section

47. Indigenous adaptation strategies of tribal vis-vis non-tribal farmers and impact of CIARI technologies in mitigating clime change effects on agriculture in Andaman & Nicobar Islands.

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

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

Presented by : Dr. R. Jayakumaravaradan

Interaction:PI inforrmed that elderly farmers who have long experience in farming were purposefully selected to elucidate their perception about climate change. Replying ot the query, PI informed that inputs *viz*. fertilizer, pesticides and HYV seeds are crucial for adopting climate resilient varieties or crops. As the ANI Administration has banned chemical fertilizers and pesticides on the pretext of encouraging organic farming in the Islands, farmers have overwhelmingly felt it as a major constraint in adapting to climate change. Regarding the schedule of questionnaire it was informed that through a pre-structured schedule, the farmers were primed to express their own opinions which were later interpreted according to the provisions of the schedule. PI also added that survey has been done based on the issues of water shortage vis-avis impact on crop productivity.

Action Point : A compendium on climate change, its impact on Island agriculture and indigenous adaptation strategies with regard to agriculture, horticulture, animal husbandry, fisheries and NRM shall be brought out in coordination with all Divisions.

Remarks: The House approved the project to continue and drop Dr. A.Kundu and Dr. B.L. Kasinath who have been transferred.

48. Agricultural Information Sharing and Knowledge Generation Towards Sustainable Management of Island Ecosystem with Special Reference to Fishery by Developing Mobile Apps.

PI : D. Karunakaran , **Co. PI :** R. Kirubasankar

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

Presented by : D. Karunakaran

Interaction: During the interaction, PI informed that app will be launched in three months and be uploaded in ICAR website for stakeholders to download.

The scope of the project shall be expanded to develop more apps on different aspects of farm management *viz*. pest and disease identification. Accordingly, the title of the project may be reframed.

Reply of the PI: Accepted. The title of the project has been reframed as "Agricultural Information Sharing and Knowledge Generation Towards Sustainable Management of Island Ecosystem by Developing Mobile Apps"

Action Points:

- The app to be launched in 3 months.
- More apps to be developed to cover different aspects of farm management.
- Co-PI Dr.R. Kiruba Sankar put forth that validation of the app requires detailed field surveys at landing centres and meetings with stakeholders for which he requested to expand the project team with Scientists of Fisheries Science Division and Social Science Section.

Remarks: The House approved the project to continue with new title and suggested team of scientists from Fisheries Science Division and Social Science Section.

NEW PROJECTS

Animal Science Division

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

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

Period :2020- 2023 Project Code : To be given by PME cell

Presented by: Dr P Perumal

Interaction and suggestions: During the interaction following queries were raised:

- Is there any similar study carried out at mainland.
- The farming system in Nicobar is different, how the present study will justify the pigs reared on concentrate feed and pigs reared on totally natural conditions.
- It was suggested to keep option to collect samples from Nicobar also.
- It was suggested to explore the possibility to collect samples from the Andaman wild pigs available at Chidiyatapu zoo

Remarks: House approved the project with the modification as suggested.

Horticulture & Forestry Division

2. 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

Period : 2020- 2024 **Project Code : To be given by PME cell**

Presented by: Dr. V. Baskaran

Interaction: PI informed the house that the work on orchids to be conducted in prematurely closed project (Exploiting endemic and promising orchids of Andaman and Nicobar Islands for crop improvement) would be continued in this project. Dr. Jai Sunder asked if resources were available to take up the new project. PI replied that the project could be taken up with presently available resources.

Action Points: Chairman suggested mentioning the names of species/crops to be covered under different objectives. PI has suggested to include S.K. Zamir Ahmed and L.B. Singh as Co PIs in the project. Dr. S.K Zamir Ahmed suggested including the word 'conservation' in the project title.

Remarks: IRC approved the new project with modification as suggested and approved the inclusion of Dr. S.K.Zamir Ahmed and Dr L.B.Singh as Co-PIs.

Natural Resource Management

3. Management of moisture stress in vegetable cropping systems

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

Period: 2020-22 **Project Code:** To be given by PME cell

Presented by: Dr. T. Subramani

Interaction: Dr. A. Velmurugan explained that technology to extract the hydrogel from indigenous plants is to be studied by Dr. T.P. Swarnam. House suggested using extracted hydrogel or Pusa hydrogel for moisture conservation and nutrient absorption. House discussed about the experimental plot location: Garacharma, near ground or new Padak farm. House suggested including Chilli, CIARI Brinjal variety & Okra. The Chariman suggested using ICAR released crop varieties instead of private company hybrids. Dr. S.K. Zamir Ahmed suggested to include outcome of the project.

Action Points: Objectives to be modified and rewritten

Remarks: The house approved the project with the suggested modifications.

4. Study of carbon foot prints in major farming systems of A&N Islands for climate change adaptation

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

Period: 2020-23 **Project Code:** To be given by PME cell

Presented by: Dr. Kiran Karthik Raj

Interaction: Dr. A. Velmurugan explained carbon study at different carbon pool level using CHN analyzer and use of carbon isotopes to study the marine deposits and land use changes. Dr. T.P. Swarnam suggested using IAFSR model for estimating carbon foot prints at farm level in different farming systems. Dr. S.K. Zamir Ahmed suggested identifying major farming systems in Andaman & Nicobar Islands.

Action Points: Modification of objectives.

Remarks: The house approved the project with the suggested modifications.

5. Development of novel biostimulants for enhancing crop production under island agro-ecosystem

PI: T.P. Swarnam

Co. PIs: A. Velmurugan, I. Jaisankar, Kiran Karthik Raj and S. Swain

Period: 2020-23 **Project Code:** To be given by PME cell

Presented by: T.P. Swarnam

Interaction: Dr. Jai Sunder enquired about the recovery rate of Alginate on wet basis, fortification with other nutrient and pest & disease incidences. The Chariman suggested including observations on pests & diseases. It is enquired the potentiality of sea weed availability in Islands for up scaling. The Chariman suggested testing the byproduct of sea weed extract as weedicde as it contain high Na.

Action Points: The house approved the project with suggested modification

6. Valorization of organic wastes for abiotic stress management

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

Period: 2020-22 **Project Code:** To be given by PME cell

Presented by: Dr. A. Velmurugan

Interaction: Dr. P.K. Singh enquired the kind of abiotic stress that is going to be addressed. It is suggested to put "Salinity & Nutrient" stress instead of abiotic. Dr. Jai Sunder enquired difference between simple organic composting & valorized organic waste. Dr. A. Velmurugan explained in details of the advantages. Dr. S.K. Zamir Ahmed enquired target EC range for imposing stress. It is suggested to consider other crop along with Brinjal of CIARI variety. The

Chairman suggested to add one more Co-PI based on the need preferably with the collaboration partners from other institutes.

Action Points: The house approved the project with suggested modification

Social Science Section

7. 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 : 2020- **Project Code :** To be given by PME cell

Presented by: Dr. S.K. Zamir Ahmed

Interaction and suggestions: Dr. Jai Sunder suggested that North & Middle Andaman district shares the major proportion of farmers in the Islands, the project may be conducted there. PI replied that though the number of farmers in South Andaman district is proportionally lesser than that of North & Middle Andaman district, the study is more relevant to South Andaman due to its fast urbanization and flourishing agriculture market. The Chariman suggested to expand the study to cover whole of the Islands. PI replied that due to prevailing COVID-19 lockdown protocols and logistics inhibits access to N & M Andaman and Nicobar districts at present. Once the situation normalizes, other locales will be taken up for the study. Dr. A. Velmurugan suggested that the attitude of farmers needs to be validated with actual data.

Action Points: Based on the progress of the project, the study area may be expanded to other districts to come out with policy implication for whole of the Islands.

Remarks: The house approved the project with suggested modification

Technology presentation: 01 No.

1. Technology: Trimodel Therapy Module to Treat Humpsore in cattle

Presented by: Dr D. Bhattacharya
Team: Dr P. Perumal
Dr. S.K. Ravi
Dr. A.K. De
Dr. S. Mondal
Dr. L. B. Singh
Dr. S. K. Zamir Ahmed
Dr. B. A. Jerard
Dr. D. Bhattacharya

Salient points:

- Trimodel therapy module is very useful to treat humpsore
- It improved significantly the production and reproductive performances in milch cows
- It improved the antioxidant status of dairy cows
- Skin texture returned normal
- No recurrence since one year

IRC Comments: Prepare package of practices of the technology for control of hump sore. Dissemination of the technology to KVKs for its wider use in the field. House suggested to submit the technology to ICAR news as well as to ITMU also. House approved the technology developed by the Animal Science Division for further exploitation.

Interaction with KVK, South Andaman, Nicobar &North and Middle Andaman

Brief discussion on critical gap in transfer of technologies and the important researchable issues at farmer's field were discussed with representatives of all the KVKs. The following issues were highlighted by the KVKs

KVK, North & Middle Andaman

- Demand of early duration pulse variety
- Technology for off season vegetable cultivation (mainly rainy season)
- Demand of wilt resistant variety in solanaceous vegetables.
- Problems of leaf folder disease in paddy
- Mealy bug is not a big problem in North & Middle Andaman
- Demand of fish seeds
- House suggested preparing success stories on institute technologies and publishing in ICAR website/local newspapers.

KVK, South Andaman

- No problem of input supply
- Laxmi variety of tomato with approximately 85% wilt resistant may be evaluated
- Research is needed to see the effect of radish followed by tomato to reduce the incidence of wilt
- Demand of chicks/duckling
- Need to establish fodder bank

Overall, it was suggested KVKs should promote the varieties and technology developed by ICAR-CIARI to the farmer's field

Summary of the projects presented and discussed in IRC 2020

Division	Ongoing 2019– 20	Close	New institute funded project	In Hand 2020-2021
Hort. & Forestry	13	05	01	09
FCI&P	08	03	-	05
NRM	04	02	04	06
Animal Sci.	13	05	01	09
Fisheries Sci.	08	02	-	06
SSS	02	-	01	03
TOTAL	48	17	07	38

At the end, the member Secretary, IRC thanked the Chairman, IRC, expert members and all the scientists for their valuable suggestion, remarks and active participation.

The following officials attended:

1. Dr. B. A. Jerard, Director& Chairman, IRC
2. Dr. Debasis Bhattacharya, Pr. Scientist
3. Dr. S.K. Zamir Ahmed, Pr. Scientist & I/c SSS
4. Dr. P.K. Singh, Pr. Scientist&HoD I/c, FCI&P
5. Dr. A. Velmurugan, Pr. Scientist&HoD I/c NRM
6. Dr. R. Kirubasankar, Scientist &HoD I/c FSD
7. Dr. V. Baskaran, Pr. Scientist
8. Dr. T.P. Swarnam, Pr. Scientist
9. Dr. T. Sujatha, Sr. Scintist
10. Dr. K. Abirami, Sr. Scientist
11. Dr. I. Jaisankar, Sr. Scientist
12. Dr. T. Subramani, Sr. Scientist
13. Dr. Arun Kumar De, Scientist
14. Dr. K. Muniswamy, Scientist
15. Dr. Ajit Arun Waman, Scientist
16. Dr. Pooja Bohra, Scientist
17. Dr. K. Saravanan, Scientist
18. Mr. J. Praveenraj, Scientist
19. Dr. P. Perumal, Scientist
20. Dr. K. Venkatesan, Scientist
21. Dr. T. Bharathimeena, Scientist
22. Dr. R. Jaya Kumaravaradan, Scientist
23. Shri. D. Karunakaran, Scientist
24. Dr. Harsha Haridas, Scientist
25. Dr. Kiran K.R., Scientist
26. Ms. Deepitha, R.P., Scientist
27. Dr. Sirisha Adamala, Scientist
28. Dr. Gladston Y., Scientist
29. Mrs. Ajina S.M., Scientist
30. Mrs. Sreepriya Prakasan, Scientist

31. Dr. L. Brojendra Singh, I/c Head KVK, South Andaman
32. Dr. Debatrata Basantia, SMS, KVK, N & M Andaman
33. Dr. S. Murugesan
34. Mr. Benny Varghese
35. Dr. Jai Sunder, Pr. Scientist, Incharge, PME Cell & Member Secretary IRC 2019

(Jai Sunder)
Officer Incharge, PME Cell &
Member Secretary, IRC-2020

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Copy to : All concerned through e-mail for information and necessary action.
P.S. to Director for information to the Competent Authority.