

Narrative Report

The Annual International Research Colloquium between Ehime University (EU) and De La Salle University (DLSU) with the theme “Recent trends in biological control: Interdisciplinary approaches for vector-borne diseases and agricultural pest management.” was held on February 20, 2024 at the 2nd floor, Room 212 of General Research Building No. 2, Johoku campus, Ehime University. It was organized by the EU-DLSU International Collaborative Research Laboratory (ICRL) with the physical address in De La Salle University (DLSU), Laguna Campus and the Molecular Ecology and Health (MECOH) Laboratory of Ehime University. The symposium was sponsored by the Leading Academia in Marine and Environment Pollution Research (LaMer). It was attended by 21 participants, 3 and 18 from DLSU and EU, respectively (Figure 1). The participants were mainly from the MECOH laboratory members. There were three speakers from the De La Salle University (DLSU).



Figure 1. Participants of the Annual International Research Colloquium between Ehime University (EU) and De La Salle University (DLSU). February 20, 2024.

The symposium convened professors, researchers and graduate students of the two universities and to exchange research results from the research activities conducted at the ICRL and MECOH laboratories. The objective of the symposium was to present and discuss the current technological and interdisciplinary research advances from ecological, biochemical, molecular, and computational approaches to develop or improve biological control strategies. The three presentations covered biological control of viral, microbial, and insect pests in agriculture, natural resources, and urban environments. The symposium highlighted the importance of biological control as an environmentally sound and effective means for reducing or mitigating pests and pest effects through the use of biologically based technologies. The program of activities is shown in Appendix 1. Dr. Kozo Watanabe delivered the welcome remarks and officially opened the symposium (Figure 2).



Figure 2. Dr. Kozo Watanabe, CMES Professor, delivered the welcome remarks.

Below are the abstracts of the talk of the 3 speakers:

Speaker 1: Dr. Divina M. Amalin (Figure 3)

Title: Biological Control Approaches in the Management of Pests of Some High Value Crops in the Philippines

Abstract: The use of conventional pesticides often leads to toxic residues, pest resistance, evolving secondary pests, and pest resurgence just to name a few unwelcome outcomes. In the long term, they are not only dangerous to the environment but also hazardous to human health. Thus, there is a need for alternative pest solution through biologically-based approaches. A variety of solutions are available with advances in modern agriculture, such as: use of biological control agents, microbial pesticides, pest-behavior modifying

chemicals, genetic manipulation of pest populations, and plant immunization. These technologies play a crucial role in producing high quality of food and often generate more income for the farmers. This talk will highlight the on-going research on biologically based pest control system in the Philippines.



Figure 3. Dr. Divina Amalin, CENSER Director, DLSU presented the topic on the “Biological Control Approaches in the Management of Pests of Some High Value Crops in the Philippines”

Speaker 2: Mr. Kris Lord Santos (Figure 4)

Title: “Chemical Ecology and Biological Control: Applications in the Control of Insect Pests of Medical and Agricultural Importance”

Abstract: Biological control is an environmentally sound method that can be used to reduce reliance on harmful pesticides. Strategies for biological control involves consideration of the complex interactions among plants, insect pests and their natural enemies. In this aspect, chemical ecology plays an important role since these complex interactions are often mediated by chemical cues. In this lecture, the intersections between chemical ecology and biological control will be discussed. In addition, emerging technologies and approaches that involve application of chemical ecology-based principles on biological control programs of insect pests of medical and agricultural importance will be highlighted.

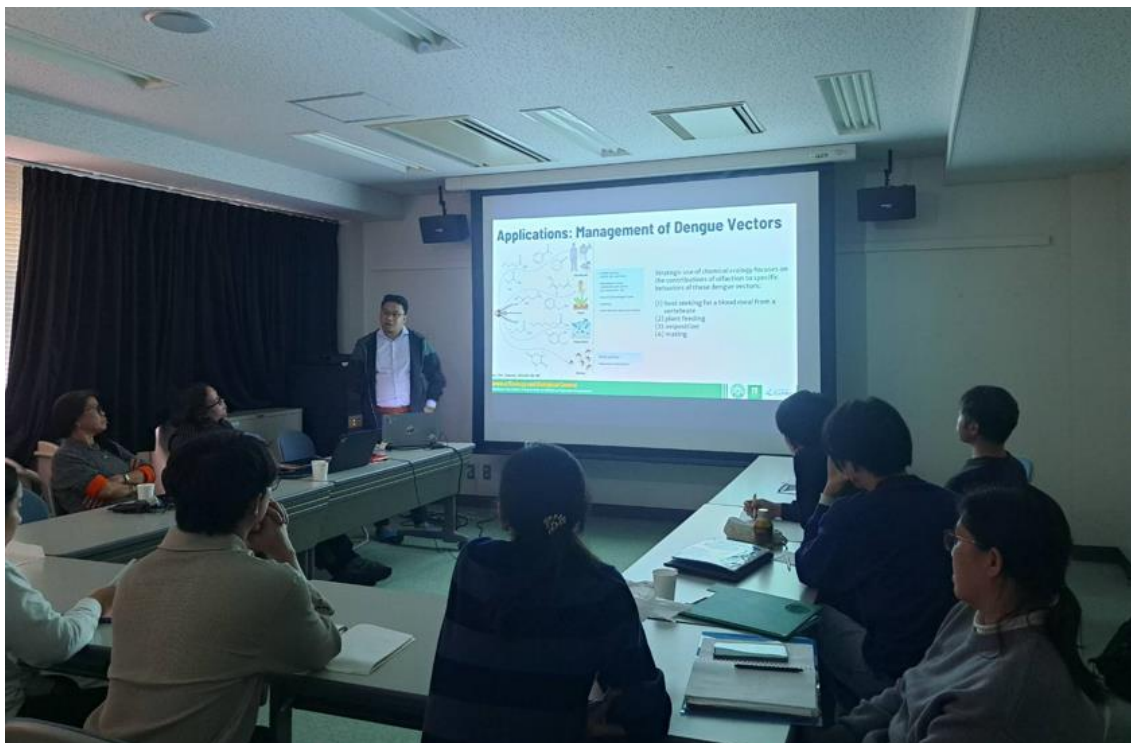


Figure 4. Mr. Kris Lord Santos, Senior Research Specialist, BCRU-DLSU, presented the topic “Chemical Ecology and Biological Control: Applications in the Control of Insect Pests of Medical and Agricultural Importance”

Speaker 3: Dr. Ana Karen Laserna (Figure 5)

Title: “Metabolomics as a tool in the assessment of biological control”

Abstract: Metabolomics involves the simultaneous and often comprehensive analysis of small molecules called metabolites, which are vital components of any organism. This analytical approach can provide novel and in-depth insights into the biological system under study. It can be used for various applications, such as in clinical, environmental, food and nutrition, and agricultural research. In this presentation, an overview of what metabolomics is and some applications in various research areas will be discussed. Studies involving the use of metabolomics in the profiling of biological agents, host-pathogen interaction, and development of herbivore resistance and susceptibility will also be presented.



Figure 5. Dr. Ana Karen Laserna, Academic Service Faculty, CIF-DLSU, presented the topic on “Metabolomics as a tool in the assessment of biological control”

Open Forum followed after the talks (Figure 6). The discussion was very engaging. Future research collaborations were identified by the participants between the DLSU and EU.



Figure 6. Open forum after the presentations of the three speakers.

APPENDIX 1

Annual International Research Colloquium between Ehime University (EU) and
De La Salle University (DLSU)

February 20, 2024

2nd floor, Room 212 of General Research Building No. 2,
Johoku campus, Ehime University

Time	Activity	
15:30	Opening Remarks	Kozo Watanabe Professor, CMES, Ehime University
15:40	Speaker 1	Divina Amalin Director, CENSER, DLSU
16:00	Speaker 2	Ana Karen Laserna Academic Service Faculty CIF, DLSU
16:40	Speaker 3	Kris Lord Santos Senior Research Specialist BCRU-CENSER, DLSU
17:00	Open Forum	