USM MIDYEAR

In-House Review

Theme:
Excellence in USM RDE towards societal impact

July 20, 2023

This serves as an invitation

rpso@usm.edu.ph www.usm.edu.ph/rde

2023

MIDYEAR IN-HOUSE REVIEW PROGRAM 2023

GENERAL SCHEDULE OF ACTIVITIES

July 20, 2023 (Thursday)

TI ME	ACTIVITY
7:30 AM – 8:30 AM	Registration
8:30 AM – 9:15 AM	Opening Program
9:30 AM – 12:00 PM	Presentations
12:00 PM – 1:00 PM	Lunch Break
1:00 PM – 4:10 PM	Presentations
4:10 PM – 4:20 PM	Break
4: 20 PM – 4:40 PM	Closing Program

Opening Program

Commercial Building
July 20, 2023
8:30 AM

Invocation	**Dr. Tamie C. Solpot** **Dr. Abubakar A. Murray**
National Anthem	**In-Video**
Cotabato Hymn	**In-Video**
Kabacan Hymn	**In-Video**
Welcome Remarks	**Dr. Ma. Teodora N. Cabasan** Vice President for RD&E
Message of the President	**Dr. Francisco Gil N. Garcia** SUC President IV
Rationale	**Prof. Lydia C. Pascual** Director, RDO
Presentation of Evaluators	**Dr. Mary Joy Cañolas** Director, Extension Services Office Over-all Coordinator, Midyear In-house Review

EMCEE : Maria Angelika T. Balungay

EVALUATORS

Session I

Basic Research

Engr. Willie Jones B. Saliling

Dr. Naomi G. Tangonan

Dr. Krizler C. Tanalgo

Session II

Applied Research

Dr. Edward A. Barlaan

Assoc. Prof. Bryan Lloyd P. Bretaña

Dr. Khris June L. Callano

Session III

Extension

Dr. Josephine L. Arbes

Dr. Ardniel A. Baladjay

Dr. Josephine R. Migalbin

Session IV

Social Research, Extension, Product Development

Dr. Astrofil Hyde M. Alcala

Dr. Romiel John P. Basan

Dr. Elizabeth C. Molina

Dr. Apple R. Ureta

MODERATORS

Session I

Basic Research

AM - Leanne Jay M. Tejero (CSM)
AM -Nor-ain M. Corpuz (CEIT)

PM -Marlene E. Ofrecio (ISPEAR)
PM -Norquez M. Mangindra (CED)

Session II

Applied Research

AM - Rene C. Cabahug, Jr. (CTI)
AM -Gary D. Lasaga (CVM)

PM - Florey Mae Pascua (CEIT)
PM -Samson L. Rapuza (CTI)

Session III

Extension

AM -Estella B. Barbosa (CASS)
AM -Rowell N. Nitafan (CASS)

PM -Saima M. Andil (IMEAS)
PM -Alina S. Arancel (CHS)

Session IV

Social Research and Extension & Product Development

AM -AP Warren P. Adamat (CVM)
AM -Saque J. Amilbahar (CEIT)

PM -Ellen Joy M. Farala (CED)
PM -Karizza Jane B. Pejaner (P-PALMA)

		BASIC	APPLIED	EXTENSION	SOCIAL RESEARCH AND EXTENSION + PRODUCT DEVELOPMENT
7:30 AM	**8:30 AM**	**Registration**			
8:30 AM	**9:15 AM**	**Opening Program**			
9:30 AM	9:40 AM	101 - (Futures Thinking) Innovative Growing of Corn Microgreens (Zea mays) as Potential New Food for Commercialization -Mark Al-Jamie J. Muttulani, Lorelyn Joy N. Turnos, & Leila S. Moscoso	201 - Program: Land management of rubber-based systems in Southern Philippines PROJECT 1. Effective Rubber-Based Cropping System in Southern Philippines - Rezin Cabantug	301 - Infograp NG Mga Impormasyon Hinggil SA Omicron Variant Para Maiwasan Ang Pagkalat NG COVID-19 at Ang Benipisyo NG Pagbabakuna: Isang Teknikal NA Pagsasalin -Radji A. Macatabon	401 - Examining Academic and Institutional Factors Influencing Licensure Performance of Selected Programs in the University of Southern Mindanao-Kharlo Subrio
9:40 AM	9:50 AM	102 - Propagation techniques in growing various herbs and spices and their bio-control efficacy against Ralstonia sp. And Phytophtora sp. -Lorelyn Joy Turnos-Milgarosa, Mark Al-Jamie J. Muttulani, & Tamie C. Solpot	202 - Program: Land management of rubber-based systems in Southern Philippines PROJECT 3. Developing Rapid and Affordable Soil Nutrient Test Fertilizer Formulation for Rubber Cropping System - Leandreux Ocasion	302 - Strengthening Mother-tongue based Education of Elementary Teachers in DepEd Cotabato/MBHTE BARMM through Instructional Materials Development and Validation - Philip Lester P. Benjamin & Sandra A. Nanding	402 - Financial Analysis of Income Generating Projects (IGP) of Public High Education Institutions (HEIS) in Region XII - Charisse Quiambao
9:50 AM	10:00 AM	103 [Futures Thinking] - Sustainable production of culinary ingredients using halal plant-based extracts as root promoter, nutrient booster and bio-fumigants - Mark Al-Jamie Muttulani, Lorelyn Joy Turnos-Milagrosa, Bernadith T. Borja, Sandra Joy P. Pahm	203 - Program: Land management of rubber-based systems in Southern Philippines PROJECT 4. Development of Cost and Effective Pest and Disease Management of Rubber and Intercrops - Joan P. Sadoral	303 - Adopt a Madrasah for Knowledge and Skills Development in Teaching Pedagogy of Azatidz in Barangay Aringay, Kabacan, Cotabato - Sofia G. Molao, Remedios C. Kulidtod, Norjaida D. Maliga, JIkiri M. Entol, & Abdulnasser G. Makalugi	403 - Compendium of Ethnoveterinary Therapies for Control of Internal Parasites in Livestock - Elizabeth C. Molina and Josephine Flores
10:00 AM	**10:20 AM**	**Open Forum**			
10:20 AM	10:30 AM	104 - Impact of Fertigation and Pre-Harvest Application of Biocon Agent on Dragon Fruit Production -Jasmin A. Pecho	204 - Utilization of Corn Sprouts as Fodder for Livestock Production - Mary Ann D. Rama, Efren Magulama, & Josephine R. Migalbin	304 - CASAMA-Comprehensive Assistance and Services Authentic and Meaningful Action-Phase 2: Utilization of Local Coconuts Fruits for VCO Production and VCO Enhance Soap - Cherie C. Mangaoang & Marivic D. Candari	404 - MOM (Mothers on Move) Towards Building Assets Through Innovation Development of Fish Products -Ivy Mar Cabornida

10:30 AM	10:40 AM	105 - Efficiency of Freshwater Fish Farming under Monoculture Oil Palm Plantation -Pia Amabelle M. Flores & Rezin Cabantug	205 - Lactic Acid Bacteria Serum Production for Silage Making -Josephine R. Migalbin, Bernadith Borja, & Neil Pep Dave Sumaya	305 - Integrated Services for Enhanced Education (I-SEE): Connectivity Resilience Project Amidst COVID-19 Pandemic - Janice M. Bangoy	405 - Gender in USM Extension Projects: Engagement , Oppoturnities and Entry Points -Marcos F. Monderin
10:40 AM	10:50 AM	106 - Yield Performance of 12 Promising Rubber Clones Using Different Tapping System -Sheena B. Lucena and Randy Tumacder	206 - Development of Herbal Mosquito Repellent from Leaves and Flowers of Marigold (Tagetes erecta) -Sedra A. Murray & Elma G. Sepelagio	306 - Development of Community-Based Tourism in Kabacan, Cotabato - Meldred F. Semblacena	406 - I-CARES: Islamic Relief's COVID19 Adaptation and Recovery through Economic and Social Protection and Support project - Esmaira Gunsayan
10:50 AM	**11:10 AM**	**Open Forum**			
11:10 AM	11:20 AM	107 - Multilocation Trial of Ten (10) Promising Varieties of Cacao in Type II and Agro-CLimatic Zone in Southern and Northern Mindanao - Ardniel A. Baladjay	207 - Accelerated R&D Program for Capacity Building of Research and Development Institutions and Industrial Competitivenes: NICHE centers in the regions for R&D (NICER) Program: Cacao R&D Center NICER Project 1 - Molecular Fingerprinting of Cacao Parental Recommended HYVs and True Criollo Ensuring Multiplication of Quality Planting Materials (QPMs) for Increased Profitability -Edward A. Barlaan	307 - Bionihan Para sa Kalikasan: Community Empowerment Towards Conservation - Florence Roy P. Salvaña, Cromwel M. Jumao-as, & Cherie C. Mangaoang	407 - Pagpalain Bangsamoro: Unveiling the history and Struggles of primary actors towards peaceful Bangsamoro government - Saima Andil
11:20 AM	11:30 AM	108 - Phenology, Yield and Fruit Quality of Different Pummelo Cultivars at USMARDC -Nancy E. Duque	208 - NICER Project 2 - Upgrading of the Cacao Gene Bank for Conservation and Management in Cacao Varietal Improvement - Gwen Iris D. Empleo	308 - CA-CARE: Capacity and Resiliency Enhancement for Agricultural Technologist of Cotabato Province - Noe S.Mamon, Jr. & Gelyn V. Amilbahar	408 - Development of Contextualized Instructional Materials in Teduray -Girlie D. Batapa, Ashley Coleen Ortiz, & Hazel Ann S. Soriano

11:30 AM	11:40 AM	109 - Francisco Gil N. Garcia University of Southern Mindanao Higher Education Research: Technological Advancements and Innovation Projects	209 - NICER Project 3 - Development of Optimized Post-Harvest Processing Approaches for Improved Quality of Cacao Beans -Renel M. Alucilja	309 - Farmers Field School (FFS): Technology Delivery System for Enhancing Skills on Swine Production and Artificial Insemination - AP Warren P. Adamat & Vrenelie II D. Flores	409 - Commercialization of Chevon Food Products and Standardization of Processing Center - Jalaloden Marohom
11:40 AM	**12:00 PM**	**Open Forum**			
12:00 PM	**1:00 PM**	**Lunch Break**			
1:00 PM	1:10 PM	110 - Efficiency of various physical exercise, dietary intakes - Moreno Java Jr.	210 - SMART Cacao Budwood Nursery and Greenhouse for Production of High-Quality Planting Materials - Edward A. Barlaan	310 - Gender Research and Capability Building in Extension Projects: Exploring Engagement, Opportunities and Entry Points -Glyn G. Magbanua	410 **[Extension]** - Transferring and Advancing Learning materials for Knowledge: Using of IECs for Archiving and Information Disseminating (TALK:AID) - Charlotte Adrea D. Tutor, Allan C. Facurib, & Janice M. Bangoy
1:10 PM	1:20 PM		211 - Development of Corn Hybrids and Synthetic with Tolerance to Herbicide - Jessie Elarde	311 - Livelihood Enhancement through Agricultural Products - Leo M. Gayao, Jane R. Desamito, Karizza Jane B. Pejaner, & Sambay P. Mla	411 **[Extension]** - Use of ICT in Facilitating Independent Learning and Teaching in the New Normal - Benedict D. Entera & Astrofil Hyde M. Alcala
1:20 PM	1:30 PM	112 - Carbon Stock Potential of Agroforests in Univeristy of Southern Mindanao (USM) and Arakan Valley Agricultural School (AVAS) -Florence Roy Salvaña	212 - (Futures Thinking) Cacao-Based Product Development and Innovation Using Cocoa Butter and Powder -Harem R Roca & Jane R. Desamito	312 - Knowledge and Skills Advancement for the Ambulant Food Vendors in Kabacan, Cotabato - Melchie G. Palapar, Maribelle T. Piamonte, & Shirl May M. Bebit	412 - Development of E-learning Modules for Certificate Courses in Halal Science -Jalaloden Marohom, Francisco Gil N. Garcia, Jurhamid C. Imlan and Josephine R. Migalbin
1:30 PM	**1:50 PM**	**Open Forum**			

1:50 PM	2:00 PM	113 - Sustainable Forage Production Systems for Ruminant Livestock at USMARDC - Mary Joy S. Cañolas, Ivy M. Pasquin, Lorelyn Joy T. Milagrosa, & Geoffray R. Atok	213 - Developing Land Management Options for Diverse Cacao-Based System in Mindanao -Mel Chrisel Sales	313 - Juan Food: Enabling 4Ps Beneficiaries Through Community Garden in Support for Household Food Security and Livelihood as Response to COVID-19 Pandemic -Mary Rodelyn A. Cariaga	413 - Statistical Tool Selector(Stat Select): A Mobile App for Faculty, Students and Researchers -Anna Jean S. Garcia, Honey Vincent Valle, Daryl Mae Mamon, Leonard Paleta, Jupiter Pilongco, Roel Valenton, Jeaneth Licaros, Jonald Pimentel, Philip Benjamin, Rowel Madio, Leorence Tandog, & Debbie Marie Verzosa
2:00 PM	2:10 PM	114 - (Futures Thinking) Herbicide-Based Application as Weed Management Intervention for Improved Productivity in Adlay - -Baser L. Mamalac	214 - Steady-State Hydraulic Numerical for Optimized Water Distribution Water Distribution Network Modelling: An Application of Selected Hydraulic Solver -Ma. Dely P. Esberto	314 - CAPE 2- Consultancy for Agricultural Productivity Enhancement Program - Francisco Gil N. Garcia, Edward A. Barlaan, & USM Experts	414 - Development of Arduino Microcontroller-based Lee's Disc Apparatus -Benedict Entera & Amancio II S. Manceras
2:10 PM	2:20 PM	115 -	215 - Optimization of Irrigation Flow Through Conduit Microhydropower to Generate Electricity for Off-grid Barangay of Kabacan, Cotabato -Marilyn S. Painagan, Tito Jun T. Tidula, Benhamin I. Mamalo, and Jonnah Mae A. Casalan	315 - PROJECT 6. Capability Building of Rubber Stakeholders and Role of Women and their Children Natural Rubber Industry in Agusan del Sur and North Cotabato -Mary Rodelyn A. Cariaga	415 - Design & Innovation of Fully Automatic Egg Incubator -Joel V. Misanes & Orlando Forro
2:20 PM	**2:40 PM**	**Open Forum**			
2:40 PM	2:50 PM	116 - BARMM in a Changing Environment (Biomonitoring and Assessment of the Relationship between Marsh and Man) - Meriam Manampan-Rubio, Renee Jane A. Ele, Bona Abigail H. Husain, and Krizler C. Tanalgo	216 - (Futures Thinking) Formulation and Optimization of Functional Cereal-Based Snack Foods -Maribelle T. Piamonte, Apple U. Revilla, Oscar Q. Magbanua, Ian Jade A. Flores, Ivy Mar B. Cabornida, Ma. Teodora N. Cabasan	316 - “Laro Mo, Sagot Ko” A Sports Management Skills Development Project - Cheeze R. Juanito	416- **[Extension]** Community-Based Development and Economic Mainstreaming (CBDEM) on Promotion of Halal Kagikit for Certification-Analyn A. Gonzales

2:50 PM	3:00 PM	117 - Spatial and Temporal Crop Diversification in Adlay-Based Cropping System for Land-Use Efficiency and Improved Crop Productivity and Sustainability -Nancy E. Duque, Baser L. Mamalac, Ana Rose Cunanan, & Efren E. Magulama	217 - University of Southern Mindanao-Treelife Coco Sugar Research and Development - Maria Elena M. Neyra-Tanabe	317 - Hakbang para sa Pagbabagong Lubos (HAPLOS) para PWUDS: A Community-Based Fitness and Livelihood Project - Moreno B Java, Jr., Marlene E. Orfrecio	417 - **[Extension]** Production, Processing and Positioning (3Ps) coco-based Products for Collaborative Barangay-Based Development and Economic Mainstreaming (3Ps CBDEM) - Jay-R G. Vildac, Lian D. Bagonoc, Jeannie U. Duka, Aileen Mitzi M. Alba, & Rodelyn A. Cariaga
3:00 PM	3:10 PM	118 - Establishment , Conservation and Utilization of Indigenous Tropical Fruit Crops at the University of Southern Mindanao -Nenita E. Olero	218 - (Futures Thinking) Development and Halal Verification of "Plant-Based Protein-Rich" Feed for Halal Grown Poultry Products -Jurhamid C. Imlan, Queennie L. Rufino, & Mary Ann B. Rama	318 - Kabataan Kontra Droga at Terrorismo (Kkdat): Sports Development Program-Moreno B. Java Jr.	418 - New Formulation of BAR and Liquid Soap From Selected Industrial Crops with Potential Anti-MIcrobial Activity -Abubakar A. Murray, Sedra Murray & Lorelyn Joy Turnos-Milagrosa
3:10 PM	**3:30 PM**	**Open Forum**			
3:30 PM	3:40 PM	119 - Screening of Potential Endophytes as Biocontrol Agent Against Major in Emerging Leaf Diseases of Rubber -Tamie C. Solpot, Ma. Teodora N. Cabasan & Bernadith T. Borja	219 - Fruit Quality Improvement in Carabao Mango through Quantitative Trait Loci (QTL) Identification for Scab and Stem-end Rot Resistance by Genotyping by Sequencing GBS and Genom-wide Association Studies (GWAS) - Edward Barlaan	319 - YES, through SSTAMP: Youth Engagement in Sports through Sustainable Sport Training and Management Program - Elpedio A. Arias, Moreno B. Java Jr., Vinus P. Java & Eduard S. Sumera	419 - Maguindanaon Delicacies: Packaging, Labeling, Marketing and Profitability Toward Commercialization - Roy Gacus
3:40 PM	3:50 PM	120 - Francisco Gil N. Garcia - University of Southern Mindanao Futures Thinking: Food and Health Security, Systems, Innovations and Sustainability	220 - Digital screening promotion of technologies (Pia Amabelle Flores)	320 - HOPE (Holistic Opportunities for Progress and Empowerment) for Student Mothers - Jacinta T. Pueyo, Altair R. Neri, & Vivekeh D. Bat-og	420 - Product Development and Innovation of Calamansi Infused Bevegraes for Refrehsing Blends USMARC - Sandra Joy Pahm
3:50 PM	**4:10 PM**	**Open Forum**			
4:10 PM	**4:20 PM**	**Break**			

4:20 PM	**4:40 PM**	**Closing Program**

9:30-9:40

101 – (Futures Thinking) Innovative Growing of Corn Microgreens (Zea mays) as Potential New Food for Commercialization

Mark Al-Jamie J. Muttulani & Lorelyn Joy Turnos

ABSTRACT. X

Keywords: X

9:40-9:50

102 – Propagation techniques in growing various herbs and spices and their bio-control efficacy against Ralstonia sp. And Phytopthora sp.

Lorelyn Joy Turnos-Milagrosa, Mark Al-Jamie J. Muttulani, & Tamie C. Solpot

ABSTRACT. X

Keywords: X

9:50-10:00

103 – (Futures Thingking) sustainable production of culinary ingredients using halal plant-based extracts as root promoter, nutrient booster and bio-fumigants

Mark Al-jamie Muttulani, Lorelyn Joy T. Milagrosa, Bernadith T. Borja, & Sandra Joy P. Pahm

ABSTRACT. X

Keywords: X

10:20-10:30

104 – Impact of fertigation and pre-harvest application of biocon agent on dragon fruit production

Jasmin A. Pecho

ABSTRACT. X

Keywords: X

10:30-10:40

105 – Efficiency of freshwater fish farming under monoculture oil palm plantation

Pia Amabelle M. Flores & Rezin G. Cabantug

ABSTRACT. X

***Keywords*:** X

10:40-10:50

106 – Yield performance of 12 promising rubber clones using different Tapping System

Sheena B. Lucena & Randy Tumacder

ABSTRACT. X

***Keywords*:** X

11:10-11:20

107 – Multilocation Trail of Ten (10) Promising Varieties of Cacao in Type II and Agro-Climatic Zone in Southern Mindanao and Northern Mindanao

Ardniel A. Baladjay

ABSTRACT. X

***Keywords*:** X

11:20-11:30

108 – Phenology, Yield and Fruit Quality of Different Pummelo Cultivars at USMARDC

Nancy E. Duque

ABSTRACT. XThe orchard with eight pummelo cultivars at the University of Southern Mindanao Agricultural Research Center (USMARC), USM, Kabacan, Cotabato was rehabilitated to determine their phenology, yield and fruit quality, and to propagate these cultivars for conservation and disposal. Pummelo trees are exiting at a distance of 6 x 7 m with nine trees per cultivar and was established in 2011. Most of the pummelo cultivars showed poor growth exhibiting yellow leaves and dry terminal twigs, They also did not produced flowers nor fruits. . The area was also weedy. To rehabilitate the pummelo trees, weeding, pruning, application of fertilizer and insect pests and disease management were done. Presently, the trees have started developing new flushes of leaves and growth is improving

***Keywords*:** cultivar, phenology, pummelo, tree, quality

11:30-11:40

109 – University of Southern Mindanao Higher Education Research: Technological Advancements and Innovation Projects

Francisco Gil N. Garcia

ABSTRACT. X

***Keywords*:** X

1:00-1:10

110 -

ABSTRACT. X

***Keywords*:** X

1:10-1:20

111 – Development and Consumer Acceptability of Mutton Based Food Products for emergencies

Jurhamid C. Imlan, Josephine R. Migalbin, Jalaloden B. Marohom, Queenie L. Rufino & Maricel G. Dayaday

ABSTRACT. X

***Keywords*:** X

1:20-1:30

112 – Carbon Stock Potential of Agroforests in University of Southern Mindanao (USM) and Arakan Valley Agricultural School (AVAS)

Florence Roy P. Salvaña

ABSTRACT. Carbon stock is the absolute quantity of carbon held within a pool at a specified time. This study generally aims to determine the carbon stock potential of agroforestry stands of two selected sites - USMARDC and AVAS, Cotabato, Philippines. Transect line method was employed which was divided in different sampling plots. Identification of trees, dbh, and tree height were gathered in each sampling plots. Aboveground biomass (AGB) values were calculated in each plot using established allometric equations. A total of 12 species of trees belonging to 5 families were identified. Among the identified species, 8 were native trees. Plot 1 had the highest AGB value while Plot 6 had the least value. Saplings and mother trees of native species were also observed during data gathering. These native trees include Diospyrus blancoi, Macaranga tanarius, Vitex parviflora, Dysoxylum gaudichaudianum, Ficus nota, Artocarpus camansi, Ficus ampelas, Artocarpus odoratissimus

***Keywords*:** trees, agroforest, climate change, native

1:50-2:00

113 – Sustainable Forage Production Systems for Ruminant Livestock at USMARDC

Mary Joy S. Cañolas, Ivy M. Pasquin, Lorelyn Joy T. Milagrosa & Geoffray R. Atok

ABSTRACT. X

***Keywords*:** X

2:00-2:15

114 – (Futures Thinking) Herbicide-Based Application as Weed Management Intervention for Improved Productivity in Adlay

Baser L. Mamalac

ABSTRACT. X

***Keywords*:** X

2:10-2:20

115 – Biodiversity Assessment in Key Areas for Wildlife and Nature Project (BAKAWAN Project): Assessment of Structural and Functional Biodiversity in Mangrove Ecosystem of Timaco Mangrove Swamp

Cherie C, Mangaoang & Florence Roy P. Salvaña

ABSTRACT. X

***Keywords*:** X

2:40-2:50

116 – BARMM in a changing environment (Biomonitoring and Assessment of the Relationship between Marsh and Man)

Meriam Manampan-Rubio, Renee Jane A. Ele, Bona Abigail H. Husain, & Krizler C. Tanalgo

ABSTRACT. X

***Keywords*:** X

2:50-3:00

117 – Spatial and Temporal Crop Diversification in Adlay-Based Cropping System for Land-use Efficiency and improved Crop Productivity and Sustainability

Nancy E. Duque, Baser L. Mamalac, Ana Rose Cunanan, & Efren E. Magulama

ABSTRACT. Adlay is an emerging and promising additional staple food crop as source of nutrients in the Philippines. However, just like in many cereal crops, its production system focuses more on monocropping and limited in diversification. Studies were conducted at the University of Southern Mindanao Agricultural Research Center (USMARC), USM, Kabacan, Cotabato to determine the crop diversification strategy in adlay-based cropping system, identify the appropriate adlay and legumes varietal combination and determine the land and economic efficiency of the cropping system. Adlay at 90 days after planting were significantly taller under solecropping than intercropping system. Adlay intercropped with peanut varieties, NSIC Pn12, NSIC Pn13, NSIC Pn16 and NSIC Pn22 had comparable heights. Height, shelling percentage and one hundred seed weight of peanut were significantly reduced by intercropping but the number of pods per plant and bean yield were unaffected. Meanwhile, adlay intercropped with different mungbean varieties were comparable in heights at 60 days after planting. However, these were significantly taller than those grown as solecrop. Mungbean grown as solecrop and as intercrop in adlay were similar in height, number of pods and one hundred seed weight. However, bean yield significantly varied. NSIC Mg17, NSIC Mg 19 and NSIC Mg 22 had higher yields than NSIC Mg21. Moreover, bean yields of mungbean in solecropping were higher than that grown under intercropping.

***Keywords*:** adlay, intercroppong, mungbean, peanut, solecropping

3:00-3:10

118 – Establishment, Conservation and Utilization of Indigenous Tropical Fruit Crops at the University of Southern Mindanao

Nenita E. Olero

ABSTRACT. X

***Keywords*:** X

3:30-3:40

119 – Screening of Potential Endophytes as Biocontrol Agent Against Major in Emerging Leaf Diseases of Rubber

Tamie C. Solpot, Ma. Teodora N. Cabasan & Bernadith T. Borja

ABSTRACT. Leaf diseases of rubber are considered as one of the major constraints in rubber production resulting in lower latex yield. Biological control has been suggested as the most sustainable long-term solution toward disease management. In this project, the occurrence and prevalence of major and emerging leaf diseases of rubber in North Cotabato were determined and the evaluation of effective endophytic fungi against rubber diseases were done. There were seven leaf diseases of rubber observed in five municipalities of North Cotabato, with six (6) already known such as Colletotrichum leaf spot (Colletotrichum gloeosporioides), Corynespora leaf fall/spot, Phytophthora leaf fall/blight, powdery mildew,

bird's eye-spot disease, and the algal spot disease. A new report of Colletotrichum siamense causing leaf spot disease was also described and confirmed. On the other hand, of the 321 endophytic fungi isolated from healthy rubber leaves, 18 were found non-pathogenic (both in wounded and unwounded) and exhibited promising results in in vitro assays and were thereby trialed out in vivo experimentation with protective and eradicative set-ups.

Keywords**:** rubber, endophytes, screening, biocontrol, leaf diseases

3:40-3:50

120 – University of Southern Mindanao Futures Thinking: Food and Health Security, Systems, Innovations and Sustainability

Francisco Gil N. Garcia

ABSTRACT. Futures thinking is a future-oriented mindset through a systematic method of exploring alternative futures. It enables people to be future-ready for possible scenarios and improves the quality of their decisions to be more strategic and far-sighted. However, there is a need to capacitate the manpower in various entities in the Philippines to practice and utilize the Futures Thinking ideas in different fields. There is a great need to create futures for long-term agricultural developments, innovations, and systems to ensure sustainable production, profitability, and food security. The objective of this program is to provide directions through Futures Thinking-based capacity building and collaborative initiatives for food security, systems, and innovations in USM and Region 12 state universities and colleges. This also included Research, Development and Innovations projects in Food Production, Security, Systems and Sustainability in Region 12 and USM.

Keywords**:** futures thinking, innovations, research, sustainable development goals

9:30-9:40

201 – Program: Land management of rubber-based systems in Southern Philippines PROJECT 1. Effective Rubber Based Cropping System in Southern Philippines

Rezin Cabantug

ABSTRACT. X

Keywords: X

10:15-10:25

202 – Program: Land Management of rubber-based systems in Southern Philippines PROJECT 3. Developing Rapid and Affordable Soil Nutrient Test Fertilizer Formulation for Rubber Cropping System

Leandreux Ocasion

ABSTRACT. X

Keywords: X

9:50-10:00

203 – Program: Land Management of rubber-based systems in Southern Philippines PROJECT 4. Development of Cost and Effective Pest and Disease Management of Rubber and Intercrops

Joan P. Sadoral

ABSTRACT. X

Keywords: X

10:20-10:30

204 – Utilization of Corn Sprouts as Fodder for Livestock Production

Mary Ann D. Rama, Efren Magulama, & Josephine R. Migalbin

ABSTRACT. X

Keywords: X

11:15-11:25

205 – Lactic Acid Bacteria Serum Production for Silage Making

Josephine R. Migalbin, Bernadith Borja, & Neil Pep Dave Sumaya

ABSTRACT. Lactic acid bacteria (LAB) inocula are essential in the preservation and fermentation of fodder crops due to their ability which successfully lower pH, prevent survival of undesired microorganisms, and regulate nutrient loss in fermented silage. This study aimed to maximize efficient culture media for LAB production, identify different LAB in various ratios of rice wash and milk, determine the population count of LAB cultured in various types of milk media, isolate and identify effective LAB for napier grass silage, mass produce identified LAB for napier grass silage production. The study was carried out with four treatments and five replications using Two Factorial Analysis of Variance. The treatments for the component 1 are the following: Distilled Water: Rice Ratio) 1:1 (50 gram rice, 50 ml distilled water), 2:1 (50 gram rice, 100 ml distilled water), 3:1 (50 gram rice, 150 ml distilled water), 4:1 (50 gram rice, 200 ml distilled water). Component 2: Treatment I- RW + Buffalo's Milk (Pasteurized),Treatment II- RW+ Buffalo's Milk (Non Pasteurized),Treatment III- RW+ Cow's Milk (Pasteurized),Treatment IV- RW+ Cow's Milk (Non Pasteurized) and Treatment V- RW+ Skim Milk. Component 3, Treatment I- Control (Without LAB), Treatment II - $7x10^{10}$ cfu/ton of napier grass , - Treatment III- $8x10^{10}$ cfu/ton of napier grass,- Treatment IV- $9x10^{10}$cfu/ton of napier grass,- Treatment V - $10x10^{10}$cfu/ton of napier grass and - Treatment VI- $11x10^{10}$cfu/ton of napier grass. Based on the initial result the optimum ratio of rice wash and water fermentation is 1:1. On the other hand, three colonies have been discovered and are, respectively, yellow, white, and brown which are subject for further microscopic examinations.

***Keywords*:** Lactic acid bacteria,silage, rice wash, milk

10:40-10:50

206 – Development of Herbal Mosquito Repellent from Leaves and Flowers of Marigold (*Tagetes erecta*)

Sedra A. Murray & Elma G. Sepelagio

ABSTRACT. X

***Keywords*:** X

11:10-11:20

207 – Accelerated R&D Program for Capacity building of Research and Development Institutions and Industrial Competitiveness: NICHE centers in the regions for R&D (NICER) Program: Cacao R&D Center NICER Project 1 – Molecular Fingerprinting of Cacao Parental Recommended HYVs and True Criollo Ensuring Multiplication of Quality Planting Materials (QPMs) for Increased Profitability

Edward A. Barlaan

ABSTRACT. The validated SSR markers for cacao are essential tools for identification of genuine varieties to guarantee planting of true-to-types to ensure increased productivity and profitability. The study aimed to identify and molecularly fingerprint parental sources of recommended cacao HYVs and true Criollo for multiplication of quality planting materials and to propagate and distribute the certified true-to-type cacao varieties as mother plant

sources or genetic stocks. Functional SSR markers were used to validate NSIC recommended varieties and differentiate true Criollo types from non-Criollo accessions. Fifty accredited nurseries across different regions in the Philippines agreed to collaborate with the project. DNAs of collected leaf samples were extracted, quantified and used for PCR amplification and gel electrophoresis. 189 claimed Criollo-types, 5 Forastero, and 6 Trinitario from various regions of the Philippines were molecularly analyzed using SSR markers. 115 claimed Criollo-types were partially evaluated at the morphological level based on the available descriptors. For NSIC cacao varieties, most varieties sold in the nurseries are BR25 and UF18. Out of 189 UF18 mother plants analyzed, 11.64% (22) were found out that are not authentic using C7729t1 marker while BR25 had 12.93% (19) out of 147 mother plants using C8223t1 marker. Different regions of the Philippines and other government agencies like the Department of Agriculture (DA), the Bureau of Plant Industry (BPI-NSQCS) and also other private companies requested to analyze their samples. Out of 292 samples sent, 12.33% (36), 10.62% (31) were authentic BR25 and UF18 respectively. Trained 25 BPI personnel on molecular training. 15 accredited nurseries were monitored from Region XII. Molecularly verified and BPI-certified cacao seedlings of UF18 and BR25 were propagated and distributed to different cacao nursery operators and farmers in Regions XI and XII. So far, a total 3,880 cacao quality planting materials were already distributed to 75 cacao nursery operators and private individuals.

***Keywords*:** Cacao, NSIC varieties, Criollo, SSR markers, quality planting materials

11:20-11:30

208 – NICER Project 2 – Upgrading of the Cacao Gene Bank for Conservation and Management in Cacao Varietal Improvement

Gwen Iris D. Empleo

ABSTRACT. The identification of Theobroma cacao L. clones that possess desirable traits for varietal improvement is essential to meet changing production and market conditions. This project addresses the problems on the relatively low yield and low bean quality in cacao, and the prevailing diseases and pests affecting cacao productivity. The main goal of this project is to carry out effective cacao breeding strategies for the development of cacao varieties with improved yield, bean quality; and resistance to diseases and pests. The project aims to rehabilitate the existing USM cacao gene bank; enhance the USM cacao gene bank through the introduction of additional cacao clones; evaluate the morphological and agronomic characteristics of the cacao clones for the development of the Philippine cacao catalogue; develop cacao hybrids with high yield, bean quality, or resistance to pests and diseases; and validate the F1 identity of the products of crosses using molecular approaches. To date, scions from 66 cacao clones were collected from the Davao, Bukidnon Province, and the Camiguin Island, and transplanted at the gene bank. Also, cacao clones from the International Cocoa Quarantine Center (ICQC) at the University of Reading in the UK were received, grafted and maintained at the nursery. A total of 72 fruit-bearing cacao clones were partially evaluated at the morphological level using the available descriptors for the development of the cacao catalogue. Seedlings from 21 F1 crosses and 4 three-way crosses developed from selected parents through hand-pollination are transplanted in the gene bank for evaluation.

***Keywords*:** Cacao, gene bank, introduction, hybridization, breeding

11:30-11:40

209 – NICER Project 3 – Development of Optimized Post-Harvest Processing Approaches for improved Quality of Cacao Beans

Renel M. Alucilja

ABSTRACT. Cacao bean quality significantly influences the market price of cacao-based products. Limitations such as inadequate knowledge and expertise in post-harvest processing technologies, unavailability of post-harvest processing facilities, and lack of access to market information and high-value markets must be addressed. This study aimed to develop optimized post-harvest processing approaches for improved quality of cacao beans. The design for the development and optimization of post-harvest machines was crafted. Fabrication and modifications of the machines and prior runs were done in preparation for the operational testing. Benchmarking surveys for the cacao pod storage, fermentation, drying, and dried bean storage were done in 17 different sites of Region XI, XII, and XIII to determine the common practices for innovation and optimization. Preliminary studies on fermentation and drying, and conducted a three-factor experiment on pod ripeness and storage, and wet bean draining were conducted and samples were submitted for analysis. The physico-chemical analysis determined the different nutrient content and chemical compositions of processed cacao beans. A total of 72 samples were collected and among the bean samples, fermentation of 5 to 9 days was slightly acidic in terms of pH and has a higher percentage value of titratable acidity (acetic acid content). Direct sun drying of 7 to 9 days and mechanized drying of cacao beans indicated a lower percentage of moisture and fat content. Meanwhile, the ash content of all the collected cacao beans lies on the typical value and has a higher percentage of carbohydrates. Region XII recorded higher protein content compared to samples collected in Region XI.

Keywords**:** cacao, benchmarking, optimization, physico-chemical, post-harvest

1:00-1:10

210 – SMART Cacao Budwood Nursery and Greenhouse for Production of High-Quality Planting Materials

Edward A. Barlaan

ABSTRACT. Cacao production is constrained by several factors including low yield, lack of quality planting materials, limited area of cacao production, lack of awareness and technical know-how on improved technologies, limited technical support, and lack of access to market information and high-value markets. The study generally aimed to establish smart cacao budwood nursery and greenhouse for authentic NSIC and Criollo varieties and other promising accessions as resources for quality planting materials (QPMs), genetic improvement, development, and application of improved cacao-based agricultural systems. Specifically, it aims to assess at genomic level the purity of the putative true Criollo cacao types for production of QPMs; determine the percentage of Criollo incorporated in NSIC varieties at genomic level for cacao varietal improvement on bean quality; develop and evaluate smart and precision agriculture technologies in budwood nursery and greenhouse for data acquisition, analysis, and monitoring; and develop mass production, distribution, and

monitoring systems of cacao quality planting materials for sustainable utilization. Putative Criollo types were identified through phylogenetic analysis using SSR markers specific for Criollo. Samples with 80%-100% coefficient were selected for genome sequencing. Leaf samples of 26 putative Criollo were collected for DNA extraction. Scions of 26 putative Criollo were grafted for the establishment of smart cacao budwood nursery. The land area for the smart cacao greenhouse and budwood nursery had a total dimension of 100 m x 110 m. Land preparation and field layout were conducted in preparation for the establishment of the smart cacao greenhouse and budwood nursery. Banana plantlets were planted as partial shading for the cacao seedlings. Mowing and herbicide applications were done for field maintenance. Post-qualification and evaluation for the design, delivery and installation of greenhouse and drip irrigation system are underway. Soil bagger system was already awarded and machine prototyping is ongoing. The development and application of smart or precision agriculture in the budwood nursery and greenhouse are employed for the improvement and modernization of cacao-based farming and agricultural systems for increased productivity and profitability.

Keywords**:** cacao, budwood nursery, Criollo, greenhouse, smart agriculture

1:10-1:20

211 – Development of Corn Hybrids and Synthetic with Tolerance to Herbicide

Jessie Elarde

ABSTRACT. X

Keywords**:** X

1:20-1:30

212 – (Futures Thinking) Cacao-Based product Development and Innovation Using Butter and Powder

Harem R. Roca & Jane R. Desamito

ABSTRACT. X

Keywords**:** X

1:50-2:00

213 – Developing Land Management Options for Diverse Cacao-Based System in Mindanao

Mel Chrisel Sales

ABSTRACT. XCacao production in Mindanao is faced with several challenges to include decline soil productivity, and the impact of climate change which resulted to production supply gap and quality issues. Hence, this project was implemented to provide scientifically-based mitigation approach through small-holder cacao farmers empowerment in addressing

climate change derived impacts and arising market challenges by providing them with the appropriate cacao farming technologies and capacity to satisfactorily harnessing available local resources towards quality and safe cacao production. The project specifically aims to determine effective, regenerative and climate resilient soil management options for safe and sustainable cacao-based cropping system in Davao City and North Cotabato and showcase the advantages of the different soil management technologies to cacao farmers and other players of the industry. To determine the effective, regenerative and climate resilient soil management options for safe and sustainable cacao-based cropping systems, two field experiments were established located in Site 1 - Brgy. Sirib, Calinan District Davao City and Site 2 - USM, Kabacan North Cotabato. In Site 1, the field experiment was conducted in RCBD with 7 treatments (farmer's practice, OF, Lime, mulching + OF, ½ RR + OF, RR) whilst Split Plot Design with 2 mainplots (cropping systems) and 5 subplots (Control, RR, Lime, OF, OF + Lime) were employed in Site 2. Baseline report was developed for the experimental sites and data gathering and analysis is continuously done. Mentoring activities with the cacao cooperators were also conducted in Davao City (Site 1) and North Cotabato (Site 2). There were 17 cacao cooperators selected and mentored in Site 1 and 15 in Site 2. Four topics were delivered in Site 1, whilst 2 topics in Site 2. Topics delivered in Site 1 were as follows: a) Importance of Research and Data Recording in Cacao Production Management; b) Climate Change Effects and Mitigation; c) Cacao Characteristics and Requirement; and d) Composting and Sustainable Agriculture. While, topics delivered in Site 2 were: a) Importance of Research and Data Recording in Cacao Production Management; b) Climate Change Effects and Mitigation. Benchmarking of the major cacao producing areas in Mindanao was also conducted as an initial activity to showcase the advantages of the different soil management technologies to cacao farmers and other players of the industry. KII with cacao cooperative leaders, processors and cacao farmers and soil and leaf sampling were done in the areas of Region XI (Davao City, Davao del Norte and Davao Oriental), XII (Libungan, Magpet, Pigcawayan, and President Roxas), and XIII (Hinatuan, Surigao del Sur).

***Keywords*:** Soil Management, Climate Resilient, Field Experiment, Mentoring

2:00-2:10

214 – Steady-State Hydraulic Numerical for Optimized Water Distribution Water Distribution Network Modelling: An Application of Selected Hydraulic Solver

Ma. Dely P. Esberto, Christopher A. Benito & Zherwin R. Descallar

ABSTRACT. Control valves are used to mitigate problems on the hydraulic integrity of a water distribution system. System failure occurs when there is a high pressures within the network that can damage the pipes, cause leakages and unsatisfactory water supply. However, there is no fixed procedure as to how these valves should be placed within the network, thus, several hybrid hydraulic solvers were developed to save time and effort in balancing the water system. The output of which would be the best optimized network where the valve placement seem to give the best option addressing the issues mentioned earlier. The reliability of these solvers were verified using manual calculations or comparing the results with other solver predictions. Very few studies considered validating the performance and reliability of the hydraulic solver to real life water system. This study aimed to provide a comprehensive hydraulic analysis using the steady-state hydraulic numerical solver applied to an existing network to improve the water system services to the community in Ganatan, Arakan Cotabato. Specifically, this study aims to determine the best optimized WDN model

using the selected steady-state hydraulic numerical solver; develop the automated pressure monitoring device (APMD) for remote data observation and develop a computer program in GUI format for the steady-state hydraulic Numerical Solver. The study is consist of three (3) main components namely; selection of best optimized WDB model; development of pressure automated monitoring device; and development of a Graphic User Interface Platform for the Steady-State hydraulic Numerical Solver. In this study, it is expected that the predictions provided by the numerical solver will be similar to the actual readings obtained from the pressure logs via remote monitoring. Consequently, the hydraulic anomalies of the existing water system will be corrected using the best optimized model that can be produced by the hydraulic solver simulations.

Keywords**:** X

2:10-2:10

215 – Optimization of Irrigation Flow Through Conduit Microhydropower to Generate Electricity for Off-grid Barangay of Kabacan, Cotabato

Marilyn S. Painagan, Tito Jun T. Tidula, Benhamin I. Mamalo, & Jonnah Mae A. Casalan

ABSTRACT. This project intends to set-up a locally fabricated micro hydropower system that will generate 15- 20 kW of electricity, can be transported in limited accessibility areas and can be installed on low head and low discharge concrete channels. This micro-hydropower system aims to electrify the households along an off-grid area of sitio Silangan, brgy. Pisan, Kabacan, Cotabato. The micro-hydropower was designed using low-cost materials and was fabricated locally, the outer diameter and length of the screw runner is 36 cm and 100 cm, respectively. The distance between pitch is 7 cm and the blade clearance from the housing is 2 cm. The height of the inlet is 16 cm and the angle of inclination is 9 degrees. The prevailing velocity of the flowing water is 0.591 m/s and water depth is 23 cm. These parameters produced an average turbine RPM of 160. Several parameters that are crucial in the design are still undergoing several iterations in order to achieve the desired RPM. This project also aims to promote opportunities with energy resources for farmers' utilization and livelihood (POWERFUL extension), wherein beneficiaries are being trained in manufacturing and marketing a low-cost micro-hydropower turbine.

Keywords**:** Archimedes screw turbine, low-cost materials, micro-hydropower, off-grid, water velocity

2:40-2:50

216 – (Futures Thinking) Formulation and Optimization of Functional Cereal-Based Snack Foods

Maribelle T. Piamonte, Apple U. Revilla, Oscar Q. Magbanua, Ian Jade A. Flores, Ivy Mar B. Cabornida,

ABSTRACT. The prevalence of disease caused by eating unhealthy food and inactive lifestyle affects not only adults but younger generation as well. Nowadays, consumers are concerned on their food choices as it affects their health and wellness. Thus, this study aims to develop a functional cereal-based snack foods employing enhanced processing

technologies. The development was conducted in three stages: screening of suitable functional ingredients, formulation & optimization and quality evaluation. For cereal-based nutri-drink, identified suitable functional ingredients were the following: Cereals (rice, corn, adlai, soy bean) salt, vanilla, cocoa powder; for the cereal-vegetable based patty, screened ingredients includes the following: Corn Patty, corn kernel, black beans, breadcrumbs, onion, garlic, cumin powder, paprika powder, salt, pepper and vegetable oil and for Rice Patty, white rice, breadcrumbs, parmesan cheese, onion, garlic, salt, black pepper, and vegetable oil for cereal based snack foods, several trial runs were done for the development of cornicks using USM white corn Var 6 and Var 10. Although optimization of the product is still ongoing, initial sensory assessment of the product as described by the panel was "like moderately" (?)

Keywords**:** Corn, Rice, Adlai, Soy bean, Healthy snack foods.

2:50-3:00

217 – University of Southern Mindanao-Treelife Coco Sugar Research and Development

Maria Elena M. Neyra-Tanabe

ABSTRACT. X

Keywords**:** X

3:00-3:10

218 – (Futures Thinking) Development and Halal Verification of "Plant-Based Protein-Rich" Feed for Halal Grown Poultry Products

Jurhamid C. Imlan, Quennie L. Rufino, & Mary Ann B. Rama

ABSTRACT. Halal industry plays an important role, especially for Muslims. In choosing animal-based halal food products, a Muslim should be concerned not only about the sources of the animals and the slaughtering process, but also the way the animals were raised and fed. The study aims to develop and verify the formulation of Halal feeds based on protein-rich plants for the production of Halal-grown poultry products. The research focuses on three main components: In Component 1, the nutritive value of potential protein-rich plants grown in Mindanao is determined, including dry matter, ash, crude protein, crude fiber, crude fat, calcium, and phosphorus. This characterization will establish a list of suitable protein-rich plants for the formulation of Halal feeds. Component 2 involves formulating Halal feeds for broiler chickens using protein-rich plants. The nutritive value of the formulated Halal feeds is evaluated, and Halal verification of the plant-based feeds will be conducted. In Component 3, the growth performance and carcass quality of Halal-grown broiler chickens fed with the formulated Halal plant-based feeds is determined. The study evaluates the quality of the poultry meat in terms of moisture, protein, fat, ash, fiber, cooking yield, pH, color, and water holding capacity. The team conducted a review of different raw materials for Halal feeds, characterized the feeds' raw materials, analyzed their nutritive value and essential amino acid profile, formulated Halal feeds based on evaluated protein-rich plants and conducted proximate analysis. Apparently, the project compiled a list of locally available protein-rich

plant sources for Halal feeds and developed Halal plant-based feeds. The research contributes to ensuring the production of Halal-certified poultry products and improving the quality of poultry meat in a Halal environment. Additionally, the study aims to establish partnerships and linkages for future collaboration in the field of Halal feed development and Halal verification.

***Keywords*:** Halal feeds, Poultry products, Protein-rich plants, Halal industry, Halal verification

3:30-3:40

219 – Fruit Quaility Improvement in Cabarao Mango though Quantitative Trait Loci (QTL) Identification for Scab and Stem-end Rot Resistance by Genotyping by Sequencing GBS and Genom-wide Association Studies (GWAS)

Edward A. Barlaan

ABSTRACT. Mango (Mangifera indica) is one of the economically important fruit crops for local consumption and export. However, mango production in the Philippines is constrained by post-harvest diseases affecting fruit quality and yield. These diseases include stem-end rot (SER) caused by Lasiodiplodia theobromae and scab caused by Elsinoë mangiferae. There is a need to identify sources of resistance to these pathogens from various mango strains, cultivars and varieties to improve the Philippine mango for resistance to SER and scab. The study aimed to isolate and molecularly identify the causal pathogens and develop molecular markers associated with scab and SER resistance in mango using genotyping-by-sequencing (GBS) and genome wide association studies (GWAS) for utility in marker-assisted selection/breeding. Besides carabao mango and other mango cultivars were used as potential sources of resistance to SER and scab. One hundred eight mango fruits were inoculated with causal pathogens of stem-end rot disease and assessed based on the degree of infection. Results revealed that Huani and Irwin were identified as resistant to stem-end rot disease. For scab, attempts were made to determine the causal pathogen associated with scab through isolation and inoculation of putative fungal pathogens. The grafted mango seedlings were used for evaluation of resistance against scab disease through the spraying method, leaf and fruit patching method, mycelial plug, and combination of all putative isolates. However, no typical symptoms of scab were observed in all studies. Alternatively, evaluation of scab disease reactions on sixty-eight other mango cultivars was done under natural field conditions. Results revealed that Malalag Bar Accession was identified as resistant to scab. For GBS and GWAS analysis, genomic DNAs of 73 other mango cultivars were extracted and quantified and submitted for GBS library construction and bioinformatics analysis utilizing the service of DArT Company.

***Keywords*:** Mango; Genotyping-by-sequencing (GBS); Genome Wide Association Studies (GWAS); Stem-end rot; Scab disease

3:40-3:50

220 – Digital screening promotion of technologies

Pia Amabelle Flores

ABSTRACT. One of the recent challenges of startups in the rural setting nowadays is the promotion of its products to a wider range of target market. Lack of promotion may impede a crucial progress of the product that could have benefited from the significant promotion in the region.With this, a substantial collaboration between DOST- 12 and USM ATBI can be mediated for screening viable and science-and-technology (S&T) based products in the region that has potential for business incubation.The project, D-SPOT, is an innovative intervention in promoting local products. Most importantly, D-SPOT supports mobilization of innovative ecosystem which in the long run paves way for regional development. Within the first quarter of its implementation, D-SPOT has conducted exploratory meetings with important key players of promoting local products in the region. This was crucial in establishing potential partnerships in the future. D-SPOT also conducted preliminary survey to assess the prospect of digital marketing in the region from respondents across the five provinces. In the present, D-SPOT has launched digital promotions of local products through social media platforms. The project is expected to complete the following objectives within the remaining quarter: (1) Identify local products that have potential for digital promotion and technology business incubation, (2) Evaluate the influence of digital marketing platforms on consumer preference of the region; (3) Enhance promotion of local products and startups in the region through digital marketing; and, (4) Intensify linkages and networking of products in Region 12.

***Keywords*:** Digital promotion, local products, digitalization, social media platform, regional development

9:30-9:40

301 – Infograp ng mga impormasyon hinggil sa omicron variant para maiwasan ang pagkalat ng COVID-19 at ang benepisyo ng pagbabakuna: Isang Teknikal na Pagsasalin

Radji A. Macatabon

ABSTRACT. X

Keywords: X

9:40-9:50

302 – Strengthening Mother-tongue based Education of Elementary Teachers in DepEd Cotabato/MBHTE BARMM though Instructional Materials Development and Validation

Philip Lester Benjamin & Sandra A. Nanding

ABSTRACT. This extension project aims to strengthen mother-tongue based education in the DepEd Cotabato Division by focusing on instructional materials development and capacity building for elementary teachers. The project is motivated by several key considerations, including the promotion of linguistic and cultural diversity, improvement of student learning outcomes, and addressing the specific needs of students. By using the mother-tongue as the medium of instruction in the early years of education, the project aims to preserve and promote the linguistic and cultural heritage of students in the DepEd Cotabato Division. Research indicates that students who learn in their mother-tongue achieve better academic outcomes, and therefore, this project seeks to enhance student learning outcomes by providing tailored instructional materials that align with their linguistic and cultural background. Additionally, the project aims to build the capacity of teachers to effectively teach in the students' mother-tongue. To achieve its objectives, the project will develop high-quality instructional materials specifically for elementary mathematics. These materials will be designed to engage and educate students effectively. The developed materials will then undergo validation through data analysis and feedback from teachers, students, and parents. This validation process ensures that the materials are aligned with the curriculum and meet the needs of the students. Ultimately, this extension project strives to enhance mother-tongue based education in the DepEd Cotabato Division by providing customized instructional materials and improving the capacity of teachers. By doing so, the project aims to improve student learning outcomes and promote linguistic and cultural diversity in the region.

Keywords: Mother-tongue based education, instructional materials development, elementary teachers, DepEd Cotabato Division, instructional materials validation

9:50-10:00

303– Adopt a Madrasah for Knowledge and Skills Development in Teaching Pedagogy of Azatidz in Barangay Aringay, Kabacan, Cotabato

Sofia G. Molao, Remedios C. Kulidtod, Norjaida D. Maliga, Jikiri M. Entol & Abdulnasser G. Makalugi

ABSTRACT. This extension project entitled: Adopt a Madrasah for Knowledge and Skills Development in Teaching Pedagogy of Azatidz In Barangay Aringay, Kabacan, Cotabato were conducted with the following objectives: Generally, this study aimed to Knowledge: to develop full potential on the Pedagogical knowledge and skills of the azatidz. Skills: to show their learning through hands-on and output-based activities, and actual teaching demonstration. Attitude: to accept the importance of learning pedagogical knowledge and skills for self-improvement as a teacher, to motivate their learners and improve the quality of learning in the madrasah. Specifically, it aimed to: 1. adopt a Madrasah; 2. capacitate azatidz and administrators of Madrasah in terms of Lesson Planning, Instructional Materials making and pedagogical skills development; and 3. actual teaching demonstration for azatidz. There were five (5) components in this extension project: 1. Lesson Planning, 2. Instructional Materials, 3. Teaching Strategies and Classroom Management, 4. Student Learning Assessment Methods, and 5. Curriculum Development. The project leader made a letter to conduct project addressed to the Moder/Principal of Madrasahtul Laguinding Al-Islamie and to the Barangay Captain of Aringay. A conduct of Training Needs Assessment was followed. The IMEAS Extensionist made a training design based on the results of training needs assessment as well as prepared and signed a Memorandum of Agreement (MOA) between IMEAS-USM, the Madrasah, and Barangay Local Government of Aringay. Courtesy Call and Inception Meeting was done to the beneficiaries. Pre-Evaluation (Topical) was conducted to measure the prior knowledge of the participants. There were fourteen (14) participants/beneficiaries in this extension project. The Workshop on Lesson Planning for Azatidz (Component 1) leader and members made a PowerPoint presentation about Lesson Planning. Aside from English Language, the leader and members used Tagalog and Arabic Languages. Hands-on activities was done during the conduct of workshop.

Keywords: Azatidz, Madrasah, Pedagogy, Teaching, Skills development

10:20-10:30

304 – CASAMA-Comprehensive Assistance and Services Authentic and Meaningful Action-Phase 2: Utilization of Local Coconuts Fruits for VCO Production and VCO Enhace Soap

Cherie C. Mangaoang & Marivic D. Candari

ABSTRACT. Virgin coconut oil (VCO) is the newest high-value coconut product which has gained much attention lately due to its human nutraceutical benefits and as a functional food. The growing demand for VCO can be attributed to an increasing number of published books and results of medical research concerning the health benefits of coconut oil to humans. One of the agricultural products that the Municipality of Columbio is well-known for is coconut, however, the price in the market is unpredictable. Having an alternative product for coconut might help farmers to maximize their coconut produce. It is therefore the aim of this study to teach the Columbio small coconut farmers to process their coconut produce into virgin coconut oil to improve their livelihood and at the same time promote its health benefits. During the pre-implementation phase, a series of activities were conducted such as coordination meetings with partner agency, profiling of the target participants, conducting need assessment, and inception meeting. A total of 25 women members were trained in

Financial Planning and Management and facilitated by the faculty of the Mathematics and Statistics Department. Forty-five percent (45%) of the target participants were 41-60 years of age, with an income of 1000-10,000 per month, and dominated by Ilocanos.

Keywords**:** community empowerment, quality of life, high-value product

10:30-10:40

305 - Integrated Services for Enhanced Education (I-SEE): Connectivity Resilience Project Amidst COVID-19 Pandemic

Janice M. Bangoy

ABSTRACT. X

Keywords**:** X

10:40-10:50

306 – Development of Community-Based Tourism in Kabacan, Cotabato

Meldred F. Semblacena

ABSTRACT. X

Keywords**:** vX

11:10-11:20

307 - Bionihan Para sa Kalikasan: Community Empowerment Towards Conservation

Florence Roy P. Salvaña, Cromwel M. Jumao-as, & Cherie C. Mangaoang

ABSTRACT. An ordinance protecting and conserving bats and other wildlife species was crafted and approved in the Municipality of Kabacan. This ordinance includes fines and penalties of individuals who will be caught harvesting wildlife species. It is therefore the aim of this proposal to enhance Bantay Kalikasan members on proper monitoring and reporting of the current status of wildlife in their respective areas. Pre-implementation activities was done including meetings with stakeholders, inception meeting, participant profiling and needs assessment in Brgy. Cuyapon, Kabacan, Cotabato. Needs assessment revealed that participants were able to identify few wildlife species in Ligawasa Marsh. However, identification techniques were purely on the recognition level which need to be enhanced through capability building.

Keywords**:** biodiversity, conservation, locals, community based management, capacity building

11:20-11:30

308 – CA-CARE: Capacity and Resiliency Enhancement for Agricultural Technologist of Cotabato Province

Noe S.Mamon, Jr. & Gelyn V. Amilbahar

ABSTRACT. Adopted current technologies and CA pool of experts will help capacitate the Agricultural Technologists of the LGU within Cotabato Province. The college can offer the following technical services, eg. pests and disease diagnosis, crop suitability and nutrient management, crop pre and post-harvest processing, entomological audit for stored product and structural pests, livestock and poultry production and management through consultancy and provisions of sustainable recommendations and advisories. Training needs assessment lays the essential foundation for determining clientele's actual and real needs and how they can benefit from the training. This was done through online survey among identified AT's. To further verify and provide more in depth assessment on the actual needs of MAO-Antipas, its head of office was interviewed as key informant (KI). The result of conducted training needs assessment among agricultural technologists in DA-Antipas recommends the conduct of capacity enhancement training on the Entomological Audit for Stored Product and Structural Pests and Crop Suitability Assessment (GIS). However, the Top 1 among other training needs being supplemented by the respondents and the pipeline need of the municipal agriculturist office was the vegetable seed production, gene banking and seed storage operations thus this training will be prioritized. Training on Seed Collection, Keeping, Conservation, and Dispersal will be conducted to the target beneficiaries. In addition, lecture series about Neglected and Underutilized Vegetable Species will also be delivered. The aforesaid training will be conducted at the Antipas' Demo Farm and will be facilitated by selected faculty members of CA-USM.

***Keywords*:** Capacity, enhancement, seed, vegetable, gene-banking

11:30-11:40

309 - Farmers Field School (FFS): Technology Delivery System for Enhancing Skills on Swine Production and Artificial Insemination

AP Warren P. Adamat & Vrenelie II D. Flores

ABSTRACT. This project utilizes a technology delivery system designed to improve farmers' abilities in artificial insemination and swine production. The system provides easy access to information and training materials by fusing digital technologies, educational resources, and hands-on training. To enable productive learning experiences, it combines interactive learning modules, assessment exercises, field training, and actual teaching opportunities. To guarantee comprehensive learning and skill growth, the system also includes on-site training sessions and progress monitoring. The technology delivery system helps the swine business and large ruminant farmers remain viable and profitable by providing them with the knowledge and abilities they need.

***Keywords*:** Swine production, Artificial insemination, Large ruminants, Livestock, Animal raisers

1:00-1:10

310 – Gender Research and Capability Building in Extension Projects: Exploring Engagement, Opportunities and Entry Points

Glyn G. Magbanua

ABSTRACT. x

Keywords: x

1:10-1:20

311 – Livelihood Enhancement through Agricultural Products

Leo M. Gayao, Jane R. Desamito, Karizza Jane B. Pejaner, & Sambay P. Mla

ABSTRACT. The first and second quarters of the project Livelihood Enhancement through Agricultural Products (LEAP) at Barangay Sinapangan, Libungan, Cotabato was spent for the pre-implementation phase. The project aims to improve the income and competitiveness of mothers and out-of-school youth in the community. Before conducting the needs assessment, a meeting with the barangay captain to discuss possible project activities and identify community needs was conducted. Livelihood needs were assessed after using a methodology based on community participation and a standard questionnaire. Findings from the needs assessment revealed that farming is the main source of income for all participants, with corn being the primary crop grown. The participants faced various challenges such as rat infestation, extreme weather conditions, lack of farming knowledge, high input costs, inadequate farm-to-market roads, and retail business monopolies. Participants expressed the need for goats, vegetable gardens, marketing strategies, and product development. Additional training and support were also identified as needs, including online marketing and the establishment of a cooperative marketplace in the community. Coordination meetings, MOA signing, beneficiary profiling, and community organizing were also part of the pre-implementation activities. However, MOA is still in the process stage. The development of Information, Education, and Communication (IEC) materials was made using Bisaya and English.

Keywords: Agricultural products, farming, livelihood, mothers, out-of-school youth

1:20-1:30

312 - Knowledge and Skills Advancement for the Ambulant Food Vendors in Kabacan, Cotabato

Melchie G. Palapar, Maribelle T. Piamonte, & Shirl May M. Bebit

ABSTRACT. Organizing and profiling, Coordination Meeting, Preliminary Assessment and Inception Meeting were the methods used in the pre-implementation of the KASA Project for Ambulant Food Vendors in Poblacion Kabacan while Lecture, Discussion, and Demonstration were used during the implementation of the Project. There were 31 target beneficiaries have been reached based in the most recent sessions. Most of the Ambulant Food Vendors came from the Población, Kabacan, female, married, Ilocano, and affiliated in Christian religion. They were mostly college graduate, having 6-7 members in the family,

never attended any relevant trainings and dependent in street food vending activity as their main source of income. Ambulant Food vendors' knowledge was analyzed to have a "less knowledgeable" in general. Establishes a Support of Housekeeping Advancement, Food Trends, Safety & Food and Beverage Services (shafts & fabs) training for ambulant food vendors through lecture and Discussion was realized on May 01, 2023. Particularly, Ian Jade A. Flores delivered the topics in Food Safety and Security, food hygiene, food safety, codex Alimentarius, food borne and poisoning, food hazard, RA 10611, FBOs, Rules and Social Responsibilities, prohibited Acts, penalties and Sanctions for unlawful Acts in One and a half hour. Prof. JMJSON C. Bautista conducted and delivered Food and Beverage Services while Prof. Shirl Mae M. Bebit conducted and delivered topics on 7S under Housekeeping Services of Ambulant Food Vendors on same date. Proper service, dish out, handling trays, welcoming the guest and bidding goodbye as well as the Housekeeping Services specifically 7 S were completely delivered in 3 hours allotted time. Prof. JMJSON C. Bautista and Prof. SM Bebit Highlighted the System, Safety, Service, Style and Skills (5s) Demonstration for Ambulant food vendors on food and beverage, and housekeeping Services on the same.

Keywords: Ambulant Food Vendors, Knowledge, Skills, Advancement, Itinerant, Semi Static, Ambulant Vending

1:50-2:00

313 – Juan Food: Enabling 4Ps Beneficiaries Through Community Garden in Support for Household Food Security and Livelihood as Response to COVID-19 Pandemic

Mary Rodelyn A. Cariaga

ABSTRACT. x

Keywords: x

2:00-2:10

314 – CAPE 2- Consultancy for Agricultural Productivity Enhancement Program

Francisco Gil N. Garcia, Edward A. Barlaan, & USM Experts

ABSTRACT. x

Keywords: x

2:10-2:20

315 – PROJECT 6. Capability Building of Rubber Stakeholders and Role of Women and their Children Natural Rubber Industry in Agusan del Sur and North Cotabato

Mary Rodelyn A. Cariaga

ABSTRACT. x

***Keywords*:** x

2:40-2:50

316 – "Laro Mo, Sagot Ko" A Sports Management Skills Development Project

Cheeze R. Juanito

ABSTRACT. x

Keywords: x

2:50-3:00

317 - Hakbang para sa Pagbabagong Lubos (HAPLOS) para PWUDS: A Community Based Fitness and Livelihood Project

Moreno B Java, Jr., Marlene E. Orfrecio

ABSTRACT. x

***Keywords*:** x

3:00-3:10

318 - Kabataan Kontra Droga at Terrorismo (Kkdat): Sports Development Program

Moreno B. Java Jr.

ABSTRACT. x

***Keywords*: x**

3:20-3:40

319 - YES, through SSTAMP: Youth Engagement in Sports through Sustainable Sport Training and Management Program

Elpedio A. Arias, Moreno B. Java Jr., Vinus P. Java & Eduard S. Sumera
ABSTRACT. x

***Keywords*: x**

3:40-3:50

320 - HOPE (Holistic Opportunities for Progress and Empowerment) for Student Mothers

Jacinta T. Pueyo, Altair R. Neri, & Vivekeh D. Bat-og

ABSTRACT. xThe narrative report shows the rationale and the objectives of the project which are to increase knowledge, assist student mothers, either single or married, and other girls with practical and strategic skills and knowledge system needed to cope with their conditions as parents and students. More so, this also presents the methodology used to implement Project HOPE to the student-mothers enrolled at USM PALMA, and the accomplishment done, to wit: Consultation and Dialogue, Needs Assessment and Establishment of Student Mothers Organization, Inception Meeting, Child/Student Mothers' Minding Space, Database for Student-Mothers, and Gender Sensitivity Training. In the needs assessment, it is found that 23 % of the student-mothers needed training on Gender and Development, followed by 20% of the student-mothers who wanted training on Safe Space Law, while 13 % of the student-mothers chose Cookery and Pastry Baking as the IGP they want to undergo. Moreover, it is shown the problems met and recommendation to avoid such problems of happening again.

***Keywords*:** student-mothers, minding space, teenage pregnancy

9:30-9:40

401 – Examining Academic and Institutional Factors Influencing Licensure Performance of Selected Programs in the University of Southern Mindanao

Kharlo Subrio

ABSTRACT. X

Keywords: X

9:40-9:50

402 – Financial Analysis of Income Generating Projects (IGP) of Public High Education Institutions (HEIS) in Region XII

Charisse Quiambao

ABSTRACT. X

Keywords: X

9:50-10:00

403 – Compendium of Ethnoveterinary Therapies for Control of Internal Parasites in Livestock

Elizabeth C. Molina and Josephine Flores

ABSTRACT. Ethnoveterinary therapies are alternative remedies against internal parasitism in livestock. Production of a compendium on ethnoveterinary therapies for the control of internal parasites in livestock is being undertaken by the College of Veterinary Medicine from January 2023 to present. Secondary data from various studies conducted in the college on ethnoveterinary products that were tested against coccidia, helminths and trematodes of livestock were gathered, compiled and encoded. Initial lay-outing and editing of the compendium were done. A total of 23 ethnoveterinary preparations such as leaf, flower, fruit, stem and whole plant extracts, leaf powder extracts, crude extracts and oil extracts were included in the compendium. Moreover, capsulated and molasses-mineral-salt block dosage forms were contained in the compendium. Further, the dosage regimens of the ethnoveterinary products with anticoccidial, anthelmintic and antitrematodal effects in livestock were indicated in the compendium.

Keywords: anticoccidial, anthelmintic, antitrematodal, ethnoveterinary preparations, livestock

10:20-10:30

404 – MOM (Mothers on Move) Towards Building Assets Through Innovation Development of Fish Products

Ivy Mar Cabornida

ABSTRACT. The fish processing industry holds considerable potential for development through employment, income generation and nutrition from direct consumption as fish provides valuable animal protein requirement. Thus, the study aims to capacitate mothers through training on freshwater fish product development innovation strategies that would hopefully stimulate change to enhance productivity. The study has generally 3 phases: assessment of the fish processing and culinary experience by the mothers; development of quality processed fish products and fish dishes and finally to introduce to the mothers through training-workshop the developed fish products and fish dishes as "basket of options" for potential adaptation. Value-added fish products had also been developed. Among the these, fish balls, fish siomai, fish lumpia and fish nuggets were "like extremely" by the evaluators while fish chorizo and frozen marinated fish had "like very much" acceptability ratings. Moreover, the fish tocino and fish crackling needs more improvement as it only got a "like moderately" acceptability rating. These fish products developed were vacuum-packed and frozen for storability testing.

***Keywords*:** fresh water fishes/mothers/innovation/processing technology/fish products and dishes

10:30-10:40

405 - Gender in USM Extension Projects: Engagement , Oppoturnities and Entry Points

Marcos F. Monderin

ABSTRACT. Until recently, the idea of integrating research and extension activities into a single project has remained largely unexplored at the University of Southern Mindanao. Although there have been efforts to connect the two disciplines together, these two have remained separate and distinct. Thus, the need to establish a common understanding, expectations and language among research and extension activities paved the way to this proposal of integrating gender research into the extension initiatives of the institution. This project aims to assess the extent of engagement of beneficiaries in extension projects at the university and to deliver gender-sensitivity trainings to beneficiaries. Data will be gathered through Focus Group Discussions (FGD) and Key Informant Interviews (KII) To date, the proponents are in the process of crafting the questionnaire and interview schedule, which will be used to gather the data. Moreover, Information, Education and Communication (IEC) materials are likewise being prepared for utilization during the trainings.

***Keywords*:** Gender, narratives, capability building, engagement, gender sensitivity

10:40-10:50

406 – I-CARES: Islamic Relief's COVID19 Adaptation and Recovery through Economic and Social Protection and Support project

Esmaira Gunsayan

ABSTRACT. X

***Keywords*:** vX

11:10-11:20

407 - Pagpalain Bangsamoro: Unveiling the history and Struggles of primary actors towards peaceful Bangsamoro governmen

Saima Andil

ABSTRACT. Due to the unforeseen problems encountered by the researchers, the conduct of research interviews with the target participants is still ongoing from July 12-14, 2023 in Cotabato City, BARMM. Therefore, there are no data will be discussed in this narrative report but the researchers will assure that there will be a processed data during the presentation of this year's midyear in-house review.

***Keywords*:** Bangsamoro, Government, History, Peace, Primary actors

11:20-11:30

408 – Development of Contextualized Instructional Materials in Teduray

Girlie D. Batapa, Ashley Coleen Ortiz, & Hazel Ann S. Soriano

ABSTRACT. x

***Keywords*: x**

11:30-11:40

409 - Commercialization of Chevon Food Products and Standardization of Processing Center

Jalaloden Marohom

ABSTRACT. x

***Keywords*: x**

1:00-1:10

410 – Transferring and Advancing Learning materials for Knowledge: Using of IECs for Archiving and Information Disseminating (TALK:AID)

Charlotte Adrea D. Tutor, Allan C. Facurib, & Janice M. Bangoy

ABSTRACT. x

***Keywords*:** x

1:10-1:20

411 – Use of ICT in Facilitating Independent Learning and Teaching in the New Normal

Benedict D. Entera & Astrofil Hyde M. Alcala

ABSTRACT. In the "new" normal, education was forced to digitize and technologize. Therefore, many institutions are making greater use of technology, especially ICT, in the learning and teaching of students. To help teachers and parents in utilizing technology in teaching students, this extension program aims to capacitate teachers and parents on the use of information and communications technology to facilitate teaching and learning. Training considered for teachers and parents include utilizing educational mobile apps, how to build a simple mobile learning app, creating multimedia content and presentation, and using ICT tools to store and retrieve learning and teachings materials.

Keywords: ICT, New Normal, Teaching/Learning, ICTECKS, Mobile app

1:20-1:30

412 - Development of E-learning Modules for Certificate Courses in Halal Science

Jalaloden Marohom, Francisco Gil N. Garcia, Jurhamid C. Imlan and Josephine R. Migalbin

ABSTRACT. The proposed project aims to develop electronic learning modules for a certificate course in the halal science curriculum. The objectives include assessing the learning modules, developing e-learning modules, and creating a Virtual Learning Environment on Halal Science (VLE-HS) for the accessibility of these modules. The project follows a methodology that involves module assessment, the development of e-learning modules, the capacity building of module developers, and the development of the VLE-HS. The project proponents have completed the intended activities by seeking alternative means and holding meetings to review and plan future activities. The project commenced with a meeting to discuss and review the modules for the Halal Science Curriculum, followed by a seminar-workshop to enhance learning materials and prepare for the conversion of modules into electronic format. The modules underwent evaluation, and improvements were made based on feedback. The next planned activities include external evaluation, submission of storyboard layouts, and the digitalization of modules to make them available online. Animation will be incorporated into the e-learning modules, and the content will be presented in an animated format. The project aims to enhance understanding and education in halal studies, meet the demand for qualified personnel in the halal industry, and provide wider access to the halal science curriculum through e-learning. The Virtual Learning Environment on Halal Science (VLE-HS) will be developed with the invitation of an IT expert. The e-learning modules will be uploaded, and developers should ensure the appropriateness and friendliness of the system for use. This may ease the need for clients to join the certificate course without worrying about travel. It can cater to clients online and on-site. The uploaded e-learning modules in the completed online portal will be pre-tested before full implementation.

Keywords: Halal Science Curriculum, Electronic Learning Module, Certificate Course, Halal Studies. Halal education

1:50-2:00

413 – Statistical Tool Selector(Stat Select): A Mobile App for Faculty, Students and Researchers

Anna Jean S. Garcia, Honey Vincent Valle, Daryl Mae Mamon, Leonard Paleta, Jupiter Pilongco, Roel Valenton, Jeaneth Licaros, Jonald Pimentel, Philip Benjamin, Rowel Madio, Leorence Tandog, & Debbie Marie Verzosa

ABSTRACT. Selection of statistical method is crucial, and it depends on different situations such as the objectives of the research study, types of data, and the assumptions of statistical methodology. This research project will create a free mobile app that is readily available for the students and researchers of the university to help them select the appropriate statistical method for their study and data analysis. During the first two quarters, the researchers read literatures, brainstormed, discussed the commonly used statistical techniques in undergraduate and graduate student theses. Based on this information, the researchers created a comprehensive framework that organized the most commonly used statistical techniques as well as some more advanced statistical tools into a coherent framework that will be input in the app. The team has also started working on the app prototype. During the next two quarters, the app together with tutorial materials will be developed and finalized, and training of selected USM faculty will be conducted.

Keywords: Statistical Techniques, Descriptive Statistics, Test of Difference, Test of Relationship, Hypothesis Testing, Sample Determination

2:00-2:10

414 – Development of Arduino Microcontroller-based Lee's Disc Apparatus

Benedict Entera & Amancio II S. Manceras

ABSTRACT. The simple Lee's Disc Method is a common method of determining the thermal conductivity of solid materials used for insulation. The working principle of the Lee's disc apparatus is to find the thermal conductivity of a solid material that is a poor conductor by heat transfer. Heat from a heat source is transferred through two brass discs with the thin sample of insulating material put in between. Steady-state temperatures of the two discs will be measured using glass thermometers, the rate of cooling will be determined, then thermal conductivity will be calculated. This study focuses on improving the accuracy of temperature measurements by using a more precise system. The system consists of a microcontroller-based Arduino Uno board, waterproof temperature sensors DS18B20, and a lcd display. The system will be programmed using the Arduino IDE to take temperature measurements at shorter intervals, saved on a file to be used for thermal conductivity measurements. As for the heat source, two types are considered: nozzle heater and an improvised heater from common appliance like electric iron.

Keywords: Arduino, temperature, sensor, Lee's disc method, heat source

2:10-2:20

415 – Design & Innovation of Fully Automatic Egg Incubator

Joel V. Misanes & Orlando Forro

ABSTRACT. This initiative is the collaborative effort of the faculty research tandem by the two technically oriented people in the field of Industrial Technology. The project is called Fully Automatic Egg Incubator since it has a feature of a temperature control, Humidity control, Self-detect blower operation for the ventilation and automatic turning. Dual source or a hybrid type of power source will be employed in the innovation of this machine so that it will reduce the energy consumption to the whole operation. It will utilize the conventional electricity source plus the renewable energy in aid of solar panel.

***Keywords*:** Egg Incubation, Fully Automatic, Hybrid, Temperature, Humidity

2:40-2:50

416 – Community-Based Development and Economic Mainstreaming (CBDEM) on Promotion of Halal Kagikit for Certification

Analyn A. Gonzales

ABSTRACT. The College of Business, Development Economics and Management through its extension and community services is guided by its mission for community development through advocacy, technology transfer, consultancy and other support services. Through the help of the CBDEM extension project of USM, the Community-Based Development and Economic Mainstreaming (CBDEM) on Promotion of Halal Kagikit for Certification, the Kayaga Women's Organization produced chicken kagikit product for commercialization. The college believed that it has the economic advantage that will help both Maguindanaon and non-Maguindanaon entrepreneurs, investors, and advocates. The college conducted needs assessment and profiling of 25 beneficiaries, signed Memorandum of Agreement between Barangay Kayaga and USM-CBDEM, capacitated the partner community through technical training, and produced financial management training module. Through the help of the college, the Kayaga Women's Organization (KWO) has been granted the certification as legitimate workers' association by the Department of Labor and Employment (DOLE). Moreover, the AgriBusiness Department spearheaded the product testing using the sensory evaluation criteria such as appearance, aroma, taste and texture, the research instrument employed a 9-point rating scale with 1 as the lowest and 9 as the highest. Overall, the general acceptability of the product was evaluated as "Like Extremely" by 115 respondents.

Keywords: Development, economic, management, promotion, financial

2:50-3:00

417 - Production, Processing and Positioning (3Ps) coco-based Products for Collaborative Barangay-Based Development and Economic Mainstreaming (3Ps CBDEM)

Jay-R G. Vildac, Lian D. Bagonoc, Jeannie U. Duka, Aileen Mitzi M. Alba, & Rodelyn A. Cariaga

ABSTRACT. Coconut products have gained significant recognition globally for their versatility, nutritional value, and sustainability. Cooperative enterprises play a vital role in the

coconut industry, contributing to the socio-economic development of community. This study aims to capacitate the partner-community on the production, processing, and positioning strategies of coco-based products through seminars, workshop and demonstration, with a specific focus on collaborative mainstreaming efforts within cooperative and the college. The component leaders attended the USM-ESO Project Inception Meeting on February 07, 2023, followed by the inception meeting of the college and the cooperative on March 09, 2023. Inception Meeting is considered as the initial planning stage of the project, the objective of this meeting is to bring together the beneficiaries and implementers of the project to present, discuss and agree on the direction of the project before it commence. During the Focus Group Discussion (FGD), it was agreed by the partner-community that they are willing to be capacitated on the production, processing and positioning of (a) virgin coconut oil, (b) coconut sap sugar, (c) coconut flour, and (d) young coconut water. The orientation to the community and meeting with the core group was made possible by the active participation of 15 members of the Dagupan Agrarian Reform Beneficiaries-Multi-Purpose Cooperative (DARB-MPC) and faculty extension implementers. On May 03, 2023 the beneficiaries were capacitated on coconut food-based product processing with the training experts from Philippine Coconut Authority (PCA).

Keywords**:** Collaboration, development, economic, management, product

3:00-3:10

418 - New Formulation of BAR and Liquid Soap From Selected Industrial Crops with Potential Anti-MIcrobial Activity

Abubakar A. Murray, Sedra Murray & Lorelyn Joy Turnos-Milagrosa

ABSTRACT. x

Keywords**: x**

3:20-3:40

419 - Maguindanaon Delicacies: Packaging, Labeling, Marketing and Profitability Toward Commercialization

Roy Gacus

ABSTRACT. xhis project focusses on the identification of packaging materials for selected Maguindanaon delicacies, particularly Kagikit and Dudol. The project intends to improve the packaging and labeling techniques of these delicacies to align with Maguindanaon culture, enhance marketability, and preserve their cultural significance. The project team determines possible options for packaging for Kagikit and Dudol, such as retortable pouches, glass bottles/jars, vacuum pouches, and pastry boxes, through an in-depth review of the literature, collaborative brainstorming meetings, and experimentation. Pre-testing on the shelf-life of the delicacies is another part of the research project, as is examining the effectiveness of alternative packaging materials and storage situations. Furthermore, an improved labeling design is created, considering pertinent information, regulatory requirements, and cultural representation. This project's successes promote the preservation and marketing of Maguindanaon delicacies.

***Keywords*:** Dudol, kagikit, labeling, Maguindanaon delicacies, packaging, shelf-life

3:40-3:50

420 - Product Development and Innovation of Calamansi Infused Bevegraes for Refrehsing Blends USMARC

Sandra Joy Pahm

ABSTRACT. The Philippine lime or calamondin is locally known as calamansi (Citrofortunella microcarpa) and an indigenous plant of the Philippines. Currently, there is an increasing importance of calamansi due to its expanded uses and new market in the processed food, cosmetics and household products industry. In the beverage industry, consumers are opting for an alternative to the sugar-laden commercial products that are available in the market since consumers are getting conscious of what they consume. While in the locality of Kabacan Cotabato, calamansi based beverages available in the market are all produced in the other provinces. Technology for processing juice is very well known to all, but innovations and improvements of the different calamansi blends still has a lot of work. Thus, this study aims to establish a calamansi orchard in the University for production and processing, and to develop different blends of calamansi juice infused with turmeric that can be acceptable for market.

***Keywords*:** calamansi, juice, blends, orchard, processing

USM MIDYEAR

In-House Review

Theme:
Excellence in USM RDE towards societal impact

July 20, 2023

This serves as an invitation

rpso@usm.edu.ph www.usm.edu.ph/rde

2023

MIDYEAR IN-HOUSE REVIEW PROGRAM 2023

GENERAL SCHEDULE OF ACTIVITIES

July 20, 2022 (Thursday)

TI ME	ACTIVITY
7:30 AM – 8:30 AM	Registration
8:30 AM – 9:15 AM	Opening Program
9:30 AM – 12:00 PM	Presentations
12:00 PM – 1:00 PM	Lunch Break
1:00 PM – 4:10 PM	Presentations
4:10 PM – 4:20 PM	Break
4: 20 PM – 4:40 PM	Closing Program

Opening Program

Commercial Building
July 20, 2023
8:30 AM

Invocation	**Dr. Tamie C. Solpot** **Dr. Abubakar A. Murray**
National Anthem	**In-Video**
Cotabato Hymn	**In-Video**
Kabacan Hymn	**In-Video**
Welcome Remarks	**Dr. Ma. Teodora N. Cabasan** Vice President for RD&E
Message of the President	**Dr. Francisco Gil N. Garcia** SUC President IV
Rationale	**Prof. Lydia C. Pascual** Director, RDO
Presentation of Evaluators	**Dr. Mary Joy Cañolas** Director, Extension Services Office Over-all Coordinator, Midyear In-house Review

EMCEE : Maria Angelika T. Balungay

EVALUATORS

Session I

Basic Research

Engr. Willie Jones B. Saliling

Dr. Naomi G. Tangonan

Dr. Krizler C. Tanalgo

Session II

Applied Research

Dr. Edward A. Barlaan

Assoc. Prof. Bryan Lloyd P. Bretaña

Dr. Khris June L. Callano

Session III

Extension

Dr. Josephine L. Arbes

Dr. Ardniel A. Baladjay

Dr. Josephine R. Migalbin

Session IV

Social Research, Extension, Product Development

Dr. Astrofil Hyde M. Alcala

Dr. Romiel John P. Basan

Dr. Elizabeth C. Molina

Dr. Apple R. Ureta

MODERATORS

Session I

Basic Research

AM - Leanne Jay M. Tejero (CSM)
AM -Nor-ain M. Corpuz (CEIT)

PM -Marlene E. Ofrecio (ISPEAR)
PM -Norquez M. Mangindra (CED)

Session II

Applied Research

AM - Rene C. Cabahug, Jr. (CTI)
AM -Gary D. Lasaga (CVM)

PM - Florey Mae Pascua (CEIT)
PM -Samson L. Rapuza (CTI)

Session III

Extension

AM -Estella B. Barbosa (CASS)
AM -Rowell N. Nitafan (CASS)

PM -Saima M. Andil (IMEAS)
PM -Alina S. Arancel (CHS)

Session IV

Social Research and Extension & Product Development

AM -AP Warren P. Adamat (CVM)
AM -Saque J. Amilbahar (CEIT)

PM -Ellen Joy M. Farala (CED)
PM -Karizza Jane B. Pejaner (P-PALMA)

Closing Program

Commercial Building
July 20, 2023
4:20 PM

SYNTHESIS PRESENTATION	
SESSION 1	**MS. MARRY GRACE S. BALBUENA** EPS I
SESSION 2	**MS. HELEN MACAILING**
SESSION 3	**CHARLOTTE ANDREA TUTOR** EPS II
SESSION 4	**ENGR. KHARLO J. SUBRIO** EPS II
PRESENTATION OF OUTPUT FOR USMARD CENTER RESEARCH	**DR. EFREN E. MAGULAMA** Director, USMARD Center
PRESENTATION OF OUTPUT FOR EXTENSION	**DR. MARY JOY S. CAÑOLAS** Director, Extension Services
PRESENTATION OF OUTPUT FOR COLLEGE-BASED RESEARCH	**PROF. LYDIA C. PASCUAL** Director, Research and Development
PRESENTATION OF OUTPUT FOR PICRI RESEARCH	**DR. ABUBAKAR A. MURRAY** Director, PICRI
PRESENTATION OF RDE OUTPUTS	**DR. MA. TEODORA N. CABASAN** Vice President, RDE
ACCEPTANCE OF RDE OUTPUTS	**DR. FRANCISCO GIL N. GARCIA** SUC President IV
CLOSING MESSAGE	**DR. FRANCISCO GIL N. GARCIA** SUC President IV
CLOSING PRAYER	**DR. TAMIE C. SOLPOT** Faculty Researcher

***EMCEE*:** Sofia Loren Bonete

Theme:

Excellence in USM RDE towards societal impact

December 4-5, 2023
Commercial Bldg, USM, Kabacan, Cotabato

2023

This serves as an invitation

usmvprde@usm.edu.ph www.usm.edu.ph/rde

Republic of the Philippines
UNIVERSITY OF SOUTHERN MINDANAO
Kabacan, Cotabato
Tel. No.: (064)572-2138
Email address: op@usm.edu.ph

OFFICE OF THE PRESIDENT

Message

Once again, we find ourselves in a journey of knowledge and innovation towards societal impact through celebrating the spirit of excellence in Research, Development, and Extension. With each research, we are fueled by the passion for social betterment, showcasing our commitment to the community by ensuring that we make a profound difference. I hope that this dedication to achieving excellence in RDE serves as a guiding light, inspiring us to unravel new frontiers, contribute to humanity, and foster positive change in our society.

My warmest gratitude to our USM RDE family, for your tireless effort and collective pursuit of excellence. Our commitment to help improve the lives of our clientele through our initiatives is truly a blessing.

Proverbs 2:6 reminds us, "For the Lord gives wisdom; from his mouth come knowledge and understanding." Let this divine wisdom guide our endeavors, magnifying the impact of our research, development, and extension activities. May our commitment to excellence be a testament to our dedication in creating a brighter, more compassionate future for all. *One USM!*

(SGD) FRANCISCO GIL N. GARCIA, PhD
SUC President IV

OPENING PROGRAM

Commercial Building
December 4, 2023
8:30 AM

Invocation	
Christian Prayer	**Tamie C. Solpot, PhD** Faculty, College of Agriculture
Muslim Prayer	**Abubakar A. Murray, PhD** Director, PICRI
National Anthem	**Girlie D. Batapa, PhD** Faculty, CED
Welcome Remarks	**Ma. Teodora N. Cabasan, PhD** VPRDE
Message of the President	**Francisco Gil N. Garcia, PhD, RPAE** SUC President IV
Rationale	**Lydia C. Pascual, PhD** Director, RDO
Presentation of Evaluators	**Mary Joy S. Cañolas, PhD.** Director, Extension Services Office Over-all Coordinator, 2023 IHR

Emcee: **Loynie F. Sumalinog**

GENERAL SCHEDULE OF ACTIVITIES

Day 1: December 4, 2023

TIME	ACTIVITY
7:30AM-8:30AM	Registration
8:30AM– 9:30AM	Opening Program
10:00AM– 12:00NN	Research, Development, Innovation and Extension Parallel Presentations
	Session I – Research
	Session II – Development and Research
	Session III- Innovation and Research
	Session IV – Extension
12:00NN-1:00PM	Lunch Break
1:00PM – 1:20PM	Poster Viewing *[Poster presenters are requested to be present]*
1:20PM – 4:40PM	Research, Development, Innovation and Extension Parallel Presentations

Day 2: December 5, 2023

TIME	ACTIVITY
9:00AM–12:00NN	Research, Development, Innovation and Extension Presentation
12:00NN-1:00PM	Lunch Break
1:00PM-2:00PM	Research, Development, Innovation and Extension Parallel Presentations
2:00PM-3:00PM	Judging of Posters *[Poster presenters are requested to be present]*
3:30PM-4:30PM	Closing Program
	Synthesis Presentation
	Presentation of Output
	Awarding of Certificates to Evaluators, Best Paper and Posters
	Closing Message

PANEL OF EVALUATORS

RESEARCH CATEGORY

DR. NAOMI G. TANGONAN – Prof. Emeritus, USM

DR. CHRIS REY LITUANAS – Prof. 1 PBD, IBS, CAS, CMU

DR. GRACIELLA L. CABALLERO – Retired Prof. DSSC

DEVELOPMENT CATEGORY

DR. MARK LLOYD DAPAR – Asst. Prof. 2 & Div. Chair, ABD, IBS, CAS, CMU

MR. RUEL L. VILLANUEVA – Admin Officer & Com Officer, OPAg, Cotabato

DR. ARISTON A. CALVO – Retired Prof., USM

INNOVATION CATEGORY

DR. JOSH ELISHA OCTURA – Prof. 1, MSU GenSan

DR. MARK JUDE TRUNDILLO – RDI Director, DSSC

ENGR. NEMESIO M. TOLENTINO – Retired Prof. USM

EXTENSION CATEGOY

DR. JOSEPHINE L. ARBES – Asso. Prof. IV, CMU

MR. OMMAL ABDULKADIL – TechTrans Coor. SOXAARRDEC

DR. KENO JAY BALOGBOG - Extension Director, MSU GenSan

MODERATORS

Sessions	Names
Session I (Research)	**Day 1** **AM** Krizler Tanalgo (CSM) – Chair **PM** Nor-ain Corpuz (CEIT) **Day 2** **AM** Jamaica Delos Reyes (CSM) **PM** Hemochem Sorupia (CSM)
Session II (Development and Research)	**Day 1** **AM** Romiel John Basan (CBDEM) **PM** Marilyn S. Painagan (CEIT) **Day 2** **AM** Josephine R. Flores (CVM) **PM** Samson L. Rapuza (CTI)
Session III (Innovation and Research)	**Day 1** **AM** Estella B. Barbosa (CASS) **PM** Dianne Cristel M. Basilio (CHEFS) **Day 2** **AM** Rowell N. Nitafan (CASS) **PM** Saima M. Andil (IMEAS)
Session IV (Extension)	**Day 1** **AM** Leonard H. Latido (SOXAARRDEC) **PM** AP Warren P. Adamat (CVM) **Day 2** **AM** Ellen Joy Farala (CED) **PM** Karizza Jane Pejaner (USM PALMA)

WORKING COMMITTEE

Role	Persons Involved
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Co-Chairperson	Jasmin A. Pecho
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Chairperson	Janice M. Bangoy
Co-Chairperson	Arjay M. Valenzuela
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Chairperson	Mary Joy S. Cañolas
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Chairperson	Meldred Semblaceno
Co-Chairperson	Rosyell Angelo Piosca
Member	Tourism Students (5 students)
Pins Committee	
Chairperson	Emily T. Montero
Co-Chairperson	Jennifer E. Sinco
Member	Charlotte Andrea Tutor
Secretariat and Proceedings Committee	
Chairperson	Debbie Marie B. Verzosa
Co-Chairperson	Rezin G. Cabantug
Member	Nenita E. Olero Rapporteur Chairs
Registration Committee	
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Co-Chairperson	Cyrelle Besana
Member	Amancio Manceras II
Rapporteur Committee	
Over-all Chairperson	Charlotte Andrea D. Tutor
Session I- RESEARCH CATEGORY Chairperson	Mary Grace S. Balbuena

Member	Fritzi Juls Lamera
	April Kimberly Lamera
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Electrical/Sound Committee	
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Member	Ildefonso Seguritan Julbasar M. Sajiran
Transportation Committee	
Chairperson	Orlando B. Forro
Co-Chair	Oscar B. Organas
Member	Benjamin E. Fortinez
	Jurhamid C. Imlan

Note: 20 minutes per presenter (8 minutes presentation + 12 minutes Q&A)

Legend: Programs/projects highlighted in green are COMPETING.

Day 1: December 4, 2023				
9:00-9:40	**Opening Program**			
9:40-10:00	**Break**			
	Research	**Development + Non-competing Research**	**Innovation + Non-competing Research**	**Extension**
10:00 - 10:20 AM	**101 [Research]** - BARMM in a Changing Environment (Biomonitoring and Assessment of the Relationship between Marsh and Man) - Meriam Manampan-Rubio, Renee Jane A. Ele, Bona Abigail H. Husain, and Krizler C. Tanalgo	**201 - [Development]** USM-LIFER 2 Project: USM & Ligawasan Marsh Innovative Fish-based Products and Establishing Relevant Community Collaboration - Pia Amabelle Flores & Rowell Nitafan	**301 [Innovation]** - Innovative Growing of Corn Microgreens (*Zea mays*) as Potential New Food for Commercialization -Mark Al-Jamie J. Muttulani, Lorelyn Joy N. Turnos, & Leila S. Moscoso	**401 [Extension]** Farmers Field School (FFS): Technology Delivery System for Enhancing Skills on Swine Production and Artificial Insemination - AP Warren P. Adamat & Vrenelie II D. Flores
10:20 - 10:40 AM	**102 [Research]** - Microbial Diversity of Liguasan Marsh and their Potential Biotechnological Application on Green Energy, Fisheries, Sustainable Agriculture and Animal Production and Human Health - Maria Elena Tanabe	**202 [Development]** Optimization of Irrigation Flow Through Conduit Microhydropower to Generate Electricity for Off-grid Barangay of Kabacan, Cotabato -Marilyn S. Painagan, Tito Jun T. Tidula, Benhamin I. Mamalo, Jonnah Mae A. Casalan, Jalaloden Marohom and Janice Bangoy	**302 [Innovation]** - New Formulation of BAR and Liquid Soap From Selected Industrial Crops with Potential Anti-MIcrobial Activity -Abubakar A. Murray, Sedra Murray & Lorelyn Joy Turnos-Milagrosa	**402 [Extension] -** Adopt a Madrasah for Knowledge and Skills Development in Teaching Pedagogy of Azatidz in Barangay Aringay, Kabacan, Cotabato - Sofia G. Molao, Remedios C. Kulidtod, Norjaida D. Maliga, JIkiri M. Entol, & Abdulnasser G. Makalugi
10:40 - 11:00 AM	**103 [Research]** - Program: Land management of rubber-based systems in Southern Philippines PROJECT 1. Effective Rubber-Based Cropping System in Southern Philippines - Rezin Cabantug	**203 - [Development]** Development of Contextualized Instructional Materials in Teduray - Girlie D. Batapa, Ashley Coleen Ortiz, & Hazel Ann S. Soriano	**303 [Innovation]** - Development of Herbal Mosquito Repellent from Leaves and Flowers of Marigold (*Tagetes erecta*) -Sedra A. Murray & Elma G. Sepelagio	**403 [Extension]** - Knowledge and Skills Advancement for the Ambulant Food Vendors in Kabacan, Cotabato - Melchie G. Palapar, Maribelle T. Piamonte, & Shirl May M. Bebit

Note: 20 minutes per presenter (8 minutes presentation + 12 minutes Q&A)

Legend: Programs/projects highlighted in green are COMPETING.

11:00 - 11:20 AM	**104 [Research]** - Program: Land management of rubber-based systems in Southern Philippines PROJECT 3. Developing Rapid and Affordable Soil Nutrient Test Fertilizer Formulation for Rubber Cropping System - Leandreux Ocasion	**204 [Development]** RAISE program - Josephine R. Migalbin	**304 [Innovation]** - (D-SPOT) Digital Promotional and Screening of Local Products Or Startups in Region 12 for Technology Incubation - Pia Amabelle M. Flores	**404 [Extension]** - Juan Food: Enabling 4Ps Beneficiaries Through Community Garden in Support for Household Food Security and Livelihood as Response to COVID-19 Pandemic -Mary Rodelyn A. Cariaga, Metche Anne C. Logronio, & Romiel John P. Basan
11:20 - 11:40 AM	**105 [Research]** - PROJECT 4. Development of Cost and Effective Pest and DIsease Management of Rubber and Intercrops - Joan Sadoral	**205 - [Development]** - Formulation and Optimization of Functional Cereal-Based Snack Foods -Maribelle T. Piamonte, Apple U. Revilla, Oscar Q. Magbanua, Ian Jade A. Flores, Ivy Mar B. Cabornida	**305 [Innovation]** - USM IP-TBM Phase II Patent Mining of Rubber Technologies thru Intellectual Property and Technology Business Management (IP-TBM) Operations of the University of Southern Mindanao - Pia Amabelle Flores, & Cyrelle M. Besana	**405 [Extension]** - HOPE (Holistic Opportunities for Progress and Empowerment) for Student Mothers - Jacinta T. Pueyo, Altair R. Neri, & Vivekeh D. Bat-og
11:40 - 12:00 NN	**106 [Research]** - Screening of Potential Endophytes as Biocontrol Agent Against Major in Emerging Leaf Diseases of Rubber -Tamie C. Solpot, Ma. Teodora N. Cabasan & Bernadith T. Borja	**206 [Development]** - Commercialization of Chevon Food Products and Standardization of Processing Center - Jalaloden Marohom		**406 [Extension] -** Wholistic Recovery Approach for Persons who Use Drugs - Marlene Ofrecio
12:00 - 1:00 PM	**Lunch Break**			
1:00-1:20 PM	**Poster Viewing**			
1:20 - 1:40 PM	**107 [Research]** - Yield Performance of 12 Promising Rubber Clones Using Different Tapping System -Sheena B. Lucena and Randy Tumacder	**207 [Development]** Development of E-learning Modules for Certificate Courses in Halal Science - Jalaloden Marohom, Francisco Gil N. Garcia, Jurhamid C. Imlan and Josephine R. Migalbin	**307 [Innovation]** - Statistical Tool Selector(Stat Select): A Mobile App for Faculty, Students and Researchers -Anna Jean S. Garcia, Honey Vincent Valle, Daryl Mae Mamon, Leonard Paleta, Jupiter Pilongco, Roel Valenton, Jeaneth Licaros, Jonald Pimentel, Philip Benjamin, Rowel Madio, Leorence Tandog, & Debbie Marie Verzosa	**407 [Extension]** - YES, through SSTAMP: Youth Engagement in Sports through Sustainable Sport Training and Management Program - Elpedio A. Arias, Moreno B. Java Jr., Vinus P. Java & Eduard S. Sumera

Note: 20 minutes per presenter (8 minutes presentation + 12 minutes Q&A)

Legend: Programs/projects highlighted in green are COMPETING.

1:40 - 2:00 PM	**108 [Research]** - Adoption and Impact of Banana Macropropagation Technology Dissemination in Columbio, Sultan Kudarat - Janice M. Bangoy	**208 [Development]** Goin Bananas: Restoring Livelihood of Conflict Affected Farmers in Cotabato - Rezin G. Cabantug, Adeflor G. Garcia, Purificacion O. Cahatian, Harem R. Roca, Marcos Monderin	**308 [Innovation]** - Development of Arduino Microcontroller-based Lee's Disc Apparatus - Benedict Entera & Amancio II S. Manceras	**408 [Extension]** - Hakbang para sa Pagbabagong Lubos (HAPLOS) para PWUDS: A Community-Based Fitness and Livelihood Project -Moreno B. Java Jr, Marlene E. Orfrecio, & Vinus P. Java
2:00 - 2:20 PM	**109 [Research] -** Development and optimization of innovative tissue culture systems for 'cardava' banana - Tamie C. Solpot	**209 [Research]** - Biological diagnostic tool for vulnerable agroecosystems: Nematode community analysis as an approach to assess sustainability of agricultural practices - Ma. Teodora N. Cabasan	**309 [Innovation]** - Design & Innovation of Fully Automatic Egg Incubator -Joel V. Misanes & Orlando Forro	**409 [Extension]** - "Laro Mo, Sagot ko" A Sports Management Skills Development Project - Cheeze R. Juanito
2:20 - 2:40 PM	**110 [Research]** - Impact of Pre-Harvest Application of Biocon Agents and Bio-stimulants on Dragon Fruit Production-Jasmin Pecho	**210 [Research]** - Phenology, Yield and Fruit Quality of Different Pummelo Cultivars at USMARDC -Nancy E. Duque	**310 [Innovation] -** Maguindanaon Delicacies: Packaging, Labeling, Marketing and Profitability Toward Commercialization - Roy Gacus	**410 [Extension] -** Integrated Services for Enhanced Education (I-SEE): Connectivity Resilience Project Amidst COVID-19 Pandemic - Janice M. Bangoy, Myrna Tan, Brex Brayan Nicolas, & Juvelyn Gesulga
2:40 - 3:00 PM	**111 [Research] -** Development of Corn Hybrids and Synthetic with Tolerance to Herbicide -Jessie Elarde	**211 [Research] -** Establishment , Conservation and Utilization of Indigenous Tropical Fruit Crops at the University of Southern Mindanao -Nenita E. Olero	**311 [Innovation]** - Product Development and Innovation of Calamansi Infused Beverages for Refreshing Blends USMARC -Sandra Joy Pahm	**411 [Extension]** - Transferring and Advancing Learning materials for Knowledge: Using of IECs for Archiving and Information Disseminating (TALK:AID) - Charlotte Adrea D. Tutor, Allan C. Facurib, & Janice M. Bangoy
3:00 - 3:20 PM	**Break**			
3:20 - 3:40 PM	**112 [Research]** - Sustainable Forage Production Systems for Ruminant Livestock at USMARDC - Mary Joy S. Cañolas, Ivy M. Pasquin, Lorelyn Joy T. Milagrosa, & Geoffray R. Atok	**212 [Research]** SNAP DOST for screening antibiotic residues in milk - Elma G. Sepelagio	**312 [Innovation] -** Cacao-Based Product Development and Innovation Using Cocoa Butter and Powder -Harem R. Roca & Jane R. Desamito	**412 [Extension] -** Promoting Resilient OPV Corn Seed Production for Enhanced Economic Development and Sustainability (PROSEEDS) - Francisco Gil N. Garcia, Efren E. Magulama, Mary Joy S. Canolas and Janice M. Bangoy

Note: 20 minutes per presenter (8 minutes presentation + 12 minutes Q&A)

Legend: Programs/projects highlighted in green are COMPETING.

3:40 - 4:00 PM	**113 [Research]** - Lactic Acid Bacteria Serum Production for Silage Making -Josephine R. Migalbin, Bernadith Borja, & Neil Pep Dave Sumaya	**213 [Research]** - Productivity assesment of Robusta Coffee applied with different organic & Inorganic fertilizers in Mindanao - Leandreux Ocasion	**313 [Innovation]** - University of Southern Mindanao Higher Education Research: Technological Advancements and Innovation Projects - Francisco Gil N. Garcia	**413 [Extension]** - CAPE 2- Consultancy for Agricultural Productivity Enhancement Program - Francisco Gil N. Garcia, Edward A. Barlaan, Mary Joy S. Cañolas, Janice M. Bangoy & USM Experts
4:00 - 4:20 PM	**114 [Research]** - Development of Protocols and Identification of Halal Critical Control Points (HalCCP) Towards Establishment of Philippine National Standards (PNS) for Halal Sheep and Vegetable Production - Josephine R. Migalbin, Jurhamid C. Imlan, Mary Ann Rama, and Sandra Pahm	**214 [Research]** - Herbicide-Based Application as Weed Management Intervention for Improved Productivity in Adlay - -Baser L. Mamalac	**314 [Innovation]** University of Southern Mindanao Futures Thinking: Food and Health Security, Systems, Innovations and Sustainability - Francisco Gil N. Garcia	**414 [Extension]** - PROJECT 6. Capability Building of Rubber Stakeholders and Role of Women and their Children Natural Rubber Industry in Agusan del Sur and North Cotabato -Mary Rodelyn A. Cariaga
4:20 - 4:40 PM	**115 [Research]** - Compendium of Ethnoveterinary Therapies for Control of Internal Parasites in Livestock - Elizabeth C. Molina and Josephine Flores	**215 [Research]** - Development and Halal Verification of "Plant-Based Protein-Rich" Feed for Halal Grown Poultry Products - Jurhamid C. Imlan, Queennie L. Rufino, & Mary Ann B. Rama	**315 [Research]** - Pagpalain Bangsamoro: Unveiling the history and Struggles of primary actors towards peaceful Bangsamoro government - Saima Andil	**415 [Extension] -** BIOnihan para sa kalikasan: promoting holistic biodiversity conservation through community partnership - Bryan Lloyd P. Bretaña
Day 2: December 5, 2023				
	Research	**Development + Non-competing Research**	**Innovation + Non-competing Research**	**Extension**
9:00 - 9:20 AM	**116 [Research]** - Seed Propagation techniques in growing various herbs and spices and their bio-control efficacy against Ralstonia sp. And Phytophtora sp. -Lorelyn Joy Turnos-Milgarosa, Mark Al-Jamie J. Muttulani, & Tamie C. Solpot	**216 [Research]** - Spatial and Temporal Crop Diversification in Adlay-Based Cropping System for Land-Use Efficiency and Improved Crop Productivity and Sustainability - Nancy E. Duque, Baser L. Mamalac, Ana Rose Cunanan, & Efren E. Magulama	**316 [Research]** Financial Analysis of Income Generating Projects (IGP) of Public High Education Institutions (HEIS) in Region XII - Sandra Angela A. Bangcaya	**416 [Extension]** - Bionihan Para sa Kalikasan: Community Empowerment Towards Conservation - Florence Roy P. Salvaña, Cromwel M. Jumao-as, & Cherie C. Mangaoang

Note: 20 minutes per presenter (8 minutes presentation + 12 minutes Q&A)

Legend: Programs/projects highlighted in green are COMPETING.

9:20 - 9:40 AM	**117 [Research]** - Sustainable production of culinary ingredients using halal plant-based extracts as root promoter, nutrient booster and bio-fumigants - Mark Al-Jamie Muttulani, Lorelyn Joy Turnos-Milagrosa, Bernadith T. Borja, Sandra Joy P. Pahm	**217 [Research]** - Fruit Quality Improvement in Carabao Mango through Quantitative Trait Loci (QTL) Identification for Scab and Stem-end Rot Resistance by Genotyping by Sequencing GBS and Genom-wide Association Studies (GWAS) - Edward Barlaan	**317 [Research]** MOM (Mothers on Move) Towards Building Assets Through Innovation Development of Fish Products - Ivy Mar Cabornida	**417 [Extension]** - Showcase the advantges of the different soil management technologies of the cacao-based system in Mindanao - Mel Chrisel Sales
9:40 - 10:00 AM	**118 [Research]** - Sources and usage of information of farmers in Kidapawan City - Isaac B. Gutierrez	**218 [Research]** - Assesment of organic cornseed production in Saniag - Janice M. Bangoy		**418 [Extension]** - CA-CARE: Capacity and Resiliency Enhancement for Agricultural Technologist of Cotabato Province - Noe S.Mamon, Jr. & Julius Jerome G. Ele
10:00 - 10:20 AM	**119 [Research]** - Efficiency of various physical exercise, dietary intakes - Moreno Java Jr. and Helen Lopez	**219 [Research]** - Utilization of Corn Sprouts as Fodder for Livestock Production - Mary Ann D. Rama, Efren Magulama, & Josephine R. Migalbin	**319 [Research]** Steady-State Hydraulic Numerical for Optimized Water Distribution Network Modelling: An Application of Selected Hydraulic Solver -Ma. Dely P. Esberto	**419 [Extension]** - Livelihood Enhancement through Agricultural Products - Leo M. Gayao, Jane R. Desamito, Karizza Jane B. Pejaner, & Sambay P. Mla
10:20 - 10:40 AM	**Break**			
10:40 - 11:00 AM	**120** - Multilocation Trial of Ten (10) Promising Varieties of Cacao in Type II and Agro-Climatic Zone in Southern and Northern Mindanao - Ardniel A. Baladjay	**220 [Research]** Indigenous Phosphorus and Potassium Solubilizing Microorganisms as Potential Enhancer of Phosphorus and Potassium Uptake of Corn - Leandreux Ocasion	**320 [Research]** Enhancing Adlai Farming Techniques through Precision Agriculture - Shieryl P. Ortiza	**420 [Extension]** - Production, Processing and Positioning (3Ps) coco-based Products for Collaborative Barangay-Based Development and Economic Mainstreaming (3Ps CBDEM) - Jay-R G. Vildac, Lian D. Bagonoc, Jeannie U. Duka, Aileen Mitzi M. Alba, & Rodelyn A. Cariaga

Note: 20 minutes per presenter (8 minutes presentation + 12 minutes Q&A)

Legend: Programs/projects highlighted in green are COMPETING.

11:00 - 11:20 AM	**121** - Accelerated R&D Program for Capacity Building of Research and Development Institutions and Industrial Competitivenes: NICHE centers in the regions for R&D (NICER) Program: Cacao R&D Center NICER Project 1 - Molecular Fingerprinting of Cacao Parental Recommended HYVs and True Criollo Ensuring Multiplication of Quality Planting Materials (QPMs) for Increased Profitability -Edward A. Barlaan	**221 [Research]** - University of Southern Mindanao-Treelife Coco Sugar Research and Development - Maria Elena M. Neyra-Tanabe	**321 [Research]** Examining Academic and Institutional Factors Influencing Licensure Performance of Selected Programs in the University of Southern Mindanao-Kharlo Subrio	**421 [Extension]** - Strengthening Mother-tongue based Education of Elementary Teachers in DepEd Cotabato/MBHTE BARMM through Instructional Materials Development and Validation - Philip Lester P. Benjamin & Sandra A. Nanding
11:20 - 11:40 AM	**122** - NICER Project 2 - Upgrading of the Cacao Gene Bank for Conservation and Management in Cacao Varietal Improvement - Gwen Iris D. Empleo	**222 [Research]** - Sustainable Agricultural Environment Establishment through Durian Producer Cooperative Organization in Mindanao, Philippines: Developing climate resilient and regenerative land management guide for ICS of durian production in Mindanao - Mel Chrisel Sales	**322 [Research]** - Carbon Stock Potential of Agroforests in Univeristy of Southern Mindanao (USM) and Arakan Valley Agricultural School (AVAS) -Florence Roy Salvaña	**422 [Extension]** - Use of ICT in Facilitating Independent Learning and Teaching in the New Normal - Benedict D. Entera & Astrofil Hyde M. Alcala
11:40 - 12:00 NN	**123** - NICER Project 3 - Development of Optimized Post-Harvest Processing Approaches for Improved Quality of Cacao Beans -Renel M. Alucilja	**223 [Research]** - Effective, regenerative and climate resilient soil management options for safe and sustainable cacao-based cropping system - Mel Chrisel Sales	**323 [Research]** - Food for Life: Assessment of Wild Food Resources for Sustainable and Safe Food Production Among Local Communities in Ligawasan Marsh - Florence Roy P. Salvaña	**423 [Extension]** - Infograp NG Mga Impormasyon Hinggil SA Omicron Variant Para Maiwasan Ang Pagkalat NG COVID-19 at Ang Benipisyo NG Pagbabakuna: Isang Teknikal NA Pagsasalin -Radji A. Macatabon & Normie G. Pabinal
12:00 - 1:00 PM	**Lunch Break**			

Note: 20 minutes per presenter (8 minutes presentation + 12 minutes Q&A)

Legend: Programs/projects highlighted in green are COMPETING.

1:00 - 1:20 PM	**124** - SMART Cacao Budwood Nursery and Greenhouse for Production of High-Quality Planting Materials - Edward A. Barlaan	**224 [Research]** - Efficiency of Freshwater Fish Farming under Monoculture Oil Palm Plantation -Pia Amabelle M. Flores & Rezin Cabantug	**324 [Research]** - Food for Life2.0: Strengthening Sustainable Fisheries in Ligawasan Marsh - Florence Roy P. Salvaña	**424 [Extension]** - CASAMA-Comprehensive Assistance and Services Authentic and Meaningful Action-Phase 2: Utilization of Local Coconuts Fruits for VCO Production and VCO Enhance Soap - Cherie C. Mangaoang & Marivic D. Candari
1:20 - 1:40 PM	**125** - Validation of Molecular Markers for Identification of Cacao HYVs, Criollo Types and Disease Resistant Varieties through Marker-assisted Breeding - Edward Barlaan		**325 [Research]** - Biodiversity Assessment in Key Areas for Wildlife and Nature Project (BAKAWAN Project): Assessment of Structural and Functional Biodiversity in Mangrove Ecosystem of Timaco Mangrove Swamp, Bangsamoro Autonomous Region in Muslim Mindanao - Cherie C. Mangaoang	**425 [Extension]** - Development of Community-Based Tourism in Kabacan, Cotabato - Meldred F. Samblaceña, Roswell Angelo Piosca & Urduja G. Nacar
1:40 - 2:00 PM	**126** - Developing Land Management Options for Diverse Cacao-Based System in Mindanao -Mel Chrisel Sales			**426 [Extension]** - Gender Research and Capability Building in Extension Projects: Exploring Engagement, Opportunities and Entry Points -Glyn G. Magbanua, Juvelyn Gesulga, & Erwin Mallo
3:30 - 4:30 PM	**Awarding and Closing Program**			

CLOSING PROGRAM

Commercial Building
December 5, 2023
4:00 PM

Synthesis Presentation

Session 1	**Nenita E. Olero** SSRS
Session 2	**Rhenalie N. Bello** Faculty, CBDEM
Session 3	**Kharlo J. Subrio** ESP II
Session 4	**Charlotte Andrea Tutor** IO I
Presentation of Output for USMARD Center Research	**Efren E. Magulama, PhD** Director, USMARDC
Presentation of Output for PICRI Research	**Abubakar A. Murray, EdD** Director, PICRI
Presentation of Output for College-based Research	**Lydia C. Pascual, PhD** Director, RDO
Presentation of Output for Extension	**Mary Joy S. Cañolas, PhD** Extension Services Office
Presentation of RDE Outputs	**Ma. Teodora N. Cabasan, PhD** VPRDE
Acceptance of RDE Outputs	**Francisco Gil N. Garcia, PhD, RPAE** SUC President IV
Awarding of Certificates to Evaluators, Best Paper and Posters	**Francisco Gil N. Garcia, PhD, RPAE** SUC President IV
	Ma. Teodora N. Cabasan, PhD VPRDE
Closing Message	**Francisco Gil N. Garcia, PhD, RPAE** SUC President IV
Singing of USM Hymn	ALL

EMCEE **John Leonard Latido**

VISION

USM envisions upholding its status of excellence in Research and Development by continuing to be the pioneer source of technology and information that are on track towards poverty reduction, food security, and global competitiveness for cohesive and sustainable development among its multi-socio-cultural clienteles.

MISSION

To put into operation a system to undertake multi-disciplinary approach for R & D activities to ensure that technologies and information generated can address the prevailing concerns and issues in the local, regional and national levels for sustainable development.

GOALS

- **Improve the system with scientific excellence through collaborative and interdisciplinary R&D activities that are anchored on the University's vision/mission;**
- **Conduct researches and generate technologies that could provide solutions and address the local, regional, and national concerns and issues;**
- **Provide a mechanism to ensure that research results be effectively and efficiently delivered to the clients for utilization and commercialization; and**
- **Build up resource generation facilities for continuous and sustainable R&D programs that geared towards ensuring food security, global competitiveness, socio-cultural responsiveness that eventually improve the quality of life of the clienteles.**

43rd Year-End In-House Review

December 2023

This serves as an invitation