

2 ZERO HUNGER

MMSU's Commitment

MMSU is committed in the eradication of hunger by implementing academic, research, development, and extension programs that promote sustainable agricultural practices and food products development.

MMSU fosters generation of virtuous and skilled human capital, including graduates in programs that support food production such as agriculture, aquaculture, and food technology. The university through its teaching advocates food sustainability thereby emphasizing on sustainable farming practices, upholding animal welfare, minimizing environmental impact, protection of public health, and promotion of ethical employment practices, and fair working conditions.

INDIGENOUS FOOD RESEARCH FOR FOOD SECURITY IN REGION 1



CHED-funded indigenous food research consortium in Region 1 launched tomorrow

With a P289-M funding from the Commission on Higher Education, the Indigenous Food Research Consortium (IFRC) will be launched tomorrow, January 19. It attempts to intensify the development and promotion of indigenous food plants in the Region 1. CHED Chairperson J. Prospero De Vera III will lead the launch of the IFRC. Department of Science and Technology Secretary Renato U. Solidum, Jr. will also witness the event.

SUSTAINABLE DEVELOPMENT GOALS 2 ZERO HUNGER 3 GOOD HEALTH AND WELL-BEING 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 12 RESPONSIBLE CONSUMPTION AND PRODUCTION

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A research funding from the Commission on Higher Education (CHED) for the research on Indigenous Food and Probiotics aimed at promoting food products development from the indigenous food plants in Region 1 and to maximize the development of probiotics from the indigenous food plants through academic-industry collaboration.

A research consortium (Indigenous Food Research Consortium) was created to fulfill the goals and objectives of the project. With the development of probiotics and functional foods, these healthy foods will be easily accessible to everyone which will greatly help in the promotion of health and nutrition.

Highlights

| Program Study | Number of Graduates | | | |
|-----------------------------|---------------------|------------|------------|------------|
| | 2020 | 2021 | 2022 | 2023 |
| BS Agribusiness | n.a | 9 | 26 | 32 |
| BS Environmental Science | 38 | 60 | 50 | 56 |
| BS Forestry | 16 | 9 | 34 | 24 |
| BS Agriculture | 60 | 20 | 64 | 117 |
| BS Food Technology | n.a | n.a | 24 | 33 |
| BS Agricultural Engineering | 58 | 22 | 63 | 32 |
| BS Fisheries | n.a | n.a | 19 | 19 |
| TOTAL | 172 | 120 | 280 | 313 |

Key Activities and Accomplishments

- **Food Products Development through Research.** Food products are continuously innovated by MMSU harnessing the locally available raw materials. Among the developed food products of the university include the black garlic furikake, ice cream, and sauce; freeze dried ilocos garlic; tomango ketchup and juice; mango choco powder mix; mango sinigang mix with kamangeg; sandcooked peanut; kamangeg pacencia; and pickled egg. There are also developed agricultural products such as solamea, banana muffin, bibingcao, kamangeg cookies, and caramel bars.
- **School-on-the-AIR (SOA) Program.** Around 2,000 community members from the province enrolled in 2023 in the program to learn about goat and swine production. Yearly, the university determines the needs of the community and from there develop programs that would help enhance the lives of the surrounding community of MMSU.
- **Research Innovations in Agriculture, Fisheries, and Natural Resources.** MMSU sustains its commitment in producing innovative researchers to improve the production and quality of agri-fishery products in the region to ensure the sustained supply of different products and ensuring food security in the region.
- **34th ILAARRDEC Regional R&D Symposium.** The Ilocos Agriculture, Aquatic and Natural Resources Research and Development Consortium (ILAARRDEC) conducted its much-anticipated Regional Symposium on Research and Development featuring R&D breakthroughs of the Ilocos region's higher education institutions and government agencies with the theme, "Pagkain sa bansa ay siguraduhin, likas-yamang produksyon ng agrikultura't pangisdaan ay isulong natin ayon sa pagbabago ng panahon."
- **National Recognition for MMSU Bio-Intensive Gardening.** Mariano Marcos State University (MMSU) achieved remarkable success at the first National Extension Conference, organized online by Southern Leyte State University on March 21-22, by winning the Best Paper Award under the disaster management track. The award-winning project, *"Bio-Intensive Gardening (BIG) - Panlaban sa COVID-19 para sa Ilocos,"* was authored by Ms. Marissa Atis, Prof. Geovannie Stanley Malab, Dr. Aris Reynold Cajigal, Ms. Mercy Fausta Gaño, Dr. Sherlyn Nicolas, Ms. Bella Gervacio, and Ms. Abegail Marcelino. This initiative, implemented by the university's Research and Extension directorates, aimed to enhance food security in Ilocos Norte amid the COVID-19 pandemic by promoting vegetable gardening and glutinous corn production. Beneficiaries included household members and elementary school pupils, as well as local farmers, who gained valuable skills in organic gardening and improved crop production.

- **Skills Training on Ready-to-Eat Tilapia.** The training aimed to transfer techniques and skills, ensuring the end product's quality is consistently maintained. Additionally, it sought to enhance the processing efficiency, leading to reduced waste and increased throughput. The training also provides technical assistance and consultation to support the incubatees in producing their products effectively and safely. Ultimately, by achieving these objectives, VEA Eco Foods can continue to offer consumers a convenient, healthy, and delicious meal option with their bottled ready-to-eat tilapia in olive oil.
- **Basic Skills Training on Ilocos Miki Noodles.** The training can help workers become more efficient in their tasks, which can lead to increased productivity and faster turnaround times. With product development, the business can also explore ways to streamline its production processes and reduce waste, which can lead to cost savings. With improved product quality and increased efficiency, the business can gain a competitive advantage in the market. By offering unique and high-quality products, they can differentiate themselves from competitors and attract more customers.
- **Skills Training and Process Optimization of Wrap-In Garlic Sauce.** This training was crucial for ensuring consistency and standardization in processing, meeting quality standards, and enhancing market sustainability. Proper skills training not only extended the shelf life of the product but also improved efficiency, productivity, reduced costs, and increased profitability by minimizing waste and enhancing throughput in garlic sauce processing.
- **SPC Juice Product Optimization.** SPC Juice Product Optimization is a focused effort to enhance the quality, taste, and nutritional value of SPC Juice, a unique beverage crafted from sweet potatoes. This initiative involves meticulous ingredient selection, recipe refinement, and packaging design to deliver a delicious and nutritious drink that appeals to health-conscious consumers. Through careful optimization of flavors, nutrients, and presentation, SPC Juice Product Optimization aims to create a standout product in the beverage market.
- **Rice Paddy Art Project "Bagong Pilipinas".** The Mariano Marcos State University and the Philippine Rice Research Institute (PhilRice) launched a rice paddy art featuring President Ferdinand R. Marcos, Jr. and his "Bagong Pilipinas" governance slogan. This year's paddy art is in support of the vision of a new Philippines, particularly on achieving food security and reinvigorating the country's agriculture sector.
- **Nutrilocos Product Development and Optimization.** Through continuous experimentation and refinement of recipes, Andrew's Table aims to develop innovative new products that not only satisfy customers' cravings but also promote overall health and well-being. By optimizing ingredient sourcing, baking techniques, and packaging solutions, Andrew's Table strives to deliver delicious and wholesome baked goods that align with modern dietary preferences and lifestyles.

Relevant Researches and Projects in SDG 2: Zero Hunger

| Title | Researcher/s | Fund Source |
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| Germplasm Collection and Characterization of Vegetable Landraces, and Crop Management for Sustainable Conservation in Ilocos Norte | M Atis, H Obien, J Ramos, M Antonio, MF Inocencio, D Bucao | GAA |

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| Mass Production of Garlic Clean Planting Materials from Tissue-Culture and Bulbil Cum Training of Garlic Seed Growers. | M Atis, MJ Agacaoili, E Galacgac, N Legaspi, H Obien, J Ramos, D Bucao | GAA |
| Optimizing Yield and Bulb Quality of Shallot (<i>allium cepa</i> var. <i>agregatum</i>) as Influence by Planting Density and Nutrient Management | J Jimenez, D Bucao, N Legaspi, J Bernabe, M Antonio | GAA |
| Maximization and Commercialization of Pigeon Pea Nutri-Based Products as a Source of Livelihood <ul style="list-style-type: none"> • Development and Formulation of Pigeon Pea Nutri-Based Products • Promotion and Marketing of Pigeon Pea Nutri-Based Products • Production of IEC materials for Promotion and Commercialization of Pigeon Pea Nutri-based Products | J Bernabe | GAA |
| Verification, Pilot Application, and Optimization of the Production and Processing Technologies of Less-Known Yam Species (kamangeg, karot, tugui) for Sustainable Commercialization <ul style="list-style-type: none"> • Food Product Development on Karot and Tugui • Optimization of the Kamangeg Flour Production and Karot Detoxification Technologies • Revalidation of the production technology | N Legaspi, L Agbigay | GAA |
| Food Products R&D in Ilocos Region <ul style="list-style-type: none"> • Survey, Documentation, Mapping, Optimization and Promotion of Traditional Cuisine in Ilocos Norte • Commercialization of Developed Food Products/Technologies • Optimization of Developed Food Products in MMSU | F Sanculi, E Grande | GAA |
| Development of Vacuum-Fried Shallot Snacks | R Garcia, J Doroyan, S Il Sabejon | GAA |
| Leveraging the Potential of Indigenous Fruits in the Ilocos for Food and Nutrition Security <ul style="list-style-type: none"> • Documentation and Germplasm Collection of Indigenous Fruits in the Ilocos • Product Development and Marketability Assessment for Indigenous Fruits and Value-Added Products | M Antonio, J Ramos, MC Birginias, D Bucao, X Bucao, Z Fernandez | GAA |
| Germplasm Collection, Characterization and Evaluation of Underutilized Root and Tuber Crops <ul style="list-style-type: none"> • Assessment of Phenotypic Diversity in Root and Tuber Crops | M Antonio, J Agreda, J Pugat | GAA |

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| <p>Strengthening the Resilience of Iloco Crop Diversity Through Complementary Conservation Approach</p> <ul style="list-style-type: none"> ● Establishing Ex Situ Conservation Facilities for Iloco Crop Genetic Resources ● Establishing Community Foodscapes and Seedbanks of Iloco Crop Genetic Resources | <p>M Antonio, B Santos, MC Birginias, J Agreda, B Gervacio</p> | <p>GAA</p> |
| <p>Mainstreaming the Sustainable Conservation and Utilization of Iloco Crop Genetic Diversity</p> <ul style="list-style-type: none"> ● Germplasm Collection, Characterization and Evaluation of Underutilized Root and Tuber Crops ● Leveraging the Potential of Indigenous Fruits in the Ilocos for Food and Nutrition Security ● Strengthening the Resilience of Iloco Crop Diversity Through Complementary Conservation Approach | <p>M Antonio, B Santos, J Agreda, J Pugat</p> | <p>GAA</p> |