

# 2018

## NATIONAL RICE R&D HIGHLIGHTS



**PHILRICE NEGROS**  
BRANCH STATION



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# PHILRICE NEGROS

*Branch Director: Caesar Joventino M. Tado*

## EXECUTIVE SUMMARY

PhilRice Negros addresses regional issues, which include 1) low productivity, profitability, adaptability to climate change impacts, lack of labor and high cost of production; 2) lack of awareness, adaptive capabilities, value-adding partnerships and linkages; and 3) lack of science-based knowledge on organic farming. Four projects were implemented: Collaborative Rice Extension for Achieving Community Transformation (REACT), Project on Rice Areas towards Intensified and Sustainable Environment (PRAISE), Development of Technologies for Organic-Based Rice Areas (OBRA), and Rice Business Innovations System (RiceBIS). These projects contributed in achieving 7 major final outputs of the institute: extension support; capacity enhancement; crop management systems; rice-based products; publications and IEC materials; partnership and collaborations and extension modalities and production models. Station's projects and studies also contributed in attaining 6 MFOs: genetic resource conserved, varieties, crop management system, systems and protocols for seed production, surveys and databases, and capacity enhancement.

Aside from the stations' initiative projects, PhilRice Negros also implemented five CES-based projects under development, 3 CES-based projects, and 11 CES-based under research. These are also funded by PhilRice, Department of Agriculture-Bureau of Agricultural Research, and International Rice Research Institute (IRRI).

The station's outputs contributed to Outcomes # 1, 2, 3, 5 and 6: increased productivity, improved rice trade, enhanced value, advance rice science and technology, and partnership.

# COLLABORATIVE RICE EXTENSION FOR ACHIEVING COMMUNITY TRANSFORMATION (REACT)

*CU Seville, JAE Cordova, AO Pajarillo, LG Dogeno, KV Canto, CJE Parina, VA Tingson, and JMM Barrato*

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This project aimed to enhance partnership and knowledge for R4D and enhance value, availability, and utilization of rice and diversified rice-based farming. Three studies; 1) DiscoverRice: Palayamanan Plus, One-Stop-Shop Information, Demonstration and Learning Center; 2) Capacity building and knowledge sharing; and 3) Rice-based food product development composed the project.

## **DiscoverRice: Palayamanan® Demonstration, Learning and One-Stop-Shop Information System**

*RG Corales*

Demonstration of cropping systems that will address adverse environments such as sorjan system for the waterlogged areas, and the One-Stop-Shop Information System (OSSIS) which provides an avenue for sales of vegetables and technology transfer for visiting farmers comprised DiscoverRice. Poultry were included to determine its compatibility with other crops, while varieties were demonstrated on farm to determine their adaptability.

Results showed that yield of 10 promising traditional/special varieties: Gift-18, Arabon, Minerva, Laila, Kosi, Libtong, Dinorado, Calatrava, Lao-PDR, and Lubang ranged from 3-6t/ha while modern varieties NSIC Rc 428, Rc 478, Rc 472 and Rc 426 yielded 5-6t/ha across seasons.

Four state colleges and universities were identified as sites for extended varietal demonstration set-up within Negros island.

### **Varietal Demonstration**

In the dry season, 133 traditional and special rice lines collected across the country were established in a 0.96 ha to determine their adaptability under PhilRice Negros environment.

During 2017 WS, only 7% of rice cultivars exhibited an intermediate RTV response while the rest were all resistant. In 2018 DS, all lines were found to be resistant. RTV rates of 10 best-performing traditional and special rice lines showed that all lines were consistent in their resistance both in dry and wet seasons of 2018. Year-long field assessment on RTV responses showed that the 400-series rice varieties were resistant for both seasons except for NSIC Rc 442, which was infected at intermediate rate during 2018 DS.

### **Crop Component: Vegetable Garden**

Cropping patterns were identified and established: intercropping of tomato and bush sitao (tomato+bush sitao); eggplant, pechay, upland kangkong and lady finger (eggplant+pechay+upo+okra); and eggplant and bush sitao (eggplant+bush sitao).

Cropping sequences also included pole sitao, bittergourd, tomato and bottle gourd (pole sitao-bittergourd-tomato-bottlegourd) and squash and corn. Intercropping of tomato and bush sitao generated the highest income at P41.02/m<sup>2</sup>. The average income across patterns was P22.60/m<sup>2</sup> for the first season.

### **Sorjan Farming System**

The establishment of various crops on raised beds for sorjan cropping system is still ongoing.

### **Poultry Raising**

One hundred chicks and ducklings were raised collectively in a fenced area. Free-ranged chickens and mallard ducks were at developmental stage managing them through grazing on crop remnants and minimum commercial feeding.

### **One-Stop-Shop Information System (OSSIS)**

OSSIS was established with PhilRice knowledge products and GAD corner.

### **Technology Extension to State Universities and Colleges (SUCs)**

Four target schools across Negros were identified and will be tapped starting February 2019.

## **Localization of Knowledge Products and Enhancing KSL Activities**

*JAE Cordova and VA Tingson*

Knowledge Sharing and Learning (KSL) activities were conducted to enhance awareness and linkages. Rice Info Hub were established in Murcia and Victorias City, which served as farmers' mini library and *tambayan*. Four localized technology guides were circulated in Region VI, VII, and VIII. There were 3,485 copies of knowledge products distributed to 13 LGUs. Twenty-eight experts' dispatch were facilitated this year including training of trainers, seed inspector training, and seed growers training. Engagement in social media also increased with 1,773 Facebook likers.

## **Rice Based Food Product Development**

*CU Seville, AO Pajarillo, LG Dogeno, KV Canto, CJE Parina, VA Tingson, and JMM Barrato*

Cookfest was also conducted during the nutrition month, in which four high schools from Murcia and Bacolod, Negros Occidental created nine dishes from *Malagkit* rice. Similar activities are expected to enhance value, availability, and utilization of rice; and diversify rice-based by-products for better health, nutrition, and income.

# PROJECT ON RICE AREAS TOWARDS INTENSIFIED AND SUSTAINABLE ENVIRONMENT (PRAISE)

*CU Seville, LT Sta. Ines, CLC Mondejar, AO Pajarillo, GE Bello, MO Palanog, FLA Pantin, LG Dogeno, KV Canto, CJE Parina, RF Austria, MO Etchon, and MAD Norbe*

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The project implemented four studies: 1) Development of highly productive rice-based farming models; 2) Nutrient management for sustainable rice-based farming; 3) Insect pests and disease implications on rice yields and profitability; and 4) Development of production technologies to address climate change.

Target outcomes of the project are as follows: MFO14 Capacity enhancement with sub-MFO of on-farm technology promotion for Study 1, MFO 4 Crop management system/decision support tool with sub-MFO of Pest and nutrient and pests management and MFO 1 extension support, education with sub-MFO of information/knowledge for Study 2, 3 and 4.

Project accomplishments have contributed in achieving the outcome “Increased productivity, cost-effectiveness, and profitability of rice farming in a sustainable manner.”

## **Development of Highly Productive Rice-Based Farming Models**

*LG Dogeno and AO Pajarillo*

This study aimed to develop an efficient and highly productive rice-based farming models through engaging in the system of integration and intensification. Four traditional and special rice lines namely *Minerva*, *Laila*, *Libtong*, and *Dinorado* were selected for the cropping season, which serve as the baseline data before integrating compatible upland crops and vegetables based on the formulated patterns for the succeeding seasons. Rice lines yielded 3-4t/ha and exhibited resistance to RTV infection. Production costs, yield, and income will be monitored and analyzed.

## **Nutrient Management for Sustainable Rice-Based Farming**

*CLC Mondejar, MO Palanog, GE Bello, LG Dogeno, CJE Parina, MAD Norbe, RF Austria, MO Etchon, KV Canto, and FLA Pantin*

Site-specific fertilizer recommendations were generated for the PhilRice Negros seed production to increase rice seed yield. RCM was used in 2018 DS. MOET was also used in identifying nutrient limitations based on site characterizations. Yield harvested was 92% comparable with the target yield using RCM as basis of recommendation. Some fields in the station have nutrient limitations based on MOET results. The general fertilizer recommendation for the station must provide sufficiently high nitrogen (90kg N/ha for the wet season and 120 kg N/ha for the dry season), phosphorus (30-45 kg P<sub>2</sub>O<sub>5</sub>/ha), and potassium (75-90 kg K<sub>2</sub>O/ha).

## **Insect Pests and Disease Implications on Rice Yields and Profitability**

*CLC Mondejar, MO Palanog, GE Bello, LG Dogeno, CJE Parina, MAD Norbe, RF Austria, MO Etchon, KV Canto and FLA Pantin*

Activities was focused on benchmarking that include data collection of pests in seed production area. Stemborer and leaf folder damaged were observed. Green leafhoppers,

adult whorl maggot, leaf folder, stemborer, and rice bugs were collected using sweeping. No significant disease infection was observed during the dry season. Rice tungro virus, bacterial leaf blight, and bacterial leaf streak significantly affected the yield of some rice varieties planted during wet season.

## **Development of Production Technologies to Address Climate Change**

*CU Seville, LT Sta. Ines, and CJE Parina*

This study was conducted to develop technologies to help farmers cope with changing climate. This study would identify suitable planting schedule for inbred varieties. Six inbred rice varieties, NSIC Rc 302, Rc 354, Rc 360, Rc 398, Rc 400, and Rc 440 were established in 9m<sup>2</sup> plot in three replicates in five planting schedules during the 2018 WS.

# DEVELOPMENT OF TECHNOLOGIES FOR ORGANIC-BASED RICE AREAS (OBRA)

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Project activities included collection of soil samples from organic rice farms in Bago City, Escalante City, Murcia and Candoni, Negros Occidental. The project completed two seasons of seedlings experiment using NSIC Rc 204H and Rc 222 seedlings raised in seedbeds with bokashi, vermicast, sugarcane mudpress, Bio-N versus zero fertilization, and chemical fertilization. Another field experiment using NSIC Rc 204H, Rc 222, Rc 226 and Rc 360 under bokashi, vermicast, sugarcane mudress, and green manure vs. chemical fertilizer and zero fertilization plots was also conducted.



We are a government corporate entity (Classification E) under the Department of Agriculture. We were created through Executive Order 1061 on 5 November 1985 (as amended) to help develop high-yielding and cost-reducing technologies so farmers can produce enough rice for all Filipinos.

With a "Rice-Secure Philippines" vision, we want the Filipino rice farmers and the Philippine rice industry to be competitive through research for development in our central and seven branch stations, coordinating with a network that comprises 59 agencies strategically located nationwide.

We have the following certifications: ISO 9001:2008 (Quality Management), ISO 14001:2004 (Environmental Management), and OHSAS 18001:2007 (Occupational Health and Safety Assessment Series).

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