2020

PhilRice R&D Highlights

PhilRice Negros

Contents

STATION

PhilRice Negros

Branch director: Gerardo F. Estoy Jr.

EXECUTIVE SUMMARY

PhilRice Negros develops, improves, and promotes rice and rice-based technologies for Western and Central Visayas with special focus on organic rice farming.

The station handled five projects: (1) Project on Rice Areas towards Intensified and Sustainable Environment (PRAISE); (2) Development of Organic Rice-based Production Systems (OBRA); (3) Collaborative Rice Extension for Achieving Community Transformation (REACT); (4) Rice Business Innovations System (RiceBIS); and (5) Strengthening Regional Rice Seed System (RSS) in the Visayas.

This year, PRAISE project established one rice-based cropping pattern in the station, in which rice was planted with upland kangkong, eggplant, and string beans. Soil fertility status of the station's seed production area was assessed. Fertilizer recommendations of 120-45-60kg and 90-45-45kg of N, P_2O_5, K_2O were applied in the DS and WS, to gain 6t/ha in DS and 5t/ha in WS. Rice Tungro Disease (RTD) and stem borer were identified as the most prominent problems for both seasons. The suitable sowing period for DS establishment was from last week of October to November and June for WS. To facilitate enhanced monitoring and data gathering of pest incidences and management practices in the seed production and research areas, 2 android-based applications were developed: WIDGEN (a weed identification application) and Open-data Kit (for monitoring and recording cultural management practices, pest incidences, and other important observations and generate real-time recommendations).

For the OBRA project, a baseline survey of organic rice farmers was conducted in Candoni, Negros Occidental. Seventy-one organic rice farmers were interviewed. Organic fields are almost equally distributed in three ecosystems: irrigated (40%), upland (33%), and rainfed (26%). Majority of farmers used good seeds of inbred rice varieties, mostly exchanged from other farmers while some used certified seeds distributed from the government through the Rice Competitiveness Enhancement Fund Program.

Varietal demonstrations under the REACT project were established in the Central Philippines State University (CPSU) in Kabankalan and Moises Padilla campuses and at PhilRice Negros station. In the Moises Padilla site, NSIC Rc 358, Rc 216 and PSB Rc 18 performed well under the PalayCheck System. The Kabankalan site was applied with organic farming, in which NSIC Rc 222 achieved 3.9t/ha. Genotypes

such as Red-64, Arabon, Ginandara, and Minerva; and NSIC Rc 222, Rc 216, Rc 398, Rc 416, Rc 420, and PSB Rc 18 yielded significant results in the Negros station demo.

Knowledge Sharing and Learning (KSL) efforts resulted in the establishment of two additional rice hubs in Victorias City, Negros Occidental and Alicia, Bohol. Four quarterly seminar series with special COVID-19 adjustment topics, RCEF Technical briefing, and training of trainers reached 167,122 stakeholders.

For the RiceBIS project, Net income from brown rice processing enterprise (BRPE) reached P12,556 in 2019 and P34,673 in 2020 with 8% and 25% ROI, respectively. In Phase II, NSIC Rc 216 and Pioneer topped the list of inbred and hybrid rice varieties planted in the project sites. Modified Farmer Field School (FFS) was conducted from July to November 27, 2020.

Under the Rice Seed System Project, NSIC Rc 222 and NSIC Rc 216 were the most preferred varieties of the survey respondents during dry season and wet season, respectively. For 2020 DS, NSIC Rc 358 obtained the highest yield (5.83t/ha) followed by PSB Rc 10 (5.10t/ha). NSIC Rc 216, Rc 222, Rc 358, Rc 400, and Rc 442 performed well in Aklan; while NSIC Rc 222 and Rc 400 in Negros Occidental; and NSIC Rc 358, PSB Rc 10, and Rc 18 in Bohol.Meanwhile, NSIC Rc 400 produced the highest yield of 4.8t/ha, followed by NSIC Rc 222 (4.5t/ha) and Rc 358 (4t/ha) in the wet season.

Aside from these five projects, PhilRice Negros also implemented extra-core projects and studies: the Multi-Purpose Seeder in Iloilo, Antique, and Negros, Weather Rice-Nutrient Integrated Decision Support System (WeRise) Project, the National Cooperative Testing (NCT) for hybrid and rainfed dry direct-seeding rice, Pre-NCT for Micronutrient-dense rice selections, and Philippine Rice Information System (PRISM).

Under the Rice Competitiveness Enhancement Fund (RCEF) Seed Program, 404,785 bags @20kg/bag (DS-71,359 and WS-333,426) were distributed, while the Extension Program established 6 and 13 techno-demo sites during DS and WS, respectively. Four batches composed of 46 males and 21 females were also trained in the Training of Trainers.

PROJECT 1

Project on Rice Areas toward Intensified and Sustainable Environment (PRAISE)

Cherry U. Seville

The project addressed the regional issues on low productivity, profitability, adaptability to climate change impacts, lack of labor, and high cost of production. It established rice-based cropping pattern in the station environment, assessed the soil fertility status of rice fields, provided location-specific fertilizer, developed standard procedures and decision guides for insect pests and disease monitoring activities, characterized the rice production situation, and identified suitable planting calendar for inbred seed production. It had 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.

The station's monitoring team was reconstituted to effectively gather and process data needed for real-time recommendations and generate management options to be used as guide for the Business Development (BD) group in achieving optimum rice yield and quality. Monitoring team found that Rice Tungro Disease (RTD) and stem borer were identified as major problems in rice production.

To determine suitable planting dates for inbred, NSIC Rc 302, Rc 354, Rc 360, Rc 398, Rc 400 and Rc 440 were established in 13 planting schedules during DS and WS. Crop establishment in the DS is best done from last week of October until November and in June for WS.

Development of Highly Productive Rice-Based Farming Models

Le-Ann G. Dogeno, Cherryl U. Seville, Anileen O. Pajarillo, and Jennifer C. Soliguen

The study assessed and validated the efficiency of rice-based cropping patterns at PhilRice Negros' environment. Three replications were established at 10m x 5m dimension, each with rice, eggplant, and upland kangkong. The establishment of each crop was based on its respective agronomic specificity. Only the WS demonstration was completed. For rice, an average yield of 2.69t/ha was produced; upland kangkong, 330.56kg; and eggplant, 897.20kg gaining a sale of P51,256.94. The sale of these commodities was based on price within the community.

Nutrient Management for Sustainable Rice-Based Farming

Cielo Luz Mondejar-Bello, Gerald E. Bello, Karla V. Canto, Chennille Kay L. Galvan, Alvin D. Palanog, May O. Palanog, Ellie Zandrew S. Ganela, and Genaro O. San Valentin

While many of the present rice varieties can yield up to 10t/ha, the actual harvest in the station only averages less than 5t/ha. The reasons behind the stagnant rice yield in the province should be identified. Soil fertility was assessed, in which the seed production area of PhilRice Negros was divided into 27 uniform sampling units and soil samples from each sampling unit were collected separately.

Results of the analysis showed all soil samples were strongly acidic and most of the nutrients needed by the rice crop were limiting. The results of soil analysis were supported by the NOPT and actual field performance trial using recommendations for nutrient management. However, two to three seasons are required to determine the consistency of the rice crop performance using the recommended nutrient management for PhilRice Negros.

Insect Pests and Disease Implications on Rice Yields and Profitability

Cielo Luz Mondejar-Bello, Gerald E. Bello, Karla V. Canto, Chennille Kay L. Galvan, Alvin D. Palanog, May O. Palanog, and Ellie Zandrew S. Ganela

Decrease in yield is usually associated with pests and diseases, specifically tungro, which is prevalent in PhilRice Negros. The station's seed production area was monitored and evaluated by the R&D unit to identify problems and management options to be implemented by the BD unit. An Android mobile application was developed for this activity. RTD and stem borer were identified as the major pests damaging the rice crops in the 2020 dry and wet seasons.

The internal seed quality monitoring team of PhilRice Negros was reconstituted and restructured to ensure optimum yield and quality of rice seeds produced by the station.

Development of Production Technologies to address Climate Change

Cherryl U. Seville, Ellie Zandrew S. Ganela, AJ T. Ruales, and Leo T. Sta. Ines

Climate change is one of the challenges affecting all aspects of food security including access, utilization, and price stability. It also affects the incidence and emergence of pests and diseases. One of the PhilRice Negros' efforts on addressing the issue is to identify the suitable planting dates for rice establishment. NSIC Rc 302, Rc 354, Rc 360, Rc 398, Rc 400, and Rc 440 were established in a randomized complete block design with $9m^2$ plot size. A 1-to-2-week sowing interval was observed during the dry and wet season. Yield performance of the varieties was low due to water scarcity and RTV infection in the DS and RTV infection and pest infestation in the WS. Yield data of the varieties in 2020 DS validated the results from 2019 DS. Yields started to increase during the last week of October to November. Initial results showed June as the promising establishment schedule for the WS.

PROJECT 2

Development of Organic Rice-based Production Systems (OBRA)

Alvin D. Palanog

Baseline Survey of Organic Rice Farmers in the Visayas

Alvin D. Palanog, Cielo Luz Mondejar-Bello, Albert Christian Suñer, Cherryl U. Seville, Leo T. Sta. Ines, May O. Palanog, Karla V. Canto, and Gerald E. Bello

Information on the existing and best practices and management techniques of organic rice farmers is needed for a sustainable, efficient, economic, environmental, and humanely standard protocol in organic rice farming. Hence, a purposive survey on current certified and practicing organic farmers was conducted in Negros Occidental. The survey was conducted in Candoni, Negros Occidental where majority of the organic farmers were located. Seventy-one organic rice farmers were interviewed while their farms were geo-tagged using global positioning system (GPS) device. Majority of the organic farmers surveyed were male (82%) aged 46-60 years old. Most of the organic farmers surveyed had low income (86%) and attained secondary education. Those with average to high income attained tertiary education. In terms of rice area, majority of farmers cultivated 1-2ha with most of them devoting only less than 1ha for organic rice production. Majority of the respondents have been farming from 10 to 20 years, and almost all of them (90%) started organic rice farming about 10 years ago. Fields are almost equally distributed in three ecosystems: irrigated (40%), upland (33%), and rainfed (26%). Majority of farmers used good seeds of inbred rice varieties, exchanged from fellow farmers. Some of them used certified seeds distributed from the government through RCEF. Farmers considered eating quality, pest resistance, and yield as basis for choosing varieties to plant. Establishment method was mostly transplanting followed by direct seeding. Drill method was the common farmers' practice in the upland ecosystem. Typically, farmers followed the ideal age of seedlings for transplanting (18-21 DAS) and planting distance (20cm x 20cm) while the others used younger seedlings and wider planting distance. Farmers source water from natural streams (40%) and communal irrigation system (20%). Fifty out of 71 farmers used filter ponds in their irrigation systems and combination of swamp cabbage and monochoria as common filter plants. Rice bugs were the common insect pest attacking organic rice while brown spot and rice blast were the common field diseases. Yield from organic farming were relatively variable across ecosystems with higher mean yield observed in irrigated fields.

PROJECT 3

Collaborative Rice Extension in Achieving Community Transformation (REACT)

Gerardo F. Estoy Jr.

The Collaborative Rice Extension in Achieving Community Transformation (REACT) started in 2018. The project, which was terminated this year, implemented three components: (1) DiscoveRice: Palayamanan®, Demonstration, Learning and One-stop Information Shop, (2) Localization of Knowledge Products and Enhancing Knowledge Sharing and Learning (KSL) activities, and (3) Rice-based Food Product Development.

Varietal trials in CPSU-Kabankalan and Moises Padilla showed a significant difference between locations. In CPSU Moises Padilla, NSIC Rc 358, PSB Rc 18, and NSIC Rc 216 gained yields of 8t/ha, 7t/ha and 6t/ha, respectively. In CPSU-Kabankalan, NSIC Rc 222 produced 3.9t/ha.

Cropping pattern integrating tomato, mung bean, pechay and upland kangkong was identified as economically adaptable at the station. Chicken, ducks, and goats comprised the animal component.

Most of the activities under KSL were focused on knowledge products distribution, social media utilization, and technical dispatch.

Rice festival and cookfest were not implemented as targeted due to IATF restrictions on mass gathering. The component focused on the collection of photos and layout of the cookbook for publication. Photo collections were from previous year's activities.

Component 1: Discoverice: Palayamanan® Demonstration, Learning and One-Stop-Shop Information System

Le-Ann G. Dogeno, Anileen O. Pajarillo, Jennifer C. Soliguen, Cherryl U. Seville, and Gerardo F. Estoy Jr.

The study aimed to demonstrate rice-based technologies and recommend location-specific options. Three varietal trials were established during dry season and one commercial pigmented rice production during wet season. Various cropping patterns were also evaluated.

The varietal trial on station (DS) was composed of traditional, recommended, and modern genotypes. Trials showed Red-64, Arabon, Ginandara and Minerva as the superior traditional varieties with 3.5-3.8t/ha yield. National and recommended varieties NSIC Rc 222, Rc 216, Rc 398, and PSB Rc 18 performed well with 3-4t/ha yield. NSIC Rc 416 and Rc 420 produced the highest yield of 4t/ha and 3.8t/ha, respectively. For wet season, Arabon, Balatinao, MG 26, Red-64, and Dinorado were commercially producedto expand seed sources in Negros.

The results for varietal trials established in CPSU-Kabankalan and Moises Padilla showed significant difference between locations. The Moises Padilla setup was cultivated using PalayCheck® while organic production was implemented in Kabankalan. In CPSU Moises Padilla, NSIC Rc 358 gained 8t/ha; PSB Rc 18, 7t/ha; and NSIC Rc 216, 6t/ha. For CPSU-Main, NSIC Rc 222 produced 3.9t/ha. Wet season setup was suspended due to the limitations brought about by the pandemic.

For the crop component, crop pattern composing tomato, mung bean, pechay, and upland kangkong was identified as economically adaptable at station. The setup was maintained to validate results and to serve as food source for PhilRice workers and nearby communities. Chicken, ducks, and goats comprising the other component were sold with the proceeds going to the station's income.

Component 2: Capacity building and knowledge sharing and learning

Vanessa A. Tingson, Karla V. Canto, and Cherryl U. Seville

This study generally aimed to increase the productivity of farmers by raising awareness on research-based technologies.

Additional two rice hubs were established — one in Victorias City, Negros Occidental and one in Alicia, Bohol. Implementers reached out to 167,122 stakeholders through the four quarterly seminar series, RCEF technical briefing, and training of trainers. The quarterly seminar series tackled updates on rice technologies, updates on healthier rice, and COVID-19 adjustment of agencies. Fifteen staff were dispatched as speakers during Training of Trainers, Farmer Field Schools, and Info Caravan. Gabay sa Makabagong Pagpapalayan was the most distributed knowledge products. Province of Iloilo had the most recipients of knowledge products. Eighty-two percent of the knowledge products distributed went to farmer-beneficiaries of seed distribution and the rest were recived by farm schools, OPAs, PhilRice Negros staff, agricultural technicians, and recipients of PhilRice project beneficiariess.

Component 3: Rice-Based Food Product Development

Cherryl U. Seville, Care Jason E. Parina, Jose Arnel E. Cordova, Vanessa A. Tingson, Jessa Marie M. Barrato, Le-Ann G. Dogeno, Anileen O. Pajarillo, and Karla V. Canto

Visayas is rich in culinary traditions. The station banks on this richness to enhance rice-based food products. PhilRice Negros had been conducting a rice festival during Lakbay Palay but contestants were only limited to households from the local government units and menu were usually main dishes or desserts. To capture a wider scope, different generations were targeted as participants. This would also strengthen the link among PhilRice Negros, local government units, and the academe. For this year, cookfests were not conducted due to restrictions on mass gathering. The study focused on photo collection lay out of the cookbook.

PROJECT 3

Rice Business Innovations System (RiceBIS) in the Visayas

Annileen O. Pajarillo

The RiceBIS Phase I in Negros Occidental covers 80ha rice production clusters participated by 80 rice farmers (51 male and 29 female) from Murcia and City of Victorias. Based on the survey conducted at the end of every season, adoption rate for yield-enhancing and cost-reducing technologies is high, particularly on seeding rate, use of high-quality seeds, and nutrient and pest management. Adoption of farm machines is still low. The agroenterprise development, especifically brown rice production of pigmented rice-Red 64, was prioritized in these communities. Members were continuously capacitated on organizational management, business operation, and financial management. Market linkage was formed and Memorandum of Agreement with the partner was prepared. Net income from brown rice processing enterprise was recorded at P12,556 and P34,673 in 2020 with an ROI of 8% and 25% respectively.

The Phase II of the RiceBIS project was implemented at Brgy. Bayug, Canlaon City in Negros Oriental in Region VII. Two main activities were carried out: identification of location-specific, yield-enhancing and cost-reducing technologies; and development of agro-enterprise, which may include rice-based product identification, product development, market scanning, market study analysis, marketing, promotional activities and market linkage. Focus Group Discussions were conducted in its first year of implementation. Activities included plotting of seasonal calendar, preference matrix of varieties, and organizational challenges. Farmers listed NSIC Rc 216 and Pioneer as top varieties. The three yield-enhancing and three cost-reducing technologies were determined and emphasized during the modified Farmer Field School conducted from July 20 to November 27, 2020. which was attended by 150 farmers with 125 graduates.

PROJECT 4

Rice Seed System (RSS) in the Visayas

May O. Palanog

The RSS project aimed to improve the accessibility and availability of recommended and preferred varieties in Region VI and VII. The two studies were (1) Increase utilization of high-quality seeds to improve the rice seed system in Central and Western Visayas and (2) Promotion of high-quality seeds of location-specific high yielding varieties in Visayas.

To increase the utilization of high-quality seeds (HQS) in the Central and Western Visayas, a community technology demonstration was established in Sitio Cabarles, Murcia participated by six local farmers. Cooperators also participated in the short refresher courses on varietal selection, land preparation, and seed purification. One farmer produced HQS and sold registered seeds through PhilRice Negros Business Development Unit. The project also evaluated the seed system of farmer-leaders in Negros Occidental. Results showed that 79% of the respondents use HQS, in which 71% is certified seeds. NSIC Rc 222 and NSIC Rc 216 were the most preferred varieties in the dry season and wet season, respectively.

Six varieties were assessed under farmer's field in irrigated and rainfed area. During DS, NSIC Rc 358 obtained the highest yield (5.83t/ha) followed by PSB Rc 10 (5.10t/ha). NSIC Rc 216, Rc 222, Rc 358, Rc 400, and Rc 442 performed well in Aklan; NSIC Rc 222 and Rc 400 in Negros Occidental; and NSIC Rc 358, PSB Rc 10, and Rc 18 in Bohol.

During WS, trials were only conducted in the irrigated area of Brgy. Damsite, Murcia and rainfed area in Brgy. Aboabo, Murcia, Negros Occidental due to the pandemic. NSIC Rc 400 produced the highest yield (4.8t/ha) followed by NSIC Rc 222 (4.5t/ha), and Rc 358 (4t/ha) in the irrigated ecosystem. NSIC Rc 216 gained the highest harvest (4.5t/ha) followed by NSIC Rc 472 (4t/ha) in the rainfed ecosystem.

Techno demo on public hybrids and inbred is one of the activities of Public Hybrid Rice Seeds System (PHRSS) Project under the Rice Seed System (RSS) Program. The techno-demo at PhilRice CES and branch stations showcased public hybrids and newly released rice varieties and the PalayCheck System. Nine newly released varieties (mostly 500 series) and two public hybrids (PSB Rc 72H and NSIC Rc 204H) were established at PhilRice Negros during the DS. NSIC Rc 204H attained the highest yield despite the RTV infection. PSB Rc 72H obtained 4.40t/ha yield, ranking fourth among the 11 varieties. NSIC Rc 506 attained the highest yield (5.60t/h) among inbred varieties with 10 % RTV infection. NSIC Rc 160 had the highest RTV infection (70%) while NSIC Rc 512 (2.75t/ha) was the lowest yielder.

Field Evaluation of FPA-Approved Fertilizers for Irrigated Lowland Rice Ecosystem for the Packaging of Best Nutrient Management Technology

Cielo Luz Mondejar-Belo

This project determined the best nutrient management package to achieve high yield at the least cost, and also in a profitable and environmentally-safe manner.

Six FPA-approved fertilizer companies and PhilRice Negros participated in this project during the WS field trial. The actual yield without the crop cut ranged from 2,638 to 3,652kg/ha in 2020 WS. For the crop cut yield, the corrected yield ranged from 4.07 to 5.15t/ha with the ThaiPhil Advance Agritech Corporation garnering the highest yield while BioPrime Agri Industries Inc recorded the lowest. Yield applied with No-S gained the highest yield, followed by No-K, No-P, No-N, and complete. Plants in the No-S treated plots produced the highest, probably because all other plots received S in the form of acid contributing $(NH_4)_2SO_4$. Yield component data such as panicles/m^2, spikelets/panicles, filled and unfilled spikelets (%), and 1,000 grain weight were also collected for rice productivity analysis.

NCT for Rainfed Lowland (Dry-seeded) Rice Selections

Leo Sta. Ines, Cielo Luz Mondejar-Belo, and Karla V. Canto

The field experiment at PhilRice Negros had 16 entries including the four check varieties. The entries were seeded on June 21, 2020 with a spacing of 30cm between rows. Sofit was applied as pre-emergence herbicide and Nominee was sprayed as early post emergence herbicide 10 days after seeding (DAS). The first fertilizer was applied with the rate of 90-30-30kg-NPK/ha using complete fertilizer (14-14-14) and Urea (46-0-0) in three split applications. Rice tungro infestations and other pests were recorded starting September 23, 2020. Field were maintained (weed control and clearing of levees) to avoid weed competition and water stress. Data on days to heading were gathered from the third week of September until third week of October 2020, while plant height and the number of productive tillers were gathered at the maturity dates of each entry. Entries were harvested at maturity. Other data observed were phenotypic acceptability ratings and reaction to insect pests and diseases.

Three entries significantly outyielded the check varieties PSB Rc68, NSIC Rc 192, PSB Rc 14, and the local check variety NSIC Rc 222. These best selections were

C9352 (4.2t/ha), PR42837-NSIC Rc222-SM-DR-9 (4.1t/ha), and IR16L1860 (4.1t/ha). The entries tend to be susceptible to rice bug attack, while some were moderately susceptible to white head caused by stem borer.

NCT for Hybrid Rice Selections

Leo Sta. Ines, Cielo Luz Mondejar-Belo, and Karla V. Canto

Twenty-six hybrid entries were tested during the dry season while 27 entries were planted during the dry season including the check varieties. The entries were transplanted in 20cm x 20cm spacing with three replications in RCBD and were grouped in two. The rate of 150-30-60kg-NPK/ha during the dry season and 90-30-60kg-NPK/ha during the wet season using complete fertilizer (14-14-14) and Urea (46-0-0) in four split applications were applied. Rice tungro infestations and other pests were recorded during the early tillering stage up to maturity.

Index No. 8 in Group I and Index No. 19 in Group II either had comparable yield or outyielded check varieties Mestiso 38, Mestiso 6, and Mestiso 20 (Group I); and Mestiso 20, Mestiso 46, and NSIC Rc222 (local check) for Group II in dry season. During the wet season, the entries Index Nos. 4 and 12 outyielded the check varieties Mestiso 103, Mestiso 99, Mestiso 60, and Mestiso 6 in Group I. Index No. 19 outyielded the check varieties Mestiso 99, Mestiso 46, and NSIC Rc222 (local check) in Group II.

Weather Rice-Nutrient Integrated Decision Support System (WeRise)

Keiichi Hayashi, Ailon Oliver V. Capistrano, Daniel S. Villon Jr.

The weather-rice nutrient integrated decision support system (WeRise) was developed as a climate prediction-based app by IRRI-Japan Collaborative Research Project to provide weather advisories such as the best time to plant, suitable variety for planting, and the optimum timing of fertilizer applications.

In Sta. Barbara, Iloilo, NSIC Rc 420 performed well in farmers' practice and WeRise recommendations. NSIC Rc 216 and NSIC Rc 420 performed well in Cabatuan and Miagao, respectively. Average yield in three municipalities were 2.33, 3.18 and 3.7t/ha for NSIC Rc 216, Rc 222, and Rc 420, respectively. NSIC Rc 216 average yield was recorded at 4.83t/ha; NSIC Rc 222, 2.9t/ha; and NSIC Rc 420, 4.03t/ha during the WS. Miagao trial showed that NSIC Rc 216 attained 4.05t/ha, NSIC Rc 222, 4.0t/ha; and NSIC Rc 420, 4.65t/ha. In Sta.Barbara, NSIC Rc 216 gained an average yield of 2.6t/ha; NSIC Rc 222, 2.6t/ha; and NSIC Rc 420, 3.7t/ha. In Cabatuan, NSIC Rc 216 produced in an average, 3.35t/ha; NSIC Rc 222, 2.75t/ha; and NSIC Rc 420, 2.7t/ha.

Philippine Rice Information System: Region VI and VII

Gerald E. Bello and Chennille Kay L. Galvan

There were 261 active fields monitored in Region VI (Western Visayas) and 64 active fields in Region VII (Central Visayas). As part of COVID-19 response, the schedule of each monitoring visit was adjusted to every 24 days instead of every 12 days during the 2nd semester. Two rice and non-rice activities were conducted across each region with 676 area points validated. Stratified rice and non-rice validation were also conducted in four provinces in Region VI during the first semester. All data and other data products are available for public use in PRISM's official website https://prism.philrice.gov.ph.

Pre-NCT for Micronutrient-Dense Rice Selections

Leo T. Sta. Ines, Cielo Luz Mondejar-Bello, and Karla V. Canto

About 40% of the world population suffered from micronutrient deficiency (Welch and Graham, 2002). The approach was to fortify staple foods such as rice with the micronutrients. Field experiments were established at PhilRice Negros during the dry and wet season. One-hundred entries were tested during the dry season and 100 entries were planted during the dry season including the check varieties. The entries were transplanted in 20cm x 20cm spacing with three replications in RCBD. The rate of 120-30-60kg-NPK/ha during the dry season and 90-30-60kg-NPK/ha during the wet season using complete fertilizer (14-14-14) and Urea (46-0-0) in four split applications were applied. Rice tungro infestations and other pests were recorded during the early tillering stage until maturity. Index No. 18(IR17M1650) was the best performing selection with 5.9t/ha, outyielding the check varieties NSIC Rc 222 and NSIC Rc 460. In the wet season, IR15M2601 produced the highest yield of 5t/ha, which was significantly higher than the check varieties NSIC Rc 222 and NSIC Rc 460.

RCM Phase III: Transition to Operational Sustainability for Research and Dissemination from IRRI to DA

Wilfredo B. Collado, Sandro D. Canete, Cherryl U. Seville, Mary Ann D. Norbe, and Rayan Deloma

The Rice Crop Manager (RCM) is the main component of the RCM Advisory Services (RAS). It is a digital agriculture information service that provides farmers with information to improve productivity and profitability of their rice farming through targeted and integrated crop management. A research trial was implemented in Libacao, Himamaylan with seven farmer cooperators evaluating and assessing the RCM agronomic performance under specified field conditions. Average grain yield obtained from RCM1, RCM2, and FP treatments were 3.14t/ha, 3.29t/ha and 3.06t/ha, respectively. Enhanced RCM performance relative to the existing RCM (RCM1 vs RCM2) in an on-station implementation attained an average grain yield of 3.91t/ha and 3.76t/ha, respectively. In an on-station trial, 15% RTV manifestation started at active tillering stage and high infestation of rice bug was observed during the booting stage to harvesting. Water scarcity during the cropping season contributed to the inefficiency of the applied herbicides as well as to the timing of fertilizer application in the fields. The abundant weeds species were *Fimbristylis miliacea*, *Echinochloa sp.,* and *Sphenoclea zeylanica*.

Rice Competitiveness Enhancement Fund in the Visayas (Seed and Extension Components)

Jose Arnel E. Cordova, Albert Christian S. Suner, Rojen Austria, and Fennie Lyn A. Pantin

Seed distribution, training, and communication were conducted under the Rice Competitiveness Enhancement Fund Program. For 2020, the station distributed 404,785 bags (20kg/bag) which were planted to an estimated 146,570ha by 112,408 farmer-beneficiaries. Six and 13 techno demo sites were established during DS and WS, respectively.

Training of Trainers on the production of high-quality inbred seeds and farm mechanization were conducted to 67 stakeholders from January to November 2020.

EXTRA-CORE PROJECTS

All recipients of RCEF seeds in Region VI and VII received copy of *Gabay sa Makabagong Pagpapalayan, Sistemang* PalayCheck primer, and PalayCheck System-booklet on rice production. Audio and text of some of the Key Check Videos and leaflets were localized.

The station produced seeds needed by the RCEF program in both DS and WS. Seeds were planted in 59.62 and 55.34ha, which produced 3.1t/ha and 2.7t/ha during the DS and WS, respectively. The station produced NSIC Rc 216, Rc 222, Rc 226, Rc 27, Rc 416, Rc 442, Rc 480, PSB Rc 10, and Rc 18. Net income of P1,463,760.59 was generated from seed production, P299,440.00 from the hostel and event hosting; and P28,110.00 from PhilRice products and services.

In 2020, 122 staff are contributory to the accomplishments of the station (22, admin; 18, RCEF-admin; 19, RCEF-technicians; 14, research; 13, development; and 30, BD unit). Staff is comprised of 14 permanent; 3, contractual; and 105, service contract.