PHILMECH

Quarterly Publication of the Philippine Center for Postharvest Development and Mechanization

COVER STORY:

SIQUIJOR COOP PRIDES ITSELF ON HAVING HIGH QUALITY CORN GRITS

40 Years

of saving losses and modernizing the Philippine Agriculture

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Contents

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ABOUT THE COVER

Ms. Josieli P. Bajo and Mr. Jason Omilig of the Alang sa Tanan Multi-purpose Cooperative (ALTAMCO) in Larena, Siquijor pose with the compact corn mill of PHilMech.

Photo by: Danilo T. Esteves
Cover Design by: Jett Molech G. Subaba

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PHilMech setting up regional technology centers

The Philippine Center for Postharvest Development and Mechanization (PHilMech) will establish Regional Technology Management and Demonstration Centers (RTMDCs) that will help spearhead the agency's efforts to commercialize its technologies and offer training to farmers who are completely or relatively new to agricultural mechanization and help form more agribusiness enterprises in the rural areas.

PHilMech Executive Director Baldwin G. Jallorina said the PHilMech-RTMDCs will allow farmers to gain easy access to information and technology services, with the overall aim of commercializing more postharvest and farm mechanization technologies.

"As such, the PHilMech-RTMDCs will serve as a training and learning site, technology demonstration and deployment site, information dissemination hub, and farm and business advisory kiosk," Dr. Jallorina said.

"Consequently, it will offer easy access to information and technology services to grassroots clients and local stakeholders for more far-reaching adoption and diffusion of new postharvest and mechanization technologies. The PHilMech-RTMDCs will serve as a linchpin of technology generation and adoption at the regional level," he said.

Dr. Jallorina added the PHilMech-RTDMCs will also offer business advisory, or to assist clients in the formation of agribusiness enterprises using the postharvest and farm mechanization technologies developed by the agency. Clients assisted will then be referred to enterprises and institutions that are partners of PHilMech in the development, manufacture, and distribution of its developed technologies for the farming sector.

The PHilMech Regional Technology Management and Demonstration Center at DA-RFO V in Pili, Camarines Sur.

Besides stand alone or individual technologies, PHilMech has been developing protocols and processes, wherein technologies produced by the agency and locally-available equipment are tapped for easier adoption by farmers, cooperatives, and agribusiness enterprises. Among the successful protocols, PHilMech has so far developed is for the production of soybean products like tofu and soymilk using equipment that can be procured locally and started in a small scale, allowing home-based enterprises to adopt the system.

PHilMech will also help foster e-learning through the technology centers, which is part of the agency's efforts to link farmers to cyberspace and social media.

The agency is already in the process of establishing the centers in Abuyog, Southern Leyte for Region 8 (Eastern Visayas), Tugbok District, Davao City for Region 11 (Davao Region), and Pili, Camarines Sur for Region 5 (Bicol Region). PHilMech, also in

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PHilMech Impeller compact rice mill

Impeller compact rice mill, 2018 NICE winner

The Department of Science and Technology (DOST) through its Technology Application and Promotion Institute (TAPI) has recognized the impeller compact rice mill of PHilMech as Outstanding Creative Research. The awarding took place during the National Invention Contest and Exhibit (NICE) at the Le Pavillion, Pasay City on August 14-16, 2018.

As first prize winner in the Likha Award, DOST-TAPI believed in its "potential to develop into a relevant and commercially viable technology for possible adopters." Dr. Michael A. Gragasin, Dr. Romualdo C. Martinez and Engr. Jayvee P. Illustrisimo of PHilMech developed the technology. They won a cash prize of Php100,000, a plaque and a certificate of recognition.

According to Dr. Gragasin, one of the inventors, "the newly developed rice mill technology is highly favorable for villages with no existing rice mill in the area. This rice mill can be easily connected to household or single-phase electrical line". Efficient and simple, the PHilMech impeller compact rice mill can produce both white rice and brown rice with a milling cost of Php 0.87 per kg of milled rice.

The NICE is an annual event organized by TAPI-DOST to encourage inventors and innovators to come up with new products and services that are commercially viable and beneficial to the society. Regional winners in the invention contest and exhibit of the previous year participated in the 2018 NICE.

by Mila B. Gonzalez

Farmer-scientists, leaders step up rice production and mechanization

Thirty-one *Magsasakang Syentista* (Farmer-Scientists) graduated in a training course on the production of high-quality inbred rice seeds and farm mechanization at San Jose del Monte, Bulacan last July 20-31, 2018.

Senator Cynthia A. Villar graced the ceremony and encouraged the graduates to step up.

She said, "You (farmers) have to be competitive. You have to produce more per hectare courtesy of PhilRice and you have to mechanize to reduce your labor cost courtesy of PHilMech. The hope of our nation is PHilMech and PhilRice."

Senator Villar further emphasized, "It is important for the farmers to profit and be skilled because the food security of our country depends on them."

The Philippine Center for Postharvest Development and Mechanization (PHilMech) and the Philippine Rice Research Institute (PhilRice) conducted the said training to improve the farmers' rice production capacity and efficiency through the support of Agricultural Training Institute (ATI) and Villar Social Institute for Poverty and Governance (Villar SIPAG).

PhilRice kick-started the training with a discussion about the PalayCheck system, the seed exchange program, and the maintenance of the seed quality.

Successively, PHilMech provided lectures, demonstrations, and hands-on activities on land and seedling preparation, harvesting and drying to equip the participants with the knowledge and skills on the operation and maintenance of selected agricultural machinery.

The participants were evaluated based on knowledge gained, skills acquired and their feedback of the participants to the over-all conduct of the training course such as the content, resource persons, venue, food, accommodations and others.

The participants are expected to be monitored, coached and mentored for six months to one year after the training to further assess what have been undertaken to the action plans they prepared during the training..

by Jessica Marie Laturnas

Senator Cynthia A. Villar encourages the farmer-scientists who finished the training course on farm mechanization.

Fellow Filipino workshop participants with AJPM managing editor, Dr. Rodolfo Estigoy (middlle) and SAFE Network coordinator , Dr. Novizar Nazir.

PHilMech journal editor attends SAFE workshop in KL

Dr. Rodolfo P. Estigoy, Asian Journal of Postharvest and Mechanization (AJPM) managing editor attended the Sustainable Agriculture, Food and Energy (SAFE) Network Workshop on Journal Publication Collaboration. The workshop was held in Kuala Lumpur, Malaysia on September 12-13, 2018.

The goal of the seminar workshop is to gather representatives from journals managed by SAFE members and provide a venue for scholars, scientists, reviewers and journal editors to exchange ideas and stories on their respective journal publications. It was also a venue to generate new opportunities and serve as platform for publication collaboration and the exchange of manuscripts and forge alliance between SAFE Network journals for better dissemination among its member agencies.

The seminar workshop was held at the Universiti Teknologi Mara main campus attended by different editors from scientific journals published by research and development institutions and universities from the Philippines, Indonesia and Malaysia.

The output of the workshop is a letter of intent which maps out the platform for publication collaboration among twenty journals under the SAFE Network. This will eventually increase the capability of the scientific community to develop strategy on how to improve journal management towards Scopus indexing.

The seminar also included some topics on introduction on journal publication collaboration , ethics in scientific publication, management of scientific publication and some tips on writing good scientific papers and successful publication in high end journals.

Dr. Estigoy was able to network with 19 other editors for future collaboration and manuscript sharing and had the chance to let experts in journal publication review the AJPM.

Fulbright alumni pose with Senator Juan Edgardo Angara during the FPAA national conference and agrifisheries R&D festival in Sorsogon.

PHilMech joins Fulbright at 70

Fulbright alumni of PHilMech joined fellow scholars at Sorsogon City to celebrate Fulbright's 70th anniversary in the Philippines and at the same time, honor the legacy of two Fulbright inspiring and visionary leaders—former Secretaries of Agriculture Salvador H. Escudero and Senator Edgardo J. Angara.

PHilMech presented SHEGA III to Representative Evelina G. Escudero to honor and grateful the late Sec. Escudero. It was his leadership that paved way for the development of this first Filipino-made grain moisture meter

Gracing the event, Senator Sonny Angara, son of former Senator Ed Angara, vowed to continue the visionary agri-fishery development programs of his father.

"My father used to say in his speech: 'Although I am a lawyer by training, I am a farmer at heart'... He firmly believed that agriculture is momentous and that modern agriculture is the only secured foundation for modern industry," he said.

He also emphasized that, "We should carry on the work of these two great gentlemen (Agriculture Secretary Salvador H. Escudero III and Senator Edgardo J. Angara). With your help we will be producing better products. We will be more productive. It is in our hands to make better standards of living for our farmers and to provide more affordable food for our countrymen."

The conference opened in an atmosphere of hope and anticipation. "We hope that in this conference, participants in integrated courses and technology fora will be empowered, will learn new things that they can bring home to make their works more productive and efficient, and will be able to contribute to their professional growth and productivity," FPAAA President Dr. Danilda Hufana-Duran said during her opening remarks

The FPAAA Secretary Ma. Carmen Ablan-Lagman's speech was centered on encouraging the participants, most especially the youth, to contribute to the development of agriculture.

Technology exhibits and capability building sessions for professional and student researchers were also

Continued on page 19

Farmer-processor introduces new soya-based products

"I will not be able to venture in this kind of business without PHilMech", Donald C. Esguerra, soybean farmer and processor said in an interview.

Mr. Esguerra, 48, a native from Angeles City, Pampanga opened his first D-Soya branch at Marque Mall last July 2018.

Aiming to introduce soya-based products into new and higher level market urged him to tie-up with Ayala Malls and put up his business.

To make noise among Pampangeños, his D-Soya adopted the tagline "Plant-based protein; your meatless option". Locals now consider the D-soya their new and healthy favorite food.

"I want them to patronize our very own organic soya-based products with a taste of new trends by adding more value that they would definitely love", Esguerra said.

His new line of soya-based products include the okara cookies with raisin or chocolate (Php 60.00), tofu rice toppings (Php 49-69.00). chilled taho with arnibal, mango, strawberry, and blueberry syrup (Php 30-35.00), soyamix (fresh soymilk with choices of melon, banana and torani flavor; cupcake, hazelnut, strawberry). Now, he is developing his Irish cream soy coffee which will be out soon on the market.

Before venturing into soy processing, Esguerra was very hesitant to engage in the processing business. It was in 2016 when he attended the training demonstration on soybean processing at PHilMech.

After a year, he tried to process the four sacks of harvested soybeans from his trial farm. He made the traditional soymilk and soy ice candy sold in schools and in their local market.

"Never in my mind did I imagine to engage in soybean processing. When I was able to sell it at a much higher price, I was convinced to take it as a challenge and introduce soya here," he proudly shared.

The continuous assistance from Dr. Ma. Cecilia R. Antolin of PHilMech motivated him to pursue the soybean processing. "PHilMech was there helping me from recommending what bean should I plant up to the monitoring and harvesting. I dreamed of having a processing business and make a name out of soya . Then, the D-Soya was launched, " he added.

For his first three months in processing, his monthly sales reached Php 48,000 to 54,000. "I was able to process 1.5 kilogram of beans equivalent to 18 to 20 liters of milk and sold it at Php 1400 and Php 800 of 3 kilograms of tofu," Esguerra said.

D-Soya was able to employ two on-call processors, and one regular worker earning Php 350.00 daily.

Currently, he is assisted by PHilMech for training and linkaging, and the Department of Science and Technology (DOST) for product packaging. The D-Soya owner will have his second branch in Nepo Mall soon to open this coming October. ***by Jhoanna Keith B. Santiago***

Donald C. Esguerra, soybean farmer from Pampanga and the owner of D-Soya store.

During the commencement program of the SOA on Climate Smart Agiculture at Isabela State University (ISU), Echague, Isabela.

Region II SOA concludes, largest turnout in history

More than 5,000 farmers in Region II graduated from the School-on-the-Air (SOA) on Climate Smart Agriculture, breaking the all-time record of SOA graduates.

Farmers from the region's major food producing provinces— Isabela, Cagayan, Nueva Vizcaya, and Quirino gathered at the mass graduation ceremony at Isabela State University (ISU), Echague, last August 24.

The five month-long SOA program was conducted by the Department of Agriculture (DA), Philippine Federation of Rural Broadcasters, and Philippine Agricultural Journalists, Inc.

PHilMech along with other organizations joined in the implementation of the program, which aired from March to August 2018.

Dr. Rodolfo P. Estigoy, ACD chief, served as the resource person duirng the SOA broadcast. He discussed the module on rice postharvest operations.

Dr. Ricmar P. Aquino, President of Isabela State University commended the program. He emphasized the importance of SOA in educating farmers & fisherfolk and facilitating interactions among the farmers and experts.

"School-on-the-Air is an effective way to cultivate the knowledge of farmers and fisherfolk in agriculture, so that their livelihood will prosper," he said.

Meanwhile, Regional Executive Director of DA-RFO 02 Narciso A. Edillo was grateful to the agencies and farmers for their sacrifices and efforts in making the program successful.

"As the father of agriculture of this region, I salute all the 18 partner agencies, local government units, state universities and colleges, and private sectors for this school-on-the-air," remarked Edillo.

"I firmly believe that you can give our farmers a real chance to compete, to win the market, and to prosper. Let us be reminded that we have the ability to deliver a better agricultural region for food is abundant for its population," he added.

Moreover, Edilla discussed the current challenges related to food security and climate change.

"In the agricultural sector, we continue to face different challenges, from price hike to climate change and calamities, and while our

Continued on page 19

FITS meeting and set-up in Dingalan, Aurora with MAO Zenia O. Abaya (in pink) and Mayor Sherwin H. Taay (in white).

PHilMech supports FITS centers in Region III

The Applied Communication Division of PHilMech accelerates the dissemination of science and technology through the conduct of both information and educational campaigns, provision of scientific literatures, and media relations. To further improve its utilities, the Techno Gabay Program (TGP) was adopted to improve access of grassroots to information and technologies on postharvest and mechanization.

The TGP saw its beginnings under the Philippine Council for Agriculture, Forestry and Natural Resources (PCARRD). It has since then moved to the care of the Agricultural Training Institute (ATI) where it still performs its prime function of serving as a platform for bringing together various actors in knowledge generation, diffusion, utilization, and to achieve the common goals of improving farm productivity, increasing farmers' income, and enhancing the competitiveness of agricultural products. The program does so through four interrelated modalities, namely; Farmers' Information and Technology Services (FITS); Farmer-Scientist or Magsasaka Siyentista (MS); information, education and communication (IEC) strategies; and information and communications technology (ICT).

PHilMech is in the frontline, establishing postharvest and mechanization sections to selected FITS Center across Region III as well as information drives concerning the technologies appropriate to the local area. It has already spearheaded programs in the municipalities of Dingalan, Aurora, Zaragoza, and Talavera, Nueva Ecija. The center also conducted information drive in the municipality of Dingalan, Aurora regarding Cacao Postharvest and Processing Systems and Pest and Diseases Control by request of its Municipal Agriculturist, Ms. Zenia Abaya.

Mr. Elijah Z. Davalos, Senior Science Research Specialist of Food Protection Department discussed PHilMech Technologies and the Environment Friendly Cacao diseases Control with Microbials while Ms. Aileen G. Carriedo of BPED introduced the by-products that can be generated from the cacao wastes in processing and production.

Resident Barangay Captain, Isagani Roxas was quoted saying "*Maraming salamat sa PHilMech dahil kayo ang pumupunta sa amin para sa karagdagang kaalaman sa makatapos ani*". Municipal Mayor, Mr. Shierwin Taay also expressed his gratitude towards the program and to the farmers for producing economically important commodities.

Local farmers were engrossed with the technologies presented particularly with the processing of cacao leaves. Seventy cacao farmers attended the event. ***by Isis DC. Davalos***

PHilMech set to commercialize Fluidized Bed Dryer

The Philippine Center for Postharvest Development and Mechanization (PHilMech) will start commercializing from the latter part of this year the Fluidized Bed Dryer it has developed, with the aim of providing a better grains drying system for rice farmers.

PHilMech Executive Director Dr. Baldwin G. Jallorina said the Fluidized Bed Dryer developed by the agency had undergone testing and trials in the past two years and has proven its worth when it comes to efficiency. Also, PHilMech was able to increase the capacity of its Fluidized Bed Dryer prototype from 500 kilograms of palay (paddy or unmilled rice) per batch to one ton per batch.

The drying cost per kilo of the PHilMech-developed Fluidized Bed Dryer is below the industry average P1 per kilo.

"PHilMech researchers and scientists have vastly improved on the Fluidized Bed Dryer prototype that the agency developed in 2015. From the latter part of this year, PhilMech will take steps to commercialize the technology," Dr. Jallorina said.

"From the prototype developed in 2015 that only had 500 kilograms capacity per batch, PHilMech was able to develop a model that can dry one ton of palay per batch," he added.

PHilMech will select companies from the local farm machinery fabrication industry to manufacture the Fluidized Bed Dryer.

A typical fluidized bed drying system uses heated air to dry commodities like grains. During the fluidization process, hot air or gas is introduced through the bed of solid particulates. The gas or air will move upwards through the spaces between the particles.

Besides the agriculture sector, fluidized drying has applications in the food processing, chemical, pharmaceutical, dairy, metals, and dyes industries, among others.

Part of the commercialization process PHilMech will undertake is to accredit and select manufacturers that will fabricate the Fluidized Bed Dryer it developed, which is also in line with the agency's advocacy to promote locally-developed and fabricated farm equipment.

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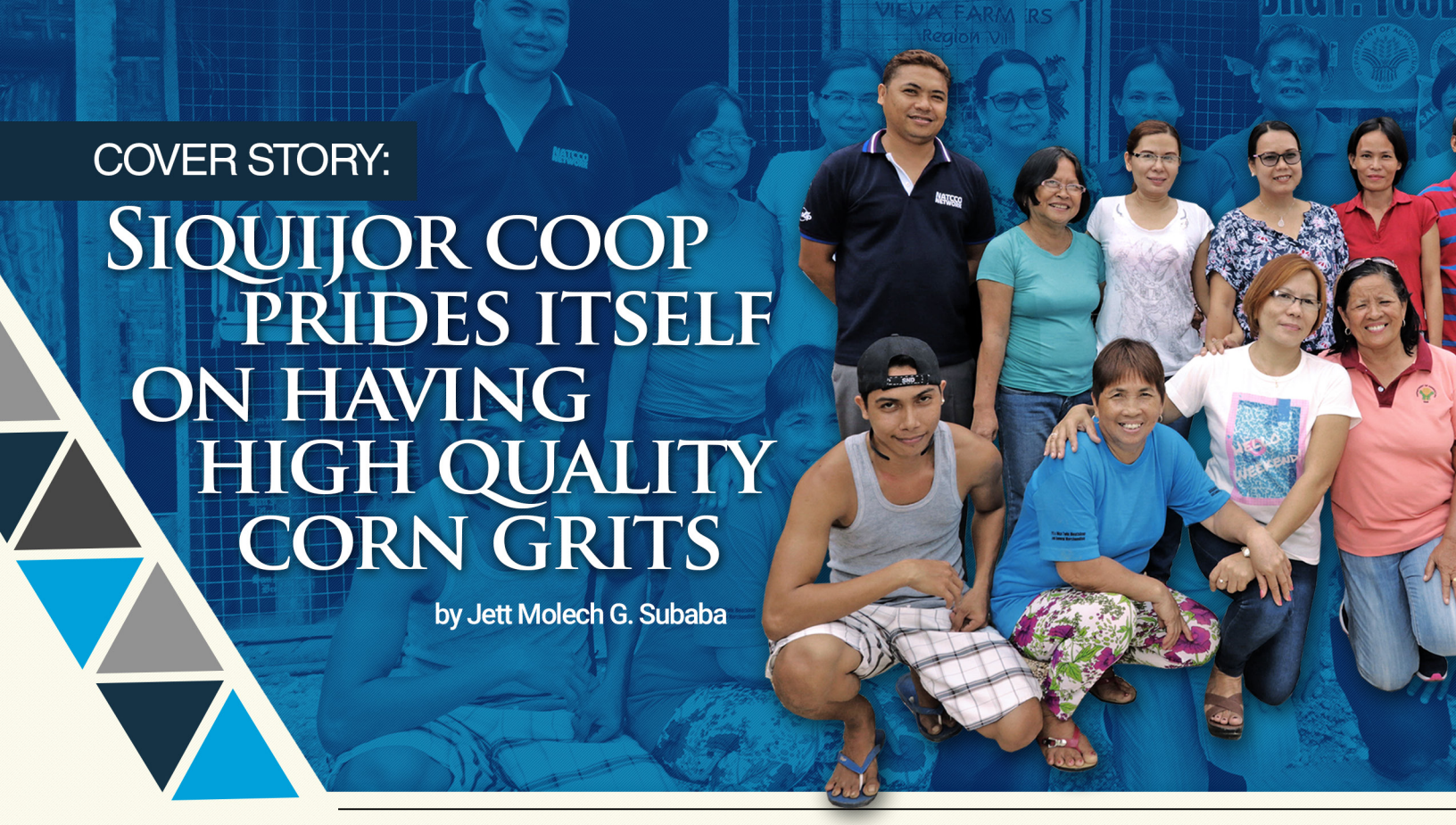
Fluidized Bed Dryer set up in Nueva Vizcaya.

COVER STORY:

SIQUIJOR COOP PRIDES ITSELF ON HAVING HIGH QUALITY CORN GRITS

by Jett Molech G. Subaba



If you're looking for the most unforgettable one-day summer adventure, then it's definitely in Siquijor. But aside from its beautiful destinations and rich historical heritage, this province island is also the home of corn lovers and producers. Thus, the PHilMech compact corn mill suits the need of the Siquijorians as it can produce high quality corn grits!

Based on the 2017 records of the Office of the Provincial Agriculturist, the total land area planted for this commodity is 6, 067 hectares with 6,740.14 metric tons produced for food consumption (corn grits). The Island has only six local village-level corn mills way back in 2015. These cater to the needs of the Siquijorians for corn as food.

With the need for more corn mills, Mr. Edgardo G. Anhao, the then provincial corn coordinator requested a grant from the Department of Agriculture two units of compact corn mill developed by the Philippine Center for Postharvest Development and Mechanization (PHilMech). In 2015, one of the units was awarded to the Alang sa tanan Multi-purpose Cooperative or ALTAMCO.

The ALTAMCO is a 26-year old farmers' cooperative located at the municipality of Larena. It has 1,889 province-wide members who are mostly corn farmers. Aside from corn, this cooperative produces multi-commodities ranging from palay, high-value crops, bamboo, copra, aqua-marine and even minerals.

One of the benefits of the compact corn mill to the cooperative is the improvement of the quality of corn grits in comparison to the village-level mills. "I have experienced using this PHilMech compact corn mill and my observation was, the grits it produces is very white compared with other available millers in our island. You just have to make sure that the corn is well-dried and of good quality too," said Mr. Anhao, a former chairman of the ALTAMCO.

Edgardo G. Anhao

During peak seasons which fall on the months of September to October,

"I have experienced using this PHilMech compact corn mill and my observation was, the grits it produces is very white compared with other available millers in our island."

Edgardo G. Anhao

they were able to mill 200 kilos of corn per day of operation. In every 50 kilos, according to their operator, Mr. Jason Omilig, they can get 36 kilos of high quality grits or 72% recovery. This is another good benefit of the compact corn mill, its high recovery. Most of the coop's customers came from the top corn producers in their province—the municipalities of Siquijor, Lazi and San Juan. They were charged Php2.00 per kilo for the electric consumption and maintenance.

The compact corn mill of PHilMech aims to address the lack of available corn mill in the Philippines. Aside from the pre-mentioned benefits of this technology, it can also reduce aflatoxin contamination, sorts different sizes of corn grits allows simultaneous sorting, cleaning and size reduction operations. Moreover, on the economic side, this can provide business opportunities to small business enterprise like the ALTAMCO. (PHilMech technology bulletin No. 4, 2016)

The management of ALTAMCO sees to it that the technology is properly and regularly maintained to prolong its use and maximize its efficiency. Should there be technical malfunctions, they can easily address the problem and apply immediate solutions.

Being blessed with many government-funded projects for the past many years, ALTAMCO continues to receive more and more project grants and funding. The reason for this, they believe, are their management skills and

Achieving Food sufficiency in the S.O.G. community

by Jett Molech G. Subaba

Inside a 68-hectare walled community is a paradise—a harmonious place of farm animals, fruit-bearing trees, bountiful crops and spiritually devoted people, all in one. In the midst of its beauty rises the fear confronting the supply of rice in this self-sufficient community. Thanks to the PHilMech Compact Corn Mill, worries will be resolved at last!

They consider this place and everything inside as sent of God, thus called the "Sent of God Foundation" located at Barangay San Isidro, Magalang Pampanga. This foundation ventured into agriculture since their founding year in 1972 planting sweet potatoes, then rice and corn in the latter years. The once seemingly desert and barren land becomes a fruitful and productive lot.

According to Brother Ricardo Lopez Trumata, 62, the most recent El Niño phenomenon in the country worried them. They thought of finding a corn mill so they can mix corn grits with rice since the whole community consumes two bags of rice daily.

(from left) Brother Alexander Morales and Brother Ricardo Lopez Trumata,

In their search for a corn mill, they found out that PHilMech through Dr. Michael A. Gragasin, Supervising Science Research Specialist was developing a compact-type corn mill in Nueva Ecija. Because of their eagerness to avail the technology, they were able to test it and finally bought one unit in 2016. Engr. Jayvee Ilustrisimo, Science Research Specialist I, assisted The installation and conditioning of the technology.

Brother Alexander Morales, in-charge of the corn mill's operation, sees much potential in the technology. It can produce many by-products of corn like the cracked corn; the different corn grits sizes and the corn flour. "Once you pour the corn into the technology, it will deliver many by-products which are ready for utilization. In our case where we only need a small amount for different purposes, it is very fitting to us," Morales said.

Moreover, Brother Rick emphasizes that the corn mill is less laborious in operations, has cheaper electricity consumption and has a nice and clean product. "The technology is not labor intensive unlike the hammer mill. As I see it, if you will use it for commercial purposes this technology is really good. While it offers cheap electricity consumption," Trumata said.

"Once you pour the corn into the technology, it will deliver many by-products which are ready for utilization."

Alexander Morales

During the hands-on training course on mechanization and postharvest technologies for Corn & Cassava at PHilMech TMDC.

PHilMech continues to empower the agri-fishery sectors

Another quarter has passed. The Technology Management and Training Division of PHilMech stayed true to the agency's mission of empowering the agriculture and fishery sectors by increasing resource use efficiency and productivity, reducing losses and adding value to the produce through research, development and extension.

Strongly committed to excellence, the TMTD extended knowledge and ideas that help meet the needs of the modernized agriculture and fishery sectors. A big pool of multi-disciplinary, and well-rounded experts of PHilMech provided technical assistance to other agencies, and stakeholders nationwide.

Among the efforts of the TMTD for the third quarter of 2018, include the development of training designs, provision of resource persons to train extension workers and change agents on the operation and maintenance of selected agricultural machinery, and conduct of training on mechanization and postharvest technologies for soybean, corn, and cassava.

Two training courses were conducted in collaboration with DA-BAFE on the operation and management of rice transplanter (Walk Behind & Ride-on Type) and Four-Wheel Drive Tractor/ Hand Tractor. A training course on Soybean Processing was conducted with the DOST-Ifugao. Three training courses on Mechanization and Postharvest Technologies for Corn & Cassava, on the operation of Walk Behind Transplanter, and on mechanization and postharvest technologies for Corn & Cassava were conducted with ATI-Central Office. PHilMech has also conducted a training course with ATI-Region III on the operation and maintenance of small farm engine and motorcycle NC II. ***by Jennilyn A. Adajar***

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Winners of the 39th in-house project review pose with their plaques during the awarding ceremony.

PHilMech holds 39th In-house RD&E

To create high-impact Research, Development and Extension (RD&E) programs, PHilMech conducted its annual in-house review at PHilMech Training Hall, Science City of Muñoz, Nueva Ecija last July 18-19.

The agency's Planning, Management and Information Technology Division (PMITD) organized the activity to assess the progress of 21 completed agency projects. Each project was evaluated based on achievement of objectives, application of proper methodology and determination of issues that should be addressed in order to improve the delivery of results.

Panel of evaluators came from universities and agencies. For Agricultural Mechanization Division (AMD), Dr. Aurelio Delos Reyes, Jr., Dr. Manolito C. Bulaong, and Dr. Jessie C. Elauria; for Bioprocess Engineering Division (BPED), Dr. Victorino T. Taylan, Mr. Ruel G. Peneyr, Dr. Anthony C. Nicdao, Dr. Kevin F. Yaptenco, and Dr. Judith P. Antonino; for Food Protection Division (FPD), Dr. Renato G. Reyes and Dr. Elaida R. Fiegalan; and for Socio-economic and Policy Research Division (SEPRD), Dr. Marilyn M. Elauria, and Dr. Gloria P. Jimenez.

For each category, best paper presenters were awarded. For AMD, Engr. Arlene C. Joaquin for the paper "Development of Non-Destructive Moisture Meter for Coffee Beans". For BPED, Engr. Andres M. Tuates for the paper "Utilization of De-oiled Cashew NutShell as Fuel Briquettes". For SEPRD, Dr. Ma. Cecilia R. Antolin for the paper "Pilot-testing of Mechanized Onion Planting System Using 10-Row Hand Tractor Driven Mechanical Seeder". For FPD, Dr. Dionisio G. Alvindia received the best paper and early bird awards for the paper "Non-Chemical Approaches for Managing Postharvest Diseases of Tropical Fruits (Module 5: Citrus)".. ***by Jessica Marie Laturnas***

Fulbright at 70... from page 7

Ms. Isis DC. Davalos explains PHilMech technologies to exhibit visitors.

carried out simultaneously. These include workshops on project proposal for funding application, study proposal for scholarship application, writing scientific papers for publication and technical writing, and lectures on funding of research projects, scholarship opportunities and the scientific career system.

PHilMech was one of the sponsors of the event, along with the Provincial Governor's and Mayor's Office of Sorsogon Congresswoman Office of the 1st district and 2nd district of Sorsogon, Office of Sen. Chiz Escudero, Philippine-American Education Foundation (PAEF), Philippine Carabao Center (PCC), and Philippine Coconut Authority-Region 5.

Fulbright Philippines Agriculture Alumni Association (FPAAA) is a group of returning Filipino researchers who obtained graduate degrees and advanced training in various fields of specialization in agriculture and fishery through the Fulbright scholarship in the United States. ***by Jessica Marie Laturnas***

Fluidized bed... from page 11

"PHilMech fully supports the development of the local farm machinery industry that has the potential to employ more people especially in the rural areas, not only in the actual manufacture of the machines but also in the provision of after-sales or maintenance services," Jallorina said.

The PHilMech executive director added that drying palay remains an issue that needs to be addressed given that most small farmers still dry their grains on the road, which can be inefficient. Also, farmers who cannot properly dry their palay are forced to sell their products to traders who have drying facilities at a much lower price.

Improperly dried palay can also result in less quantity or poor quality of rice recovered during the milling process. Usually, milling results in 50 to 60 percent rice recovered based on the weight of palay. During the rainy season, palay harvested wet is more prevalent, making it more challenging for the rice industry to produce quality rice.

The ideal moisture content for palay is 14 percent.

SOA Graduation. from page 9

population is increasing, the global demand for food is also rising," he said.

"I know that these challenges will only make us stronger and will result to programs that will surely solve the problems in food shortage," he added.

Some farmers were also awarded during the event. Marlon Edralin (Luna, Isabela) was recognized as Outstanding Regional Top Awardee while Manuel Ubias (Camalaniugan, Cagayan,) Luis Tasani (Cordon, Isabela), Celso Gabaon and Jesusa Gacusan (Diffun, Quirino) emerged as Outstanding Provincial Top Awardees.

Nueva Vizcaya received the Outstanding Province award while the Municipality of Bambang was awarded as Outstanding Municipality. ***by Jessica Marie Laturnas***

Siquijor

Siquijor is the third smallest province in the Philippines both in population and in land area. It was called Isla del Fuego or "Island of fire" during the Spanish era and now considered by Filipinos to be a mystical island.

It is composed of six municipalities, 134 barangays and a lone congressional district. Based from the latest record of the local government (2017), the total population of the province is 97, 913.

Agricultural Profile

Crop production is the major component of agricultural activities in the province. Siquijor's total land area of 31, 812.30 hectares which occupies about 2% of the total land area of central Visayas and 0.11% of the entire country. Siquijor has a total agricultural area of 18, 514 hectares representing 54% of the province's total land area. This manifests that Siquijor is a major agricultural province in the country.

Postharvest Situationer

With the present production, some of the problems encountered by farmers that are related to production and postharvest are low productivity in rice and corn and high postharvest losses due to inadequate postharvest facilities and training among the industry stakeholders in the province.

In HVCC industry, the surfacing problems were the lack of production equipment and facility, low quality produce and low value-adding activities. While in the fishery sector, the province experienced high losses due to inadequate facilities for drying, preservation and value-adding techniques.

Proposed Postharvest Projects

During the consultation and planning workshop with the different stakeholders, the following postharvest projects were proposed:

- Establishment of village-level grain drying centers for rice and corn
- Establishment of multi-commodity solar tunnel dryer
- Evaporative cooler facility loan program
- Provision of mobile rice mill
- Establishment of village level fish processing center
- Establishment of corn mechanization service center
- Provision of corn sheller facility
- Provision of four-wheel tractor for corn cluster areas

Source: Siquijor Postharvest Development Plan (2008-2018)
DA-PHilMech (formerly BPRE) and the Provincial Government of Siquijor

Design and Development of Rolling Corn Mill for Village-level Operation

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Engr. Jayvee P. Illustrisimo and Dr. Romualdo C. Martinez

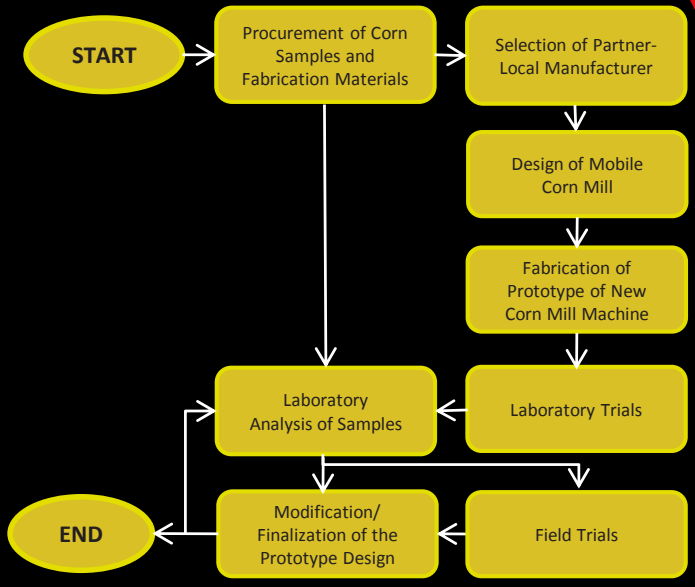
Introduction

- The country's corn mill deficit is estimated at 4,500 units of 400 kg/h capacity .
- The design of rice mill technology has already evolved over the years but the corn mill is still using kiskisan-type corn mill, a more than 50-year old technology.
- The inefficiency of corn mill is highly evident with the prevailing fee of Php 2 - 3 kg/h (input) or Php 3.50 – 4.70 kg/h (output) as compared to rice milling fee of Php 1.75 – 2.25 kg/h (output).

Objective

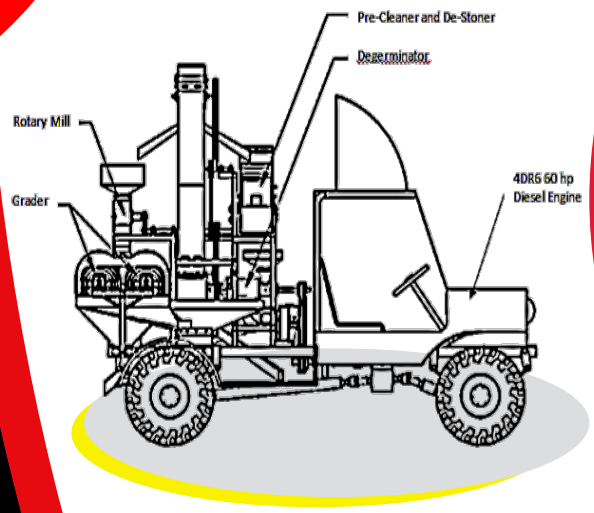
To develop a technically viable and financially feasible engine-driven mobile corn mill for village-level of operation.

Methodology



Results

Design of the Rolling Corn Mill



Design Features

Input Capacity of 940 – 1,100 kg/h with product recovery of 68-71 % and degerminator efficiency of 82-88 %.

Equipped with pre-cleaner (winnower and destoner) to remove corn cobs and stones in the corn grains.

Powered by 4DR6 automotive engine with total displacement of 2,199 cc and power rating of 60 hp at 4,000 rpm.

Installation of pneumatic tire system to withstand poor road condition in the remote areas.

Estimated direct fabrication cost is Php. 850,000.000

Technical Performance

Parameters	White Corn	Yellow Corn
Input Capacity (kg/h)	1,080.26	1,005.80
Milling Capacity (kg/h)	611.63	611.41
Degerminator Efficiency (%)	82.92	82.96
Product Recovery (%)	66.37	66.73
Percent Flour (%)	4.03	5.67
Percent Bran (%)	26.73	25.67

Conclusion

A compact yet powerful new type of mobile corn mill with capacity of 1,100kg/h, degerminator efficiency of 82 – 88 % and product recovery of 68 – 71 % was developed for village-level of operation.

ALTAMCO.. from page 13

organizational ability which made them successful. "Maybe it's our excellence in management of the cooperative that the government continues to trust us with more," said Ms. Josieli P. Bajo, the ALTAMCO's secretary.

Moreover, Mr. Alejandro G. Carpiso, the cooperative's chairman sees the loyalty of the members and their increasing investments help the cooperative flourish and achieve longevity in the industry. He hopes for more of government support to encourage more corn farmers in their island to go back tilling the land. As he observed, farmers in their place have become complacent because of the financial subsidies and free services they now acquire from the government.

The ALTAMCO plans to market corn grits as their new product next harvest season to open more sources of income and share the high quality corn grits they produce to the rest of the Siquijorians.

Mr. Alejandro G. Carpiso, chairman of ALTAMCO.

NEWS

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cooperation with the Department of Agriculture regional field offices.

Dr. Jallorina said that besides commercializing the agency's farm technologies and assisting in the formation of agribusiness enterprises, the PHilMech-RTDMCs will also help the agency in getting inputs from farmers, those involved in agribusiness, and agricultural stakeholders on what type of technologies the agency needs to develop for them.

"So we are also creating a feedback mechanism through the PHilMech-RTDMCs, enabling the agency to get information and pulse on what type of agricultural technologies our clients need. This is an essential component of the agency research, development and extension efforts," he added.

Besides rice and corn, PHilMech has developed technologies for mango, cassava, coffee, cacao, soybean, vegetables, onions, among others.

CORN INDUSTRY

2016 Commodity Fact Sheet

LAND AREA

2016

2,484,465 has.

MAJOR LOCATION

Isabela (10.1%)

PRODUCTION

2016

7,133,975 m.t.

VALUE

PHP 85,326.41 million

MAJOR PRODUCERS

Isabela (14.5%) Bukidnon (11.1%)

South Cotabato (6.3%)

YIELD

2016

2.91 m.t./ha.

HIGHEST YIELD/HA

Tarlac (6.06 m.t. /ha.) Pangasinan (5.88 m.t./ha.)

Pampanga (5.66 m.t./ha.)

COST OF PRODUCTION

COST PER KILOGRAM

All types (PHP7.67) White (PHP8.64) Yellow (PHP 9.98)

SHARE IN GROSS OUTPUT IN AGRICULTURE | 6.10%

PRICING (November, 2016)

	Farmgate	Wholesale	Retail
Corngrain White	P12.30/kg	P13.10/kg	P22.77/kg
Corngrain Yellow	P11.78/kg	P15.63/kg	P20.36/kg
Green Corn White	P16.19/kg	N/A	N/A
Green Corn Yellow	P47.45/kg	N/A	N/A
Corngrits White	N/A	P23.18/kg	P27.19/kg
Corngrits Yellow	N/A	P21.07/kg	P25.76/kg

Compact Corn Mill Adopters

The members of the Sent of God community in Magalang Pampanga demostrate how they use the compact corn mill.

(044)-456-0213

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