

Hybrid seeds double farmers' incomes despite El Niño

Farmers in the El Niño-hit provinces of Isabela and Cagayan were able to double their incomes and increase their yields by an average of 200 percent despite the dry spell by planting hybrid *palay* seeds during the dry season, agriculture officials said.

Dr. Frisco Malabanan, director of the Ginintuang Masaganang Ani (GMA) Rice Program of the Department of Agriculture (DA), said the 68 farmer-beneficiaries who took part in the DA's hybrid rice technology demonstration project harvested an average of 164 cavans of *palay* per hectare (dry weight), which is equivalent to 8.86 metric tons per hectare (MT/ha) at 50 to 54 kilograms per cavan.

Several farmers yielded as high as 253 cav/ha or 13.68 MT/ha using various hybrids such as SL-8H, Jolly Rice, Bigante, Mestizo 1, PHB 71, and Rizalina 333, Malabanan said in his report to the Secretary.

The harvests are much higher than the farmers' usual output of 3-4 MT/ha using inbred rice varieties, Malabanan said.

"This translates into an increase in profit of at least P30,000 per hectare from only P15,000. Hybrid rice achieves greater yields and thus farmers earn more without increasing their cultivation area," Malabanan said.

Latest figures submitted to the GMA Rice Program show that 126,645 ha were planted to hybrid rice during the 2010 dry season.

For the regular 2010 wet



PHOTO: RDELACRUZ

cropping season, the program targets 96,888 ha to be planted to hybrid rice, Malabanan said.

As a recovery plan to offset production losses brought about by El Niño, an additional 64,170 ha target area will be planted to hybrid rice in Central Luzon, Western Visayas, the Cordillera Administrative Region (CAR) and the *palay*-growing provinces of Mindanao.

"With more hybrid rice areas and greater cooperation from LGUs and the private sector, the rice industry can look forward to achieving the *palay* production target of 17 million MT or more for cropping year 2010," Malabanan said.

He said the DA aims to increase areas planted to hybrid rice to at least 600,000 to 800,000 ha in 2013.

Malabanan said the DA had encouraged the farmer-beneficiaries from Isabela and Cagayan to use the various hybrid rice seeds available to them so they could see for themselves the benefits of cultivating superior genetic materials.

He noted that the farmers' dry produce was bought at an average of P14.00/kg, which brought them gross profits ranging from P77,850 to P191,468 even with the presence of the El Niño weather phenomenon.

"The increase in harvest provides a positive outlook for the rice

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Dutch marketing expert visits BAR-assisted Coop in CamNorte



Mr. Rik Bakker, marketing expert of SharePeople Netherlands, visits the Labo Progressive Multi-Purpose Cooperative (LPMPC) in Malasigui, Camarines Norte wherein he shares his expertise on how to improve and enhance products to be more competitive in the market. LPMPC and BIARC/DA-RFU 5 are implementing a project on Queen pineapple which is being coordinated by BAR and funded by HVCC.

PHOTOS: RMARANAN



commercialization effort.

"Our focus will be on strategy and marketing. Although finance and production are also key parameters of profitability, these will not be touched by the project," said Mr. Bakker.

"The 3Ps, otherwise known as the triple concept of SharePeople, representing PEOPLE, PLANET, and

turn to page 5

Mr. Rik Bakker, marketing expert of SharePeople Netherlands, together with representatives from the Bureau of Agricultural Research (BAR) recently visited the Labo Progressive Multi-Purpose Cooperative (LPMPC) in Malasigui, Camarines Norte for a consultation meeting.

The LPMPC and the Department of Agriculture-Regional Field Unit 5 (DA-RFU 5) are the implementers of the project titled, "Enhancing Competitiveness of the Queen Pineapple in the Bicol Region (Phase II)" coordinated by BAR and funded under the Ginintuang Masaganang Ani-High Value Commercial Crops (GMA-HVCC) program.

This project will be the recipient of the marketing assistance from SharePeople, a Dutch social enterprise geared towards the

improvement and development of small and medium enterprises and the commercialization of non-government organizations (NGOs) in developing countries like the Philippines through the involvement of professionals from European countries.

"We welcome this support that we are getting from SharePeople Netherlands with so much enthusiasm. We are very thankful that, with their assistance, we will be able to improve and enhance our products for these to be more competitive in the market," said Mr. Mario Espeso, general manager of LPMPC. "Right now, we have the *Queench* natural pineapple juice and dried pineapple candies for our products."

Through this collaboration, SharePeople is aiming to increase the profitability of the Cooperative by capitalizing on LPMPC's portfolio of products through a market-oriented



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Rep. Imee Marcos graces 1st Garlic Forum, serves as keynote speaker



Rep. Imee Marcos (inset) delivers her keynote address during the First Garlic Technology and Marketing Forum cum Product Exhibition. In the audience is BAR Asst. Dir. Teodoro S. Solsoloy (right).

PHOTOS: NDELROSARIO III

Rep. Imee Marcos served as the keynote speaker during the 1st Garlic Technology and Marketing Forum *Cum* Product Exhibition held in Batac, Ilocos Norte.

"I am very happy that the garlic growers in Ilocos are very active in reviving the industry. I commend and thank the DA-BAR for supporting projects on garlic such as this," said Rep. Marcos.

Representatives from the different garlic associations coming from four municipalities in Ilocos Norte such as San Nicolas, Pinili, Pasuquin, and Vintar as well as researchers from the Philippine Rice Research Institute (PhilRice) and the Department of Agriculture-Regional Field Unit I (DA-

RFU I) participated in this two-day affair.

Bureau of Agricultural Research (BAR) Assistant Director Teodoro S. Solsoloy delivered a message expressing the Bureau's support to the "Technology Commercialization Project on Garlic (Phase II)."

"We are pleased to know that the BAR project that we are supporting here in Ilocos Norte has come

this far. Through technology commercialization, we are slowly exposing the Ilocos garlic industry to a broader market. We hope that this project will continue gaining success in the near future," said Asst. Dir. Solsoloy.

Likewise, Ms. Digna Sandoval of the Technology Commercialization Unit (TCU) provided the participants with an overview of the National Technology Commercialization Program (NTCP), one of the banner programs of BAR.

During the product exhibition, the four participating municipalities showcased their products made from garlic such as garlic powder, garlic flakes, pickled garlic, and fresh garlic produced through the new technology

on gibberellic acid (GA3).

Through the use of the GA3 technology, the size of the bulb of the Ilocos garlic is increased thereby causing an increase as well in its yield compared with farmer's practice.

In the duration of the event, the following papers were discussed: 1) Garlic production technology by Dr. Wilhelmina Castañeda of the DA-Research Outreach Station-Batac (DA-ROS Batac); 2) Organic fertilizer production by Dr. Floramante Pastor of the Mariano Marcos State University (MMSU); 3) Garlic postharvest technologies by Dr. Edralina Serrano of the University of the Philippines-Postharvest Horticulture Training and Research Center (UPLB-PHTRC); 4) Good manufacturing practices and bar coding by Mr. Perry Agbayani of the Department of Trade and Industry (DTI); 5) Financing opportunities for entrepreneurs and farmers' organizations by Mr. Noel Clarence Ducusin of the Agricultural Credit and Policy Council (ACPC); and 6) Marketing opportunities of garlic by DA-Agribusiness and Marketing Assistance Service (AMAS) Director Francisco Ramos.

The activity is an offshoot of the project consultation meeting involving the project leader and farmer cooperators of the different garlic associations held in March. (**Don P. Lejano**)

government of Sibacan, conducted a participatory action research (PRA) in Brgy. Sibacan to determine and introduce a project that would help the community improve their economic conditions. This was done by introducing interventions and technologies that would improve their economic conditions.

One important innovation that BFAR Region 3 introduced is the use of gillnets in catching blue crabs. Crabbing using gillnets with the recommended mesh size is a selective and environment-friendly method which the fisherfolk of Sibacan could easily adopt since some of them have already experienced gillnet crabbing.

With funding support from the Bureau of Agricultural Research (BAR), the project, "Community-based Participatory Action Research (CPAR) in Blue Crab Fishing Using Gillnets for the Marginal Fisherfolk of Bataan" was implemented in November 2009.

Looking at the potentials of the project and its consequential effect to his livelihood as a subsistence fisherfolk, Mang Benje became one of the cooperators of the CPAR project. He also led the other fisherfolk in Sibacan to be involved in the project. Hence, an association that they called, "*Samahan ng mga Maliliit na Mangangisda ni Apo San Rafael*" was born. The association provides financial assistance or loans through the funds generated from the



Mang Benje practicing the traditional method of catching blue crabs using bare hands locally known as "pangangapa". On the average, he catches 3 kgs of crabs (mixed sizes) with other species (top left photo).

daily contributions of all the members which started in number with 20 and now has 70 members.

As cooperator, Mang Benje was provided with his own gillnet, 15 *panyo* (a unit of gillnet), which is the conventional length used in crabbing which is equivalent to five rolls of polyethylene net. The longer the *panyo*, the higher is the chance of catching more blue crabs.

Experts from the Office of the Provincial Agriculturist (OPA) of Bataan and the Office of the City Agriculturist (OCA) in Balanga have been working with the project provided the technical assistance

needed by cooperators like Mang Benje. They imparted appropriate fishing technology using gillnets and sent the cooperators to orientations and trainings on resource management, leadership and organizational skills, values formation and orientation. They were also given briefings on rules and regulations on fisheries and other relevant laws geared towards the protection and conservation, not only of the blue crabs, but also of other marine resources that are threatened or have been abused by illegal fishing.

Given the interventions introduced through the project, Mang Benje compares his life before when he went out to the sea to catch blue crabs using his bare hands and, now, now using gillnet which was provided to him as cooperator.

"Using the gillnets, my catch averages 5-7 kgs a day which is much better than when I was still using the traditional method. Also, with the gillnet, my catch is uniform and bigger in size so that I could sell them from P150-180 per kilo.

Another cooperator that benefited from this CPAR project is Narciso S. Bernardo fondly called by fellow crabber as "Mang Narsing". He has been fishing for 25 years and like Mang Benje also lives on a subsistence level. "It's a good thing that this CPAR project on gillnet was introduced to us. We were taught the new techniques in crabbing and, with the gillnets that were provided to us, our catch drastically increased," enthused Mang Narsing. ###



Mang Benje uses gillnet to catch blue crabs averaging to 5-7 kgs a day which is much better than when he was using the traditional method.



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Crabbing blue crabs in Sibacan: From bare hands to gillnet

Text by:
RITA T. DELA CRUZ
Photos by:
EAGRON & RDELACRUZ

Early morning, when the tide is at its lowest, Mang Benje Manuel prepares himself to submerge into the cold water of Manila Bay and without any protection or tools, he catches blue crabs using his bare hands.

Crabs are quick and can bite or pinch with their claws. Although they seldom do more than draw a little blood, the bite can momentarily be painful. But given Mang Benje's skill in crabbing, he learns how to handle a live hard-shelled crab with his bare hands through experience.

Locally-known as *alimasag*, blue crabs (*Portunus pelagicus*) is an important industry in the Philippines. In Region 3 (Central Luzon), blue crabs are abundant in Bulacan, Pampanga, and Bataan. In Bataan, it can be found in the municipal waters of Samal, Abucay, Pilar, Orani and Orion.

According to the Bureau of Agricultural Statistics, blue crab production in Bataan in 2008 was 808.41MT valued at P70,106.19. This puts Bataan in the third spot in terms of production in Region 3. And given the demand and good price in the market, marginal fisherfolk make it a source of their livelihood.

Mang Benje or fondly called by friends as "Kabo" belongs to the 40 percent of the inhabitants of Brgy. Sibacan in Balanga City, Bataan. They

depend on catching blue crab to meet the economic needs of their families. Majority of the people in this coastal community live in poverty with no additional source of income for their daily needs outside of fishing.

Like many fisherfolk in the community on a subsistence level, Mang Benje still uses the traditional method of crabbing using his bare hands locally known as "pangangapa". This method requires guts and skills which Mang Benje has acquired from catching blue crab for a long time. Although the method is environment-

friendly, *pangangapa* works on the principle of instinct and involves risk and uncertainty.

After hours of being submerged into the water, Mang Benje collects his catch for the day. On the average, he catches 3 kgs of crabs (mixed sizes) which he sells in the market for P80-100 a kilo. He goes home and his family lives for a day.

In August 2008 a group of researchers from the Department of Agriculture-Bureau of Fisheries and Aquatic Resources (DA-BFAR) Region 3, in collaboration with the local



Mang Benje makes his own gillnet which he now uses to catch blue crabs in Sibacan.

UPLB FOOD SCIENCE CLUSTER develops processed products from native chicken meat

With the hype of fastfood chains advertising crispy and flavorful plump chicken breasts and chunky thighs, it's no wonder that most people, particularly the young ones, have taken to eating commercially bred broiler meat over native chicken meat.

But given the increasing population of health-conscious people who prefer eating lean, healthy and organically-grown foods, the demand for native chicken is on the rise.

It is specifically craved for its distinct flavor and leaner meat which is more nutritious and healthy. Native chickens are usually grown free range; hence they feed themselves with more greens and have no chemical residues in their flesh compared to their commercially-bred counterparts.

Optimizing the healthful benefits of eating native chicken meat and promoting this growing backyard industry, the Food Science Cluster-College of Agriculture of the University of the Philippines Los Baños (UPLB) is developing and evaluating various products made from native chicken meat with the view to improve its eating quality.

The study titled, "Food Quality Evaluation of Native Chicken" led by Dr. Ma. Josie V. Sumague, was initiated in August 2009 with funding support from the Bureau of Agricultural Research (BAR).

The study aims to evaluate and explore the potential of native chicken



(Clockwise)
Processed products
from native chicken:
1) canned chicken
products (chicken
arrozcaldo, afritada,
and tinola); 2)
chicken nuggets; 3)
chicken frankfurter;
and 4) chicken
burger; and 5)
corned chicken.

PHOTOS: MJSUMAGUE/UPLB

meat as substitute for broilers and to develop value-added processed products that will enhance and promote the marketability of native chicken meat.

Three native chicken breeds (*Paraokan*, *Banaba*, and *Joloanon*) were used in the study and compare their proximate composition and functional properties vis-à-vis that of the commercially bred broilers in terms of color, aroma, structure (fibrous or compact), flavor, tenderness and general acceptability.

Preliminary results of the study showed that, of the three native chicken breeds, *Paraokan* gave the highest meat yield (47 percent) and its breast and leg parts, the highest crude protein content. For the aroma, color

and structure, all chicken samples scored an average mean score with no significant difference.

Based on the evaluation and study, the Food Science Cluster was able to develop five processed and value-added products from native chicken. These are: 1) canned chicken products (chicken *arrozcaldo*, *afritada*, and *tinola*); 2) chicken nuggets; 3) chicken frankfurter; 4) chicken burger; and 5) corned chicken.

The group is still in the process of fine-tuning and evaluating the quality and marketability of the products developed from native chicken meat. The group is hoping to complete the study by August 2010. (Rita T. dela Cruz)



PHOTOS: MJSUMAGUE/UPLB

Extended storability of *Marang* studied



Artocarpus odoratissima or "Marang"

Marang (*Artocarpus odoratissima*) is one of the indigenous fruits found in the Philippines. It is somewhat similar to jackfruit and breadfruit, but smaller and softer compared to the jackfruit and a little bigger than the breadfruit. Marang is grown in the marginal and hilly areas of Mindanao and seldom found in Luzon and in the Visayas.

This fruit is esteemed because of its palatable taste, pleasant odor (especially when ripe) and nutritional value. It is a complete food as it contains protein, fat, carbohydrates, crude fiber, ash, calcium, phosphorus, iron, retinol, beta-carotene, vitamin A, thiamine, riboflavin, niacin, and ascorbic acid. Aside from being eaten as fruit dessert (eaten raw), it is also considered as one of the best flavoring material for desserts in Mindanao. Thus, marang is believed to have excellent market potential not only in Mindanao but in the whole country and even abroad as well.

However, regardless of the qualities that Marang possesses, the industry is still considered at the infant stage because the products, both processed and non-processed are only found in a few areas in Mindanao. Storability is a problem.

"Short shelf life of Marang is the major limiting factor that impedes the industry's growth," said Dr. Emma Sales of the University of Southern Mindanao (USM) in Cabacan, Cotabato.

“Short shelf life of Marang is the major limiting factor that impedes the industry's growth, this inspires me to conduct a research to increase the shelf life of Marang. ~ Dr. Sales, USM



"This inspires me to conduct a research to increase the shelf life of Marang", she added during an interview.

The USM study titled, "Improved Postharvest Technologies in Marang," aims to develop postharvest technologies that could prolong the storability of the fruit through improved harvesting and handling techniques. The study is coordinated by the Bureau of Agricultural Research (BAR) and funded under the Ginintuang Masaganang Ani-High Value Commercial Crops (GMA-HVCC) program of the Department of Agriculture (DA).

According to Dr. Sales, poor harvesting methods, poor handling during transport and poor conditions during storage can lead to poor product quality. Surveys revealed that, farmers usually predict when to harvest Marang based on the fruit's appearance. "The study sets a standard for maturity indices that may help farmers to accurately determine when is the best time to harvest the fruit", said Dr. Sales.

The results of the study show that Marang is best harvested at 80-90 days from fruit onset. On the other hand, appropriate harvesting tools, combined with careful and proper techniques in harvesting and hauling, lessen injuries to the fruit. Storability and shelf life can be prolonged through the use of appropriate packaging

materials and proper storage temperature.

Techniques such as washing, covering the fruit with wet sacks or cloth and ripening substances will hasten ripening, while polyethylene bag as packaging, use of ethylene scrubber and cold storage delay ripening.

For minimally processed Marang, the use of either polyethylene bags (zip lock) or Styrofoam with antioxidant such as *metabisulfite* will delay browning. Cold storage at about 0°C-4°C also preserves the acceptable appearance of Marang pulp.

The study also experimented on processing Marang into value added products. Among the products developed were: Marang ice cream, Marang jam, Marang syrup, vacuum fried Marang, dehydrated Marang, spray dried Marang, Marang puree, Marang preserve and Marang concentrates. Powdered Marang were also produced.

Dr. Sales concluded that the economic results of the study are helpful to Marang farmers, processors and other industry enthusiasts. It will improve the current practices and strategies in the field and in processing of the fruit. Hence, it will enhance its marketability. This will also complement the government's strategies to address poverty in the poor areas of Mindanao by providing a sustainable livelihood to farmers and an alternative source of income to housewives.

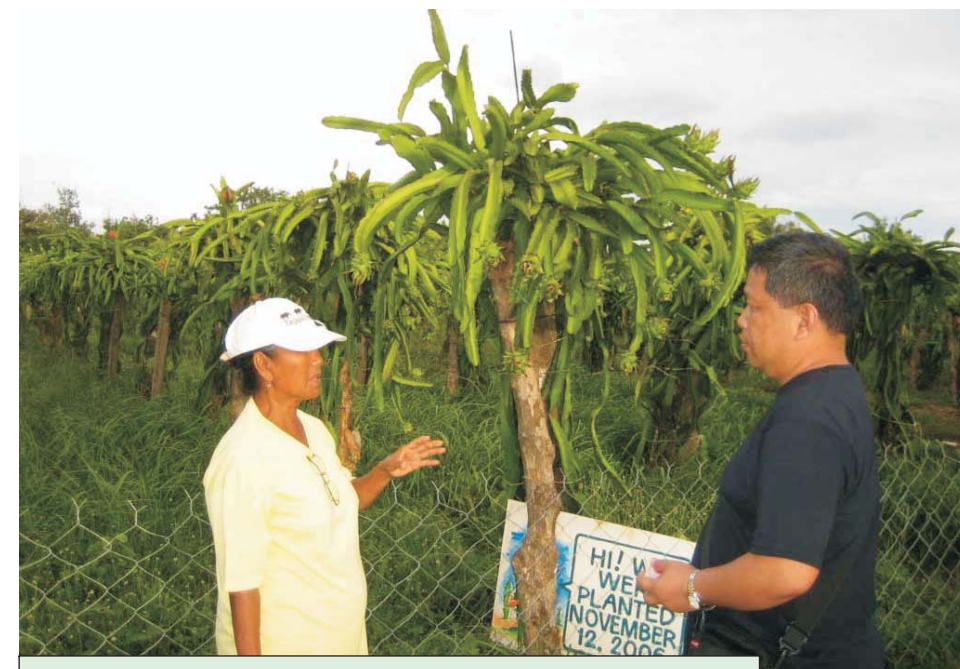
The scientific results of the study will also serve as reference to further improve the harvesting and post harvest handling technologies as well as storage practices essential to producing good quality Marang in the future. "With continuous research and development as well as promotion of this indigenous fruit, the industry will surely grow", said Dr. Sales. (*Edmon B. Agron*)

utilize the fruit, flowers, and stem. In the coming weeks, she uses the Saniata red peels to extract natural dye to add color to the threads she use in packaging her pastries and other delicacies.

Aside from food and beverages, the REFMAD farm is now expanding in terms of services provider. It is now catering to the growing tourism activities within the province and region through the establishment of a fishpond, resort, recreational area and small cottages for visitors to stay and enjoy the farm, nearby scenic spots and the beaches.

REFMAD vision and plans

Banking on the positive gains and lessons learned in the overall operation of the REFMAD farms and the local farmers, Ms Dacuycuy envisions establishing a local Saniata winery in Burgos, Ilocos Norte. With the help of the Ilocos provincial government, the REFMAD and its stakeholders will collectively work and create a Ilocos Saniata Community of Practice. This initiative will place the province in a competitive advantage because of its geographic location for future exports via the Laoag International Airport, to Taiwan, Hongkong, Japan and other Asean countries. Added to this is its ideal



Ms. Editha Dacuycuy (left) and the author the REFMAD Farms, Burgos, Ilocos Norte.

production area for raw materials and product development including processing, and the farmers and community's willingness to venture and engage in a competitive agribusiness.

Research and development activities will be sustained to support the farmers involved in the production of the crop including other processing activities. These activities will include seminars, workshops, trainings, farmers' field days and demonstration

farms in collaboration with DA, DOST, MMSU and the local governments. As Ms Dacuycuy said, "We are creating a new direction of progress for our lives to be fulfilled which can help our families, farmers, communities and the country as a whole. This wonderful crop we call Ilocos Saniata will be the answer in making the difference and this challenges us to be responsive to the needs of our families and community." ###

Hybrid seeds...from page 16

industry," Malabanan said. "For the previous cropping seasons, the country has seen the benefits of hybrid rice, not only in increasing production but also in raising farmers' incomes."

Under the leadership of Secretary Bernie Fondevilla and his predecessor, Secretary Arthur Yap, the DA's goal is not only to attain food security, but also to likewise make agriculture a more profitable venture for small farmers and fisherfolk.

Malabanan said the DA, through the GMA Rice Program, currently grants subsidy for the purchase of hybrid rice seeds and conducts technical briefings for farmers on how to optimize yields using hybrid seeds with the help of its Regional Field Units (RFUs) in collaboration with the local

government units (LGUs) and the private sector.

To further promote hybrid rice, the Program, through the RFUs, National Irrigation Administration (NIA), LGUs, and private seed companies conducts technology demonstrations "to satisfy the farmers' 'to see is to believe' motto when it comes to adopting new technologies," Malabanan said.

"A techno demo never fails to impress farmers since it really shows that rice farming is profitable with the use of hybrid rice that yields much higher than the traditional or inbred rice varieties. This only shows that with all the stakeholders participating, an increase in farmer's income and rice self-sufficiency can be achieved," Malabanan pointed out.

Since 2001, the Program has focused its efforts on the expansion of hybrid areas. Hybrid rice yields at least 15% more produce than certified seeds (CS).

Based on reports, hybrid rice varieties have recorded a yield advantage of 33% more than those of inbred CS. The expansion of hybrid rice in fully irrigated areas will contribute to the sustained increase in the national palay production of the country, Malabanan noted.

Final estimates from the DA-Bureau of Agricultural Statistics show that area harvested to hybrid rice in 2009 reached 191,368 ha, which contributed 1,015,467 MT more to the national palay production at an average yield of 5.31 MT/ha. (*DA Press Office*)

Ilocos 'Saniata' Red now a luxury commodity

Text & Photos by:
MARLOWE U. AQUINO, PhD

Known to many as dragon fruit or "pitaya, the crop has found a niche in the local and international market. Four years ago, Ilocos Norte became the new home of this fruit as a new agribusiness commodity. Commercially grown now in Burgos, Ilocos Norte, and called it "Saniata" became a precious and important commodity after Ms. Editha Dacuycuy and her family decided to venture in the crop as a source of income and alternative health product in the local market. It is said to regulate and normalize digestion and improve metabolism and, therefore, is a healthy fruit for everyone.

The inspiration

According to Manang Edith as Mrs. Dacuycuy is called, the production of the Ilocos Saniata Red started as a hobby in Pasuquin, Ilocos Norte in a 250 square meter lot adjacent to their home. It was also a way to search for a food substitute to augment the required nutritional requirement of her daughter, Kate who needs special dietary supplement. Since Manang Edith believes that everything has a reason, her concern for her daughter led her to use the Ilocano word "Saniata", meaning precious and or treasured jewel to associate this trait with this important commodity that helped her meet her daughter's dietary need and which led to venture into a successful venture into a commercial agribusiness.

Growth and expansion

After the initial crop production in Pasuquin, Ilocos Norte, Manang Edith expanded her production area into a commercial farm in Burgos, Ilocos Norte within a six-hectare area. The farm was established in a small area in November 2006 and was gradually expanded to adjust to the farm's growth and development. Through the use of technologies and agricultural literature she found in the World Wide Web and in



Products derived from the Ilocos Saniata Red: spring rolls, cookies, and macaroons

books, the farm tested and applied production technologies to improve farm operations.

With the expansion of the business, Manang Edith realized the need to register her agribusiness and encourage other local farmers to engage in Ilocos Saniata production. Together with her fellow farmers, they established the Rare Eagle Forest Marine in Agricultural Development (REFMAD) as a legitimate organization of Saniata producers. They tapped the services of the Department of Agriculture in Region I, Ilocos provincial government – office of the provincial agriculturist through Ms Norma Lagman, the Mariano Marcos State University (MMSU), and Department of Science and Technology (DOST).

Today, the REFMAD is now

covering twenty-seven hectares in the provinces of Ilocos Norte, Ilocos Sur and La Union. The members are now propagating and cultivating the light yellow, pink and white varieties. However, it is the Ilocos Saniata Red that is gaining popularity which the REFMAD is proud to have mass produced and expanded commercially.

Diversified products and services

The increasing production of Ilocos Saniata led Ms Dacuycuy to do her own research on product development and on its alternative uses. Now, after much research, with her simple household laboratory and kitchen she prepares pastries like macaroons, tarts, cookies and bread, spring rolls, lumpia, tea, wine, and vinegar. She also has recipes that

BAR and Optiserve to finalize the CPAR performance index



Ms. Cheryl Marie Natividad (inset), CEO of Optiserve Technologies, Inc., explains the performance indices which are qualitative and quantitative criteria that can be used as important references to evaluators of BAR's CPAR projects. PHOTOS: EAGRON

To further enhance the performance of the farmers and fisherfolk toward agribusiness development, the CPAR frontliners from Bureau of Agricultural Research (BAR) and Optiserve Technologies Inc, together with the Regional Integrated Agricultural Research Center (RIARC) and Regional Fisheries Research and Development Center (RFRDC) managers, convened to finalize the CPAR performance indices.

Recently, the Bureau of Agricultural Research (BAR) has adopted a computer-based decision support system (DSS) known as e-Pinoy FARMS to systematize the monitoring and evaluation of CPAR programs in the country. Through e-Pinoy FARMS, the hassle in data collection was facilitated and simplified. Thus, creating a body of usable information that is readily available for project evaluators, researchers, extension workers, and even for fisherfolk and farmers. These data are categorized and processed to

come up with specific information necessary for the improvement of the CPAR project implementation. One of these is to determine the current performance of the farmers and fisherfolk involved in the project. Hence, the determination of the performance indices is a must to come up with a standard format applicable in all regions where CPAR projects are implemented.

According to Ms Cheryl Marie Natividad, CEO of OPTISERVE Technologies, performance indices are qualitative and quantitative criteria that can be used as an important reference to all evaluators of CPAR projects. The index is expected to further improve the performance of local farmers and fisherfolk and will serve as supporting data in assessing the viability, replicability, and scalability of CPAR projects for technology commercialization.

The workshop was attended by Dr. Edison D. Cruz, executive director of the University of the Philippines, Technology Management Center (UP-

TMC). He delivered a lecture on technology and enterprise development. Ms Teresa Tumbali from the private sector also discussed the sustainability factors for cooperative business ventures.

The workshop was conducted at BAR on 31 May 2010 and was aimed to simplify the internalization of innovative production management system and improve the fisherfolk and farmers' decision making skills through information management.

The activity will also enhance the production knowledge system through community organizing and enable farmers and fisherfolk to adopt risk reducing management schemes through effective information sharing, said Ms Natividad.

CPAR is one of the banner programs of the BAR designed to improve the overall management system aim to increase farmers and fisherfolk production and income through the use of information. (Edmon B. Agron)

Dutch marketing...from page 1

PROFIT will be used as a guiding principle of this venture," he added. "Guarding the ecological and social performance is of equal importance and should not be neglected while improving the financial performance of the products."

Representatives from the Department of Trade and Industry-Regional Field Unit 5 (DTI-RFU 5), GMA-HVCC Region 5, and the Advocate of Philippine Fair Trade (APFT) were also present during the meeting to share their respective roles and participations in the Queen pineapple project.

A commercialization roadmap, a strategic review, and commercialization tools are the expected deliverables from this project. (Don P. Lejano)

CRDES to address immediate concerns of rice industry in 3 regions



Dr. Santiago Obien, BAR technical adviser (top left), shares his expertise on rice during the round table discussion; and Dr. Agnes Rola (top right), dean of CPAF-UPLB and CRDES program leader, presents the progress report. PHOTOS: AVELASCO



The University of the Philippines Los Baños (UPLB) led in the conduct of the “Regional Round Table Discussion on Collaborative Research, Development and Extension Services (CRDES) Implementation” on 6 May 2010 at Villa Caceres, Naga City.

The activity emphasized the need to do more action and to immediately implement them for the benefit of the rice industry in the country. The importance of the action plan for every province and the need to concentrate on the rice seed system, delivery system, and rice master plan were also raised and emphasized.

The “CRDES for Food Security: The Case of Regions 4A, 4B and 5” is being implemented by UPLB in collaboration with local government units (LGUs) in the three regions.

Funded by Bureau of Agricultural Research (BAR), the project was conceptualized at a time when the country was experiencing a rice problem.

In a series of consultations, it has been decided that to meet demands of the people for rice and ensure sustained food self-sufficiency, a collaborative effort of important stakeholders, such as the state universities and colleges (SUCs), LGUs, and the Department of Agriculture (DA), needs to be forged.

The CRDES is about fostering this partnership between and among these various stakeholders and guaranteeing that rice in particular as well as food in general will be made available to all.

During the meeting, GMA rice

coordinators of regions 4A, 4B, and 5 and their representatives presented updates of the regional rice action plan being implemented in their respective areas.

In behalf of the regional GMA rice coordinator, Ms. Digna Narvacan, manager of the Southern Tagalog Integrated Agricultural Research Center/DA-RFU IVA (STIARC), presented the status of the rice program in CALABARZON. According to her, there is not enough seeds in the region.

Ms. Tess Aguilar, coordinator of GMA Rice Region 4B, presented a detailed implementation of the rice program in 4B while Mr. Tirso Perlas, coordinator of GMA Rice Region 5, explained the FIELDS program implemented in Bicol.

Representatives from the Philippine Rice Research Institute (PhilRice) were also invited to the meeting and were headed by Mr. Mario M. Mavillon of PhilRice-Los Baños. He said, “the technologies were there through time and yet we got stuck in the problems which were already there in the 60s, 70s, 80s.” He also reported on the programs and technologies developed which are being implemented by the PhilRice in regions 4A, 4B, and 5.

Meanwhile, Dr. Agnes Rola, Dean of the College of Public Affairs (CPAF) and CRDES program leader,

presented updates on the implementation of the project after which the points of convergence of the regional activities with the CRDES implementation activities were identified. The activities and outputs of the project based on regional needs were also redefined. Delineation of roles among the different stakeholders were also defined and made clear to each of the stakeholders.

Aside from giving attention to the FIELDS component, the project will adopt the strategy of a BAR banner program, the Community-based Participatory Action Research (CPAR). Mr. Tito Z. Arevalo, coordinator of CPAR agriculture in Region 5, explained to the group what CPAR approach is all about.

Dr. Luis I. Velasco, UPLB chancellor was also present in the meeting with other project leaders, researchers, and professors of the university. Also present were Dr. Aida Cariño and Dr. Yvonne Vinas, Regional Technical Directors for Planning and Research of Regions 4A and 4B, respectively, and BAR technical staff including Jenette Lory Tamayo and Amavel Velasco of the Research Coordination Division and Maylen Villareal of the Programs Development Division. (Amavel A. Velasco)

Effective technology management options to abate fruitfly in jackfruit developed



Dr. Carlos de la Cruz of EVIARC-Abuyog (2nd from left) shows how to bag the jackfruit using shark skin, one of the effective technology management against the fruitfly (*Bactrocera umbrosa*). PHOTO: RDELACRUZ



The three technologies to effectively arrest the spread of fruit flies included: 1) bagging technology, 2) modified trapping technique, and 3) application of the biological agent, *Metarhizium anisopliae* SPW isolate. PHOTOS: EVIARC

One of the most destructive insect pests of jackfruit is the fruitfly (*Bactrocera umbrosa*) as it causes severe damage to the quality of fruits and eventually, the entire production. Once infested, yield loss can reach up to 83 percent for jackfruit. Jackfruit is a champion commodity in Region 8 and given its increasing demand, fresh fruit or processed, there is a need to immediately address the problem.

The Eastern Visayas Integrated Agricultural Center (EVIARC) has developed effective management strategies to combat fruitflies infestation in jackfruit and other crops. This was reported during the “Terminal Project Review and Field Monitoring and Evaluation of BAR-Funded Projects” held at the main RIARC office in Babatngon, Leyte on 12 May 2010. The activity highlighted the presentations of 13 completed EVIARC projects which were funded by the Bureau of Agricultural Research (BAR), one of which is on the technologies developed to manage jackfruit fly.

According to Dr. Carlos S. de la Cruz, superintendent of EVIARC-Abuyog and project leader, the study sought to develop an effective, cost-efficient, and sustainable management system to combat fruit fly, infestation by making use of the existing fruit fly management options that proved efficient and effective even for other crops that are also infested by

fruitflies.

The three technologies to effectively arrest the spread of fruit flies included: 1) bagging technology, 2) modified trapping technique, and 3) application of the biological agent, *Metarhizium anisopliae* SPW isolate. To effectively manage the infestation, Dr. de la Cruz recommended the integration of these technology options with proper sanitation.

For the **bagging technology**, shark skin plastic is recommended since it can be used for two fruiting seasons compared to used sack which is the conventional bagging material. “Correct timing of fruit bagging is very important,” explained Dr. de la Cruz. Jackfruit must be bagged 10-15 days after complete fertilization of fruits when all the flower stigmas have blackened. But since it's quite difficult to gauge this, a simplified and practical extension teaching tool was developed using a molding clay or cement replica that would make it easier for farmers to gauge when the jackfruit is ready for bagging. The dimension of the cement replica of the jackfruit measures 12.52 cm (width) by 20.66 cm (length).

The use of a **modified trapping technique** can drastically reduce the population of the male adult fruitflies. Traps are made using 1-liter empty plastic containers of transmission fluid with 38 perforation holes and a window

to facilitate re-spraying of a pheromone attractant and replacement of cotton ball inside. The killing agent of the trapped fruit includes soapy water instead of insecticide which drowns the male adult fruitflies, suppressing their population. “Traps are installed in the orchard with 4 inner traps within the orchard and 6 barrier traps 20 meters around the orchard's perimeter and hanged 1.5 meters above the ground level.

The last technology management option is the **application of a biological agent** for jackfruit fruit fly made of an isolate of an entomopathogenic called *Metarhizium anisopliae* SPW. To prepare, three bags of the fungus culture are mixed into a knapsack sprayer (16L) and sprayed directly on the fruits and on the ground of the orchard plantation. The fungus is mass cultured in a palay substrate of 50 percent palay and 50 percent rice bran. “The cost of producing 1 bag *Metarhizium* is only Php17.59,” said Dr. de la Cruz.

Dr. de la Cruz said that the technology management options are the results of a completed study titled, “Development and Adaptability Test of Available Technologies for the Management of Jackfruit Fly” which have already been verified for effectiveness and further improvement to suit the conditions of jackfruit growers in Region 8. (Rita T. dela Cruz)

BAR joins in Water WATCH conference



“Participated in by stakeholders, national and local government leaders and agencies... including BAR, the conference discussed water and sanitation in terms of supply and demand management, and specific technology issues as well as alternative water sources.”

The Congressional Commission on Science and Technology and Engineering (COMSTE) together with the Aurora Pacific Economic Zone, Office of Senator Edgardo J. Angara and the University of the Philippines (UP) Institute of Civil Engineering, organized the “Water Conference on the Wise Adaptation of Technologies for Clean H₂O” also known as the Water WATCH on 14-16 May 2010 in Baler, Aurora.

Mandated to review and assess the state of competitiveness of Science and Technology (S&T) and Engineering Research and Development (R&D) systems in the country, the Congressional Commission on Science and Technology and Engineering (COMSTE) is tasked to offer S&T and engineering strategies in the water sector, including proper science-based approaches that can be applied to

decision-making in terms of technology identification, transfer and project implementation.

Participated in by stakeholders, national and local government leaders and agencies, financial institutions, local and international experts and non-government organizations including the Bureau of Agricultural Research (BAR), the conference discussed water and sanitation in terms of supply and demand management, and specific technology issues such as water for agriculture, water and energy, and water and flood control; as well as alternative water sources such as rainwater harvesting and desalination.

The presentations for the two-day conference were categorized into: water supply and demand management; Metro Manila water management; alternative sources and; financing and private-public partnerships and other issues.

In the Philippines, the largest share in water usage goes to the agricultural sector with an estimate of about 86 percent. The rest are shared by the industry and domestic use. Our population is increasing and the demand for water is likewise on the rise. However, supply of water is not the issue; the problem is in the quality and the distribution. Currently, there are technologies to minimize these problems and it's just a matter of implementation, financing and adopting.

The resource persons emphasized in their presentations, one

common issue and this has to do with policy making. There was a consensus among the participants on this matter. They expressed the sentiment that Government intervention is critical to the management of water resources, supply and demand, for sustainability.

Senator Edgardo J. Angara, chair of COMSTE, stressed the importance of the conference especially in view of its focus on sanitation for health and agriculture. He said that morbidity causes are more on water sanitation; it may be direct or indirect effects. Thus, he encouraged and challenged the participants in their individual and institutional capacities and capabilities to devise ways and means of conserving, preserving and recycling used water.

Angara also explained the reason why Aurora chosen as the venue of the conference. They want to showcase the province's abundant potable and fresh water resources to pave the way for technologies and investments in the area.

“The province of Aurora has a lot of potentials. We just need technologies to explore these potentials without degrading the environment”, provincial administrator Mr. Alex Ocampo said in his message in behalf of Governor Bellaflor Angara-Castillo.

The conference culminated with a visit to the Aurora Pacific Economic Zone at Casiguran Aurora, specifically to attract possible investors. (Ethyl G. Bulao)



SEARCA, BAR conduct fourth batch of financial viability training



“This training series is part of a continuing collaboration between SEARCA and BAR to enhance the bureau's capability in managing and promoting commercially available technologies for agriculture and fisheries with emphasis on their financial viability.”

The Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) in collaboration with the Bureau of Agricultural Research (BAR) conducted anew the course, “Profitability of New Production and Processing Technologies” on 17-20 May 2010. This is the fourth of a training series, which is part of a continuing collaboration between SEARCA and BAR to enhance the Bureau's capability in managing and promoting commercially available technologies for agriculture and fisheries with emphasis on their financial viability.

The training was attended by 29 participants representing various agencies from state universities and colleges, DA regional offices, the local government of unit (LGU) of Isabela Province, Philippine Coconut Authority, Federation of Free Farmers (FFF), and BAPAMIN, a private enterprise, aside from technical staff from BAR.

SEARCA Director Gil C. Saguiguit, Jr. welcomed and acknowledged the participation of an assortment of research scientists, professors, extension workers, local government unit, farmers associations and technical staff from various agencies of government as participants and reiterated the importance of developing new agri-fishery based technologies.

Mr. Anthony B. Obligado, OIC

head of BAR's Technology Commercialization Unit (TCU) gave the opening remarks on behalf of Director Nicomedes P. Eleazar. He underscored the premise that in agriculture “if it is not profitable, it is not sustainable”. Hence, the need for a training that highlights the importance of the “profitability aspect” in generating production and processing technologies in the agriculture sector is imperative. He likewise thanked SEARCA for spearheading the training.

Dr. Bessie M. Burgos, project development manager of SEARCA, led the introduction of participants and set the festive mood for the four-day mental exercise while Ms. Sarah Grace L. Quinones also of SEARCA served as the project coordinator for the activity.

Dr. Corazon T. Aragon, professor at the UPLB Department of Agricultural Economics- College of Economics and Management (DAE-CEM) was the designated head trainer and lecturer for the entire training. She was assisted by Dr. Cesar Quicoy and Professor Antonio Jesus Quillooy also of DAE-CEM.

The first two days focused on understanding by the participants of the rigors of *cost-and-return analysis*, *partial budgeting* and *break-even analysis*, while the remaining days

were devoted to laboratory sessions and the continuation of the topic on *financial cash flow analysis*.

Dr. Aragon and SEARCA's deputy director for administration, Dr. Francisco F. Peñalba led the closing ceremonies by congratulating all the participants for their enthusiasm to learn. The awarding of Certificates of Completion concluded the seminar-training. Dr. Aragon likewise acknowledged the involvement of her colleagues from the DAE-CEM.

SEARCA officials and most of the participants recommended a follow-through training on marketing that substantiates the importance of figuring out the financial viability of any agri-fishery-based projects. According to these proponents, this is premised on the need to accelerate the flow of investments throughout the country that will serve as the springboard for a dynamic agri-business climate. It is also worth mentioning that the materials used in the hands-on exercises were extracted from the actual data and figures of BAR-funded projects.

Through such as these training courses, the financial viability of agriculture and fishery-based technologies is strengthened thereby enhancing and facilitating the growth of the agribusiness sector. (Patrick A. Lesaca)

NATIVE OYSTER species in Surigao del Sur draws attention for research

“It is delicious and appears to be the local favourite” said Ms Gemma A. Asufre of Surigao del Sur State University (SDSSU) during the presentation of her research titled, “Preliminary study of Tikod Amo on its potential as an Oyster culture species” at the Bureau of Agricultural Research (BAR) in Diliman, Quezon City.



Tikod Amo, native oyster endemic in Surigao del Sur.

Tikod Amo is an oyster species that is found in coastal waters of Lianga Bay in Barobo Surigao del Sur, because of its good taste, this endemic oyster species became a favourite seafood source in Barobo and adjacent municipalities in Surigao del Sur. Aside from being a delicacy, it also became a good source of income among small fishers in the coastal areas of the province. In fact, “the price of *Tikod Amo* is higher than the price of any ordinary oyster meat available in the market” said Asufre. However, with constant harvest, the natural stock of *Tikod Amo* in the wild is now being threatened.

According to the Municipal Agriculture Office of Barobo, the abundance of *Tikod Amo* in Lianga bay is continuously declining due to rampant collection for industry and household consumption. They also observed that the practice of collection is not sustainable and it poses a threat, not only to the diversity of oyster species in the area, but also to the hard coral substrates where these species naturally dwell.

“What is more interesting is that, this species seems unknown in the international species nomenclature database,” we found no information that describes its biological features, hence, we assumed *Tikod Amo* is a new species said Asufre.

She further says that, *Tikod Amo* (TA) was observed to have similar characteristics to some widely cultivated oyster species such as *Cassostrea iredalei* and *C. edulis* but it differs in the color and morphological descriptions of the flesh inside the valve, where *Tikod Amo* resembles the “ankle of an ape” –

thus the local name “Tikod Amo” was derived, explained Asufre.

The study has four components namely: 1) Conduct of a preliminary study about the biological aspects of *Tikod Amo*; 2) Understanding the environmental characterization of the *Tikod Amo* habitat; 3) Monitoring of *Tikod Amo* when it produces offspring (spat) and collect it for growing out; and, 4) Grow-out culture - where suitable mariculture practices are tested to prove that this species can be cultivated or cultured.

Based on the initial results of the study, *Tikod Amo* is observed attaching onto rocks, hard corals, logs, shell substrates, bamboo poles, old tires and whatever hard materials may be found at the bottom of coastal waters. This indicates that spats (baby oysters) will grow either attached or detached from any substrate, thus showing a high potential for culture, said Asufre.

The result of the study will help mitigate the declining population of “tikod amo” and open greater opportunity to small fishers not only in Barobo but also in other municipalities to engage in *Tikod Amo* culture soon.

Likewise, the study will help the government address poverty by providing the community with

sustainable livelihood, strengthen the wise utilization of coastal and marine resources for sustainable development, and complement the existing Coastal Resource Management Plan (CRMP) of Barobo, Asufre added.

The study is funded by the Bureau of Agricultural Research, in collaboration with the Bureau of Fisheries and Aquatic Resources - Caraga Fishery Research and Development Center (BFAR-CFRDC), Surigao del Sur State University and the local government of Barobo, Surigao del Sur.

On the other hand, BAR is also funding another research complementary to the research conducted by Asufre, “Systematics of native Oysters “Tikod Amo” in Barobo Waters” headed by Mr. Miguel Baay of BFAR-CFRDC CARAGA.

This study will characterize *Tikod Amo* at the molecular level, using 16SrDNA-based analysis, and determine the phylogenetic relationship of *Tikod Amo* to other oyster species using a Vector NTI programs or software packages.

The result of the study will come up with complete morphological characteristics of *Tikod Amo* and designate a common name for submission and inclusion in the International Species Nomenclature. (Edmon B. Agron)

Tikod Amo is an oyster species that is endemic in coastal waters of Lianga Bay in Barobo Surigao del Sur, which is also a good source of income among small fishers in the coastal areas of the province.

BAR conducts terminal and annual review of 6 R&D projects of ILIARC

To identify significant accomplishments and validate the acceptability of project reports, the Bureau of Agricultural Research (BAR) conducted the “Annual and Terminal Review of BAR-funded Projects in Region 1” in San Fernando City, La Union on 26 May 2010.

The activity also served as venue to present highlights of completed RDE projects and outputs that were classified as for dissemination, commercialization, Intellectual Property (IP) registration or for follow-up research.

Five completed projects were subjected to a terminal review while one project underwent annual review. The five completed projects reviewed were:

1) Processing and Utilization of Rejects and Non-Marketable Mango Fruits; 2) CPAR Goat Agri-Business Development Project (ABDP) in Region 1; 3) Mango Production & Marketing Practices in Major Growing Areas of Region I; 4) Farmers' Cultural Management Practices in Major Vegetable Production Areas of Region I; and 5) Period of Prevalence of



Dr. Carmencita V. Kagaoan (left) leads in the “Annual and Terminal Review of BAR-funded Projects in Region 1” in San Fernando, La Union. Five completed projects were reviewed.

PHOTO: AMENDOZA

Common Gastrointestinal Nematodes and Liverfluke Infection Among Ruminants in Pangasinan: Animal Disease Investigation and Surveillance in Different Areas of Region I.

Meanwhile, the study, “Enhancing the Utilization of the Light Trapping Technology for Insect Pest

Management of Major Crops in Region I” went through an annual review.

Evaluating the projects were: Carmencita V. Kagaoan, chief of BAR's Programs Development Division (PDD) and Ms. Apolonia A. Mendoza, BAR coordinator for Region I of the Research Coordination Division (RCD); Dr. Paz Mones, regional technical director of the Department of Agriculture-Regional Field Unit 1 and center manager of the Ilocos Integrated Agricultural Research Center (DA-RFU 1/ILIARC); Prof. Rhoda Garcia of the Mariano Marcos State University (MMSU); and Dr. Marcelo Gutierrez of the Pangasinan State University (PSU).

After the review, the evaluating team visited an on-going project, “Community-based Participatory Action Research on Integrated Rice-Rice-Rice-Corn+Duck Farming Systems” in San Gabriel, La Union.

One of the observations was an increase in the number of Muscovy ducks (*Cairina moschata*) from 100 to 300 ducks with daily production of 100 hatched eggs. The eggs were processed into salted eggs and sold to the local market. Snails in the ricefield were collected and used as food supplement to feed the ducks. This reduced the problem of snails which are pests in the rice fields. There was also a noted 5 percent increase in the rice yield due to the pasturing of ducks that feed on the snails. (Rita T. dela Cruz)



The evaluating team visits an on-going BAR project, “CPAR on Integrated Rice-Rice-Rice-Corn+Duck Farming Systems” in San Gabriel, La Union.

PHOTOS: AMENDOZA

