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RP, IRRI hold workplan meeting

Guests and participants during the Philippines-IRRI Workplan Meeting held at PhilRice, Malagaya, Nueva Ecija. BAR Director William C. Medrano is sixth from left; PhilRice Executive Director Leocadio S. Sebastian (in dark glasses) is at his left (front row).

To advance common objectives of promoting and accelerating research, technology promotion, and delivery on rice and rice-based farming systems, the Philippine Rice Research Institute (PhilRice), Department of Agriculture (DA), and the University of the Philippines Los Baños (UPLB) held a workplan meeting with the International Rice Research Institute (IRRI) at PhilRice, Muñoz, Nueva Ecija, September 1-2, 2003.

The event also sought to improve the coordination and management of partnerships between the said institutions. Specifically, the workplan meeting was the venue to review the progress of Philippine research institutions and IRRI's collaboration efforts; come up with a workplan and detailed action plan for 2004 to 2006; cite new priority areas that effect greater impact to rice farmers; and identify strategies to improve and promote awareness of the collaboration between the Philippines and IRRI.

PhilRice Executive Director Leocadio Sebastian acknowledged IRRI's role as a dominant force in the development of new rice varieties in the country, and stressed the need for the involved institutions to identify areas where they can work individually, and as a team. Bureau of Agricultural Research (BAR) Director William C. Medrano emphasized the challenge of feeding a growing population from dwindling resources, and pledged BAR's support to the effort. In a message, Dr. William G. Padolina, deputy director-general for partnerships at IRRI, underscored the need to feel a sense of urgency in developing and delivering technologies to farmers. *(Ma. Lizbeth J. Baroña)* ■

Inside...

SCIENCESCOPING

A look at a citrus farm in the North

What makes people from Luzon who travel to Mindanao go through the trouble of buying crates of Davao pomelo, checking them in at the airport then have the difficulty of bringing them home when those from Luzon are as sweet and delicious? And the Davao pomelo is expensive. To top it, those at the bottom of the crate are not as good as those at the top.

It is funny that one can only get interested about a thing when he has made a comparison. I, too, had been biased about the Davao pomelo until I have tasted those from Abulug, Cagayan. I am referring here to the pomelo given me by Ms. Celerina Miranda, head of the Abulug Seed Production Project when I went to interview her for a project that I am working on. She brought me to the orchard and I did not believe that we have one like it in the north. This is the High Value Cash Crop (HVCC) Project called Foundation Grove located in Abulug, Cagayan and managed by the DA where Ms. Miranda is also designated as the regional coordinator for citrus.

Established in 1985 under the Philippine Citrus Development Action Program, this 51.25 hectare-orchard is under the Department of Agriculture Region 2 and now financed by BAR's HVCC program. There are 1,500 citrus that include pomelo, Perante orange, and calamansi; rambutan, lanzones, chestnut, and coconut. Among the pomelo varieties grown are ***Satsuma*** *(a seedless variety),* ***Sweet Siamese,*** *and* ***Amoy Manlan.*** *The* ***Sweet Siamese*** *is a new introduction to find out if this is adaptable in the lowland and they found that it is. The Abulug orchard is part of the project with the main area in Kasibu, Nueva Vizcaya where there is an orchard plantation.*

According to Ms. Miranda, their sweet pomelo has reached a brix of 10.9%. When asked how they can produce a pomelo that sweet, she said that they put muriate of potash at the base of the plant while fruiting. On the economics of pomelo growing, she said that a tree can have as many as 500 fruits with 4 to 5 pieces to a kilo at P25 per kilo. This would amount to big money especially if the fruit would be priced as that of the Davao pomelo. And really when I saw the trees, their branches, heavy laden with fruits, were threatening to break. The same was true with their Perante oranges, sweet and heavily laden. Except for the chestnuts, all the trees are bearing fruits. The coconuts are sold at P3 per nut, a far cry from the P15 per ***buko*** *in the city.*

Citrus is one of our major fruit crops in the country. Rich in vitamin C and calcium, the oil from its seed and skin is used as food additive for flavoring, coloring, and perfume while its rind can be used in the preparation of candies and marmalades. The most common types include mandarin, pomelo, sweet oranges, tangelo, lemon, lime, and ***calamondin*** *or* ***calamansi.*** *Mandarin is* ***sintones*** *or* ***dalanghita,*** *to us, and has thin and fine skin that is easy to peel while the sweet orange has skin that is generally thick, tough, and leathery. Lemon is grown for its acid juice that is rich in Vitamin C and is used for drink, garnishes, and flavoring. It is oval with smooth skin with a marked point at its distal end. The lime is an acid fruit with a characteristic flavor. Its juice is for a refreshing drink, source of limeade, limejuice and marmalade. (I am not familiar with the tangelo but it is described as having a skin that peels easily, flesh is fine-textured and is less bitter than the grapefruit.) Our familiar pomelo is locally known as* ***suha.*** *It has thick skin, plenty of seeds, and low juice content.*

A tropical and sub-tropical fruit crop that originated in Southern China, India and Vietnam, citrus can grow anywhere in the country.(Calamansi is native to the Philippines.) It needs warm temperature for rapid growth and maturation and cool temperature for a good color of the fruit. It is propagated by budding and grafting to obtain true-to-type varieties and for earlier fruit bearing. Twenty years ago, Batangas was our number one citrus producing province but the industry was almost wiped out by the greening and tristeza virus disease in that province. Registering a 444% growth rate from 1994 to 1998, Isabela is now

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DA establishes DAGISNet; BAR technical adviser presents potential

(from left to right facing camera) Mr. Ric Castro, section head of BAR-ICTS, Ibarra Poliquit, DA Assistant Secretary, and Dr. Steeve Godilano, technical adviser of BAR on GIS

The Department of Agriculture (DA), through Assistant Secretary for Field Operations Ibarra T.C. Poliquit, with support from the Bureau of Agricultural Research (BAR) through Director William C. Medrano, initiated the establishment of the DA Geospatial Information Systems Network (DAGISNet). An initial meeting was held at the NAFC Conference Room DA Compound, Quezon City, 2 September 2003.

DAGISNet aims to provide geospatial technology in planning, implementation, analysis, monitoring and evaluation, and assist in policy-making for DA programs/projects. The project is also geared to provide statistical and geographical knowledge and information to its clientele who have access on the Internet.

For an orientation on DAGISNet, Dr. Esteban Godilano BAR technical adviser on GIS gave a two-hour presentation on the potential of GIS as a tool in agricultural and fishery development. The meeting was highlighted by the development of short and long term plans forDAGISNet operation in the whole Department. The first step is an inventory of existing databases of the agencies followed by capability building of staff that will manage DAGISNet. There will be a technical working group (TWG) to oversee the over-all operation. So far, there are already a number of information technology (IT) staff from different agencies who trained at BAR on GIS and data warehousing (data gathering).

The need for DA to consolidate all the efforts on GIS by all agencies was stressed. Currently, there are DA bureaus and attached agencies like the Bureau of Soils and Water Management (BSWM), National Irrigation Administration (NIA), Bureau of Animal Industry (BAI), and the Bureau of Agricultural Statistics (BAS) that are already using geospatial technology. These agencies find the tool useful and effective in implementing their various programs. It was also emphasized that there should only be one base map used by DA field offices, bureaus, and attached agencies. To be generated by DAGISNet, this base map will be distributed to all network members and they can tailor these maps according to their needs.

Aside from providing geospatial technology for DA programs and projects, DAGISNet is also geared to provide knowledge and information that are accessible in the Internet. The data exchange and sharing of information with the common database template is easier without duplication of efforts. Many routine and repeated tasks could be simplified or eliminated. This would also minimize cost of data collection, processing, and consolidation. DAGISNet is envisioned to have a central database created, which will be linked to DA-GIS and be made available in the Internet.

To fast track all the initial activities in DAGISNet establishment, Poliquit scheduled a training on GIS for all DA units that were represented in the initial meeting. *(Likha C. Cuevas)*

Sciencescoping...

the top producing province for citrus followed by Nueva Vizcaya, Quirino, and Cagayan. While Davao has not registered a positive growth, its pomelo is shipped to the metropolis where it commands a very high price.

The Davao pomelo is truly a treat and it makes one's mouth water by just thinking of dipping it in Ilocano dark vinegar with little salt or just popping it right into your mouth after removing the skin. But wait until you have tasted the ***Sweet Siamese*** *or* ***Satsuma*** *from the Foundation Grove of Abulug, Cagayan.* ***VAD*** ■

Potential of '*Vizcaya oranges*'

Dr. Solsoloy represents BAR in citrus forum

The Malabing Valley Multi-Purpose Cooperative (MVMPC) conducted a citrus forum to discuss the potential and competitive advantage of the 'Vizcaya oranges' in the citrus industry at the Malabing Valley Training Center, Kasibu, Nueva Vizcaya, 6 September 2003.

A cooperative of farmer members, the MVMPC is instrumental in implementing poverty alleviation and people empowerment projects in their community through its partnership with the provincial government. Recently, the Coop won the *Most Outstanding Coop-LGU Partnership Award for 2003* (national level). This is a yearly event sponsored by the office of Senator Aquilino Pimentel Jr. and five other agencies to recognize the contribution of MVMPC's contribution to boost the economic production of the community.

Representing the Bureau of AAgricultural Research (BAR) was Dr. Teodoro Solsoloy, scientist I and technical adviser on programs in the forum.

In his speech, he emphasized the importance of citrus as a commercial fruit in the country. He mentioned that although the country is focusing its production mainly on *calamondin* and *pummelo* in terms of the area of production, farmers must also look into the possibility of producing other citrus varieties that may have an edge in the world market. Since Nueva Vizcaya is becoming known for its sweet 'Vizcaya oranges' he reckoned that this might give a boost to the industry.

In terms of our national production, citrus ranks fourth—next to banana, mango, and pineapple. The country is exporting citrus (in all forms) next to banana, pineapple, mangoes, and papaya. If area for production is increased, the country could further boost its yield and export more of these fruits.

He mentioned that one of the daunting problems in the citrus industry aside from the low production and pests and diseases is postharvest and handling. He mentioned that solving this problem strengthens the stand of the citrus industry. The key to good postharvest handling is careful harvesting. The quality of perishable foods is achieved from the moment they are picked or harvested. From this point, farmers should maintain postharvest conditions so that deterioration is minimized, and quality is preserved at its best. He stressed the importance of having high-tech equipment and necessary facilities to improve the postharvest handling of fruits. A lot of produce are wasted if not properly handled

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Functional foods seminar held

The Product Quality Systems RDE Network, (PQSN) of the Department of Agriculture – Bureau of Agricultural Research (DA-BAR), organized a seminar-workshop on "Functional Foods R&D in the Philippines". The seminar, co-sponsored by BAR and the Food and Nutrition Research Institute (FNRI) of the Department of Science and Technology (DOST), was held at the FNRI Training Room, FNRI, DOST, Bicutan, Taguig on September 23, 2003.

The guests and participants were welcomed by Dr. Arturo Argañosa, BAR technical adviser. Dr. Ma. Regina A. Pedro, Nutritional Assessment and Monitoring Division chief of FNRI, and Dr. Aguedo Troy D. Gepte, Department of Health (DOH) epidemiologist, gave an overview of the nutrition and health status of the Philippines. Other topics discussed were: food-based approaches in addressing health and nutrition situations; concepts and applications of functional foods; and regulation on the use of functional foods.

Several academic institutions namely, Ateneo de Manila University (ADMU), University of the Philippines (UP) Manila, UP Diliman, and UP Los Baños gave updates on functional food research and development (R&D) by the academe. R&D institutions like FNRI, Marine Science Institute (MSI), and the Institute of Plant Breeding (IPB) also discussed updates on the same topic. Food industry insiders like Quaker Oats and ORAFTI discussed the situation in the manufacturing business and their incorporation of functional foods in their products. Dr. Mario Capanzana of PQSN presented a resolution on functional foods. Dr. Ma.

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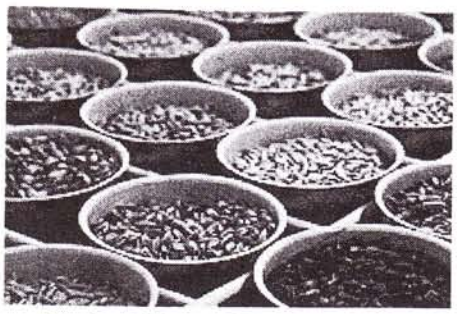
Crossing boundaries to save indigenous crops



A new project to conserve indigenous crops in the country has rekindled interest in saving precious flora native to the country. Entitled "Sustainable conservation and utilization of Philippine indigenous crops and wild relatives", the project aims to preserve cultivated and wild varieties of banana, abaca, rootcrops and vegetables and encourage indigenous groups and local communities to participate in the efforts.

The Philippines ranks fourth in the world in terms of the number and kinds of endemic species based on a survey by the International Union for the Conservation of Nature (IUCN) making it a rich repository of genetic resources. Of its 39,100 species of flora and fauna, 67% are endemic that means that these species can be found only in the Philippines. However, some of these species are at risk of becoming extinct in the near future.

Urbanization, land use, increasing population, natural calamities, pests and diseases, and overexploitation are some factors pushing these important resources to the brink of extinction.

With this project, important crops and their wild varieties can be utilized and sustained in their natural environments *(in situ)* such as wild varieties of the cultivated banana-*Musa acuminata* and *Musa balbisiana* and three ornamental species *(M. occinea, M. ornata, and M. velutina)* found in Palawan, Ilocos Norte, Albay, and South Cotabato and some indigenous vegetables and rootcrops in La Union, Ilocos Norte, and Bohol.

Preserving abaca or Manila hemp is also critical not only because it is another top dollar earner but because " tinalak" and "sinamay" (two types of woven fabric made of abaca fibers and decorated with unique ethnic designs) are important if not the main sources of livelihood for some indigenous communities in Aklan and Ilo-ilo.

To ensure the success of the project, it will seek the active participation of local government units, indigenous communities, farmers, traditional healers, tenured migrants, and women in managing the conservation sites.

This project is a collaboration of the United Nations Development Program (UNDP) which is the GEF implementing agency, the Bureau of Agricultural Research of the Department of Agriculture (DA-BAR), the Bureau of Plant Industry (BPI), the Philippine National Network on Plant Genetic Resources for Food and Agriculture with its 25 member research institutions, the regional Integrated Agricultural Research Centers (RIARCs) and their provincial Research Outreach Stations (ROS) and the Department of Environment and Natural Resources (DENR). *(Junelyn S. de la Rosa)* ■

Potential of...

after harvest.

Other attendees include: Gilbert Cumila, chairman of the Malabing Valley Multi-Purpose Cooperative, Mr. Alfonso Namujhe III owner of the Namujhe Farms, Dr. Edralina Serrano, director of Postharvest Training and Research Center (PHTRC), and Dir. Gumersindo Lasam, regional executive director of DA-Region 2. This activity is partly sponsored by BAR. *(Rita T. dela Cruz)* ■

Functional foods...

Concepcion C. Lizada, PQSN national team leader, synthesized the whole activity.

PQSN, a national program under BAR is a collaboration of state colleges and universities, government agencies and attached bureaus, and private/industry sector. These network members help in formulating, implementating, monitoring, and evaluation of the agenda set by the Network. One of PQSN's programs is on functional and fortified foods wherein the network aims to characterize the nutritive value (dietary fiber, antioxidants, vitamins, minerals) of selected foods; enhance the nutritional contribution of widely consumed food through commercially viable food fortification technologies; and maximize the nutritional contribution of agriculture and fisheries products through appropriate production, handling, and processing technologies. *(Likha C. Cuevas)* ■

Healthy oil?
It's not a contradiction

Finally, there's an oil that has a good sound to it.

Misconceptions on coconut oil having cholesterol and therefore bad for the health, caused the coconut industry to suffer. Studies were conducted to dispel this fallacy, and at the same time, promote products from coconut that are proven better alternative to established brands. One of these coconut products is the virgin coconut oil, or VCNO.

VCNO is made from fresh coconut meat or what is called a non-copra. There are two processes to come up with the VCNO. First, is the method that uses minimal heat to quick- dry the fresh meat. After drying, oil is pressed out through mechanical means. The second method of extracting VCNO is through wet-milling. This method extracts the coconut milk first from freshly grated coconut. The milk is later subjected to boiling, fermentation, refrigeration or other mechanical centrifuge to separate the oil from the water. These methods of extracting the oil sets VCNO different from the commercial grade coconut oil that is made from copra. Copra, being dried, exposed to the elements had to be refined, bleached and deodorized. VCNO also retains the scent and taste of coconut, while the refined coconut oil, having undergone more intense processes, does not.

Why is VCNO 'good oil'?

The process of extracting VCNO produces high quality oil that has 50-50% lauric acid. Lauric acid has been found beneficial to the body. Lauric acid, being one of the medium-length long-chain fatty acids, is part of the class of organic compounds known as lipids. Lipids are important in the construction of cellular membranes.

In general, coconut oil belongs to the medium-chain triglycerides (MCTs). MCTs are much more easily digested and absorbed by the liver, which makes its conversion to energy faster. Compared to long-chain triglycerides (LCT) such as those derived from corn oil, butterfat and other animal fats, coconut oil results in a higher resting metabolic rate (RMR) for the individual. This means faster burning of calories, thus keeping fats from being deposited in the body. According to Dr. Emil Carandang, executive director of the Philippine Coconut Research & Development Foundation Incorporated (PCRDFI), MCTs, are now in the market as a component in infant food and nutritional supplements for the sick and convalescent. *(Philippine Daily Inquirer, Feb. 6, 2002),*

In addition, coconut oil also helps prevent bacterial, fungal, and viral infections, and helps strengthen the immune system. It is also regarded as one of the best oils to use in cooking because it does not break down with heat.

It's for real. If there is one indispensable item in your kitchen you wish is more healthful, you can count on the VCNO.(*Ma. Lizbeth J. Baroña*) ■

Sources:

1. *Frequently Asked Questions about VCNO by Merle A. Villanueva, Industrial Technology Development Institute, Department of Science and Technology, Taguig, Metro Manila*
2. *www.coco-info.com*
3. *http://electricalbody.com/product/luscious-coconut-oil.htm*
4. *http://healthchecksystems.com/chol.htm*

Coconut flour from *sapal*; cheap and nutritious

Coconut *(Cocos nucifera)* is the Philippines' wonder tree. Every part of it is used either for domestic or industrial purposes including the by-products. *Sapal* is one of the many by-products of coconut. It is the coconut meat left after extracting the milk. These are often thrown away since most people find no use for it.

But did you know that *sapal* could be made into coconut flour? And nutritious as well! This is the promise of a research conducted by Dr. Trinidad P. Trinidad of the Food and Nutrition Research Institute (FNRI) of the Department of Science and Technology (DOST). His study was presented during the recently held 17th National Coco Week.

According to Dr. Trinidad, the coconut flour from *sapal* is rich in dietary fiber, thus a promising functional food. *Functional foods* are those that provide health benefit beyond their basic nutrition. It is similar in appearance to conventional food and is consumed as part of usual diet. Functional food has demonstrated physiological benefits that reduce the risk of chronic disease.

A lot of our indigenous crops fall as functional foods due to their dietary fibers content. Some of these include the *kampilan* (red rice), *kintab* (a variety of mungbean), and recently, the coconut flour from *sapal*. Dietary fiber is important in preventing risk of colon cancer. It binds with bile acids and prevents its re-absorption in the liver, which inhibits cholesterol synthesis. It is also effective in controlling and managing diabetes mellitus and obesity by controlling the release of glucose in the body.

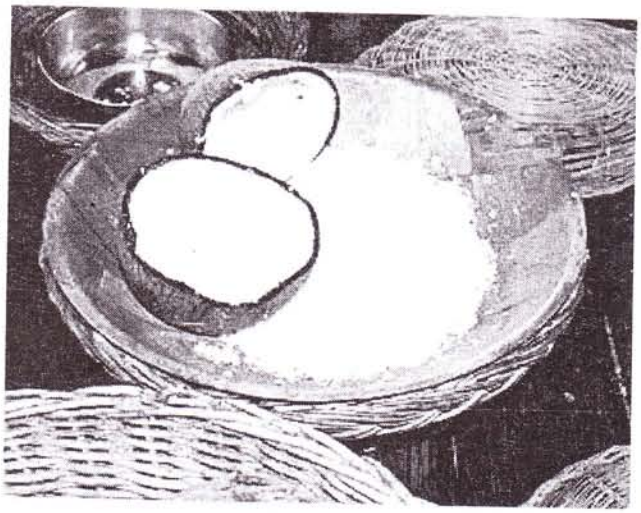
Dr. Trinidad used three parameters to determine the 'functionality' of coconut flour as food: fermentability, mineral availability, and the glycemic index.

The fermentability showed that there is a significantly greater dietary fiber content in the coconut flour than other local fiber sources like banana, cassava, wheat and rice flours.

He also found that the mineral availabile in coconut flour are: iron, zinc, calcium, and phytic and tannic acids. Moreover, as coconut flour itself is already a good source of dietary fiber, it does not affect the mineral content of other food when the coconut flour serves as an additive.

Glycemic index is a classification of foods based on their glucose response relative to a starchy food. This makes it therapeutic for diabetic and obese persons by slowing down carbohydrate absorption. Adding dietary fiber to food lowers the glycemic index and in turn reduces postprandial blood glucose and insulin responses. It improves the overall glucose and lipid concentrations in normal patients and those with diabetes. Foods supplemented with coconut flour have lower glycemic index.

Although a lot of people are still confused which food is functional and which is 'just' food, there is still a wide concern on which food is healthy and which is junk. A lot of people are more conscious in watching what they eat. Even though the Philippines has no available policy on functional foods it is still important that they be promoted to people. This will also prevent people from being misguided by false labeling of food.



With the discovery of coconut flour, production of *sapal* becomes an attractive endeavor for the coconut industry. It is nutritious. It is a good source of generating income. *(Rita T. dela Cruz)* ■

Source:
"Coconut Flour from Sapal: A Promising Functional Food" by Dr. Trinidad P. Tinidad, paper presented during the 17th National Coco Week, 27 August 2003, PCA Auditorium, Diliman, Quezon City, Philippines.