



The Philippines is host to 2002 CGIAR AGM



The official logo of the 2002 CGIAR AGM

It will be the first time that the Consultative Group of International Agricultural Research Annual General Meeting (CGIAR AGM) is held in Southeast Asia and the Philippines will host this international event on October 28 to November 01, 2002.

Every year, the AGM gathers representatives from 16 international agricultural research centers to discuss and draft policies on agricultural R&D. About 600 participants are expected to turn out for the event.

The Bureau of Agricultural Research (BAR), the national team leaders of commodity- and discipline-based RDE networks and representative of various R&D institutions in the country convened this July to prepare and finalize plans for the event. UP Los Baños (UPLB),

in close collaboration with BAR, spearheads the preparations for the Philippine Day during the AGM on 28 October. The Philippine Day will be held at UPLB and will feature exhibits on the different sectors of agriculture, fisheries, forestry and natural resources with the theme "Partnership in Action Towards a Food Secured Philippines" at the Institute of Plant Breeding and College of Forestry.

A highly significant event, the AGM will put the Philippines on the global map of agricultural R&D. Hopefully, the event will allow the Philippines to air its concerns on agricultural R&D policies, both local and foreign, as well as promote the country's agricultural sector by showcasing various technologies and products.

Since its inception in 1971, CGIAR has been on a mission to contribute to food security and poverty eradication in developing countries through research, partnerships, capacity building, and policy support. It is made up of public and private members supporting a

system of 16 Future Harvest Centers that work in more than 100 countries to organize cutting-edge science that reduces hunger and poverty, improves human nutrition and health, and protects the environment.

In 1980, the Philippines became a member of the CGIAR and is host to CGIAR's International Rice Research Institute (IRRI) in Los Baños. The Philippines' official support to the CGIAR comes in two forms: the regular "unrestricted" allocation from the Department of Foreign Affairs (DFA)'s International Commitments Fund and the "restricted" funds provided by the DA through BAR.

"Unrestricted" means the fund can be spent by the CGIAR on whatever expense item it deems fit. Conversely, "restricted" means the fund can only be spent on expense items that BAR, being the grantor, has identified.

At the moment, BAR is the government's primary contact with CGIAR on operational matters.

(Thea Kristina M. Pabuayon)

RDE networks gear for better resource allocation

The national team leaders (NTLs) discussed the 2002 budget allocation for the networks' operation and research implementation. BAR Director Eliseo R. Ponce said that subsequent budget releases for this year are uncertain due to inadequate cash given by the Department of Budget and Management (DBM). Thus, he requested the networks to prioritize their projects and allocate the limited resources according to priorities.

In view of this, BAR proposed a change in the current

provision regarding the unexpended balance of completed and terminated projects. As provided by the contract, unexpended balance of completed or terminated projects should be returned to the national treasury. An Omnibus Memorandum of Agreement shall be prepared to allow the project's implementing agency to utilize the fund balance to support on-going projects experiencing delayed fund releases, and for institutional development expenses such as

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Soybeans for house construction?

*I*t is funny that before I finally took residence in a progressive barangay in the town of the late President Marcos, I did not even know what a soybean is and how it looks but I did know soy sauce, a product from soybeans because we used it for cooking adobo.

I heard rhythmic paddling like washing clothes in the river one afternoon, but there was no river nearby and it was about one o'clock in the afternoon. I followed the sound and it brought me to our neighbor who was considered landed. On a pavement beside their house were women with wooden paddles striking mounds of partly de-husked pods similar to lima beans of the small-pod variety. They said they were de-husking soybeans and they had long-sleeved shirts on since the work is itchy. I picked up one pod and I felt the hairs stuck on my fingers. I asked them the use of soybean and they said it can be a viand like the mungbean when fresh, and like the seeds of the string bean but has to be crushed. Or it can be made into coffee by roasting then ground and sweetened with molasses when boiled in water. That same evening I was gifted with soybean coffee and really, it tasted good. Of course, those women did not know the many uses of soybeans, as did I. Three decades after, I am here writing about soybeans after I scoped on it searching for materials to write about.

Soybean has been grown for thousand of years as food for millions of people and as feed for their livestock or as ingredient for

feed of the livestock industry. These traditional uses have been expanded into many, many more. In the early 1900s Henry Ford developed industrial uses from renewable agricultural products. He researched on various commodities and found soybeans to be the most versatile. He developed an auto trunk lid from soybean-based plastics and brought down an axe on his innovated lid to demonstrate its resilience.

Great products out of soybeans are being turned out at the University of Delaware such as common adhesive tapes from soybean oil, hurricane-resistant houses from panels of soybean resin and many others. Presently, a professor from the same university has patent applications for a resin made from soybean oil that could be used to replace some petroleum-based plastics and polymers. According to the article, this could be further explored in making one-piece roofs that can resist hurricane-force winds. The materials are made from biological substances, which are renewable. John Deere of the tractor fame now uses soy-based fiberglass composites to build body panels for farm machinery.

The Affordable Composites from Renewable Sources (ACRES) program under Dr. Richard Wool of the University of Delaware said that their research has the potential to replace 26 billion pounds of petroleum-based adhesives and plastics by year 2020. The implication of this scientific breakthrough is an annual crop of enough soybeans to be used to build things that today are made from trees grown over decades or from irreplaceable oil deposits. A postdoctoral research associate also working on the project said that within a few months, farmers can grow enough soybeans to build

houses. Soybean is grown seasonally so that every year there is a new crop to provide enough supply.

And to think that there are other uses of soybean from food to body products. Soy foods include tofu, soymilk and other drinks, soy-based burgers, tempeh, soy nuts, soy ice cream, soy sauce, soy baking mixes, and cultured soy. A new milk collection from dried milk, soy, rice and oat protein combined, gently nurtures, nourishes, and soothes the skin. Soy is great for the body and for the mind. One article cited that pharmacologists at King's College in London found that people who had high soy diet for 10 weeks developed better memory than those who consumed the same amounts of fats, protein and calories from other sources.

Other soybeans products are body care products, candles, cleaners, composite materials, crayons, high performance diesel additives, fabric conditioner, hair conditioner, hair styling gel, hand cleaner, paint removers, ball pen made from soybean resin, polish, shampoo (first to contain hydrolyzed soya protein), solvents, desks and dressers, and wax for cars.

Incredible but today there is nothing impossible in science! VAD ■

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Ponce calls on scientists to reflect on their impact in society



The Batac Science Community (BSC) flocked to the Teatro Ilocandia of the Mariano Marcos State University to start the one-week celebration of the National Science and Technology Week last July 4, 2002 as it also commemorated its 6th foundation anniversary with Dr. Eliseo R. Ponce,

director of the Bureau of Agricultural Research, as the keynote speaker. The audience is composed of the officials, staff, faculty and students of colleges and universities and agencies in Regions I, II and CAR.

"I would like to invite the science community to get out from the comforts of the university and see how our country is faring," Ponce stated. Indeed, situations such as crisis call not just for action but also for reflection. Not finding faults but assessing what has been done and discerning lessons from them.

"Agriculture is 20 percent of our gross national product and employs more than 50 percent of our population but it never gets the attention it deserves. Our population grows at about 2.3 percent each year but agriculture's average growth in the last ten years had remained at two percent. If we compare our agricultural productivity to that of Indonesia, Malaysia, Vietnam—our productivity is among the lowest,"

disclosed Ponce.

Questions such as why we do not have enough food, why poverty incidence worsens and why we don't have decent opportunities for employment need to be answered. Ponce is emphatic that scientists should deal with these issues. "Because the academic community is supposed to be the voice of reason, it should be the first one to say that, hey, wait, the country is in trouble!"

With the BSC in its sixth year of existence, Ponce challenged them to "ask yourselves your reasons for existence." BSC facilitates productive scientific endeavors and maximum interaction through cooperation and sharing of resources of the member agencies. The community hopes that through such partnership, they can help in creating a science and technology culture among member-agencies in Region I, namely, the Department of Science and Technology, Department of Agriculture, Mariano Marcos State University, Mariano Marcos Memorial Medical Center, Cotton Development Authority, National Tobacco Administration, Philippine Carabao Center, Agricultural Training Institute, Philippine Rice Research Institute and the local government units.

The scientists connected with these agencies hope to accelerate the socio-economic development of Batac and ultimately, Regions I, and II through the generation, verification, packaging and dissemination of technologies and information for promoting agriculture, health, industry and natural resources development—thus achieving relevance in the society that they operate in.

Ponce stressed the importance of assessment and credibility, "You should excel in your endeavors so that people will listen to you because you are

RDE networks gear...

purchase of equipments, and repair or improvement of laboratory facilities.

For a more effective allocation of funds to the networks' projects, BAR shall provide the regular annual budget allocation of the networks, starting 2003. This will allow the networks to effectively prioritize and distribute resources across their major programs and projects.

Dr. Ponce also encouraged the networks to source-out funds from other national and international funding agencies to pursue their R & D programs. This will considerably strengthen their capabilities to support more priority programs/projects that are needed in the agriculture and fishery sectors.

Furthermore, Dr. Ponce encouraged the networks to focus on

the aspects of effective project implementation and resource management. Hence, he suggested that UPLB-networks regularly meet with the project implementers in order to discuss and resolve problems encountered in project implementation. He further enjoined the NTLs to interact with each other regularly to identify ways to improve and strengthen Research, Development and Extension (RDE) project implementation. In connection with the need for regular interaction among the NTLs, Dr. Ponce gladly announced the upcoming construction of the National Agriculture and Fishery Research, Development and Extension Network Center at UPLB. This will house all the UPLB-based networks and will provide a venue for network meetings and fora. (*Thea Kristina M. Pabuayon and Karen A. Salandanan*)

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UPLB scientists introduce biological approach to increase yield in veggies



system the key to productivity is in the superiority of the transplant. Plants must be provided with resources to achieve the most favorable growth and strength that eventually lead to better establishment of the crop.

Some formulations of PGPR are now

available and others are in commercial development. *Bacillus subtilis* is a PGPR organism with activity against soil-borne fungal root pathogens.

Among the isolates used in the study to test the growth responses of vegetables were: BS 58 and BTToRe. Results of the study showed that treatment of plants with BS 58 significantly increased the shoot biomass of tomato, radish, and pechay. Meanwhile, BTToRe significantly increased the shoot dry matter yield of sweet pepper and okra.

PGPR have been shown to enhance plant growth and protect roots from the incursion of pathogens on many crops. Soil-less transplant growth mixes are an ideal medium for delivery of PGPR in transplanted crops.

Growth of tomato particularly the White Apollo on soil-less culture was significantly improved through inoculation using local isolate, BTS and compost as medium. In a pot experiment using Lipa clay loam, the Improved Pope was more responsive to inoculation than cultivars, *Maligaya* and *Marikit*. Meanwhile, BS 58 improved the shoot growth of all the cultivars used.

In another experiment using Lipa clay loam and Taal sandy loam, significant increase in plant height of White Apollo was observed using BS 58. In a laboratory experiment, using radish, PGPR inoculation favored germination, induced radicle (the part of a plant embryo that forms the root of the young plant) elongation and improved root and shoot development. Under greenhouse conditions, inoculation increased dry matter yield three weeks after planting. (Rita T. dela Cruz)

Source: *Enhancement of Vegetable Growth by Inoculation with Plant Growth-Promoting Rhizobacteria (PGPR)* by Erlinda S. Paterno and Elizabeth S. Garcia, Institute of Plant Breeding, College of Agriculture, University of the Philippines Los Baños, Laguna. Tel. no. (049) 536-2512

Scientists from the University of the Philippines Los Baños (UPLB) recently evaluated the growth responses of five types of vegetables, namely, tomato, radish, sweet pepper, okra, and pechay to plant growth-promoting rhizobacteria (PGPR). PGPR are beneficial bacteria that live on the roots of plants to enhance their growth and reduce disease in many different agronomic crops. Using commercial isolates, the scientists were able to record PGPR's effects on the growth of vegetables.

Through this biological approach, the bacteria were introduced twice on the different cultivars of vegetables, first on the seeds before planting them and then before transplanting the seedlings. The growth responses such as plant height, root and shoot length, root and shoot biomass accumulation, and root surface area and root-shoot ratio were evaluated and recorded under the growth room or the greenhouse conditions. Data collection was done during the early flowering stage or four weeks after the plants have been transplanted.

In any vegetable production

Ponce calls on...

credible." He challenged them to assess bravely, even it would mean realizing the possibility that "BSC has not gotten any nearer in the excellence that it wants to achieve."

An instructor from St. Paul University in Cagayan commented that science communities encounter difficulties in translating their mission into actions. He said that what Dr. Ponce stated, does not discourage them. This is a challenge for them to work harder in fulfilling their goals.

Dr. Carlos Pascual, director of BSC, in a response, disclosed that "we will immediately discuss in our next board meeting the lessons we gleaned from Dr. Ponce's message."

Achieving our dreams does not only require courage and boldness. Dr. Ponce urged the scientists, managers and students present in the celebration to be willing to "buckle down to work to become useful in the society we vow to serve." (Ma. Rowena S.A. Briones)

Make profits from sea urchin culture

by Mary Charlotte O. Fresco

Few years ago, sea urchins or what foreign countries tagged as *sea porcupines*, are generally ignored marine species. It could be because of their strange-looking movable spines and tubular feet akin to starfish that make people stay away from them. People only realized sea urchin's special value when its demand in foreign markets had overtaken the demand for the more traditional lobster.

In 1995, the worldwide production of sea urchins was estimated at 119,647 metric tons. Their highly priced roe or gonads or what we call locally as *alige* became the most sought-after marine delicacy for its sweet, tangy and exquisite flavor. In Tokyo wholesale markets, sea urchin gonads are sold at US \$58-160/ kg. Japan is said to be the largest consumer of sea urchin gonads, followed by France and Korea.

The increased market demand for sea urchins coupled with favorable economic return had resulted to uncontrolled and non-selective harvesting of the species. One best documented example of sea urchin exploitation was reported in our country, particularly in the municipality of Bolinao, Pangasinan, where residents indiscriminately collected the small, immature urchins even before they spawn or reproduce.

This alarming case had prompted the fishery experts of Marine Science Institute (MSI), University of the Philippines Diliman to develop a grow-out culture technology for sea urchins not only to conserve and sustain the urchins' population but also to provide lucrative business opportunities for small and large fishery operators.

Getting used to sea urchins

Just like any other marine species, sea urchins have distinct biological features that need to be thoroughly understood by the growers.

In our country, the most common sea urchin species is *Triplaneustes grantilla* locally known as *swaki*, *santol-santolan*, *maritangtang*

and *kuden-kuden* and found in the Ilocos and Bicol regions. Their purplish-brown body has numerous short white-and-orange spines. They live on the sea floor and feed on *sargassum*, a brown seaweed.

Sea urchins have two distinct phases in their life cycle: the planktonic larval stage that lasts 5-8 weeks and benthic adult stage, wherein the urchins reach sexual maturity at 7-8 months after fertilization.

It is hard to distinguish males from female sea urchins by simply looking at their external appearance. One may determine the sex by shucking the urchins and examining the color and texture of the gonads. The gonads are the edible part of the animal that contain sex cells and gametes. Each urchin has five strips of gonads between the rows of its tube feet. The female gonads are orange with granular egg; while the gonads of males are yellow with cream-yellow sperms.

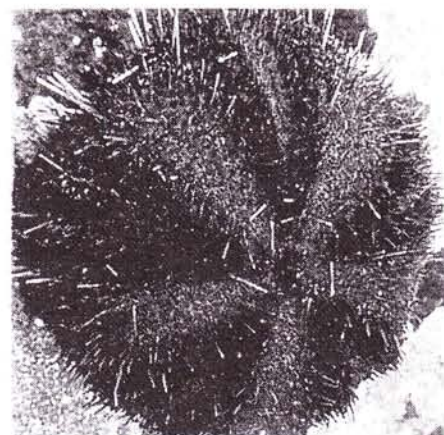
Sea urchins spawn or release eggs year-round in their two to three-year lifespan.

The Grow-out procedure

According to the researchers of the study, one should do an initial survey in the prospective grow-out site while making sure that sea urchin brood stock is abundant in the area.

For the construction of the cage, the most durable materials locally available are PVC pipe frames covered with green polyethylene screen or net. These cages are installed on the seafloor by tying the four corners of the net to bamboo stakes. The cage should be elevated at least one foot above the seafloor and the top should be about 0.5 m below the sea water surface during low tide.

When the source of seed stock is far from the grow-out area, proper transporting procedure should be strictly followed. Live sea urchins while in transport should be kept in Styrofoam iceboxes (with aerators similar to aquarium's) that contain seawater. About 500-600 urchins can



be placed in one Styrofoam box. It is recommended to transport the seedstock early in the morning when the temperature is lower. Sea urchins, regardless of how they are transported, should not be abruptly transferred from the transport containers directly to the sea cages because sudden change in water conditions can further stress the urchins and may cause them to die.

The ideal number of sea urchin per cage should not exceed 500 because too crowded grow-out cage results to competition. Even if they are always supplied with *sargassum*, their growth will not be uniform thus stunted individuals yield smaller gonads.

In sea urchin culture, proper care and maintenance should not be only limited to the animals. One should also be "responsible" in taking care of the urchins' source of food. *Sargassum*, when indiscriminately stripped may result to eventual denudation of algal bed. One proper way of harvesting *sargassum* is by using a sharp knife or sickle to selectively harvest the plant's secondary branches. This practice will leave the roots and the primary axis of plant intact, thus letting the plant to regenerate for future harvesting.

Sea urchins are fed with *sargassum* once or twice a week. There should be enough amount of *sargassum* left in the cage to ensure that urchins feed at maximum rates, grow faster, and consequently develop

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Bt corn: The saga continues

by Rita T. dela Cruz

Two years ago, anti-GMO campaigns were launched to stop the Bt-corn (*Bacillus thuringiensis*) field-testing in General Santos. The field-testing, which started as early as December 15, 1999 was headed by Cargill-Agroseed Inc. and the Institute of Plant Breeding of UP Los Baños (IPB-UPLB). Although approved by the National Committee on Biosafety of the Philippines (NCBP), advocates of the anti-GMO campaigns filed a petition before the Supreme Court for a restraining order. Their reason is the ill effects of Bt corn on environment and biodiversity.

Since there are no studies and field tests conducted in the Philippines to support the claims of the pro-GMOs that such activity poses no significant risks to human health and the environment, the misconception on the drawbacks of GMOs continue to proliferate.

During the First National Corn Congress held recently at Malaybalay, Bukidnon, Senator Edgardo Angara, one of the principal authors of the Agriculture and Fisheries Modernization Act (AFMA) and former secretary of the Department of Agriculture (DA), said that Bt corn field testing are vital because it is only then that the true effects (both beneficial and unfavorable) could be determined, otherwise, people are just left with misconceptions.

Superiority of Bt corn

A multi-location field test conducted in the country showed that Bt corn is far more superior over non-Bt variety in terms of production yield, costs, profitability, and nutritional value. This was revealed by Filipino scientist Leonardo Gonzales, chairman and president of Sikap Foundation in a large gathering of agricultural researchers and experts.

In terms of production yield, the field tests showed that the farms planted with Bt corn had yield 41% higher compared to non-Bt corn farms. When done in actual corn farmers' fields, production yield was 60%

higher on the average. Bt corn also proved to be more cost efficient since it is much cheaper for local farmers to produce. Field tests showed that it only costs P2.81 to produce a kilo of Bt corn compared to P3.71 for non Bt corn. Profitability wise, Bt corn surpassed the performance of non-Bt. Profitability advantage of Bt corn ranged from 25% to 86%.

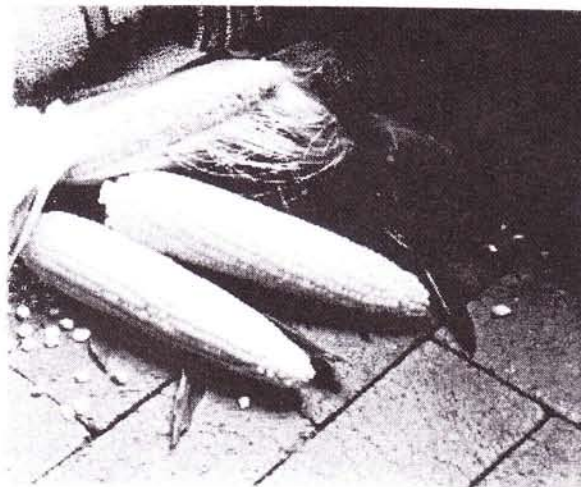
When asked about the farmers' reaction, Gonzales mentioned their positive feedback mainly because of the high productivity and the minimal use of pesticides. He also cited the willingness of the farmers to adopt the technology provided that technology is already available in the market.

Resolution to support biotech policy approved

With declining farm productivity and dwindling agricultural areas in the country, President Macapagal-Arroyo stated in her recent policy statement the adoption of biotechnology as an important strategy to address food security and environmental concerns.

In view of this, the Philippine Maize Federation, Inc. (PMFI), the country's largest organization of corn farmers approved a resolution to support the national policy of the government. Specifically, the group expressed its support to the adoption of Bt corn due to its promised productivity and profitability for the farmers.

In the US, there are already nine types of Bt corn developed and approved for planting for food and feed use. These are: Knockout, NatureGuard, Yieldgard® (Bt 11), Starlink, Bt Xtra™, MON801, Yieldgard® (MON802), Yieldgard® (MON810), MON809, and



Herculex™ I. Starlink corn was approved for feed only because of regulatory problems.

Here in the Philippines, commercialization of Bt corn is not yet allowed but with the President's recent policy statement on biotechnology, its availability in the market may not be far.

Anti-GMO resolution vetoed

A recent development on this continuing saga of Bt corn was Mayor Claudius Barroso of Tampakan recently vetoing Resolution No. 102 prohibiting further field trials of GM crops within the municipality. This is indeed good news for the corn farmers of South Cotabato who want to adopt and benefit from the Bt corn.

A project on the "Multi-location field trials of Bt Transgenic Yieldgard Corn Against Asiatic Corn Borer, *O. furnacalis* G., in the Philippines" was approved by NCBP for implementation at Tampakan, South Cotabato. ■

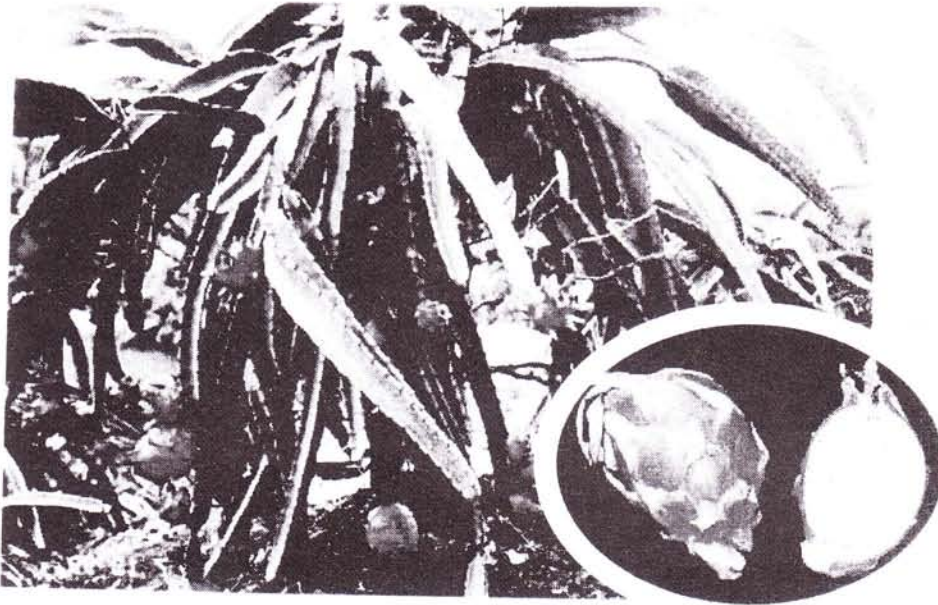
Sources:

1. "Anti-GMO petition filed before the Supreme Court" published in *BalikKalikasan* (http://www.bwf.org/bk/2k/02/21_01.html)
2. "NGO, farmer group back biotech corn" 21 July 2002, *The Philippine Star*
3. "Tampakan Mayor Vetoes Anti-GMO Resolution" Press release from SEARCA
4. "What are the facts about...Bt Corn" by Saturnina C. Halos, Ph.D published by DA-BAR

The exotic dragonfruit: A hot new fruit

FEATURE

by Junelyn S. de la Rosa



Big, bright red things with interesting flaps and folds in the skin, like some kind of ornamental chinese lantern- is the dragonfruit (*Hylocereus undatus*). It first caught my eye at a local supermarket a week ago. I was not the only one hovering over the bizarre-looking fruits- at least four other people were smelling and touching them.

Priced at P120-150 a kilo, this fruit is fast becoming a hot new item in the market. A sure profit giver, scientists from the Institute of Plant Breeding (IPB) are encouraging farmers to plant dragonfruit in their backyards.

I learned that the dragonfruit is a climbing cactus whose fragrant white flowers bloom at night. In fact, it is popular as an ornamental in Hawaii and is called Queen of the Night, Moonflower or Lady of the Night because of its magnificent bell-shaped flowers.

Like other fruits, the dragonfruit or strawberry pear is very nutritious. It contains minerals, vitamins, and dietary fiber. It lessens cholesterol and is good for people with diabetes.

The ripe strawberry pear is found delicious, especially if chilled and cut in half so that the flesh can be eaten with a spoon. The juice is enjoyed

as a cool drink. A syrup made from the whole fruit is used to color pastries and candy. The unopened flowerbud can be cooked and eaten as a vegetable.

Dragonfruit is also medicinal- the sap of its stems can be used as a vermifuge or dewormer but it is said to be caustic and hazardous. The air-dried, powdered stems contain B-sitosterol which is 30 times more effective than choline in breaking down cholesterol.

The dragonfruit plants can be cultivated using seeds, cuttings and pieces. They are easy to grow and maintain provided they are not overwatered. Like other cacti, they thrive best in well-drained soils such as sand and perlite and bloom best under full sunshine.

To cultivate the plant, stem cuttings can be prepared from plants that are 1/2 to 1 1/2 meter long. Then, these cuttings are stored in a dark area for a week before they are planted in plastic bags filled with a mixture of soil, manure and burnt rice hulls.

When the seedlings are big enough, they can be transplanted to a 30-cm thick plot with a wooden trellis for the them to climb on. They can also be allowed to climb a tree or a wall like other vines or scrambling plants.

Other pointers that are useful

are: 1) Plant them in areas that are not infested with ants, 2) Make sure that the plants get enough sunlight 3) Let the branches hang to enhance flowering and 4) Avoid overwatering and letting the soil dry in between waterings, and, 5) Indoors- place them in full sunshine, outdoors- place them in a partially shaded area. And if the leaves develop "burned" spots, give them more shade.

Recently, the dragonfruit has already made its way into the European market and latest figures show cacti fruit sales are soaring across the world. Although consumers are sometimes skeptical, there is a market for new exotic fruits. Farmers can augment their income by planting special crops like these in their backyard or in their farms. ■

Source: Pagtatanim ng Dragon Fruit by Drs. Rodel Maghirang, Gloria Rodulfo and Eufemio Rasco Jr., Special Crops Project-Vegetable Division, Institute of Plant Breeding, College of Agriculture, UP Los Baños at Telephone No. 049-536-3304 loc 217 and E-mail: rgm2000@yahoo.com

Make profits from...

large gonads.

One advantage of rearing sea urchins over other aquaculture species is that they don't require regular monitoring. Monitoring is only deemed useful if one wants to periodically check on the growth performance of the sea urchins.

In a grow-out trial conducted to determine the rate of survivorship of the urchins, experts found that 85% of the population successfully survived. They explained that the sea urchins survival rate is relatively high mainly due to few known parasitic diseases for sea urchin..

One remarkable characteristic of sea urchins is that they grow very rapidly but gradually tapers off when they become larger. Because of this, thinning out of the population is required. It is recommended to build additional cages for splitting the

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Web NEWS

WSSD to ensure global development

<http://www.johannesburgsummit.org>

Agricultural production can meet demand with proper policies

<http://www.fao.org/docrep/004/y3557e/y3557e00.htm>

Agriculture and biodiversity can survive and thrive together

<http://www.futureharvest.org>

Farm exports reach \$131.7 M in June - Montemayor

<http://www.da.gov.ph>

RP to rich nations: Let your foreign aid help us open up your market

<http://www.da.gov.ph>

Make profits from...

stocking density, especially in the last month prior to harvesting, where urchins are in "fattening phase". During this stage, the ideal number of sea urchins should be maintained at 200 individuals per sq m. They should always be given high food rations.

On harvesting

The right time to harvest sea urchins is when they reach a diameter of 7-8 cm. To ensure maximum yield, it is best to harvest the sea urchins before they spawn, because urchins that are close to spawning have large, firm gonads. One technique of determining if the urchins have large gonads is shucking about 10-20 urchins. If the gonads are filled with nutritive cells or ripe sperms or eggs, it is an indicator that the urchins are close to spawning. But if more than half of the samples have thin and watery gonads, it is an indicator that the urchins have already spawned. If this is the case, it is recommended to wait another 2-3 weeks before harvesting.

Reference:

Sea Urchin Grow-out Culture – a study funded by DA-Bureau of Agricultural Research

For more information, please contact, Dr. Marie Antonette Junio-Meñez, UP Marine Science Institute, UP Diliman, Quezon City at Tel. No. (02) 9223921; 9205301

ERP provides insights on poverty



It is quite contrary for a country known for its rich natural resources and large sector of highly educated population to be in the list of the top countries in Asia that are mired in poverty.

According to World Bank, poverty incidence in the Philippines falls from 40 percent (1991) to 32 percent in 1997, yet, there are millions of people, both in urban and rural areas that lack the basic necessities of life.

There may be other reasons for the poverty of the Filipinos. What makes us poor?

This is the challenging question posed by Bureau of Agricultural Research (BAR) Director Eliseo R. Ponce during the opening program of the Pampanga Agricultural College's (PAC) School Year 2002-2003 on 10 July 2002 in Magalang, Pampanga.

In Dr. Ponce's speech, the dimension and root cause of poverty were narrowed down to institutional and individual levels.

According to him, individually, Filipinos are bright and intelligent but "collectively" they are

not. This problem, according to him, may be attributed to the weak governance among social institutions that fail to enforce and motivate its people to contribute to development.

Social inequity, high crime rate which result to increased insecurity, are just some continuing faces of poverty that hamper our country to move forward in all aspects of development,

he added.

From these viewpoints, Dr. Ponce identified four important core values that will help us achieve the development goals laid for our country for the 21st century: 1) develop a collective scientific mind, which Dr. Ponce deemed important for us to keep abreast with the rest of the world; 2) to build our country based on the positive values of the Filipinos; 3) plant seeds of peace in the heart of every Filipino; and 4) educate the people on the correct concept of governance.

He emphasized that governance is a public trust and its process of implementation should be directed in producing results to meet the needs of the society while making the best use of the resources.

But good governance is not all a responsibility of government, it should also ensure that all members of society feel that they have a stake in it and move as one.

With this, Dr. Ponce averred that we have a shared vision to live with and that is to have a progressive and peaceful country where no Filipino goes to bed with empty stomach. (Mary Charlotte O. Fresco)

BAR Chronicle

A bi-monthly publication of the
Bureau of Agricultural Research
3/F ATI Bldg., Elliptical Road
Diliman, Quezon City 1104
