BAR Chronicle

ISSN 1655-3942

BUREAU OF AGRICULTURAL RESEARCH
Department of Agriculture

visit the official website at **http://www.bar.gov.ph**

Vol. 2 No. 1 | A bi-monthly publication | 1-15 January 2002

BPI marks 72nd anniv; BAR gets award

BAR Dir. Eliseo Ponce receives award from DA Sec. Leonardo Montemayor. Looking on (L-R) are DA Usec. Ernesto Ordoñez, Presidential Adviser Angelito Sarmiento, and BPI Dir. Blo Umpar Adiong.

In what could be best described as a festive event, the Bureau of Plant Industry (BPI), one of the oldest units of the Department of Agriculture (DA), celebrated its 72nd anniversary on 14 January 2002 at its headquarters in San Andres, Malate, Manila.

The vibrant colors in the backdrop of the Camus Hall, where the anniversary program was held; the *tiangge* showcasing an array of freshly harvested vegetables and processed fruits; the exhibits from various crop-producing industries; and the colorful *banderitas* that were hanging above – all added to the festive atmosphere of the event.

Senator Loren Legarda-Leviste, who is also the honorary chairperson of the *Luntiang Pilipinas* Foundation, Inc., was guest speaker for the program. DA Secretary Leonardo Montemayor, with wife Monica M. Montemayor, headed the ribbon cutting ceremonies and opening of exhibits. Other prominent officials of the agriculture sector joined in the celebration, including DA Usec Ernesto Ordonez, Asst. Sec. Segfredo Serrano, Bureau of Animal Industry (BAI) Director Jose Molina, Philippine Rice Research Institute (PhilRice) Executive Director Leocadio Sebastian, *Ating Alamin* television program anchor Jerry Geronimo, and Bureau of Agricultural Research (BAR) experts Drs. Saturnina Halos and Santiago Obien.

As part of the celebration, BPI awarded plaques of recognition to various DA offices and officials for their contributions to the goals of BPI and the development of agriculture and fisheries in 2001. BAR was recognized for its "invaluable and meritorious contribution to the cause of BPI and as tribute to Dr. Ponce's dynamic leadership; for his benevolence, zealous concern; and active support to the multifarious activities of BPI for it to attain fully its noble intentions and objectives."

Along with BAR, other awardees were the National Agriculture and Fisheries Council of the DA, PhilRice; National Institute of Molecular Biology and Biotechnology and Institute of Plant Breeding, both in UP Los Banos; and the Japan International Cooperation Agency. *(Laarni C. Anenias)*

INSIDE...

SCIENCE SCOPING

Productivity in agriculture and fisheries

■ *VA Duldulao*

Our work at the Knowledge Products and Services makes us aware of the many information and technologies generated. And even in the former offices I worked, also research institutions dealing on tobacco and rice and lately on urban agriculture, I could say that there is so much information that could make us more knowledgeable and many technologies that our farmers could use to improve their productivity. And if we consider the many institutions doing research and the many commodities being worked on, one can imagine the immensity and the bulk of knowledge generated? But what percent of these generated information and technology have been used? Have they contributed to the improvement of agriculture and fisheries? And more importantly, have they contributed to the life of the users for whom they are intended?

There are many problems in agriculture. Our agricultural lands have become weak, tired, and infertile. Their constant and improper use, without amelioration whatsoever, have rendered them incapable of producing what they used to. The same is true with fisheries. There is overuse and overkill of our marine resources and changes in the use of our marine sanctuaries.

The benefits expected from our resources are no longer the same as five to ten years ago, even with increasing inputs; little by little the environment is destroyed with the increasing use of chemical fertilizers and pesticides.

There are better ways of doing things to improve production in agriculture and fisheries if only these are put to use. But the users themselves have their own reasons for not employing the new methods, the technologies, and the information offered them.

Now, there are new ways of putting our agri and fisheries resources to good use. There are endless possibilities of deriving an income from these resources if only we are innovative, resourceful, and determined. A bit of creativity and the love for interacting with people are also needed. And of course, the knack for getting things done systematically and orderly. But the vision should be clear and a plan should be laid out. There are alternative agriculture enterprises which are already being practiced by other countries. We are already doing this in our country, only that we are not aware that these could be alternative sources of income for our farmers and fisherfolk.

Some years back, the Department of Science and Technology(DOST) had water impounding projects in our province. But before this, I have seen a well-to-do farmer in our barangay making his own water impounding on an elevated portion of his farm. If there was remaining water in the impounding after his rice crop, then he used it to irrigate his tobacco or garlic farm. Then, we had the good fortune of being offered by DOST to construct an impounding project (with us putting in a counterpart fund) in our farm with the agreement that it becomes a model for the farmers so they are free to now and then come and visit it and see how it is being used to water the surrounding farms. There were benefits we derived from the impounding aside from its purpose of supplying irrigation water for the farms around. First, the nearby wells never ran dry even during summer and how thankful are the owners of these wells for they no longer go to far distances just to fetch their household water. Second, the trees around maintained their robust crown and so the place is always cool and shady unlike the other trees that are scorched and look emaciated and dehydrated during summer.

The point, is we have sacrificed a part of the farm for the impounding but gained more in return. We made the pond bigger and deeper and for three years now we had been seeding it with tilapia fingerlings every September. These are ready for harvest from December to January. We do not only get fish for the table but also a small income from it. More importantly, my children and their friends enjoy fishing from the impounding which makes me think of converting it into a fee-fishing enterprise. (to be continued)

BAR gets much-needed face lift

The offices of the Bureau of Agricultural Research of the Department of Agriculture (DA-BAR), 3rd floor, Agricultural Training Institute (ATI) building is undergoing a much-needed renovation. The project will be completed by the end of February this year.

The renovated right wing will house the Institutional Infrastructure Development Division (IDD), Human Resource Development Division (HRD), Administrative Division (AD), Finance and Management Division (FMD), Internal Control Unit (ICU), Commission on Audit (COA), Information, Communication and Technology Division (ICTD), National Programs Division (NPD), Regional Programs Division (RPD), and the BAR Library.

The renovated right wing will be separated by several glass partitions to ensure visibility and efficiency of the staff.

The renovation job is being done by C-JAY Builders, a local architectural and construction firm and is coordinated by the IDD-BAR. *(Junelyn S. de la Rosa)*

Managing...

on the plants.

These strategies rest on the principle that if the farmer safeguards the environment as he safeguards his plants, the environment returns the favor by working for him. With the plea of nature that we become more conscientious with our ways, IPM strategies seem to be the best way■

(Source: Singson, Evelyn. Insect Pests of Foliage Plants. PCARRD Information Bulletin No. 205/2001. For more information, please contact Ms Susan Sandra Ilao of the Crops Research Production of PCARRD, Los Baños, Laguna at Tel. Nos. (049) 536-0016 to 20 or fax at (049) 536- 0132).

AICAF officials visit DA-BAR

(L-R) Mr. Victoriano Guiam, Dr. Chukichi Kaneda, Ms. Agnes Sastrillo, Dr. Reynaldo Comia and Mr. Hideki Hiyama

Officials from the Association for International Cooperation of Agriculture and Forestry (AICAF) visited the Bureau of Agricultural Research (BAR) last 14 January 2002 for a briefing on the country's R&D system. They are: Dr. Chukichi Kaneda, technical advisor and Mr. Hideki Hiyama, assistant director of the Operation Department of AICAF .

AICAF carries out research on rural development and makes proposals to the Japanese government to support policy and rural development studies in developing countries. This international association is funded and supported by the Ministry of Foreign Affairs (MFA) and the Ministry of Agriculture, Forestry and Fisheries (MAFF) of Japan.

Dr. Kaneda and Mr. Hiyama are here in the Philippines to visit international research institutions like the International Rice Research Institute (IRRI), local research organizations like the Philippine Rice Research Institute (PhilRice), government offices, and research institutions of the Department of Agriculture (DA).

The visit is part of the study that the government of Japan is currently undertaking in collaboration with Asian countries like the Philippines. The study entitled, "Basic Study on Country Cooperation Policies in the Fields of Agriculture, Forestry and Fisheries" is aimed at formulating programs that extends support to official development assistance or ODA. According to Dr. Kaneda, this study sought to draft and examine new cooperation policies for agriculture, forestry and fisheries in order to respond to new issues and needs in Southeast Asian countries.

In view of this study, the AICAF officers inquired into some of the possible areas in research and collaboration wherein the government of Japan may extend support particularly in the fields of agriculture and fisheries. Dr. Kaneda asked about the latest research of BAR in the fields of climatic condition, specifically the severe effects of El Niño and La Niña in the country, how the farmers were able to cope and the implemented mechanisms in the production level.

The Japanese visitors hope that through this visit, Japan and the Philippines may work together in achieving the aforementioned goals. *(Rita T. dela Cruz)*

FEATURE

Do you want to culture abalones?

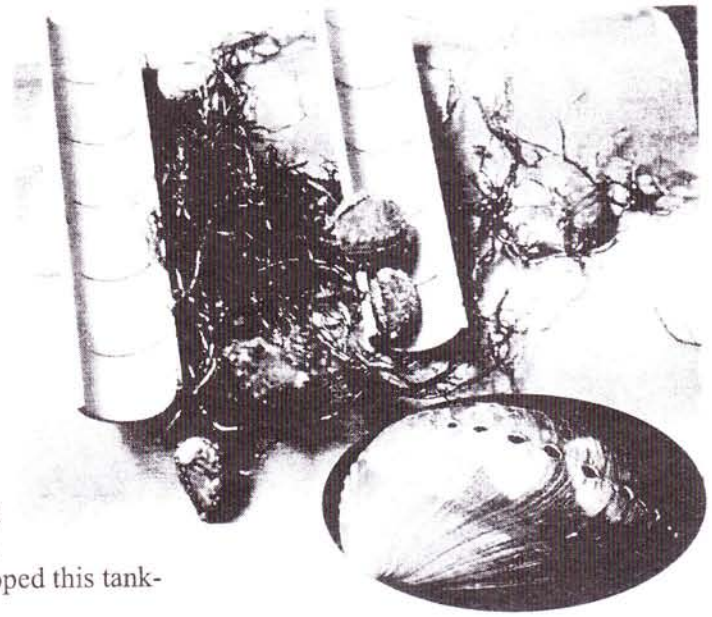
by Mary Charlotte O. Fresco

Filipinos think of something "foreign" whenever they hear the word abalones. Abalone is becoming a popular and much sought-after international cuisine in countries like Japan, China, Europe, Australia, USA, and Mexico. abalones are ear-shaped molluscs belonging to genus *Haliotis* which means "sea ear". Some abalones live in shallow waters and feed on *small algae or diatoms*. Abalones can be easily distinguished from other molluscs because of some respiratory pores that are evident along the margin of its shell. Abalone meat, which can be purchased fresh, canned or dried, command high prices because of its firm meat texture, and exceptional and delicate flavor. In Japan, the most popular cuisine prepared from abalones is sushi and sashimi, while the favored western styles are grilled and deep-fried.

What is so surprising is that this "luxury food" (as abalone is considered in China) is endemic in the Philippines. There are three known species of abalone that thrive in our marine waters: the donkey's ear abalone *Haliotis asinina* (local name: *lampas* or *sobra-sobra*); *H. varia* (local name: *kapinan*), and *H. ovina*. In fact, there are existing commercial abalone farms in the provinces of Iloilo, Guimaras, Negros, Samar, Surigao, Zamboanga, Palawan and Tawi-tawi.

However, since abalones are slow-growing molluscs, producers find it hard to sustain its production after initial harvest. Another problem that causes the decline in abalone harvest is the depleting natural food resource (algae) due to factors like varying water current and presence of water pollutants.

With the advent of new agricultural technologies particularly in Research and Development (R&D), it is now possible to culture and multiply abalones in tanks and large containers. One major advantage of rearing abalones in tanks is that one can monitor and regulate abalone seed production while in captivity. The Southeast Asian Fisheries Development Center (SEAFDEC) in Tigbauan, Iloilo developed this tank-rearing method.



On Seed Production

Abalones in captivity attain sexual maturity within 6-8 months at shell size of 35-40 mm. Mature abalones that are used for reproductive purposes are called *broodstock*. They are held in fibreglass or concrete spawning tanks with flow-through sand-filtered seawater.

One can easily distinguish a male from a female abalone. Females have dark green *gonad*, while males have milky-white gonad. In molluscs, the *gonad* is the reproductive organ found protruding between the shell and foot muscle, and is responsible for releasing the gametes or eggs during mating. Gonads easily mature when proper nutrition, high water temperature, and longer *photoperiod* (amount of daylight) are provided.

Spawning, or the act of releasing the gametes of either sex usually occurs between one and three o'clock in the morning. Male abalones release their milt (*gamete*) earlier that triggers spawning in mature females. A single male abalone is enough to fertilize 3-4 female abalones. A mature female (50-80 mm shell length) can spawn 100,000 to 1million eggs at one spawning period. The time interval between two successive spawnings may vary from 13 to 37 days. Ten spawning tanks with 50-60 breeders can provide a stable supply of eggs and larvae throughout the year.

Fertilized eggs should be collected early in the morning between six to seven o'clock.

Abalone larvae are then placed in rearing tanks with pre-grown *diatoms*. One can culture diatoms by placing 50-60 pieces plates vertically in a 1-ton oval tank. Tanks are filled with filtered-seawater with a depth of 40-50 cm and should be held under ambient light. Seawater should flow continuously until the plate surface turns pale greenish-brown (indicating growth of *diatoms*).

Nursery rearing

Place about 150,000 to 300,000 larvae in a one-ton tank with sand-filled seawater. Seawater is normally filtered using a 0.5-micron cartridge. On the fifth day of stocking, tanks should be provided with mild aeration and should be placed under ambient light. Artificial lighting maybe provided at night by using 40-watt fluorescent lamps. Larvae may be reared

see Abalones, next page

BAR's logo and the artist

▪ *by Maria Rowena SA Briones*

The official institutional logo of the Bureau of Agricultural Research (BAR) has a farm family as its focal point. It used to be just a male farmer but recognizing that women and children play integral roles in any productive activity, BAR Director Eliseo Ponce decided that this should also be embodied in the new BAR logo.

The logo is a symbol of an organization's identity—the organization's visions, what it wants to achieve and what it does to realize this. Thus, from the logo itself, BAR views farming as a family enterprise. Inasmuch as the family is the basic unit of society, so is farming as the basic component of our development as a country.

The funnel, serving as the backdrop to the family, symbolizes the catalytic role of BAR in agriculture research and development. By superimposing the family to the funnel, BAR illustrates its mission of upholding agricultural researches that improve the welfare of families, especially those engaged in agriculture and fisheries.

The BAR logo's green, brown and blue colors represents the sectors that make up agriculture. Green stands for the crop sector, blue for fisheries, and brown for poultry and livestock.

The elements represent the dynamic relationship of the agriculture and fisheries sectors and research and development activities. This relationship is integral to achieving sustainable development.

The artist behind the logo

Anthony Constantino, the artist- illustrator of BAR, could not agree more with these 'artistic philosophies.' He was the one who executed the ideas of Dr. Ponce as to how the logo should look. He took extra care listening and conceptualizing the design because he believes that, "the logo is the symbol of the organization. It is not just a figure artistically drawn, it is what the organization is."

This he learned from a seminar on publication and corporate design by the Asian Institute of Journalism; his sense of art, from his life. Anthony defines art as something clear, simple and thematic, and in harmony. The colors should blend well, the shade, dazzling. It should be telling you something yet it is comforting. He furthered that art is not just striking, it is memorable.

Anthony got his appreciation of art from his father who took up sketching, design and photography. "I like drawing, I like it even more than writing. I wanted to become an architect when I was a child. I wanted to build houses." Thus in college, he enrolled at the College of Fine Arts at the University of Sto. Tomas. But due to financial problems, he finished only three semesters.

His career as artist-illustrator is a tale of perseverance and hard work. He had his apprehensions when he first learned of the job opening through a relative. He thought he will not get accepted because he does not have a degree. But then BAR Director William Dar told him, "I am not looking for someone with a degree, I am for someone with dedication."
Anthony swore that he will always be grateful for that chance. "I was able to hone my skills in drawing and learn a lot more—layouting, how to use and operate sophisticated programs like Corel and state of the art equipment like iMac, HP printers, and enhance my knowledge in photography. I am proud that I learned all these on my own."

The artist that Anthony really admires is Juan Luna. *"I like him for his masterful depiction of Philippine landscapes in canvas. From his styles, you can see that he is way ahead of his time. He was not just an artist, he was a revolutionary."* He said impishly, *"I don't think I can be that great. I just want to refine my techniques, explore other media and become the quintessential professional artist in my own right—innovative, efficient and an effective communicator."*

He has a wife and two children. Every man lives by a principle, and this is his: *"Wala kang dapat na ipagyabang kung ikaw ay mautak at maraming alam pagkat kung susuriin ang ating isipan, katulad ng lahat, ikaw ay tuldok lang."* And indeed, he comes into full circle like an unassuming dot—small but big in purpose ▪

Abalones...

in tanks up to 60 days until they reach the juvenile size ranging from 5 to 10 mm.

Early juveniles may now be cultured in PVC pipes cut in half. They can be sustained with fresh seaweeds for 70-80 days or until they reach a shell length of 30 mm.

It is important to note that sand-filtered seawater should be continuously supplied to maintain good water quality.

Grow-out

Abalones that reach 55-60 mm shell length are either cultured in flow-through tanks or in sea cages within 8-10 months until they are ready for harvest. One can stock 60-100 mature abalones in each cage. In tank culture, it is important to maintain sufficient and continuous in-flow of sand-filtered

see Abalones, page 8

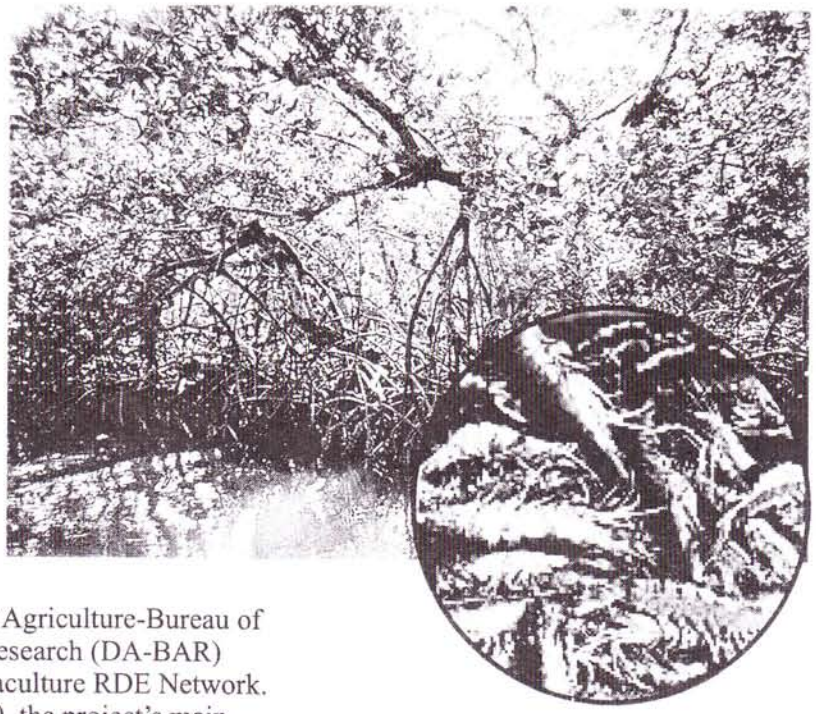
Mangrove and shrimp for sustainable aquaculture

by Mary Charlotte O. Fresco

Focusing in one aspect may mean neglect of the others. This dilemma seems to hold true even in aquaculture production. Since shrimp farming showed an impressive and steady rise in production in the mid-90s, large parts of mangrove areas in the country have been swept out to give way to brackish pond culture. The situation further worsened when farmers, especially those into large-scale operations, started to adopt expensive and intensive facilities to maximize profits. Intensive operation systems such as construction of concrete ponds, water pumps, high stocking densities, feeding with pellets, and application of chemicals posed an overwhelming threat to our coastal ecosystem.

Over the past years, as the mangrove areas dramatically decreased, so did the production of fish and shrimp caught near shore.

These alarming environmental and economic issues have prompted various agencies in fisheries research to develop projects that would help the people better understand the "intertwined" functions of mangroves and shrimp aquaculture. One of these is the "Mangrove-Shrimp Aquaculture: A Strategy for an Environment-Friendly and Sustainable Shrimp Farming," a High Impact Project (HIP) funded by the Department of Agriculture-Bureau of Agricultural Research (DA-BAR) under the Aquaculture RDE Network. Started in 2000, the project's main activities are divided into two phases, covering a five-year implementation period.



The project is generally aimed at evaluating the use of mangrove as a strategy for improving sustainability and profitability of shrimp farming. This is by far no different from other mangrove friendly aquaculture technologies that allow the rearing of both aquatic animals and mangrove trees in the same pond.

Initial information and results gathered by the researchers in its first year of implementation helped them analyze the critical factors that affect the growth of shrimp when cultured together with mangroves. Likewise, researchers will closely examine the biological and ecological factors like succession of organisms; energy relationship; nutrient flow/pathway, and the inter-relationships existing between those factors.

In a long run, the project is intended to help fishery experts understand the dynamics involved when effluent or waste discharged from shrimp ponds are passed through a mangrove-pond ecosystem. This is one way to determine the efficiency of mangrove to decrease the pollution in coastal ecosystems by absorbing nutrients (especially nitrogen and phosphorus) from waste.

Fisheries experts are hopeful that results of this study could be used in managing farms with mangroves and encourage those who have not considered the use of mangroves for sustainable farming ▪

IR 68098 is best for rainfed lowlands

Two researchers from Mariano Marcos State University (MMSU) in Batac, Ilocos Norte have identified a better rice variety for rainfed farms in the Ilocos region. A consistent top yielder at 80 cavans per hectare, IR 68098 has excellent eating quality and is resistant to major rice pests.

Dr. Miriam E. Pascua, dean of the College of Agriculture and Forestry of MMSU and researcher - Ms. Araceli Badar said that planting this variety will mean higher profit for farmers at a lesser cost. IR 68098 yields at least 30 cavans more than the variety (UPL R1-7) that is traditionally planted by farmers in Regions I and II.

Farmers who plant the new variety are expected to gain a net income of P26,357 per hectare. This is equivalent to a

see IR 68098, page 8

Corn forage as excellent source of livestock feeds

FEATURE

■ *by Rita T. dela Cruz*

Corn, while serving as staple food to 20% of Filipinos in the South, is also an important animal feed. Unfortunately, the country has never been self-sufficient in its corn production, thereby affecting the livestock sector. Corn forages are excellent sources of energy for livestock. For instance, corn stovers, or leaves and stalks of corn that are left in a field after harvesting, that are of good quality can be used as ruminant feeds.

Through proper conservation, these stovers are being put to good use by preserving its good quality as feed stuff for future use. These could be fed to livestock either as hay or silage. This way, farmers will be able to save time and money for the day to day feeds of their livestock.

Corn forage production and management

Corn stovers are basically used for feeds but can also be converted to organic fertilizer. As feeds, stovers in vegetable and green corn production are utilized as soilage (fresh fodder), silage and hay. Meanwhile, in grain corn production, detopped stovers are utilized as soilage alone.

Corn forage production and management is said to be less tedious and yet very efficient. There is less problem concerning its postharvest operations and storage processes. The storability of corn silage assures the cattle grower of a continuous supply of good quality feed stuff for his herd the whole year round.

Corn stovers as fodder

The silage technology makes use of corn stovers from the baby corn, green corn, whole corn or the grain corn.

Baby corn is very nutritious and could be fed to large ruminants even without chopping. If the farmers wished to process it, they can harvest the baby corn 48 days after planting since the corn stover at this stage is very succulent and contains about 85% water. If the farmer opted to ensile (preserving green fodder as silage by allowing it to ferment and become acified in a silo) the baby corn, it needs to be dried under the sun for one day to preserve the nutrient content. If harvested in small quantities, it is advisable to use them as fresh feed.

Green corn is harvested 65-75 days after planting. It can be processed into silage since its water content is acceptable for silage making. For small quantities, green corn can be fed to animals as soilage, preferably chopped. The whole corn is silaged after 80-85 days of planting. Most farmers feed the whole corn as soilage after mechanically harvesting them in large quantities. Ensiling is not advisable for this type of stover because forage is consumed right after harvest. But if the harvested corns are not to be consumed in one to two days, ensiling is the best alternative.

Considered as low quality stover are the grain corn stovers. If not for feeds, these are mainly used as compost materials for organic fertilizers. If the farmers opted to use these as feeds, the corn must be detopped two to three weeks before the grain corn is harvested. It could be used as forage to be ensiled or as fresh feed■

(Source: "Corn Forage Conservation and Utilization, A Case in San Jose, Occidental Mindoro", a joint publication of the Department of Agricultural Education and Rural Studies (DAERS), Farming Systems and Soil Resources Institute (FSSRI), National Corn RDE Network and BAR)

Managing foliage pests the best way

■ *by Maria Rowena S.A. Briones*

Foliage plants are valued for the beauty of their leaves and stems. The plant should be healthy for it to command a good price in the market. But leaves and stems are also what the pests are after.

Growers normally protect their plants from pests with insecticides. However, these chemicals can kill both the harmful and beneficial insects. With long term use, pesticides also endanger the health of the farmers administering it.

What scientists call Integrated Pest Management (IPM), this minimizes the use of pesticides thus decrease costs of production. They are safe both for the health of farmers and the environment. The farmers will be surprised to know that these strategies are easy to learn and perform.

Dealing with some of foliage pests such as armored and soft scales, and gray mealybugs using IPM illustrates how practical these strategies are. Armored scales are very small insects with brown or black round and flattened shells that settle on leaves, stem and branches of *Ti* plants, tricolor and compacta. The Soft scales are yellowish green and coated with wax powder and thrive on

see Managing, page 8

Call for papers for upcoming BAR publications

The Bureau of Agricultural Research (BAR) is inviting all agriculture and fisheries R&D researchers and scientists to submit manuscripts of concluded studies from 2000 to date for possible inclusion in the upcoming BAR 2001 R&D Highlights. This publication features highlights of recently concluded studies implemented by the various agricultural research centers nationwide.

These researches could also be included in another upcoming publication, which is a compendium of researches conducted by R&D institutions in the country.

For their part, members of the National R&D System for Agriculture and Fisheries (NaRDSAF) are also called to submit their own agriculture and fisheries R&D researches from 1997 to present. This will be included in another BAR publication that will feature R&D generated technologies for the last five years.

NaRDSAF is an association composed of state colleges and universities, regional research centers, and heads of attached agencies of the Department of Agriculture.

Those interested in contributing to the R&D Highlights and compendium, please send full papers to ***Ms. Laarni C. Anenias*** of the Knowledge Products and Services Division (KPSD), BAR, 3/F ATI Building, Elliptical Road, Diliman, Quezon City, or contact her at 928-8585 local 161, 162, or 163 for any concerns/questions.

NaRDSAF members who wish to contribute to the publication on R&D generated technologies for the last five years, please send your full papers to ***Ms. Junelyn S. de la Rosa***, KPSD, or contact her at the numbers indicated above ■

IR 68098...

return of investment three times more since the traditional variety yields 50 cavans per hectare.

IR 68098 is resistant to major pests of rice such as whitehead and yellow stemborer, green leafhopper and bacterial leaf blight, matures in 122 days, grows 97 cm tall, and produces 98 tillers per linear meter.

The researchers assured the farmers that there is a ready market for IR 68098. Classified as premium rice, it has 13.3% amylose content. Grains of this variety are very glossy, very cohesive, and tender and smooth, hence much preferred by consumers according to PhilRice.

Dr. Pascua and Ms Badar identified the IR 68098 after evaluating 18 rainfed rice varieties including two traditional varieties used as check plants.

The 18 varieties consisted of eight PR varieties developed by PhilRice, eight IR varieties developed by the International Rice Research Institute (IRRI), and two check varieties. Seeds of IR 68098 are available at MMSU, Philippine Rice Research Institute (PhilRice) at Maligaya, Muñoz, Nueva Ecija, DA-Isabela, Bicol Integrated Agricultural Research Center (BIARC) and DA-Cagayan. *(Junelyn S. de la Rosa)*

Source: Rice Varietal Evaluation for the Rainfed Lowlands of Ilocos Region by Dr. Miriam E. Pascua and Ms Araceli J. Badar of Mariano Marcos State University at Tel. No. (077)792-3131

Managing...

the green shoots of *Ti* plants.

Gray mealybugs attack not only foliage plants but also other crops such as coffee, cacao, citrus, cotton, jute, and peanut. These four mm long, oval soft bodied insects covered with waxy secretions settle around young shoots, berries, and leaves causing it to yellow and wither.

These pests cause stunted growth of plants, leaf discoloration, and death of plant tissues. Heavily infested plants should be burned to prevent the spread of pest. In lieu of use of pesticides, natural enemies of pests are encouraged to grow. Ladybird beetle predators and parasitoid wasps are natural enemies of armored and soft scales. Orange-spotted coccinelid beetle and wasps such as *Leptomastix dactylopius* eat gray mealybugs. These beneficial insects naturally grow from mildly infested plants.

The affected plant parts can also be immediately treated with soap solution (7.5 g of Perla soap and 1 L of water). If pests are beyond control and foliage plants are numerous, IPM considers use of pesticides only as a last resort. IPM, instead, espouses the maintenance of cleanliness of planting materials and the environment because this already discourages the encroaching of pests

see Managing, page 3

Abalones...

seawater. For ease in feeding and maintenance, abalone may be held in perforated plastic buckets suspended in tanks. Abalones are fed with fresh seaweeds at weekly intervals ■

(For further information, please contact: SEAFDEC Aquaculture Department, Tigbauan 5021, Iloilo, Philippines or at Tel: (63 33) 336 2937, 336 2965 Email: aqdchief@aqd.seafdec.org.ph)

BAR Chronicle

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

Entered as a second class mail at the Quezon City Central Post Office under permit no. 753-01 NCR

BAR Chronicle

ISSN 1655-3942

BUREAU OF AGRICULTURAL RESEARCH
Department of Agriculture

visit the official website at http://www.bar.gov.ph

Vol. 2 No. 2 | A bi-monthly publication | 16-31 January 2002

PROFILE

NTL for rice is TOYM awardee

by Ma. Rowena S.A. Briones

One of the Ten Outstanding Young Men (TOYM) of the country heads the Philippine Rice Research Institute (PhilRice). I went to Nueva Ecija to interview him, wondering how it is like to be hailed as 'outstanding'.

The National Team Leader (NTL) for the rice research, development and extension (RDE) network of the Bureau of Agricultural Research, Dr. Leocadio Sebastian, chuckled when I asked him that.

Yes, the Executive Director of PhilRice is one of the ten outstanding young men honored last December 12, 2001 at Malacañang Palace.

"(I was as happy) when the National Academy of Science and Technology chose me as an Outstanding Young Scientist in Plant Breeding. But after the awarding ceremonies, I realized that the TOYM Award is more significant for other people."

No less than President Gloria Macapagal-Arroyo declared TOYM awardees as " sources of national pride (because they) represent professionalism at its best". The President had also specifically asked him to ensure the effective promotion of hybrid rice technology .

Sebastian clarified that he did not feel as if he was the "best". "Awards are but fringe benefits for giving your best in whatever you do. It does not mean you bested other people because you are not competing with other people, you are competing only with yourself."

For one who used to help his parents in their dry goods store in Vigan, Ilocos Sur the 39-year old scientist had competed well with himself. He was an Agriculture Rural Development scholar at UP Los Baños where he took BS Biology. After graduation, he went back to the Ilocos Region to work with the Philippine Tobacco Research and Training Center. He later moved to PhilRice.

It was by working with these institutions that Sebastian understood

the psyche and plight of the Filipino farmers—something he never did forget. He pursued his Doctor of Philosophy at the Cornell University in the United States. He could have stayed there but he opted to return to the Philippines. Why? Because he believes he can do something to help our country. "If I wanted to earn money, I would not have

please see NTL, page 3

New varieties of high-yielding white corn now available--IPB

White corn is the staple food of 12 million Filipinos, mostly in the South. However, the country's corn industry has been devoting much of its efforts in increasing the production of the yellow corn, which is used primarily for animal feeds, thus, neglecting white corn. Statistics show that yellow corn has an annual yield growth rate of 15 percent over the past 25 years, in contrast to white corn with only 1.48 percent annual growth rate during the same period.

Thus, the Institute of Plant Breeding (IPB) of the University of the Philippines Los Baños (UPLB) recently introduced five new varieties of high-yielding white corn. The varieties include: *Tanco White, IPB Var 2, Improved Macapuno, Lagkitan*, and *the DLU Pearl Sweet.*

Tanco White (IPB Var 2)
This variety is high yielding,

see New varieties, page 8

INSIDE...

SCIENCE SCOPING

Fee fishing

■*VA Duldulao*

In the preceding issue I started writing about a water impounding project given to us by the Department of Science and Technology (DOST) which we don't only use for watering the crops surrounding it but convert it into a fishpond after each harvest. This is located just below a hilly portion of one end of the farm such that it catches all the runoff during the rainy season. It is small, about 21x8 m and 5 m at the deepest portion. Covering it from view are mahogany trees at one long side, tamarind and kakawate trees at one short side and nearby are bamboos, mango and chico trees, a patch of pineapple plants, and farms that are rotated with palay, tobacco and sometimes mongo. And who would think that a pond exists on a hill?

When the impounding is converted into a fishpond after it has served its primary purpose, tilapia fingerlings are seeded into it. And we feed them with commercial feeds which could be supplemented with termites gotten from anthills and rice bran. No effort is expended into this activity, in fact there is enjoyment looking at the fishes rambling to the surface of the water for their food. But there is more enjoyment when the fish are ready for harvest and angling. It is here that I saw the potential of fee fishing when the friends of my children gathered to angle in the fishpond. All that are needed are a platform where they could stand or sit comfortably while angling, fishing gears and worms for bait. And if this is really made into a business, then some amenities could be put up. For a longer fishing period, a source of water should be available to replenish the water.

Fee fishing can be an alternative way of using resources not as productive as before. Aside from the food provided, it can be shared to others as form of relaxation or source of newly-caught fish while giving an additional income. It is not a new concept or practice. Many countries, especially in Europe, have been into this ***agritainment*** *enterprise through individual families that wanted to convert their non-productive ponds for some income. If it is feasible in a little farm, like ours, that is hilly and where water is a constraint, why can it not be possible for those who are near lakes, man-made ponds or swamps?*

Fee fishing is a practice where anglers pay for the right to fish or for any fish that is caught. For instance, for the right (or enjoyment) to fish, the angler can be charged 50 pesos for one day. It doesn't matter if he is going to fish for an hour or for eight hours a day. The fish he catches is not also free. He is charged for each fish he catches. His catch is weighed and priced similar to that in the prevailing market.

Privately owned ponds can be turned into a fee fishing venture. Or entrepreneurs can also look at it as another business venture by constructing a specially designed pond for fee fishing. This should be made accessible by locating it close to public road with appropriate signs for easy recognition by individuals travelling in the area. For the technical requirements of fish production, it is always safe to solicit the help of the Bureau of Fisheries and Aquatic Resources. Since the business caters to people, owners should have plenty of public relations goodies, always polite and courteous even under the most trying situations.

There are other requirements in fee fishing such as the following: a shade, picnic area, food and beverages, bait, fishing gear, rental equipment, ice, fish cleaning service, weighing scale, toilet facilities, first aid and life saving equipment and a bar that sells not only drinks but personal items. The pond should be fenced or must have natural barriers to prevent non-paying anglers. The customers can be experienced or any interested angler, children under the care of adults, and whole families that are spending the day together. Schools can even promote this kind of activity and can be a lesson in health and science.

One distinct advantage of fee fishing is the use of a small pond. It is not necessary to have a very big area. In fact, if the area is small it can give better entertainment because the anglers are sure to catch fish. Fee fishing as a business uses underutilized resources and a source of income. It supplies fishing opportunities and as a source of fresh fish.

Editorial Staff

Editor-in-Chief	VIRGINIA A. DULDULAO, Ph.D.
Associate Editor	LAARNI C. ANENIAS (in this issue)
Managing Editor/ Layout	RITA T. DELA CRUZ
Writers	LAARNI C. ANENIAS MA. ROWENA S.A. BRIONES JUNELYN S. DE LA ROSA RITA T. DELA CRUZ MARY CHARLOTTE O. FRESCO THEA KRISTINA M. PABUAYON
Print Manager	RICARDO G. BERNARDO
Circulation	JULIA A. LAPITAN VICTORIA G. RAMOS
Adviser	ELISEO R. PONCE, Ph.D.

BAR awards P5M inst'l grant to SMIARC

NEWS

To uphold its mandate of strengthening the R&D capabilities of national and regional research institutions, the Bureau of Agricultural Research (BAR) recently awarded a P5 million institutional development grant (IDG) to the Southern Mindanao Integrated Agricultural Research Center (SMIARC) central experiment station.

The grant will assist the Center in the construction of an administration building in the 50-hectare Manambulan Station of the Department of Agriculture-Regional Field Unit XI in Tugbok District, Davao City. Part of the grant will be used to upgrade and renovate the Center's existing research facilities.

The proposed design of the building was patterned after the Philippine Rice Research Institute (PhilRice) regional office in Agusan. It will be a two-storey building with an approximate floor area of 432 sqm.

SMIARC is currently located in the compound of the Bureau of Plant Industry-Davao National Crop Research and Development Center (BPI-DNCRDC). The relocation of the Center will give way to the conversion of BPI-DNCRDC into the Tropical Fruits Research Institute headquarters.

Present building of SMIARC at the Bureau of Plant Industry, Davao

SMIARC, as the nerve center for R&D in Region XI, actively undertakes on-farm and midstream researches and provides technical assistance to farmers in fruit tree growing and orchard development. *(Mary Charlotte O. Fresco)*

NTL...

returned here anymore. It was that simple but that dream inspired me. You know, if you believe in your dreams, you will live them. "

Live his dreams, he did. From working as one of the rank-and-file employees, he went on to become the Executive Director of PhilRice. But it was never easy. "Helping farmers is very challenging. They are very diverse—they have different classes, religions, beliefs, principles, problems, needs and dreams."

He keeps in mind that in dealing with farmers, " you don't have to argue —the best approach is to be open, dynamic and flexible. You give your stakeholders different options. You teach them why rather than how so they can make innovations on their own." And he keeps his feet firmly on the ground.

"I still don't have an accomplishment I consider as the 'greatest'. I am still trying to contribute the best that I can for our country," he disclosed. This he will do by ensuring that PhilRice and the rice RDE Network achieve its goals. " We have feasible goals but it is the declining budgetary support and changing policy directions that constrain us. Our problem is not that we do not know what to do or that we cannot do it. It's just that there have been a lot of inaction because of very little, fragmented and unstable support to activities meant to help the agriculture sector."

Sebastian conceptualized and steered the implementation of the interdisciplinary, ecosystem and problem-based research thrusts of PhilRice, the lead institution for pursuing the national R&D agenda for rice. According to him, "PhilRice develops technologies that will reduce the cost of production, increase yield and help farmers diversify what they plant so they can have other sources of income." For the promotion of these technologies, PhilRice forges partnerships with agencies directly involved with extension work.

Sebastian pointed out that budget allocation is but one of the problems. He assured that, "with qualified and dedicated personnel, we can still do something even if our activities are limited." Indeed, if we want the agriculture sector to prosper, we must invest in it.

But this TOYM awardee views obstacles as opportunities for innovation and creativity. For him, "there will always be obstacles but these are just insights and warning signs." With the plans of the Arroyo administration to fully implement the Agriculture and Fisheries Modernization Act, Sebastian hopes that it will not be long for agriculture to be back on track.

For Sebastian, it seems to me, 'outstanding' and 'successful' are two different states. One becomes outstanding if other people perceive them so. Successful? " You know, when you are able to help people be on their own, to be creative and innovative, to achieve success for themselves—that's when you are successful." ■

African research officials visit BAR

Key agricultural research officials from Kenya, Uganda, and Tanzania visited the Bureau of Agricultural Research (BAR) on 29 January 2002 for a brief orientation on the Bureau's thrusts, programs, and projects. The visit is part of the study tour organized by the SEAMEO Regional Center for Graduate Study and Research in Agriculture (SEARCA), an intergovernmental organization based in Los Banos, Laguna.

The activity is a nine day-visit to various agencies and offices in the Philippines that fund agricultural researches. BAR is the tour's first destination.

The study tour aims to provide in-depth insights on how research funds are established and processed toward sustainable agricultural research. The output of this tour will provide specific and practical details on the arrangements of research funds and its effective and efficient functions and operations.

BAR Director Eliseo R. Ponce familiarized the participants on the establishment of an endowment fund for agricultural research in the context of the Agricultural and Fisheries Modernization Act or AFMA.

The key agricultural research officials iclude John Oloya of the World Bank, Leonard Oruko of the International Livestock Research Institute, George Sempeho of the Tanzania Agricultural Research, Ludovick Kinabo of Sokoine University of Agriculture, James Matata of Kenya Agricultural Research Institute, Gadi Gumisiriza of the National Agricultural Research Organization, Ninatubu Lema of the Ministry of Agriculture and Food Security, and Betty Kiplagat of the Kenya Agricultural Research Institute.

Angel Morcozo of the Institutional Development Division of BAR is also one of the participants of the study tour. *(Rita T. dela Cruz)*

DA bans imported birds from USA, transhipments from China and Japan

Following an outbreak of the avian flu virus or 'bird flu' in Pennsylvania, USA, the Department of Agriculture (DA) released two orders last January 30 banning the importation of domestic and wild birds from the said region, and transhipments of birds from Japan and China that originated from the US.

Type H7N2 virus, a low pathogenic virus that could develop into a highly pathogenic avian virus, was discovered by the US Animal and Plant Health Inspection Service in Pennsylvania in December 2001.

DA Administrative Order No. 3, Series of 2002 states that there is a "temporary ban on the importation of domestic and wild birds and their products including poultry meat, day-old chicks, eggs, and semen originating from the State of Pennsylvania, US."

Likewise, Administrative Order No. 4, series of 2002 is a " temporary ban on the transhipment from Japan and China of domestic wild birds and their products including poultry meat, day-old chicks, eggs and semen originating from the United States.

The bans include the immediate suspension of the processing, evaluation, and issuance of veterinary quarantine clearances/international veterinary certificate import permits relevant to the importation and transhipments of the said commodities from the said regions. Likewise, DA Secretary Leonardo Montemayor instructed all DA veterinary quarantine officers and inspectors to confiscate "all shipments into the country of suspected/affected products at all major sea and airports."

Senator Edgardo Angara, also former Aggie chief, and co-senator Manuel Villar blew the whistle in the second week of January when they received reports that the Philippines could be made a 'dumping ground' for the infected chickens. Angara said in an interview with the Philippine Daily Inquirer that "local poultry growers received reports that US exporters were looking for other buyers" of the chicken which were originally purchased by China and Japan.

China and Japan had already issued separate bans when the 'bird flu' outbreak in Pennsylvania was reported in January 12. However, Japan partially lifted its ban last January 20, allowing entry of poultry products slaughtered before November 11.

Japan is the fifth largest poultry importer of US, with annual average imports of $170 million. *(Thea Kristina M. Pabuayon)*

(Sources: Philippine Daily Inquirer: January 24, 2002; Iowa Farm Bureau; and USDA News Release; A.O. Nos. 3 and 4)

Red tide hits again, BFAR raises alert

Think twice before eating those baked *tahong* or tasty *nilagang tulya* if you live in Las Piñas or Parañaque. The Bureau of Fisheries and Aquatic Resources (BFAR) has banned the selling and buying of shellfish in these cities after it found traces of red tide toxins in Manila Bay. Also banned are oysters, *alamang*, penshells, and blood cockle varieties.

Following this pronouncement, the Department of Health (DOH) asked the local government units to help monitor the selling and buying of these fish products in the public markets of the affected areas. For their part, Las Piñas Mayor Vergel Aguilar and Parañaque Mayor Rodel Apolinario have started their respective monitoring activities, setting up individual teams to make their rounds in the public markets.

After BFAR raised the alert, there have been no reported incidents of red tide poisoning yet. However, DOH Secretary Manuel Dayrit advised the public to immediately seek medical attention when they suspect red tide poisoning, which may lead to death if left untreated. Among the symptoms are nausea, vomiting, severe stomach pains, partial paralysis of the hands and feet, difficult breathing, heart palpitation, and diarrhea.

According to BFAR experts, the red tide toxins thrive and become more pronounced under cold weather conditions.

On January 17, BFAR also raised the red tide alert in five areas of Mindanao, specifically in Balite Bay in Davao Oriental, Masinloc Waters in Zambales, Mandaon and Milagros Waters in Masbate, and Dumaquillas Bay in Zamboanga del Sur.

Meanwhile, these areas have tested negative for the red tide toxins: Cavite, Navotas, Bulacan, Bataan Waters in Manila Bay, Malampaya Sound in Palawan, Banago Waters in Bacolod, Victorias Waters in Negros Occidental, Sapian Bay and Tinagong Dagat in Capiz, Maqueda and Villareal Bays in Western Samar, Calbayog Waters in Calbayog City, Cancabato Bay in Tacloban City, Sorsogon Bay in Sorsogon, Illana and Sabiguey Bays in Zamboanga del Sur, and Tanguines Lagoon in Camiguin Islands. *(Thea Kristina M. Pabuayon)*

(Sources: Philippine Daily Inquire,. Daily Tribune, Kabayan Online, Philippine Star)

Indigenous...

Without preventive measures, it may not be long before we lose our indigenous orchid species such as *Vanda sanderiana RchB. F.* var. alba (waling-waling), *Spathoglottis plicata Blume* (ground orchid), and *Phalenopsis amabilis (L.) Blume* (mariposa or butterfly orchid).

With these, the Bureau of Agricultural Research (BAR) established the Plant Genetic Resources (PGR) Network. One of the most recently-established networks, it is aimed at the research, development, and extension for the conservation and sustainable use of PGR in the country. The network is set to do an inventory of collections of all agencies doing genetic resources conservation. In pioneering the activities of the network, BAR has earmarked P10 million for the network's activities such as repairing and acquiring of equipment, laboratories, and storage systems. So far, the network has sent off its first batch of trainees after an intensive two-month PGR training held during the last quarter of 2001. This is part of the human resources development component of the network. *(Laarni C. Anenias)*

Eleazar elected rapporteur in 20th CGPRT session

Assistant Director Nicomedes Eleazar of the Bureau of Agricultural Research of the Department of Agriculture (DA-BAR) was elected rapporteur during the 20th session of the governing board of the Regional Coordination Center for Research and Development of Coarse Grains, Pulses, Roots and Tuber Crops in the Humid Tropics of Asia and the Pacific (CGPRT Center) in Bogor, Indonesia, 15-16 January 2002.

Mr. Eleazar who represented the Philippines is the youngest among the new set of officers. H.E. Mr. H.K.J.R. Bandara, the representative of Sri Lanka, and Dr. Syed Mustaq Razvi, the representative of Pakistan, were elected chairperson and vice chairperson, respectively.

Twenty four representatives from the nine member-countries, representatives of international agencies like the Food and Agriculture Organization (FAO), the Center for International Forestry Research (CIFOR) and Center for International Cooperation in Agriculture Research for Development (CIRAD) of France, and the CGPRT Center staff attended the session. *(Junelyn S. de la Rosa)*

TECHNOLOGY

Growing straw mushrooms the cheap way

by Junelyn S. de la Rosa

Straw mushrooms (Volvariella volvacea Singer)- a type of edible tropical mushroom can be grown cheaply using rice straw or banana leaves as bedding material. Dr. Alicbusan from the National Institute of Science and Technology, National Science Development Board (NIST-NDB) recommends this method since it is cheap and easy to adopt.

Straw mushrooms flourish almost simultaneously along the sides of the growth substrate. Within two to three days the color changes from white to black, then to brown, and gradually fades as the mushrooms grow larger. Some strains are dark brown or black. They may be chestnut- or egg-shaped.

The young mushroom is covered initially with a thin membrane called the volva. As the mushroom develops, the stem or stipe elongates, gradually pushing the cap upwards, which causes the volva to rupture and remain at the base of the stem. The still unopened mushroom cap is further pushed up to a height of about 6 to 10 cm. Once the stem reaches its maximum height, the cap starts to expand. Initially, the gills are white, but they turn brown once mature basidiospores (external spores produced by the mushroom) are produced in the gills. The opened mushroom has a stronger odor and taste attributable to the mature basidiospores.

The beds should not be watered in the first five days after bed preparation. During the dry season, the beds may be watered minimally but generously on the sixth or seventh day after planting. The beds should be watered once a day until the mushrooms are as big as pin-heads.

During the rainy season, only the sides of the beds should be watered. Button mushrooms can be harvested 10 to 14 days after planting. The harvest usually lasts for three days. This is called the "first flush". Average daily production during this period is 1.2 kg. The next harvest is done after five to seven days, The second harvest is much smaller at 0.42 kg. This manner of production may continue for a month or even longer.

During harvest, the mushrooms must be carefully pulled out whole from the bed. Any portion left behind will decay and result to bacterial soft-rot affecting the succeeding crop, and drastically reducing the yield.

Both bed types need lots of bedding materials. Yields depend on the volume of bedding material used. A standard four-meter, six-layer bed could yield up to 7 kg of buttons or 12.6 kg of fully mature mushrooms.

Scientists recommend that farmers use this simple technology in their own backyards. If not for money, they can always grow it for their own consumption. Mushrooms are very nutritious containing a "cocktail of nutrients"- vitamins, minerals, chitin and protein that everyone needs. Not only that, it has no cholesterol and thus, is very good for the heart.

Source: Mushroom production technology for rural development by R. V. Alicbusan, National Institute of Science and Technology, National Science Development Board, Manila, Philippines

Indigenous orchids dwindling, study says

The Philippines is one of the world's richest countries in plant and animal species. Numerous biodiversity studies conducted in the past attest to this. However, abuse of natural resources, its continued depletion and extinction, endanger our endemic species.

A research group led by Dr. Adoracion Robles of the School of Environmental Science and Management in UP Los Banos noted this phenomenon, particularly in the ornamental industry. According to the study, indigenous species of orchids in the Philippines have not been preserved - this time not by destructive means, but by crossbreeding these species with other introduced species.

The study, an environmental impact assessment of ornamental plant production in the Philippines, stated that although it is true that crossbreeds are genetically improved species, the gene pool of the indigenous species is lost and consequently become extinct. The study cited that crossbreeding of our endemic orchid species with those from Hawaii, Malaysia, Thailand, Japan, and Holland greatly contribute to this occurrence, most of which take place among large-scale orchid growers in Davao, Laguna, Cavite, and Batangas.

see Indigenous, page 5

Not all CRABS are safe to eat

FEATURE

by Mary Charlotte O. Fresco

If people are not created equal, so are crabs. Some crabs add savor to our favorite seafood delicacies. But be aware, some of them are poisonous and even fatal.

The occurrence of poisonous crabs first existed as widespread rumors in the Pacific islands during the late 70s until a Japanese fishery expert named Hashimoto provided concrete evidences by exposing 19 unreported fatalities due to crab poisoning in the islands of Japan and Fiji. In the Philippines, a surprising 10 fatal cases were reported from the provinces of Southern Negros in early 80s.

This alarming fact prompted two fishery experts Angel C. Alcala and Lawton C. Alcala of Siliman University to study and identify several poisonous species of crabs lurking in our marine waters. According to them, local fishermen and consumers should be familiarized with the dangerous crab species especially their distinguishing features, geographical distribution, and local habitat.

Here are the nine identified poisonous crab species (midly toxic to killer ones) we should avoid.

Zozymus aeneus

Known in Zamboanga as *Kagang-bugton*, this is classified as the most poisonous crab in our country and largely distributed in Ilocos, La Union, Batangas, Quezon, Albay, Sorsogon, Mindoro, Marinduque, Panay Island, Palawan, and Zamboanga. These crabs can be found hiding under coral reefs during the day and crawl out at night. Their body size ranges from 50 to 100 mm. Their body has eye-like chocolate brown spots and is covered with smooth and well-defined lobules. Their pincers (front claws) are of the same size and rough. Their walking legs are fringed with long hairs. The carapace (thick covering of crustacean's body) has protruding frontal borders divided into four lobes (first three are rounded while the fourth is tooth-like).

Long-armed crab (Dalforfia horrida L.)

This crab has an awful appearance due to some rounded swelling and spines covering its body and appendages. The carapace is pentagon in shape and has size exceeding 140 mm. The pincers are unequal and their size double the breadth of the carapace. This crab lives under rocks and digs in sandy mud from 33 to 125 meters deep. They are usually found in Ilocos, Marinduque, and Palawan.

Rock crab (Carpilius convexus F)

These are medium-sized crabs with two lobes in the middle margin of the carapace. The color of carapace is combination of cream and red. The pincers are unequal and stout. This mildly toxic crab is common in Ilocos, Batangas, Mindoro, Quezon, Bicol Region, Panay Island, Samar, and Palawan. It thrives under stones or cracks of coral reefs.

Lophozozymus pictor F.

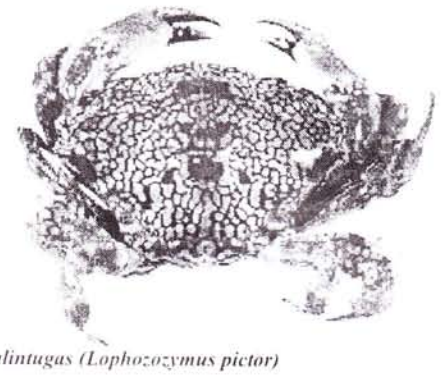
Known as *calintugas*, this highly-toxic, moderately-sized crab weighs about 100 grams and is 10 cm wide. The carapace is bright orange with mosaic patterns. The walking legs have small hairs in their border. They live along the coral areas of Batangas, Mindoro, Sorsogon, Negros Oriental, and Samar.

Atergatis integerrimus

This mildly toxic crab has broad oval carapace with brownish-yellow color. Its pincers have the same length while the legs are hardly pitted with fine hairs. It is usually found in rocky and sandy bottoms from 10 to 30 meters and widely distributed in Ilocos, Batangas, Quezon, Bohol, and Palawan.

Splendid rock crab (Etisus splendidus R.)

This crab with bright red color can grow up to six inches. The front lateral margin has 9 to 13 teeth of different sizes. The pincers are very large and unequal, the arm has 1 to 3 spines on the upper border. This mildly toxic species thrives in shallow waters and coral reefs of Ilocos, Negros Oriental, and Palawan.



Calintugas (Lophozozymus pictor)

Red-eyed rock crab (Eriphia sebana)

This aggressive and nocturnal crab has an oval-shaped carapace which is covered with tubercles (round swelling on skin). The frontal margin has six or more spines. The pincers are unequal and covered with very tiny granules. This crab lives in rock cracks in shallow waters of Ilocos, Batangas, Panay Island, and Palawan.

Shoal crab (Platypoda granulose R.)

This small crab has distinctly rough surface due to small granules and fine hairs covering it. The pincers are equal and the fingers have black tips. It can be found in shallow waters of Kalayaan Island, Palawan.

Atergatis floridus L.

Locally called *agokoy* or *amumodlong*, this gray crab has evident lacework pattern on its smooth carapace. The pincers are equal in size with black tips. It lives in beaches of Ilocos, Batangas, Quezon, Bicol Region, Mindoro, Negros, Panay Island, Palawan, and Davao.

The symptoms that can be observed from crab poisoning are the same as those of paralytic shellfish poisoning. The onset of symptoms usually ranges from 15 minutes to several hours. A person who has eaten poisonous crabmeat will feel numbness of the tongue and vomiting. If medical assistance is not administered within 12 hours, the victim will suffer from respiratory failure, which will eventually lead to death.

So next time you encounter a strange-looking crab, take a closer look, you might have spotted one of the species described above ■

(Sources: www. philstar.com/philstar/index.html and www. who.int/fsfl/fish/crabpoisoning.html)

Web NEWS

Get serious about averting trouble in the forest
http://www.futureharvest.org

Oscar Aria speaks out on ecoagriculture to folks de Sao Paulo
http://www.agriculture.org

Philippine mangoes reap praises from Brussels
http://www.da.gov.ph

Breakthrough in freshwater shrimp breeding made
http://www.da.gov.ph

Increasing farmers' technical capacity in raising farm animals
http://www.da.gov.ph

Plant vetiver grass to minimize erosion and flooding
http://www.pcarrd.dost.gov.ph

Regional CGPRT tackles poverty alleviation in the Asia-Pacific

The governing board for the Regional Coordination Center for Research and Development of Coarse Grains, Pulses, Roots, and Tuber (CGPRT) Crops in the Humid Tropics of Asia and the Pacific tackled poverty alleviation during its 20th session at the Center's headquarters in Bogor Indonesia on 15-16 January 2002.

The discussions focused on the socio-economic aspects of rural development, equity, employment, women's role and household economy of small-scale farmers of CGPRT crops.

Last year, the Center completed two projects; 1) Food security strategies for selected South Pacific island countries and 2) Economic and policy analysis for the eco-regional approach in Southeast Asia. The center also implemented three projects last year; 1) Stabilization of upland agriculture and rural development in countries vulnerable to El Niño, 2) Prospects of feed crops in South Asia, and 3) Management of agricultural policies for sustainable development with focus towards the supply of food for urban consumers.

This year, the Center plans to implement three more projects. These are: 1) market diversification for CGPRT crops as pulling factor of sustainable development of diverse agriculture in selected Asian countries, 2) Prospects of feed crops in Southeast Asian countries, and 3) Capitalizing information technology on CGPRT crops agriculture.

The Philippines is collaborating with the Center and four other member-countries (Indonesia, Malaysia, Papua New Guinea and Thailand) on a project to stabilize upland agriculture and rural development in countries vulnerable to El Niño. Its main objective is to mitigate the damage caused by El Niño, particularly drought in upland farms in developing countries. This three-year study was implemented starting in April 2000 and funded by the government of Japan.

The current governing board is made up of representatives from Indonesia (the host country) and nine countries, Bangladesh, France, India, Japan, Pakistan, the Philippines, Republic of Korea, Sri Lanka, and Thailand. The board meets yearly to review the operation of the Center and to consider and adopt the annual and long-term programs of work of the Center.

Assistant Director Nicomedes Eleazar of the Bureau of Agricultural Research (BAR) represented the Philippines during the two-day meeting. *(Junelyn S. de la Rosa)*

New varieties...

white flint (the hard grain form), open-pollinated (pollinated naturally without human intervention), and grows up to 2.25 meters and matures in103 days. It is resistant to mildew and can produce 5.07 tons per hectare.

IPB Var 4
This variety is white, open-pollinated, and with a good husk cover, kernel depth, and broader leaves. It matures in 110 days and can yield up to 4.89 tons per hectare. It is moderately tolerant to corn borer.

Improved Makapuno
This is a better and glutinous variety of *Makapuno* with distinct cone-shaped ears and grains filling up to the top. It matures after 68-70 days after planting. It produces 6.26 tons per hectare. It can be harvested early and thus, demands a higher price.

Lagkitan or Composite No. 2
This variety is open-pollinated, glutinous, and yields 6.5 tons per hectare. This variety is for table use with excellent eating quality. The plant grows up to 224 centimeters and matures after 68-70 days of planting.

DLU Pearl Sweet (PSB Cn 93-49)
This is an open-pollinated, glutinous type also for table use. Fresh ears can be harvested in 72 days during dry season and 70 days during the wet season. It yields up to 6.10 tons per hectare. It is well adapted to both dry and wet seasons and can be grown to any type of soil-making it a very good cash crop. *(Rita T. dela Cruz with information provided by the IPB-UPLB corn production guide leaflet)*

(Fore more information, please contact the Office of the Director, IPB, College of Agriculture, UPLB, College, Laguna or call tel.no. (049) 536-2512 or fax at (049) 536-3438)

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

Entered as a second class mail at the Quezon City Central Post Office under permit no. 753-01 NCR