BAR
BUREAU OF AGRICULTURAL RESEARCH

BAR Chronicle
ISSN 1655-3942
Visit the official website at http://www.bar.gov.ph

2003 Gawad Oscar Florendo Awardee for Outstanding Information Tool for Print

Vol. 6 No. 1 | A monthly publication | JANUARY 2005

DA-BAR, AVRDC eye future collaboration in vegetable R&D

IN THIS ISSUE

Representatives from the Asian Vegetable Research and Development Center (AVRDC) and the Singapore-initiative ASEAN-AVRDC Regional Network on Vegetable Research and Development (AARNET) discussed with Philippine officials future collaborative activities in a bid to strengthen vegetable research and development in the member countries of the ASEAN region.

The AARNET Fact Finding Mission, headed by the AARNET chair, Mr. Leslie Cheong of Singapore, visited Southeast Asian countries namely, Indonesia, Malaysia, Thailand, and Brunei Darussalam before proceeding to the Philippines.

They were met at the Bureau of Agricultural Research (BAR) by Dr. Carmencita Kagaoan, head of the Program Development Division (PDD); Mr. Victoriano Guiam, head of the Management Information Systems Division (MISD); and Dr. Rodel Maghirang, team leader of the DA-BAR Vegetable R&D Network.

In a two-hour presentation meeting, the group discussed developments in the AARNET as well as the country's role and level of commitment to it.

Mr. Leslie Cheong, AARNET chair (Singapore) shares a light moment with BAR officials during the meeting. On the foreground is Dr. George Kuo, director of AVRDC for International Cooperation.

AARNET is a collaborative network on vegetable research and development for the Southeast Asian region. Initiated by Singapore in 1998, AARNET gained support from various ASEAN countries and was approved in principle by various ASEAN Ministers at the 20th Senior Officials Meeting of the ASEAN Ministers on Agriculture and Forestry (SOM-AMAF) in Hanoi.

Since its inception, AARNET envisioned to conduct projects that will promote sustainable and improved production of good quality and safe vegetables for consumption and trade; enhance vegetable R&D cooperation as well as the development of indigenous vegetable-related industries within the region; and strengthen linkages with the international R&D community. Specifically, these projects are aimed at narrowing the gap in vegetable R&D capacity of member countries; facilitating generation and adoption of improved materials through collaborative research, information exchange and consultations; and maximizing

see Philippines...page 5

EDITORIAL

Going nuts!

by Victoriano B. Guiam

Peanut news

In this issue, we have health-related articles on peanut. Originally from South America, this commodity found its way into the Filipino diet. It is an ingredient of our famous *kare-kare*. Various sweets are made with it such as the peanut brittle of Baguio, the *panutsa* of Batangas, and the peanut cake of local Chinese. It is in chocolate bars such as ChocNut™ and, of course, it is the prime ingredient of peanut butter. In most cases, people eat it as plain peanut in boiled, fried or roasted form.

There are wise ways of producing peanut, as the articles show. Under poor growing conditions, it can be a problem as peanut can acquire the dreaded aflatoxin, a potent carcinogen. But technology for managing this problem now exists. There is also an attempt to make peanut a means for increasing the micronutrient uptake of people through the technique of biofortification with Vitamin A.

In the management of soils, alternating the main crop with peanuts has a beneficial effect. As a legume, it has the ability to extract nitrogen from the atmosphere in a symbiotic relationship with nitrogen-fixing bacteria and this makes peanut a good organic fertilizer.

After harvest, the advantage of growing peanut does not end there. The tops of the peanut plant can be fed to cattle and other ruminants while still green or in the form of peanut hay.

Presently, the India-based International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) is the leading R&D agency on peanut in this part of the world. The Institute was kind enough to send two of its top scientists to the Philippines this month for lectures at BAR on peanut breeding and the management of aflatoxin contamination in food and feed.

We were informed by the ICRISAT scientists that there is tremendous potential for peanut exports to other countries. ICRISAT breeding activities have enabled countries to increase peanut production. However, keeping aflatoxin at a minimum or even zero levels as required by the countries of destination remains a formidable task among many of the peanut-producing areas where the aflatoxin fungus has taken root. If this problem is solved, the Philippines would have another dollar-earning commodity at its hands.

BAR's 8-point strategy in a nutshell

Also in this issue, are the BAR director's pronouncements on an 8-point R&D strategy lined up for implementation under his term. Several of these are familiar ones, no doubt due to their continuing relevance.

We see a continuation of approaches on the allocation of resources for applied and on-farm research; support for high priority R&D projects for the development of small and medium enterprises; and a unified R&D agenda for the agricultural R&D systems of the DA (through BAR) and DOST (through PCARRD & PCAMRD).

The new ones may not exactly be new but their mention as Bureau strategies in more focused form elevates their status to that of primary concern. These are on cooperation with other government offices and partnerships with LGUs, NGOs , POs and others in the regions; integration of efforts across agencies to sustain agricultural growth, institutional development of the DA's R&D units; intensified information search and exchange through information systems innovations; and advocacy of policies for sustained agricultural growth and increased investments in agricultural R&D.

Apparently, BAR is moving into the realm of practical research where its technology outputs become an accepted factor of production accompanying other inputs into the production mainstream. In due time, BAR shall refocus its energies towards making available to farmers, fisherfolk, and other producers the results of the agricultural R&D activities of the Department in more vigorous and direct ways.

New nuts

Along with the change in BAR Director are changes elsewhere in the Bureau. Mention must be made of the re-organization of BAR along its classic lines in the 1980s-90s. We now have the return of the Research Coordination Division (RCD) which is headed by Mr. Rolando Labios, the Program Development Division (PDD) under Dr. Carmencita Kagaoan, and the Management Information Systems Division (MISD) with Mr. Victoriano Guiam as OIC. These staff must be experiencing something of a *déjà vu* as they were intimately involved with these divisions as heads or senior staff until mid-1998.

The really new faces of the units that are staging a return are Ms. Rosalia Maranan, the OIC of the Administration

see Editorial... page 8

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BAR Chronicle

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

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BAR features leading peanut scientists from ICRISAT

BAR Director Nicomedes P. Eleazar providing the welcome remarks during the seminar. Looking on are Dr.. Farid Waliyar and Dr. Syam Nigam of ICRISAT.

The Bureau of Agricultural Research's Knowledge Management Division conducted the first of its seminar series for this year, which is on prospects and opportunities of peanut breeding, and management strategies of aflatoxin contamination on food and feeds, at the Research and Development Management and Information Center (RDMIC) Lobby last January 7.

Dr. Syam Nigam and Dr. Farid Waliyar of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) were the resource persons for the seminar. They spoke of prospects and opportunities in peanut breeding, and management strategies in aflatoxin contamination in feeds and food.

Dr. Nigam is ICRISAT's lead scientist in peanut breeding research. He is also the regional coordinator for Asia in Seed Systems. On the other hand, Dr. Waliyar is ICRISAT's principal scientist in aflatoxin research and is currently the Global Theme Leader on biotechnology in the research center.

Bureau of Agricultural Research (BAR) Director Nicomedes P. Eleazar pointed out in his opening remarks the importance of pursuing knowledge in the fields that the two scientists discussed at length on. He mentioned the decreasing figures in peanut butter imports that give an indication of the looming problem for peanut growing industry.

Director Eleazar said that this problem is a good opportunity for us to explore the merits of the knowledge from the seminar's topics.

ICRISAT's director-general, Dr. William Dar also attended the event.

The seminar series is one of KMD's way of processing information from different sources into knowledge products for the Bureau's clients. It is also the Bureau's way of giving providing an avenue for technologies to be presented and discussed in public. *(Ma. Lizbeth J. Baroña)* ■

NEWS

BAR reorganizes for efficiency

Under the Bureau of Agricultural Research's new steward, Director Nicomedes P. Eleazar, a re-structuring of the Bureau's organizational arrangement was made to "streamline operation and realign the assignment of staff towards an improved performance and implementation of the Bureau's mandate, policies, and programs."

The Bureau is now composed of three divisions: Program Development Division (PDD), Management and Information System Division (MISD), and the Research Coordination Division (RCD).

PDD's new division head is Dr. Carmencita V. Kagaoan. Three sections comprise the division, which are the Project Packaging Section, which is headed by Ms. Salvacion M. Ritual; Project Implementation Section, headed by Ms. Digna Sandoval; and Institutional Development Section, headed by Ms. Iluminada M. Ching.

MISD, headed by Mr. Victoriano B. Guiam, is made up of sections—Management Information Systems, Applied Communication, and the Library. MIS Section is headed by Mr. Herminigildo G. Quibuyen, AC Section is being lead by Ms. Julia A. Lapitan, and the Library Section, Ms. Lalaine A. Perlawan.

RCD's head is Mr. Rolando V. Labios, assisted by Mr. Tito Z. Arevalo. This division is composed of regional research coordinators and technical staff.

Under the Office of the Director are are various units that include: the Administrative Unit headed by Ms. Rosalia G. Maranan; Finance, under Mr. Roberto S. Quing; Legal Office, with Atty. James Dennis C. Gumpal; International Relations, Mr. Victoriano B. Guiam; Planning, Mr. Braulio B. Tamayo; Policy Research, Ms. Josefina M. Lantican; Internal Control, Ms. Julieta Sd. Yonzon; and the Intellectual Property Rights Office headed by Dr. Andrea B. Aguillon. *(Ma. Lizbeth J. Baroña)* ■

NEWS

New BAR director identifies 8-point R&D strategy for implementation

BAR Director Nick Eleazar

To keep the smooth and effective operations of the Bureau of Agricultural Research (BAR), its newly appointed director, Nicomedes P. Eleazar, CESO IV, recently outlined his 8-point Research and Development (R&D) strategy. This was done during a general assembly meeting held on 10 January 2005, RDMIC Lobby. Attending the general assembly meeting were: BAR officials, staff, and member of the technical advisory group (TAG).

His 8-point R&D strategy include:

One, ***allocate resources for the conduct of applied and on-farm researches (OFRs).*** This strategy is achieved by following the farming systems approach to fast track promotion and adoption of technologies thereby creating immediate impact to the lives of farmers and fisherfolk. Likewise, strengthening collaborative researches among DA R&D institutions and state colleges and universities (SCUs) is highlighted to further improve the agriculture sector.

Another, ***foster cooperation with other government line agencies and active partnership with the LGUs, NGOs, POs and other concerned institutions at the regional level.*** In our effort to immediately bring new ideas to our farmers and fishing community while at the same time aim for sustainability, it is also important to forge partnerships with different sectors that have direct links with the DA's clientele in technology promotion. Although ties have already been long established, partnerships should be further strengthened through various collaborations and interfaces. It is disheartening to know that many of our mature technologies are not being immediately marketed and made available to intended users because ineffective delivery of agricultural support and social services still looms in the system. There is a need for a viable national extension policy so that LGU officials are able to work hand-in-hand with the R&D system in injecting newly developed technologies to the farming communities.

Vital to the enhancement of agribusiness development is BAR's ***support to the implementation of high priority R&D projects that have direct bearing on the development of small and medium enterprises (SMEs)***. This is achieved through BAR's high impact projects (HIPs), which are top priority projects that are of national significance and are expected to generate results within two to three years. To date, BAR is operating through the 21 commodity- and discipline-based national RDE networks. Each network has a national RDE agenda and program, which serves as a guide in determining which projects and researches are to be implemented. Specifically, the networks conduct upstream researches that identify specific needs and give solutions to problems of the commodity/discipline. Each network has a lead institution that spearheads its activities and program implementation. Aside from this, rural-urban linkage on agriculture will be further studied.

The agriculture sector is increasingly living in a liberalized trade regime. Thus, Filipino farmers must acquire the edge to be able to compete globally. In response to this new challenge, ***a more deliberate and functional integration of efforts among various agencies is being undertaken to enhance sustained growth in agriculture***. The convergence initiative, which was initiated during the time of former BAR Director William C. Medrano is strengthened and continued. Agencies like Department of Agriculture (DA), Department of Agrarian Reform (DAR) and the Department of Science and Technology (DOST) are foreseen to come together with convergence initiates to enhance R&D and delivery of services to the farmers and fisherfolk. Likewise, this triumvirate effort shall provide competitive, complimentary and compensatory measures in behalf of the farmers. It is being undertaken through two important components: focus on unified and enhanced R&D programs to modernize the agriculture and fisheries sectors and complement and coordinate the strategic delivery of technology. Through this synergized effort, the impact of R&D outputs on productivity and generating income of the farmers is maximized.

Importantly, Dir. Eleazar also emphasized the importance of ***strengthening institutional development support (human resource and infrastructure) to enhance the capability of the DA R&D system.*** He mentioned that, to ensure a strong institutional capacity, BAR must implement a human resource and facilities development program for the agriculture and fisheries R&D system. This is achieved through BAR's Institutional Development Program (IDP).

A unified national research agenda based on actual research needs and a unified research system are vital in addressing the fundamental problems of the agricultural R&D system. To realize this, BAR ***institutionalizes the planning and implementation of an integrated***

see next page

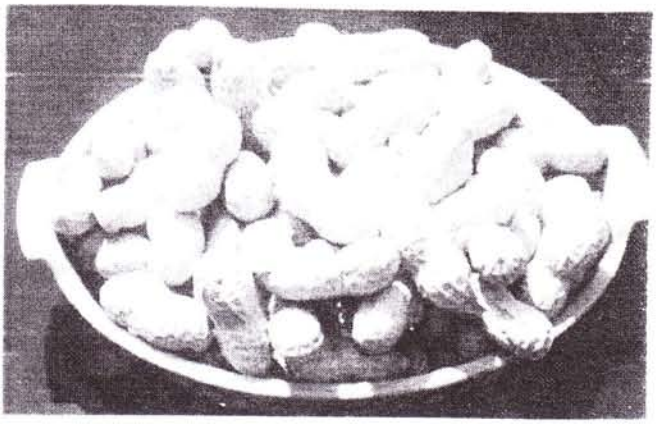
New BAR...

and unified R&D agenda of both DA-BAR and DOST-PCARRD/PCAMRD. These agencies rule on the same R&D themes and are funding actual researches from both ends of the sector. To avoid duplication of researches and waste of resources, a need for institutional arrangements and mechanisms should be put in place. To start this initiative, the Bureau is conducting consultations and interface meetings.

Another important point is to ***intensify information seeking and exchange is important to sustain the high gear of R&D management***. Through information systems innovation, we would like to fast track decision-making and enhance technology adoption. This age of information highway resulting from the development of information and communication technology (ICT) brings in a potent social and economic infrastructure. The tangible effects are mainly cost-cutting and speed resulting to a reduced time and efficiency enabling increased linkages with clients, and capability to provide product and service information. One important initiative in relation to this agendum is the DA's recent move to establish a virtual academy for Philippine agriculture. To realize the vision of a modernized agriculture, ICT should bridge the digital divide among different regions in the country. Conventional methods of information-knowledge sharing are no longer adequate and appropriate. What is needed is to keep up with the on-going revolution in information and communication technologies enabling distance education and strong linkages with important sectors in agriculture. The main goal of the academy is to educate, train and mobilize the key actors of agricultural modernization, especially researchers, extentionists, farmers and support service providers.

Lastly, BAR shall ***advocate policies that promote sustained growth in agriculture and develop strategies to increase investments in R&D.*** The key element here is working on the principle of sustainability. Transparency of operation must work along the line of a strategic type of management. *(Rita T. dela Cruz)* ■

Bio-fortified...



90%) in shoot regeneration from cotyledon and leaf explants of peanut. The technology is now being used to produce genetic peanuts with higher levels of ß-carotenes. It is hoped that with the bio-fortified peanut, an important genetic base is formed and also, incorporate resistance to other biotic and abiotic constraints to its high production.

While vitamin A is only present in animal products, its predecessor ß-carotene or provitamin A can be found in several plant species. However, these are not taken up easily from digested food, because they are fat-soluble and their bioavailability depends on the presence of fat or oil in the same meal, failing which they are excreted undigested. Oral delivery of vitamin A is problematic, mainly because of the lack of infrastructure thus the need for viable alternatives. And this is where our reliable peanut comes in. ■

(For further information, contact Dr K K Sharma of ICRISAT or email him at k.sharma@cgiar.org)

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Philippines...

the use of resources through collaborative research on common problems.

These projects covered various areas such as indigenous vegetables, with Brunei Darussalam as lead country implementer; improved leafy vegetable varieties under Singapore; improved varieties on fruit vegetables (Indonesia); biotic and abiotic stress resistance in leafy vegetables (Singapore); postharvest technology (Malaysia); supply system of vegetable seeds and seedling (Thailand); and the Philippine-led vegetable information exchange.

In a separate meeting at the Bureau of Plant Industry (BPI) in Los Baños, Dr. Kuo and BPI officials agreed to revive the relationship between the two research centers. The AVRDC-Philippine Outreach Program (POP), the forerunner of the BPI Economic Garden, serves as a conduit for the introduction of AVRDC germplasm and improved material to be included and tested under the Varietal Testing Program.

The Philippine-visit of the Fact Finding Mission is part of the two-leg mission, which visited the countries of Indonesia Malaysia, and Thailand on December 6-8, 2004 and Brunei on 19 January 2005. *(Rudyard R. Roxas)* ■

FEATURE

Aflatoxin can spoil your peanut butter sandwhich moment

by Ma. Lizbeth J. Baroña

Some like it spread on a cracker while some like it with an Oreo. Still others are content just licking it off their fingers. But no one definitely likes digging into their peanut butter laced with a carcinogenic mycotoxin called aflatoxin.

Aflatoxins can be found in a wide array of food products like peanut – the erstwhile form of our peanut butter paste. It is toxic, and cancer-causing, and is produced as secondary metabolites by the fungi, *Aspergillus flavus* and *Aspergillus parasiticus*. At least 13 different types of aflatoxin are produced in nature, but aflatoxin B1 is considered the most toxic. While the presence of *A. flavus* does not always indicate harmful levels of aflatoxin, it does mean that the potential for aflatoxin production is present.

Aspergillus flavus is common and widespread and is most often found when certain grains are grown under stressful conditions such as drought. This type of mold occurs in soil, decaying vegetation, hay, and grains undergoing microbiological deterioration.

It invades all types of organic substrates whenever and wherever the conditions are favorable for its growth. These conditions include high moisture content and high temperature. A.flavus grows in a wide range of temperature, which is between 10-40 degrees Celsius.

Dr. Farid Waliyar, principal scientist in aflatoxin research at the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), reports that many agricultural commodities, which we eat as part of our daily diet, are vulnerable to attack by this toxin.

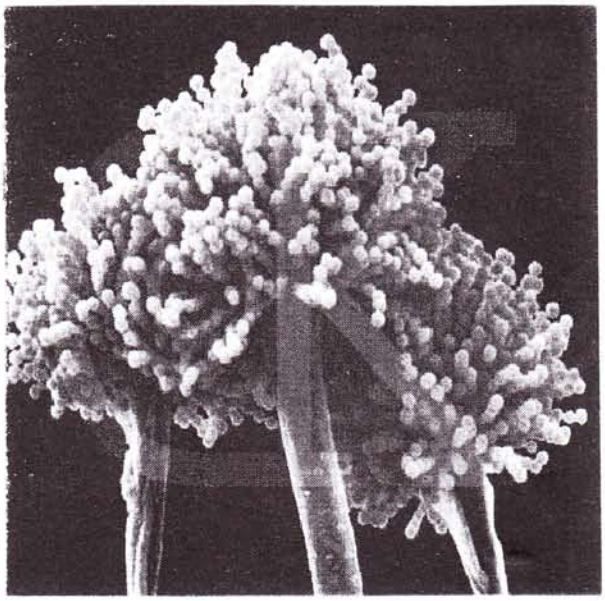
Food products that can also be contaminated with aflatoxin include corn, sorghum, rice, wheat, peanut, soybean, sunflower, cotton, spices, black pepper, coriander, turmeric, zinger, almond, pistachio, walnut, coconut, and milk.

Aflatoxin also affects swine, poultry, and other ruminants. In swine, aflatoxicosis – the food poisoning after ingesting food contaminated with aflatoxin –is due mainly to the fact that corn is a large part of their diet. Studies show that 0.4 ppm in the diet, from weaning to market weight, will have negative effects on health and growth rate. Aflatoxicosis can be compounded by the addition of stress. This can lead to ataxia – the inability to coordinate muscle movements - and induced hemorrhaging.

It also adversely affects growth in poultry and causes a decrease in the absorption of the fat-soluble vitamins. Aflatoxins also decrease the production of Vitamin A in the liver. For ruminants like sheep and cow, aflatoxicosis has also been shown to cause decreased fertility, abortion, and lowered birth weights, especially in sheep.

Dr. Waliyar also reports that clinical studies reveal that exposure to large doses of aflatoxin – more than 6000 mg - may cause acute toxicity with lethal effect, whereas exposure to small doses for prolonged periods is carcinogenic.

Although reports on human contamination of this toxin has been rising in places like Africa, and some parts of Asia, this should not dampen your love for peanut brittle or peanut butter because there are ways to detect and control the production of this toxin. Using Enzyme-Linked Immunosorbant Assay or ELISA, alfatoxin can be detected and quantified using an enzyme and antibodies specific to aflatoxin. Fungi, under the genus, Trichoderma, can also be used to control A.flavus if incorporated in the planting process. Recently, a biopesticide has been developed by a company in the United States that controls the production of aflatoxin in agricultural products. ■



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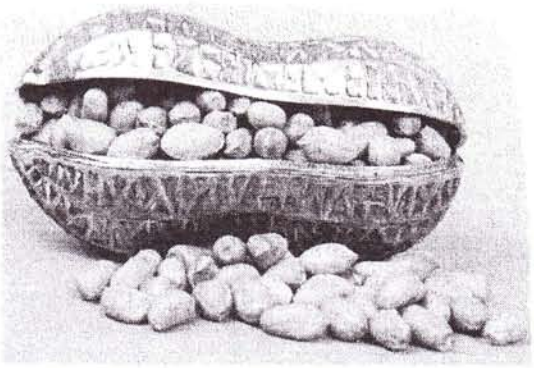
Bio-fortified peanuts: An answer to global malnutrition

FEATURE



by Rita T. dela Cruz

Malnutrition is one of the world's leading problems. In the recent World Nutrition Overview, more than 800 million people in the world today are malnourished. Majority comes from the developing countries, mostly affecting children below five.

Micronutrient deficiency is one of the major aspects of malnutrition. Today, more than three billion people suffer the life-hreatening effects of micronutrient deficiencies. Aside from iron and iodine, Vitamin A is perhaps one of the most critical in terms of current health consequences for poor people in developing countries. Micronutrient deficiencies increase the risk of early mortality, disease, and disability particularly for women and children.

Achieving Vitamin A sufficiency

Vitamin A Deficiency (VAD) has its tragic consequences, including blindness, disease, and premature death. World Health Organization (WHO) reports that Vitamin A-deficiency is the leading cause of preventable blindness in children and increases the risk of disease and death from severe infections. In pregnant women it causes night blindness and may increase the risk of maternal mortality. It is an insidious public health problem in over 118 countries, particularly in Africa and Southeast Asia. Between 100 and 140 million children are vitamin A deficient and an estimated 250, 000 to 500, 000 vitamin A-deficient children become blind every year, half of them dying within 12 months of losing their sight. Meanwhile, approximately 600, 000 women die from childbirth-related causes each year, the vast majority of them from complications which could be reduced through better nutrition including vitamin A.

In a major attempt to solve the problem of malnutrition, particularly micronutrients deficiency, the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) has recently launched a research to enhance the production of ß-carotenes in peanut and help fight Vitamin A deficiency among resource poor consumers in the semi-arid tropics. ICRISAT is a non-profit international research organization headquartered in India, devoted to science-based agricultural development.

This research is part of the Global Challenge Program of the Consultative Group for International Agricultural Research (CGIAR) aimed at the bio-fortification of food crops to fight malnutrition due to the deficiency of nutrients such as iron, zinc, and vitamin. ICRISAT is one of the 15 international agricultural research institutes under CGIAR.

Why peanut?

Why not.

Peanut *(Arachis hypogea L.)* is an important cash crop. About two thirds of world production is crushed for oil and the remaining one third is consumed as food. Presently, it is cultivated in over 108 countries of the world. Asia with 63.4% area produces 71.7% of world groundnut production followed by Africa with 31.3% area and 18.6% production. Important groundnut producing countries are China, India, and Indonesia, in Asia; Nigeria, Senegal, Sudan, in Africa; Argentina and Brazil in South America; and USA and Mexico in North America.

In the Philippines, peanut is also an important food crop. It is usually planted either in monocrop, in rotation with other crops like corn, sugarcane, pineapple, cassava, tomato, white potato, and other vegetables, and as an intercrop in coconut and mango plantations.

In terms of nutrient value, peanut contains high amounts of protein (25-30%) and oil (46-50%). Pound for pound, it contains more protein than meat, about 2 1/ 2 times more than eggs and far more than any other vegetable food, except soyabean and yeast.

Through bio-fortification, the nutritive content of peanut is leveled to a higher level—one that is rich in ß-carotenes. Peanut, while being oil-rich and packed with other nutrients like zinc and iron, but deficient in ß-carotenes, it can be enhanced through the use of recombinant technologies as what has been done recently for rice (Golden Rice). Moreover, according to the scientist of ICRISAT, enrichment of human diets with ß-carotenes can facilitate the uptake of other important minerals like iron.

Bio-fortication of food crops is one of the most promising new tools of science today to fight malnutrition and save lives. This approach is a new paradigm in the field of agriculture, the results of which focus on providing better food to poor people and not just providing them with bulk. This approach is in sync with the millennium development goals that are being implemented by agricultural organizations all over the world—eradicating hunger, reducing child mortality, and improving maternal health.

To bio-fortify peanuts, ICRISAT scientists explained that tissue culture and transformation methods have been optimized to obtain high frequency (80-

see Bio-fortified...page 5

ABARE inducts new officers

Dir. Nick P. Eleazar (left) facilitates the oath-taking ceremony of new ABARE officers.

The Association of BAR Employees (ABARE) inducted its new set of officers with the oath taking and turnover ceremonies held on 13 January 2005 at the RDMIC Lobby. Administering the oath taking was Nicomedes P. Eleazar, director of the Bureau of Agricultural Research (BAR).

The new set of officers include: Alvin Bernardo Divinagracia (president), Marlowe Aquino (VP for external affairs), Carmencita Kagaoan (VP for internal affairs), Jude Ray Laguna (secretary), Bernardo Manuel (asst. secretary/marshall), Melody Memita (treasurer), Juliet SD Yonzon (asst. treasurer/business manager), Judith Maghanoy (auditor), and Braulio Tamayo (public relations officer).

After the oath taking, Dir. Nick extended his congratulations to the new officers. In his brief message he expressed his hope that the new officers work harmoniously with the management and help in the smooth operation of the whole organization to achieve its further advancement. He also emphasized that although work is very important, it is only one aspect of our lives, and thus work should not affect other concerns.

He also enjoined everyone to do their best and to continue working effectively with other DA research institutions towards agribusiness development which is now the main priority of the current administration. *(Rita T. dela Cruz)* ■

BAR Chronicle

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

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

Web news

Report encourages S&T investment for developing countries
(http://www.isaaa.org/kc.)

GM soybean shows no risk of outcrossing--report
(http://www.bsbanet.org.)

FAO schedules open forum on GM and developing countries
(http://www.fao.org/biotech/C12doc.htm.)

Key areas identified for GM crops biosafety capacity in Asia
(http://www.fao.org/biotech/index.asp?lang=en)

Philippines to test Bt cotton
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Agri minister encourages GM seed import
(http://www.thehindubusinessline.com/2005/01/19/stories/2005/011902860100.htm.)

Editorial...

Unit, and Mr. Robert Quing, the Head of the Finance Unit.

Previous units have either been integrated into the new ones or downgraded to the next lower organizational level. For instance, the former Institutional Development Division is now the Institutional Development Section under the PDD. Others, particularly those under the Office of the Director, have seen a modification of function and these include the Planning Unit (formerly the Program Planning, Monitoring and Evaluation Division) and the International Relations Unit (formerly the Grant Development, International Cooperation and Project Development Unit).

Newly created groups are the Project Implementation Section under the PDD and the Regional Research Coordinators of the RCD. Other new ones are the Legal Unit and the Policy Research Unit, both under the Office of the Director.

This BAR publication is also seeing changes with my turn as editor. ■