Asian Cucurbits Round Table
First ACRT sets the bar high for subsequent events

Japan Seed Trade Trends
High value germplasm tracked to, from the Far Eastern country

Ready for Korea Seed Expo
All you need to know about the second edition this October

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Deputy General of Thailand’s Dept of Ag Ext. is all for empowering farmers

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Thoughts on Sales

Brenda Dossey, APSA President

If you saw the word “sales” and thought it doesn’t apply to you because you are a plant breeder or a manager, think again.

We are all involved in making sales every day whether we know it or not. The mother waking her children up in the morning for school is selling them on getting their education.

The manager conducting a staff meeting is selling the ideas of working together safely and productively. The plant breeder is selling his directors on the way forward with applications of new technology.

I personally think that selling is an art form. I have been selling seed for 40 years. It has fed my family, helped me raise my children, welcomed my grandchildren and has been and still is a very satisfying existence.

When I first started all those years ago, I was sort of different because I had a university degree in Agronomy and Plant Genetics. Not many seed sales persons had university degrees.

Sometimes that was a negative and I was even considered a bit over-educated by some because I had also done graduate studies and published articles in Crop Science and the Agronomy Journal.

But I would have to say, while my education opened the door to the seed industry for me, it was the sales skills I developed working with people, attending sales seminars and reading sales management articles that allowed me to stay in the seed industry.

Recently, I spotted an article in the Seed World newsletter that made me stop in my tracks. It was entitled, “The More You Study Product, The Less You Will Sell” by Rod Osthus, president of RC Thomas Company.

I just couldn’t believe the headline. I thought to myself, “What in the world could he be talking about?” I was really kind of shocked to think someone was downgrading the importance of product information in sales. I am a believer in good technical information. I had to read the article.

However, when I read the article, it wasn’t bashing technical information.

Instead, it served as a really good reminder about what your customers are looking for in a sales person and the sales relationship.

Your customers – no matter who they might be; farmers, distributors, wholesale seed companies – all value the following qualities in a sales person:

- Trust & Respectability
- Enthusiasm & Motivation
- Reliability & Commitment

In his article, sales people made technical information available (thank goodness I was relieved to read that), but when they changed their focus to spending more time on developing the qualities listed above and recruiting people who already had those qualities, their sales went up dramatically.

This is a compelling story and I thought I would share it with my fellow APSA members.

You can spend a lot of money on developing a new variety and bringing it to the market, but without sales people, it just stays in the warehouse.

Keep smiling and keep selling!

http://seedworld.com/study-product-less-will-sell/
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TAKII SEED
Creating Tomorrow Today
It’s an exciting time for seed. Gaining momentum into the second half of 2018, innovation in the agricultural world continues to transform our industry for the better.

With respect to many new developments – in plant breeding innovation, plant variety registration processes (UPOV’s PRISMA), electronic phytosanitary certificate issuance (ePhyto) and increasing awareness and adoption of the International Treaty on Plant and Genetic Resources for Food and Agriculture (ITPGRFA), for example – strengthening collaboration between the public and private sectors continues to be a priority for APSA moving forward.

It’s been an eventful past few months as I assume an important new role with APSA. To recap, in June, I participated in ISF’s World Seed Congress in Brisbane, Australia. The theme of the event was ‘Where Innovation Shines’, underlining the growing importance of plant breeding innovation to unlock the potential of genetic resources, to produce more with less resources.

APSA was represented at a number of important meetings – for NSAs and RSAs in addition to ISF’s committees for phytosanitary matters, plant breeding innovation and seed applied technology. In these meetings, we were updated on global trends and saw the approval of eight position papers. See more on page 9.

Immediately after ISF, I travelled to Sapporo, Japan to attend ISTA’s Annual Meeting. The opening seminar was concerned with vigour test methods and the importance of these results to manage inventories and commercial seed storage.

I can’t stress enough the importance of this topic, especially for quality managers to understand which vigour method is most suitable for the type of seeds they are dealing with.

At the meeting I heard updates from ISTA’s 20 technical committees and joined the meetings for ISTA’s committees for Seed Health and GMOs. These latter two meetings focused on methods for seed borne diseases and testing adventitious presence and trait purity of GM crops, respectively.

Also in June, I attended my first APSA Executive Committee meeting, which was organized in Kuala Lumpur Malaysia, which we confirmed will be the venue for the Asian Seed Congress 2019. These plans were cemented with the signing of a National Organizing Committee agreement between APSA and the National Seed Association of Malaysia. (See p. 33)

We look forward to working with NSAM to ensure a memorable ASC 2019.

In July, APSA organized our first Asian Cucurbits Round Table in Bangkok. Thanks to meticulous planning from our dedicated Secretariat and R&D Advisory Committee led by Dr. Narendra K. Singh, the forum was a success, drawing more than 100 delegates from more than 40 companies.

The event also had strong representation from Thailand’s public sector, including the kingdom’s Department of Agriculture, The National Center for Genetic Engineering and Biotechnology (BIOTEC) as well as our co-organizers, Kasetsart University.

Next, we look forward to our 4th Expert Consultation on Phytosanitary Measures in the Asia-Pacific, which will take place 29 and 30 August. At press time, APSA had confirmed attendance of 10 National Plant
Protection Officers (NPPOs) from key Asian countries.

In addition to exchanging national and regional updates, we have invited key international resource personnel to update our NPPOs on global developments and trends: ISF will lead a workshop on ISPM38 and ISF’s regulated pest list, while ISTA will give an update on seed health test methods, seed certification and sampling guidelines.

The summary of actions that we anticipate from this meeting will be important for our region to enhance and harmonize seed trade standards and policy. So, please stay tuned with our activities.

On a closing note, we welcome APSA members who have competencies in hybrid rice, field crops, forage crops, trade and marketing as well as seed technology to join in our respective Standing Committees (SCs) or Special Interest Groups (SIGs).

Your ideas and expertise can only improve our activities for the benefit of all APSA members.

With that, I look forward to hearing from you. Enjoy the rest of this issue!

APSA in July visited Thailand’s NSTDA to discuss further collaboration opportunities.
The International Seed Testing Association (ISTA) held its Annual Meeting 11 to 14 June on the island of Hokkaido at the Emisia Hotel in Sapporo, Japan.

Organized in collaboration with the National ISTA Designated Authority of Japan (the Ministry of Agriculture, Forestry and Fisheries), the meeting was attended by 178 participants from 38 countries, representing both public and private organizations, including universities, companies and government agencies.

Following the opening of the event by ISTA President Craig McGill, Alison Powell (ISTA Vigour Committee) chaired a seminar focused on vigour tests and the scientific basis of their development.

On 12 and 13 June, ISTA’s 18 technical committees presented their work, with lectures, a poster session and side meetings. A half-day session was dedicated to discussing proposed changes to the ISTA Rules, which were later voted on in the Ordinary General Meeting.

Highlights included:

- New methods to assess seed germination of radish, spinach and flower species such as Eustoma and Felicia.
- A new seed health method for detection of Xanthomonas campestris pv. campestris in Brassica spp. seed was approved.
- However, the proposal to indicate seed lot size by number of seeds was rejected owing to negative consequences on the intensity of sampling and modification of seed lot sizes. Further studies were requested to support the proposal and to analyze its impact on regulations and trade.
- The Association’s strong financial situation, which affords funding of new projects, including a new website; a feasibility study on electronic certificates (Orange International Certificates); and financial support of technical committee work encouraging new seed testing methods.

Several important items for the future of ISTA were also discussed: German members submitted a motion to advance development and implementation of new technologies in existing classical tests. Technologies involved included image analysis, multispectral and X-Ray techniques. In a related move, ISTA’s membership approved the executive committee’s proposal to prioritize development of new technologies for classical seed testing.

Proposed changes to the International Rules for Seed Testing 2019 were voted on by 28 voting delegates, voting on behalf of their governments. At the Ordinary Meeting on 14 June, addresses from Craig McGill and Atsushi Suginaka, Director, Intellectual Property Division, Food Industry Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries, Japan were given. The ISTA President expressed his appreciation for Japan’s invitation to meet in Sapporo.

Following his address, and the roll call of designated members entitled to vote, the Executive Committee and the Secretary General presented their reports.

During the last day’s opening session Tomohiro Kondo, representative of the Japan Seed Trade Association (JASTA) gave a presentation on the Seed Industry in Japan and John Mukuka from COMESA gave a status update on the COMESA Seed Harmonisation Programme (COMSHIP).

ISTA’s Annual Meeting was followed by an ISTA Workshop on “Quality Assurance and ISTA Accreditation for Beginners”, organized jointly by the Centre for Seeds and Seedlings, NARO (NCSS) and ISTA, from 19 to 21 of June in Tsukuba City, Ibaraki, Japan.

Japan is home to five ISTA-accredited labs, while ISTA has 66 active member organizations in Asia.

Next year’s meeting will take place in Hyderabad, India, from 26 June - 3 July.
In Brisbane, Australia, the General Assembly of the 69th International Seed Federation (ISF) World Seed Congress adopted eight position papers on key industry issues, including: movement of seed; plant breeding innovation; illegal seed practices and seed choices for farmers.

The three-day event was held 3 - 6 June, with a post-Congress Thematic Day at Queensland University on 7 June.

Eduard Fito of Spain was elected president and Donald Coles of Australia vice president; new members of the Executive Committee and Board of Directors were also selected by the General Assembly.

1,148 delegates from 59 countries attended. Highlights included a roundtable on the 'Future face of the seed sector' and panel discussion on international phytosanitary measure standards.

Held at Queensland University, the event's theme 'Where Innovation Shines' underlined the importance of plant breeding innovation (PBI) in the international seed industry.

Featured were presentations on agricultural technology, including blockchain data, speed breeding and robotics.

In his acceptance speech, new president Fito said he would concentrate on seed movement and innovation pursuant to the ISF vision of "a world where quality seed is accessible to all." He also noted that his predecessor, Jean-Christophe Gouache, had renewed organization objectives via the 'ISF 2020 project'.

Messrs Fito, Coles and Gouache will continue overseeing implementation of the five-year Strategic Plan with new Executive Committee members Marc Cool of the US (replacing Usha Zehr as chair of the Breeders Committee) and Christoph Betschart of Switzerland (who replaces Vincent Vuille as treasurer).

In his opening address to delegates, M. Gouache observed that "unlocking the potential of genetic resources to produce more with less" is "the fantastic mission of the seed industry." He said that the "power of genetics" will ensure that farming is more resilient and efficient than heretofore.

Senator James McGrath, Assistant Minister to the Australian Prime Minister, in his address said "responsibility for delivering higher yields and more nutritious food" rests on innovation. "Your organizations," he added, "support the entire food chain globally and are driving innovation in food and fodder production."

The 2019 Congress is scheduled for 3 - 5 June in Nice, France. Some 1,500 delegates are expected.
In the Land of the Rising Seed

No fewer than 231,251 tonnes of sowing seed worth US$1.8 billion moved across Japan’s borders during the five-year period ending with the first quarter of this year. Over the 20 quarters analyzed, trade averaged 3,854 tonnes (imports plus exports) per month, or 46,250 t per year, making the Japanese international sowing seed market worth at least US$368mn per year.

Most of the trade represented imports, however: during the period beginning with the second quarter of 2013, Japan ran a US$560mn deficit in sowing seeds, exporting 6,630 t of seed worth $640.6mn while importing 224,621 t worth US$1.2bn. Nonetheless, Japan seed exports were worth 18 times more per unit than imports: imported seed averaged US$5,343 /t, while Japanese seed exports averaged US$96,623 /t.

In a nutshell, though heavily dependent on foreign cereal and grass germplasm for food security, Japan is a leading producer and supplier of high-value, high-quality germplasm, notably for vegetables and flowers.

OUTBOUND TRENDS

The overwhelming majority of Japanese sowing seed exports were for horticulture, representing 97.7 percent of volume, and 99.63 percent of value. Of these, nearly 80 percent (5,276 t) were vegetable seed, worth US$481 mn (75%), exported at an average US$91,190/t.

Still more impressive was the herbaceous flowering plant seed average: US$521,210 /t. Such seed represented 4 percent of exports (261 t) but 21 percent (US$135mn) of export market value. Top markets for Japanese flower seed exports during the five-year period were Denmark (US$38.8mn), China (US$30mn) and the US (US$25.8mn); also of note were the Netherlands (US$11.8mn), Vietnam (US$6.4mn) and S. Korea (US$4.2mn).

Remaining key horticulture seed varieties (categorized as ‘other’, see notes) were less remunerative, logging 941 t (14.2%) in exports worth US$19.5 mn (3%), or only US$20,756 /t (still four times the average price of imports).

Among sowing seed exports, forage and field crop varieties represented respectively just 0.97 and 1.31 percent. Varieties in these two broad categories represented less than two-fifths of a percent of the market in value. Forage variety exports averaged US$22,000 /t. Among field crop seed exports, only two categories are notable: rough paddy (11 t of seed averaging US$7,181) and soybean (75 t...
averaging US$11,864 /t).

At a glance, Japanese melon seed appears a statistical anomaly; average exports were valued at US$1.7mn per tonne. The listed total volume of this export, however, was less than a tonne. Yet foreign sales were made amounting to US$1.6mn.

Apparently volumes less than one tonne were recorded as ‘0’ (even though clear monetary values were logged during those quarters). Therefore, while the actual volume is unknown, we can safely conclude such germplasm was exported to various countries, chiefly Brazil, Korea, Malaysia, Argentina, Chinese Taipei and Thailand.

**INBOUND TRENDS**

In terms of volume, Japan imported forage (62.2%) and horticulture (30.5%) varieties; field varieties represented the remaining 7.3 percent.

High-value horticultural varieties dominated the seed import market in value, amounting to US$948mn or 79 percent of the total. Field and forage crops split the remaining 21 percent, generating US$127.4mn and US$124.8mn respectively.

Although veg seed amounted to just 10.8% (24,305 t) of total imported seed volume, its value amounted to 54.6 percent (US$656mn) of the market, averaging US$26,979 /t. Of these imported (cont. from page 11) vegetable varieties, only radish (120991010) was specified:

... (continued on page 13)
The analysis and observations in this report are based on international trade data reported by the International Trade Commission, which cites Japanese Ministry of Finance statistics, and covers 20 financial quarters, starting from the second quarter of 2013, and ending the first quarter of 2018. APSA does not provide any guarantees about the validity or accuracy of the data, tables, charts or analyses, which can be corroborated by querying the ITC database directly. The report is intended to highlight general trends but does not represent the full picture of seed trade, particularly with respect to domestic demand and consumption.

Certain varieties of vegetable, fruit and flowering crop sowing seeds are not categorized by the ITC under the broader categories for vegetable (120991) or “herbaceous plants cultivated principally for their flowers, of a kind used for sowing (120930)” – referred to in this report as herbaceous flowering plants – but may instead be counted in the general category for “other seeds, fruits and spores (120999)”. Specific varietal data for this category was not available.

Furthermore, some herbaceous veg and spice seed varieties, of a potentially-sowing grade (neither crushed nor ground) such as coriander (090921), cumin (090931) and juniper berries and seeds of anise, badian, caraway or fennel, (090961), fall under “Coffee, tea, maté and spices”. Moreover, melon seeds (120770) are categorized under “Other oil seeds and oleaginous fruits, whether or not broken…”

Therefore, this report has combined Categories 120770, 120999, 120991, 120930, 090921, 090931 and 090961 to represent a broad horticulture crop seed category. Other broad categories of sowing seed grouped and analyzed in this report are field crops (cotton maize, rough paddy, soybean, sugar beet, barley, cotton, groundnut, millet, oats, seed potato, sorghum and wheat) and forage (alfalfa, clover, fescue, ryegrass and Kentucky bluegrass).
(Continued from page 11) ... Japan imported about 6,172 tonnes of this seed type, worth US$50.5mn, or US$8,185/t.

Data indicate the most valuable types of horticulture seed imported to Japan during the period were for herbaceous flowering plants: 934 t (0.42%) totaling US$110mn (9.2%), an average price of US$118,130/t.

Coriander was another horticulture variety with strong Japanese demand, amounting to 7.8 percent of import tonnage (17,570 t), but taking only 2.3% of market value (US$28.5 mn) at an average of US$1,624/t.

Maize dominated field crop sowing seed imports: 10,153 t (4.52 %) at US$62.6mn (5.2%) or US$6,167/t.

Among forage crop seeds, 16,615 t of ryegrass (7.4%) was imported at US$26mn (2.2%) or US$1,570/t.

It appears oats were the most lucrative type of sowing seed for Japanese importers: just 27 t of this field crop seed cost US$26.9mn over five years — an average price-per-tonne of, astonishingly, US$995,491.

The price trend line graph underlines how lucrative and volatile the flower seed market is in Japan.
The Indian seed industry stands to grow five-fold in the coming 12 years – from an estimated INR 200 billion (US$2.9bn) at present to INR 1 trillion (US$14.6bn) by 2030 – a Mumbai-headquartered financial firm has forecast.

A report, published recently by the Research Division of Sunidhi Securities & Finance Ltd., highlights a number of interesting global and Indian seed sector trends.

Globally, the seed industry, which was valued at US$50bn in 2016, is estimated to be growing by between 6-8 percent annually, while growth of the industry in India is pegged at 12 percent per annum.

Fueling this rapid growth is surging demand for quality seeds, which, the report suggests is driven by a number of demographic, climatic and geopolitical factors, including population growth, urbanization, rising affluence, favorable government policies, and the increased adoption of irrigation, hybridization and biotechnology.

The seed market in India, reportedly the sixth largest in the world in 2015 after the US, China, France, Brazil and Canada, is estimated to be worth US$2.20bn, which is dominated by field crops (US$1.85bn).

The country’s vegetable seed sector, which is worth about US$350 million, is evenly divided between OP and hybrid crops, the report notes.

Much of this seed is distributed and sown domestically to support vegetable production, which feeds growing demand for both fresh vegetables, and processed, value-added products.

Land dedicated to vegetable cultivation is currently estimated at around 10.3mn hectares yielding about 175mn tonnes of produce, making India the second largest producer of vegetables in the world, after China.

The largest vegetable growing areas in India are in Uttar Pradesh (15.1% of total land allocated to vegetable cultivation in India), West Bengal (14.6%), Madhya Pradesh (9.5%), Bihar (8.1%), Gujarat (7.7%), Maharashtra (5.9%), Odisha (5%), Karnataka (4.7%), Haryana (4%) and Chhattisgarh (3.8%).

APSA members and readers doing seed business in India or in the Asian region in general, are encouraged to obtain the full report, which includes detailed analyses on aforementioned highlights, as well as financial insights into leading seed companies in India and the world.

The full report can be downloaded via Sunidhi.com; for more info, email: rohit.n@sunidhi.com

### Seeds Sector

<table>
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<tr>
<th>State</th>
<th>Area ('000 hectares)</th>
<th>Production ('000 tonnes)</th>
<th>Productivity (tonne/ha.)</th>
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<td>Andhra Pradesh</td>
<td>224</td>
<td>5,356</td>
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<tr>
<td>Arunachal Pradesh</td>
<td>4</td>
<td>33</td>
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Source: Horticulture statistics at a glance 2017 via the Research Division of Sunidhi Securities & Finance Ltd.
LAST YEAR WAS AN important and special year for the Chinese seed industry owing to dramatic industry developments and business changes – and also a tough year for most enterprises.

Chinese seed industry market volume has seen sustained growth for many years. All current statistical analyses show it exceeding 100 billion yuan, making it second in the world next to that of the US.

In 2017, according to an official report, the number of seed enterprises fell to 4,300. The firm Long Ping High-Tech entered the world seed market, surging into the world’s top 10 seed companies. Fine-quality breeding research programs led to more than 100 fine varieties from four major crops. Use of Chinese breeds greatly increased during the year. The regulatory environment also improved.

Still, it is obvious that China’s seed industry confronts serious obstacles: higher levels of stock, an increased number of varieties entering the market, intensified market competition, extreme weather, pest and disease damage, as well as reduced product variety life cycles. No more than 15 percent of all seed industry enterprises were able to maintain stable business performance. Several companies successfully bucked the trend, however, notably Long Ping High-Tech, Win-All Hi-Tech Seed, Beijing Lantron Seed and Hongxiang Seed.

Improved hybrid rice varieties and technological advancements afforded Long Ping High-Tech and Win-All Hi-Tech Seed exponential growth, placing them far ahead of competitors.

A look at hybrid corn indicates that 2017 might have been the darkest moment just before dawn. In 2017, more than 3,000 varieties were either registered or approved for use in extended regions. These varieties, however, were highly homogenized. Denghai Seed was challenged by continuous hot weather; enterprises in the northeast also ran into various difficulties.

Methods of grain collection and storage have been reformed. In the past, the government purchased whatever farmers planted. Now farmers plant what is needed by the market, which decides the action taken by seed breeding enterprises (who ought to start listening to consumer voices).

High-quality hybrid rice and high-quality wheat are much sought after in the market, and many corn seed breeders have started exploring fine varieties.

It is a relief and a delight to see several performance results in 2017. One good result is the satisfactory performance of Long Ping High-Tech, Win-All Hi-Tech Seed, Beijing Lantron Seed and Hubei Kangnong Seed, attributable to their continued input on research, while the performance of Denghai Seed, Beijing Huanong Weiye Seed, Gansu Wugu Seed and Hoping Seeds appear to be on the rebound.

Good performance also has resulted from back-end service, now receiving unprecedented close attention from the market. These services include powerful new platforms that integrate industry resources, extending to solutions for planting, pesticide and fertilizer packaging and processing, weather monitoring and financial management.

For full article, see agropages.com
TO LEARN MORE ABOUT Thailand’s first and only ISTA-accredited public seed testing laboratory, Asian Seed spoke with lab head, Dr. Papassorn Wattanakulpakin, or Dr. Kwan.

Administered by Thailand’s Department of Agriculture (DOA), the Phitsanulok Seed Research & Development Center (PSRDC) houses one of only two public facilities designated to issue official Seed Analysis Certificates for various types of crop seed. The other one is the central DOA seed lab in Bangkok.

Dr. Kwan explained that her lab was opened in 2011 under the Ministry of Agriculture and Cooperatives’ policy to develop Thailand into a regional seed production center, which is part of the ASEAN Seed Hub strategy.

Under this policy, emphasis is placed on standardizing quality control across the entire seed production chain, which is realized through certification.

Required for commercial sale of seeds within Thailand, as well as for the export of seeds to most countries, the seed certification analysis focuses on three important indicators of seed quality: germination, physical purity and moisture content.

Designed in compliance with national, regional and international seed regulation guidelines, the Phitsanulok lab was established as a model lab preceding other planned facilities, Dr. Kwan said, noting that two new seed testing labs, in Chiang Mai and Khon Kaen, will open in the near future.

However, like the DOA’s central lab, “These new labs will only issue seed-analysis certification from the Thai government, not ISTA certificates, which, for the immediate future will only be available from the PSRDC lab,” Dr. Kwan said.

Having received ISTA Accreditation in April this year, the PSRDC seed lab is a welcome new option for Thai seed producers to test and certify their seeds in compliance with not only Thai regulations but those of international trade, as governed by ISTA.

Dr. Kwan explained that her lab is currently authorized and equipped to issue ISTA Blue and Orange Certificates covering manual sampling, germination, physical purity and determination of other seeds, with a specific scope for vegetable and cereal crop seeds.

Previously, Thai seed producers had limited options to obtain ISTA certification for their germplasm, which is increasingly required by National Plant Protection Offices and Quarantine bodies at point of entry.

“The Thai seed analysis certificate has been sufficient for most of our trading partners thanks to bilateral agreements, but our exporters are increasingly getting asked for ISTA certificates,” she said.

She explained that the PSRDC was strategically selected to open the new lab to offer one more option for seed producers. Its ideal location between Thailand’s Central, North and Northeast regions – where a majority of the Kingdom’s seeds are cultivated – made it much more convenient for producers to not only send in small samples, but to coordinate analysis of larger seed lots at production and storage sites.

At present the Phitsanulok lab can process up to 200 samples per day (for field crop seeds), but the exact capacity depends on the type of seed and required analysis parameters.

Though the lab can offer analysis of moisture content in compliance with Thai certification standards, it is still in the process of upgrading its facilities to offer this option for ISTA certification. Dr. Kwan expects this to be an option when the lab renews its three-year ISTA accreditation in 2021.

For specific inquiries about the PSRDCC, please email: kwanpapas@gmail
Some 32 reps from a dozen Thai seed firms refined their seed testing quality control knowledge and skills at an intensive workshop 9-13 July in the northern Thai city of Phitsanulok.

Co-organized by the Thai Seed Trade Association (THASTA) and Thailand’s Department of Agriculture (DOA), the “Seed Testing Quality Control Workshop” was held at the Phitsanulok Seed Research & Development Center (PSRDC).

Administered by the DOA, the PSRDC houses Thailand’s first and only public seed lab that is accredited by the International Seed Testing Association (ISTA). See right.

Inaugurating the workshop on 9 July, PSRDC Director, Jira Suwanprasert stressed the importance of quality seeds with respect to not only economic prosperity but national food security.

In a subsequent keynote address, renowned Thai seed technologist and retired Associate Professor from Kasetsart University’s Horticulture Department, Dr. Sutevee Sukprakarn, elaborated on the various aspects of “quality seed” with respect to genetic, physical, physiological and seed health aspects.

She highlighted one of the most common issues seed producers and processors face — inconsistencies between lab and field results: “We often get asked why seeds don’t perform like they’re supposed to. Controlled conditions in the lab may be completely different from the field or point of sale.

“This is why it’s essential for you to understand these conditions, and how to regulate and control them in every step of the process — from factory, to storage to shop to field,” she said.

Also presiding over the opening was THASTA President, Dr. Chairerg Sagwasupayakorn, who explained the objectives of the workshop.

“This workshop is part of efforts to upgrade the standards, skills and knowledge of Thai seed companies in the production of quality seeds, which is in line with public-private initiatives to develop Thailand into a seed production hub,” Dr. Chairerg said.

“This is a good opportunity for some of our larger companies like East West Seed and Chia Tai, who already have their own ISTA-accredited labs, to join with government officers and scientists to share their expertise with some of our smaller and medium sized companies,” he added.

Dr. Papassorn Wattanakulpakin, head of the PSRDC Seed Lab, elaborated on the benefits of private-public collaboration:

“We have a lot of good resources in Thailand, in both the public and private sectors. Quality seed standards aren’t new for us. The government and private companies have long adopted international standards (for seed testing quality control), but in the past there’ve been some communication gaps. This is a great opportunity for us to coordinate and bring everyone together for the benefit of the entire industry,” she said.

The workshop featured lectures, interactive demonstrations and hands-on laboratory sampling technique training, led by expert seed technologists, scientists and personnel from the DOA, Kasetsart University, and THASTA member companies, including East-West Seed, Chia Tai Seeds and the Thai Seed & Agriculture Company.
The Second Korea Seed Expo will take place 23–26 October at K-Seed Valley, S. Korea’s state-of-the-art seed and breeding R&D complex in Gimje City of Jeollabukdo Province on the Korean peninsula’s southwest coast.

Jeollabukdo Province reputedly has the country’s most fertile fields and is known for agriculture. Organized by the Foundation of Agri. Tech. Commercialization and Transfer (FACT), the expo is sponsored by the Ministry of Agriculture, Food and Rural Affairs (MAFRA), Jeollabukdo Province and Gimje City. Supported by the Korean Seed Association (KOSA) and other seed industry related institutions, the event will feature exhibitions and demonstrations aimed at promoting Korea’s seed industry development through international seed trade opportunities. To learn more, Asian Seed spoke with Kyung-Ku Ahn of FACT:

How many exhibitors are expected and which companies have confirmed?
We are inviting more than 50 companies including not only seed companies but seed industry-related agro companies. 23 seed companies have scheduled field demonstration programs. We are recruiting more vendors for the exhibition hall booths. By comparison, 36 companies participated in Korea Seed Expo 2017.

How many visitors are expected? Is it a public event?
Our goal is to attract over 40,000 visitors to this public event. Last year we had 36,000. Central and local governments are funding, and the Seed Industry Promotion Center (SIPC) of FACT plans and manages the event. Currently, participation is free for all exhibitors and visitors.

The physical size of this year’s event is approximately double that of last year’s. We are building four exhibition halls; there were two last year. The field demonstration area increases from 30,000 square meters to 40,000, and the number of plastic houses from four to eight.

We will show field crop varieties and exotic germplasms as well as seed company commercial varieties.

How much has been budgeted for organization? Are there any targets?
A total of 1 billion won (about US$900,000) is budgeted, and we hope to achieve business contracts totaling about 5 billion won during the event. By promoting export of excellent varieties, we hope to make it more international and to grow as a representative seed event in the Asian region.

What can we expect to see?
The Seed Industry Hall will exhibit seed company products. The Seed Theme Hall features booths from agriculture-related institutions such as the Rural Development Administration (RDA), the Korea Seed and Variety Service (KSVS), etc. In the Agro-Industry Hall, agro-company booths will display products related to
young plant raising, agricultural materials, agricultural machines, among others. In the Educational Experience Hall, visitors can learn from a number of on-site, seed-related, education programs.

In the demonstration field, we are growing 17 crops with 296 varieties, mostly commercial vegetables provided by seed companies. With regard to international trade, we have prepared a "buyer invitation and matching program". Academic events, a seed-related symposium and seminars are also scheduled.

Most agriculture-related industry events are held in convention centers -- in cities. So we decided to organize this event to have a demonstration field showing varieties as they grow, which is important in the seed industry because the actual performance of many seed products from different companies can be evaluated in one place. Compared to last year, this year's event has greater diversity, whether from among commercial varieties or the collections of public institutions.

Something that should be of great interest is the Golden Seed Project (GSP), a seed R&D project organized jointly by MAFRA, RDA, the Ministry of Oceans and Fisheries (MOF), and the Korean Forest Service (KFS). We will have a booth on the GSP and its important developments at the expo. It is aimed at helping seed companies develop competitive new products for the global market, as seed company breeders work with university and public institute researchers to enhance breeding and breeding technology.

Whom do you hope to see?
We want to enhance international trade -- but we also have programs to attract R&D people, suppliers, growers and others. To that end, we are preparing better services, such as business programs, information and interpretation, transportation and accommodation, tours and more.

Last year many non-professionals interested in seeds and the seed industry attended. That's why we've prepared educational programs for families and students. As a long term goal, recruitment of young talent is most important for industry development, so we'll have fun activities such as sweet potato harvesting. We are also preparing more rest zones in the exhibition halls and at the demonstration field.

Chili peppers, Chinese cabbage and Oriental radish are very competitive in global markets. Korean people eat these at almost every meal, therefore competition is keen among seed companies to make better varieties. Then, Korea has four seasons, which influences our differing types, such as spring, summer, fall and 'overwinter' Chinese cabbage. At the expo, various varieties of fall segment Brassica crops can be seen.

What is the current trend in Korea's seed industry?
We are moving from emphasis on what growers demand to what consumers demand. We still need to address the demands of growers -- such as disease resistance -- but the trend is towards meeting consumer demands. So now one variety must meet the needs not only of growers, but of processors and consumers. Then there is the 'Smart Farm' concept, of cultivation in more controlled environments -- so I'd say the seed industry trend is towards focusing more on high-value varieties.
APSA extends gratitude to all sponsors, speakers, officers, chairs and co-chairs for ensuring a successful event. We look forward to future collaboration.
More than 140 breeders, pathologists, academicians and seed firm executives took part in the first Asian Cucurbits Round Table.

Organized 19-21 July by APSA and Kasetsart University at the latter’s Bangkok and Kamphaeng Saen campuses, the three-day event’s theme was Challenges and Future Trends in R&D for Cucurbit Crops in Asia, and featured talks from 16 leading public and private sector breeders, a field demonstration and student poster exhibition.

APSA acting director Dr. Kanokwan Chodchoey welcomed delegates to Ruang Khao Grand Conference Hall in KU’s Wachira Anusorn building, describing the conference as a “forum for networking, exchanging ideas, sharing best practices, and helping build Asian seed industry capabilities.”

Welcoming delegates on behalf of KU, acting president Dr. Chongrak Wachrinrat noted that cucurbits "constitute one of the biggest groups of vegetables in the tropics, providing calories, proteins, vitamins, and medicines as well as essential small-scale farm income."

Thailand Department of Agriculture Deputy Deputy-Director General Mr. Warawut Chootummatouch officially opened the meeting with an address that stressed the importance of cucurbits in Thailand and Asia, emphasizing the need for continued public-private collaboration.

Conference chairman Dr. Narendra Singh (APSA R&D Committee Chair and R&D Director at HM. Clause) clarified that, "Cucurbits are the 2nd biggest crop group in terms of value after solanaceous crops" in the Asian region, which has "varied agro climates, culture and food habits." He said strengthening public and private sector partnerships will be important to tackling issues involving cucurbits, which include cucumber, squash, watermelon, melon, pumpkin and gourds.

"Thus far, progress has been inadequate," he averred. Dr. Narendra believes the major reason for lower productivity, "is lack of high yielding varieties with disease and pest resistance, and high-nutrition fruit quality." He said that, though Asia is considered a major hub for global cucurbit seed production, "GSB, BFB, CGMMV and many other begomoviruses and tospoviruses" too long have been major threats, and so, after two successful Asia Solanaceous Round Tables, "it became clear that we needed to develop a similar platform specifically for cucurbit crops."

With that realization, the first Asian Cucurbits Round Table was born.

Over the next two days, cucurbit heavy-hitters from leading companies and institutions presented insights, data and experiences, with a major emphasis on disease diagnosis, management and genomics.

Dr. Xingping Zhang of Syngenta set a warm tone for the conference with an intimate presentation about himself and outlook on breeding and genomics. A renowned watermelon breeder who contributed to a long line of popular seeded and seedless varieties in China and around the world, Dr. Zhang’s expertise comprises plant genetics, breeding, crop management, IP protection and genome editing technology for useful watermelon traits.

Stressing the need for a rounded understanding of the entire research, development and production chain – especially with respect to the needs of the market and consumers – he told attendees genetic improvement of watermelon has always focused on yield, disease resistance and quality. Today, molecular tools for watermelon breeding have paved the way for an exciting new age of breeding, especially since the watermelon genome was sequenced in 2012.

That means marker-assisted selection...
for breeding with molecular design is now possible, with the result that genome editing "will quickly generate new traits and mutations not identified in current germplasm collections."

Building on this theme, Dr. Manash Chatterjee, founder of India’s BenchBio and adjunct faculty at the National University of Ireland Galway, introduced one such "non-GM" cutting-edge tool to develop new mutations in his talk on ‘Allele Discovery in Cucurbits for Yield and Quality Traits’.

From the breeders’ standpoint, he explained, "the challenge of the future will be the speed at which DNA sequence databases are analysed and candidate genes of agronomic importance selected and utilised for breeding."

"The transgenic GM method is one route to validate gene function and improve crops," he said, but is not available for all crops and faces "tremendous difficulties in public acceptance". "The technology is expensive and also frequently limits "freedom to operate". Additionally, at present the GM method cannot keep pace with the speed at which candidate genes for important traits are being identified."

He said that at BenchBio: "We are using an alternative tool, TILLING (Targeting Induced Local Lesions in Genomes) which is, mutagenesis in combination with forward and reverse genetics, which offers an alternative way to improve crops without transgenics." Elaborating more on TILLING, Dr. Chatterjee explained that it is, "Reverse genetics combining traditional chemical mutagenesis with sensitive molecular screenings at the DNA level to discover induced point mutations in genes controlling important traits," while "forward genetics combines identification of novel traits by phenotyping and cloning of genes afterwards."

By combining these two methods, new genotypes with potentially high agronomic value are isolated and produce commercial cucurbits with traits such as long shelf life, Potyvirus resistance and increased yield by changing the flowers’ sex form.

Next, World Vegetable Centre virologist Dr. Yuan-Li ‘Sophia’ Chan updated participants on pathogen trends in Asia in her talk on ‘Viral Disease and its Management in Cucurbits’. "Viral diseases are a major constraint to cucurbit production in most areas," she said, explaining that the fight against them begins with identifying and locating the enemy: To assess the predominant and emerging virus diseases of cucurbits on the island of Taiwan, a field survey was conducted in 2016 and 2017. Results indicated that virus distribution and prevalent viruses varied: "The predominant viruses in squash production were from the genera Begomovirus and Potyvirus, while the major viruses identified in cucumber samples were from the genera Potyvirus and Tospovirus -- and Crinivirus, which may be the emerging virus in the island’s southern part."

Investing in effective inoculation and diagnostic tools is thus essential moving forward. Dr. Channarong Seepiban, of Thailand’s National Science and Technology Development Agency BIOTEC Monoclonal Antibody Production Laboratory discussed some of them in his talk, 'Immunodiagnostic Assays for Detection of Devastating Diseases of Cucurbits in Thailand'.

"Rapid and cost-effective detection systems for plant pathogens are essential for epidemiological study, disease management, production and certification of disease-free seeds as well as selection of pathogen-resistant plants," he observed.

To that end, Thailand’s BIOTEC has produced "a catalog of antibodies for detection of plant pathogens that cause serious diseases of cucurbit crops." These involve monoclonal antibodies and rabbit polyclonal antibodies for detection. Moreover, to further reduce diagnostic time and costs, "assays based on diverse technologies such as multiplex strip tests, antibody micro-array and surface plasmon resonance" can be invoked for "multiplex detection of plant pathogens."

Dr. Saengsoon Charoenvilaisir, a researcher with Dr. Channarong at BIOTEC, elaborated on the preceding theme in her talk, ‘The Diversity of Begomoviruses Infecting Cucurbit and Solanaceous Plants in Thailand’. She first not-
ed that begomoviruses are plant DNA viruses, then detailed how to detect and identify them:

"Infection was detected by enzyme-linked immunosorbent assay (ELISA) using in-house monoclonal antibodies (MAbs), and by PCR using universal Begomovirus primers."

Sequence analysis of the amplified coat protein (CP) gene and replication initiation protein (Rep) gene provided clues to the species' identity, and results revealed a diversity of begomoviruses infecting cucurbit and solanaceous crops in Thailand higher than previously reported.

The information, she said, has implications for control strategies through use of resistant cultivars suited to particular crops and locations.

From the Genetics Department of host Kasetsart University, Asst. Prof. Dr. Sompid Samipak looked at 'Mapping Quantitative Trait Loci for Downy Mildew Resistance in Cucumber (Cucumis sativus L.)', explaining that Downy Mildew (or DM) caused by Pseudoperonospora cubensis is one of the most important fungal diseases in cucumber.

As part of a public-private-collaboration, Dr. Sompid's team used simple sequence repeat (SSR) markers to analyze F2 and RILs, so as to identify and record resistance to DM. Results indicate DM resistance is controlled by multiple recessive genes. A useful integrated map of F2 populations was thereafter constructed using 138 SSR markers.

As has been noted, bitter gourd today remains relatively unexploited -- yet opportunities are plentiful. In a talk on 'Bitter Gourd Crop Improvement and Management', the Indian Agricultural Research Institute's Dr. Tusar Kanti Behera explained that "the Asian continent is endowed with a wide range of diversity in this crop, so there is a vast opportunity for genetic improvement."

"The fruit contains bioactive components with many important medicinal properties," he said, adding however that, owing to unavailability of improved cultivars, "most genetic development... has been the result of selection within landraces by farmers in local habitats." That is changing: "Over the last two decades, increasing emphasis has been placed on more systematic bitter gourd improvement."

Notably, though the predominant sex form in bitter gourd is monococious, gynoecious sex forms (with only female flowers) have been reported in India, Japan and China. "Generations using gynoecious as one parent," he said, "showed very high percentage of pistillate flowers and [so] have high yield potential."

Virologist Wen-Shi Tsai, associate professor in Chinese Taipei's National Chiayi University Department of Plant Medicine, is expert in developing transgenic tomato resistant to CMV, Tospovirus and Begomovirus using CP and gene silencing strategy. The professor provided yet another view on 'Cucurbit Viruses and Their Management in South and Southeast Asia'.

Noting that "begomoviruses were detected in most collected samples -- including bitter gourd, bottle gourd, cucumber, luffa, melon, and pumpkin," and that "Crinivirus was found in melon and watermelon samples," he found it "interesting [that] phytoplasma was also detected in bitter gourd samples."

Regarding resistance screening for virus disease management, he said "mechanical transmission is commonly used for RNA virus inoculation, whereas vector-mediated inoculation is powerful for non-mechanical transmission viruses -- such as poleroviruses and begomoviruses." He concluded, however, that "few resistances were revealed efficient for certain cucurbit viruses."

Yet hope springs eternal in the science community and Dr. Masatoshi Sato, of Japan's Center for Seeds and Seedlings at the National Agriculture and Food Research Organization (NCSS/NARO), afforded some for those laboring against one of the "most important and destructive diseases" of the cucurbits world in his talk on 'Bacterial Fruit Blotch (BFB) in Watermelon and Melon'.

BFB, he said, is caused by Acidovorax citrulli in contaminated seeds. The first step in prevention is "using healthy seed, free from bacterial pathogen." To confirm seed is A. citrulli free, seed health testing and treatment prior to use are imperative. "Seed producers should take those actions post-harvest to ensure risk reduction in the seed market," he averred. "A. citrulli
is known to survive on external and internal parts of the seed. Hence, in seed disinfection it is necessary to consider pathogenic bacteria present on and in the seed." Thereafter he presented some seed disinfection methods using chemical and physical treatment.

He also observed that A. citrulli thrives in dense plantlett populations with high temperature and humidity: "Overhead irrigation for plantlets [therefore] should be avoided because pathogenic bacteria spread easily with water drops."

Bringing focus back to promising cucurbit breeding progress in Asia, WorldVeg breeder Dr. Narinder Dhillon introduced his work on two cucurbit species: bitter gourd (Momordica charantia) and tropical pumpkin (Cucurbita moschata).

"Breeding effort has resulted in development of bitter gourd breeding lines resistant to powdery mildew caused by Podosphaera xanthii and Begomovirus," he said, while the Center’s tropical pumpkin breeding program focuses on development of pumpkin lines resistant to multiple viruses, including Squash Leaf Curl China virus, Squash Leaf Curl Philippines viruses, and Tomato Leaf Curl New Delhi virus. "Predominantly gynoecious lines of bitter gourd have also been developed and shared," Dr. Narinder said.

The delegation got a chance to inspect the aforementioned bitter gourds in the field – along with hundreds more from throughout the region – on the final day of ACRT. (see below)

Meanwhile, Indian Agricultural Research Institute Advanced Centre for Plant Virology's Dr. Bikash Mandal intrigued participants with details on his work in developing a CG-MMV genome-based expression vector for the production of foreign protein in plant systems.

His talk was on 'Viruses Affecting Cucurbit Cultivation in India', and he explained that, "Several virus species in the genera of Begomovirus, Cucumovirus, Ilarvirus, Potyvirus, Tobamovirus and Tobacco ringspot virus-W, watermelon mosaic virus and zucchini yellow mosaic virus commonly occur and are associated with motting or mosaic disease in various cucurbits."

Begomovirus and Tospovirus emerged as serious problems for Indian cucurbits "since 1980s and 1990s, respectively ... Begomoviruses are transmitted by whitefly (Bemisia tabaci)," he said, which prefer many cucurbits as breeding hosts. As a result, Begomovirus breaks out rapidly." What do cucurbit breeders look for? "Yellow spots or patches, curling and distortion of leaves are common symptoms," he said.

Dr. D. K. Singh, Professor of Vegetable Science at India's G. B. Pant University of Agriculture and Technology, has developed 18 varieties of cucurbitaceous vegetable crops. In his talk on 'Cucurbits Breeding in India', he noted that the cucurbitaceous family, which is found in tropical, subtropical, desert, and temperate regions. Cucumber, he said, originated in India, while wax gourd (Benincasa hispida) "is from Southeast Asia."

The professor said intensive breeding efforts have paid off, "particularly with Cucumber, Bottle gourd, Bitter gourd, Luffa and Melons." Numerous new cultivars provide diverse nutritional value, multiple disease resistance, and extended shelf life. Professor Singh also emphasized the importance of Pc and F gene for exploitation in breeding program for the development of parthenocarpic and gynoecious cultivars/hybrids in cucurbitaceous vegetable crops.

From the ICAR-Indian Institute of Horticultural Research, Dr. E. Sreenivasa Rao discussed 'Watermelon and Melon Improvement in the Context of Emerging Challenges and Opportunities for Public Private Partnership'.

He revealed that his institute has "over 600 accessions of watermelon and 400 of muskmelon," among them several popular varieties, including "a triple disease resistant watermelon variety, Arka Manik, which has been adopted in several South Asian nations."

Dr. Rao said future research "should concentrate on resis-
tance to watermelon bud necrosis disease, Fusarium wilt and Gummy stem blight (GSB) in watermelon and resistance to Gummy stem blight, long shelf life and novel taste in melons, featuring spritely acid-sugar blends. "Alternatives to hand pollination for polyhouse cultivation of melons is another challenge needing attention," Chia Tai’s seed business research manager Dr. John R. Sheedy revealed some valuable market insights in his presentation on 'Perspectives from Chia Tai' with respect to cucurbits, including 'Challenges and Prospects in South and South-East Asia'. On the financial side, Chia Tai estimates the total value annually of commercial seed production of watermelon, gourds, cucumber, melon and pumpkin in the South and South-east Asia regions at "a minimum of US$270M. "Several cucurbit genomes," he said, "have now been sequenced, and other ‘omics’ technologies advanced in precision and throughput." These, he affirmed, will be "applied to develop and realize innovative cucurbit breeding objectives."

In a final note on gourds, Noble Seeds' research director Dr. Gopalkrishna Hegde offered his views on 'Future Prospects of Cucurbit Crops in India', noting that consumption and area devoted to planting of Bitter Gourd is "increasing in India because of perceived health benefits," notably its anti-diabetic effect in non-insulin dependent Diabetes mellitus. He cited three major market segments: Spiny long, Spiny/smooth medium and Spiny short, adding that "the value composition of these segments are Spiny long, 42 percent; Spiny/smooth medium, 38 percent; and Spiny short, 20 percent."

He said intensive cultivation and changing climatic factors, especially warming in India, are increasing disease pressure, with Leaf Curl virus spreading rapidly.

There is a need for multiple disease resistant hybrids for open field cultivation and use of Molecular markers are not exploited fully in India in Cucurbits.

Break-out sessions on July 20 facilitated an opportunity for four groups to pave the way for future collaborations to tackle hot issues, especially with respect to begomoviruses, tospoviruses, diagnostic and quarantine matters.

In between sessions, participants reviewed and rated several cucurbit project posters by KU students. The most favored poster was one by Anyamanee Auvuchanon, Suwichaya Sayanathsamit and Surapong Dumrongkittikule of KU's Faculty of Agriculture, Kamphaeng Saen. Their trials crossing commercial and landrace pumpkin cultivars yielded promising F2 hybrids with high beta-carotene content.

In addition, there were a few presentations to promote collaboration with state research institutions in Thailand. Dr. Buncha Chinnasri gave a presentation on Kasetsart University, which is the oldest agriculture research institution in the kingdom and has grown to be the largest Thai university as measured by student enrollment.

Professor Emeritus Dr. Morakot Tanticharoen, from Thailand’s National Science and Technology Development Agency (BIO-TEC), gave a talk on her agency’s collaborative opportunities with seed clusters in Thailand.

On the third and final day of ACRT, the APSA secretariat led an excursion to Kasetsart University’s Kamphaeng Saen Campus for an inspection of Dr. Narinder Dhillon and his World Vegetable Center team’s Bitter Gourd field trials.

The plot, which showcased hundreds of genetically-improved bitter gourd lines, F1 hybrids and products of recurrent selection from throughout the region, was a treat for breeders, many of whom stayed on longer for closer inspection.

The final agenda item was a visit to KU’s Tropical Vegetable Research Center nearby, which stores nearly 13,000 accessions of 34 crops.

Be sure to check apsaseed.org for more information about collaboration and events in Asian quality seed and crop R&D.
Fields of Gourd

Full gallery of the entire event can be found online at apsaseed.org/events/ACRT/
2018.10.23.(Tue)~2018.10.26.(Fri)
K-Seed Valley, Gimje, KOREA

New varieties evaluation in demonstration fields and greenhouses
Business programs for international seed trade
Tour programs for Korea seed industry and traditional culture

Organized by: Korea Seed Expo Organizing Committee
Sponsored by: Ministry of Agriculture, Food and Rural Affairs
Supports by: Ministry of Trade, Industry and Energy
Strengthening Our Roots

Thailand’s Department of Agriculture Extension is Works Hard for Farmers’ Welfare

In our beloved industry no shortage of praise is heard for farmers, on whom all depend for multiplying seed stocks, growing crops and thus ensuring global food security and economic sustainability. According to a recent estimate by Asian Development Bank, incomes of more than 2.2 billion people in Asia alone depend on agriculture.

Yet those in this vital sector face Herculean challenges as arable land, eaten by urban sprawl, grows sparser. Society meanwhile ages, and youth flee the farm for cities where they hope to evade poverty.

Who, then, will tend the crops?

Thailand’s Ministry of Agriculture and Cooperatives is alert to these issues, with a number of programs aimed at wealth creation for farmers.

Asian Seed recently sat down with two of those overseeing implementation at the Department of Agriculture Extension (DOAE), the department concerned with rural communities and farm welfare. In this issue, we feature DOAE Director-General Somchai Charnnarongkul, who discusses his experience and the DOAE’s core welfare work via its ‘Big Farm’ initiative. The next installment features DOAE Farmer Development Division director Ms. Panee Boonyaguakul, who heads the Young Smart Farmer program.

SOMETHING FROM NOTHING

Mr. Somchai has spent 37 years in the civil service, with both the Department of Agriculture (DOA) and the Department of Agriculture Extension, where he is now director-general. 20 percent working with farmers and 80 percent conducting research.”

He grew up on his parents’ citrus plantation in Bang Mod, Eastern Bangkok, and has pursued agriculture since. After obtaining a B.S. in Plant Pathology at Kasetsart University, he did three years’ private sector work, gaining valuable international trade experience with agrofood conglomerate CP Inter Trade before returning to KU for his Master’s in Agricultural Extension.

Regarding inspiration, Mr. Somchai cited his late KU mentor, Prof. Dr. Rapee Sagarik, KU president from 1975 till 1979. “I gained so much from Dr. Rapee. He is famous for domesticating and commercializing wild orchids. ‘Por’ (‘father’ in English), as we all called him, showed us how to make something of value from nothing -- in this case, an ignored wild flower in the jungle.”

Driven by his passion for varietal development and economics, Dr. Rapee set the groundwork for what would ultimately become an extremely valuable product, domestically and internationally, Mr. Somchai said, adding that a good variety is everything -- something he learned during his first official post as Subject Matters Specialist at Nakhon Sawan’s provincial agricultural extension office some 200 kilometers north of Bangkok.

“The rice, cassava, soy bean, maize and cotton farmers I worked with depended too much on private sector middlemen for providing them with good seeds and inputs. So they were often taken advantage of . . .”

– Somchai Charnnarongkul
DG, Thailand DOAE

The DOAE is one of 15 Departments under the Ministry of Agriculture and Cooperatives, functioning as a direct bridge between government and farmers.

“About 50 percent of our work at the DOAE is interacting with farmers,” explained Mr. Somchai, “the other 50 percent is technical. The DOA, by comparison, is about to KU for his Master’s in Agricultural Extension.

Regarding inspiration, Mr. Somchai cited his late KU mentor, Prof. Dr. Rapee Sagarik, KU president from 1975 till 1979.

“I gained so much from Dr. Rapee. He is famous for domesticating and commercializing wild orchids. ‘Por’ (‘father’ in English), as we all called

Somchai pins this disadvantage down to a lack of knowledge, ability or willingness to develop good varieties independently.

He thus insists technology – and access to it – is a key factor to help farmers. He recalls, for example, how quickly one important cash crop rose -- and waned:

“The cotton industry used to thrive in Thailand,
Somchai spends much of his time on the road, visiting farmers in the field and at the DOAE's Agriculture Learning Centers around the country.

and at one time was a valuable staple crop for us. But this plant is susceptible to new pests and diseases. Our farmers were unable to adapt. They tried pesticides but the pests soon became resistant and we faced other problems that arose from such heavy reliance on toxic chemicals.

"It wasn’t sustainable, and the industry eventually died out as we couldn’t compete with other countries who developed new varieties and adopted biotechnology," he said, adding that GMO adoption in Thailand lags owing to legal barriers and perceptions.

OLD WAYS, NEW SOLUTIONS

Mr. Somchai dilated on another persistent farming challenge -- contentedness with familiarity:

"In Thailand the climate has long been favorable for farming and we haven’t been faced with many catastrophes. While this has enabled our country to thrive in agriculture and become an important food basket for the world, at the same time, we haven’t learned to become as resilient as other countries which are constantly forced to adapt. When faced with uncertainty, many farmers struggle to adapt, especially those who insist on doing things the way they’ve always been done."

To overcome this tendency, Director-General Somchai and the DOAE, with Ministry of Agriculture and Cooperatives endorsement, are pushing programs and initiatives to help Thai farmers deal with the problems of adaptation.

Significant among these are the Large Collaborative Farming Project (Big Farm) and the Agricultural Learning Center (ALC), set up together as the main mechanism for driving participation by all parties, and for network management based on resources, problems and real needs of farmers in a given area. The ALC is also a community learning center for appropriate agricultural commodities production and a service center for information exchange in the community.

He says the DOAE coordinates and integrates resources and expertise among private and public sectors, including all departments under the Ministry of Agriculture and Cooperatives and other relevant ministries.

"The idea is for farmers in each district to organize themselves into one 'big farm'," he said, "as opposed to many small farms, similar to the concept of a cooperative."

"We’ve established the ALC, which is actively being rolled out in all of the Kingdom’s 882 districts -- one in each district, 77 provinces, nationwide. We organize and coordinate capacity-building and technology transfer initiatives with farmers. These include workshops, seminars, demonstrations and networking events. So each farmer can apply learned knowledge and technology appropriately," he said.

With the underlying goal of raising living standards for Thailand’s rural base, five key objectives are emphasized at Big Farm:

1. Reducing costs
2. Increasing yields
3. Standardizing production
4. Farm management skills
5. Developing marketing networks

He says the four key factors for achieving these objectives are:

1. Planning and goal setting (the Individual Farm Production Plan or IFPP)
2. Having access to knowledge and innovation
3. Having a vested interest as a ‘shareholder of nature’, the latter including climate, soil, environment and inputs
4. Having an open mind

Director-General Somchai likened the farmer base to the roots of a tree -- the tree of Thailand:

"A healthy tree needs a strong network of roots," he says. "If the roots are not strong, the tree cannot thrive and bloom flowers, or yield fruits.

"We are strengthening these roots."
Meet a professional Filipina seed trader who loves oil painting & vegetarian food: Olivia Wong, General Manager of Haverson Enterprises, has been with APSA since the beginning and recently sat down with Asian Seed for a heart-to-heart.

Born and raised in Hong Kong, Olivia Wong was her parents' lone daughter, with two elder and two younger brothers. Her father owned a factory producing Hong Kong's well-known YKK zippers. It was "a traditional Chinese family."

Though "a bit spoiled, and a show off" when young, Olivia learned from her father: "My father is a very smart businessman. He started everything from scratch despite only graduating from third grade.

"He taught me always to put myself in the other person's mind, to think differently."

Forty years ago, Olivia went to study in the Philippines, then the only country in this region where people commonly...
spoke English. She found herself trying to adapt to a life-style totally at odds with Hong Kong’s speedy environment.

"My best friend Su-vannnee Prathuangsit (from Lion Seeds in Thailand) told me to think in a local way, not to think my own way. I agreed with her. You need to think in a different angle," she said.

Oliva reflected on business ventures in the Philippines and beyond.

"The Philippines is a free trade country and I believe there is room for everyone. Trust is the most important thing. It takes time to gain farmers' trust. I keep telling my men, 'No fooling around. After you've sold the seeds, visit farmers, check their production and progress, so that they feel confident using our brand.'"

Olivia has no background in agriculture. Like her father, she started from scratch.

It was after getting married. Her husband, as the only son, took over his parents' family business. So she got into seed owing to friendship with a family of seed traders, setting up office in Manila’s famous Divisoria commercial hub (close to Chinatown) where it remains, with a branch office in Northern Luzon’s Baguio City.

"In my life," she observes, "I met good friends who taught me how to run a business and how to be a good leader – to listen first before delivering a reply."

Olivia was first to introduce green Bok Choy to the Philippines, after a survey of South Korea. "I wanted to introduce something high value to growers," she explained, "because if they earn money, they continue growing." Nowadays green Bok Choy is quite common there.

In 1998, Olivia started export of organic fertilizer. The organic concept was still very new and she was able to export widely – to Indonesia, Spain, Africa, China, India, Pakistan, Thailand, Malaysia, Korea and Japan.

"I'm a vegetarian," she said. "I love trying something new — something unique and cute."

As for the future of the business, Olivia said it depends on her children: "I have no intention of forcing them to take over. They may earn more; or, even if they earn less, as long as they are happy with what they are doing, and spend time with family. I have an open mind...."

Olivia is one of a handful of active APSA members who attended the association's Foundation Meeting in 1994, in Chiang Mai, Thailand. Her company, Haverson Enterprises, is also an active member of the Philippine Seed Industry Association. Being a member of these associations has brought great benefit to her company, especially with respect to facilitating trade.

"I trust that if you work hard," she says of her outlook, "that there is always a way to do good, honest business." With such an outlook she has always found "good seed suppliers."

Olivia shared her humble views on women in society and family life.

"In the past, women were like second-class citizens," she avers. "We had to obey our family -- and the boss – in everything; now most have good education, so we see more working women in families."

Olivia thinks women can be in business, have roles in society and have families: "There is no need to act like a man."

In fact, she loves being a good mom and grandma as well as a good business woman: "I like cooking. I buy food in four different places to make sure I get the best ingredients."

She has also a passion for art, studies oil painting, spends free time with family in New Zealand and is the very model of a modern Asian wife, mother, grandmother – and businesswoman. 🌸
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The 2019 Asian Seed Congress is planned to be held in the Malaysian capital from 25-29 November, 2019. The plans were confirmed by executives from the Asia and Pacific Seed Association (APSA) and the National Seed Association of Malaysia (NSAM) during a meeting on June 22 in Kuala Lumpur.

At the meeting, attended by key representatives from both associations, APSA President, Ms Brenda Dossey and NSAM President, Dr. Uma Rani Sinniah, signed a National Organizing Committee (NOC) agreement to confirm cooperation to co-organize the largest regional seed industry event next year, which will be the 26th edition.

Also attending the meeting was Research Officer, Muhammad Najib Othman Ghani. This will be the second time Kuala Lumpur hosts the ASC. The first time was in 2006.

Malaysia Durian Fiesta

MALAYSIA IS CAMPAIGNING to promote fresh, whole-fruit premium durians to consumers in Thailand – itself a major producer of the strongly aromatic but tasty fruit.

The maiden event, held 1st June at Malaysia's embassy in Bangkok, was entitled “Malaysian Durian Fiesta 2018 — Inaugural Malaysian Whole Fresh Fruit Durian Promotion In Thailand”. Special emphasis was placed on the premium “Musang King” variety, Malaysia’s most popular.

Musang King is called ‘Mao Shang Wang’ in Chinese and ‘Cat Mountain King’ in English.

The event inaugurates export of whole fresh durians from Malaysia to Thailand, said. Malaysian durian imports to Thailand were previously restricted, in 2011, to pulp, frozen and chilled forms.

The ambassador commended the strong agricultural partnership existing between Thailand and Malaysia. He said some horticultural produce – aquatic plants, chrysanthemums, coconuts, and spider lilies – are now also admitted to Thai markets.

Mohammad Ezri Bin Shamuddin, Agriculture Counsellor attached to the Malaysian Embassy in Bangkok, told Asian Seed what makes the Musang King durian unique: “Musang King is famous for its golden yellow flesh and bittersweet taste. This particular stock of durian is enjoying an all-time high demand....” (Full story on apsaseed.org/News/)

Enza Zaden opens SEA HQ in Penang

The Netherlands’ Enza Zaden recently announced the opening of its US$12M Southeast Asian regional headquarters and logistics hub at the Penang Science Park in Batu Kawan on peninsular Malaysia’s northwest coast.

The 80-year-old family run business has 45 subsidiaries on six continents and breeds more than thirty vegetable crops, including: lettuce, sweet peppers, tomatoes, cucumbers and onions to bitter gourds and bird’s eye chilies.

Enza Zaden Asia is responsible for developing vegetable varieties and distribution throughout Southeast Asia. The logistics center in Penang has automated machine seed packing and a 4000 cubic meter cold room.

The opening ceremony was 30 March.
The July 18 meeting identified potential collaboration areas. Three are ISTA-accredited: East West Seeds, Chia Tai Seeds and the Phitsanuloke Seed Research and Development Center.

The meeting recommended training courses on testing and sampling, and streamlining import regulations. DOA Deputy-Director General Warawut Chootummatouch promised to prioritize the suggestions, saying they are in line with Thailand’s Seed Hub policy “and there’s nothing that can’t be done.” It was also proposed ISTA experts lead more courses in Thailand.

APSA will continue public sector engagement at the 4th Expert Consultation on Phytopharmaceutical Measures in Asia-Pacific late August. See more on apsaseed.org/events

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