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THE OFFICIAL PUBLICATION OF THE ASIA & PACIFIC SEED ASSOCIATION

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New tomato, pepper and bitter gourd lines demonstrated.

New Zealand Seed Report

Trends over five years of seed trade in 'Kiwi' country.

APSA's First Midterms

Seed industry looks to strengthen IPR, PVP in Asia

Seed For Thought

From Brazil to India, APSA's Jack Metzelaar on breeding, market wisdom.

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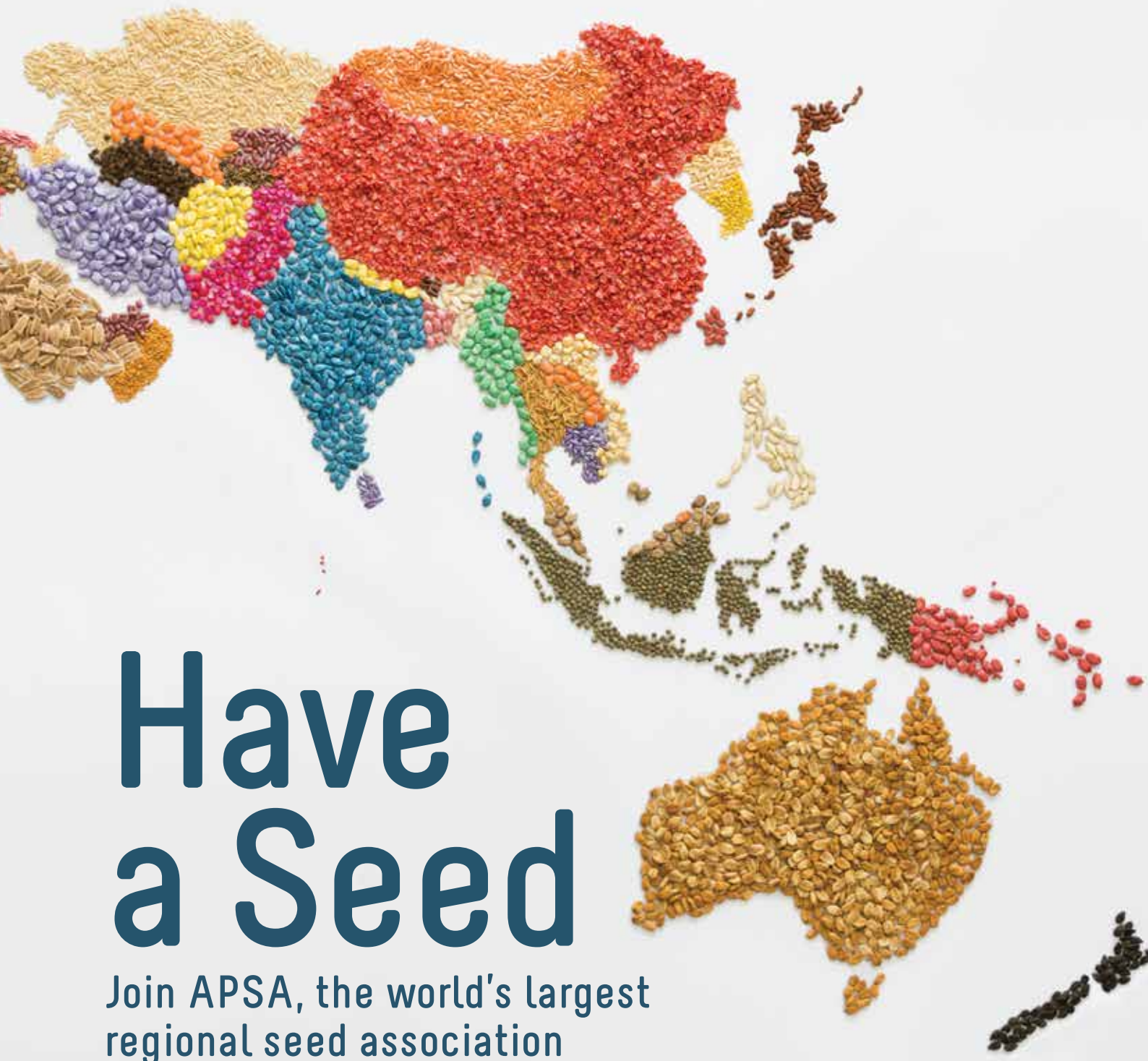
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ASIAN SEED

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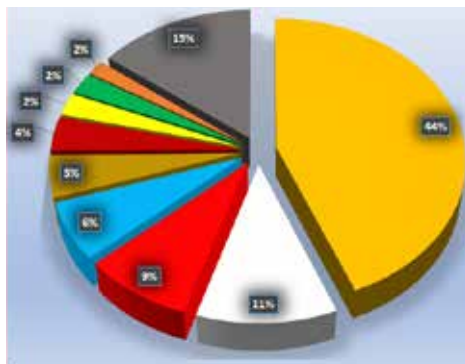
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Jack Metzelaar reflects on valuable breeding, marketing lessons he picked up, from Brazil to India.

Looking Back, Moving Forward

During the recent, and first-ever, APSA Midterm meeting (see pp 14–18), APSA Communications Officer Steven Layne had a chance to sit down with APSA President Ms Brenda Dossey and APSA Executive Director Mrs Heidi Gallant to chat about the many improvements made to APSA in the past year and what they have lined-up for the future.

Steven Layne: You began your leadership roles with APSA in 2016, is that correct?

Brenda Dossey: Yes. I started my term as president in November 2016 but I already had been serving on the APSA EC since November 2013. I served as vice president since November 2014. Prior to serving on the APSA EC, I was the chair of the Special Interest Group for Forage and Amenity Turf for many years.

Heidi Gallant: I became the new Executive Director of APSA on June 1, 2016. APSA experienced a period without a director in place from June 2015 until I came on board.

I know you are both very excited about all of the improvements made to APSA in such a short time.

I was very lucky to have hired you at just the right time! One of your first duties was to improve APSA's online presence. The biggest and only online tool we had was the website, which was extremely outdated and never updated. You helped me with the implementation and design of not only a new website, but a membership management

database with both front end, which is for members, and back end, which is for secretariat administration. The new site is beautiful and was launched in January 2017, along with the new directory and database. Members can now find each other between seed congresses for business opportunities all year.

BD: I would also like to add that APSA had no true social media presence in the past and we now have regular news and activity on a variety of social media platforms including LinkedIn, Facebook, WeChat and Twitter. The print magazine is also still being published and members often tell me how much they enjoy reading it when it arrives on their desk every couple of months.

Thanks to you both! Now let's talk about other new people and things at the secretariat.

BD: I am very excited when I walk into the APSA office these days and see the happy faces of the staff and look at the great new workspace that has been created. The office has been cleaned-out and refreshed with a bit of paint, and the new team actually did this work themselves to create a more welcoming space for members to visit. I encourage you to visit if you are in Bangkok and get to know your APSA Secretariat.

HG: We shuffled positions around a bit and created three new roles at APSA in 2017: the Business Development Officer, the Membership Programs Officer and the Deputy Director. The team has been trained on their specific duties but also cross-trained to

cover each other's roles. This is important with a small team so that member services never are delayed due to the annual leave or sickness of any one employee. The Deputy Director was a new idea for APSA, but, with my departure at the end of June, it was a great call to have a manager in place and never have to go without secretariat leadership.

Well, since you brought it up, what does Heidi leaving mean for APSA and its members?

BD: As Heidi said, APSA had been without a director for some time before she joined us. In her two years of service, Heidi implemented an extensive set of standard operating procedures needed for good NGO governance. She shared her knowledge of NGO management with the Executive Committee so we could continue to effectively implement the new APSA Constitution that was approved in Macau in 2014.

She leaves us in a better position than when she joined us. We are now in a healthy, safe place, with an amazing secretariat team to work with. The long process of achieving international status in Thailand – as per the direction of APSA's members, who want us registered as an international association and who also want us to remain in Thailand – continues, as we take steps to follow through on that objective. We are getting closer every day.

Lastly, as Heidi mentioned earlier, we have recently hired Dr. May Chodchoey as Deputy Director, so we will not revert to being a "director-less" association";

instead, Dr. May will be able to step in as Acting Director when Heidi completes her service at the end of June.

HG: I am really lucky to have had the chance to work for APSA. Though some of the challenges were tougher than I expected, they prepared me well to continue my career in NGO management.

What is the greatest thing you have achieved together during your time as the leadership team for APSA?

BD: If I had to choose just one thing, it would have to be improving transparency for members about how their association works. We know much more about the workings of the association and the laws of Thailand now, and have shared these findings with the members as we move forward.

HG: I agree. It is a great challenge to work across so many culture and language barriers, but we have spent a lot of time communicating with members during this period. Members should also feel like they can ask questions and I hope they continue to do so. The spirit of a membership association is members working together to achieve common goals. Members should always keep this objective in mind when working with APSA.

BD: I'd like to add a second one in here. It's just starting to gain traction, but we also started featuring Women

in Seed articles in the *Asian Seed Magazine* in 2016. Every issue we choose a well-respected seedswoman and we tell her story. I think this movement is really important to encourage young women to get involved in the seed industry and to understand that they are not alone in their challenges.

I hope members will heed your advice about being part of a membership association. Heidi, I also know that our Membership Programs Officer, Kuna, loves doing the Women in Seed interviews. The stories are really motivational.

My final question is personal to each of you: what has been your favorite part about serving the association?

HG: For me it's been learning about the seed industry. I'm hooked! It was fascinating to find out about new breeding technologies, to work on harmonizing phytosanitary measures in our region, to represent this industry – and Asia – in international meetings with seed industry and government bodies, and to have the chance to meet some amazing seed people who helped me grow professionally over the past two years. I have to say thank you to all of you, and also to Brenda here, for this opportunity and the amazing support during my time with APSA.

BD: My APSA tenure has been a very challenging one – and



TIMELESS: Brenda Dossey and Heidi Gallant (above) and the APSA Secretariat (below) pose at the recent midterm meetings.



the challenges are not over yet – but I would have to say my favorite part of serving the association has been getting to know my APSA colleagues and working with them to meet these challenges. The support and advice from APSA past-presidents, former Executive Committee members, key

stakeholders and APSA members have also been most welcome and helpful. Like Heidi, when my term is over, I would like to say that I leave APSA in a better place than I found it – well positioned to look after the needs of members and to give them a voice in the international seed industry. 🌱

New Online Biotech Crop Database Launched

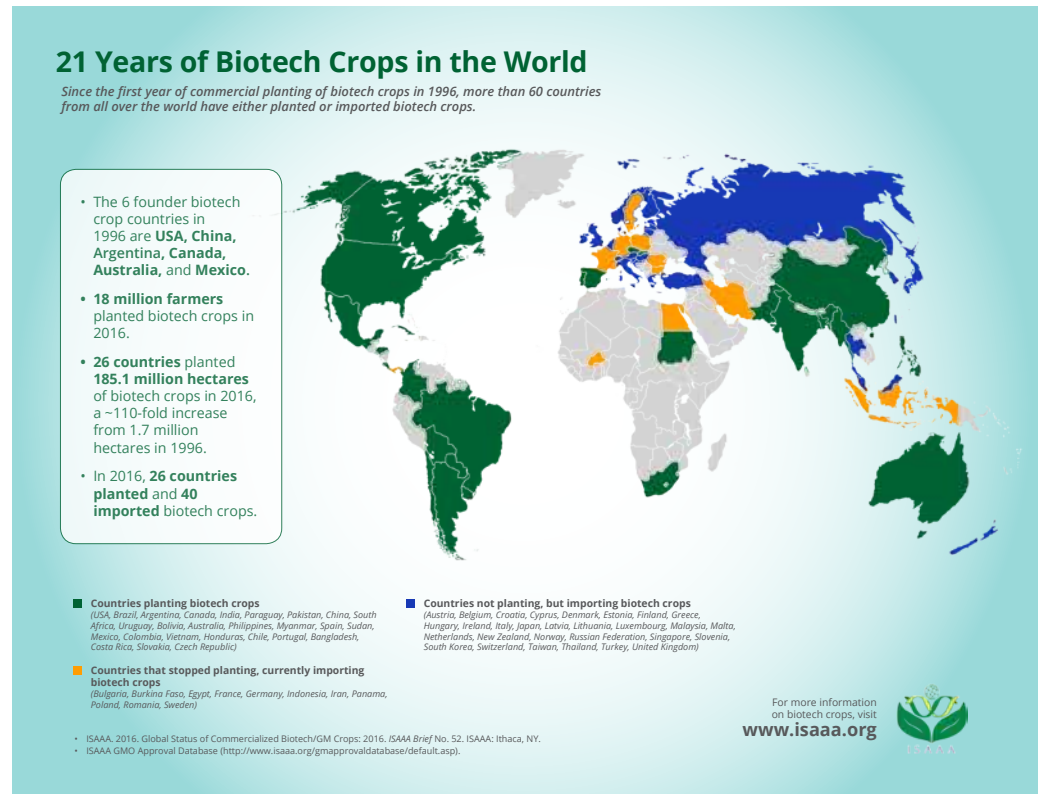
Addressing the need for up-to-date, accurate information on the growing number of biotech crops, the International Service for the Acquisition of Agri-Biotech Applications (ISAAA) has established an easy-to-use online GM-Approval Database.

Significant planting of biotech crops began in 1996, with 1.7 million hectares. By 2016, the number of hectares stood at 185.1 million -- a 110-fold increase in the global adoption rate over a period of just 21 years, with double-digit growth rates during 12 of those years. As of April 2018, 39 countries and the European Union issued 4,233 regulatory approvals for 502 GM 'events' from 29 crops.

"The database contains vital information about every event approved," said ISAAA Global Knowledge Center on Crop Biotechnology director Dr. Rhodora R. Aldemita. "Among these are the genes inserted or silenced to confer traits to each event. Information on these genes [and] their roles in certain crops could be the basis for research studies on [a specific] gene, related genes, or their orthologs in other crops. With the availability of gene information, there are endless possibilities to improve other crops still needing improvement."

Information on these events might also afford researchers information on which GM crops and events to develop.

The non-profit ISAAA, which is based in the Philippines and was founded by Dr. Clive James, has been a leading source of credible information on



This infographic by ISAAA highlights global trends with biotech crops. The online database is a powerful tool for researchers to search for vital information about every GM 'event' approved.

biotech crops since their introduction.

Although the ISAAA database contains no information on the Intellectual Property Rights (IPR) or Plant Varietal Protection (PVP) status of genes, events, or transformation methods, it does have links to websites with more information -- that may include an event's IPR/PVP status and information on how to contact for permissions. It is thus useful in advancing the accelerating biotech revolution in agriculture.

About half of world GM hectareage is planted to soybean. Moreover, 78% of all soybean, 64% of cotton, 33% of maize and 24% of canola were biotech in 2016, with some 41% of all GM crops planted to those with 'stacked traits' (events with any combination of two or more GM traits). Herbicide-tolerant soy-

bean, canola, maize, alfalfa, and cotton account for 47% of global GM hectareage.

"During the first decade of commercialization of GM crops (1992-2003)," explained Dr. Aldemita, "only five countries from Asia had approvals: China, Japan, Philippines, South Korea, and Chinese Taipei. The majority of these approvals came in the waning moments of the first decade, which was when countries have drafted their regulatory law for use, planting, and consumption of GM crops.

"Starting 2004, the number of Asian countries adopting GM crops increased to 14 countries, with Vietnam and Singapore being the most recent additions. The regulatory laws of the first five countries in Asia, especially those of the Philippines, served as templates for other countries -- enabling

them to draft their own regulatory laws."

"As of now, our database only includes information on GM crops developed using traditional methods," said Dr. Aldemita. "However, we look forward to record information on crops developed through new breeding technologies."

New technologies for targeted gene-editing, such as Clustered Regularly Inter-Spaced Palindromic Repeats (CRISPR-Cas9), the Transcription Activator-Like Effector Nucleases (TALENs) and the Zinc-Finger Nucleases (ZFN), which all have DNA cleaving and DNA binding domains, will likely result in even greater need to access information -- another reason why ISAAA's GM Approval Database is so important.

For Inquiries, please email: gmapproval@isaaa.org

Croker Heads Advanta Australia

As of May 1, Barry Croker resumed his former post as Pacific Seeds' managing director following a five-year stint as global head of supply chain management with agriculture seed leader Advanta Seeds.

Headquartered in Toowoomba, Queensland, Pacific Seeds is a brand of Advanta Seeds – a UPL Company headquartered in Dubai.

Retiring Advanta Australia managing director Nick Gardner – a past president of APSA – said Barry brings the right balance of commercial focus, innovative thinking, strategic intelligence and leadership to keep its people at the forefront within the agricultural industry.

“Advanta Seeds is committed to being a leader in

driving sustained growth through world-class plant genetics and value-adding within the agricultural and food industries,” said Mr Gardner.

Mr. Croker brings to the role nearly 25 years of firsthand experience working for Advanta Seeds both domestically and internationally.

Mr. Croker said looking outside traditional business and business models for opportunities will be the key to growth.

“The agricultural economy is changing and consolidating, which will require different skill sets and different mindsets in order to flourish. We intend to be a driver of change, not a passenger. Our proven track record of investing in our people, facilities and



technology to constantly improve product standards demonstrates this,” said Mr. Croker.

“Our response to the rapidly changing landscape will be built around innovation, delivering more efficient and effective solutions, engagement of our people and our global network.

“The company has changed a lot in the past

five years. In many ways it is like walking into a new business, but I’m looking forward to the learning curve and the exciting opportunities that lie ahead.”

Current managing director Nick Gardner will move into a global projects manager role, working across a range of projects until his official retirement in December this year (2018).



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Update: 2019 Access to Seeds Index

As reported recently in *Asian Seed* (Volume 23, Issue 6, page 34) dozens of APSA members will be assessed in the next Access to Seeds Index. The 2019 index, which will be published towards the end of this year, is funded by the Bill & Melinda Gates Foundation and the government of the Netherlands. To find out what's new, *Asian Seed* reached out to Coosje Hoogendoorn, who leads the research process for South and South East Asia at the Access to Seeds Foundation.

AS: What's new since last update? Aside from addition of countries and companies, are there any other specific revisions to the methodologies or approach worth highlighting?

CH: First of all, we see a growing attention for enabling smallholder farmers to cope with the effects of climate change. As announced at the "One Planet Summit" in Paris on 12 December 2017, the European Union together with the Bill & Melinda Gates Foundation have pledged more than €500 million to develop tools and technologies to help the world's poorest farmers better adapt to

increasingly challenging growing conditions brought about by climate change.

This makes the Index very timely because obviously seed companies play a key role in delivering new tools and technologies in the hands of smallholder farmers. Findings presented by the Index feed the dialogue on how the seed industry can support a growing food production in the world while remaining within planetary boundaries and reduce climate change impact. We are clearly linking company actions for smallholder farmers with the UN's global Sustainable Development Goals issues such as climate change,

nutrition, agro-biodiversity, sustainable intensification, and women farmers.

The 2016 Index underlined the crucial role regional seed companies play in addressing these issues. Therefore we doubled the number of companies assessed from 25 to 60 in total. This allows us to include more regionally-operating companies in West & Central Africa, Eastern & Southern Africa as well as South and Southeast Asia.

With respect to data collection for the new index, how has progress been thus far: have companies been cooperative and transparent?

We are in the middle of data collection and are in touch with virtually all companies selected for the SSEA regional Index. Some of them were already involved in the 2016 Index. Not surprisingly those companies that are new to the Index in general have more questions and need time to build up an understanding. For each company, two analysts from the Access to Seeds Index team are available for specific questions and other support until the moment the data submission period closes in June.

Compared to smaller companies, larger companies with more resources may be more capable of meeting criteria, supplying information, even if only for show considering that much of the data is supplied voluntarily. That said, how can Access to Seeds ensure objectivity and accuracy of the results?

One of the findings of the 2016 Index was that smaller companies based in the region are almost by default more geared towards the market of smallholder farmers, which usually gives them a head start over the multinationals from the Access to Seeds Index point of view. The Index also gives more weight to performance than to commitment, i.e. to actions over policy documents, to quality over quantity. Also, we can scale for size and presence to account for company size. In this way



A young, Indian rice seed farmer outside Agra excited for harvest. Photo: Steven Layne / APSA



Coosje Hoogendoorn of the Access to Seeds Foundation

we, and the experts that advise us, are confident we have an adequate level playing field.

We provide the companies with a platform to show their presence, portfolio and performance. This information is used by other companies, research agencies or governments looking for companies to partner with. So it is in their own interest that companies provide us with correct information. Although we cannot do checks on the ground, we do verify the information through cross checking and analysis. In case of doubt, we consult experts.

From the work done so far, what are some of the challenges and advantages you think Southeast and South Asia face compared to other regions?

Our landscaping studies show that the enabling environment for the seed industry in South and Southeast Asia is overall more advanced than in Sub-Saharan Africa.

On the other end, the positive effect of SAARC and ASEAN on stimulating cross border seed trade remains unclear, although potentially this could be of great value to the industry. We have identified many seed companies in the region, but as yet still have to learn a lot about the industry's attention for small-holder farmers.

More information can be found at accesstoseeds.org.

Dr. Hoogendoorn can be contacted via choogendoorn@accesstoseeds.org

Regional Index for South & Southeast Asia

	Company	Country
1	Acsean HyVeg	IND
2	Advanta	ARE
3	Bayer	DEU
4	Bioseed	IND
5	BRAC	BGD
6	Charoen Pokphand	THA
7	DowDuPont	USA
8	East-West Seed	THA
9	Groupe Limagrain	FRA
10	Kalash Seeds	IND
11	Known-You Seed	TWN
12	Lai Teer Seed	BGD
13	Mahyco	IND
14	Monsanto	USA
15	Namdhari Seeds	IND
16	National Seeds Corporation	IND
17	Nongwoo Bio	KOR
18	Nuziveedu Seeds	IND
19	Punjab Seed Corporation	PAK
20	Rallis/Metahelix	IND
21	Sakata	JPN
22	Syngenta (ChemChina)	CHE
23	Takii	JPN
24	Vinaseed	VNM

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Sowing Quality Over Quantity in Kiwi Country

No less than 1.45 million tonnes of sowing seed worth US\$1.32 billion was traded across New Zealand borders in a recent five-year period, contributing to an annual trade surplus of \$48mn for the South Pacific island nation.

That equates to an average of 24,316 t of seed movements (exports + imports) per month, or 291,801 t /year, making New Zealand's international seed sector worth no less than US\$265mn annually.

During the five-year or 20-quarter focus period of this report – from Q1 of 2013 to Q4 of 2017 – New

Zealand racked up a 240-million-dollar seed trade surplus, calculated from \$782.8mn in exports against \$543.2mn in imports.

This was despite the fact that the country brought in more than five times the bulk of sowing seed it sent out: 217,200 t was exported, whereas 1.24 million t was imported. This is reflected by the relatively-

low average value of imported seed (\$437.4 / t) against high-value exported seed (\$3,604/t).

OUTBOUND

Dominating New Zealand sowing seed exports were forage varieties, representing 66% of all outbound consignments, and 45.3% of the market in terms of monetary value.



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And though horticulture crop seeds – which include vegetable, flower and fruit varieties* – made up about a quarter of the total volume of exports, this category commanded nearly 41% of the outbound market value. Similarly carrying its value-to-volume weight, field crop seed had a 14% share of the market despite making up only 9% of exports.

About half (107,017 t) of all the exported seeds were ryegrass (cat. 120925), generating \$212.4 mn (27 %) for an average tonnage price of \$1,984. Clover seeds (120922) in comparison, were relatively lucrative among the exported forage seeds, with 18,375 t (8.5%) of this type of seed turning over \$85.1 mn (10.9%) at an average price of \$4,629 /t.

A majority of the horticulture crop seeds exported from New Zealand were vegetable varieties (120991), which amounted to 46,810 t in exports worth \$283.7 mn (21.6% volume, 36.2% value) at an average tonnage rate of \$6,059.

Maize seeds were the most popular type of field crop seed for New Zealand exporters, who delivered more than 17,000 t (8%) of this type, valued at \$106.3mn (13.6%) for an average price of \$6,224 /t.

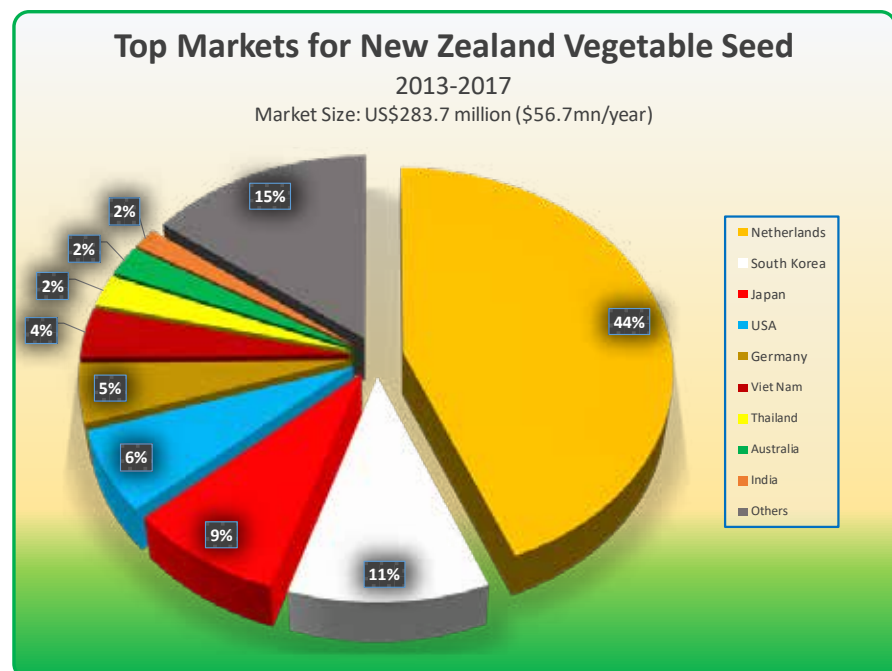
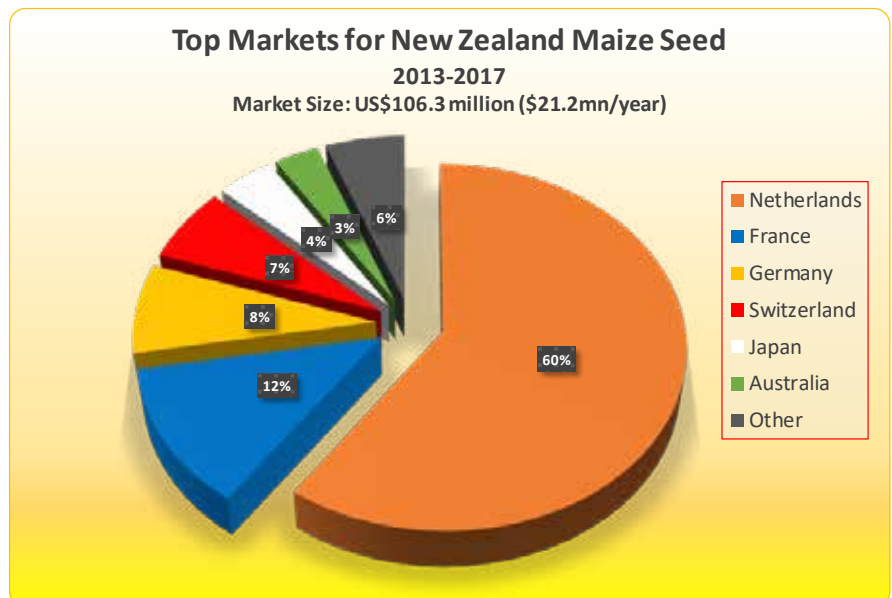
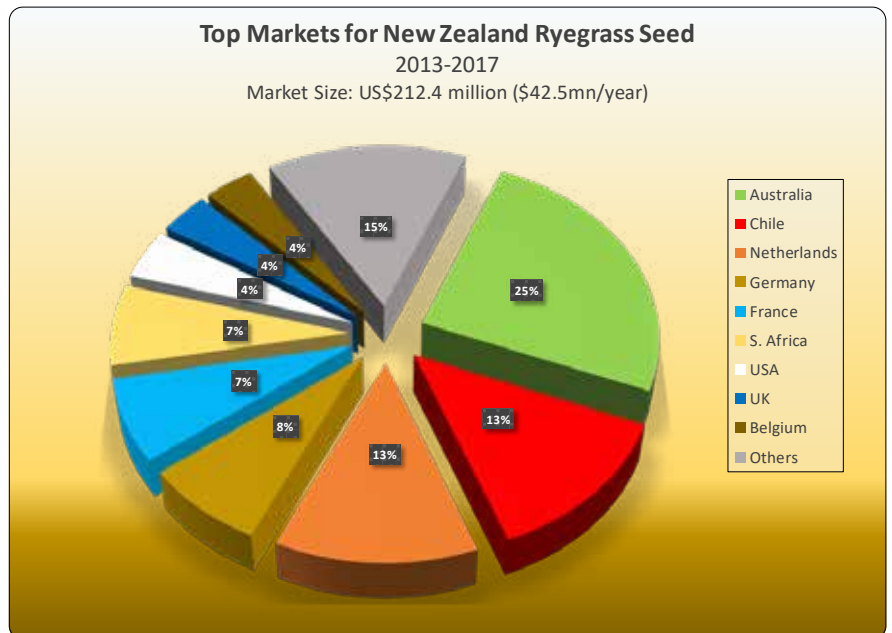
But it was sugar beet seeds (cat. 120910) that churned out the highest premium for seed exporters, even though the amount of seeds exported was relatively insignificant: six tonnes of this type generated about \$160,000 at an average tonnage rate of \$24,937.

Also logging an above-average tonnage rate at low volume, about 171 tonnes of herbaceous flowering plant seeds (120930*) were exported at \$12,117 /t, generating \$2mn.

INBOUND

Sowing seed was imported into New Zealand at an average rate of just \$437 /t. An overwhelming majority of these seeds, or 1.22 million tonnes, just under 99% of the total bulk of all imports, were field crop varieties, which generated \$372mn, representing 68.5% of the total value of imports. Though forage seeds represented only three-quarters of a percent of the total imported tonnage, this type of seed commanded a 12.5% share of the import market in value. Likewise, horticulture crop seeds represented 19% of the total value, despite making up only two-fifths of a percent of the inbound volume.

Non-durum (Meslin) wheat varieties (100191)



The pie graphs show top markets for three types of staple seed from New Zealand.

New Zealand Staple Sowing Seed

Average Export Prices: 2013–2017



dominated seed imports: 939,115 tonnes (75.6 %) of this type of seed, worth \$279mn (51.4%), was imported at an average rate of just \$297/t. Nearly all of it, or 939,006 t (99%), came from Australia, with the rest coming from India, UK, USA and Canada.

Maize seed (100510) was another important bulk seed import category. 175,277 t (14.1%) worth \$55 mn (10%) was brought in at an average price-per-tonne of \$314. The top market-leading suppliers of this staple crop seed were Bulgaria (\$26mn, 47%), USA (\$10mn, 18%), Romania (\$8mn, 14%) and France (\$7mn, 12%). Also contributing significantly to the country's

food security, barley (100310) and grain sorghum (100710) seeds were imported at below-average rates: 91,665 t (7.4 %) of the former cost importers \$23 mn (4.2 %) or \$249 /t, while 16,385 t (1.3%) of the latter cost \$5mn (1%) or \$325 /t.

Underlining New Zealand's strong vegetable seed production sector, a relatively-low amount of this type of staple seed was imported over five years: just 2,159 t, which represents only 0.17% of all seed imports. Nonetheless, this veggie germplasm was valued at \$83mn (15.3% share) or \$38,541 /t, 88 times the mean value of all seed imports.

These veg seeds came mostly from the Netherlands (\$22mn, 27%), France (\$12mn, 14%), the USA (\$9mn, 11%) and Australia (\$8mn, 9%). Japan, China, Chile, India and Italy were also key suppliers of veg seed to New Zealand, with these latter five countries accounting for 24% share of the market.

Even more lucrative for seed importers were herbaceous flowering plants: a mere 25 tonnes of this type of seed generated \$1.8 mn (0.34 %), equating to an impressive, \$72,620 /t. Also relatively expensive were sugar beet seeds, with 133 t costing \$6.3 mn (1.16%) or \$47,368 /t. 🌱

ABOUT THIS REPORT

The analysis and observations in this report are based on international trade data reported by the International Trade Commission, which cites Stats NZ (stats.govt.nz). APSA does not provide any guarantees about the validity or accuracy of the data, tables, charts or analysis, 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.

The vegetable sowing seed (120991) category comprises several sub-categories of specific varieties traded in retail packs: cabbage (1209910001), carrot (1209910009), onion (1209910011), radish (1209910019), tomato (1209910021), silverbeet (1209910029) and varieties not-otherwise-specified (1209910039); in addition to seeds that were not traded in retail packs: cabbage (1209910041), carrot (1209910049), onion (1209910051), radish (1209910059), tomato (1209910061), silverbeet (1209910069), and not otherwise specified (1209910079).

For reasons not immediately clear, certain varieties of vegetable, fruit and flowering crop sowing seeds, were not counted under the broader categories for vegetable (120991) or "herbaceous plants cultivated principally for their flowers, of a kind used for sowing (120931)" – referred to in this report as herbaceous flowering plants – but instead lumped into a general category for "other seeds, fruits and spores (120999)". These include certified marrow-stemmed kale (1209990001) uncertified marrow-stemmed kale (1209990009), non-marrow-stemmed kale (1209990019), lupin (1209990021), swede for seed purposes (1209990029), turnip for seed purposes (1209990031), yarrow (1209990039), flower seeds in retail packs (1209990041), flower seeds not in retail packs (1209990049), tree varieties (1209990051) and not-otherwise-specified (1209990059).

Moreover, some herbaceous veg and spice seed varieties, such as "coriander, neither crushed nor ground" (090921), "Cumin, neither crushed or ground" (090931) and "Juniper berries and seeds of anise, badian, caraway or fennel, neither crushed nor ground" (090961), are counted as "Coffee, tea, maté and spices".

Therefore, this report has combined Categories 120999, 120991, 120931, 090921, 090931 and 090961 to represent a broader horticulture crop seed category. Other broad categories of sowing seed grouped and analyzed in this report are field crops (maize, rough paddy, soya bean, sugar beet, barley, cotton, groundnut, millet, oats, seed potato, sorghum and wheat) and forage (alfalfa, clover, fescue, ryegrass and Kentucky bluegrass).


Also note, New Zealand trades a significant amount of high-value seeds which are categorized broadly as "Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal plants; straw and fodder". These seeds, which include everything from melon to hemp and mustard, are not covered in this report because it is not clear if said seeds would be of sowing grade.

Asian Cucurbit Round Table 2018

The Asia and Pacific Seed Association (APSA) in collaboration with Kasetsart University (KU), is proud to host the 1st Asian Cucurbit Round Table 2018 from the 19th – 21st of July 2018 at the Vajiranusorn Building, Kasetsart University (Bangkhen Campus).

APSA is offering corporate sponsorship to companies and organizations looking to show their support for this scientific co-operation to improve the health of cucurbit crops. Your generous support is critical in making this event a success.

We are offering several categories of sponsorship opportunities:

SPONSORSHIP BENEFITS	 \$ 5,000 USD	 \$ 3,000 USD	 \$ 1,500 USD
Complimentary Delegates	✓ 5 Delegates	✓ 3 Delegates	✓ 1 Delegate
Advertisement in Program Book	✓ Full-Page	✓ Half-Page	✓ Half-Page
Logo space on Event Back drop	✓	✓	✓
Logo on Event Advertising	✓		
Advertising in APSA Asian Seed Magazine Issue no. 3	✓ Full-Page	✓ Quarter-Page	
Recognition by MC on each program day	✓	✓	✓
Recognition by MC at the Welcome Dinner	✓		
Opportunity to offer company-branded gifts in the delegate kit	✓	✓	✓
Opportunity to offer company-branded gifts at the Welcome Dinner	✓		

For more information, please contact APSA Secretariat at kuna@apsaseed.org



Advocacy Action Asia

Seed Industry Solidly Supports IP Protection at APSA's Maiden Midterms

Promoting and protecting seed innovation, technology, research and ethics were top-of-the-agenda at APSA's first-ever midterm meeting, held 24–25 April in the Thai capital.

FACE VALUE

In her inauguration speech, APSA president Ms. Brenda Dossey welcomed the delegation before giving background on the decision to hold midterms.

“Our Special Interest Groups and Standing Committees have always functioned around the Asian Seed Congress. But meeting once a year has its limitations, especially in our rapidly-changing industry. For the past several years, we've started meeting more frequently through teleconferencing. Though this has allowed us to get more organized and to better plan activities ahead of Congress, it's not the same as meeting face-to-face, which you can't put a price on.”

Ms. Dossey explained the idea for midterms was born of discussions to form a new working group under APSA's SIG for Vegetables & Ornamentals.

“The Working

Group for Integrated Seed Companies, or WIC, is a new group of about 20 companies in the Asia-Pacific region whose operations integrate all aspects of the seed business – research, production and sales. We think this will be a key group for APSA and thought it a good idea to get together in person to discuss our objectives and how to achieve them.

“Expanding on this, we decided to invite reps from other SIGs and SCs to hold a proper midterm meeting. This will allow us to do what we do best at APSA, since we are so diverse and come from various back-

grounds – as evident in this room alone. We are always more effective when we work together in person, and this will ensure we go from strength to strength. There is a lot of strength in this room, and here we can utilize these strengths to focus on what we can do – not what we

can't do,” she said.

WIC chair Dr. Anthony Tse (Clover Seed Co. Ltd.) elaborated on the new working group's mission:

“By forming a smaller working group with reps from key vegetable seed companies, we can more effectively and actively identify specific issues affecting the vegetable seed industry and tackle them by proposing specific activities, priorities and projects



“We are always more effective when we work together in person and this will ensure we go from strength to strength.”

– **Brenda Dossey, APSA President**

to be implemented within the larger SIG Veg & Orn group.”

APSA's activities – which include study tours, workshops and conferences aimed at capacity-building and professional development for APSA members and associates – are planned by the association's four

SIGs and three SCs, with final consideration given by the Executive Committee, who meet in person twice a year before the Asian Seed Congress, and twice more during the association's annual meeting.

Co-chair of APSA SIG Veg & Orn, Jack Metzelaar (HM Clause) underlined the significance of the meeting: “This is a beginning phase where the common consensus reached is a realistic one. Awareness of property rights is the priority and it should start with giving APSA members the information and tools to reach out to their key stakeholders ... What is encouraging is that there is a willingness of

important member companies to take action and commit resources to the efforts in the future. Positive and important also is that the specific issues of the region, such as the estab-

lishment of a pest list for Asian crops, are put on the list of actions for the future,” he said.

BREEDING BOUNTY

Introducing the first item on the agenda, Influencing Regulation in Plant Breeding Innovation, APSA Director Heidi Gallant noted that there is a strong



APSA's maiden midterm meeting was attended by a few dozen member delegates, as well as several international observers. The delegation represented China, India, Pakistan, Japan, South Korea, Thailand, the Philippines, Australia, Netherlands and France.

push in the international seed industry to raise awareness of the latest breeding techniques. The international seed industry's aim is not only to educate stakeholders about these techniques, but to influence regulators regarding how these techniques differ.

"Plant varieties developed through the latest breeding methods," she averred, "should not be differentially regulated if they are similar or indistinguishable from varieties that could be produced through established breeding methods."

"Building on mechanisms created by nature," she explained, "the latest innovations in plant breeding methods simply achieve the relevant breeding results in less time and with greater precision."

Mrs. Gallant highlighted current campaigns by the European Seed Association and the American Seed Trade Association, and noted that resources – including

videos, pamphlets and info-graphics – can be adapted for APSA audiences.

Dr. Arvind Kapur (Acsen Hyveg Pvt Ltd) – chairman of SC IPR and Biodiversity – suggested that special consideration be taken in Asia with regard to understanding of, and access to, the latest technologies, as well as in terms of a sometimes weak regulatory-enforcement environment.

"It is essential that we educate stakeholders, not only on how to handle these technologies properly with respect to research and commercial purposes, but also to educate them on how these technologies can help in terms of food production, as well as promoting biodiversity and protecting the environment," he said.

Dr. Mary Ann Sayoc of East-West Seeds agreed that education was key, and suggested efforts should be considered on a country-by-country basis, working through

National Seed Associations, which serve as the initial point of contact with legislators.

"APSA doesn't need to reinvent the wheel but can adopt existing materials and resources to be relevant to specifically-defined target audiences," she said, noting that the Philippine Seed Industry Association actively engages regulatory bodies to promote new breeding techniques.

"PBI is an important topic for us in the Philippines, and this will be the central theme of the Pre-Congress Workshop at the upcoming Asian Seed Congress in Manila on November 12," Dr. Sayoc said.

Wang Zhiping of Celestial Seeds said the Chinese government has also prioritized promotion of technological innovation with respect to agriculture and breeding:

"Plant Breeding Innovation was a key topic of discussion at our recent China

National Seed Conference, and the government is increasingly engaging stakeholders in China and abroad. We are seeing more and more interest with respect to advancements in plant breeding – and this interest is not just limited to the agriculture sector," he explained.

Mr Wang added that "China is still a developing country, and, [though] IPR /PVP rules and regulations have been improving, implementation still needs more effort."

Subsequent comments from Japanese, Korean and Indian delegates echoed the notion that special consideration be taken in defining audiences and objectives for each country, and that NSAs be actively engaged, complemented by a multi-channel approach through AP-
SA's broad network.

PROTECT PROFITS

Over the course of two days, AP-
SA delegates actively deliberated

various agenda points. Intellectual Property Rights – and protection thereof – was identified by the WIC as its priority.

APSA past-president, Mr. Manas Chiravanond (CEO, Chia Tai) summed it up in metaphor: “The other topics we talk about here are the ‘cream’, but this one – Intellectual Property Rights – is the cake.”

Setting the stage for lively discussion was a presentation on IPR global trends and models, by APSA Executive Committee member Mr. Casper van Kempen.

Mr. van Kempen, Managing Director of the EU-based Anti-Infringement Bureau or AIB, admitted that the concept of Intellectual Property is relatively new to the seed industry, especially in Asia, likening it to an “experimental path”.

“We are in the business of Intellectual Property – we sell IP, which enables us to protect our investments. Without protection there is no economic incentive to invest in innovation to create new varieties.”

He then distinguished the different types of IP with which the seed industry is con-



The Midterms provided both formal and informal opportunities for delegates to discuss industry issues.

cerned:

“Plant Variety Protection is the main type of IP we deal with in the vegetable sector, but there are others: patents, trademarks, copyrights and trade secrets are all growing in importance for stakeholders in our industry.” He added that in Asia, only five countries – China, Japan, South Korea, Singapore and Vietnam – are currently members of UPOV, the international governing body for PVP.

“But this doesn’t mean that PVP doesn’t exist in the other Asian countries. Most of the countries have national PVP laws in place, which are often, in structure, quite similar to UPOV principles,” he said.

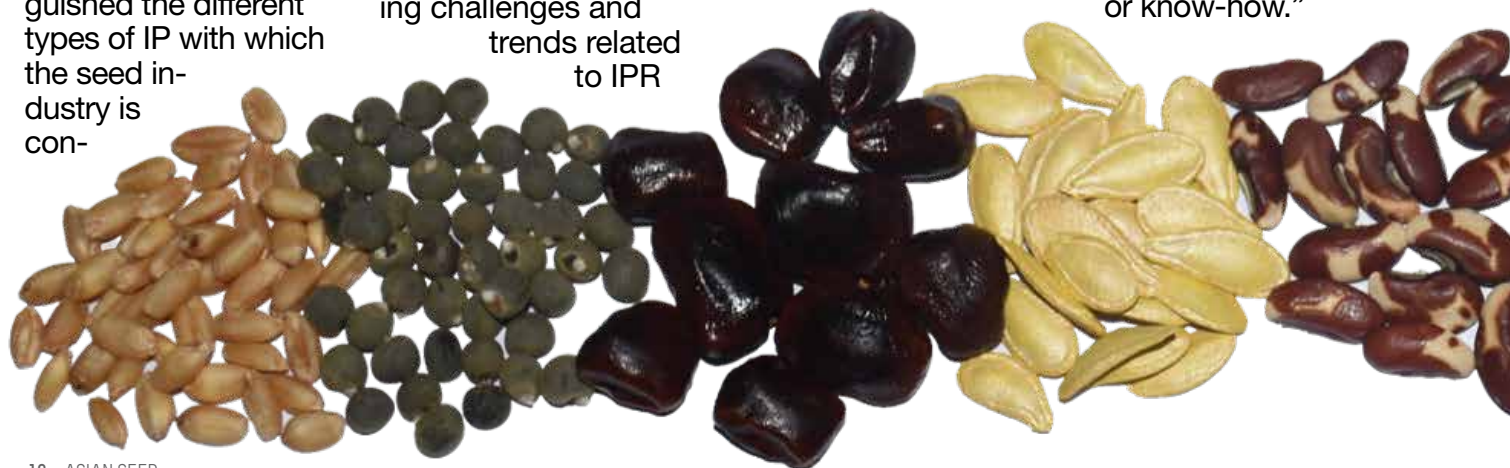
Mr. van Kempen continued by describing challenges and trends related to IPR

and PVP for the vegetable seed industry in Asia, along with their benefits, emphasizing that IP protection can only be effective with enforcement. Without enforcement IP protection has little to no use. He concluded by introducing the work and models of his own organization, AIB, as well as its sister organization in North America, the Seed Innovation and Protection Alliance (or SIPA) to create IP awareness for the vegetable seed sector and to assist member companies to enforce their IP rights. The formation of a similar organization focused on Asia was pitched to the meeting, who welcomed the idea.

By way of example, Dr. Sayoc explained that in the

Philippines seed law is too narrowly defined to afford sufficient IP protection. Said she: “It only refers to infected seed lots. There is no mention of mislabeling, seed piracy or theft of parental materials, for example. Penalties for violation are not severe enough to deter violators.”

WIC participants from across the region echoed her point. Liu Wei, head of Marketing and Sales APAC at Nunhems BV, thinks all integrated seed companies must fight together against IP infringement: “It is too difficult for one company to solve,” he said. “In Asia, this issue is more serious, as...people do not have much knowledge regarding IP rights. They feel it does not matter if they steal some parent-lines or know-how.”





Left: Dr. Kanokwan Chodchoey presents on APSA's R&D Advisory Committee's activities. Above: APSA's SIG for Vegetables & Ornamentals met on the morning of April 25 before joining the main WIC meeting.

The answer, he posits, will come with education, more robust legal enforcement, and penalties severe enough to discourage piracy.

Michel Devarre-waere, VP East-West Seed International Ltd, underlined a key difference between Asia and the West: "In Europe or the US, PVP laws are very clear and legal enforcement more effective. Farmers there represent a small portion of the population. In Asia, farmers represent a large portion of the population, with many countries advocating sufficiency economy policies. Farmers rights are often misinterpreted by legislators – which explains poor adoption of the UPOV convention."

Yoo Sung Jeong, head of Seed Produc-

tion, Nongwoo Bio Co., Ltd offered the following flagrant example: "An oriental melon variety [was registered] for PVP [in S. Korea] -- under the name of an employee working [in the company's] account department!" He said senior breeders sometimes switch companies, then swiftly release to market: "It is very difficult for us to understand how they breed the new varieties within such a short term."

Sumitra Kantrong, assistant VP of Thailand's Chia Tai, called "the moving of breeders to other companies with germplasm in their pocket" a "very sensitive" issue and said its solution should be a "top priority" for APSA members.

Clover Seeds' An-

thony Tse said, "We will need more than PVP legislation and policing," to overcome the problem because, in Asia, it is not a matter merely of "small companies and growers stealing from the breeding companies. In Asia the problem is among breeding companies themselves," he said. "This is why I suggested we set up a code of ethics within the WIC to abide by, and to set an example for others."

Achieving IP harmony among breeders, however, is only one step. Others may be more difficult to attain. For example, Plantum's Anke van den Hurk, a member of APSA's IPR & Biodiversity standing committee, said one of the biggest challenges may be get-

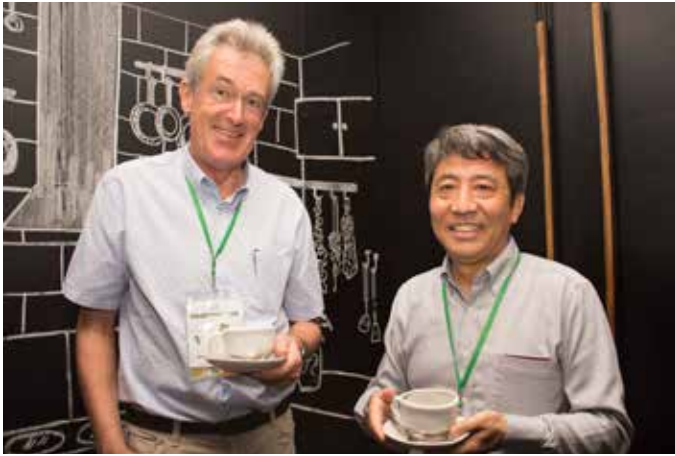
ting "policy makers and the seed sector at the same table to understand each other's point of view." Several participants called attention to Asia's regulatory environment, comparing it unfavorably to those of the US and the EU. As Matsumoto Akio, manager of Kaneko Seeds Co., observed: "We believe it would be beneficial if standards on seed import and export can be harmonized."

Mr. van Kempen's presentation is available to APSA and WIC members via members' respective platforms on apsa-seed.org.

PRIVATE-PUBLIC PROGRESSION

Dr. May Chodchoey – who joined APSA earlier this year as Deputy Director and will step





Casper van Kempen (AIB) and Wang Zhiping (Celestial Seeds)



Manas Chiaravanond and Dr. Sumitra Kantrong of Chia Tai.

up as Acting Director from July, 2018 – has been leading the charge for stakeholder engagement in APSA technical affairs. At the midterms, she updated delegates on key activities of APSA’s R&D Committee:

“Building on the recent success of two Asian Solanaceous Round Tables (ASRT), APSA continues to gain strong momentum in the domain of public private collaboration,” Dr. Chodchoey said.

Initially held in India in 2014, with a subsequent meeting last year in Bangkok, the ASRT forum served private and public sector researchers, who compared notes on the latest breeding technologies and techniques relevant to disease resistance and country-specific trends for the Solanaceous crop family (chili peppers, tomatoes, eggplants etc.).

Acting on recommendations made at the initial ASRT, a joint public and private sector collaboration was formed between participating APSA companies and the Thailand National Centre for Genetic Engineering and Biotechnology (Thailand).

The objective of the initial phase of this “TOSPO project I”, which concluded last year, was to develop a disease screening protocol involving inoculation of plants with tospoviruses, a destructive negative-RNA virus that still evades eradication nearly a century



Dr. Mary Ann Sayoc (EastWest Seed)

after discovery and infects no fewer than 800 plant species.

Nonetheless, thanks to the latest screening methods and the dedication of keen pathologists and breeders, it is only a matter of time before genotypes with promising tospovirus resistance are confirmed – and APSA is alert to progress in the field:

“This initial phase of the TOSPO project between APSA and BIOTEC was completed in the given time frame and the resulting screening method specific to TNRV and CaCV (two target tospoviruses) was transferred to participating companies,” Dr. Chodchoey announced.

Listening to further recommendations from key stakeholders, APSA’s R&D Committee will shift immediate research focus to cucurbits, another key economic crop family encompassing cucum-



Dr. Anthony Tse (Clover Seed)

ber, watermelon, melon, bitter gourd and pumpkin.

“We are excited to hold our first Asian Cucurbits Round Table,” said Dr. Chodchoey, “which will be held in Bangkok and Nakhon Pathom from 19 – 21 July. It is modelled on a similar platform as the ASRT and any researchers who have a stake in cucurbits, are encouraged to get involved.”

Dr Chodchoey noted that collaboration between APSA and BIOTEC is set to proceed with a second phase of tospovirus screening research: “TOSPO Phase II will focus on viral disease resistance screening specific to India, with an objective of identifying promising germplasms that demonstrate resistance to TNRV and CaCV in tomato,” she explained. 🌱

All APSA members can find the current activities and meeting summaries on apsaseed.org

KOREA SEED EXPO 2018



2018. 10. 23.(Tue)~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** FACT 농업기술실용화재단

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Korean Seed Association

Vegetable Breeding Breakthroughs

New Disease-Resistant Varieties Unveiled at WorldVeg-APSA Consortium

Words by Kunaporn Phuntunil and Maureen Mecozzi

Photos by Vanna Liu, Yaching Amy Chen and Kunaporn Phuntunil



Dozens of new varieties of tomato, pepper and cucurbits were presented to breeders at the APSA-WorldVeg Vegetable Breeding Consortium's second annual workshop. The meeting, attended by 52 representatives from 32 Consortium companies, was held May 16-17 at World Vegetable Center Headquarters in Shanhua, Tainan, Chinese Taipei.

Participants – all APSA members – from India, Indonesia, Japan, Malaysia, Philippines, Chinese Taipei, Thailand,

the Netherlands and Singapore joined 37 WorldVeg staff for discussions, intensive seminars on the Center's breeding work, research, and in-field evaluations. This year's group was nearly double in size to that attending last year's inaugural workshop:

"We've had tremendous growth," said David Johnson, WorldVeg Deputy Director General – Research. "We started with 19 member companies just a year ago, and now our number stands at 32." He said so much support for the Consortium is

evidence that the industry is "moving forward together."

During the workshop, participating companies and WorldVeg researchers have multiple opportunities to discuss and evaluate breeding approaches, and to discover new avenues of sharing data. Early access to new breeding lines and interacting with WorldVeg experts on upstream research are also features.

The two-day workshop included one day of technical sessions covering feedback mecha-

nisms and vegetable breeding, and one day visiting WorldVeg fields to see how they deal with plant protection issues and vegetable germplasm.

Breeders had the chance to arrange private meetings with WorldVeg scientists for further discussion.

For WorldVeg, such meetings are of major importance: they thereby receive feedback on the performance of the Center's materials from various locations

and on their usefulness in commercial seed production. APSA Execu-





The workshop was attended by 52 representatives of 32 Consortium companies from throughout the Asia Pacific region.

tive Director Heidi Gallant encouraged interaction between APSA members and WorldVeg breeders, focusing in her address on how critical it is for breeders to provide data on breeding materials obtained through the consortium.

"Your data help WorldVeg demonstrate how breeding improvements reach farmers," she explained.

Pepijn Schreinemachers, WorldVeg Lead Scientist – Impact Evaluation, elaborated on this idea during the May 16 morning session: "Feedback we receive from seed companies is extremely valuable for this purpose," he said. "For instance, from data on the number of varieties released and the tons of seed sold that

contain WorldVeg material, we can approximate how many hectares could be planted and how many farmers reached."

All data sent to WorldVeg from seed companies are aggregated so that confidential trade information will not be compromised. "We're working on ways to collect structured, systematic feedback to ensure the quality of data provided," Mr. Schreinemachers said.

The Center has long bred fresh market and dual-purpose tomatoes (the latter used either for fresh consumption or in processing). Tomato

Breeder Peter Hanson briefed workshop participants on research to develop fruit color and high lycopene content.

High pigment



WorldVeg breeders have experienced success trialling new disease-resistant tomato and chili pepper varieties.



(hp1) and crimson (ogc) genes, he explained, improve fruit color and lead plants to be more determinate: determinate plants can be grown

more densely and without staking – which farmers may see as a boon. Mr. Hanson also stressed how important is multi-location

testing of lines with pyramided Ty genes to improve late blight resistance (an activity in which APSA members have been especially helpful).

He described such new developments as tomatoes with rutin content 12 times higher than that of control

plantings: rutin is a flavonoid with anti-allergic, anti-inflammatory, and anti-carcinogenic properties.

Vegetable Breeder Mohamed Rakha

talked about developing insect resistance in tomato, which hosts more than 100 insect pests. Resistance to such major disease vectors as whitefly, spider mite, tomato fruitworm, and tomato leaf miner can be achieved by crossing wild relatives of tomato with appropriate traits – such as *Solanum galapagense* – to production varieties.

Mr. Mohamed said the Center is expanding on an important 2017 WorldVeg breakthrough incorporating resistance based on trichomes (plant hairs) and compounds released by plants to defend themselves from pests.

The team is also studying resistance mechanisms to thrips and *Tuta absoluta*.



Left Photo: Ramakrishnan Nair (World Vegetable Center), examines a new disease-resistant line of chili pepper as Shashi Kumar Kataria (KF Bioplants Pvt. Ltd.) looks on; Arvind Deshpande (United Genetics India Pvt. Ltd.) walks through a trial plot with intrigue.

WorldVeg Pepper Breeder Sanjeet Kumar gave an overview of the Center's pepper breeding program. He noted with pride that WorldVeg has maintained its International Chili Pepper Nursery now for 24 years and told Consortium members how to obtain the Center's new sweet and hot pepper germplasm releases.

In a related discussion, Breeding Postdoc Derek Barchenger reviewed progress developing and applying molecular markers in pepper, which he told participants is challenging owing to the pepper's large genome.

Also of interest were comments

by Cucurbit Breeder Narinder Dhillon in his report on bitter melon: he noted his team's success developing bitter melon lines resistant to cucurbit powdery mildew and said a bitter melon support group has been established for seed companies.

WorldVeg's improved breeding lines will be demonstrated in the field during APISA's First Asian Cucurbit Round Table on 21 July in Bangkok, and during the annual Bitter Melon Open Field Days, 23 - 24 July, at the WorldVeg East and Southeast Asia Research and Training Station, Kamphaeng

Saen, Thailand.

An administrative change sure to spur development was announced by WorldVeg Lead Specialist in Plant Pathology and Virology Lawrence Kenyon, who told participants the Center's seed health and quarantine, virology, mycology, bacteriology, and nematology units are now working as a comprehensive Plant Pathology group. Mr. Kenyon described phytosanitary measures to limit propagation of viroids in seed and discussed how that process affects delivery of seed to consortium members. He also reviewed research on pumpkin and

squash viruses in Chinese Taipei, progress on screening tomato germplasm for tospoviruses, and work developing eggplant rootstocks resistant to bacterial wilt.

One of the most important tasks undertaken by WorldVeg is its genebank — currently containing 59,967 accessions of 439 species, including the major nightshades (tomato, peppers, eggplant); cucurbits (bitter melon, pumpkins, squash, cucumber); legumes (mungbean, yard-long bean, soybean); brassicas (Chinese cabbage, cauliflower); alliums (onion, garlic); important regional commer-

cial vegetables such as okra; and traditional vegetables such as African eggplant, amaranth, and Malabar spinach.

Genebank Manager Maarten van Zonneveld told the workshop about genebank operations, potential funding pathways, and the challenges of transferring seed across international borders. He thanked the ten Taiwanese seed companies now regenerating 265 accessions for the genebank. Regenerating seed — growing plants, collecting and processing fresh seed for use and storage — represents the genebank's principal operational cost.

Consortium

members were then presented special projects to consider, and member views on particular needs or concerns were solicited:

"We want to service your needs," WorldVeg Deputy Director General – Research David Johnson told seed company representatives from APSA during that day's wrap-up session, "so that you can do what you do best – provide quality seed to farmers."

On May 17, breeders took a bus to WorldVeg demonstration fields for a closer look at the performance of WorldVeg breeding material.

Sanjeet Kumar, Derek Barchenger, Susan Lin and Vivian Wang, at Field No. 87, showed off plots of hot and sweet peppers, both newly developed and released elite lines and selected hybrids, with multiple disease resistance. In the same field, Narinder Dhillon and Vicky Cheng offered details of demonstration trials for bitter melon lines resistant to cucurbit powdery mildew (*Phodoshphaera xanthii*).

Particularly popular was Field No. 88 of the 2018 Spring Preliminary Yield Trial (PYT) and Observational Trials of WorldVeg tomato lines and hybrids. There, the tomato team of Peter Hanson, Grace Hsu, and Shufen Lu presented preliminary yield trials of fresh market and dual purpose tomato lines,

advanced F7 lines with the Bwr6 gene for bacterial wilt resistance, and a hybrid trial for yield, horticultural, and fruit quality traits -- and answered breeder questions. 17 lines were introduced.

Outside, newly developed lines of hot and sweet peppers featured resistance to multiple diseases such as cucumber mosaic virus (CMV), Chili vein mottle virus (ChiVMV), Bacterial spots (BS), Anthracnose and others.

Participants were told that seeds from all 13 lines at the demonstration trials of bitter melon resistant to cu-

"We want to service your needs so that you can do what you do best – provide quality seed to farmers."

– David Johnson, Deputy Director General of Research, World Vegetable Center

curbit powdery mildew are available for immediate distribution to consortium members. Some breeders spent several hours in the plots as if they were in a playground.

Participants escaped the heat inside the WorldVeg Genebank's Genetic Resource and Seed Unit (GRSU) cool storage rooms, where seeds are kept under 5 degrees Celsius for 20 – 50 years. Genebank chief Maarten van Zonneveld and genebank curators discussed processes for such long-term germplasm preservation.

"The germplasm level we saw was very

high," said Kyunghyun Seok from Syngenta Asia Pacific. Rajesh Ramdas Wankhade from Sungro Seeds, India, commented on his interaction with WorldVeg scientists, adding, "We're very glad WorldVeg is cooperating with us to benefit farmers."

Back in the field, entomologists Paola Sotelo-Cardona and Meiyang Lin introduced use of pink-colored netting in a screenhouse for pest control. They explained how manipulation of light quality protected cultivation, and that the pink net innovation modified the sunlight rates of blue,

green and red light – making it better for plant growth.

"I am very happy to see your tomato field," said Mr. Thippeswamy Somanna, Lead Tomato Breeder at Seedworks International Pvt. Ltd., "it was very interesting, especially the BW and ToLCV background materials; also the CLN 4000 Series lines in tomato. I am interested to test the melon lines in India for viruses, as well as for powdery mildew resistance."

"Overall, this workshop is excellent," exclaimed Gopalkrishna Hegde, Breeding Division Research Di-

rector at Noble Seeds Pvt Ltd. "The presentation and demo fields are really informative and useful – this type of consortium will definitely benefit both the public and private sectors."

Indeed, the APSA-WorldVeg Consortium is a unique platform for such cooperation in the Asia-Pacific region: "It is a great effort, visualized," said Dr. Khumansang Chauhan, GM of Vegetable R&D at Kaveri Seed. "Breeding better-

ments – as for tomato, bitter melon and chili peppers – specifically focus on commercially-viable value traits, introgression and delivery of advance lines, thereby benefiting business and grower prosperity."

Perhaps the most exciting benefit is Consortium members' 12-month lead access to newly-developed lines. Consortium members can also request ten free seed acquisitions per year from WorldVeg and a 20% discount on tuition for WorldVeg training.

"The Consortium [affords] to small and large companies equal access to [WorldVeg] breeding material," said Sandeep Baranwal, Head of R&D at Satva Seeds Pvt. Ltd.."

For further details, visit apsaseed.org and click 'activities' on the menu bar. Alternatively, email kuna@apsaseed.org

APSA-WorldVeg Consortium 2018 Snaps



Saraswathi Nagesh of Nethra Enterprises captivated by genetics.



Lively discussions on Day 1 primed breeders for the field tours.



From Left: Arvind Deshpande, Santanu Acharya, Peter Hanson, Manish Bhatnagar and Mukesh Kumar Varshney



From Left: Mandy Li-ju Lin and Pepijn Schreinemachers (WorldVeg) with Heidi Gallant and Kanokwan Chodchoey (APSA)



Shih-Wen-Lin (Susan) of World Vegetable Center and Praveen N Noojibail of I & B Seeds Private Limited.



From Left: Paola Sotelo Cardona, Ramakrishnan Nair and Maureen Mecozzi (World Vegetable Center)



From Left: Shashi K Kataria (KF BIOPLANTS PVT. LTD) and Jedeliza Ferrater (East-West Seed International Limited)



From Left: Satish Vadrahalli, Gururaj Kulkarni, Revanasiddappa K V, M V Balaran and G. Radhakrishnan from Nunhems BV.

Comic Characters Schooling Indian Youngsters on IP Issues

To help ensure that children in India get the right angle on intellectual property issues from their earliest stirrings, the Ministry of Commerce and Industry is presenting them with cartoon mascots: grandma 'IP Nani' and her grandson 'Chhotu' (also known as 'Aditya'), whose adventures are related in comic book form.

The new characters were introduced by India's Minister of Commerce and Industry, Shri Suresh Prabhu, at the conference on National Intellectual Property Rights Policy in New Delhi. Their appearance was timed to coincide with activities related to the World Intellectual Property Organisation's World IP Day, 26th April.

The initiative follows previously-created IP-centered cartoon characters in India: last year, to celebrate World IP Day, the portly and avuncular 'IP Man' was presented. That character, whose name is Inder "IP" Prakash, was initially created in 2012 by law firm Anand and Anand, for a nine-story series called 'The Adventures of Mr. IP' – nine stories covering intellectual property topics such as copyright in music and films, alternate dispute resolution, the doctrine of equivalence, remedies, and parallel imports.

IP Nani is presented as a tech-savvy grandmother who, with the aid of her grandson, helps

government and law enforcement agencies ferret-out intellectual property thieves. According to a press release, it is hoped the new mascots spread awareness about IPR importance -- especially among children -- in an interesting manner.

"Protection of intellectual property rights is critical for building a knowledge-based society," the Minister told conference participants.

"Mere legal provisions are not sufficient for protection...." He noted, however, that "strict implementation" of applicable laws is required because "piracy is a serious crime" and observed that "participation of society" is critical to stamping out violations. To that end, Mr. IP and IP Nani were created, aimed at building a culture of awareness and thereby making IP theft not only illegal but immoral.

Making the latest mascot female was in line with the WIPO's theme this year of celebrating the inventiveness of women: the Geneva-based UN-affiliated organization says patent applications from women have jumped from 12.2 percent in 1990 to 31.2 last year.

For WIPO Director General Francis Gurry there is still room for improvement: "Available statistics indicate that the level of participation by women in innovation and creativity is below par," he wrote in a message published on World IP Day, and called on "everyone, every-



IP Nani was introduced by the Indian Minister of Commerce and Industry on April 26.



In this snap-shot of an episode from 'Adventures of Mr. IP', the protagonist teaches two boys about the 'Doctrine of Equivalents' with respect to patent infringement. Credit: Anand & Anand

where, to ensure that we each do everything in our power to increase the full participation of women in innovation and creativity."

India is one of the world's biggest IPR supporters. In 2015, in a speech at the WIPO, Ajit Kumar, Ambassador and Permanent Representative of India to the United Nations Offices in Geneva, pointed out how serious is his government's focus: "We, as policy makers, have a duty towards creating awareness in the masses, especially the new generation, about their IPRs. We have initiated a 'Kids Nook' corner to

inculcate the culture of IPRs in children through comics. It would be really heartening for WIPO to take up such awareness initiatives globally."

The Indian government also aims at preventing unscrupulous parties from gaining rights over local peoples' traditional knowledge and inventions: "The creation of the Traditional Knowledge Digital Library (TKDL)," said the ambassador, "has been a major achievement for India, a country with a vast pool of traditional knowledge. India has been able to partially

prevent attempts to misappropriate its traditional knowledge with the help of this digital library, particularly with those countries that have included TKDL in their search. We hope that TKDL is made a part of PCT minimum documentation."

The Patent Cooperation Treaty (PCT) assists applicants seeking patent protection internationally, helps patent offices with patent granting decisions, and facilitates public access to technical information. 152 countries have signed the treaty. WIPO counts 191 member states.

IPR Insider: Philippines

To learn more about IP issues in the host country of the upcoming Asian Seed Congress in Manila, *Asian Seed* reached out to Edmund Jason Baranda, a Managing Partner of Baranda & Associates, a Manila-based law firm that specializes in IP law. Here we speak with Mr. Baranda about the IPR situation in the Philippines.

First, please tell us about your interest and background in IP law.

I took up Molecular Biology and Biotechnology in college with the intention of becoming a scientist. However, when I did my internship at a marine science laboratory, I realized that being in the lab for almost 24 hours working on experiments was not for me. I learned later on that there's a field in law, patent law in particular, where a background in science is an advantage.

I then pursued law (in the Philippines you need to have an undergrad degree before going to law school) and after graduation worked immediately at the IP department of a big firm in Manila. My practice inevitably covered IP law in general – not just patents – as patent law is not yet a big practice here. But I also enjoy working on other areas in IP law such as trademark prosecution and enforcement so I continue to work in those areas.

How about the IP situation in Philippines -- past, present and future?

The Philippines has a generally robust IP situation. The sale of infringing goods used to be rampant in public markets and the Philippines used to be included in the Watch List and Priority Watch List of the United States Trade Representative (USTR)'s Special 301 Report. To address this, the National Committee on Intellectual

Property Rights (NCIPR) was created with the IP Office of the Philippines (IPOPIL) as the lead agency.

The IPOPIL coordinated with law enforcement agencies (which are members of NCIPR as well) and IP owners and pursued enforcement actions against infringers. Since 2014, or for five years now, the Philippines has avoided USTR's Watch List and Priority Watch List, proving that the Philippines is no longer among the economies with weak IP protection.

Nevertheless, there are still challenges to overcome as the sale of infringing products has shifted from the physical markets to the online platforms. IP owners have to be more proactive in monitoring infringements. Philippine laws and regulations have to be updated to facilitate IP protection and enforcement against online targets and to adjust to the developments in technology. The Customs also needs to do a better job of preventing counterfeits from entering the Philippine market.

Please explain the concept of "Freedom to operate searches" and what you do with respect to this?

Freedom to operate searches are conducted to determine if a certain product/invention is covered by any existing patents. We usually conduct such searches for clients who plan to use a particular product or wish to commercialize their inventions in the Philippines. It is useful in assessing the risks, if any, of a patent infringement suit that may be filed against the client for such commercial use.

The seed industry is primarily concerned with two types of IPR – plant variety protection (PVP) and patents. Asian stakeholders are advocating for stronger PVP, as the respective

models (e.g.: UPOV) address rights and exceptions for breeders and farmers, for example. However, many stakeholders here still have strong reservations about the patent model for plant material. What is your view on this, and how is this topic addressed in the Philippines?

In the Philippines, plant varieties and essential biological processes for the production of plants are expressly excluded from patent protection. As the Philippines is an agricultural producing country with a highly diverse flora, obtaining patents over living things such as plants (microorganisms are patentable though) may not be something that will be readily accepted by communities/ organizations here.

Plant varieties are protected, though, by a separate law, the Plant Variety Protection Act of 2002, and have a separate registry. The fact that they are called "registrations" and not "patents," and hence without the perceived "monopoly" that comes with patents, and – as you've mentioned – come with exceptions such as use for breeding purposes and non-commercial use, and also recognize the traditional right of farmers to save, use, exchange, share or sell their farm produce of a registered variety, seem to have had an effect on its acceptability. A PVP framework in place should encourage breeding programs and investments in the agriculture industry.

The vegetable seed sector reportedly suffers from the theft of parental lines, which are subsequently used to reproduce hybrids. How is the legislation on trade secrets enforced in the Philippines?"

Trade secrets are recognized in our IP Code as an intellectual property right, though the term "protection of undisclosed information" is used instead of "trade



Edmund Jason Baranda is both an IP lawyer and a qualified Patent Agent with more than 10 years' experience in the Philippines. He has a broad-spectrum of enforcement experience and has extensive experience in drafting patent specifications, advising on freedom-to-operate searches and prosecuting local and international patent applications. He is also involved in patent litigation, particularly patent cancellation and patent infringement actions in the pharmaceutical field, and trade mark/ copyright litigation. Edmund can be contacted through barandaandassociates.com.

secret." The IP Code does not provide how trade secrets are enforced but we have jurisprudence that says that it "may be treated as property, and ordinarily an injunction will be granted to prevent the disclosure of the trade secret by one who obtained the information 'in confidence' or through a 'confidential relationship.' Since it is a property right, apart from injunction, damages may also be recovered from the infringer for any unauthorized disclosure of the trade secret.

PVP and IPR in the Philippines, and Asia in general, will be high on the agenda at the Asian Seed Congress, scheduled 12-16 November in Manila.

For more information, visit apsaseed.org/events/.



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APSA Inks MoU with Thai DoA

The Asia and Pacific Seed Association (APSA) and the Department of Agriculture under Thailand's Ministry of Agriculture and Cooperatives, on May 21 formalized mutual cooperation to strengthen seed-related research initiatives in the Asia Pacific region.

Cooperation between the two organizations was cemented with the signing of a Memorandum of Understanding (MoU) by APSA's executive director, Mrs. Heidi Gallant and the DoA's director-general, Dr. Suwit Chaikiattiyos.

The MoU effectively provides a framework for APSA and the DoA to build capacity in national and regional quality seed production through information exchange, and organization of research, conferences, workshops and training programs.

The signing ceremony, held at the DoA's Bangkok Office near Kasetsart University in Bang Khen district, was attended by officers from seven seed-concerned divisions of the DoA, as well as officers and executives from the APSA Secretariat, Thai



From left: Jack Metzelaar (APSA OB); Wichai Laocharoenpornkul (APSA EC); Dr. Kanokwan Chodchoey (APSA Deputy Director); Heidi Gallant (APSA Executive Director) and Dr. Suwit Chaikiattiyos (Thailand DoA Director-General) discuss cooperation priorities.

Seed Trade Association, Kasetsart University and the World Vegetable Centre.

After the signing ceremony, reps from the two organizations met to discuss specific areas of cooperation moving forward.

Several priority areas were identified at

the meeting, including the exchange of information covering country-by-country regulation updates; and organizing capacity-building activities that focus on everything from the latest techniques used in gene bank and germplasm management, to genetic purity, seed pathology, and diagnostics. 🌱

Showcasing Thailand Ag Research Innovation

Thailand's Department of Agriculture (DoA), under the Ministry of Agriculture and Cooperatives 25-28 May held its "Open House", an annual street-fair to showcase agricultural innovation and facilitate knowledge exchange among officers, researchers and the general public.

Among the highlights showcased were projects that utilized automated environment-control techniques to improve horticulture productivity potential.

The "Temporary Immersion Bioreactor System" by the DoA's Horticulture Research Institute is a closed-loop growing chamber prototype that enabled researchers to germinate, grow and



Breeder Amnuai Adthalung (left) demonstrates where to insert pollen; a DOA "Temporary Immersion Bioreactor System" (right) was also among highlights.

nurse sprouts in a glass enclosure by controlling specific vital inputs — nutrients, water, oxygen and carbon dioxide.

Another interesting prototype demonstrated was a project by the Agriculture Engineering Research Institute, which implemented fourth-generation telecommunications

(Internet-Of-Things) to remotely monitor and control an automated greenhouse.

The Open House also hosted several interesting, free seminars that covered everything from the identification of durian varieties to the benefits of energy-inducing herbs and coconut oil.



Station whose breeding expertise spans solanaceous, cucurbit and brassica crops; and Mr. Amnuai Adthalung, an Agricultural Research Officer, who is a renowned okra and orchid breeder.

Mr. Amnuai led a small demonstration with orchids, giving participants the chance to extract pollen and manually pollinate the plant. Participants were allowed to take home samples to find out if their efforts were sufficient.

For full story and photo gallery, visit apsaseed.org/news

Asian Seed on May 28 attended a seminar on horticulture crop breeding techniques, led by expert breeders: Dr. Sompol Somsri, a renowned authority in durian breeding and consultant to the DoA; Ms Saowanee Ketsakul, an Agricultural Research Officer at the Horticulture Research Institute's Si Saket

The Wanderlust Lady of Los Baños

Rowena Bienes Pursues Passion for Travel and People Through Seeds

Ms. Rowena “Wennie” Bienes is the Executive Assistant of Allied Botanical Corporation (ABC), which is a long-standing member of APSA and the Philippine Seed Industry Association (PSIA). Here, Ms. Bienes, who serves as the Corporate Secretary for PSIA, shares her motivational story.

“I grew up in Los Baños with four brothers and one sister. The University of the Philippines at Los Baños, a well-known agriculture institute, was our ‘playground’. The campus was really close to our home, and I pursued my studies there. I always wanted to travel far away, but my mom wanted me close to home.” Rowena said.

Inspired by an advisor, Wennie pursued a Bachelor of Science in Horticulture Plant Breeding. The advisor, Dr. Ruben R. Villareal, was a well-known tomato breeder and used to work in AVRDC (today WorldVeg). He arranged interesting field trips for students.

One of the trips was to a newly established tomato paste company in San Carlos, Pangasinan, and from this trip, a seed was germinated inside Wennie: “I love traveling to different places so after my graduation, the first thing I thought to myself is that I want to



go far and gain experience living away from home, independently,” she said.

Aside from her advisor, Wennie was inspired by her aunt, Priscilla Carpio Potenciano.

“My auntie is my idol. She works at the Department of Agrarian Reforms. At family gatherings, she always shares with us stories about her travels all over the country. She got her Master’s Degree from Kasetsart University in Thailand, which allowed her to travel and study. I love travel and have always been curious about plant varieties and food, and where they come from. So, studying agriculture was a good path for me.”

After graduation, her first job was as researcher at a tomato processing company called Northern Foods Corporation located in Sarrat, Ilocos Norte which is in northern Philippines, about 500km from Manila.

After five years there as a researcher she returned to Los Baños to pursue her master’s degree in horticulture at UPLB, continuing to work as a research assistant in the entomology laboratory of the Institute of Plant Breeding.

“The project I handled at that time was insect resistance screening in cucumber, legumes and cow peas. My team traveled to different farms and communities in many provinces

for data collection.” She then went on to work for the ABS-CBN Foundation, an NGO dedicated to improving the lives of disadvantaged Filipinos. The ABS-CBN established a rehabilitation center in Iba Zambales for displaced families affected by the Mt. Pinatubo eruption on June 15, 1991.

The foundation provided the local community decent housing and encouraged production of vegetables to supplement incomes: “I was hired as a project supervisor, tasked with establishing a commercial vegetable area within the settlement. Local families provided the labor pool. We planted squash, eggplant, toma-

toes, pechay and introduced high value crops such as honey dew melons from Known You Seed. It was a big challenge to teach them -- because they were not farmers so we had to be patient."

A year later, Rowena got a job offer from Harbest Agribusiness Corporation, the distributor of Known You Seed in the Philippines. She was assigned -- as assistant to the president -- to undertake many coordination and marketing activities for the company.

During her year there, she gained important marketing skills to round off her agricultural expertise. "When you sell seeds, you need to be able to explain how to sow them. My technical and training background proved useful in marketing agriculture, as did my interpersonal skills. I love talking and meeting with people and having a foundation in seed production complemented this role."

In 2000 Rowena began her career with Allied Botanical Corporation (ABC), where she remains. ABC has been a member of APSA since 2003 and of PSIA since 2005. Rowena represents her company and country at both organizations' annual meetings.

"I started with ABC as a researcher and worked on a farm for six months, before moving to their head office in Manila, where I've worked in various customer service and sales roles managing the accounts of important clients, while offering technical support to my team."

In her current role, she spends time mostly in the field and in meetings, engaging government and community stakeholders through youth and farmer canvassing and advocacy work.

PAYING FORWARD

Rowena firmly believes you should follow your heart: "When you are young, your main consideration is

salary -- but if you make decisions based on money alone, it can be a struggle. I always emphasized personal satisfaction; and so did what I wanted. You should do what you love. You can give back to society whenever you have the chance. Some are lucky -- but some don't have the chance to explore or study. Whenever I meet poor farmers, I always think they deserve more. For technical people, it is our duty to pay forward our knowledge to farmers so that they can improve their livelihood."

In her advocacy work, she not only focuses on active farmers, but potential farmers, too: "The average age of farmers in the Philippines is 57, so it's a challenge in all agriculture-dependent countries to

"All women can have a strong mindset and thus have equal opportunity with men. I have always believed in my ability to achieve the same things that men can at work. Women are good at details and this can be an advantage."

encourage the younger generation to get into farming. The new generation has the impression that farming is only hard work, with few benefits -- but that's not necessarily true, especially with the right technical knowledge, tools and training."

To increase knowledge and awareness of the many benefits and breakthroughs in agriculture, Rowena engages the community through company activities, which include donating seeds, conducting workshops and demonstrations.

"I enjoy meeting people, and customers, whom I consider my friends. Their joy is worth more than money," she said.

GENDER DOESN'T MATTER

Rowena believes that gender should not be a limiting factor in agriculture. "All women can have a strong mindset and thus have equal opportunity with men. I have always believed

in my ability to achieve the same things that men can at work. Women are good at details and this can be an advantage.

"For me, gender has never mattered. More important is one's ability to learn and improve skills."

Rowena encourages women to trust in their abilities and not be afraid to speak their minds at work so as to build confidence -- and thus achieve what they would like.

CHANGE & CHALLENGE

Asked about the key success factors for the seed industry in her home country, Rowena highlighted strong collaboration among stakeholders: companies, government and seed associations.

"Being a member of the PSIA affords opportunity to effectively address key issues in the industry.

Through working group discussions, we directly engage officers within the

Department of Agriculture and are also able to get input from representatives of other related sectors and associations. These meetings allow us to share industry perspectives and thus drive needed changes. Even though we are competitors, we are united in the associations to strengthen our connection with government."

Changes in government policy, however, are a continuing challenge. Rowena believes resilience and a readiness to adapt to change are seed industry imperatives. Perhaps the most immediate change is food security in relation to an aging society: "We have to show the young generation the importance of eating more fruits and vegetables. This can be one of many ways to keep farmers running their farms, and for the seed industry to introduce more nutritional varieties.

"This way we can sustain agriculture." 🌱

Good Genetics Plus Passion Make for Innovative Accidents

By Jack Metzelaar, outgoing Vice President of Sales for Asia at H.M.Clause. Jack has served on APISA's Executive Committee since 2010, most recently as the association's treasurer.



Jack, pictured here with H.M.Clause gourds, highlights what's possible when combining passion and good genetics.

A good variety always has a market and innovation often is made by accident. I found this out very early on in my career in the vegetable seed industry.

When I was taking care of export sales at Clause International from France in the 1990s, I started exploring options to market our vegetable seeds in Brazil. Brazil is a huge market with diverse populations, coming from Europe, Japan and other countries in the Americas. When I traveled around, visiting vegetable producers and distributors, I wondered why all the tomatoes were sold in their green stage.

I would skip the tomatoes in the salad at restaurants, because they were hard as rocks and tasteless. The reason was that producers couldn't ship ripe tomatoes to the market, due to the logistical issues in this huge country. There were no refrigerated trucks at the time and the tomatoes were crated and shipped in open trucks.

So, I started trying our varieties in the different production areas. The product manager also gave me samples of one tomato variety that was originally developed for Spain, but turned out to be too soft, making it difficult for transport in that country.

However, this particular variety was a huge seed yielder and we were stuck with a lot of unsold inventory. Unfortunately, it also turned out to be too soft in the Brazilian trials too.

During the same period, I was setting up the beginnings of what is now H.M. Clause do Brasil and hired our first local Brazilian manager. His mission was to identify products for the market and he started working with some trusted customers to find out if they could change the fertilization regime for this variety in order to make it firmer. After a year of trials, they found the formula. A winner was born!

This variety could ship in near red colour conditions for long distances in non-refrigerated trucks, tasted great and became a near instant hit in the market. Clause hit the market running and the variety was a market leader for nearly ten years.

A similar story happened when I started setting up Clause India in the middle of the '90s, when finally, the legal obstacles to market vegetable seeds there were abolished by the Indian government.

This was our company's first exploration of an Asian market and was an absolute eye-opener for me. This market was even bigger than Brazil. But it

didn't look like I had anything to sell there. Clause at the time was mainly a breeder of temperate crops and I was looking at fields of okra, gourds, chilies and other exotic vegetables that I had never heard of or tasted before landing in India. However, I found partners in India that were willing to test our varieties.

One major breeding program in our company is cauliflower. However, I was told by the technicians that you needed tropical or very-early maturing varieties in order to succeed in the Indian market -- not really specs our breeders in France had considered.

At the time, there were hardly any hybrid cauliflowers in the Indian market. We tested some of our hybrids and open pollinated varieties, originally developed for Northern and Southern Europe. Most of them failed dismally in high heat, high humidity and disease pressure conditions.

Again, at the same time, I recruited the first manager of Clause in India and he took me on multiple trips in multiple markets. At a certain stage, he and our distributor in West Bengal took me to a cauliflower trial close to Calcutta.

Very clearly, we were in the tropics, so I expected

to see another field of burned up plants. One open-pollinated variety, which was actually developed for northern France, was performing in a remarkable way. When we went to the field, the whole village had turned out and farmers were asking where they could get more seed of this variety.

There, under the palm trees, I saw an excellent field of brilliantly white, large-headed cauliflowers. My first suspicion was that somebody mixed up the sample, but the packets the grower showed me were ours.

This was the birth of cauliflower Madhuri, to this day a market leader in the Indian market. In fact, for many Indian growers, we are not H.M.Clause, but we are called the Madhuri company!

These are only two examples of what the interaction between good genetics and passionate people can produce. That is what makes me really addicted to this industry.

Genetics will always surprise us. Sometimes positively and sometimes giving us more challenges. But you never have a dull moment in this diverse world, where we all enjoy feeding the world with food with a quality that some consumers never even knew existed. 🌱



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* Client supplies copy and photos with editorial support. Editor will advise specs, varying on advertorial size. Value of advertorial is advertisement rate plus 10% premium
 **Facebook Basic Campaign = 1 week; audience reach 5,000-15,000 depending on desired demographic parameters & type of content; Premium = 2 weeks; audience reach 10,000-50,000 depending on desired demographic parameters
 *** Calendar is booked on first come, first service basis. The special rate quoted in card is in addition to cost of package.
 **** Only Good Standing APSA Members are eligible for the above rates; Asian Seed & Planting Material reserves the right to accept or reject content.

Times have changed and will continue to change with the rapid digitization of marketing and communications in 2018 and beyond. As the world changes, so too must the seed industry. Hence, we are stepping up our game to meet the evolving needs of the market.

This year, *Asian Seed & Planting Material* is pleased to offer a number of new digital and dynamic marketing tools that will help you get your message out to a wider and specifically-defined audience – more effectively and efficiently than ever before.

Several new marketing opportunities are available to Good Standing APSA members à la carte, or in one of our value-added packages. See table above, or inquire via email:

Steven or Suchada @apsaseed.org





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MANILA • PHILIPPINES

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