

PAPAYA PRESS

ISSUE 3 - MAY 2019

PAPAYA CLEAN SEED PROGRAM UNDERWAY

Dr Paul Campbell

Beginning in late 2018, the papaya clean seed program (PP18001) will deliver a clean seed protocol to help protect the papaya industry against papaya sticky disease.

Papaya meleira virus 2 (PMeV2) is a seed-transmissible virus that is associated with symptom development in papaya sticky disease. Investigations have found the virus in plant lines used to generate seeds for the industry, raising the need for a clean seed program.

The program's key research provider, the Department of Agriculture and Fisheries Queensland (DAF) will be looking at other causal agents of the disease as well as raising awareness of the issue and the steps being taken to remove contaminated seed from as many breeding lines as possible.

One of the key aspects of the project's methodology is the investigation of ways to eliminate the virus from papaya plantlets for creation of virus free plants. A series of follow up screening processes will aim to ensure disease free status remains.

Lead researcher in the project for DAF, Dr Paul Campbell, said the clean seed program was an important project for industry, as any efforts to improve knowledge of papaya sticky disease in Australia will inform management options for future seed production processes.

"We know that papaya sticky disease is reported to be seed transmitted

at a high frequency. As part of this project we'll be looking at alternative approaches for the generation of clean lines, such as embryo rescue which may involve thermotherapy and chemotherapy.

"Growers also have an important role to play in ensuring plants producing clean seed are kept separate from other areas of contamination.

"The bottom line is that without access to virus-free planting material, disease pressure continues to be high which will impact on growers' yields and profitability," he said.

The project is set to conclude in August 2021.

AIMS AND OUTCOMES FOR THE CLEAN SEED PROGRAM:

Project Aims	Project Outcomes
Develop a clean seed testing protocol targeting causal agent(s) of papaya sticky disease	Virus-free seed for select commercial cultivars for the Australian papaya industry within two years following the project completion
Generate clean seed for lines and varieties of importance to industry	Clean seed protocol for implementation for verification of seed disease status
Undertake activities to improve knowledge of papaya sticky disease in Australia	Increased knowledge and understanding of causal agents of papaya sticky disease



The clean seed program is one way of protecting the papaya industry against sticky disease

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Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.

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**Hort
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Strategic levy investment

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HORT INNOVATION'S NEW STRATEGIC PLAN

Hort Innovation is in the process of developing a new Strategic Plan, which will be launched in mid-2019, replacing the current one.

In developing the plan, 20 stakeholder workshops were held around the country and an online form enabled growers who couldn't attend a workshop to provide their thoughts and ideas on how Hort Innovation invests levies on behalf of the sector.

There were four key questions posed to prompt discussion, including:

- What are the most important priorities for Hort Innovation?
- What are the top goals for Hort Innovation?
- What are Hort Innovation's strengths?
- What are Hort Innovation's obstacles?

This consultation is separate to that undertaken for the individual levy fund Strategy Investment Plans (SIPs) that were created during the last two years, and for the SIPs that will be developed in the future.

Stay tuned for more information on the new strategic plan following its launch!

From the Chair

GERARD KATH

Dear papaya post readers.
Welcome to this 3rd edition of Papaya Press.

As is the case for most growers, weather is the predominant variable which greatly affects grower profitability. It is weather that affects yield and quality which affects price. The last 3 months has again seen a significant wet season with above average rainfall. Trees will be under stress and fruit quality has been affected with Phytophthora, anthracnose, water rot and poor shelf life all playing a part in grower returns. The worst of the wet season is normally behind us by the end of March, however in wet years like this year it is likely to linger on a month longer. Hopefully by the time this is being read, the sun is shining and fruit is on the improve.

Industry growth still seems to be occurring across the board. Seed sales are back a bit but plantings are quite large from self-grown seed and tissue



culture. As has been the case for the last 10 years, the expansion is in red lines across the coast, tablelands and Lakeland. It doesn't seem to be getting any easier growing this crop with increasing pressure from fruit spotting bugs, red spider mites, black spot, fruit rots and papaya sticky disease all contributing in the day to day challenges in producing quality fruit.

Keeping up with compliance requirements is also a constant challenge for growers. QA, workplace safety and environment are some of the areas that seem to be going through a growth area for employment. There seems to be a never ending higher level that, mainly supermarkets, are pushing for. In the case of QA, the HARPS accreditation scheme is a typical example of extra compliance with poorly thought through effects and outcomes. HARPS could have easily been avoided by simply having different levels of freshcare to cater for different market requirements. I understand that all consumers see safe food as important, however I wonder if the sterile levels being aimed for are sensible and healthy for all consumers. The other question is, did the high level of QA really help the strawberry industry in the needle affair?

Until next issue.

Best regards.
Gerard Kath



The wet season made things somewhat challenging at Lecker farming!

MARKETING REPORT: PAPAYA ON SHOW!

**MARIANNEL AZARCON,
MARKETING MANAGER, HORT INNOVATION**

Papaya Australia featured at the Tropical Fruit Exhibit at this year's Sydney Royal Easter Show (12-23 April), along with Australian Passionfruit.

With an average of 824,000 attendees each year, the Sydney Royal Easter show offers an opportunity to mass reach consumers (particularly young families) with Australian Papaya key messages and an opportunity to sample the fruit.

The exhibit was brought to life with a 3m x 3m stand in the Woolworths Fresh Food Dome with Brand Ambassadors engaging with showgoers through sampling of fresh papaya (with lime or passionfruit option) and distribution of brochures, inclusive of papaya health benefits, a papaya-inspired recipe and call out to the Papaya Australia website and social page.

Papaya growers were also on hand on peak days to interact with consumers, share their knowledge on papayas as well as life on the papaya farm.

At the time of writing, the Easter show has been live for five days and already 10,000 samples of papaya and 14,000 brochures have been distributed to very excited and engaged showgoers.



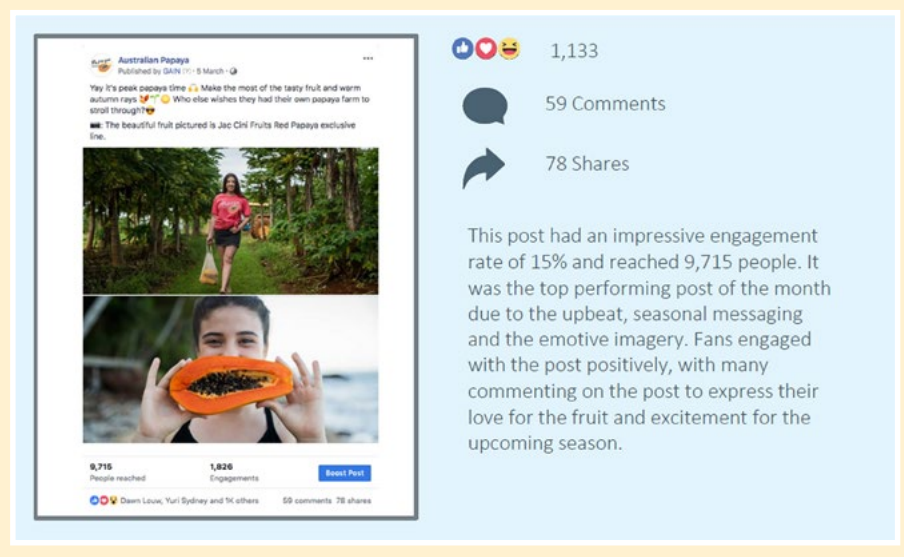
PAPAYA AUSTRALIA SOCIAL MEDIA REPORT

The Papaya Australia social media activity continues to attract and engage consumers and Australian papaya advocates. Below are the results to date at end of March 2019:

Platform	Measurement	KPI to June 2019	Achieved to Date
Social Media: Facebook	Facebook impressions*	1,600,000	1,350,000
	Cost per opportunity to see	<\$0.01	\$0.01
	Total fans	30,000	26,803
	Average Engagement rate	>5%	10%
	Total Engagements (comments, likes or shares)	n/a	93,166

* Impressions – the number of times your content is shown in a social media feed

TOP PERFORMING POST IN MARCH:



Horticulture Statistics Handbook released



The papaya industry now has access to the latest industry data following the release of the 2017/18 Horticulture Statistics Handbook (AH15001).

Released by Hort Innovation, the Handbook features information drawn from several supply chain and trade sources and includes data on more than 70 horticultural products including fruit, nuts, vegetables, nursery, turf and cut flowers.

Across all Australian horticulture industries, the total value of production was \$13.2 Billion, with fresh horticulture exports valued at \$2.15 billion – around 6 per cent higher than in the previous year.

Hort Innovation General Manager for Research, Marketing and Investment, David Moore, said the Handbook provided an in-depth overview of how the horticulture industry was performing at large, with a targeted focus on fresh market supply values and volumes by product, import and export dynamics, and the identification

of key production regions and seasonality.

Produced for a fourth time, the Horticulture Statistics Handbook provides important data for industry, researchers and decision makers, while supporting policy formation and contributing to further research that will benefit the industry.

Papaya Australia Chairman and Mareeba grower Gerard Kath said the organisation's vision for a profitable papaya industry that consistently delivers high quality fruit which exceeds consumers' expectations was supported by projects such as the statistics handbook.

"Having up to date across horticulture industry data as well as papaya specific information makes it much easier to look to united activities such as R&D and marketing projects that bring benefit to the entire sector," Mr Kath said.

The Handbook is available now on the **Hort Innovation website**.

PAPAYA INDUSTRY STATISTICS 2017/18: A SNAPSHOT

- 16,196 tonnes of red papaya and yellow pawpaw was produced
- Farm gate value was \$31.4 m while the wholesale value of the fresh supply was \$37.2 m
- The supply per capita was 645 g based on the volume supplied
- Australia imported 131 tonnes of fresh red papaya and yellow pawpaw. These imports came from Fiji (103 t) and Thailand (28 t)
- Australian exported 16 tonnes of fresh export, all coming from Queensland
- Red papaya accounted for 65% of fresh production, yellow pawpaw 35%
- New Zealand is the main market for exported fresh red papaya and yellow pawpaw taking 86% and Oman the second biggest market receiving 14% of fresh exports from Australia

Papaya consumption data at your fingertips

Did you know that one in ten households purchased papaya/papaw in the last year and that just over 45% of these purchases were from the major supermarkets?*

Your papaya levy contributes to the development and updating of the Harvest to Home dashboard and the latest data on papaya consumption is now available for the first time.

Harvest to Home is an analytics tool developed by Nielsen and Hort Innovation, which shares consumer insights in one simple dashboard. It's public, free and simple to use, with all the information able to be downloaded to keep and refer to at a later time. It can also be viewed on multiple devices, including smartphones, tablets and desktop computers.

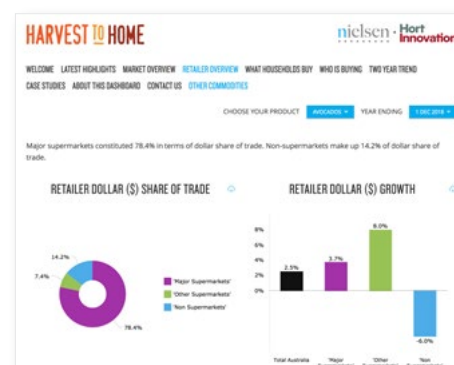
In addition to the hundreds of data points available in the dashboard, case studies and insights on specific fruit, vegetables, mushrooms and nuts are continually uploaded.

This multi-industry investment, under project *Consumer behavioural and retail data for fresh produce* (MT17015) provides regular consumer behaviour

HARVEST TO HOME

data and insight reporting to a range of industries, including the papaya industry.

The information is intended to assist growers and supply chain partners in decision-making for their businesses, such as being better informed about market opportunities, and better understanding the needs and expectations of the modern Australian shopper.

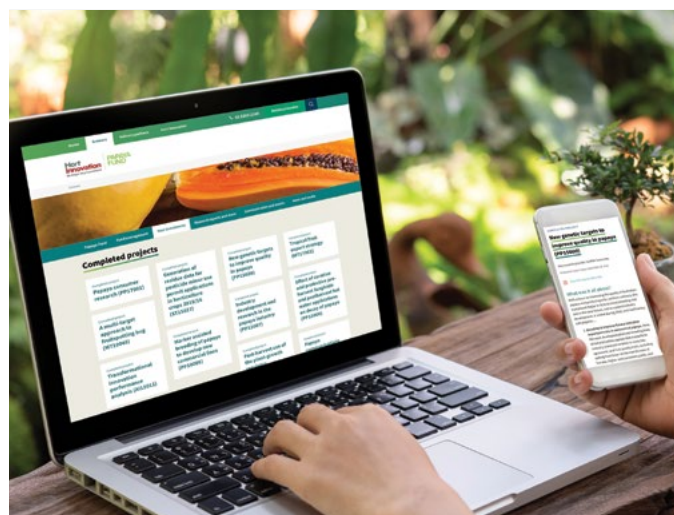


The data and insights provided through Harvest to Home also support strategic activities, including Hort Innovation Papaya Fund marketing plans.

The category update report for papaya is now available and in late August, a deep dive review will also come online. Visit the Harvest to Home dashboard at www.harvesttohome.net.au

* Source: Nielsen Homescan 52 weeks ending 23/03/2019 (Major supermarkets defined as Coles + Woolworths + Aldi)

This project (MT17015) has been funded by Hort Innovation, using the apple, pear, banana, mushroom, avocado, mango, table grape, cherry, citrus, summerfruit, macadamia, lychee, pistachio, pineapple, papaya, almond, raspberry, blackberry and strawberry research and development levies, and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.



The Papaya Fund has a new website

Hort Innovation's new website allows the papaya industry to find more information and more resources quickly and easily.

Six pages of industry-specific content provide you with:

- Up-to-date details on levy fund management
- All ongoing investments with updates, advice and actions you can take now
- Completed investments with user-friendly summaries, final research reports and more
- More resources, information and tools than ever before
- Ways to connect with industry and people you can contact now.

NEW – completed investments:

- View a user-friendly summary of what the investment achieved
- Download the final research report with in-depth information
- Access fact sheets, publications and other tools and resources that were developed as part of the investment.

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horticulture.com.au/papaya

Minor use permits

While the use of pesticides and other chemicals in the horticulture industry is being modified through the increasing uptake of integrated pest management approaches, there remains a need for the strategic use of specific chemicals.

Chemical companies submit use patterns for product label registrations to the Australian Pesticides and Veterinary Medicines Authority (APVMA) – however the papaya industry is generally provided with limited label registrations because of its ‘minor’ crop status in this area (meaning the chemical companies can consider the market size too small to generate adequate commercial returns, based on the R&D investment

required). This is where minor use permits come into play. The APVMA’s national permit system adds some flexibility to the approval process and provides a legal framework that can allow access to products for minor use purposes.

Through the Hort Innovation Papaya Fund’s *Papaya industry minor use program* (PP16000), levy funds and Australian Government contributions are used to submit renewals and applications for these minor use permits to the APVMA, as required.

All current permits for the industry are in the table below. Before use, it is recommended that you confirm the details of the permits through the APVMA website at <https://portal.apvma.gov.au/permits>.

UPCOMING MINOR USE PERMITS

When available, details on all newly issued or renewed permits are circulated in Hort Innovation’s monthly *Growing Innovation* e-newsletter, which levy-paying members receive monthly. Not a member? Sign up to the free membership program at <https://www.horticulture.com.au/growers/become-a-member/>. Any new or renewed permits will also be searchable, along with all other current permits for the industry, at <https://portal.apvma.gov.au/permits>.

At the end of each financial year, the Hort Innovation Papaya Fund Annual Report also provides a wrap-up on all permits that have been supported by the levy throughout the year. Keep a look out for this towards the end of 2019.

MINOR USE PERMITS CURRENT AS OF MARCH 15, 2019

Permit ID	Description (chemical/crop/pest or use)	Original date of issue	Expiry date	Permit holder
PER12592	Chlorothalonil and difenoconazole / Papaya / Black spot and brown spot	14-Aug-11	30-Jun-20	Growcom
PER13076 Version 2	Propamocarb / Papaw or Papaya (seedlings) / Damping off	05-Apr-12	31-Mar-22	Papaya Australia C/Hort Innovation
PER87164 Version 2	Dimethoate / Specified citrus and tropical and subtropical inedible peel fruit commodities - post-harvest dip or flood spray / Various fruit fly species	1-Mar-19	31-Mar-24	Hort Innovation
PER13671 Version 3	Beta-cyfluthrin (Bulldock 25 EC) / Papaya / Fruit-spotting bug and banana-spotting bug	28-Nov-12	28-Feb-23	Papaya Australia C/Hort Innovation
PER14098 Version 2	Etoxazole (Paramite Selective Miticide) / Papaya / Two-spotted mite	3-Oct-13	30-Jun-23	Papaya Australia
PER14097 Version 3	Abamectin and fenbutatin oxide / Papaya / Two-spotted mite	31-Oct-13	30-Jun-23	Papaya Australia
PER12450 Version 6	Trichlorfon / Specified fruit crops / Fruit fly	06-Oct-11	31-Jan-21	Growcom
PER14417 Version 2	Copper as hydroxide / Papaya / Papaya fruit rot (Phytophthora)	28-Feb-14	31-Dec-24	Hort Innovation
PER14490 Version 2	Metalaxyl-M (Ridomil Gold), Metalaxyl (Zee-mil) + Phosphorous acid / Papaya / Phytophthora root rot and pythium	4-Apr-14	31-Mar-22	Papaya Australia C/Hort Innovation
PER13859	Dimethoate / Orchard clean-up - fruit fly host crops following harvest / Fruit fly	9-Feb-15	31-Jul-24	Growcom
PER80746	Ethephon / Papaya / Fruit de-greening	18-Aug-15	31-Aug-20	Papaya Australia
PER85397	Sulfoxaflor (Transform) / Lychee, mango, papaya and passionfruit (field grown) / Fruit-spotting bug and banana-spotting bug	17-Apr-18	30-Apr-23	Hort Innovation

Data generation for papaya

The generation of pesticide residue, efficacy and crop safety data is required to support label registration and minor use permit applications made to the APVMA.

Here is where the papaya industry is benefitting through the Hort Innovation project *Generation of data for pesticide applications in horticulture crops 2018* (ST17000). Its papaya-related work is funded through a grant secured by Hort Innovation, via the Federal Government's Access to Industry Uses of Agricultural and Veterinary (Agvet) Chemicals program.

As with similar projects in the past, ST17000 is responsible for generating the required data for a range of registration and minor use applications across a variety of horticulture crops. For papaya, it is working towards supporting a Syngenta label registration application for Scholar (Fludioxonil) for the control of anthracnose. Its data will also support a Dow crop-group registration application for Transform (Sulfoxaflor) for fruit-spotting and banana-spotting bugs, which will involve papaya. This work is due for completion in 2020.

The papaya industry will also benefit from the data generated through *Generation of residue, efficacy and crop safety data for pesticide applications in horticulture crops 2017* (ST16006).

GROWER SURVEY: WE WANT YOU!

As part of the Australian Papaya Industry Communications Program (PP16001) a grower survey is being conducted in June.

Look out for an email in your inbox next month that will contain a link to a short survey on your views of the communications program. The survey will include questions on the content covered in the Papaya Press as well as your views on the areas of focus for R&D investment and if you've adopted any of the research findings under the R&D program.

We'd love to hear from you!

REGIONAL ROUND-UP

INNISFAIL, QLD – Joe Zappala

The wet tropics region has had a few problems because of the wet season. Some growers have had quality issues with their fruit. Phytophthora and Anthracnose are the main issues. Production is slightly down as a consequence of the heat wave conditions late last year. Quality and production is expected to rise in the next couple of weeks in time for Easter. Growers are also busy doing their autumn plantings before the weather cools off.

and lower fruit quality. December then saw good rainfall from storms, delivering ideal conditions, however the wet season has very much taken its toll now with above average rainfall being stressful for plants and resulting in poor fruit quality due to fruit rots and poor fruit shelf life.

The volume of plantings in the last 6 months has again been fairly high, being mainly with the larger growers. These plantings are now mainly in the red lines with yellow lines tapering back somewhat. I would anticipate there to be a large volume of fruit to come for the remaining year.

Regarding pests and diseases there has been a steady pressure from fruit spotting bugs, red spider mites, black spot and now anthracnose and phytophthora. The incidence of papaya sticky disease is still there showing up more in spring when plants are under most stress.

All in all, the outlook is still good for the coming year.

CARNARVON, WA – Valerie Shrubbs

In WA between 2017 and 2018, fruit volumes and prices have been similar, with perhaps a slight increase from 2017 to 2018.

Growers were also subject to poor summer cropping into the 2018/2019 summer with strong winds and some extreme temperatures, resulting in poor fruit set. In December we had a maximum temperature of 48.5 degrees, in January the mercury hit 44.8 degrees, in February it reached 42.8 degrees and 43.1 degrees in March.

There have been no major outbreaks of pest and disease, and encouragingly, the whole of district medfly control activities have been effective in reducing medfly strikes on fruit.

TULLY, QLD – Tayla Mackay

The Tully region experienced an extremely hot summer with temperatures reaching 43 degrees in November 2018. This caused a huge flower drop, leading to a significant decrease in production for February and March this year. Considering the loss of production, the fruit produced has been great quality with limited breakdown issues, bright colour and minimal skin markings.

Throughout autumn the Tully area is expecting stronger production volumes, with good quality and colour leading into the winter months.

TABLELANDS, QLD – Gerard Kath

Papaya production on the tablelands has been somewhat challenging in the last 6 months. This has been mainly due to very adverse weather conditions. The spring time was very hot and dry and now we've had an above average wet season. In October and November there were many weeks of temperatures in the high 30s and even into the low 40s. This together with no rain and very low humidity, resulted in tree stress

Want to submit an update from your growing region? Email industry relationship manager Christian: christian.patterson@horticulture.com.au

R&D UPDATE:

New varieties part of the long game for papaya industry



Commercial variety: Yellow 1B



Advanced Breeding line: Moonlight 3

The future marketability and profitability of the Australian papaya industry is the key focus for researchers charged with developing new papaya varieties.

New red and yellow papaya varieties are continuing to be bred and evaluated under the *National papaya breeding and evaluation program* (PP18000). This program follows on from the investment in the project *New genetic targets to improve quality in papaya* (PP15000) which has now concluded.

The research team is focused on delivering new elite, genetically

stable cultivars that meet the needs of growers and the preferences of consumers, and that are adapted to key growing areas in northern Queensland, including the Tableland and coastal regions.

The overall aim is to produce genetic stable lines by 2020, then produce new F1 hybrids for both red and yellow papayas and ultimately, expand the marketability and profitability of the Australian papaya industry.

The program has partnered with the Centre for Nutrition and Food Science, Queensland Alliance for Agriculture and Food Innovation (QAAFI) and The

University of Queensland to identify the flavour of current commercial varieties compared to the new breeding lines.

Importantly, an additional collaboration with the Queensland Department of Agriculture and Fisheries is enabling the evaluation of disease reaction on the new advanced breeding lines.

A project reference group (PRG) has been formed between representatives of Hort Innovation, project leaders from Griffith University, researchers from research partner organisations and key growers from the industry. Project planning and strategic reporting meetings will be held bi-annually between the members of the reference group.

The broader papaya industry will be able to find out more about the project, including any outputs through annual field days, with all stakeholders encouraged to attend.

The next meeting of the PRG will be in July 2019 in Innisfail, with the next field day proposed to be in September 2019.

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This project has been funded by Hort Innovation using the papaya research and development levy and funds from the Australian Government. For more information on the fund and strategic levy investment visit horticulture.com.au

60 seconds with Chat



Chat Kanchana-udomkan (PhD) is a research fellow for papaya at Griffith University and is leading the charge when it comes to breeding new papaya varieties.

Chat graduated a Ph.D. in Plant Biotechnology from Griffith University in 2015. She has been working on the papaya breeding program as a breeder since completing her degree. She was also employed as an Industry Development Officer for Papaya

Australia until 2018. Her research focuses on selective breeding using a molecular approach, including DNA markers, gene expression and QTL analysis.

Research activity has been targeted to improve the eating quality of red and yellow papayas. The aim is to produce new good and stable parental lines, leading to consistent and outstanding hybrid varieties. Her passion is to be able to apply research to the real world to improve the efficiency of agriculture.