
STAA
SEED TRADE ASSOCIATION OF ARIZONA
Every seed has its story

Let's Grow Together

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PHOTOGRAPHY BY BRETT FRAME

As the 28th president of the Seed Trade Association of Arizona, Chad Hefner has a distinction, that of being the only one to date to not have a conference.

This year's conference, scheduled to be held May 7-8 at Tubac Golf Resort and Spa, was cancelled due to concerns about the spreading coronavirus, COVID-19. "It was not a decision made lightly, but I think it was the right one for the right reason and the time frame with what is happening," he said. Instead, an online meeting likely will be held to initiate new officers and attend to other business.

Theme for his presidency is "Every Seed Has Its Story," a play off last year's theme of "The Seed Must Grow On." Hefner said if you hold up five vials of broccoli seed, they all look alike. But inside, each one is genetically different and will produce varying traits in the end product.

Hefner said his focus during his term has been revising the organization's scholarship program to make it easier to administer and hopefully to attract more local students who plan to pursue careers in agriculture. To that end, scollarship recipients will be required to participate in 20 hours of internship in the seed industry to learn more about it and the career opportunities it offers.

Hefner, desert manager and salesman for Santa Maria Seeds for the last six years, is a Yuma native, having grown up on a small citrus farm settled by his grandparents near the University of Arizona Mesa Agriculture Farm. After earning a degree in agronomy and agribusiness from the UA in 1990, he went to work briefly for Shell Oil until joining his father in the family's custom citrus farming business for the next 16 years. With the sell-off of much of the citrus land in the early 2000s, Hefner went to work for Sakata Seed, his introduction to the seed industry. After a brief stint at Priority Seed, he joined Santa Maria Seeds.

"I love where I'm at. Every day is different … things can go sideways in a day with the first or second phone call. I really enjoy the challenge."

As for involvement in STAA, Hefner said he believes it's important to have the organization in place in case a major issue concerning the industry comes up so the problem can be addressed quickly. But it's also nice to have the social connection the organization provides.

In his off time, Hefner, the father of two, enjoys continuing to farm his family's citrus acreage and likes to hunt and hike in the desert. ■

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The Seed

BY JOYCE LOBECK

Seed, such a tiny, nondescript object, but full of mystery and promise when planted and so this year's theme for the Seed Trade Association: "Every Seed Has Its Story."

That story is a complex blueprint from the seed's plant parents of the characteristics they pass on to their progeny through their genetics. In the course of nature, though, those plant parent lines can get crossed, creating a new variety with the different traits of the new parents. It's a natural process that's occurred over thousands of years as plants naturally adapted to their environment or humans selected plants with desirable characteristics to propagate.

"Then the hybrid seed is bagged up, sold and on its way to the field to grow a new crop of broccoli destined for the tables of consumers."

In modern agriculture, that process gets a helping hand from plant breeders, perhaps through more scientific methods that make use of knowledge of genetics and chromosomes, as they develop new varieties to meet a specific need of producers. The search may be for crops with enhanced nutritional value, be more uniform in size and color, naturally resistant to a disease or more suited to particular growing conditions.

Whatever the method, though, developing a new hybrid seed variety from early efforts to commercial viability isn't something that happens overnight or in one season. It is a long and painstaking process involving lots of hand labor to manually pollinate plants to create new parent lines and several steps over a period of five to eight years to develop the seed, noted Mike Edwards, broccoli seed specialist with Sakata Seed. He speaks from experience, having been in the business for 33 years.

Gregor Mendel (1822–84) is considered the «father of genetics.» His experiments with plant hybridization led to his establishing laws of inheritance. Genetics stimulated research to improve crop production through plant breeding. It is one of the main contributors to the dramatic rise in agricultural output during the last half of the 20th century. International development agencies believe that breeding new crops is important for ensuring food security as the world's population increases by developing new varieties that are higher yielding, disease resistant, drought tolerant or regionally adapted to different environments and growing conditions.

Hybrid broccoli seed packaged and ready for shipment
A hybrid broccoli plant that has gone to seed

Edwards described the process from his point of view as a broccoli specialist with Sakata. He emphasized that Sakata has no GMOs (genetically modified organisms whose genetic material has been artificially manipulated in a laboratory through genetic engineering). "Everything we do is through traditional seed breeding," he said. "Breeders evaluate seed packages for traits they're looking for and hand pollinate at the beginning … like A and B are crossed together. That's why it takes so long."

He continued: "One of the main issues we deal with is how to get product to market day-in and day-out." That means, he said, that shippers commit to providing so much product every day and need the varieties to ensure they can meet that demand whatever time of year it is and wherever they're growing. For example, in Yuma, the vegetable production season includes early fall, midwinter and spring and each part of that season requires different varieties suited for that particular growing condition.

A key issue is whether a resultant new variety will produce crops with enough yield to be profitable, he said. "There are some varieties with good traits but can they produce at preferable yields to make a profit … given the diversity of locations. From that standpoint, a lot of varieties don't make the grade."

Once the breeder evaluates the new variety in small samples, the plants are grown in trial plots by the dealers for evaluation. If they like it, the next step is seed increase under controlled conditions for further evaluation. "If there's a variety everyone likes, is better than what we have in the field and it's productive, it's moved into small acreage for another look at how valuable it would be," Edwards said. "If the dealers are saying they want it and the salesmen say they need production ramped up, we set up production to meet the demand." That may take place at multiple locations with different climates so more than one crop a year can be produced.

It's a balancing act, Edwards said, to grow enough seed to meet demand without overproducing it. "We need to be spot on for each hybrid product. Dealers want the best quality seed they can sell." That comes at a higher cost of seed. And so planting has become more precise and it has become critical that every seed will germinate and come up.

As the final step, the seed is screened to remove debris, put through a sizer to ensure all the seed is the correct size for the planters that growers use and color sorted to remove defective or weed seed. "The color sorter is able to pull out seed that is a different color than the hybrid seed," Edwards explained. "This gives you 100 percent of the right seed." Then the hybrid seed is bagged up, sold and on its way to the field to grow a new crop of broccoli destined for the tables of consumers. ■

"We need a lot of research to find what varieties will do best in this environment"

A hybrid broccoli field growing in Dome Valley to produce seed

A seed conditioner cleans the seed from the field before it is packaged for shipment

PHOTOS COURTESY OF MIKE EDWARDS/SAKATA SEED

The Spotlight

Santa Maria Seeds

BY JOYCE LOBECK

Santa Maria Seeds has deep roots in agriculture, going back to the late 1800s when the Silva family began farming in Arroyo Grande, Calif., after emigrating from Portugal.

From those humble beginnings, succeeding generations became leaders in the seed industry. In 1978, Manny Silva Jr. and a partner established Santa Maria Seeds, buying out his partner nine years later to become sole owner. Over the years, the company has grown into a leader in the nation's vegetable seed industry, providing growers with hybrid seed developed by plant breeders around the world and tested for viability and competitiveness in individual growing regions.

Today that tradition is carried on by Manny Silva III and his sister, Kelly, at the helm as they continue their father's business and take it into the future. Manny focuses on outside sales and product development while Kelly acts as the chief financial officer and handles accounting, human resources and other duties. "Kelly and I both feel blessed to have been given the opportunity to work in the seed industry," said Manny. "The company was our father's passion and we both enjoy working together to carry on his legacy. Before my father's passing, he often told us how happy it made him to see how well we worked together and got along."

Manny Silva III and Kelly Silva

The siblings graduated from California Polytechnic State University, San Luis Obispo, on the same day in December of 1999. Manny studied agriculture business management and Kelly got her degree in liberal studies with a minor in agriculture. She thought of being a teacher, but instead decided to work for Santa Maria Seeds. They both started working for the company on the same day in January 2000 and took over after their father retired.

"We don't do breeding," Manny said. "We help test new genetics from companies around the world, then sell them. We're trying to give growers the tools they need."

SMS now has offices in California in Santa Maria, Salinas and King City, where it completed construction of a new facility in

August 2019. It has had an office in Yuma since 2006, and recently expanded into the Imperial Valley with an office in Brawley.

"Yuma provides huge value to us," Manny said. "Working with our customers 52 weeks of the year to follow and help with their programs is essential. We also do this with our suppliers to ensure we are looking at their new materials before we start the season in California."

be a good example of adapting to change. Our customers are constantly facing change and challenges so we look to find ways we can help from the standpoint of seed."

Manny noted that he is "very pleased" to have two employees in SMS's Yuma office serve as leaders of the Seed Trade Association of Arizona. Branch manager Chad Hefner is the current president and salesman Justin Lewis held the position in 2017. "I think it is a great testament of the team we have in Arizona. Having served as president of the California Seed Association myself, I think it is important to be involved for the betterment of our industry."

"We worked hard to develop an App that has proven to be a great tool for our customers"

The company's biggest accomplishment in recent years is the development of its App, Manny said. "We put a lot of emphasis on product development and being progressive. We worked hard to develop an App that has proven to be a great tool for our customers. One thing you can always count on in this business is change. Being able to adapt and stay relevant is imperative. I think there is a younger generation of farmers now and our App would

Manny concluded: "I feel fortunate to work in such a great industry with a great team of people. We offer internships in all areas and hope that we can all work together to get more young people to choose the seed industry as a career and continue to move it forward."

As for the next generation of Silvas, he said that he and Kelly each have one daughter. "My daughter Paris (18) wants to be a nurse and is currently studying nursing at Boise State University. Kelly's daughter Rio is 11 so we will see if she chooses to work in the business." ■

PHOTOGRAPHY BY BRETT FRAME

"They will need to be mentored by a member of the Seed Trade Association during the summer or Christmas break so they can see what the industry is like and expose them to what a career might be like."

PHOTOS COURTESY OF TANYA HODGES/UNIVERSITY OF ARIZONA YUMA

Local agriculture students learn about date production

Alex Paez, a senior agriculture technology and management students, mentors middle school students interested in agriculture

Focusing on Scholarships

BY JOYCE LOBECK

Over the years, the Seed Trade Association of Arizona (STAA) has awarded thousands of dollars in scholarships to students enrolled in the agriculture program at the University of Arizona.

While the same generosity will continue into the future, the organization is making some changes to the program to facilitate the application process, broaden its reach to local students and foster an interest in careers in agriculture and the seed industry.

"It's more about reaching kids early as freshmen and sophomores and exposing them to the seed industry," said Chad Hefner, 2020 STAA president. "When it comes time for them to make their career decisions, they will have more knowledge about options in the seed industry."

STAA is now in partnership with the Yuma County Ag Producers (YCAP) scholarship program "in the best interests of students who are looking to follow the pathway to careers in the industry and to better serve that population of students," said Kass Sammons, YCAP board secretary/treasurer. Through the new partnership, students interested in pursuing a career in agriculture can apply through the YCAP portal for scholarships offered by either or both organizations, she explained. The portal lists all criteria for both the YCAP and STAA scholarships. Each organization will continue to fund the scholarships they offer: STAA through funds it raises with the publication of its annual magazine and other fund-raising while YCAP funds its scholarships through proceeds from the annual Southwest Ag Summit Harvest Dinner.

"It's a two-for-one," said Tanya Hodges, regional academic programs coordinator for the UAZ-Yuma Campus. "Students can apply for both scholarships in one application. YCAP and STAA will work as a team for the selection process. The important thing is that we hope it attracts more students interested in studying agriculture." STAA scholarships will now become available to community college students who declare their intent in transferring to a university to complete their bachelor's degree in agriculture. STAA scholarships will help pay for their degree while they attend Arizona Western College or other community colleges in the state. "The intent is to identify students early so we can continue to support them as they work their way through completing their four-year degree in agriculture," Hodges said. "The new partnership opens the door to community college students, providing them both assistance and support early and increases opportunities for students who attend their local community college before attending the university. STAA recognizes that not every student begins their education at the University of Arizona."

As part of the new direction for STAA scholarships, recipients are required to participate in 20 hours of shadowing, followed by internships, in the seed industry to learn more about the business and career opportunities it offers. "They will need to be mentored by a member of the Seed Trade Association during the summer or Christmas break so they can see what the industry is like and expose them to what a career might be like," Hodges said. "This really funnels money to students who want to work in agriculture, preferably the seed industry." If students maintain their grade point average and remain in the agriculture program, they could apply for and potentially receive financial aid annually from STAA, beginning with $1,000 their freshman year with increased awards for their sophomore, junior and senior years.

Last year, 26 students received a total of $45,500 in scholarships through YCAP, while four students each received a $1,000 scholarship through STAA. Students can apply for the scholarship at scholarshipuniverse.arizona.edu or GoAgNow.com. ■

Two local agriculture students study vegetable crop production

Students can apply for the scholarship at:
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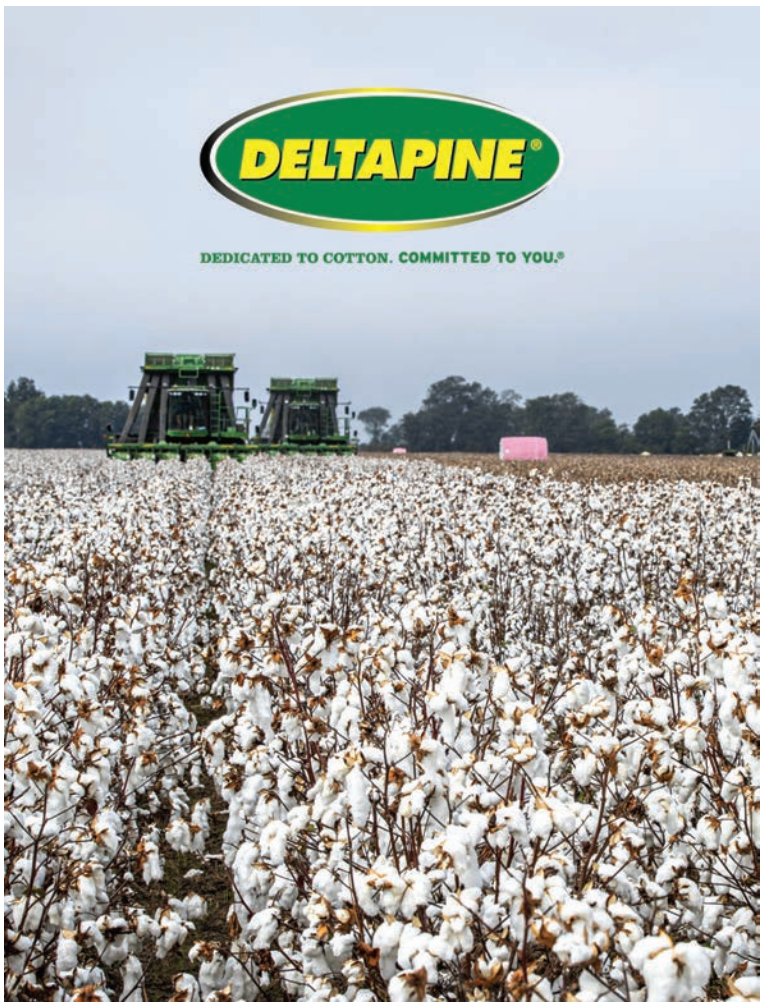

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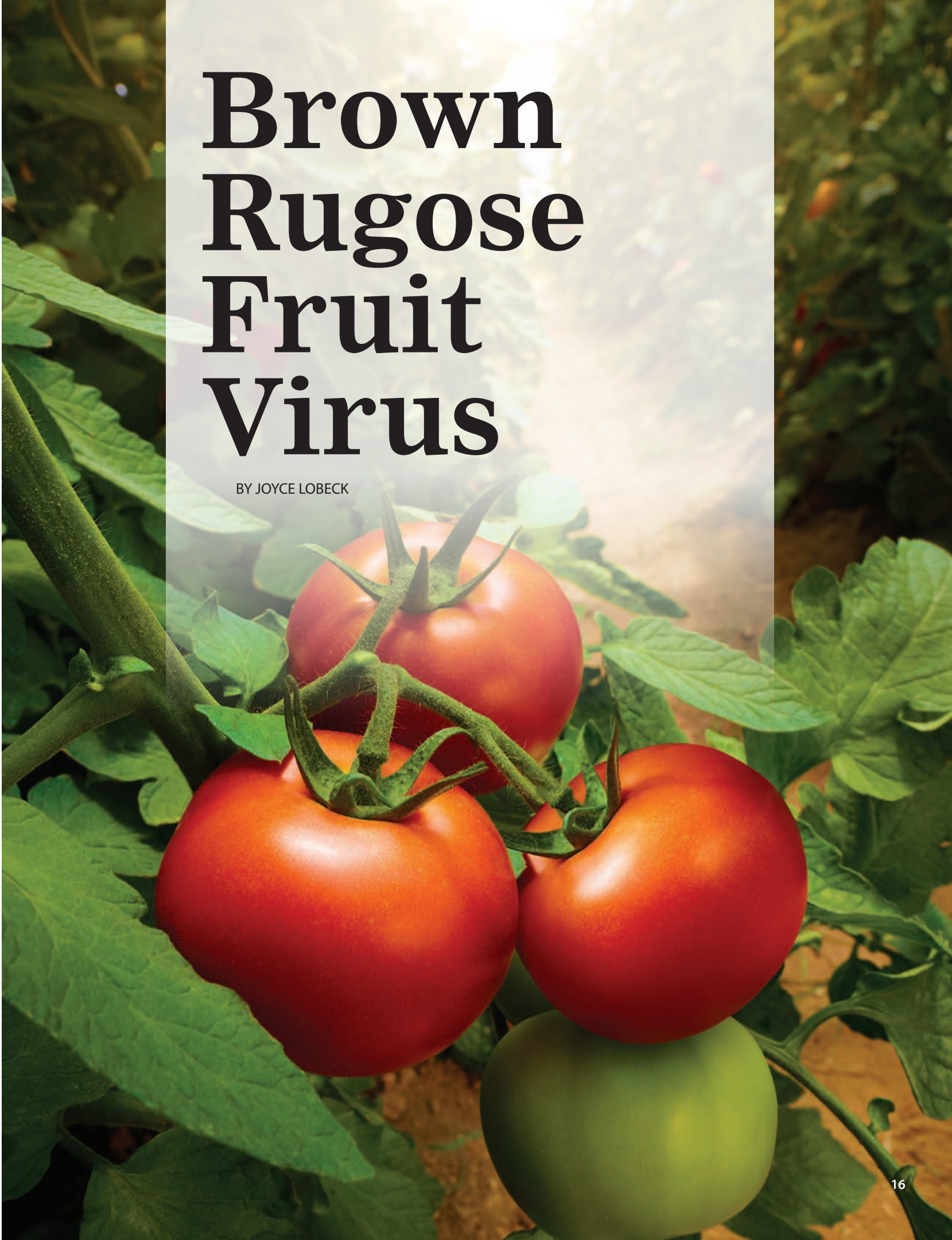
Brown Rugose Fruit Virus

BY JOYCE LOBECK



A devastating new plant virus is threatening the future of tomato production worldwide. In a twist of fate, a new human virus is adding to the challenges of supplying the U.S. market with the popular food, most worrisome to this area are the tomatoes that are grown in greenhouses across the Mexican border for American companies.

The tomato brown rugose fruit virus was first reported in 2016 in Jordan and since then has been found in Israel, Palestine, Turkey, China and several European countries. Significant to the American market, it also was found in Mexico and the United States in 2018.

If a field or greenhouse gets infected, the results are devastating, noted Sabrina Hallman, chief executive officer of Sierra Seed Co. in Nogales, which raises tomato seedlings in greenhouses in Mexico. "It can be transferred from the clothing of workers who come and go," she said. "It's highly contagious. And it spreads rapidly. We have 10 million plants at a time. If one plant gets it, within 24 hours it can spread to all of them. It kills your plant … the fruit is worthless. We would have to throw them out, sterilize the greenhouse and clean the dirt."

"We were concerned about the USDA being able to inspect every single tomato coming from Mexico."

So far, she said, no one has found an effective treatment and it likely will be years before research can produce an effective resistant variety. "Anyone in the tomato business is fighting to keep it out. It's just a devastating disease. We have a big investment in the crop and there's nothing we can do." To date, her company's greenhouses have been spared. Her company's strategy is to try to stop the virus before it can infect the crop by banning any visitors to the greenhouses and admitting only critical workers. As the workers enter, they shower, go through a sterilization process of their hands and feet and change into protective clothing. They then change back when they leave; the protective clothing is kept onsite to be sterilized daily by the company.

When the virus was found in the U.S., some U.S. growers claimed the disease came from Mexico and pressed for limiting tomato imports from it. "In fact, it was already here on both sides of the border," said Hallman. In response, though, the federal government in September 2019 signed a renegotiated suspension agreement on fresh tomatoes from Mexico. Under the agreement, the USDA Agricultural Marketing Service was to begin inspections April 4, 2020, of a substantial number of all fresh tomatoes coming into the United States from Mexico at border locations before they go to American markets.

"We were concerned about the USDA being able to inspect every single tomato coming from Mexico," Hallman said, noting the inspection requirement went into effect right as the Mexican tomato import season began. "We have truck loads. Tomatoes can't sit around forever. The USDA can pull every load and has 24 hours to get it back on trucks"

Hallman was skeptical the USDA would be able to inspect so many tomatoes in a timely manner. Now there's a new worry. According to a news report April 5, officials in Nogales asked for a pause of the new produce inspections in the major port city to help slow the spread of the coronavirus. On the day the inspections were to go into effect, the Santa Cruz County Board of Supervisors and the mayor of Nogales asked federal authorities for a "temporary delay" of those inspections, according to two similar proclamations. Both documents referenced a jump from 500

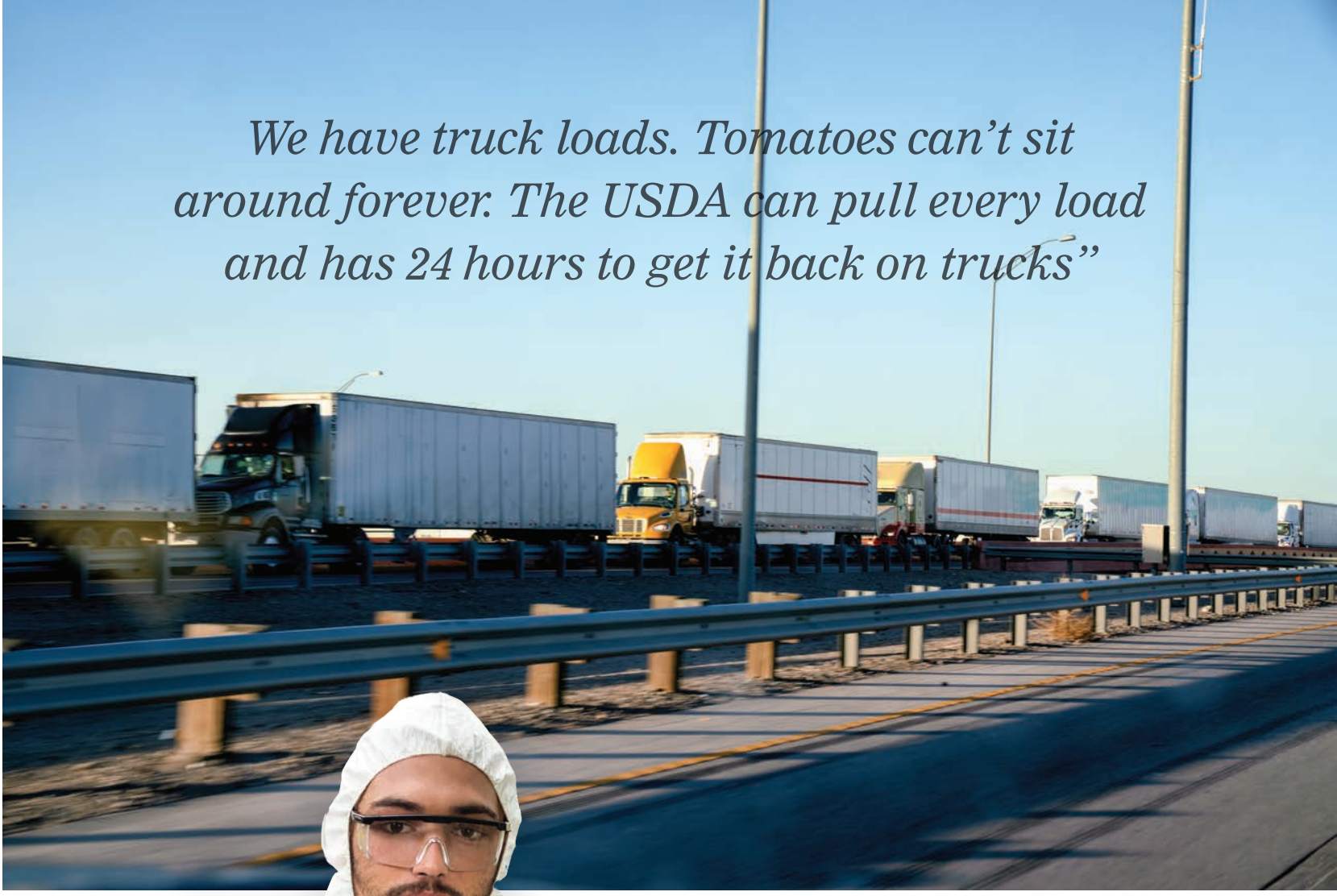
photo from www.eppo.int

quality inspections per month to more than 13,000 because of the suspension agreement. Officials noted that typical inspectors may go to four or five different warehouses in a day. As of April 4, there were four confirmed COVID-19 cases in the county, according to state authorities.

COVID-19 also has impacted her operation, said Hallman. Warehouses are staffed with skeleton crews and production has been suspended for now with most employees sent home for now.

The other virus – the tomato brown rugose fruit virus - is a member of the tobamovirus family. The other virus – the tomato brown rugose fruit virus - is a member of the tobamovirus family. The report is that the virus was present in varieties that have the TM-22 gene, a gene that provides resistance to tobamoviruses, including Tobacco mosaic virus (TMV) and Tomato mosaic

We have truck loads. Tomatoes can't sit around forever. The USDA can pull every load and has 24 hours to get it back on trucks"



virus (ToMV), according to https://seminis-us.com/resources/agronomic-spotlights/tomato-brown-rugose-fruit-virus/. However, the varieties showing symptoms contained the Tm-22 gene, which provides resistance to both of these viruses. This is how they found out that it was a new virus. Similar symptoms occurred on Tm-22 tomato varieties in Jordan in 2015.

It is easily transmitted by mechanical means; in a highly managed crop such as greenhouse tomatoes, this means that human activity is the primary vector. There also are reports of spread by bumble bee pollinators in greenhouse situations. The virus's high stability allows it to stay infectious in the soil, in plant debris and on stakes for long periods—up to 20 years.

"It's changed the way we do business," Hallman said. "It's changed the way every grower in any country does business … every tomato farm in the world. There's a lot of research to find a resistant variety. But it typically takes up to 10 years of research before that gets to fruition. Everyone worldwide is trying to figure out a way to stop it. Every seed company."

Though tomatoes aren't commercially grown in Yuma area, we still have to be careful, warned Bindu Poudel, University of Arizona Yuma County Cooperative Extension plant pathologist. Produce grown in Mexico is stocked in local grocery stores, and tomatoes as well as peppers, which also can be infected with the virus, are a favorite for home gardeners. ■

Feeding a Big

BY JOYCE LOBECK

As the world's population increases, how to feed all those hungry mouths in the years to come poses a challenge. In its latest population report, the United Nations estimated the world had 7.7 billion inhabitants in 2019. By 2030, that number is expected to reach 8.5 billion and by 2050 the UN is forecasting the world population to be nearly 10 billion people. In the meantime, the availability of arable land to grow food is shrinking, water resources are dwindling and changes to the climate are adding to the challenges of assuring an adequate food supply.

It's not a new problem for desert dwellers, said Jeff Silvertooth, University of Arizona Cooperative Extension, who was one of the speakers during a panel titled "Food, Energy and Water in 2030" at this year's Southwest Ag Summit. The ruins of the "Great House" that gave Casa Grande its name stands as a monument to a prehistoric people who disappeared hundreds of years ago likely due to drought and failure of their crops.

With the region now in the midst of another long-term drought and rising temperatures resulting in warmer falls and fewer freezes, this is a critical time for management of food, energy and water for Arizona, Silvertooth said. He noted that Arizona is one of the fastest growing states in the country at 2 percent a year with a current population of over 7.2 million people, some 90 percent of them urban dwellers. It's classified as a semi-arid state, with 68 percent of its water going to agriculture. But even as a trend toward higher temperatures is creating more demand for water, Colorado River flows are becoming less certain and levels of pumped groundwater in Central Arizona are dropping.

"As the urban areas grow, they're gobbling up land and farmers are getting offers they can't resist," he said. Meanwhile, thirsty cities look to agriculture for precious water and the electrification of everything has created a greater demand for power. "The question has become how should we best use our land and water resources. We can't afford to lose this area to agriculture."

To sum up the challenges, Silvertooth referred to "The Bottleneck" by E. O. Wilson. "There's maximum human population, maximum demand on natural resources and maximum need for human ingenuity to overcome these challenges," he said.

There is precedent for human ingenuity rising to the challenges of how to stretch natural resources to feed a growing population. Silvertooth related the story of Norman Borlaug, an American agronomist who in the mid-20th century led research worldwide in the development of new high-yielding wheat varieties with modern agricultural production techniques, greatly improving the food supply in Mexico, India and Pakistan. Called the "father of the Green Revolution," Borlaug was awarded the Nobel Peace Prize in 1970 for his contributions to world peace through increasing food supply.

Norman Borlaug
American Agronomist
Nobel Peace Prize Winner in 1970

"Arizona is using the same amount of water as it did in 1957 when the population was 1 million and now is over 7 million"

World

"We stand on the shoulders of others as we strive to save our necks, a future for our children, our grandchildren and future generations yet to come," Silvertooth said. The answer to a sustainable system of food production, he said, will be through science and education - through genetics, plant breeding, improved agronomic practices and soil and water conservation.

Tim Dennehy, former UA entomologist who now is with BASF, agrees that globally the world needs to improve yields and reduce losses to feed a growing population. He sees disparity between developed and developing parts of the world, with developing countries' survival dependent on fighting poor nutrition. "We now have a technical tool but it runs into a wall of resistances," he said." An example is golden rice, genetically modified (GM) to produce beta-carotene, the source of vitamin A needed to boost the immune system and prevent blindness. But the GM process is controversial and golden rice has been fought by critics.

In the meantime, Dennehy said, "there's been an explosion of new methods from gene-based solutions to new breeding technology" to create new varieties of plants to increase yields, stress tolerances, herbicide tolerance, insect and disease resistance and quality. "There's been investments of billions of dollars in new solutions."

He also noted that farming is in the midst of another revolution, brought on by the digital age. Just as farm animals were replaced in the 1930s by motorized tractors, farming today is being revolutionized by GPS, digital controls and self-driving tractors, robots and drones.

Dennehy noted other challenges. "In the next 20 years, it's predicted that nearly half the world will be living with water stress. We need to

reduce water needs through efficiencies and less loss of it."

Strides in that direction have been made in Arizona, said Paul Brown, recently retired from the UA Cooperative Extension who has done extensive work on climate and weather relationships to crop production. Arizona is using the same amount of water as it did in 1957 when the population was 1 million and now is over 7 million, he noted. That's happening in part because of loss of farming, with irrigated acres down 30 percent since 1978. Another factor is greater efficiency, especially in Yuma County where agriculture water use has been decreased by 20 percent through new crops (the transition to winter vegetables), new farming methods and new water management, Brown said.

"There's a tremendous amount of genetic work," he said, to make plants more drought tolerant, to improve water efficiency and to increase their cold and heat tolerance. Arizona is a good place to test with its limited rainfall. ■

Border Banking

There are more work requirements for cross-border business and a cost associated with meeting those requirements, he explained. Community banks typically have higher expense ratios so...

BY JOYCE LOBECK

The new reality for banks operating along the U.S.-Mexico border is the need to comply with onerous regulations imposed by the federal government as part of the USA Patriot Act of 2001 following 911. While meant to counter money laundering, drug trafficking, human smuggling and terrorism, the tightened regulations significantly raised the banks' cost of doing business with the unintended consequence of many banks pulling out of the border market.

Opening a U.S. bank account is difficult for Mexican business owners so they often open U.S. accounts as individuals, likely with pesos. In addition, there are multimillion-dollar transfers between growers in Mexico and distributors in Arizona, which often are followed by immediate withdrawals of cash to pay workers in Mexico. The number of foreign-held accounts and major cash transfers were red flags for U.S. banking regulators of possible money laundering or drug cartel activity.

"With the cost of compliance, exposure to risk and size of the fines (sometimes in the millions of dollars) as a result of the Bank Security Act … the perception by the industry is that they were more vulnerable to risk," said Russ Jones, head of R.L. Jones Customs Brokers. As a result, large banks de-risked by closing branches and thousands of individual and business accounts along the Southwest border from California to Texas.
The ramifications for the agriculture industry and other businesses along both sides of the border have been widespread, Jones said. "They told the business customers who brought a lot of pesos to the U.S. for deposit to go elsewhere. Banks closed accounts and told

people to come get their money. All the larger banks abandoned cross-border business. It's been a huge problem all along the border."

Finding a new bank took Sabrina Hallman, CEO of Nogales-based Sierra Seeds Co., 18 months of hectic searching after Chase closed her accounts. The banks de-risking also has presented obstacles to potential new border entrepreneurs and small Mexican businessowners who depend on American companies for supplies.

As the large banks closed their border operations or stopped offering agriculture lending, smaller community banks stepped up to fill the need for such financial services. 1st Bank Yuma has had a branch in San Luis, Ariz., since 2011 and helped fill the banking void in Nogales by taking over a bank there in 2015. "We saw it as an opportunity," said Terry Frydenlund, president and chief executive officer. "Yuma and Nogales are similar. They're both close to the border and engaged in agriculture. It's worked out quite well. That's due to the quality of the people in the branch we were able to hire on."

At the time of the purchase, Frydenlund was quoted as saying: "While other banks are pulling back, consolidating their operations and making their footprint smaller, we are seeking ways to better serve our customers and the community." There are more work requirements for cross-border business and a cost associated with meeting those requirements, he explained. Community banks typically have higher expense ratios so "we're used to that environment. We focus on hands-on relationships rather than online or automated so there are more expenses. That business model works well for us and we don't see that changing anytime soon."

Frydenlund doesn't see the regulatory issues going away but he would like to see the law updated. "As time moves on, things change. Our lives could be easier if regulators adjusted the rules. We have to keep track of all the transaction activity that comes across the border. From my perspective, the cost of keeping up with that aspect of the law is very expensive and time consuming. We have two full-time people dedicated to it and we have people in each branch also doing it. That's non-revenue generating activity, just reports, and we're just a small bank. It's an economy of scale. The more customers, the more the cost. We're able to absorb it at this time and we still see a benefit. But a time could come when it no longer is to our benefit to keep doing it."

Hector Cerna, an official with IBC Bank in Texas and a board member of the Border Trade Alliance, expressed similar concerns over the regulations imposed on banks because of money laundering concerns and the impact they have had on the banking industry along the Southwest border. "A lot of business comes from Mexico. Due diligence is what we have to do. It's our way of life now. When I joined the bank 19 years ago, there was one person looking at compliance. Now there are 60. That takes 60 people away from taking care of customers because they're too busy generating reports that may never be looked at." ■

"19 years ago, there was one person looking at compliance, now there are 60."

1st Bank Yuma has had a branch in San Luis, Ariz., since 2011 and helped fill the banking void in Nogales by taking over a bank there in 2015

Welcome

ROBERT MASSON

Yuma's County's newest agriculture extension agent is already hard at work trying to find solutions to the most pressing issue facing the area's produce industry and he needs the input of the seed industry.

Robert Masson, who joined the staff of the University of Arizona Yuma County Cooperative Extension in October 2019, will be launching a research trial in the fall in search of lettuce varieties resistant to fusarium wilt. The disease was identified by area producers in a recent survey Masson conducted as their biggest concern and one for which they would like to have extension efforts help them manage. Currently there is no treatment or cure for the disease that kills lettuce seedlings except to avoid growing the crop for several years in affected fields.

Masson plans to conduct the trial in collaboration with Yuma Center for Excellence in Desert Agriculture, involving as many of vegetable seed companies as he can. To participate, contact him at 919-889-0855 or by email at masson@email.arizona.edu.

Masson, whose title is assistant agricultural agent, is a general agriculture agent. He's no newcomer to Yuma, having worked here as a research agronomist since April 2017 with RD4G on a variety of research projects, including seed increase, crop protection product evaluations and drought-tolerance studies. Previously, he worked at Weaver Popcorn Company in Indiana as a popcorn scientist involved in plant breeding, research and development and quality assurance.

A veteran of the U.S. Navy, Masson earned a bachelor's degree in plant biology from North Carolina State University in Raleigh, N.C., then a master's degree in plant breeding while working for the U.S. Department of Agriculture in a soybean plant breeding program.

As an extension agent, he is conducting research into vegetables while also working with the hemp seed industry to find hemp varieties well adapted to the desert climate. Other duties include agricultural education to the public and working with area producers to assist them with their problems. Recently, he was featured in the January issue of Vegetables West magazine in an article about breeding plants to withstand pests and disease.

DR. BINDU POUDEL

With a strong agriculture background growing up coupled with training in molecular biology during her graduate studies, Bindu Poudel believes she has the best of both worlds.

"I am the jack of all trades in agriculture with my expertise in the field on plant pathology," said Poudel, a plant pathologist who joined the staff of the University of Arizona Yuma County Agriculture Center a year ago to run the plant pathology program under Yuma County Cooperative Extension. That gave her a year to work with Dr. Mike Matheron, who ran the program for 35 years until retiring in December 2019. The overlap provided a smoother transition for Poudel to continue with the program and add some new components. For example, she launched the hemp pilot project and is doing hemp research. The diagnostic lab will soon be offering full panel virus testing for hemp and other commodities.

Poudel was raised on a farm in Nepal and earned a bachelor's degree in agriculture science. She came to the United States in 2009 to pursue her graduate degrees, receiving her master's degree in plant pathology/virology from the University of Arkansas in 2011, and her doctorate in plant virology in 2015 from Clemson University. For the next two years she was a postdoctoral research associate at the University of Florida.

"I took the job in Yuma as it was an opportunity that allowed me to use all my skills," she explained. "I get to get dirty in the field and also get to be a lab rat." She conducts field and greenhouse research and serves as a liaison between growers and scientists. In addition, she helps supervise middle and high school students with their science projects related to plants.

She is a member of the UA Intra-Extension Advisory Council and the UA Vegetable IPM team, a reviewer of a number of agriculture-related scientific journals and organizer of various workshops and field days. She also serves on the Arizona Western College Agriculture Science Department Advisory Committee and the Yuma Union High School District Agriculture Science Advisory Committee. She can be reached at (928) 920-1110 or bpoudel@arizona.edu.

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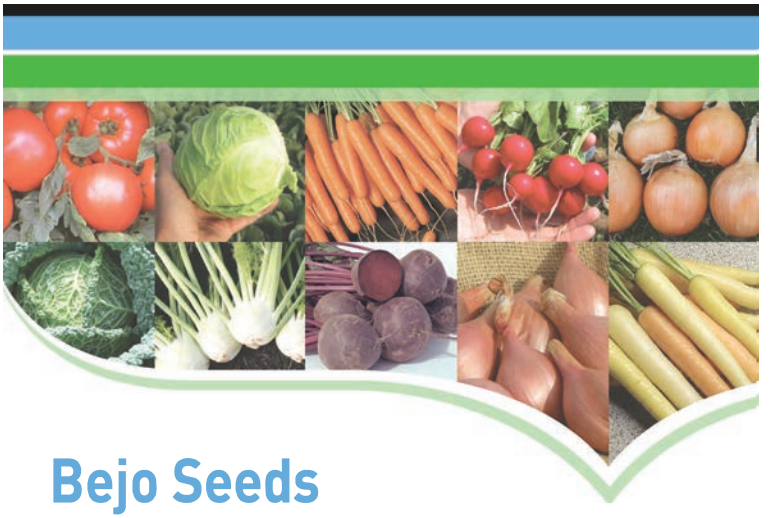

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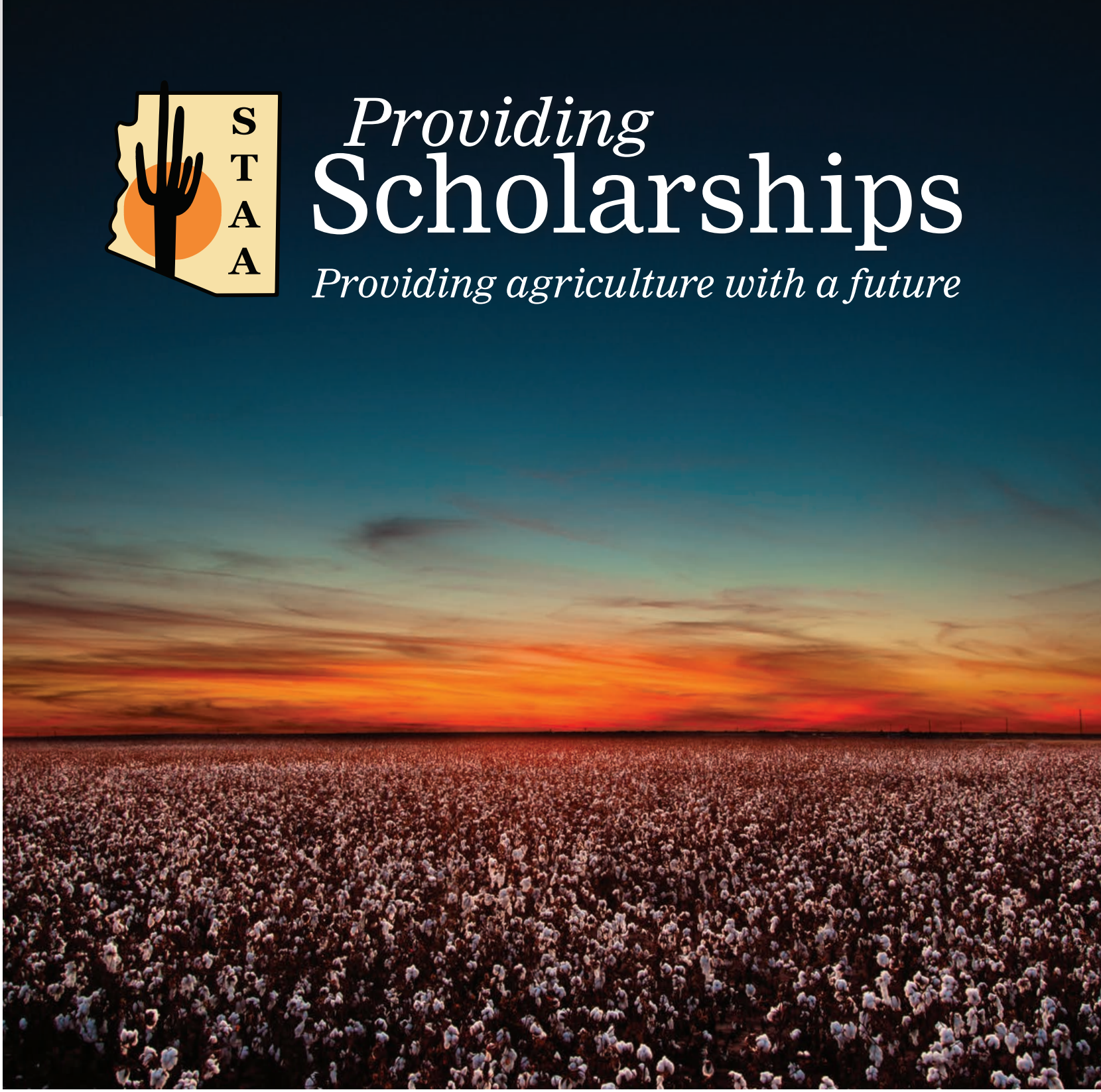
ANNUAL	PRESIDENT	YEAR	CONVENTION LOCATION
1	Duane Palmer	1993	*Yuma - Shilo Inn*
2	Duane Palmer	1994	*Yuma - Shilo Inn*
3	Pat Hodges, Jr.	1995	*Phoenix - Pointe Hilton Tapatio Cliffs*
4	Larry Taylor	1996	*Prescott - Prescott Resort*
5	Ernie Milner	1997	*Prescott - Prescott Resort*
6	Rod Hallman	1998	*Sedona - Poco Diablo Resort*
7	Manny Martinez	1999	*Gold Canyon - Gold Canyon Resort*
8	Charlie Cain	2000	*Tucson - Westin La Paloma Resort*
9	Lynn Adams	2001	*Tucson - Leows Ventana Canyon Resort*
10	Michael Edgar	2002	*San Diego - Embassy Suites, Mission Valley*
11	Kevin Ford	2003	*Sedona - Sedona Hilton Resort*
12	John Hodges	2004	*Chandler - Wild Horse Pass Resort*
13	Tim Thompson	2005	*Prescott - Prescott Resort*
14	Denney McKay	2006	*Tucson - Omni Tucson National Resort*
15	Alan Rubida	2007	*Tucson - Westward Look Resort*
16	Barry Case	2008	*Carefree - Carefree Resort*
17	Ron Berens	2009	*Tucson - Omni Tucson National Resort*
18	Jon Pasquinelli	2010	*Tubac - Tubac Golf Resort & Spa*
19	JP Tom Bodderij	2011	*Litchfield Park - Wigwam Resort & Spa*
20	Justin Smith	2012	*Tucson - Hilton El Conquistador Golf & Tennis Resort*
21	Jose Solorzano	2013	*Tubac - Tubac Golf Resort & Spa*
22	Pam Ferguson	2014	*Tubac - Tubac Golf Resort & Spa*
23	Doug Henry	2015	*Scottsdale - Talking Stick Casino & Resort*
24	Dean Wolfe	2016	*Sedona - Hilton Resort at Bell Rock*
25	Justin Lewis	2017	*Tucson - Marriott Starr Pass Resort*
26	Tim Butcher	2018	*Scottsdale - McCormick Ranch*
27	Justin Gillies	2019	*Tucson - Westin La Paloma Resort*
28	Chad Hefner	2020	*Cancelled due to Covid-19 Pandemic*

Honorary Members

Patrick K. Hodges Sr. (2005)
Louis Didier (2007)
Duane Palmer (2007)
Larry Taylor (2007)
Allan B. Simons (2008)
Rod Hallman (2010)
Carrel Loveless (2013)
Kelly Keithly (2015)
Ernie Milner (2016)
Michael Edgar (2017)
Tom Tolman (2018)
Barry Case (2019)
Charlie Cain (2020)

Providing Scholarships

Providing agriculture with a future



The Seed Trade Association of Arizona offers scholarships annually to qualifying students in the College of Agriculture and Life Sciences at the University of Arizona and other institutions in the state.

Matching contributions from the Southern Seed Association and the American Seed Trade Association augment the scholarships.

The award criteria established by STAA are:

- *Arizona residency and graduate of an Arizona high school*
- *Upper division student status - junior or senior*
- *Majoring in plant sciences, crop production or ag-tech management*

Here are 3 students who have benefited from the STAA scholarship program.

Bradley Schlottman

I have always been a Tucson, Arizona, Wildcat. I was born and raised here by University of Arizona alumni who taught me to question everything and appreciate nature. As an environmental science major, I mostly study soil and soil ecology. My favorite classes are always labs. I have worked as an undergraduate research assistant for three labs, all related to soil organisms and soil. I love lab jobs because you are usually encouraged to question everything.

I was so excited and thankful to be named a 2019-2020 STAA scholar as a senior. It meant I could shift my focus more on school and research and less on outside work. My goals after I graduate are to join a graduate program that focuses on soil-related ecological research, then continue working in research positions. Thank you so much for the opportunity you have provided me with.

Weslee Green

I am finishing my final year at the University of Arizona studying agricultural technology management with an emphasis on field crop production and a minor in sustainable plant systems. My educational goal is to build a diverse skill set that I can implement to reach those in food-insecure communities around the globe, empowering them with the ability to feed themselves healthfully and sustainably. I believe a career in the nonprofit sector would be the perfect fulfillment of this goal, since many organizations focused on alleviating poverty also have an agriculture component.

My hope was to graduate from the university this spring without incurring debt so I can pursue a service career unhindered by financial concerns. Thanks to the generosity of organizations like the Seed Trade Association, I was able to achieve this goal. I am now considering several internships with nonprofits for the coming year that have the potential to launch me into the career I've always dreamed of. Please know that your hard work and support are truly benefitting students like me. Thank you!

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Chance Muscarella

A Tucson native, I'm currently a first-semester master's student in the Environmental Science Department at the University of Arizona and was an undergraduate senior in the same department during fall 2019. The generous Seed Trade Association of Arizona award was an immense help in covering some of the costs associated with attending the university. I would like to thank the organization and its donors for their investment in my future.

This scholarship allowed me to focus more fully on my coursework and research and has set me up to continue my graduate career studying soil science. I will finish my current master's program studying soil chemistry and intend to complete a PhD with the ultimate goal of continuing to research in the fields of soil science and microbial ecology. The academic path I am on will provide me with an in-depth understanding of the soil we rely on and will open avenues for its preservation and restoration. Best wishes.

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Thank you to all our members who help serve & promote the interests of the seed Industry of the state of Arizona

Charlie Cain

2020 Seed Trade Association of Arizona Honorary Member

Charlie Cain has been named as the 2020 honorary member for his longtime involvement in the Seed Trade Association of Arizona, going back to the issue that led to the organization's establishment.

He recalled the circumstances: In the early 1990s, the Legislature was proposing a tax on the sale of commercial seed. "It would have caused a hardship," he said. "We called our suppliers and asked them for their support. We hired a lobbyist and attorney and started chatting with the state." The measure was defeated.

Over the years, Cain has stayed involved in the organization, sitting on the board for a number of years and serving as president in 2000.

While less active in the organization today, he firmly believes in its value to the industry. "An organization as a whole has much more strength than individuals. Absolutely, it's good to have it in place" to keep up with rules, regulations and issues that might impact the seed industry. "Over the 28 years, we've become a small, close-knit group. We've become friends even though many of the group are competitors."

Cain recalled his journey to Yuma, his 40-some years in the seed industry and his current position as sales accounts manager for the North America Horticulture Commercial Team for Germains Seed Technology.

A native of the Midwest, he earned a business management degree from Indiana University after serving in the Army in the 1960s, including a tour in Vietnam. In 1976, he loaded up his family and headed to the dryer climate of Arizona due to the health of his two boys. Following a career in agriculture in southern Indiana, it was an easy transition to that industry when moving to Yuma, where he found a job with Germains Seed. Over the years, he worked for various seed companies and had a couple of his own businesses before returning full circle back to Germains Seed 4 ½ years ago.


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About his recognition as this year's STAA member: "It's quite an honor. It feels good to know I have a little bit of respect in the industry after all the years I've been in it. It seems like only yesterday."

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About Top Notch Seeds Inc:

A leader in the Western United States seed industry, Top Notch Seeds is located in Brawley, California and specializes in innovative seed solutions including processing, sales and marketing both domestically and internationally. While the company has grown tremendously since its founding in 2007, its family owned customer-first service has remained the cornerstone of their operation.

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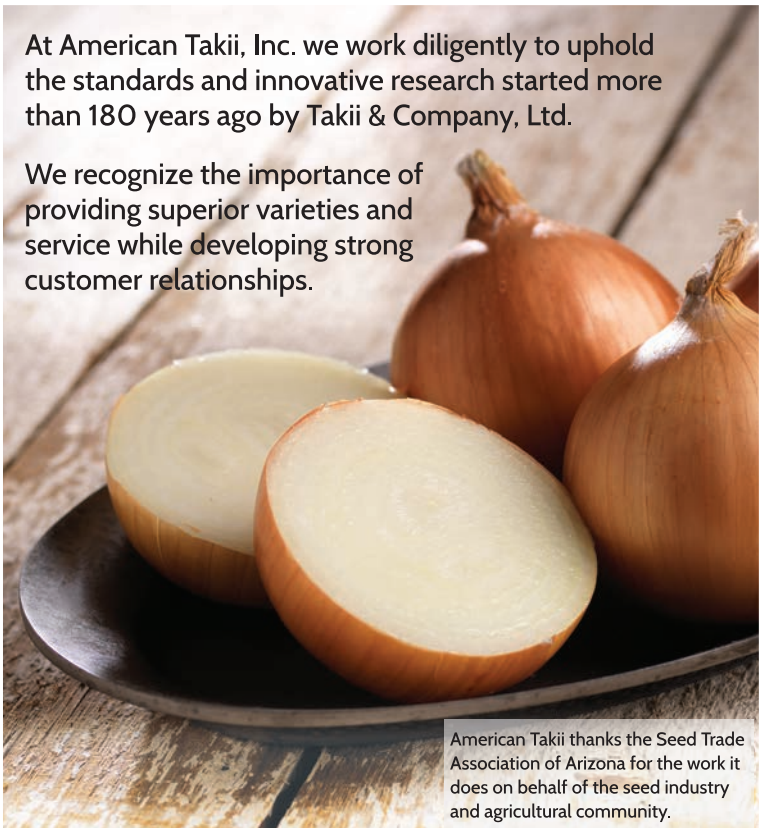

American Takii thanks the Seed Trade Association of Arizona for the work it does on behalf of the seed industry and agricultural community.

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