

STAA

SEED TRADE ASSOCIATION OF ARIZONA

the buzz about **BEEES**

the EPA is proposing tough
new regulations of pesticides
around honey bees

BARKLEY SEED INC.

A company spotlight

UofA AGRICULTURE CENTER

A valuable resource for private and government plant breeders

INTERNSHIP PROGRAMS

Two success stories for UofA graduates



A world map with a light gray background. The United States is highlighted in green. Several location pins, each with a green leaf icon, are placed on the map: one in the US, one in Europe, and several in Asia. Lines connect these pins to a central point in Europe.

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Welcome to the fourth annual publication of the Seed Trade Association of Arizona (STAA). This edition addresses not only issues important to the seed industry but also highlights the achievements of those who have benefited from the STAA scholarship program and the University of Arizona internship program.

Since 1992, the Seed Trade Association of Arizona has served to enhance communication and unity within the seed industry of the state and provide a forum for disseminating information and discussing issues of concern to the industry.

The 24th annual STAA convention, to be held May 5-6 in beautiful Sedona at the Hilton Sedona Resort at Bell Rock, will continue this tradition. This awesome setting will provide the opportunity to network with others in the seed business and related areas and to share ideas and concerns to find positive solutions for issues concerning our industry. The agenda includes guest speaker Mark Killian, the new director of the Arizona Department of Agriculture, as well as an update on exciting programs happening at the University of Arizona.

"The nice thing about this organization is that we may compete for business on a daily basis," said Dean Wolfe, 2015-16 president, "but we can all come together for the good of the industry." During his term, he has focused his attention updating

the organization's website and other means of communicating in today's world.

An employee of Barkley Seed Inc. for the past 13 years, Wolfe's entry into a career in agriculture was quite by accident. As a student at Peoria High School, he was placed in an agriculture class because the business class he had signed up for was full. "I wasn't initially thrilled," he recalled. But after two years he decided he wanted to become an agriculture teacher, crediting his decision to the influence of his ag instructor. After earning a degree in agricultural education from the University of Arizona, he taught agriculture and served as FFA adviser for six years at Cibola High School.

While working toward his master's degree, he shadowed a person at H&H Seed Company and in 1998 was hired by the company as a sales representative. When Barkley Seed Inc. acquired the H&H Seed Company facility in 2003, Wolfe was hired by Barkley to manage the Bermudagrass seed program and other seed sales. "Barkley is a great company," he said. "I love the growers I work with and the people I deal with on a daily basis ... what a great industry to be involved in."

In addition to being a member of STAA since 1998, he chairs the Nakasawa Farmers Fling golf tournament that raises thousands of dollars for FFA scholarships, is active in the Elks organization and is a member of the FFA Alumni Association.





Our Keynote Speaker

Mark Killian

Director of the Arizona Department of Agriculture

Mark Killian has been involved in Arizona State government since 1983. District 30 voters first elected him to the Arizona House of Representatives at the young age of 27. He quickly went to work and represented his district very well as the Vice Chairman of the Agriculture Committee. A few years later he became the Chairman of the Public Institutions committee and two years later he earned Chairman of the Ways and Means committee. After his work on those committees, Representatives elected him Republican Majority Leader. In 1992 Mr. Killian earned their support and became Speaker of the House; he served in that capacity for two terms. While in his leadership positions, he was awarded the Republican Legislator of the year award and recognized as the Public Official of the year by Governing Magazine. After 14 years in the Arizona House of Representatives, Governor Fife Symington appointed him to serve as the Director of the Arizona Department of Revenue where he served as its director for almost 6 years.

In April 2015 Governor Doug Ducey appointed Mr. Killian the director of the Department of Agriculture. Mr. Killian was the prime sponsor of the legislation that created the Arizona Department of Agriculture in the early 1990s while serving in the Arizona Legislature.

Mr. Killian comes from a family that has been involved in Agriculture in Arizona for more than 100 years. His family farming and ranching operations spanned Colorado, New Mexico, Kentucky and California. Currently the Killian family is farming 1500 acres land in Pinal County, Arizona and ranching in Graham and Cochise counties in Arizona. The ranching operations runs cattle on 160,000 acres of land with a cow herd of 500. Mr. Killian also owns and operates a registered Angus cattle herd that produces bulls for the family ranching operation and markets to local ranchers in Arizona.

He not only works in agriculture, but he and his brother own and operate a commercial real estate brokerage; Mr. Killian has been a licensed real estate broker in Arizona for almost 35 years specializing in the management of shopping centers and the development of small suburban office buildings.

Mr. Killian is also the chairman of the Green Reservoir Flood Control District and the Chairman of the Lower Santa Cruz River Alliance.

He is married to his wife Nancy (Nancy comes from a long time farming family in Arizona) for 39 years and they have six children and 11 grandchildren.



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24th Annual Convention

Sedona Hilton Resort at Bell Rock | Sedona, Arizona



Thursday, May 5

11:00 am Registration Opens

1:15 pm Opening General Session

President's Remarks

Arizona Department of Agriculture Current Affairs

G. John Caravetta, *Associate Director*
Arizona Dept. of Agriculture, Phoenix

**Update on Current Legislative Issues
Affecting AZ Agriculture**

Joe Sigg, *Director of Gov. Affairs, Arizona Farm Bureau, Higley*

UofA - Yuma Update on Current Academic Programs

Tanya Hodges, *Coordinator, Academic Outreach Programs, Yuma*

Committee Meetings

Board of Directors Meeting - Officer Elections

6:00 pm Hosted Cocktail Reception with Hors D'oeuvres

7:00 pm Dinner

8:00 pm Live Band! Dancing to Yuma's own – "Downtime"

Friday, May 6

7:00 am Breakfast Buffet

8:00 am Keynote Speaker

Mark Killian, *Director, Arizona Dep. of Agriculture*

STAA Business Meeting

President's Report

Treasurer's Report

**Southern Seed Association
Report and Plaque Presentations**

Tom Bodderij

American Seed Trade Association Report

Pat Miller

**University of Arizona CALS Students -
Recipients of SSA & ASTA Scholarships**

Outgoing President's Remarks

Incoming President's Remarks

Convention Adjourns

Lunch on Your Own

**12:00 PM Shot Gun Start - Al Simons' 5th Annual
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the BUZZ about Bees

BY JOYCE LOBECK

The Environmental Protection Agency is proposing tough new rules regulating the use of pesticides to protect the health of honey bees as they work in the nation's fields to pollinate vital crops.

No one is disputing the need for precautions when applying chemicals around the hard-working insect. But some say the heavy hand of government isn't needed and in fact could seriously harm the seed production industry in the desert Southwest. Furthermore, they say, the decline of honey bee colonies that prompted EPA to take action actually has become less of a problem over the last few years with growing awareness and steps being taken by farmers and beekeepers to keep bees healthy.



"In the past two or three years it's been a lesser problem," said Craig Stillwell, region head of seed production in North America for Bayer Vegetable Seeds who is a frequent visitor to Yuma County and Imperial Valley. "There's more awareness down to the farmer level ... they realize how important the bees are to their livelihood. And the beekeepers have upped their game. They're really taking care of their colonies."

Tim Butcher, production manager in Yuma for Priority Seed Production, which also owns Priority Pollination, concurred. "We seem to have some control over the (bee colonies) collapse. We're already very good at managing our bees. I don't like to see more government rules. I think we're doing a good job self-regulating."

After all, he said, "bees are vitally important for seed production. There are tens of thousands of bee hives in Yuma for the

"bees are vitally important for seed production. There are tens of thousands of bee hives in Yuma for the seed and melon crops. Their health is very important to us."

seed and melon crops. Their health is very important to us."

However, Butcher conceded, "there are other places where bees aren't as safe as they are here."

EPA is proposing to prohibit the applications of pesticides that are toxic to bees when crops are in bloom (flowering) and bees are under contract for pollination services, according to the agency's

website. These restrictions would prohibit the application of most insecticides and some herbicides during bloom. "These restrictions are expected to reduce the likelihood of high levels of pesticide exposure and mortality for bees providing pollination services," the website stated.

One concern about the proposal, Stillwell said, is what EPA considers the bloom period. "The government isn't taking into consideration the variables. Is it one flower

Bee hives placed next to hybrid broccoli seed production fields.





Worker bees tending a honeycomb.

or a percent of the field? In a lot of cases in an onion field we wouldn't bring in the bees until there's 10 to 15 percent bloom or the bees would wander off."

measures to minimize the impact on the bees. But to say we couldn't spray at all could be devastating. Emergency situations don't come up often but it does happen."

here. Butcher said that problem is being addressed in two ways. Planting rapini, a flowering mustard, in the winter months provides pollen and nectar for foraging

"Companies have proven the colony collapse was not caused by chemicals, but by mite infestations and other issues"

And growers here already aren't applying chemicals when the bees are in the field or they apply them at night when the bees have gone home, said Butcher. If they find they need to spray while the bees are in the area, they will notify the beekeeper and give him time to either remove the bees or cover the hives.



But to not be permitted to apply chemicals at all during a bloom could mean losing a crop if severe insect pressure develops, Stillwell said. "It's vital to the seed business to have the option in an emergency to use pesticides while the crop is in bloom. We wouldn't do it unless we really have to and we would take any

Stillwell also took exception to the government's focus on pesticide exposure as the cause for bee colony collapse, especially given the precautions farmers take today. "Companies have proven the colony collapse was not caused by chemicals, but by mite infestations and other issues," he said. "Quite frankly there were fly-by-night beekeepers who weren't caring for their bees and diseases got passed around. I think the bad beekeepers have been weeded out or they've started taking better care of their bees and making sure they're not infected by mites."

One issue has been the lack of forage for food for the bees in the winter because of the predominance of lettuce crops

bees. And if necessary, the bee hives are given supplemental feedings. "That's a new concept," he said, "providing forage and feeding. In the winter we could lose up to 50 percent of our bees through lack of food. If we can keep the bees healthy in the winter the colonies will grow instead of collapse."

That's vital to the California almond industry that requires as much as 75 percent of the nation's bee supply to pollinate the crop in the early spring when bee colonies are at their lowest point, Stillwell said. Butcher concluded: "It's all really about trying to take care of our resources."

Barkley Seed Inc.

A resilient company, reinventing itself through times of challenge and change.

BY JOYCE LOBECK

But one thing remains constant. Over the last quarter century since owner Robby Barkley started Barkley Seed in April 1988, the company has provided high quality, identity-preserved grains for premium or niche markets domestically and internationally.

At the time Barkley Seed was started, it was a bulk business, supplying Saudi Arabia with certified wheat seed, related Michael Edgar, longtime president of the company. That business faded in the early 1990s due to the Gulf War and also because Saudi Arabia became self-sufficient with it's own wheat production.

When that happened, the company and its growers converted to producing high quality Desert Durum Wheat, prized by pasta makers for its protein content. In 2014, Barkley Seed acquired the Desert Durum Wheat Research Program from Monsanto Company, actually a return home for the program. The work had originally been conducted by Western Plant Breeders, renamed WestBred, which Barkley Seed acquired in 1991 and sold to Monsanto in 2009.

Today the small grain research is continued by Second Nature Research, formed by Barkley Seed when it reacquired the program, which focuses on developing high-quality, high-yielding and identity-preserved durum wheat varieties for planting in the desert Southwest.



“The last few years it’s fair to say Barkley Seed has handled or produced more certified cereal grain seed than any other company in the U.S.”

In the mid-1990s, Barkley Seed entered Imperial Valley with the purchase of a grain elevator in Brawley. Today the company has facilities in Yuma, Roll, Wellton and Goodyear in Arizona and Brawley and Fresno in California. It also partners with selected growers throughout the United States to increase production.

In 2003, Barkley Seed bought the former H&H Seed property and entered into the Bermuda grass seed business, Edgar said. Also, today it is the largest wholesaler of Piper Sudangrass seed in the United States. Piper is a forage crop grown here for export to the Far East for use as dairy feed. Today, the company produces certified quality durum, wheat, safflower, barley, Bermuda grass and Piper seed and recently entered into an agreement to work with Northern Seed on its triticale program – a hybrid cross between wheat and rye.

“The last few years it’s fair to say Barkley Seed has handled or produced more certified cereal grain seed than any other company in the U.S.,” said Edgar, adding that the company not only ships cereal grain and grass seed around the country but to several other countries as well.

Edgar attributes the company’s success to “the people who work for us and the growers we do business with.” It’s also aided by the climate here, perfect for producing cereal and forage seed.

Barkley Seed has 60 full-time employees company-wide. While keeping a low profile, the company is committed to the community, supporting such events as the annual Harvest Dinner and various youth programs, Edgar said. In addition, employees are active in various organizations: Edgar is the past chairman of the U.S. Wheat Association and Dean Wolfe, a salesman for the company, serves as the current president of the Seed Trade Association of Arizona – the third Barkley Seed employee to hold that position.

The company has deep roots in Yuma, reaching back to the late 1800s when Finley Barkley, a railroad man from Tehama, Calif., came to the Yuma area to homestead. His nephews, Hugh Barkley and Leslie Barkley, came to work Fin’s 160-acre homestead for him, building a tent house and leveling the land in the Yuma Valley with a mule team and Fresno scraper.



PHOTO COURTESY OF BARKLEY SEED INC.

Eventually Hugh returned to northern California while Les stayed and became a successful farmer and rancher. His son, James, joined his father on the farm while raising three children: Mary, Jim Jr. and Robert. Throughout the years, James expanded the business and in 1971 he formed Barkley Seed and Grain. He died in 1979 when the plane he was piloting crashed. Some lean times followed as his widow, Louise, and son Robby worked hard to keep the business going, and Barkley Seed was sold. In time, Barkley Company became strong once again with Robby at the helm of the business started by his grandfather and he was able to buy back the seed business.

Today, Barkley Seed is part of Barkley Ag Enterprise, which also includes a farming operation and GreenGate Fresh salad plant.



PHOTOGRAPHY BY SHAYNE COMPTON



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University of Arizona Yuma Agriculture Center

BY JOYCE LOBECK

Lending space and technical support, the University of Arizona Yuma Agriculture Center provides a valuable resource to private companies and government plant breeders as they research, develop and propagate new varieties of crops.

"We don't do any plant breeding," said Humberto Hernandez, farm superintendent for the Yuma Agricultural Center. "But we do cater to plant breeders by providing acreage to grow their trials and make their selections."



The benefits to the breeders are many: the agriculture center can provide small plots for the seed work that wouldn't be available through large commercial fields, the farm provides a controlled growing area away from commercial production

yield potential and grain quality of wheat with rye's tolerance to marginal wheat-growing conditions. Next to it, a greenhouse quarantines imported wheat varieties to ensure the young plants are free of pests and diseases before being planted in an

researchers are working on lettuce varieties that are drought resistant or are more heat tolerant while others are breeding varieties for more desirable consumer characteristics such as flavor, texture, color, size of head or shape of the leaf.

the hamburger industry wants a 5-inch lettuce leaf – “a nice, little, round 5-inch leaf to put on the bun – It's all about niche markets”

and the center's staff cultivates the crop from planting to irrigating and thinning – all but the harvesting and gathering of data, which the companies do themselves. In addition, the UA faculty can provide support services, such as entomologist John Palumbo, who is working with seed companies to test new pest treatments.

Breeders may be trying to develop varieties that are more vigorous, can thrive in marginal conditions and soils, have resistance to devastating pests and diseases or have characteristics desirable to consumers. Or they want to increase seed for a new variety.

In a tour around the center, Hernandez pointed out some of the current projects. In one field, local plant breeder Nancy Elliott was growing triticale, a cross between durum wheat and rye that combines the

open field. The varieties were developed overseas with potential characteristics for the U.S. wheat industry, nearby plots are growing trials of red and white wheat varieties for Barkley Seed Inc. as well as a block of safflower for a variety trial. “We've worked with them for years,” Hernandez said of the Yuma-based seed company.

The center also does a lot of work with vegetable breeders. A couple of greenhouses are growing trials for brassica crops, including broccoli and cauliflower. The structures protect nearby commercial seed crops from variety contamination through cross pollination. Nearby, fields produce a mosaic of various lettuce varieties being developed for various reasons. For instance, U.S. Department of Agriculture plant breeder Ryan Hayes is researching lettuce varieties that might be resistant to the devastating fusarium wilt disease. Other

For example, Hernandez said, the hamburger industry wants a 5-inch lettuce leaf – “a nice, little, round 5-inch leaf to put on the bun. They're trying to find the perfect lettuce that people want. It's all about niche markets.”

Pointing to a lettuce plant that stuck out from the rest in one plot, Hernandez said that's something plant breeders are always on the lookout for. “That may have the characteristic or feature they're looking for.”

In other cases, the center provides fields for seed companies that want to start plant stocklings (young tubers), such as for sugar beets, radishes or carrots, for transplanting in northern climates after being chilled to induce plants into a flowering mode, he said. “By doing this, seed companies accelerate the seed growing process,



PHOTOGRAPHY BY JOYCE LOBECK

plants have a healthier start and avoid soil borne diseases such as root rot."

The last few years, driven by the ongoing drought in California, seed companies have also been coming to Yuma to produce vegetable seed "as added insurance," he said.

Hernandez noted that about 25 percent of the center is under contract for seed research and development. It's a win situation for everyone, he said. The contracts provide a revenue stream for the ag center that has seen budget cutbacks in recent years, helping to support the farm's operation and its ongoing research projects. The relationship benefits anyone in research, from growers and private seed companies to government plant breeders. "And it's all for the good of the farming community."

Opposite page: Wheat varieties developed overseas are being grown in quarantine in a greenhouse to ensure the young plants are free of pests and diseases before being planted in test plots.

Opposite page: Humberto Hernandez, examines triticale being grown in a test plot at the center.

Photo to right: Various lettuce varieties being developed by private and government plant breeders for such traits as disease resistance, more tolerance to drought and heat or to meet consumer demands such as flavor, texture, color, size of head or shape of the leaf.

The last few years, driven by the ongoing drought in California, seed companies have also been coming to Yuma to produce vegetable seed "as added insurance"



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SUCCESS

Internship programs and agriculture companies that participate provide opportunities for students pursuing careers in agriculture to find out what their passions are and helping lead to successes in the industry. Here are the stories of two such graduates: Tyler Mead and Nicholas Bahr, who share how the internships helped them succeed.

I couldn't have progressed into the business without the foundational knowledge that I gained during my time as an intern.

—Tyler Mead

My past internships have shown me that problems the industry may face will require highly specialized and educated individuals that can come together and work collaboratively to solve problems.

— Nicholas Bahr



Tyler Mead

Tyler Mead, 26, is currently employed by Santa Maria Seeds in product development and sales. He credits finding the right path for himself through his internship with GeneFresh Technologies.

"As I was born and raised in Yuma, I was surrounded by agriculture from the beginning. My father has been a Pest Control Advisor (PCA) for 36 years now, and introduced me to the field at a young age. I originally intended to become a PCA myself. However, as I got older, I realized this necessarily wasn't the best path for me. As much as I respect and look up to my father, I wanted to do something different, something that I could call my own.

"Shortly after entering the University of Arizona extension program, I received an internship opportunity at GeneFresh Technologies. At the time, I didn't know much about seed. Yet, I saw it as an exceptional opportunity to get my foot in the door and meet new people. As a warehouse associate with GeneFresh, I gained experience in managing inventory, delivering seed, planting trials and really learning the business of seed as a whole. After my internship was completed, I was soon hired at Shamrock Seed as a fulltime warehouse associate. I took advantage of every hands-on experience in the field that came my way and consequentially, I am where I'm at today because of those opportunities."



Nicholas Bahr

An agriculture and biosystems engineer, Nicholas Bahr is employed by Keithly-Williams Seed Co. as the special projects manager in the fabrication department.

"I was born and raised in Yuma, a very prolific agricultural community. My childhood home was on the outskirts of town next to the many vegetable fields that surround the area. I remember growing up and being able to see field after field all the way to the horizon. My younger brother and I would watch tractors plow the field and pretend we were driving tractors as well.

"My father worked as a mechanic for many different farms in the area and growing up I would sometimes be allowed to go to work with him. I would get so excited seeing a farm functioning close up and watching my dad help ensure that the farm stayed productive. From my youngest days, I wanted to be involved with agriculture. After high school, I went into the workforce, and fell in love with my beautiful wife, Linda, and had two children.

"Eventually, I went to work for a local irrigation district. I enjoyed this job because I worked so closely with the agricultural industry and saw how technologically advanced the industry had become. I noticed that farming had changed drastically since my childhood days when all that was needed was a tractor. Seeing these things excited me to the point that I was determined to become a part of this industry, too. So I decided to go back to school and get an

education. In 2010, I enrolled at Arizona Western College studying engineering and in 2013 transferred to the University of Arizona, where I would later graduate magna cum laude with a degree in sustainable plant systems. In the fall of 2015, I started my master's program in agriculture and biosystems engineering and accepted a position with Keithly-Williams Seed Co. as their new special projects manager in the fabrication department. This has been an exciting move for me because I am not only seeing and learning all about the innovative ways farmers can plant their crops, but I am also helping to ensure that this industry continues to remain innovative."

Tyler and Nicholas also answered some questions on how the past has helped them and how they want to further progress.

Q: How has your past internship helped you in your career?

Tyler: *My internship at GeneFresh Technologies helped open many doors into agriculture for me. I gained unique and valuable experience that prepared me for my future in the seed business.*

Nicholas: *My past internships have shown me that problems the industry may face will require highly specialized and educated individuals that can come together and work collaboratively to solve problems.*

Q: What did you get most out of your internship?

Tyler: *Experience. I couldn't have progressed into the business without the foundational knowledge that I gained during my time as an intern.*

Nicholas: *The most valuable thing I received from my internships was the ability to be able to network with area leaders. I was able to meet the local experts and collaborate with them. This proved beneficial to me upon graduating because many of the industry leaders were already familiar with me and knew what I was capable of doing.*

Q: What are you doing now?

Tyler: *I work in product development and sales for Santa Maria Seeds.*

Nicholas: *I am working for Keithly-Williams Seed Company as a special projects manager in the fabrication department. The fabrication department builds custom precision planters and transplanter.*

Q: Future goals?

Tyler: *My goal is to continue my career in sales, and to never stop learning about the industry of agriculture.*

Nicholas: *I am currently working on my master's degree from the University of Arizona in agriculture and biosystems engineering. My goal is to help design and build better planters and transplanter.*

Ernie Millner

2016 Seed Trade Association of Arizona Honorary Member

“STAA is one of the best things that ever happened to the seed industry in Arizona”

– Ernie Millner

Ernie Millner embarked on his career in the seed industry at the young age of 19, beginning with Valley Seed Company. In 1984, Ernie had a dream of creating the largest Bermuda Grass Company in the world and, thus, Cactus Seed was born. Cactus Seed purchased Farmers Marketing Corporation in 1996, and then converted to Seeds West. There the seed breeding program was implemented to a cutting-edge level by restoring Breeder, Foundation, and Certified fields originating eleven PVP varieties. Ernie continued as Senior Vice President of Seeds West until he retired in 2004.

For the duration of Ernie's career in the seed industry he fulfilled numerous duties including Southern Seed Association's President in 2002. He was a vital committee member helping form the STAA and in 1997 he served as the STAA President.

Even though retired, Ernie's commitment to the seed industry persists as he works as a consultant with agriculture companies in California.

From all of us at the STAA, thank you Ernie for your service in the seed industry!

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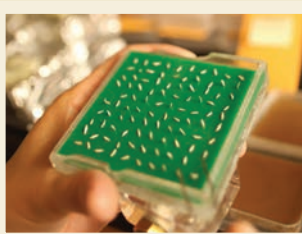
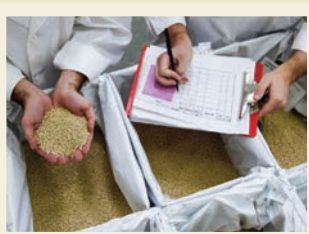
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