



# University of Arizona Cooperative Extension

## Cochise County Annual Report 2019

◀◀◀ Improving Lives, Communities, & the Economy ▶▶▶



THE UNIVERSITY  
OF ARIZONA

# Cooperative Extension

Cooperative Extension enjoys a rich and proud history in this country. On May 8, 2014, we celebrated the Smith- Lever Act, which established the Agricultural Extension Service, known today as Cooperative Extension. Cooperative Extension is a unique educational partnership between the U.S. Department of Agriculture, the nation's land grant universities and the county governments that extends research-based knowledge through a state-by-state network of extension educators. Working together, we recognize that we achieve much more than we can alone. While the authors of the enabling legislation for Cooperative Extension could not foresee the future, the mandates implicit within the legislation, is as applicable today as in 1914:

- **Serve Agriculture and the Public** - The Smith-Lever Act gave Extension a very broad clientele base—"the people of the United States"—yet also specified that its programs should be concerned with "agriculture and home economics and subjects relating thereto."
- **Define Agriculture Broadly** - The term "agriculture" was used in a comprehensive sense in the Smith- Lever Act and subsequent legislation to include producing, processing and marketing farm and forest products, plus those businesses and industries concerned with supplying the resources needs in the production and marketing process.
- **Enhance Human Development** - The underlying mandate is to provide educational programs for individuals and families, which will enhance human development and maximize the individual's contribution to society.
- **Meet Local Problems** - Section 8 of the Smith-Lever Act establishes the need for additional assistance in areas faced with special or unusual hardships, and

acknowledges Extension's role in working with groups as well as individuals in meeting local problems.

At the heart of Cooperative Extension is the deep rooted belief that engaging people through applied research and education will improve the quality of their lives, communities and the economy. This mission is the driving force behind 100 years of Cooperative Extension in Arizona. Our ability to be relevant in the years to come is based on our ability to listen and respond to our "customers"--the people in our communities. We value our partnerships and believe community voices are critical to success.

Today, Cooperative Extension continues its important role, serving communities and families, supporting agriculture and empowering youth to be leaders. Regardless of the program, Extension expertise meets public needs at the local level through the involvement of volunteers, partners, stakeholders, and advisory committees. Extension would not be what it is today without their dedication and service. We are most grateful for their willingness to be partners in our journey to improve lives, communities and economies.

We look forward to working with you, as together we create the next chapters of our continuing history!



The University of Arizona Cooperative Extension represents a unique three-way partnership of the federal, state and county government to provide access to the Land Grant University System to local citizens. Partners include the United States Department of Agriculture, the University of Arizona and Cochise County. Regardless of the program, Extension expertise meets public needs at the local level through the involvement of volunteers, stakeholders and advisory committees. Our roots in communities help us understand local needs and put university expertise and connections where they can make a difference - both in people's lives and in their livelihoods. Increasingly, Extension serves a growing, more diverse constituency with fewer resources, utilizing methods that are timely, relevant and cost-effective. These Extension-driven programs leverage and multiply each dollar of county and state support with additional outside funding. Included in this report are a few highlights of Extension's impact on this county and its people during 2019.

**Cooperative Extension, Cochise County Faculty and Staff (as of 02/19/2020)**

**Evelyn Whitmer**, Family and Consumer Health Sciences; Interim Regional County Extension Director, Cochise and Santa Cruz Counties  
**Peter Hooper**, 4-H Youth Development Area Agent  
**Kim McReynolds**, Natural Resources Area Agent  
**Randy Norton**, Agriculture Area Agent  
**Josh Sherman**, Commercial Horticulture Area Agent  
**Ashley Wright**, Livestock Area Agent

**Cynthia Aspengren**, Program Coordinator Sr, Nutrition Education  
**Kristy Beerman**, Instructional Specialist, Nutrition Education  
**Andrea Bernal**, Instructional Specialist, Nutrition Education  
**Mary Ann Capehart**, Instructional Specialist Sr., Water Wise  
**Hannah Dahl**, Instructional Specialist, Nutrition Education  
**Rebecca Dailous**, Instructional Specialist Sr., Water Wise  
**Rhegan Derfus**, Program Coordinator, Sr, Nutrition Education  
**Jacquelyn (Amie) Esteves**, Instructional Specialist, Nutrition Education  
**Isela Franco**, Extension Program Assistant, Nutrition Education  
**Jan Groth**, Assistant in Extension, Community Horticulture  
**Dustin Hancock**, Research Specialist, Rangeland Monitoring  
**Cheyenne MacMasters**, Instructional Specialist Coordinator, Building Healthy Communities  
**Nicole Miller**, Instructional Specialist Sr., Water Wise  
**Maria Molina (Rivera)**, Instructional Specialist, Nutrition Education  
**Liza Quinones**, Program Coordinator, Building Healthy Communities  
**Joseph (Sepp) Sprietsma**, Program Coordinator, Building Healthy Communities  
**Natoyah Swift**, Program Coordinator, School Based Dental Program  
**Charlotte Taylor**, Program Coordinator, Sr, Building Healthy Communities  
**Elisabeth Tyndall**, Instructional Specialist, Nutrition Education  
**Kristin Valenzuela**, Extension Program Assistant, 4-H Healthy Families  
**Candace Weingart**, Program Coordinator, Building Healthy Communities

**Sharon Buono**, Business Manager  
**Tricia Dunham**, Administrative Assistant  
**Connie Forsyth**, Administrative Associate  
**Shannon Glaser**, Administrative Assistant

**Extension Advisory Board**

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Alan Seitz  
Nathan Watkins  
Moiria White

**Office Locations**

450 S. Haskell Avenue  
Willcox Arizona 85643  
tel: 520.384.3594

1140 N. Colombo  
Sierra Vista Arizona 85635  
tel: 520.458.8278 x 2141

66 Brewery Avenue  
Bisbee Arizona 85603  
Tel: 520.366.8148  
(Friday, 9am-3pm & by appointment)



**Cooperative Extension, Cochise County Faculty and Staff Continued**

**Susan Albright**, Instructional Specialist, Horticulture, on-call  
**Sahil Arora**, Technical Expert, Dentist, on-call  
**Angela Banks**, Technical Expert, Dental Hygienist, on call, Mohave  
**JoonHong Choi**, Technical Expert, Dental Assistant, on call, Santa Cruz  
**Susan Curry**, Technical Expert, Dental Assistant, on call, Gila  
**Mary Jean Debaca**, Technical Expert, Dental Hygienist, on call, Santa Cruz  
**Madison Fenicle**, Technical Expert, Dental Assistant, on call, Navajo, Yavapai  
**Katie Flood**, Technical Expert, Dental Hygienist, on call, Navajo, Yavapai  
**Leticia Garcia**, Technical Expert, Dental Assistant, on call, Cochise  
**Taylor Glaser**, Technical Expert, Dental Assistant, on call, Cochise; Office Assistant, on call  
**Kathryn (Kamie) Gonzalez**, Office Assistant, on call  
**Kathleen (Kathy) Hunter**, Technical Expert, Dental Assistant, on-call, Gila  
**Ella Johnson**, Technical Expert, Dental Hygienist, on-call, Cochise  
**Linda Lavy**, Technical Expert, Dental Assistant, on-call, Yuma  
**Vita Mazzola Nicks**, Technical Expert, Dental Hygienist, on-call, Gila  
**Diana Milazzo**, Technical Expert, Dental Hygienist, on-call, Cochise  
**Stephanie Morris**, Technical Expert, Dental Hygienist, on-call, Yuma  
**Patricia Quets**, Technical Expert, Dental Hygienist, on-call, Cochise  
**Regina Rich**, Technical Expert, Dental Hygienist, on-call, Navajo  
**Lisa Thompson**, Instructional Specialist, Horticulture, on-call  
**Marlene Townsend**, Instructional Specialist, Horticulture, on-call  
**Jody Sharp-Webb**, Instructional Specialist, Horticulture, on-call  
**Tatianna Siler**, Technical Expert, Dental Assistant, on-call, Cochise  
**Christian Urrea**, Technical Expert, Dental Assistant, on-call, Cochise  
**Julie Winn**, Technical Expert, Dental Hygienist, on-call, Cochise, Santa Cruz  
**Linda Wright**, Office Assistant, on-call

**AmeriCorps Members**

Laura Dunham, 4-H Youth Development



Falcon demonstration for 4-H members.



Natural resource views in Cochise County.



SNAP-Ed and EFNEP blender bike in action.



Jan Groth and Master Gardener's at work in the Discovery Gardens.



Agent Josh Sherman inspecting wine grapes.

**W**ater availability is one of the most important natural resource and economic issues in Cochise County. Groundwater overdraft threatens to impact the federally protected San Pedro River National Conservation Riparian Area and the headquarters of U.S. Army Intelligence at Fort Huachuca. As the groundwater table lowers, it can impact the San Pedro River (in 2000, ecotourism contributed \$17 to \$28.3 million to the local community) and reduce missions on Ft. Huachuca which contributes an estimated \$2.68 billion to the County (Huachuca 50, 2018). The University of Arizona-Cochise County Cooperative Extension's Water Wise Program is a key educational water conservation program in the county by providing solutions that empower citizens to conserve groundwater and helps communities and the economy remain strong.



### *Here's how Water Wise helps:*

- *With educational events teaching citizens about drip irrigation, rainwater systems, low water landscape plants and design, good watering practices, septic care; and annual Rainwater and Off-the-Grid Tours.*
- *With specialized on-site home and business visits providing specific conservation actions and follow-up.*
- *By partnering with Master Gardeners, municipalities, businesses, non-profits, citizens and schools on conservation projects.*
- *By providing water conservation lessons to youth throughout Cochise County in school classrooms and special presentations for additional youth programs.*
- *Providing water conservation resources through our [website](#).*



### **2019– BY THE NUMBERS**

- ▶ Water Wise Community Outreach educators had 1,425 direct adult contacts
- ▶ Water Wise Youth educators had 3,439 direct youth contacts
- ▶ 432 Water Conservation Poster Contest entries from Sierra Vista area schools.
- ▶ About 200 adult and youth educational events were conducted by the Water Wise Program
- ▶ 37 residences had a site visit/consultation from Water Wise
- ▶ 82% of on-site visit recipients made some conservation change on their property
- ▶ Approximately 68,000 gallons of water will be saved per year through grants from the Upper San Pedro Partnership Retail Committee grants in 2019, administered by Water Wise

Contact: Evelyn Whitmer  
Regional County Extension Director, Cochise & Santa Cruz Counties  
University of Arizona Cooperative Extension  
emarkee@arizona.edu

Cochise County 4-H Youth Development is an experiential learning youth education program for Cloverbuds (children 5-8 years old) and for youth, ages 9-18. Its practical life skills education in science and technology, healthy lifestyles and citizenship can reach any kid ... anywhere ... any time through 4-H clubs, camps, after-school and summer programs, educational events, and community service. We rely heavily on volunteers to reach more youth, lead educational programs, coordinate activities, and manage clubs and groups. Through engaging, hands-on experiences, young people develop specific skills that are important for jobs and careers such as leadership skills, ability to organize and lead meetings, set and achieve goals, financial awareness, and social skills. These skills arguably lead to greater physical and emotional health and educational and occupational success.

- *4-H Youth are two times more likely to make healthier choices, three times more likely to make contributions to their communities, two times more likely to graduate from high school and go to college, and two times more likely to pursue a career in science (Tufts University Study, December 2013).*
- *Through engaging, hands-on experiences, young people learn the skills and abilities to become productive adults who contribute back to the health and economic well-being of their communities. Public value: 4-H increases personal responsibility that positively contributes workplace skills and to communities.*



### 2019 – BY THE NUMBERS

- ▶ A total of 127 demonstrations conducted during the year with 34% at the project level, 60% at the club level, 1% at the county level, and 2% other level.
- ▶ 324 youth were yearlong club members and 1,872 youth participated in special interest, military clubs, and school enrichment programs.
- ▶ Yearend evaluations of club members show 4-H provides an environment where members can explore new ideas, take on leadership roles, and develop the 5 C's of Positive Youth Development: Confidence, Competence, Character, Caring, and Connection.
- ▶ 504 youth received 6 hours of healthy living curriculum including healthy eating habits and physical activity.

Contact: Peter Hooper  
Area Agent, 4-H Youth Development  
hooperp@arizona.edu

Rangelands are important to society for the goods and services they produce and for the ecological services they provide. There is a need to balance livestock grazing with natural resources. This is especially important as livestock producers have been reducing and managing herds as a result of drought conditions for the last two decades. Workshops are held that teach various subjects relating to rangeland management, monitoring, livestock nutrition and other identified needs requested by clientele. Work is done collaboratively at both the local and state levels in partnership with ranchers, Bureau of Land Management (BLM), US Forest Service (USFS), and Natural Resources Conservation Service. Ranches are monitored for long-term soil and vegetation trends.

- *Ranchers and land management agency personnel have a better understanding of rangeland management and monitoring.*
- *Long-term rangeland monitoring data is available for USFS and BLM permittees to use in management decisions, and for federal employees to use in resource analysis.*
- *Healthy rangelands support livestock production, wildlife habitat, and other natural resource benefits for society.*



### 2019 – BY THE NUMBERS

- ▶ Conducted 6 workshops or gave invited presentations on rangeland related subjects to 163 ranchers, agency personnel, and students.
- ▶ 62 sites on 21 BLM allotments and 36 sites on 15 USFS allotments were monitored. Monitoring reports were prepared for each allotment and given to agencies and ranchers.
- ▶ \$102,000 was obtained in grants to support the monitoring program.
- ▶ 4 field trials were continued to look at the cost effectiveness of mesquite control using herbicides.

Contact: Kim McReynolds  
Area Agent, Natural Resources  
kimm@arizona.edu



Commercial beef extension programs equip cattle producers to make informed decisions regarding herd health and management, cattle nutrition, genetics and stock selection, food and product safety, economics of profitability, sustainability, and the well-being of animals and public perception of the beef industry as a whole. Commercial beef production in Cochise County is primarily composed of cow-calf operations (ranches) that utilize a variety of federal, state, and private lands for grazing cattle, several feed yards, and a livestock auction yard. There are approximately 335 cattle operations in the county raising 57,000 head of cattle. As a whole, the Cochise County beef industry contributes \$34.5 million in sales to the economy. In addition to the economic contributions, ranches maintain working landscapes and healthy rangelands that also benefit wildlife and public recreation.

- *Ranchers are better equipped to make decisions that improve herd health, develop cattle that match their forage resources, increase pounds of healthy calves produced, and enhance the value of their livestock.*
- *Properly managed livestock grazing supports healthy rangelands and wildlife habitat.*
- *Public perceptions of the livestock industry are improved by increased numbers of ranchers utilizing low-stress animal handling and consumer driven guidelines from the Beef Quality Assurance program.*



### 2019 – BY THE NUMBERS

- ▶ Conducted 3 Beginning Rancher workshops, 2 livestock workshops, the 2019 Range Livestock Nutrition Workshops, and collaborated with the Southeastern Arizona Farm and Ranch Trade Show committee to include ranch related demonstrations using live animals at the event.
- ▶ Workshop attendees were able to list at least one new concept they learned, and 95% indicated they intended to implement at least one new practice on their operation from the information provided.
- ▶ Certified 93 new producers and renewed 48 certifications in Beef Quality Assurance, a national program that emphasizes producer commitments to best management practices.
- ▶ Four issues of “Arizona Range and Livestock News” were distributed to 464 readers per issue across Southeastern Arizona.

Contact: Ashley Wright  
Area Assistant Agent, Livestock  
awright134@arizona.edu



**N**utrition and physical activity education programs offered through the Cochise County Cooperative Extension promote healthy nutrition and physical active lifestyles and systems change that lead to healthier individuals and families in our communities.

Our SNAP-Ed (Supplemental Nutrition Assistance Program –Education) program works in concert with the Arizona Health Zone. This program serves schools, families and individuals that meet SNAP eligibility.

The USDA Expanded Food and Nutrition Education Program (EFNEP) is designed to assist limited-resource audiences to acquire knowledge, skills, attitudes, and to change behaviors necessary for nutritionally sound diets, and to contribute to participant’s development and the improvement of the total family diet and nutritional well-being.

The CDC Diabetes Prevention 12 month Program (DPP) is working to prevent or delay type 2 diabetes with this evidence-based lifestyle change project.

*People involved in our Nutrition/Health Programs:*

- *Are at lower risk for obesity, reducing health care costs.*
- *Have increased moderate physical activity each day.*
- *Are eating more fruits, vegetables and whole grains.*
- *Participants have improved cholesterol, blood pressure and lower Hemoglobin A1c.*



## 2019 – BY THE NUMBERS

- ▶ There were 13,115 youth and 205 adult participants who received nutrition related messages. 11 participants completed the 12 month DPP program
- ▶ 450 hours of volunteer hours values at an estimated \$11,174.
- ▶ 83% of participant showed improvement in their diet quality.
- ▶ 65% of participants improved in their physical activity behaviors.
- ▶ 91% of DPP participants lost between 5-7% of their body weight.

Contact: Evelyn Whitmer  
Area Agent, Family, Consumer and Health Sciences  
emarkee@arizona.edu

To improve health outcomes for children in rural Arizona, the Cochise Cooperative Extension has developed and implemented several oral health programs. These programs are designed to educate the community on the importance of oral health, deliver preventative services and improve access to dental care. The First Smiles Oral Health Program provides oral health education, supports in-classroom tooth brushing and preventative dental screenings and fluoride varnish application for children birth to age seven. Additionally, this program provides education and prevention services to childcare providers/educators, conducts outreach to dentists and other oral health professionals, provides dental education and screening for pregnant women and coordinates referrals and care to a dental home. The Cavity Free AZ Sealant Program, running in three counties (soon to be eight), providing oral health education and dental sealants to low-income children in the second and sixth grades, and fluoride varnish for kindergarteners. This year, Cavity Free AZ was able to introduce Silver Diamine Fluoride and another service to encourage healthy smiles. Silver Diamine Fluoride (SDF) is brushed on specific teeth showing decay; the SDF works to arrest decay and stop further growth of bacteria. This program is school-based and operates state-wide to prevent tooth decay. The Cochise Cooperative Extension was also awarded a competitive research grant through Oral Health America, in partnership with Ronald McDonald House Charities. The Oral Health America grant is funding a two-year research study working with Head Start children. This national research study is intended to test the efficacy of an oral health model that includes oral health screenings, twice-annual fluoride varnish and the use of Cavity Free Kids parent-engagement curriculum. Fluoride and sealant prevention programs are especially important for un-fluoridated communities such as those in Cochise County. Fluoride varnish can reduce tooth decay by 37% to 63%<sup>1</sup> and Sealants can reduce decay in school children by more than 70%<sup>2</sup>. These programs lay the foundation for a lifetime of oral health through education and prevention.



- *Children in Cochise County are receiving early prevention and intervention to reduce incidence and prevalence of tooth decay.*
- *Schools and childcare facilities are receiving education for childcare providers, children and their families.*
- *Children in the 2<sup>nd</sup> and 6<sup>th</sup> grades in low income schools are receiving dental sealants and SDF to prevent and arrest tooth decay.*
- *Children at participating childcare facilities are brushing their teeth daily. Fluoride toothpaste reduces tooth decay among children by 15% - 30%<sup>3</sup>.*

## 2019 – BY THE NUMBERS

- ▶ 3002 Children screened, children receiving sealants-953, Kindergartener’s and preschoolers receiving Fluoride 935, Silver Diamine Fluoride 4.
- ▶ Number of teeth strengthened 20,700.
- ▶ The average cost of a filling is approximately \$100 per decay potentially saving our program participants \$2,070,000.

Contact: Evelyn Whitmer  
 Area Agent, Family, Consumer and Health Sciences  
 emarkee@arizona.edu

<sup>1</sup> Mishra P, Fareed N, Battur H, Khanagar S, Bhat MA, Palaniswamy J. Role of fluoride varnish in preventing early childhood caries: A systematic review. Dent Res J (Isfahan). 2017;14(3):169-176.  
<sup>2</sup> Beauchamp, Jean et al. Evidence-Based Clinical Recommendations for the Use of Pit-and-Fissure Sealants. The Journal of the American Dental Association , Volume 139 , Issue 3 , 257 – 268  
<sup>3</sup> Fluoride Recommendations Work Group. Recommendations for Using Fluoride to Prevent and Control Dental Caries in the United States. Centers for Disease Control and Prevention (CDC). August 17, 2001 / 50(RR14);1-42

The Cochise Healthy Communities Initiative works to address and change the health issues throughout Cochise County. This 3 year project obtained grant funding from the Legacy Foundation of Southeastern Arizona. Through community partnerships, leaders have developed community action "Healthy Communities" groups in each hub of the county who prioritize and resolve disparities related to health utilizing Elements of a Healthy Community that include the following: Access to health care and coverage; Affordable quality housing, Community safety; Economic, Educational, Parks and recreational opportunity; Environmental quality; Food access; Healthy community design; Social and Cultural Cohesion; Social Justice; and Transportation options. These "Healthy Communities" groups are connected to the district's School Health Advisory Councils (SHAC) to leverage resources to work together on larger health issues in the schools. A community health assessment was developed with partner financial backing; with this and through a strategic process across the county (2017) three goal areas have been identified as follows: 1. Mental Health & Substance Abuse 2. Good Jobs & Healthy Economy 3. Healthy Eating, Diabetes & Obesity.

- *Communities can make sustainable changes in their communities collectively.*
- *Leaders are advocating for environmental changes in the community to promote health, mental health/substance abuse to grow a healthy economy.*
- *Higher leadership in the county is informed and can make county decisions based on the identified needs and perspectives of these committees.*



## 2019 – BY THE NUMBERS

- ▶ Developed Cochise Leadership Academy, which graduated 36 students whose projects included, not limited to
  - increasing healthy food access in the Palominas area
  - creating school-age curriculum to build cultural awareness and self-esteem
  - creating a plant-based lifestyle/diet cookbook
  - improving local emergency response systems
  - bringing a youth recreation center to a high-need area
  - compression-only CPR, increasing usage of Pulse-Point App
  - youth resources for bullying
  - development of parent education curriculum
  - supporting/fundraising for Willcox Food Distribution Center
- ▶ School food pantries implemented at Pearce Elementary School and Winchester Heights Community Center, with several other schools ready for food safety training for pantries.
- ▶ Healthy Community Committees increased from six to ten: working on affordable housing, transportation between cities, community gardens, increasing medical services including rural health and mobile clinic, emergency plans, mental health training, and increasing school ratings.
- ▶ Cultivated healthy food system by creating new Produce on Wheels Without Waste sites, developed a comprehensive list of local farmers and ranchers, facilitated a connection with the Tombstone Food Bank with the Huachuca City Senior Center
- ▶ Recruited 5 new school districts and 10 new schools who developed a SHAC at their school to enhance school wellness policies using the WellSat and AZDE policy tools (PSE). School sites receive BHC/SNAP-Ed support via SHAC who receives resources and grant support, direct education to students, PSE change models that increase healthy lifestyles and campus health.

Contact: Evelyn Whitmer  
 Area Agent, Family, Consumer and Health Sciences  
 emarkee@arizona.edu



**B**uilding Healthy Communities (BHC) addresses health issues. With the Cooperative Extension and the County Health Department, and other partners, a local community health partnership entitled the Healthy Cochise Coalition (HCC) makes community/county health recommendations through a Community Health Assessment and Improvement Plan. This group focuses on the 12 dimensions of a Healthy Community and collective impact-access to care affordable quality housing, community design, community safety, economic opportunity, educational opportunity, environmental quality, food access, parks & recreation, social/cultural cohesion, social justice, and transportation options.

The HCC has developed citizen-led community action groups in each hub (11) of the county who prioritize and resolve disparities related to health. These "Healthy Communities" groups connected to the district's School Health Advisory Councils (SHAC) to leverage resources to work together on larger health issues in the schools and their efforts. The Federally funded hospitals (members of the HCC) have a mandate to conduct a community needs assessment where all hospitals and other entities pooled their resources to conduct a greater assessment.

Through a strategic process across the county (2017) working with a steering committee, three-goal areas identified:

1. Mental Health & Substance Abuse-Create policy changes to keep people with mental illness out of jails and prisons. Expand mental health wellness and substance abuse resources for everyone in Cochise County.
2. Good Jobs & Healthy Economy-Promote business growth and job opportunities throughout Cochise County. Promote tourism and cross-border partnerships and business activities for all of Cochise County.
3. Healthy Eating, Diabetes & Obesity also known as Healthy Eating Active Living- Build and strengthen community options for healthy eating and active living. Change the cultural expectations about the definition of a good and healthy life. This strategy funded with a two million dollar grant from the Legacy Foundation of Southeast Arizona.

*People involved in the BHC:*

- *Are developing food pantries, community and school gardens.*
- *Are changing school policy.*
- *Are bringing in fresh produce to our food deserts.*
- *Connecting communities to work together to come up with healthy solutions.*



## 2019 – BY THE NUMBERS

- ▶ 160,339 Pounds of fresh produce distributed in our rural areas monthly.
- ▶ Tri-City transportation grant of \$235,852 to connect the communities of Sierra Vista, Tombstone, and Huachuca City.
- ▶ 225,000 ounces of filtered water distributed with education on think your drink campaign.
- ▶ Implemented 4 schools with joint use policies where the community can use the physical activities facilities of the schools.

Contact: Evelyn Whitmer  
Area Agent, Family & Consumer Health Science  
emarkee@arizona.edu

Tree nuts, fruit trees, and vines contribute over \$200 million to Arizona's economy on an annual basis and the production of such crops is increasing. There are currently more than 35,000 acres currently planted in tree nuts and vines (26,000 in pecan, 9,000 in pistachio, 2,000 in grape). To date less than half of the acreage in pecan and pistachio is in fruit-bearing age thus future economic impact is expected to rise. Cochise County supports the majority of this production acreage. In all these perennial crops fungal or bacterial pathogens can have a significant impact on the mortality, quality, and yield. Some of the most common fungal diseases



are the *Phymatotrichum* (a root rot disease indigenous to Southwest soils), which impacts most dicot species of plants. In pistachio, *Septoria* leaf spot, and shoot blights, *Phoma* and *Botryosphaeria* have been an issue. *Phoma fungicola* is specifically limited to Arizona pistachios. The Commercial Horticulture program has collaborated with plant pathology specialists, both nationally and internationally, with multi-state level approaches, to research the development and lifecycles of these biotic agents, and best treatment options. There are now three American Viticulture Areas (AVA) that are federally recognized in the state of Arizona. The designated AVA's include Sonoita/Elgin, Willcox, and now Verde Valley. This program is directly responsible for the annual UA Viticulture Symposium. More than 80% of the state total grape production is in Cochise County, therefore, this program seeks grant funding, organizes education, and evaluates the viticulture needs of the grape producers. With warming trend patterns increasing in winter months, weather extremes also present risk for commercial crops in Southeast Arizona. It is necessary that not only producers, but the community, be informed when an extreme weather event may pose risk to negatively impact the areas. Also, the demand to learn about horticulture and farm business planning has grown in Cochise, with specific interest to grow their own produce, fruits, and nuts on small acreage farms, and a focus on sustainable agriculture and improving soil health the priority. This program is designed in order to maintain support and resources to protect Cochise County food producers and their investments.



- *Plan, implement, and evaluate effective outcome-based programs to support identified issues in horticulture crops.*
- *Integrate new science-based knowledge, technologies, decision-support systems, and best management practices for growers and stakeholders.*
- *Optimize efficient, economical, and sustainable production of horticultural crops and strengthen local and regional food supplies.*

#### 2019 – BY THE NUMBERS

- ▶ 10 experimental research projects were conducted which focused on various horticultural issues.
- ▶ The usage of fungicides significantly reduces the amount of *Phoma* incidence in comparison with untreated trees.
- ▶ *Phoma fungicola* showed high sensitivity to fungicides formulated with DMI-FRAC#3 and SDHI-FRAC#7 active ingredients.
- ▶ 175 constituents receive updates from Southeast Arizona weather extremes roster, a 43% increase from when this program began in 2015.
- ▶ The Arizona Pecan Grower's website was established and has been clicked 20,563 times since the release, 175 stakeholders (local, state, national and international) have visited the site, and 6 resource pages on average are clicked per visit.
- ▶ Over \$200,000 obtained in grants and in-kind gifts since 2015 for program support.

Contact: Joshua Sherman  
 Area Assistant Agent, Commercial Horticulture  
 jdsherman@arizona.edu

Master Gardeners are a vital part of consumer horticulture programming and education provided to our community by the Cooperative Extension. Master Gardeners are trained volunteers who successfully complete a 16-week class series followed by 50 community volunteer hours in order to receive a certification. They support the UA Cooperative Extension by providing research-based information on environmentally responsible gardening and landscaping practices and skills to the public, through an educational demonstration garden (Discovery Gardens at UA Sierra Vista), through monthly workshops (the MG Workshops series), by answering countless questions from the public which are received in the Master Gardener office and at Farmers' Markets, and providing ono-on-one consultations. Today, the need for these volunteers continues to grow with the increasing interest and demand for gardening-related advice.



Cochise County Master Gardeners:

- *Help to improve the natural environment through public education which leads to wise use of natural resources and efficient gardening practices and skills.*
- *Increase residents' access to UA Cooperative Extension through their broad and continuous public presence through workshops offered, public questions answered, and referrals to research-based information.*
- *Practice and educate community members with the latest horticultural information from the University of Arizona, about environmentally friendly landscapes which lead to wise water use, reduced pesticide use, and successful desert landscapes.*



2019 – BY THE NUMBERS

- ▶ >1400 students, K-12 from Cochise County schools attended the 3-hour educational field trip events in the Discovery Gardens at the UA South Campus in Sierra Vista, AZ.
- ▶ 26 Students completed the Master Gardener 16-week class series.
- ▶ 405 people attended Master Gardeners' workshops.
- ▶ >150 emails regarding landscape/gardening questions were answered via email inquiries.
- ▶ >620 questions were answered from public phone calls made to the Master Gardener office.
- ▶ >700 seed packets were given out from the newly developed Seed Library, Cochise County's first.
- ▶ Spring and Fall Plant Sales are produced which offer >100 varieties of native & desert-adapted plants with plant talks on everything available, (110 participants in Spring, 78 in Fall).
- ▶ 85 guests attended the 'Dine on the Desert' event, an educational opportunity to learn about native, local plant species that provide food.
- ▶ >\$10,000 in grant funds secured in 2019.

Contact: Joshua Sherman  
Area Assistant Agent, Commercial Horticulture Agent  
jds Sherman@arizona.edu

Jan Groth  
Assistant in Extension, Horticulture  
jangroth@arizona.edu