

2022

FACAA Mid-year Meeting and
Professional Development
Conference
April 26-27, 2022
West Palm Beach, Florida





FACAA Mid-year Meeting and Professional Development Conference

April 26-27, 2022

West Palm Beach, Florida

Agenda

April 26, 2022

Clayton E. Hutcheson Complex, Exhibit Hall A/B
559 N Military Trail, West Palm Beach, FL 33415

2:00 pm - Planning Team Arrival

- Matt VanWeelden & Jim Davis

3:00 pm - Set up for Posters

- Jim Davis and Alicia Halbritter

3:00 pm - Room Check-in (Embassy Suites Palm Beach Gardens)

4:00 pm - FACAA Board Meeting

4:30 pm - Poster Judging

5:00-6:00 pm - Poster Presentations

6:30 - Dinner (on your own)

April 27, 2022

Clayton E. Hutcheson Complex, Exhibit Hall A/B
559 N Military Trail, West Palm Beach, FL 33415

8:30 am - Tour of Palm Beach Convention Center
650 Okeechobee Blvd, West Palm Beach, FL 33401

12:00 pm - Membership Luncheon

1:00 pm - General Membership Meeting

2:45 pm - Administrative Update

- Dr. Saqib Mukhtar, Associate Dean for Extension, Agriculture and Natural Resources

3:00 pm - Poster and Abstract Awards

3:15 pm - Break

3:30 pm - Agent Abstract Presentation Sessions

6:30 pm - Adjourn

2021-2022 Mid-year Committee

Chair – Matt VanWeelden

Co-Chair – Jim E. Davis

Abstracts and Poster Chair – Alicia Halbritter

Bonnie Wells

Jessica Sullivan

Prissy Fletcher

Lauren Butler



FACAA Mid-year Meeting and Professional Development Conference April 26-27, 2022 West Palm Beach, Florida

Presentation Schedule

Time	Exhibit Hall A Presenter	Abstract Page Number	Exhibit Hall B Presenter	Abstract Page Number
3:30 pm	VIRTUAL FARM TOURS KEEP LOCAL TRADITIONS ALIVE DURING COVID-19 M. Pinkerton	4	THE BEES, THE BIRDS AND THE BUTTERFLIES: POLLINATOR-FOCUSES DAY CAMPS THAT TEACH SCIENCE AND ECOLOGY TO THE NEXT GENERATION. L. Rodriguez	8
3:50 pm	SOUTHEASTERN 4-H CROP SCOUTING SCHOOL- PEST MANAGEMENT AND AGRIBUSINESS CAREERS E.T. Carter	5	THE IMPACTS FROM GREEN INDUSTRY BEST MANAGEMENT PRACTICES TRAINING; PRICELESS L. Strange	10
4:10 pm	ENVIRONMENTAL LANDS MANAGEMENT USING CATTLE GRAZING L. Bennett	6	THE CITRUS HEALTH FORUM: EXPANDING CITRUS PROGRAMMING IN NORTH FLORIDA D. Sprague	13
4:30 pm	BRINGING PEANUT VARIETY EVALUATION ON-FARM IN CALHOUN COUNTY D.J. Leonard	7	THE IMPORTANCE OF AGENT-SPECIALIST RELATIONSHIPS IN ALTERNATIVE CROPS: A CASE STUDY IN FLORIDA HOPS M. Smith	14
4:50 pm	OPTIMIZING PEANUT HARVEST TIMING WITH THE aGDD TRACKER M.D. Mauldin	9	TRIAGING FOR HE TCAA: HOW AN EXTENSION AGENT COORDINATES A LAB WITHIN HER FTE E. Fletcher	15
5:10 pm	KEEPING A HEALTHY HERD BY UNDERSTANDING FECAL EGG COUNTS K. Korus	11	OFFERING VOCATIONAL AND LIFE SKILLS TRAININGS FOR INMATES Y. Goodiel	16
5:30 pm	BEEF CATTLE WORKSHOP FOR BEGINNERS W. Mussoline	12	USING TECH TO IDENTIFY AND HIGHLIGHT IMPACTS M. Atkinson	17
5:50 pm	EXTENDING EXTENSION AS A PROSPECTIVE EMPLOYER: COMMUNICATING A CAREER IN COUNTY EXTENSION TO A CLASS OF UF/IFAS CALS STUDENTS. J. Roberts	18		



FACAA Mid-year Meeting and Professional Development Conference April 26-27, 2022 West Palm Beach, Florida

Poster Presentations

Lead Author	Title	Abstract Page Number
L. Sanderson	WISER LAWN AND LANDSCAPE PROGRAMS LEAD TO WATER SAVINGS	19
E.T. Carter	A COMPARISON OF PEANUT FUNGICIDE PROGRAMS IN NORTHWEST FLORIDA	20
L. Johnson	USING SOIL MOSITURE SENSORS IN COVER CROPS TO DETERMINE THE EFFICACY OF USING WINTER COVER IN NORTHWESTERN FLORIDA	21
C. Prevatt	THE DISRUPTION THAT IS BLOCKCHAIN TECHNOLOGY ON REMITTANCE PAYMENTS FOR FLORIDA'S SEASONAL FARM LABOR	22
C. Prevatt	AN ECONOMIC ANALYSIS ON THE POTENTIAL TO ADOPT ALFALFA INTO ROW CROP ROTATIONS IN THE DEEP SOUTH	23
J. Bosques	RIDING THE BEEKEEPING BUZZ	24
I. Toledo	THE IMPORTANCE OF RECOGNIZING HEAT STRESS IN DAIRY COWS	25
Q. Wang	DEMONSTRATION OF DRONE TECHNOLOGIES TO IMPROVE VEGETABLE CROP MANAGEMENT	26
E. Harlow	DON'T KILL YOUR CLASSMATES! GAME-BASED LEARNING TO TEACH FOOD SAFETY IN THE GARDEN	27
A. Stonecipher	GARDEN TO TABLE SERIES	28
N. Simmons	CONNECTING THE CLOVER: SPARKING INTEREST IN A VARIETY OF 4-H PROGRAMS IN ESCAMBIA COUNTY	29
Y. Goodiel	EXTENSION SUPPORTS COUNTY PARTNERS BY PROVIDING ANNUAL TRAINING AND CEU'S	30
K. Waters	EVENTS: A PLATFORM FOR EXTENSION PROGRAM MANAGEMENT AND EVENT REGISTRATION	31
M. Beckford	PLANTING PARTNERS – ENGAGING COMMUNITIES IN AFFORESTATION	32
P. Tomlinson	WATER - THE RESOURCE THAT CONNECTS US ALL	33
A. Mészáros	FIRST RESEARCH AND EXTENSION EFFORTS ON LISTRONOTUS SP., AN EMERGING WEEVIL PEST OF CELERY AND PARSLEY IN SOUTHERN FLORIDA	34
E. Momol	UF/IFAS EXTENSION GREEN INDUSTRIES BEST MANAGEMENT PRACTICES TRAINING PROMOTES SUSTAINABLE URBAN LANDSCAPES	35
C.A.R. Sales	TROPICAL SODA APPLE AND DOGFENNEL CONTROL WITH DURACOR IN FLORIDA PASTURES	36
J. Davis	FOR THE BIRDS: BIRDING CLASSES GENERATE SIGNIFICANT KNOWLEDGE GAIN	37
J. Roberts	EXTENDING EXTENSION AS A PROSPECTIVE EMPLOYER: COMMUNICATING A CAREER IN COUNTY EXTENSION TO A CLASS OF UF/IFAS CALS STUDENTS	18



FACAA Mid-year Meeting and Professional Development Conference April 26-27, 2022 West Palm Beach, Florida

VIRTUAL FARM TOURS KEEP LOCAL TRADITIONS ALIVE DURING COVID-19

M. Pinkerton and J.K. Yarborough; UF/IFAS Extension, Seminole County, Sanford, FL

Situation: In Seminole County, Farm Tour is a long-time tradition, held for over 20 years, to encourage support of local farms and educate stakeholders on agriculture. Historically, participants attended an in-person educational tour of local farms, but in 2020, this event did not occur due to transition of extension faculty and the COVID-19 pandemic. Nonetheless, the community expressed strong desires to continue the Farm Tour tradition. In 2021, due to continued COVID-19 precautions, Farm Tour pivoted to a virtual format for the very first time. **Methods:** UF/IFAS Extension Seminole County developed six high-quality videos touring local farms in collaboration with Seminole County Government TV (SGTV). Each video included farmer-led content on topics like organic agriculture, agritourism, livestock, the nursery industry, pollinators and more. Short (<5 min.) videos were also paired with a blog that dove deeper into the topics. Content was shared and promoted on social media during a week-long event. A follow-up survey was used to measure outcomes. **Results:** Through multiple social media platforms, the Virtual Farm Tour reached over 2,700 people exceeding the average 45 people at past in-person Farm Tours. In a follow-up survey, 100% of survey participants (n=67) adopted at least one practice supporting local agriculture after viewing the Virtual Farm Tour (ie. 83.6% purchased more local agricultural products, 71.6% helped to protect honey bees and other pollinators, 65.7% checked the label of produce in the store to see where it was grown, 55.2% participated in an agritourism activity, and 44.7% encouraged youth to explore careers in agriculture). **Conclusion:** The 2021 Seminole County Virtual Farm Tour used novel techniques to keep the tradition alive and led to long-lasting, locally focused online content. Feedback from farmers and viewers was extremely positive and indicated that a virtual component will be important to Farm Tour into the future.



FACAA Mid-year Meeting and Professional Development Conference

April 26-27, 2022

West Palm Beach, Florida

Southeastern 4-H Crop Scouting School- Pest Management and Agribusiness Careers

E.T. Carter, Regional Crop IPM Agent, Jackson County, Marianna, FL 32448; C. Meadows, 4-H Agent, Seminole County, Donalsonville, GA 39845; C. Bowling, Agriculture Agent, Seminole County, Donalsonville, GA 39845; B. Hayes, Agriculture Agent, Mitchell County, Camilla, GA 31730; C. Cloud, Agriculture Agent, Grady County, Cairo, GA 39828; S. Mack, Regional Extension Agent, Houston County, Headland, AL 36245; R. Miller, Agriculture Agent, Greenwood County, Greenwood, SC 29646; A. Warner, Director of Agriculture Research & Campus Landscape, John De La Howe School, McCormick County, McCormick, SC 29835.

Background/Situation: One of the largest industries in the southeastern United States is agriculture, with the average farmer being 57.5 years old. It's imperative to educate youth on this sector and increase community engagement. Pest identification and farm management are important concepts necessary for agribusinesses. We expanded their agricultural career knowledge and increased their chance of pursuing a position in agriculture long term. This annual three-day program focused on 7-12th grade youth from Florida, Georgia, Alabama, and South Carolina. **Objectives/Purpose:** Educate youth on farm systems and crop management practices. They acquired integrated pest management and best management practice skills. Extension educates and connects youth with opportunities, this program trained them in necessary skills to acclimate to the work force following school. **Methods/Evaluation:** County extension agents transported youth to businesses in Jackson County, Florida, Houston County, Alabama, and Seminole, Grady, and Mitchell counties in Georgia. The group toured fields and facilities with farm owners and managers. Evaluation was done annually using pre/post tests. The goal was to increase knowledge on insect, weed, and disease identification, as well as common farm tools and equipment. **Results:** Over 4 years, we educated 48 youth on local agribusinesses and careers in their communities. Participants toured farms, businesses, and university research stations in Florida, Georgia, and Alabama. Thirty-three of the 48 answered pre/post surveys and results can be applied to our entire study population. Beginning knowledge levels averaged 41%, ending levels averaged 76%, demonstrating a 35% knowledge increase. **Conclusion:** Youth were excited to earn real world experience from local agribusiness leaders. Strong participant knowledge gains, several have even functioned as crop scouts after school to earn money. Extension teaches and trains future leaders, even if not all these youth remain in agriculture, they may one day be in a position to advocate for it.



FACAA Mid-year Meeting and Professional Development Conference

April 26-27, 2022
West Palm Beach, Florida

ENVIRONMENTAL LANDS MANAGEMENT USING CATTLE GRAZING.

L. Bennett, UF/IFAS Extension, Pasco County, Dade City, FL, L. Butler, UF/IFAS Extension, Okeechobee County, Okeechobee, FL, C. Kirby, UF/IFAS Extension, Manatee County, Palmetto, FL, and L. Wiggins, UF/IFAS Extension, Hendry County, LaBelle, FL.

Situation: There are more than 12 million publicly owned lands in Florida. Proper management can enhance wildlife habitat, control invasive species, maximize carbon sequestration, and provide economic benefit for Florida. Unfortunately, many managers of these properties do not have adequate knowledge of forage and cattle management nor understand the benefits. **Methods:** The purpose of this educational program and tour was to increase the knowledge of land managers of the ecosystem services provided by cattle grazing and of best management practices cattle producers follow to increase productivity and manage forage. The program was held at a public-owned property currently being managed with cattle grazing. The two-part program consisted of seminars covering ecosystem services, phosphorous and nitrogen budgets and soil health, stocking rates and forage management, and body condition scoring and physiology. Specialists from the Ona Range Cattle Research and Education Center and Archbold Biological Station assisted with the program. In the afternoon, the tour included demonstrations on soil testing, weed identification and management, hay production, body condition scoring and winter supplementation of cattle. Participants received a handbook with resources. **Results:** Retrospective surveys were used to determine knowledge gained by participants. They indicated an average knowledge gain of 61% on the topics. Nearly 2/3 of the participants were currently land managers overseeing nearly 1 million acres of land. From the evaluations, 94% stated they felt more equipped in their land management role; 89% stated they have a more positive view of cattle grazing leases as a tool for land management. **Conclusion:** Comments in our surveys showed we may impact future discussions about land management. The end goal beyond knowledge gain and behavior change was for land managers, who are not our typical stakeholders, to establish relationships with UF/IFAS Extension Agents; agents provide science-based resources for their land management decisions.



FACAA Mid-year Meeting and Professional Development Conference

April 26-27, 2022
West Palm Beach, Florida

Bringing Peanut Variety Evaluation On-Farm in Calhoun County

D.J. Leonard, UF/IFAS Calhoun County Extension, Blountstown, FL, 32424; Carter, E.T., UF/IFAS Regional Crop IPM Agent, Marianna, FL 32446; B.L. Tillman, M.W., Gomillion, North Florida Research and Education Center, Marianna, FL 32446.

Situation: Variety selection is one of the most important decisions peanut growers face each season and a main yield and profitability determinant for the operation. On-farm trials are a great way for growers to observe recently released varieties' performance in their operations and allow opportunities for partnership with county agents. Despite having ~10,000 acres of peanut production, Calhoun County has never participated in on-farm peanut variety trials, making this trial important in fostering the Extension-grower relationship. **Objectives:** To demonstrate and compare variety performance for three newer varieties and a control (standard industry variety). **Methods:** This trial was planted in a non-irrigated field after a two-year cotton rotation. Trial varieties included TUFRunner 297, FloRun 331, TifNV HiOL, and the standard Georgia 06G. Each variety was planted in 30 row blocks using a 36" twin row planter. The trial was planted on June 1st and harvested on November 1st, 153 days after planting (DAP). **Results:** Official field weights were 5,263 lb/ac for TUFRunner 297, 4,966 lb/ac for FloRun 331, 4,986 lb/ac for TifNV HiOL, and 4,697 lb/ac for Georgia 06G. Total Sound Mature Kernel percentages (TSMK%) were 76% for TUFRunner 297, 76% for FloRun 331, 76% for TifNV HiOL, and 78% for Georgia 06G. Finally, total dollar values were \$1,004.95 for TUFRunner 297, \$732.90 for FloRun 331, \$985.67 for TifNV HiOL, and \$702.51 for Georgia 06G. **Conclusions:** On-farm trials evaluating variety performance allow growers to feel connected to university research and know that research is relevant to and applicable on their farms. The farm standard variety is compared to newer releases for various metrics including grade, yield, disease pressure, and total value. Trials like this help provide farm specific data to participating growers and support the surrounding agricultural community through data that can be utilized by other growers.



FACAA Mid-year Meeting and Professional Development Conference April 26-27, 2022 West Palm Beach, Florida

THE BEES, THE BIRDS AND THE BUTTERFLIES: POLLINATOR-FOCUSED DAY CAMPS THAT TEACH SCIENCE AND ECOLOGY TO THE NEXT GENERATION

Luis O. Rodriguez Rosado, UF/IFAS Extension Polk County, Jonael Bosques UF/IFAS Extension Hardee County, Shreemoyee Gosh, UF/IFAS Extension Polk County, Marissa Alexander, UF/IFAS Extension Hardee County, Ajia Paolillo, UF/IFAS Extension Hardee County, Lourdes Perez Cordero, UF/IFAS Extension Highlands County

Situation: Pollinators are essential inhabitants of our environment. These creatures aid in the reproduction of ornamental and native plants as well as agriculture commodities. Specifically, the Western Honey Bee (*Apis mellifera*), aids humanity by pollinating approximately 85% of all crops in Florida. Youth in rural communities are often interested in nature-related topics such as beekeeping, but have little access to scientific information about pollinators. **Methods:** Spring Break Beekeeping Camps in Polk and Hardee Counties were planned, implemented, and evaluated by UF/IFAS Extension agents to increase knowledge and interest in pollinator science for youth 5 to 11. These camps focused increasing knowledge through activities such as demonstrations, crafts, field walks and formal educational time. Among the topics covered in the camps were bee biology and behavior, beekeeping tools, how honey is made and harvested, cooking with honey, and the importance of native bees and other pollinators, such as birds, butterflies, and bats for the environment. Youth were taught about beekeeping safety and observed live bees through the use of an observation hive. Other activities like making DIY pollinator hotels and a honey tasting exercise were incorporated in the camp to make the learning process more dynamic for the children. **Results:** Surveyed participants (n = 24) reported a 48% increase in knowledge when it comes to the understanding of the roles pollinators have on the environment, biology of the honey bee (32%), how honey is made by bees (73%), and how they help farmers produce more food (36%). Moreover, youth increased their awareness of potential careers they may pursue involving bees and other pollinators (73%). **Conclusion:** Pollinator education is of interest to all members of our communities including youth. UF/IFAS Extension Agents have the resources to provide science-based information to educate children and adults about important topics within natural resources and Florida agriculture using bees and pollinators as models to inspire change and practice adoption.



FACAA Mid-year Meeting and Professional Development Conference April 26-27, 2022 West Palm Beach, Florida

OPTIMIZING PEANUT HARVEST TIMING WITH THE aGDD TRACKER

M.D. Mauldin, UF/IFAS Extension, Washington County, Chipley, FL. E.T. Carter, UF/IFAS Extension, NW District, Marianna, FL. B.L. Tillman, UF/IFAS Agronomy Department, Marianna FL. L.C. Ichazo, UF/IFAS Agronomy Department, Marianna FL.

Situation: Peanuts are a major agronomic crop in North Florida. Optimizing harvest timing is essential to maximize both yield and grade but can be challenging for growers because temperature and available moisture greatly impact the speed of maturity. Timing harvest based on the accumulation of adjusted growing degree days (aGDD) is the most effective strategy. **Procedure:** To assist growers with optimizing harvest timing members of the Florida Peanut Team developed and published the *aGDD Tracker*. *The Tracker* presented aGDD data generated by Peanut Field Agronomic Resource Manager (PeanutFARM), an online platform that is tied to Florida Automated Weather Network (FAWN) weather stations. *The Tracker* showed the number of aGDDs accumulated by 140 different hypothetical fields (10 locations, 14 planting dates). Growers could follow whichever field(s) most closely approximated their own and see how aGDDs accumulated throughout the season, providing valuable insight for harvest decisions. *The Tracker* generated no new data – it was a way to combine, organize, and share aGDD data that otherwise would not have been easily accessible by growers. **Product:** 11 editions of *The Tracker* were published on the Panhandle Agriculture eNews website throughout the 2021 growing season. Each posting of *The Tracker* was accompanied by a “Peanut Update” consisting of a weather summary, field observations, and IPM recommendations. The posts were viewed approximately 1,400 times on the Panhandle Agriculture eNews website. Several of the posts were republished in trade publications furthering their reach. **Conclusion:** Input from producers and agents indicated that both the information in *The Tracker* and the updates were useful and served the intended goal of helping to inform harvest timing and IPM decisions. The *aGDD Tracker* was an excellent utilization of pre-existing resources (PeanutFARM, FAWN, Panhandle Agriculture eNews); combining them in a way that delivered timely, specific, and actionable information to growers.



FACAA Mid-year Meeting and Professional Development Conference April 26-27, 2022 West Palm Beach, Florida

THE IMPACTS FROM GREEN INDUSTRY BEST MANAGEMENT PRACTICES TRAINING; PRICELESS

L. Strange, UF/IFAS Extension, Taylor County, Perry, FL.

Situation: The Florida Department of Corrections, (FDC) the largest state agency in Florida, incarcerates approximately 80,000 individuals with a recidivism rate of 25% returning within (3) years, once released. According to FDC inmates obtaining employment after release from prison proves less likely to return to the correctional system which saves the state money, boosts local economies, and have positive impacts on the lives of inmates, their families, and the community. The University of Florida offers a science based Green Industry Best Management Practices (GI-BMP) certification, a statewide recognized certification on environmentally safe landscaping practices that help protect Florida's ground and surface waters and natural resources. The GI-BMP certification not only expands knowledge on environmental issues but provides qualifications for better marketability in the workforce. **Methods:** Five in-person trainings were conducted at the Jefferson County Correctional Institute in the fall of 2021. Eighty-seven participants completed the training, passed the exam, and received their GI-BMP certification. **Results:** An average pre-test score of 75 and post-test of 90, showed a 20% increase in knowledge after training. Two survey questions showed positive impacts with 90% stated the training a good use of their time, and 85% indicated they increased knowledge on potential impacts of landscaping activities. Having the GI-BMP certification each participant is eligible for a Limited Fertilizer Applicator license from Florida Department of Agriculture and Consumer Services. **Conclusion:** The average yearly cost of an individual in the Florida correctional system is \$22,750. If 20% of the (87) trained inmates became employed after release, the state would save \$409,500.00 per year, increasing local economy where they and their families will live, work and shop. Additionally, those trained will have the knowledge to address and implement proper practices managing turfgrasses and landscapes that encourage water conservation and pollution prevention.



FACAA Mid-year Meeting and Professional Development Conference

April 26-27, 2022
West Palm Beach, Florida

KEEPING A HEALTHY HERD BY UNDERSTANDING FECAL EGG COUNTS

K. Korus, UF/IFAS Extension, Alachua County, Newberry, FL and A. P. Tomlinson, UF/IFAS Extension, Columbia County, Lake City, FL.

Situation: Small ruminant livestock producers face many obstacles when trying to keep their herds healthy. More animals are lost to internal parasites than to any other problem. Anthelmintic treatments are effective but should only be administered to infected animals, so resistance is minimized or altogether avoided. To understand which animal is in need of treatment, fecal egg counts can be performed to find which species of parasites are present in the animal and in what populations. **Methods:** Each year at the Small Ruminant Workshop, hosted by the North Florida Livestock Agents Group, attendees are encouraged to bring fecal samples from their sheep or goats. Agents teach the producers how to properly collect, process, and examine the samples under a compound microscope. **Results:** According to a post-workshop survey, 80% of survey respondents (8 of 10) indicated that they increased their knowledge of collecting and evaluation fecal egg counts and 89% of survey respondents (8 of 9) indicated their intent to use fecal egg counts to treat their animals more accurately. Furthermore, attendees of the workshop indicated that the perceived economic impact of this training was \$1,000. **Conclusions:** If producers can sample, process, and view fecal egg samples correctly, they can treat animals and/or make culling decisions to remove more susceptible animals that continue to carry a parasite load. Also, while it is important for small ruminant livestock producers to utilize fecal egg counts, it is not realistic to expect them to be able to identify parasite eggs to the species level. As a result, samples may still need to be sent to a veterinarian for confirmation.



FACAA Mid-year Meeting and Professional Development Conference

April 26-27, 2022
West Palm Beach, Florida

BEEF CATTLE WORKSHOP FOR BEGINNERS W. Mussoline, C. Bainum, M. Brew, L. Bennett, J. Walter, T. Wilson, J. Bosques, E. Jennings, J. K. Yarborough, J. S. Strickland, K. Taylor, B. Justesen, and M. Binnelli. 2022. UF/IFAS Putnam County Extension, 111 Yelvington Road, East Palatka, FL.

Situation: Putnam County, Florida, has welcomed several new pasture landowners in the last couple years moving into rural areas in response to the COVID crisis. Many are acquiring approximately 5 to 10 head of beef cattle for greenbelt exemption purposes. According to the Putnam County Property Appraiser's office, 151 new parcels were granted greenbelt exemptions for cattle grazing operations in 2021. Most of these new operators lack education and experience in beef cattle management. Common challenges include insufficient forage, overgrazing, limited knowledge on herd health, and no understanding of beef reproduction strategies. The goal of this program was to introduce basic management practices to small beef cattle operators in Putnam County. **Methods:** The Agent collaborated with three major partners and hosted the on-farm beef cattle workshop for beginners on December 15, 2021. The Agent collaborated with the Putnam County Property Appraiser's office to market the program and with Spring Ranch to design and prepare an outdoor staging area for novices to safely handle beef cattle. The Agent assembled a knowledgeable teaching team consisting of five livestock Agents and one UF Veterinary Specialist that covered topics including toxic weeds, soil sampling, fertility for forages, winter grazing opportunities, herd health and immunizations, and pregnancy checks. **Results:** A total of 20 participants that had never attended a beef cattle educational program benefitted from this program. Attendees (17 out of 20) submitted pre- and post-tests, and their average knowledge increased from 47% to 92%. At least 80% of the attendees engaged in hands-on activities such as palpation, immunizations, or drawing blood samples for the first time. **Conclusion:** This program expanded our reach, identified new beef cattle producers eligible for the USDA climate smart technologies grant funding, and empowered small herdsman to improve their herd health through vaccinations.



FACAA Mid-year Meeting and Professional Development Conference April 26-27, 2022 West Palm Beach, Florida

THE CITRUS HEALTH FORUM: EXPANDING CITRUS PROGRAMMING IN NORTH FLORIDA

Danielle Sprague, UF/IFAS Extension, Jefferson County, Monticello, FL, and X. Martini, UF/IFAS NFREC, Dept. of Entomology & Nematology, Quincy, FL.

Situation: In North Florida, there has been significant growth in citrus production due to the relatively mild winters, advances in freeze protection, and cold hardy citrus varieties. This region is one of the only regions in Florida where commercial citrus planting is increasing, due to the relatively low incidence of the citrus greening pathogen and its vector. Despite the growth in citrus production, there is still a huge lack of knowledge for growers regarding production practices. In response to this need, state and county faculty members developed the Citrus Health Forum workshop to address the needs of citrus growers in North Florida. **Objective:** To provide research-based information to growers to improve production practices. **Methods:** The program began in 2017 and is now held annually at the UF/IFAS NFREC. It consists of classroom presentations from state specialists followed by a grower panel discussion and a field demonstration. In addition to the educational program, the program features a trade show of businesses and agencies that offer goods and services to growers in the region. Each year, we work in collaboration with the Cold Hardy Citrus Association to help plan the topics addressed at the program. **Results:** The number of participants have increased significantly, from just 65 in 2017 to 125 in 2022 and include growers from Georgia and Alabama. Since 2019, program evaluations have indicated a 96% (173/180) increase in knowledge of participants. Of those participants surveyed, 60% (101/167) indicated that they planned to make a change to their operation as a result of the information presented and 41% (57/138) indicated that they have already made a change. **Conclusion:** The Citrus Health Forum is now an established event that has been successful in offering educational content and continues to see positive feedback from growers.



FACAA Mid-year Meeting and Professional Development Conference April 26-27, 2022 West Palm Beach, Florida

THE IMPORTANCE OF AGENT-SPECIALIST RELATIONSHIPS IN ALTERNATIVE CROPS: A CASE STUDY IN FLORIDA HOPS

M. Smith, UF/IFAS Extension Sumter County, Bushnell, FL; S. Agehara, UF/IFAS Gulf Coast Research and Education Center, Balm, FL; H. Smith, UF/IFAS Gulf Coast Research and Education Center

Situation and Objectives: Florida is second only to California in the production of specialty crops.

As markets shift and new growers enter the market sphere, interest in alternative crops has grown in Hernando County. These crops are riskier to growers than established crops with years of research and proven field success. This is the case with hops, a specialty crop prized by brewers but traditionally grown in northern latitudes where long daylight hours promote full, vigorous growth of vines up to 20 feet high. Florida Sun Hops broke ground in 2018, just as the UF/IFAS Gulf Coast Research and Education Center (GCREC) broke ground on a USDA-funded hops research plot.

When I first arrived at Florida Sun Hops in 2018, the plants were severely stunted and did not yield marketable cones. The objective became to strategically partner with GCREC specialists Shinsuke Agehara and Hugh Smith to turn the farm around and bring them to a full commercial harvest within a three-year period. **Educational Methods:** Methods include communication between myself and specialists on a nearly bi-weekly basis to disseminate experimental data to growers and to report on-farm performance metrics for comparison, field visits by specialists, and on-farm research projects.

Results: Florida Sun Hops celebrated its first commercial harvest in the summer of 2021. The farm currently measures just under three acres, making it one of the largest hop farms in the southeast.

Hop vines reach 18 feet in height, are bushy, and produce hops that meet standard brewing quality expectations.

Conclusion: In situations where new crops are being grown in the state, a strong relationship between Extension Agents and Specialists is critical, both for disseminating bleeding-edge research to growers and for providing real-time feedback to researchers. For alternative crops growers already taking on great risk, it can mean the difference between success and failure.



FACAA Mid-year Meeting and Professional Development Conference

April 26-27, 2022
West Palm Beach, Florida

Triaging for the TCAA: How an Extension Agent Coordinates a Lab within Her FTE

¹E. Fletcher, UF/IFAS Extension, St. Johns County, St. Augustine, FL, ²C. Christensen, UF/IFAS HAEC, St. Johns County, Hastings, FL and ³B. Wells, UF/IFAS Extension, Brevard County, Cocoa, FL.

Situation: The Tri-County Agricultural Area (TCAA) consists of St. Johns, Putnam and Flagler Counties, representing ~63,000 acres. This area grows high value crops such as chip potatoes, turfgrass and blueberries. While the coordinator of the Hastings Triage Laboratory is only assigned to St. Johns County as the agricultural agent, the original laboratory grant was written to service all commercial TCAA growers as advised by stakeholders. UF's Plant Diagnostic Center is only 62 miles west of Hastings, but that is still half a workday's commute or expensive overnight shipping. A well-trained diagnostician could operate a laboratory to triage abiotic versus biotic stressors in crops, then narrow down biotic issues to bacteria, fungal or viral groups of pathogens. However, this objective would have to be achievable while still balancing the daily activities of a full-time Extension Agent. **Methods:** Through UF/IFAS HAEC, the coordinator requests annual grant budgets to support the operation of the lab. Since 2018, the triage lab has acquired between \$4,500 and \$15,000 per year in funding support. With the basic objectives of narrowing down to pathogen Kingdom, growers know to anticipate rapid, generalized results. However, the budget includes OPS assistance and specialized testing at the Extension labs when clientele requires more specific information. **Results:** Since 2018, the triage lab has processed 275 samples and saved growers \$13,200 in lab fees and shipping costs. It also prevented the application of unnecessary pesticides, fertilizers and soil amendments, while saving on operational costs of equipment and labor. The lab has recently relocated and doubled in square footage. **Conclusion:** With realistic objectives, stakeholder input and financial support, Extension agents can provide laboratory services while maintaining their job duties. An agent does not require a strong pathology background to triage crops; our university has a plethora of resources to tap into.



FACAA Mid-year Meeting and Professional Development Conference April 26-27, 2022 West Palm Beach, Florida

OFFERING VOCATIONAL AND LIFE SKILLS TRAININGS FOR INMATES

Y. Goodiel, UF/IFAS Extension Martin County, Stuart, FL, C. Kelly-Begazo, UF/IFAS Extension Indian River County, Vero Beach, FL, C. Roberts, UF/IFAS Extension St. Lucie County, Ft. Pierce, C. Peralta, UF/IFAS Florida-Friendly Landscaping™ Program, Naples, FL, J. Pelham, UF/IFAS Extension Martin County, Stuart, FL, K. Layton, Martin Correctional Institution, Indiantown, FL.

Situation: As Extension Agents, we strive to serve the underserved and make a difference in their lives and livelihoods. Inmates in federal and state prisons represent one such underserved audience, where extension can have tremendous benefit. About four in ten inmates released from state prisons are reincarcerated within three years. The Bureau of Justice Assistance found a 13% decrease in risk of reincarceration for inmates who participated in education programs during their confinement. Our objective was to offer inmates industry-recognized credentialing and life skills to enrich their lives and help them transition back into society. **Methods:** The Florida Department of Corrections and UF/IFAS Extension began collaborating in 2021 to offer inmates a series of certificate programs at the Martin Correctional Facility. We began with green industry and beginning farmer trainings for an initial 20 enrollees. In 2022, we added 13 additional enrollees and a personal finance series.

Results: Through 2021 pre-/post-tests and reflective surveys, we documented strong knowledge gains (16% (n=20) for Green Industry Best Management Practices, 18% (n=19) for landscape business basics, and 57% (n=19) for beginning farmer). In post-program surveys, inmates also expressed their intentions to adopt practices, including rotating crops on the facility's farm and pursuing green industry licensing/certification. **Conclusion:** Providing extension programs to inmates gives them an opportunity for positive growth during their incarceration and credentials they can use when seeking employment after release. According to the Department of Justice, for every dollar invested in prison education, incarceration costs are reduced by four to five dollars within the first three years post-release. In reducing recidivism, extension programs offer a strong return on investment and help ex-offenders reenter society successfully.



FACAA Mid-year Meeting and Professional Development Conference

April 26-27, 2022
West Palm Beach, Florida

USING TECH TO IDENTIFY AND HIGHLIGHT IMPACTS

Michelle Atkinson, UF/IFAS Extension, Manatee County, Palmetto, FL.

Situation: Running a mobile irrigation lab (MIL) for homeowners gives us an opportunity to collect a good deal of data on homeowner irrigation behaviors, common irrigation system problems, and much more. For fifteen years, data was collected by staff in the field on paper and translated into Word and Excel documents to send as a report to the client after they returned to the office. Data was aggregated into an Excel spreadsheet by office support staff. This process limited our client evaluations to two appointments a day at most taking into account in field and in office reporting.

Methods: In efforts to find a more efficient means of gathering and reporting this information, an intern with a master's degree in global information systems (GIS) was contracted. The intern worked with the extension agent that oversees the MIL to develop a system that combines software applications into a usable format for onsite reporting. Survey123 is now utilized to collect data and then reports are generated based on the data collected. **Results:** This reporting system reduced MIL staff time per evaluation by 50%. This system also cut down client report turn-around times from one week to one day. With this new tool, the intern then created a dashboard in ARC GIS to show charts and graphs from the aggregated evaluation data as well as creating layers on a county map to better identify irrigation issues and trends among our clientele. **Conclusion:** By using these tools, the MIL has reduced time per evaluation by 50% allowing more visits in a day. We have also saved office support staff time from inputting data into an overall spreadsheet then creating charts and graphs for reporting to funding agencies.



FACAA Mid-year Meeting and Professional Development Conference April 26-27, 2022 West Palm Beach, Florida

EXTENDING EXTENSION AS A PROSPECTIVE EMPLOYER: COMMUNICATING A CAREER IN COUNTY EXTENSION TO A CLASS OF UF/IFAS CALS STUDENTS.

J. Roberts, UF/IFAS Extension, Palm Beach County, West Palm Beach, FL, E. Marois, UF/IFAS Extension, Palm Beach County, West Palm Beach, FL, and R. Klein, UF/IFAS, Environmental Horticulture Department, Gainesville, FL.

Situation: Employers and fellow employees benefit from the recruitment of competitive candidates with direct knowledge on fields applicable to their everyday job performance. Cooperative extension is no exception, and already has a direct pipeline to prospective employees trained by state extension specialists via the College of Agriculture and Life Sciences (CALS). However, there is often a lack of public awareness about the mission, scope of work, and institutional structure of the extension network – even within UF/IFAS. **Methods:** A lecture was given for UF/IFAS CALS students about county extension and responsibilities of agents within the cooperative extension system. Initial pre-test data was taken via a web-based platform (i.e., Kahoot!) for both in-person and remote students enrolled in Arboriculture (ORH 4242C) Advanced Techniques in Arboriculture (ORH6932). A follow-up test and survey were conducted through Qualtrics to capture post- data and programmatic perceptions. **Results:** For questions about cooperative extension and the roles of extension agents, the pre-test responders (n=16) correctly answered questions on extension and the role of horticulture agents at a rate of 39.6%, while the post-test responses (n=11) showed students improved to a rate of 87.8%. For the survey, relatively few students reported to be “very interested” in Extension as a prospective employer before the class (i.e., 18.2%), while almost half were “very interested” afterward (i.e., 45.5%). **Conclusions:** Although the sample size from this class was relatively modest, it should impress the point that extension is still a relatively “unknown commodity” to prospective employees that have highly transferable skills in fulfilling the needs of extension. The presented lecture was oriented towards horticulture students, but similar collaborations between extension agents and other departments and classes within CALS would likely be beneficial to students, professors/specialists, extension agents, and UF/IFAS as a whole.



FACAA Mid-year Meeting and Professional Development Conference April 26-27, 2022 West Palm Beach, Florida

WISER LAWN AND LANDSCAPE PROGRAMS LEAD TO WATER SAVINGS

L. Sanderson, UF/IFAS Extension, Sumter County, Bushnell, FL

Situation: The Villages is the largest retirement community in the country and is continuing to grow exponentially. The increasing number of residents leads not only to increased water use through irrigation, but also increased use of fertilizers and pesticides whose improper use can adversely impact Florida's water resources. The newest residents of the Villages, who may be unaware of the best management practices for Florida's lawns and landscapes, are the focus of this program. The objective of this program is that at least 10% of participants will adopt one or more behaviors that will protect water resources as determined by a follow-up survey. **Methods:** WISER Lawns and Landscapes for New Residents is offered at two locations each month in an effort to focus on the new residents of The Villages. The program provides residents the skills needed to implement proper irrigation practices, using Integrated Pest Management, and including techniques for fertilization, which all protect water quality and quantity. **Results:** A Qualtrics survey was provided to participants in fall of 2021. A change in responding participants' (n=174) adopted behavior led to calculated potential water savings based on practice changes such as irrigating lawns based on seasons or installing or replacing a rain sensor. Participants (n=100) reached an estimated water savings of 3,049,913 gallons of water, a savings of \$10,552.20. They also changed behaviors related to pesticides by identifying the pest (n=47) and participants (n=80) minimizing fertilizer use in winter months. **Conclusion:** WISER Lawns and Landscapes for New Residents continues each month resulting in residents adopting practices which conserve water quality and quantity through their irrigation use, as well as fertilizer and pesticide use changes which can potentially lead to protected water quality. Participant practices changes should result in financial savings and potential longer-term water conservation.



FACAA Mid-year Meeting and Professional Development Conference April 26-27, 2022 West Palm Beach, Florida

A Comparison of Peanut Fungicide Programs in Northwest Florida

E.T. Carter, UF/IFAS Jackson County Extension, Marianna, FL 32446; B.L. Tillman, M.W. Gomillion, L.C. Ichazo, North Florida Research and Education Center, Marianna, FL 32446; N.S. Dufault, Plant Pathology Department, The University of Florida, Gainesville, FL 32611.

Situation: Fungicides and cultivar selection are key components of a peanut integrated disease management plan. However, the interaction between these components on peanut diseases (e.g. white mold (*Athelia rolfsii*) and leaf spots (*Passalora arachidicola*; *Nothopasslora personata*) is unclear. **Objectives:** To quantify differences in disease response between peanut genotypes FloRun 331™ (FR331) and Georgia 06G (GA06) under seven Peanut Rx based fungicide programs and two controls. **Methods:** This was an irrigated trial planted in two complete randomized blocks by variety. Leaf spot and stem rot were the two primary diseases of focus, and each was evaluated using different criteria. Leaf spot (LS) defoliation was estimated using the Florida 1-10 scale. Stem rot incidence was recorded throughout the season as the number of 1-ft foci/90 ft of row with below ground hit ratings collected 148 DAP at digging. **Results:** In 2021, Foliar disease onset in this trial occurred between 75 and 90 days after planting (DAP), with scale ratings ranging from 5 to 8 at 135 DAP. Fungicide program did not have an impact on stem rot hits, but incidence was numerically lower with FR331™ having 0.53 hits per treatment compared to GA06's 2.75 hits. Yield responses related to fungicide program varied between cultivars, however, both cultivars saw significant ($p < 0.01$) yield savings when fungicides were applied. These yield savings were larger on average for GA06 (1,825 lb/acre) than FR331 (1,588 lb/acre), especially for chlorothalonil alone applications (GA06 = 1827 lb/acre, FR331=997 lb/acre). **Conclusion:** Cultivar resistance as well as yield potential is critical to determining the impact fungicide programs will have on yield savings. Existing disease pressure and field history can greatly impact the effectiveness of a spray program.



FACAA Mid-year Meeting and Professional Development Conference

April 26-27, 2022
West Palm Beach, Florida

Using Soil Moisture Sensors in Cover Crops to Determine the Efficacy of Using Winter Cover in Northwestern Florida

L. Johnson, libbiej@ufl.edu, UF/IFAS Extension Escambia and Santa Rosa counties; E.T. Carter, ethancarter@ufl.edu, UF/IFAS Extension Regional Specialized Agent Northwest District; M. Mulvaney, m.mulvaney@ufl.edu, Mississippi State University Specialist; D. Schrimsher, drew.schrimsher@greenpointag.com, Auburn University PhD candidate

Situation: Unless you can afford irrigation, there are not a lot of options left to manage soil moisture under dryland production. A lot of benefits of cover cropping take years to become apparent, but improved soil moisture is not one of them. Keeping the ground mulched during periods of drought during summer production reduces the evapo- part of the evapotranspiration equation, and results in increased soil moisture compared to non-covered ground. **Objectives:** To utilize winter cover crops on dryland farmland to demonstrate an improvement on soil moisture to profitably grow the summer cash crops. **Methods:** Soil moisture sensors were installed in 3 growers' fields in Escambia and Santa Rosa counties, both in cover and non-cover fields; one set in a livestock cover crop situation. Summer crops were planted in the fields, and soil moisture is being monitored through harvest. Fall cover will be re-established after harvest to continue the trial for multiple years. **Results:** Early results demonstrate improved soil moisture in covered areas and greater penetration of moisture in the profile. Past years' results have shown an increased cotton yield in covered fields; it will be interesting to see the comparison side by side. Soil moisture was high in 2021; increased rainfall events may skew overall results. **Conclusion:** Extension activities in the area have demonstrated improved soil moisture status and yield when a persistent cover crop remains on the soil surface during cotton. Annual data are being used to advocate for statewide cost share for cover cropping in Florida; proposals are currently being developed for \$75/acre cost share for cover cropped land.



FACAA Mid-year Meeting and Professional Development Conference April 26-27, 2022 West Palm Beach, Florida

THE DISRUPTION THAT IS BLOCKCHAIN TECHNOLOGY ON REMITTANCE PAYMENTS FOR FLORIDA'S SEASONAL FARM LABOR

C. Prevatt, UF/IFAS Range Cattle Research and Education Center, Ona, FL, James K. Yarborough, UF/IFAS Orange County Extension, Orlando, FL, and Caitlin Bainum, UF/IFAS Marion County Extension, Ocala, FL.

Situation: In 2021, the UF/IFAS Blockchain Project began examining the underlying technology that blockchains provide, as well as assessing their prospective impact on society. One use case our team wanted to further evaluate was the potential to reduce remittance fees and provide a digital bank for Florida's migrant farm workers. Florida has over 175,000 seasonal farm workers from the Caribbean and Latin America. While in Florida it is estimated that over \$500 million is sent in remittance payments to their families each year. Traditionally, these payments are slow, incur high fees, and safety can be a concern on the receiving end. During 2021, our project estimates that seasonal workers incurred over \$27 million in fees when sending remittance payments. Enter new blockchain technologies that allow users with only a smartphone to their name to set up their own digital bank and send money instantly all around the world, at almost no cost. Thus, these individuals are on the cusp of collaboratively saving \$26 million in fees over the next several years by adopting new blockchain technology. **Methods:** In early 2022, an effort began to educate farm employees and employers on the ability to send instant low-fee cross boarder remittance payments at Extension programming events through presentations, exhibits, and displays. **Results:** Over the course of five Extension programs thus far twenty-two individuals downloaded and adopted their first wallet and can now send cross-border payments instantly anywhere in the world at almost no cost. **Conclusion:** Blockchain technology is and will continue to bank the unbanked and disrupt remittance payments all over the world. The project will teach about the attributes of blockchain technology and share resources with clientele through presentation, exhibits, and trade shows in 2022.



FACAA Mid-year Meeting and Professional Development Conference April 26-27, 2022 West Palm Beach, Florida

AN ECONOMIC ANALYSIS ON THE POTENTIAL TO ADOPT ALFALFA INTO ROW CROP ROTATIONS IN THE DEEP SOUTH

C. Prevatt, UF/IFAS Extension, Range Cattle Research and Education Center, Ona, FL.

Situation: Many soils throughout the United States have been eroded and degraded from continuous crop production. Despite the widespread recognition of crop rotations as a means for increasing soil health by reducing soil erosion, nutrient loss, and pest cycles, many producers have not yet implemented a crop rotation of more than two crops in their operation. One common perspective from producers is that while a crop rotation has benefits, their confidence in adopting and making another crop work is lacking. While the long-term benefits to the land from implementing a longer crop rotation is difficult to determine, we can begin to calculate the short-run costs and benefits for producers who choose to evaluate adoption. During 2020 and 2021, alfalfa production data were collected from a row crop producer in Florida. **Methods:** An Excel spreadsheet was developed to analyze the revenue, cost, production, and net returns for planting alfalfa and marketing square bales to the local legume hay market. The spreadsheet helped the producer determine if alfalfa could be an economically viable management tool to be implemented on their operation. The economic factors included in the spreadsheet are a) forage yield, b) cost of production, c) price per square bale, and d) net returns above total specified costs. Additional economic variables that were evaluated were projected breakeven levels for: cost of production, forage yield, and price per square bale. **Results:** For the seven fields that were evaluated the forage yield ranged from 2.1 to 3.4 tons/acre, the cost of production ranged from \$413 to \$657 per acre, and the net returns above total specified costs ranged from -\$22 to \$215 per acre. **Conclusion:** This analysis indicates that alfalfa can generate positive net returns. Additional fields of alfalfa are being evaluated in 2022.



FACAA Mid-year Meeting and Professional Development Conference

April 26-27, 2022
West Palm Beach, Florida

RIDING THE BEEKEEPING BUZZ

Bosques, J., UF/IFAS Extension Hardee County, L. Rodriguez, UF/IFAS Extension Polk County, J.K. Yarborough, UF/IFAS Extension Orange County, and A. Williams, UF/IFAS Extension Hillsborough County.

Situation: Florida is home to more than 400,000 colonies of honey bees (*Apis mellifera*). During the COVID-19 pandemic period a surge of interest on these pollinators was observed by Extension Agriculture agents. A series of beekeeping workshops and educational videos were designed, implemented, and evaluated across 2 Florida counties to provide education and hands-on experience to new and potential beekeepers. **Methods:** Programs consisted of classroom time spent on bee biology, tools and hive parts, economically important diseases, local and state regulations for beekeepers, and pointers on starting a home apiary. Demonstrations were also developed for these programs on use of personal protective equipment, hive inspection protocols, varroa mite monitoring/control, and utilizing and maintaining smokers and other implements used in apiculture. Educational videos (n=6; views = 7,506) were also developed in Spanish and English. Classes were adapted for 4-H youth to also learn about keeping honey bees. **Results:** Participant evaluations revealed that there was an average of 39% increase in knowledge from attending our programs and using the educational materials for instruction. After attending the educational program participants stated that they felt confident implementing the following practices: Managing bees to promote adequate bee space (100%), pest and disease monitoring (85%), honey bee supplementation during dearth (85%), use of hygienic genetics (85%), and appropriate requeening (71%), inspecting their colonies following UF recommendations (85%), and appropriate use of personal protective equipment (71%). Top three most important topics the attendants of in-person instruction reported were honey bee pest and disease management (45%), bee biology (32%), and apiary management (14%). **Conclusion and relevance:** Pollinator protection and apiculture are programs that generate significant interest by beginning farmers, youth and the overall community. These programs and materials can be utilized as timely marketing tools by UF/IFAS Extension agents to increase their access to their respective communities.



FACAA Mid-year Meeting and Professional Development Conference

April 26-27, 2022
West Palm Beach, Florida

The importance of recognizing heat stress in Dairy Cows

I. Toledo. UF/IFAS Extension, Regional Specialized Agent, Dairy. Department of Animal Sciences, Gainesville-FL.

Situation: In persistent hot, sunny, and humid conditions, dairy cow's cooling mechanisms are insufficient to dissipate all the heat accumulated, and as a consequence, the cow's body temperature begins to rise, triggering a cascade of physiological changes to reduce this excessive heat load in the body. Changes include increases in respiration rate, rectal temperature, water intake, sweating, salivation panting and increased standing time, that together, aim at decreasing body temperature. Heat stress in calves, heifers, lactating or dry cows result in decreased feed intake, altered metabolism, reduced milk production, impaired reproductive performance and increased susceptibility to diseases. Preventing the negative effects of heat stress in dairy cows increases cow comfort, production, health, animal welfare and profitability. The annual economic loss from heat stress in lactating and non-lactating dairy cows is estimated to range between \$1.2 and \$2.5 billion nationally. Desirable practices that reduce the effect of heat stress include providing unlimited quantity of drinking water, providing shade, increasing air circulation with ventilation, and providing evaporative cooling with overhead sprinklers. An increase in density of energy and nutrients in their diet helps heat-stressed cows compensate for the decrease in dry matter intake. **Methods:** Training dairy farm managers and employees on how to recognize the early effects of heat stress in dairy cows by understanding the physiological changes caused by heat stress exposure and by using non-invasive methods such as respiration rate counts is the key to manage heat stress in dairy farms. **Results:** All participants of the recognition of heat stress training have increased their knowledge in how to recognize early signs of heat stress in dairy cows. **Conclusion:** The information from this training is important to teach dairy farm workers to recognize early signs of heat stress in dairy cows and to take the appropriate measures to decrease the detrimental effects of heat stress in dairy farms in Florida.



FACAA Mid-year Meeting and Professional Development Conference

April 26-27, 2022
West Palm Beach, Florida

DEMONSTRATION OF DRONE TECHNOLOGIES TO IMPROVE VEGETABLE CROP MANAGEMENT

Q. Wang, UF/IFAS Extension Miami-Dade County, Homestead, FL, 33030

Situation: With rapid development of artificial intelligence (AI), the application of drone technologies has shown great potential in agricultural industry. However, growers need to understand the fundamentals. The objectives of this extension program are to help at least 60% of participants understand better about the new technology, the affordable cost, advantages, the operation, the government regulation, and the scale of its application by improving their overall knowledge gain by 30% or more. **Methods:** Three field day events with an on-site demonstration and two workshops for data processing and interpretation with pre- and post-tests for the program evaluation. Participants were able to watch the procedures for site selection, the flight parameters chosen, the drone autonomous flight setup, and the operation from the field demonstrations, and to learn the data processing and application from the workshops. **Results:** The pre- and post-tests showed that 91% ($n=82$) had knowledge gain with an increase of 35% in understanding the application of drone technology; 82% ($n=74$) believed that the application of drone technology would save their time and improve the crop management with the knowledge increase by 42%; and 71% ($n=64$) would change their practice by implementing the drone technology with the knowledge increase by 30% from the post- vs. pre-pest; 100% ($n=90$) believed that the various Management Zones derived from the drone and AI technologies based on crop health could provide timely information for their crop management to reduce the yield loss; and 80% ($n=72$) prefer to use a spray drone for pest management.

Conclusion: The program can provide a platform to help local vegetable growers and stakeholders with the emerging technology, improve the application of drone and AI technologies for autonomous farming, and promote the competition of US agricultural industry. The implementation will enhance the Best Management Practice (BMP) for sustainable agriculture.



FACAA Mid-year Meeting and Professional Development Conference April 26-27, 2022 West Palm Beach, Florida

DON'T KILL YOUR CLASSMATES! GAME-BASED LEARNING TO TEACH FOOD

SAFETY IN THE GARDEN. H. Corbitt, UF/IFAS Extension, Columbia County, Lake City, FL and E. Harlow, UF/IFAS Extension, Columbia County, Lake City, FL.

Situation: The Columbia County Extension horticulture program works with several middle and high schools to grow vegetables in hydroponic towers. The Extension Office was approached by the Food Services Director in 2021 to provide food safety training to students who work in the greenhouses. Once training was completed, food services would pay the agriculture program market price for their vegetables which are then used in the cafeterias. The program objective was to increase student's knowledge about food safety in the garden and post-harvest. **Methods:** Two-hour food safety workshops were provided to each class with a week between sessions. The first hour was lecture-style introducing food safety concepts both in the garden and post-harvest. The second hour was an "escape room" game-based learning event. Game-based learning uses gaming principles and applies them to real-life settings. It goes beyond learner's "playing" a game and incorporates principles and concepts to guide them to an end goal. Students used clues based on the information they learned to try and "not kill their classmates" when they harvested produce for the cafeteria.

Results: Forty-six sixth and seventh graders completed the food safety training. All completed the escape room and provided positive feedback that they enjoyed and retained the information. Through observation, approximately 98% of students had retained the information from the week prior.

Conclusion: Using game-based learning provided a unique way to measure student knowledge and an engaging way to evaluate hands-on skills. Food safety is important as the student's produce their own food. Real-world consequences could happen if they do not follow food safety guidelines, in the greenhouse or garden, harvesting, or post-harvest.



FACAA Mid-year Meeting and Professional Development Conference April 26-27, 2022 West Palm Beach, Florida

GARDEN TO TABLE SERIES

A. Stonecipher and T. Keith, UF/IFAS Extension, Jackson County, Marianna, FL

Situation: There is a high interest among our residential community for producing sustainable herb and vegetable gardens and connecting the harvest directly to healthier home cooked meals. Jackson County experienced a category 5 hurricane and Covid-19 Pandemic in the last 3 years so there is an economically motivated desire to grow food at home to achieve cost savings. This 3-part Garden to Table series was designed to educate and encourage gardening and cooking with herbs and vegetables.

Method: In the Garden to Table: Herbs workshop, residents were taught how to use herbs in their everyday cooking, how to make dried seasoning as well as how to grow and maintain their own herb garden. A handout was created for the workshop to provide participants with a reference to use at home on incorporating herbs into their everyday cooking. The workshops were seasonally appropriate and designed and delivered with informational PowerPoint presentations. Residents were provided with gardening information and best management practices and presentations were followed by cooking demonstrations. **Results:** Sixty-five people have attended the three workshops in the series. Evaluations indicated 100% gained knowledge on herbs, starting early, and the southern way and 85% intend to grow vegetables from seed this year. All attendees reported that they plan to use the information they gained in their homes to grow herbs and/or modify at least one recipe by using herbs. Sixty-seven copies of the Common Herbs and Food Combinations: Cooking with Herbs factsheet were distributed. **Conclusion:** This is a start to reaching the community with information on how to grow a garden and how to use it in the kitchen. It was well received, and we will continue to reach out to more residents in the county. In June we are doing a Garden to Table one-day children's camp for ages 8-12.



FACAA Mid-year Meeting and Professional Development Conference April 26-27, 2022 West Palm Beach, Florida

CONNECTING THE CLOVER: SPARKING INTEREST IN A VARIETY OF 4-H PROGRAMS IN ESCAMBIA COUNTY

Simmons, N., Shortinghouse, A., Estevez, B., UF/IFAS Extension Escambia County, Cantonment, FL.

Situation: Florida 4-H provides many opportunities for youth in areas of agriculture, STEM, leadership, expressive arts, and citizenship. Many Extension agents find it difficult to bring all of these opportunities to youth and create outreach opportunities for the 4-H program. Escambia County created the Connecting the Clovers program to highlight multiple program areas and bridge these areas of learning into concise learning and experience. **Objectives:** 1. Engage youth interested in 4-H but could not find their fit, 2. Expose youth to the many agricultural education programs that Florida 4-H offers youth in Escambia County, and 3. Increase enrollment in county programs. **Methods:** Delivery of the program was provided in bi-monthly night sessions that focused on common programs within Florida 4-H. The first Connecting the Clover program focused on animal science opportunities, while the second focused on STEM. Multiple Extension Faculty with expertise in the subject areas presented brief but in-depth lessons on the topics such as horse quiz bowl, drones, photography, and judging teams. Youth were able to experience new program areas and were encouraged to try new activities and enroll in clubs that sparked their interest. **Results:** Two Connecting the Clover events joined 18 4-H youth in Escambia County to experience new and exciting programs offered. Evaluations of the two Connecting the Clover workshops concluded that 37.5% of youth completing evaluations showed interest in at least one new 4-H program that they were currently not associated with, and at least four youth (22%) enrolled in new/additional clubs. **Conclusions:** The Connecting the Clover workshop series introduced multiple program areas to Escambia County 4-H members and youth who experienced project areas unknown to them. Future plans for Escambia County 4-H Connecting the Clover programs are in the areas of statewide 4-H events, preparing for the fair, and cooking.



FACAA Mid-year Meeting and Professional Development Conference

April 26-27, 2022
West Palm Beach, Florida

Extension Supports County Partners by Providing Annual Trainings and CEUs

Y. Goodiel, UF/IFAS Extension Martin County, Stuart, FL, S. Gorucu, UF/IFAS Agricultural and Biological Engineering, Gainesville, FL, S. Modlin, Martin County Parks and Recreation Department, Stuart, FL, B. Weeks, UF/IFAS Agricultural and Biological Engineering, Gainesville, FL.

Situation: Extension can provide value to municipal funding partners by offering training and CEUs.

Methods: In Martin County, our Extension office hosts the “Protecting Florida’s Resources Best Management Practices Summer CEU Series”, typically consisting of six to eight weekly two-hour sessions. Though the trainings are primarily for municipal employees, we also open them to Master Gardener volunteers and commercial clientele. **Results:** An average of 64 people have attended annually since 2018. Most attendees are grounds maintenance staff for county and city parks and facilities. Sessions cover topics requested by an advisory team of county and city staff. CEUs are offered as applicable. In 2018, as an example, we offered 106 FDACS CEUs to licensed program attendees. Though it is a large class, instructors incorporate hands-on and interactive learning. In 2021, we quantified outcomes for the Equipment Maintenance & Safety session (IRB202101319). County Parks Supervisor Scott Modlin, UF Specialist Dr. Serap Gorucu, UF ABE Engineer Ben Weeks, and I planned the session, developed evaluation tools, and co-taught. Knowledge gain averaged 10.6% across all modules, which covered best practices for safety/maintenance with power tools, PTO equipment, skid steer loaders, and ladders. Follow-up surveys were administered via Qualtrics four months after the 2021 training. All respondents (n=11) stated they had made changes in the way they maintain or use equipment as a result of the program. Best practices respondents said they now more frequently follow include: checking surroundings for hazards before using equipment, placing extension ladders the correct distance from structures, and using a seatbelt with cab rollover protection. **Conclusion:** Equipment safety represents one example of the best practices we have promoted over the years. By helping county staff obtain CEUs and learn best practices, Extension demonstrates our value to funding partners.



FACAA Mid-year Meeting and Professional Development Conference

April 26-27, 2022
West Palm Beach, Florida

EVENTS: A PLATFORM FOR EXTENSION PROGRAM MANAGEMENT AND EVENT REGISTRATION

N. Simmons¹, Waters, K.², Dillard, J.P.³, McConnell, J.⁴, Wells, J.⁵ and Vergot, P.⁶

1 County Agricultural Agent, UF/IFAS Extension Escambia County, Cantonment, FL 32533

2 County Agricultural Agent, UF/IFAS Extension Holmes County, Bonifay, FL 32425

3 4-H Youth Development, UF/IFAS Extension Washington County, Chipley, FL 32428

4 Horticulture Agent, UF/IFAS Extension Bay County, Panama City, FL 32401

5 Northwest District IT, UF/IFAS Extension Northwest District, Quincy, FL 32351

6 Northwest District Director, UF/IFAS Extension Northwest District, Quincy, FL 32351

Situation: EVENTS, <https://events.ifas.ufl.edu/>, is a newly development software platform to be implemented and provide Extension clientele a central location for all Extension programs and activities. Events replaces the need for all current software (like Eventbrite) on a state-wide level for UF/IFAS Extension. **Objectives:** “Events” software will 1) be used as a registration system for all Extension events, activities, and programs (internal and external), 2) be the single platform to collect and manage program enhancement funds, 3) manage clientele contacts, certifications, and credentials, and 4) provide Extension faculty with direct collection of data into Workload. **Methods:** The EVENTS software was developed to be a multifunctional tool that will allow Extension faculty and staff to effectively manage event registrations, including accepting payments of any kind and managing of all funding including refunds and deposits into county 182 accounts. Events also provides for complete communications between the instructor and clientele along with integration of all IFAS databases including automatically reporting to Workload. **Results/Product:** EVENTS was soft launched in the Northwest District in January 2022, with some use across the state, and is providing an enhanced event registration platform for Extension. In spring of 2022, the software will have the capability to take/receive funds and will be available statewide. **Conclusion:** EVENTS is a superior tool that will assist Extension faculty across UF/IFSA Extension in day-to-day operations, decrease the cost of collecting revenue enhancement funds, manage all accounting procedures, and provide for a central location for all Event and Activities data.



FACAA Mid-year Meeting and Professional Development Conference

April 26-27, 2022
West Palm Beach, Florida

PLANTING PARTNERS – ENGAGING COMMUNITIES IN AFFORESTATION

M. Beckford, UF/IFAS Extension Sarasota County, & M. Atkinson, UF/IFAS Extension Manatee County

Situation: Communities derive many benefits from urban forests, including reduced urban heat island temperatures, improved air quality, and positive physical and mental health impacts. In 2013, a tree canopy study of Sarasota County, Florida, indicated 35% canopy coverage, but there has been subsequent land development and tree removal since completion of the study. To mitigate canopy loss, in 2017, the Treejuvination Florida urban forestry Extension program was launched in Sarasota County. Objectives of the program include promoting awareness of urban tree benefits, encouraging community engagement in urban forestry activities, and increasing the number of tree plantings. **Methods:** In 2021, the community of DeSoto Acres decided to partner with the Treejuvination urban forestry Extension program to adopt 100 trees in commemoration of the community's 100th year anniversary. For each Adopt-a-Tree event, held annually on National Arbor Day since 2018, persons register to receive a native tree, and participate in a tutorial on tree planting and care. Participants pledge to plant a tree on their property, receiving up to 3 native trees per address. To assess new tree survival rates, a follow up survey is done 3 to 12 months after. **Results:** Surveys with Adopt-a-Tree event participants showed that since its launch in 2017, the Treejuvination Florida urban forestry program has resulted in 455 tree-plantings in Sarasota County, with an 84% survival rate (382 trees). **Conclusion:** An urban forestry Extension program designed to increase the number of tree-plantings is important, because of the continual loss of urban canopy. Additionally, with the average lifetime capacity for a native tree to sequester an estimated 3,000 lbs. of carbon as carbon dioxide, by planting more than 400 trees, Sarasota's urban forestry Extension tree planting partners have contributed to the sequestration of more than 1M lbs. of carbon.



FACAA Mid-year Meeting and Professional Development Conference

April 26-27, 2022
West Palm Beach, Florida

WATER - THE RESOURCE THAT CONNECTS US ALL.

P. Tomlinson, E. Harlow, J. Capasso, H. Janney, H. Corbitt, UF/IFAS Extension Columbia County, Lake City, FL.

Situation: Columbia County is home to a multitude of water resources, including a first magnitude spring. While the springs attract visitors that contribute millions to the local economy, agriculture is the largest contributor. Our population of 70,000 is increasing by 7% yearly and this along with agriculture, specifically irrigated acres, is to remain strong in the area through the year 2045 (FDACS) will put a strain on water resources for both quantity and quality. Educating the public on ways to conserve and protect our water resources is imperative. **Methods:** The Ichetucknee Partnership (TIP), a consortium of local and regional businesses and governmental agencies including Extension, works to educate the public about water conservation, water quality, and springs protection. Columbia Extension utilizes TIP's mascot – Bellamy Beaver to add excitement in educating youth and adults. All Extension program areas utilize Bellamy Beaver and are involved in water education, since water is the resource that connects us all. Through multiple youth events, “Follow the Water” – horticulture program, the “importance of water for our body” – FCS, and how farmers are conserving water – agriculture, our office is educating the residents of Columbia County. **Results:** Since 2019, nearly 2,500 youth and adults, participating in 24 multi-programmatic events have received water quality and quantity education. After participating in water resources education, 100% (n=1,852) of youth participants reported they would make a behavior change to protect natural resources and 80% increased their knowledge about water and water conservation. **Conclusion:** Millions of gallons of water can be saved through educating the public about “turning off the tap” while brushing your teeth (EPA). Through a multi-programmatic approach of water education, we can achieve a “whole systems” approach to protecting our water resources.



FACAA Mid-year Meeting and Professional Development Conference April 26-27, 2022 West Palm Beach, Florida

FIRST RESEARCH AND EXTENSION EFFORTS ON *LISTRONOTUS* SP., AN EMERGING WEEVIL PEST OF CELERY AND PARSLEY IN SOUTHERN FLORIDA

A. Mészáros, UF/IFAS Extension, Palm Beach County, West Palm Beach, FL and J. Beuzelin UF/IFAS Everglades Research and Education Center, Belle Glade, FL

Situation: An increase in unusual insect injury has been observed in organic and conventional celery and parsley fields in southern Florida during the past two years. This injury consists of larval tunneling through the petioles, crowns, and roots. A research and extension program was initiated to identify the insect causing the injury, study pest population dynamics, evaluate insecticide efficacy, as well as to promote information exchange and conduct grower needs assessment. **Methods:** Weevil adults collected in celery fields, and adults reared from larvae infesting celery plants, were sent to the Florida Department of Agriculture and Consumer Services for identification. Celery sentinel plots at the UF/IFAS Everglades Research and Education Center were sampled weekly to determine egg and larval infestation dynamics. In addition, five insecticides were tested in a field trial. An information exchange meeting was held with leafy vegetable stakeholders in February 2022 to assess the weevil situation and discuss management research plans for this emerging pest. **Results:** Weevils were identified as *Listronotus sparsus* (Say), which is a relatively widespread species that has not been reported as a crop pest. Observations suggest that this weevil exhibits behavior comparable to that of carrot weevils, *L. oregonensis* and *L. texanus*, which are serious pests of Apiaceae crops in the Great Lakes region and Texas, respectively. Weekly samplings showed that weevils continuously infested celery sentinel plots and insecticide evaluations suggest that oxamyl suppresses weevil injury and infestations in celery. This information, which was shared during the exchange meeting, is crucial to develop a comprehensive management program. **Conclusion:** This work was the first effort to identify this weevil, study its biology, provide management information, and involve stakeholders in an educational program. Continued collaboration among stakeholders and UF/IFAS research and extension specialists will be needed to address this threat to Apiaceae crops in Florida.



FACAA Mid-year Meeting and Professional Development Conference April 26-27, 2022 West Palm Beach, Florida

UF/IFAS EXTENSION GREEN INDUSTRIES BEST MANAGEMENT PRACTICES TRAINING PROMOTES SUSTAINABLE URBAN LANDSCAPES

Esen Momol¹, Tom Wichman¹, Don Rainey², Bryan Unruh³, Lynn Barber⁴, Marc Celestin¹, Cesar Peralta¹, CJ Bain¹ and John Bossart¹ (¹UF/IFAS Extension Florida-Friendly Landscaping™ Program, Gainesville, FL; ²UF/IFAS Southwest Extension District, Plant City, FL; ³UF/IFAS West Florida Research and Education Center, Jay, FL; ⁴UF/IFAS Extension, Hillsborough County, Tampa, FL)

Situation: Urban landscaping practices, including water, fertilizer, and pesticide use, contribute to nonpoint source pollutant loading to surface and ground waters. Consequently, the State of Florida requires Green Industries Best Management Practices (GI-BMP) training for all landscape professionals who apply fertilizers. Each year the UF/IFAS Extension Florida-Friendly Landscaping™ Program, in partnership with the Florida Department of Environmental Protection (FDEP), trains thousands of landscape professionals statewide in the GI-BMP curriculum. **Educational Approach:** GI-BMP training includes six learning modules covering efficient use of water and fertilizer, integrated pest management, fertilizer application, and water pollution-minimizing lawn and landscape cultural practices. Course delivery is available through several formats, including in-person classes, distance Zoom trainings or self-paced options available online or through a DVD. Courses are available in English and Spanish, with Haitian Creole coming soon. Those persons successfully completing the training and a written exam receive a GI-BMP certificate. **Results:** Since the GI-BMP program's start in 2006, over 72,000 persons have received training, with over 61,000 of these trainees receiving their GI-BMP certificate. Surveys conducted 6 months after each training class assess the extent to which trainees have changed their landscaping behaviors and practices to conserve water and reduce pollutants. For 2021, these surveys found that, post-training, 92-98% of the attendees used the GI-BMPs on a regular basis, with substantial improvements shown in those who always use the following practices: apply no more than 0.5-0.75 inches (1.27-1.91 cm) water per irrigation event (for water savings of 25-50%); reset irrigation controls/timers seasonally; reduce fertilizer application; and use integrated pest management. Further, the post-training surveys documented adoption of new technologies, specifically an increase of 22% in those who use soil tests to determine fertilizer needs and an increase of 33% in those who use integrative pest management practices prior to use of pesticides.



FACAA Mid-year Meeting and Professional Development Conference April 26-27, 2022 West Palm Beach, Florida

TROPICAL SODA APPLE AND DOGFENNEL CONTROL WITH DURACOR IN FLORIDA PASTURES

C.A.R. Sales, UF/IFAS Extension, Citrus County, Lecanto, FL; B.A. Sellers, UF/IFAS Range Cattle Research and Education Center, Ona, FL; P. Devkota, UF/IFAS West Florida Research and Education Center, Jay, FL; M. Wallau, UF/IFAS Agronomy Department, Gainesville, FL.

Tropical soda apple (*Solanum viarum*) and dogfennel (*Eupatorium capillifolium*) are challenging to control in pastures. Florida cattle producers struggle against difficult to control pasture weeds.

DuraCor is a premix of florpiauxifen-benzyl & aminopyralid, a new resource for pasture weed management. However, limited research is available to determine if this premix effectively controls Florida pasture weeds and if tank-mix partners are required for optimum weed control. Therefore, experiments were conducted at Limestone, FL and Lake Wales, FL. Visual evaluations of weed control were performed at 30, 60, and 120 days after application (DAT). Treatments were applied using methylated seed oil (MSO) at 1% v/v and a non-ionic surfactant (NIS) at 0.25% v/v as adjuvants. The addition of PastureGard HL (8 fl oz acre⁻¹), WeedMaster (48 fl oz acre⁻¹) and 2,4-D (48 fl oz acre⁻¹) resulted in improved dogfennel control over that with DuraCor alone (16 fl oz acre⁻¹). Control was similar to that provided by the standard tank-mix of GrazonNext HL + PastureGard HL (24 + 8 fl oz acre⁻¹). MSO provided better initial dogfennel control by 30 DAT, though there was no adjuvant effect by 60 DAT at Limestone. DuraCor alone and with tank-mixes provided at least 85% control to TSA at Lake Wales, except when tank-mixed with 2,4-D, which resulted in no greater than 57% by 30 DAT. Adjuvant type does not appear to impact tropical soda apple control. After the first evaluation, frost precluded further data collection at the Lake Wales location. Overall, data suggest that tropical soda apple is susceptible to DuraCor; however, tank-mix partners are necessary for optimum dogfennel control. Furthermore, this new herbicide combination with a tank-mix partner provides a similar control of dogfennel and tropical soda apple as compared to the standard tank-mix of GrazonNext HL + PastureGard HL.



FACAA Mid-year Meeting and Professional Development Conference

April 26-27, 2022
West Palm Beach, Florida

FOR THE BIRDS: BIRDING CLASSES GENERATE SIGNIFICANT KNOWLEDGE GAIN

J. Davis, UF/IFAS Extension, Sumter County and Hernando County, Bushnell, FL

Situation: The beneficial and economic impacts of birding is astounding. Birding alone is a multi-billion dollar industry. Over 45 million people in the United States are “birders”. Spending hundreds to thousands of dollars on trips, supplies, and photography equipment. In Florida, birding, along with wildlife viewing generate over four billion dollars and creates as many 44,000 jobs. These numbers have increased during the COVID-19 pandemic and continue to grow. Birders from all over the world flock to popular areas in Central Florida such as Lake Apopka Wildlife Drive or Circle B Bar Preserve. In Sumter County, hikers attending UF/IFAS Extension Hiking events learn about local areas such as Hog Island and Half Moon Wildlife Management Area. The objective was that surveyed participants would demonstrate at least a 25% increase in knowledge on birds found in Central Florida. **Methods:** Four webinar classes were developed as a part of the Wildlife and Invasive Species Educational (WISE) series focusing on birds. Topics included biology, habitat, behavior, and identification. The platform used was Zoom Webinar. Classes were advertised through newsletters and social media. Zoom polling was used to gather attendance data, pre, and posttests. **Results:** Surveyed participants attending “Backyard Birds” demonstrated a 27% (n=70pre/n=55post) increase in knowledge gain, “Common Birds Around Lakes in Rivers V” demonstrated a 75% (n=18pre/n=19post) increase in knowledge gain, “Common Birds Around Lakes in Rivers IV” demonstrated a 53% (n=47pre/n=42post) increase in knowledge, and “Common Birds Around Lakes in Rivers III” demonstrated a 49% (n=55pre/n=48post) increase in knowledge gain. **Conclusion:** Out of all the webinars and in-person presentations I deliver in Extension, those relating to birds have been the most popular by far. I plan on creating bird boxes in the future for in-person workshops for citizen science projects and revenue enhancement.