



# *Newsletter*

*August 2019*

*UF IFAS St. Lucie County and  
Indian River Extension*

*Fruit and Field Crops*

# Upcoming Events

## AUGUST 7

Special Seminars in IRREC  
Wednesday, August 7·4:00 – 4:30pm

[More information here](#)

## AUGUST 12

Rare Fruit and Vegetable Council of  
Broward County Meeting  
Monday, August 12·6:30 – 10:00pm

[More information here](#)

## AUGUST 14

Pesticide Class on Private  
Wed, August 14, 8:30am – 5:00pm  
F/IFAS Extension Miami-Dade County  
8710 SW 288th St, Homestead, FL  
33030

[More information here](#)

## AUGUST 14-15

Citrus Expo  
North Fort Myers, FL

[More information here](#)

## AUGUST 16

Pesticide License Exam  
Fri, August 16, 8:30am – 10:30am  
St. Lucie County

[More information here](#)

## AUGUST 19

Citrus Packinghouse Day  
Lake Alfred, FL

[More information here](#)

## AUGUST 28

Seminar: How can horticulture help the  
Indian River grapefruit industry  
Wednesday, August 28·3:45 – 5:00pm  
In IRREC, Fort Pierce

## About the Author



Amir Rezazadeh is the Multi-County Fruit and Field Crops Agent II. Before his appointment with the UF/IFAS Extension, he worked as a post-doctoral associate with Mississippi State University Coastal Research and Extension Center. There, Rezazadeh worked alongside fruit growers to improve yield and post-harvest sustainability for blueberries, blackberries, strawberries and grapes. He holds a Ph.D. in horticulture from Mississippi State University; his doctorate work focused on the influence of environmental factors and cultural practices in the development of greenhouse crops. After he completed a master's degree in horticulture, he oversaw more than 100 acres of grapefruit and mandarin trees and managed 10 employees for more than five years.

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## PASSION FRUIT: GREAT ALTERNATIVE CROP

Passion fruit growing is a great option to family operated farms. Many passion fruit growers have other fruit crops or agricultural enterprises.

Passion fruit (*Passiflora edulis*) is a perennial, climbing, woody vine that produces edible round or ovoid fruit with many small seeds. Vines have a productive life of 3 to 4 years. New plantings should be made on a continuous 3-year rotation to maintain production. The fruit can be used as fresh or juice. Popular cultivars include purple passion fruit and yellow passion fruit. The purple passion fruit is the more common type and has an egg-shaped or round-shaped fruit which is 4–6 cm in diameter and purple when ripe.

**Growing Tips:** Passion fruit vines are usually grown from seeds. If planted soon after removal from the fruit, seeds will germinate in 2 to 3 weeks. Some growers prefer layers or cuttings of matured wood with 3 to 4 nodes. Cuttings should be well rooted and ready for setting out in 90 days. Passion fruit like a well-drained soil rich in organic matter. Prepare soil by incorporating plenty of compost and well-rotted manure to a planting zone 3-6 ft wide. Water regularly and ensure good soil fertility by incorporating well-balance all-purpose organic fertilizer early spring and early autumn. Too much nitrogen encourages only leaf growth at the expense of fruiting. Regular pruning will improve production and keep your vines healthy. Most passion fruit vines start producing meaningful fruits from their second year especially under relatively colder conditions. Passion fruit flowers are not self-fertile, and many varieties are self-incompatible therefore cross-pollination is necessary for seed and fruit set. Wind pollination is not effective because of the weight and stickiness of the pollen. The purple passion fruit has self-compatible flowers, so no pollinating varieties are required. The most satisfactory way to supply ample pollination to a crop is by stocking the area with sufficient honey bee colonies.

The first fruit will appear 6-8 months after planting with the best crops after 18 months. Fruit will drop off the vine when ready. Vines generally perform well for 3-5 years after which they need to be replaced. Passion fruit woodiness virus, brown spot, fruit fly, and poor pollination are major issues in passion fruit production.



More Information about Passion Fruit

[1](#) & [2](#)

# CONTROLLING DIFFICULT WEEDS IN CITRUS GROVES

By Ramdas Kanissery, Camille McAvoy and Mongi Zekri

Some weeds are more difficult to manage in the production system than others due to their ability to grow in an available niche. If given a chance to establish, Guinea grass and goatweed can be the two most difficult weeds to manage. This is not just because they both are prolific seed producers, but also due to their inherent biological ability to survive grove conditions.

## GUINEA GRASS

Guinea grass (*Megathyrsus maximus*) was originally introduced as a forage crop from Africa in the 16th century. It is listed as a Category II on the Florida Exotic Pest Plant Council's list of invasive species in 2017. A Category II invasive species is defined as an "invasive exotic" that has yet to demonstrate damage to the ecosystem but has been found to be increasing abundantly in population.



**Figure 1.** Guinea grass

In a citrus grove, Guinea grass can establish under the tree canopy next to the trunk (Figure 1). The location under the canopy and adjacent to the tree trunk can make it a difficult area to reach for adequate herbicide spray coverage. For any weed species, this is the optimal location as water and fertilizer are in abundant supply.

Guinea grass is a perennial that can grow up to 15 feet. It is characterized by the presence of strong underground roots, also known as rhizomes. Stems are often with dense patches of hair at the junction with leaf blades and may root at the nodes. Leaves, about 35 inches long and 1.5 inches wide, are hairy on the upper surface with rough margins.

The typical identifying feature of Guinea grass is its multi-branched flower head that is approximately 30 inches tall and 8 inches wide with green to purplish colored tiny flowers, also known as spikelets. The lowest branches on the seed head are always whorled. The flower head develops into a seed head with dull, white seeds.

The characteristics that make Guinea grass difficult to manage include the ability to tolerate a wide range of environmental stresses: drought, salinity, shading by other plant species, temperature fluctuations and a wide range in soil pH (3.8 to 8.4).

The extensive root system of Guinea grass can access water more than 3 feet deep. One of the peculiar features of this weed that is most recognizable is the ability to grow tall and produce biomass rapidly. It is not unusual to encounter Guinea grass overgrowing and shading out young trees in the grove.

## GOATWEED

Goatweed (*Scoparia dulcis*), also known as sweet broom or licorice weed, is a native broadleaf perennial weed. It is found throughout the Southeast, ranging from Texas to South Carolina and down into Florida. Goatweed grows profusely in sandy soils, cultivated and non-cultivated, where moisture is abundant. This weed can be found in swales in South Florida groves or close to irrigation emitters at the dripline areas (Figure 2).

Mature plants reach heights of up to 2.5 feet. Leaves are 1.5 inches long by 1-inch wide, light green in color and serrated. Stems become woody with age, and mature leaves are linear with or without serrations. White flowers, about 0.2 inches long, are found in the leaf axils. Goatweed seed is very small and appears almost like dust to the naked eye. Seeds are enclosed in greenish-yellow or brown seed capsules or pods (Figure 3). A single plant can produce several thousand seeds. This weed species is capable of blooming year-round in Florida.

The characteristics that make goatweed difficult to manage include prolific seed production and the ability of the seed to move with the wind, on equipment and on wildlife. This ability to produce and move easily allows for many seeds to be deposited into the soil “seed bank.”



**Figure 2.** Goatweed



**Figure 3.** Seed capsules in goatweed

## MANAGEMENT METHODS

Guinea grass and goatweed are relatively tolerant to many herbicides used in citrus groves. Moreover, they are very difficult to control with post-emergent herbicides if they reach a mature growth stage. Management efforts should focus on prevention and sanitation. Controlling these weeds at a very young stage before seed sets will reduce their future emergence in the grove. Guinea grass and goatweed can be controlled using post-emergent herbicides for burndown of growing plants and pre-emergent herbicides to prevent the emergence of new seedlings.

## Post-emergent herbicide options

Guinea grass management include systemic herbicides (e.g., glyphosate) or selective grass killers such as fluazifop-p-butyl (Fusilade) or sethoxydim (Poast Plus). Attaining adequate spray coverage and adding a surfactant (e.g., crop oil concentrate, nonionic surfactant, etc.) and selecting an appropriate spray volume (20 to 40 gallons per acre) are crucial for the effective post-emergent control of Guinea grass.

Finally, plants that survive may be treated with spot spraying (1 percent volume per volume solution) of selective herbicides before flowering and setting seeds. Repeated applications, at approximately one-month intervals, will be required for heavy infestations.

Managing goatweed often requires higher application rates of post-emergent herbicides. For example, more than 3 pounds per acre (not to exceed the label rate) acid equivalent of glyphosate is needed to control this weed effectively. Applying products (e.g., Landmaster or Treevix) containing a selective herbicide active ingredient for controlling broadleaf weeds also helps with goatweed management.

The post-emergent sprays must be applied when goatweed is in its early growth stage. The herbicide will be relatively ineffective once the stem has become mature and woody. For effective post-emergent spray programs, the addition of an appropriate surfactant and thorough spray coverage are required.

## Pre-emergent herbicides

Flumioxazin (Chateau, 6 to 8 ounces per acre), when applied as a tank mix combination with indaziflam (Alion, 3 to 5 ounces per acre) or bromacil/diuron (Krovar, 2 to 4 pounds per acre), were found to effectively suppress emergence of Guinea grass and goatweed in citrus grove experiments at the Southwest Florida Research and Education Center in Immokalee. In addition, when applying pre-emergent herbicides, complete uniform coverage

### 10 things to quit right now:

1. A sense of entitlement
2. Speaking poorly behind someone's back
3. Constant complaining
4. Resentment
5. Making excuses
6. Worrying about the past
7. Interrupting people
8. Bragging about being busy
9. Fishing for compliments
10. Settling for mediocrity

### As I got older, I realized:

1. Lost money can be found, lost time is lost forever
2. Learning to learn, and changing yourself is superpower
3. You are not your job
4. Networking is about giving
5. Best teacher is your last mistake
6. Good manner is as important as good education



Green variety



Red variety

## SUGAR APPLE FIELD DAY

Last week there was a sugar apple (*Annona squamosa*) field day at USDA research land in Fort Pierce. Dr. Kim Bowman from USDA talked about his research and trial on sugar apple as an alternative crop for Florida.

Sugar apple (*Annona squamosa*) is a tropical fruit that grows on a small tree and can be grown easily and successfully in south Florida and east and west coast regions of Florida. It may have potential as a small-scale specialty fruit for the local markets. A replicated trial planting of six selections of sugar apple at the USDA farm is 2.5 years old and has a good crop of fruit, typically ripening in July-August. Tree care, horticultural performance, cropping, and fruit quality was discussed in field day. Unfortunately, because fruits were not ripe, attendees did not have a chance to try the fruits.

You can contact Dr. Bowman for more information.

[kim.bowman@ars.usda.gov](mailto:kim.bowman@ars.usda.gov) | (772)462-5920



Dr. Bowman talked about different varieties and cultural management of sugar apple

## WHAT RESEARCHERS KNOW ABOUT

# HEAT-RELATED ILLNESS

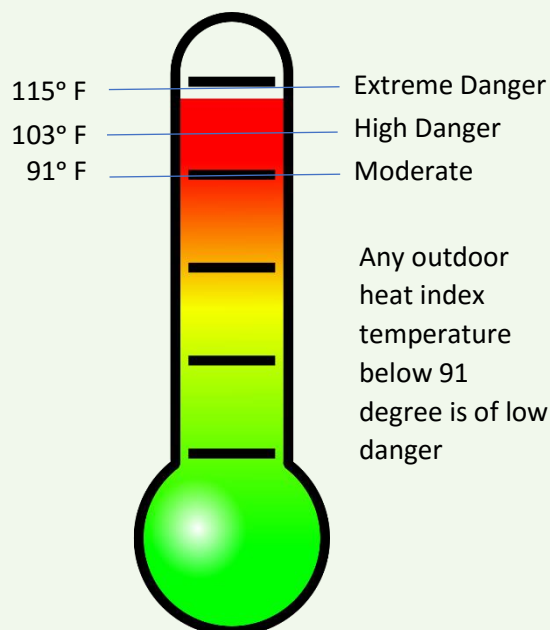
The Southeastern Coastal Center for Agricultural Health and Safety (SCCASHS) brought together scientists from the University of Florida, Florida State University, University of South Florida, Emory University, and Georgia Tech University for the inaugural Heat-Related Illness State of Science Meeting in St. Petersburg, Florida, on October 25-26, 2018.

Death from heat-related illness is 100% preventable when aggressive cooling takes place. Deaths from heat related-illness occur because of misdiagnosis, lack of care, delay of care, and immediate transport before cooling. Three of the most common types of heat related illness are hit cramps, heat exhaustion and heat strokes. Symptoms of heat cramps include muscle cramping, pain, thirst, sweating or fatigue. symptoms of heat exhaustion include a fainting, heavy sweating, cold clammy skin or fast weak pulses. symptoms of heat stroke include body temperatures over 103 degrees; confusion; fast strong pulse; or hot, red, dry or damp skin. Heat-related illnesses is the 3rd leading cause of death among high school athletes.



**WORKERS ARE AT A HIGHER RISK  
OF DEVELOPING HEAT-RELATED  
ILLNESS IN THE SUMMER &  
AFTERNOONS**

DEATH FROM HRI IS  
**100% PREVENTABLE**  
WHEN AGGRESSIVE COOLING TAKES PLACE



## TYPES OF HRI

**STROKE**

**CRAMPS**

**EXHAUSTION**



## Workers should be provided a 5-6 day acclimation period when they begin working in the heat.

As temperatures rise the risk of developing a heat-related illness also rises. At the heat index of 91 degrees, workers are at moderate danger of developing a heat-related illness. At a heat index of 103 degrees workers are at high danger of developing a heat-related illness. At the heat index of 115 degrees, workers are at extreme danger of developing a heat related illness. Any heat index temperature below 91 degrees places workers in low danger of developing a heat related illness. This means that workers are at a higher risk of developing a heat related illness during the summers and the Afternoons. Scientists recommend that employers should encourage their outdoor workers to drink small amounts of water every 20 minutes. This will allow workers to consume about 1 quart of water every hour. Workers should be provided a 5 to 6 day acclimation period when they being working in the heat.

**Source: [WWW.SCCAHS.ORG](http://WWW.SCCAHS.ORG)**



**OUTDOOR WORKERS SHOULD CONSUME ABOUT ONE QUART OF WATER (APPROXIMATELY TWO BOTTLES OF WATER) EVERY HOUR**