UF | IFAS Extension
UNIVERSITY of FLORIDA

Identification and Management of Turf Insect Pests

Bonnie C. Wells, DPM
Commercial Horticulture Extension Agent

Turfgrass Pests- Where are they hiding?

- Leaf, stem and thatch inhabitants
- Soil inhabitants

Southern Chinch Bug
Blissus insularis

On the Run Since 1783

Southern Chinch Bugs
(*Blissus insularis* Barber)

- Most significant pest of turfgrasses in Florida
- Predominant pest of St. Augustinegrass
- Recognized as a pest for more than 200 years!
- (Hemiptera: Blissidae)
- Blissidae: More than 50 genera, 400 species
- 20 Blissus species, 4 pests of turfgrass
- *B. insularis* only one of those that is a pest species of warm season grasses

Hairy Chinch Bug
Blissus leucopterus hirtsu

Common Chinch Bug
Blissus leucopterus leucopterus (Say)

Western Chinch Bug
Blissus occidus

False Chinch Bug

Nysius raphanus

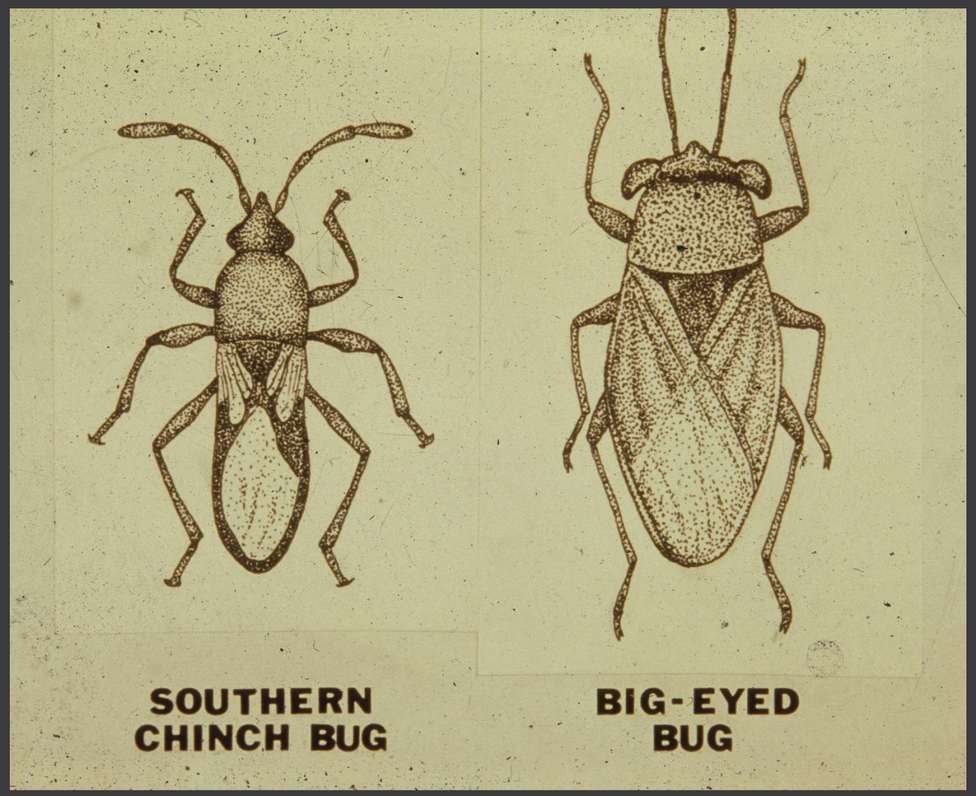
Damage

- Circular, patchy areas of yellowing grass
- Full-sun, water-stressed areas first attacked and most heavily damaged
- Confused with drought stress
- Pest favors a thick thatch layer
- Heavy damage requires resodding

Identification

- **Adults:** Black, oval and oblong body, shiny white wings with distinctive triangular marks
- Short-winged vs long-winged adults
- **Nymphs:** Resemble adults only smaller; early instars red with white band
- **Development:** 4- 10 generations per year, ectothermic
- Highest populations in July, damage all year long

Photo by D.S. Reiland, https://content.ces.ncsu.edu/chinch-bug-in-turf



Southern Chinch Bug IPM

- IPM is key to managing southern chinch bugs
- Scouting/monitoring to keep populations suppressed is crucial
- Proper cultural practices: mowing, fertilization, irrigation, thatch reduction
- Notoriously resistant to a wide range of chemical classes, rotate MOAs, choose systemic products
- Conserve natural enemies (big-eyed bugs, striped earwigs, minute pirate bugs, assassin bugs, parasitic wasp)

More Info?

Florida Turf Digest, Vol. 39 No.4, Summer 2021

Southern Chinch Bugs: IPM Strategies for a Centuries-Old Pest of Southern Lawns

Mole Crickets
Neoscapteriscus abbreviatus
Neoscapteriscus borellii
Neoscapteriscus vicinus

Mole Crickets
(*Neoscapteriscus spp.*)

- Pest species: Short-winged (*N. abbreviatus*), Southern (*N. borellii*), Tawny (*N. vicinus*)
  - ✓ Non-native, invasive: Unintentionally transported into southeastern US around 1900
- Non-pest mole cricket: Northern mole cricket, *Neocurtilla hexadactyla*
  - ✓ Native, common in eastern US
- Sod farms, home lawns, golf courses, sports fields and pastures host mole crickets
- Particularly like bahiagrass and bermudagrass
- Soil inhabitants most of their life

DAMAGE

Characteristic tunneling

Feeding on roots and tunneling can damage or kill turf

Native vs Non-Native

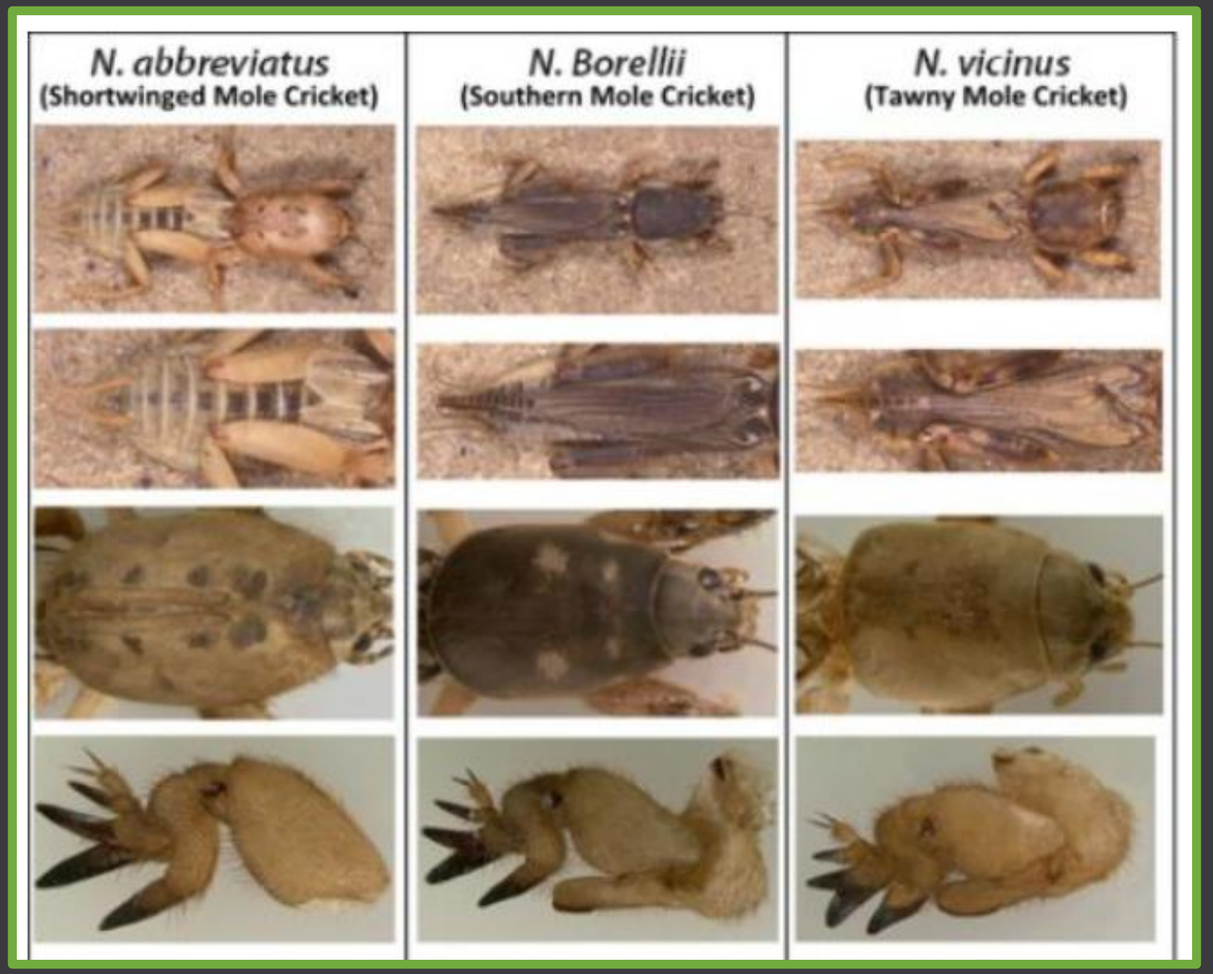
Pest Mole Crickets- Identification

Southern mole cricket

Short-winged mole cricket

Tawny mole cricket

Photo by Julie McConnell, UF/IFAS Extension Bay County



Life Cycle

Mole Cricket Development

- Adults overwinter in soil
- As temps increase (late Feb and March), adults emerge and begin to mate
- Males construct a chamber in soil and chirp to attract females
- Males die after mating and females' tunnel is soil and lay eggs, then die
- Lay 4 clutches of eggs of about 35 eggs per clutch the winter as adults in the soil

Mole Cricket IPM

- Level of management depends on turfgrass purpose (golf course greens > sports fields and sod farms > commercial and home lawns)
- Centipede and zoysiagrass most tolerant
- **Eliminate lights** from sunset to well past dark during months of peak mole cricket flight
- **Regular monitoring**, good **cultural practices** are key
- **Soapy water drench** to identify and observe life stages present
- **Map areas of infestation** for intensive monitoring (2-4 per 4 ft^2 threshold)
- Insecticides (some baits) available, timing important, apply when immature, Rotate MOAs
- Biocontrol agents present (not commercially available)

Larra Wasp

- ✓ ***Shrubby False Buttonwood, Spermacoce verticillata***

Mole Cricket Nematodes - *Steinernema scapterisci*

Birds!

Beauveria bassiana

Tuttle Mealybug

Brevennia rehi (Lindinger)

On the Run Since 1975

Tuttle Mealybug

(Brevennia rehi Lindinger)

- Significant increase in outbreaks/reports throughout the Florida since 2016
- First found in Florida in Pompano Beach, rarely problematic until later 2000s
- Primarily zoysiagrass pest also attacks bermudagrass and other species
- Occurs mostly where rice and sugarcane are grown (aka rice mealybug)
- Found worldwide
- Widespread in Florida

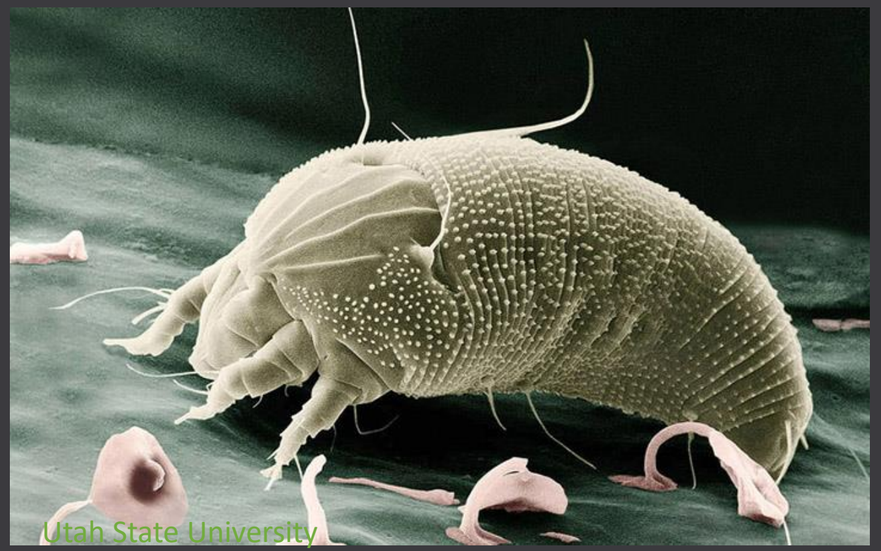
Tuttle Mealybug

(Brevennia rehi)

- Sap-feeding insects
- Small, pink bodies (<2mm)
- Produce white wax
- Scout for gray-brown areas and white wax
- Inspect declining turf to confirm identity
- Hide in thatch

Tuttle Mealybug IPM

- Thatch management is key to control!
- Verticutting in Spring
- If evident infestation, within 2 weeks after verticutting, make an insecticide application
- Use a systemic insecticide that the mealybugs will ingest as they feed on the plant sap. Do not rely on contact-toxic products!
- Rotate MOAs, mealybugs are highly likely to develop resistance to insecticides



Bermudagrass Mite
(Eriophyes cynodoniensis)

On the Run Since 1962

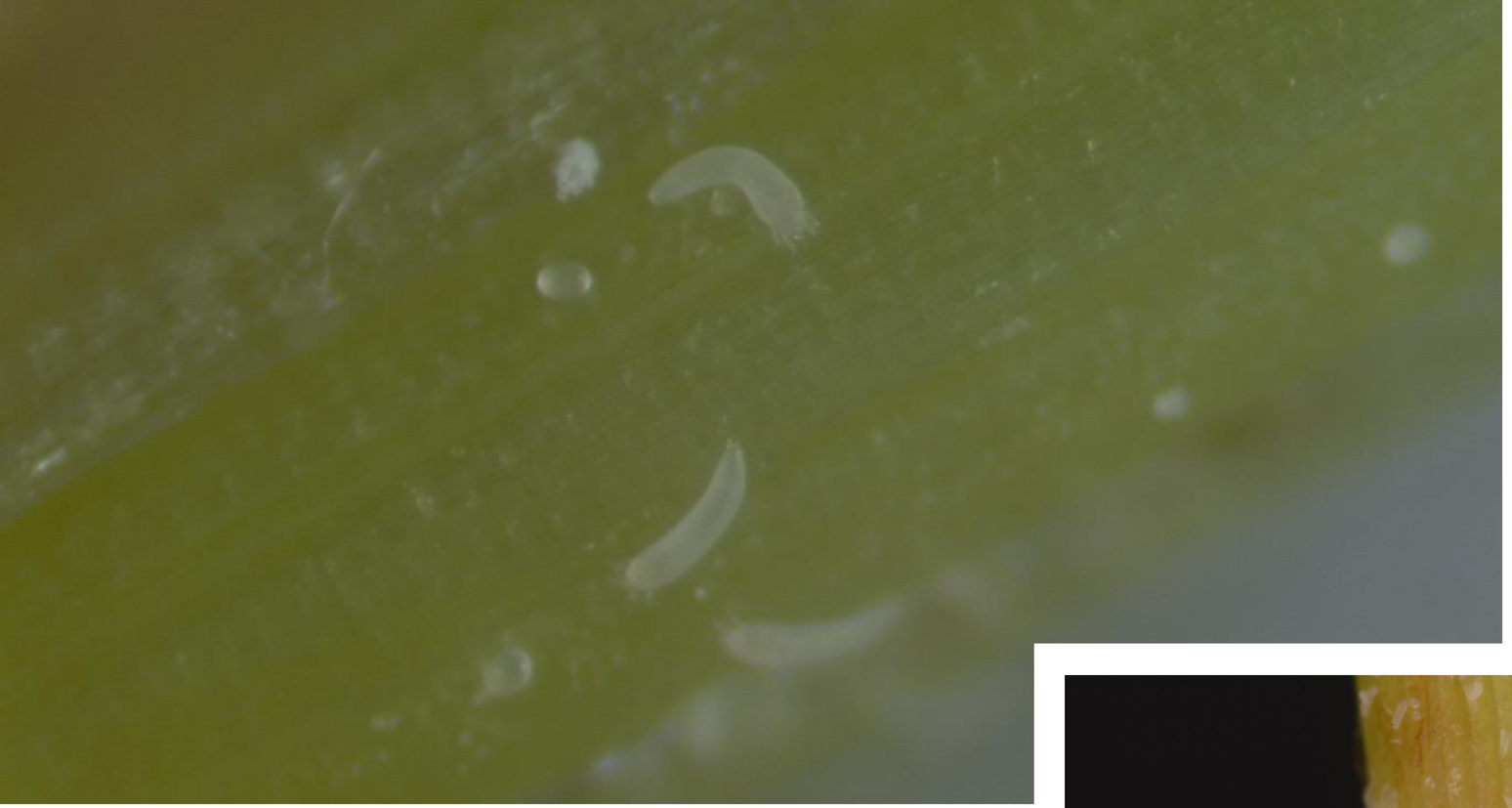
Bermudagrass Mite

(Eriophyes cynodoniensis)

- Eriophyid mite (bud, blister, gall, rust)
- Extremely small (0.2 mm)
- Specific to bermudagrass (Celebration)
- Sap-feeding
- First discovered in Florida in 1962, at Patrick Space Force Base in Melbourne, Florida
- Has become more problematic in recent years
- Golf and sports fields most affected

From a distance….Yellowing to necrotic areas

DAMAGE

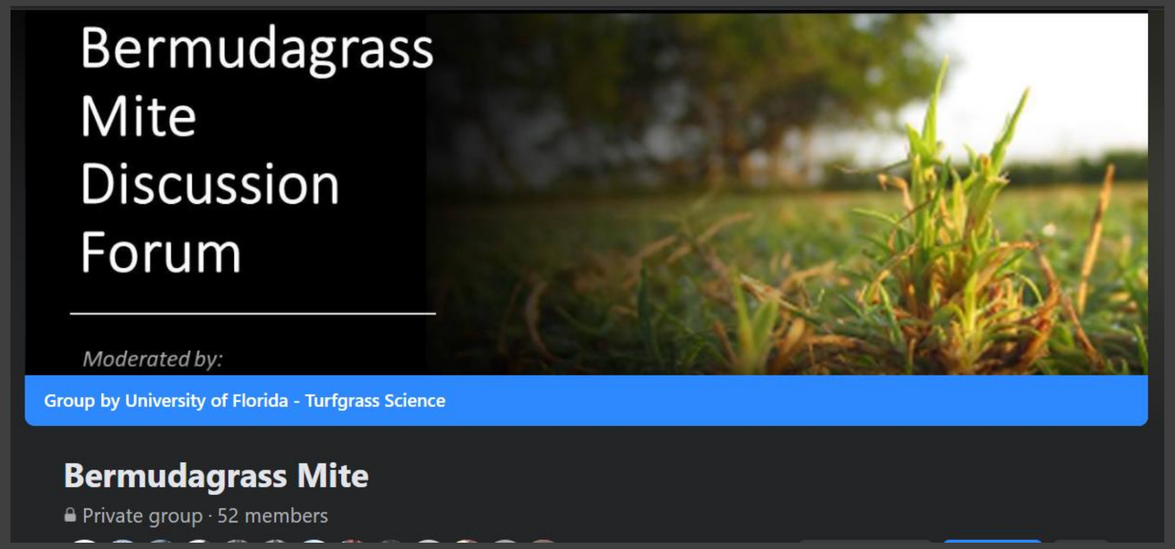


- Mites live protected within sheaths entire life (up to 200)
- Rapid generation time (2 weeks)

- Spring and early summer most activity
- Disperse on air currents, hitchhike on mole crickets, grass clippings

Bermudagrass Mite IPM

- Following UF/IFAS Best Management Practices for bermudagrass (mowing height, fertilization, etc.)
- Some tolerant cultivars (Tifsport/Tifway)
- Heavy infestations: scalped or mowed as low as possible and grass clippings disposed of off-site
- Some chemical control options available for golf courses and sports fields (even fewer for commercial and home lawns)
- Abamectin most consistent control (with surfactant)



Facebook Group/Discussion Forum by UF Turf Team

(currently 52 members)

Florida Turf Digest

Vol. 38, No. 4

Summer Issue, Pgs. 12-13

Fall Armyworm
(Spodoptera frugiperda)

On the Run Since FOREVER

Fall Armyworm

(Spodoptera frugiperda)

- Moth larva (Noctuidae)
- Native to Western Hemisphere and US
- Overwinters only in southern Florida and southern Texas
- Adults are strong-fliers, disperse long distances in summer months
- Sporadic but serious pests of turfgrasses (bermudagrass and St. Augsutinegrass)
- Immature larvae travel in masses (i.e army)
- 2020-2021, particularly bad on golf courses

Fall Armyworm Damage in Turf, | Photo Credit: R. Brandenburg, NCSU

Photo Credit: R. Brandenburg, NCSU

Fall Armyworm IPM

- Good cultural practices
- Monitor weekly with soap flushes starting late Spring
- Thresholds not clear, dependent on turf use
- Chemicals for control available, pyrethroids and spinosad (Rotate MOAs)
- Conserve natural enemies (parasitic wasps, nematodes, beetles, birds, other animals)

Tropical Sod Webworm
(Herpetogramma phaeopteralis)
On the Run Since FOREVER

Tropical Sod Webworm

(Herpetogramma phaeopteralis)

- Snout moth larva (Pyralidae/Crambidae)
- Destructive to warm season turfgrasses in US, especially newly established lawns, golf courses and sports fields
- Prefers lawngrass (St. Augustinegrass and bermudagrass)
- Feed on leaves
- Damage appears very quickly in infested landscapes

Tropical Sod Webworm

Tropical Sod Webworm IPM

- Good cultural practices! Excessive fertilizing major cause of outbreaks
- Monitor weekly with soap flushes starting late Spring
- Spot treat heavy infestations
- Chemicals for control available
- Natural enemies (parasitic wasps, nematodes, beetles, birds, other animals)

White Grubs

- C-shaped
- Whitish with dark areas near the rear
- Distinct, brown head
- Adult female beetles lay their eggs in the soil
- Adults are beetles commonly referred to as chafers

Chafers/June Beetles

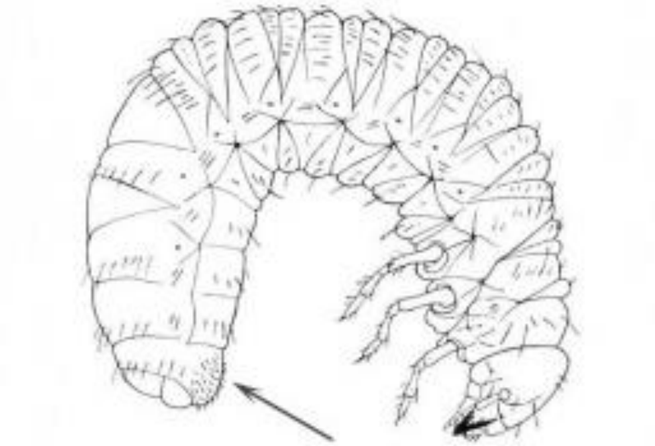
Green June beetle adult

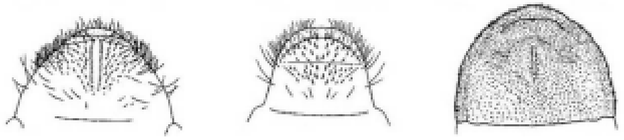
May/June beetle adult

Masked chafer adult

Grub IPM

- Monitor for increasing pest populations
  - Larvae: soil, thatch, roots (1-3 inches)
  - Adults: UV, pheromone, or bait traps
- Raster patterns help determine larval type





May/June Beetles

Masked Chafers

Green June Beetle

Grub IPM Cont’d

- **Moist soils** critical for egg hatching and grub survival, also attract adult females
- Many **chemical control** options available
- **Natural enemies**: ground beetles, ants, parasitoids, nematodes, cordyceps

Other Occasional Pests that May Be Lurking Around Turf!

Spittlebugs

- Adults are about 3/8 inch long
- Dark brown or black, and have two orange stripes across their wings
- Nymphs are ivory with brown head
- Feed on leaves
- A heavily infested area will feel "spongy" when walked on

Striped Grass Looper

Cutworms

Hunting Billbugs

Ground Pearls

Steps to Managing Turf Insects

- Prevention
- Thatch removal
- Early detection

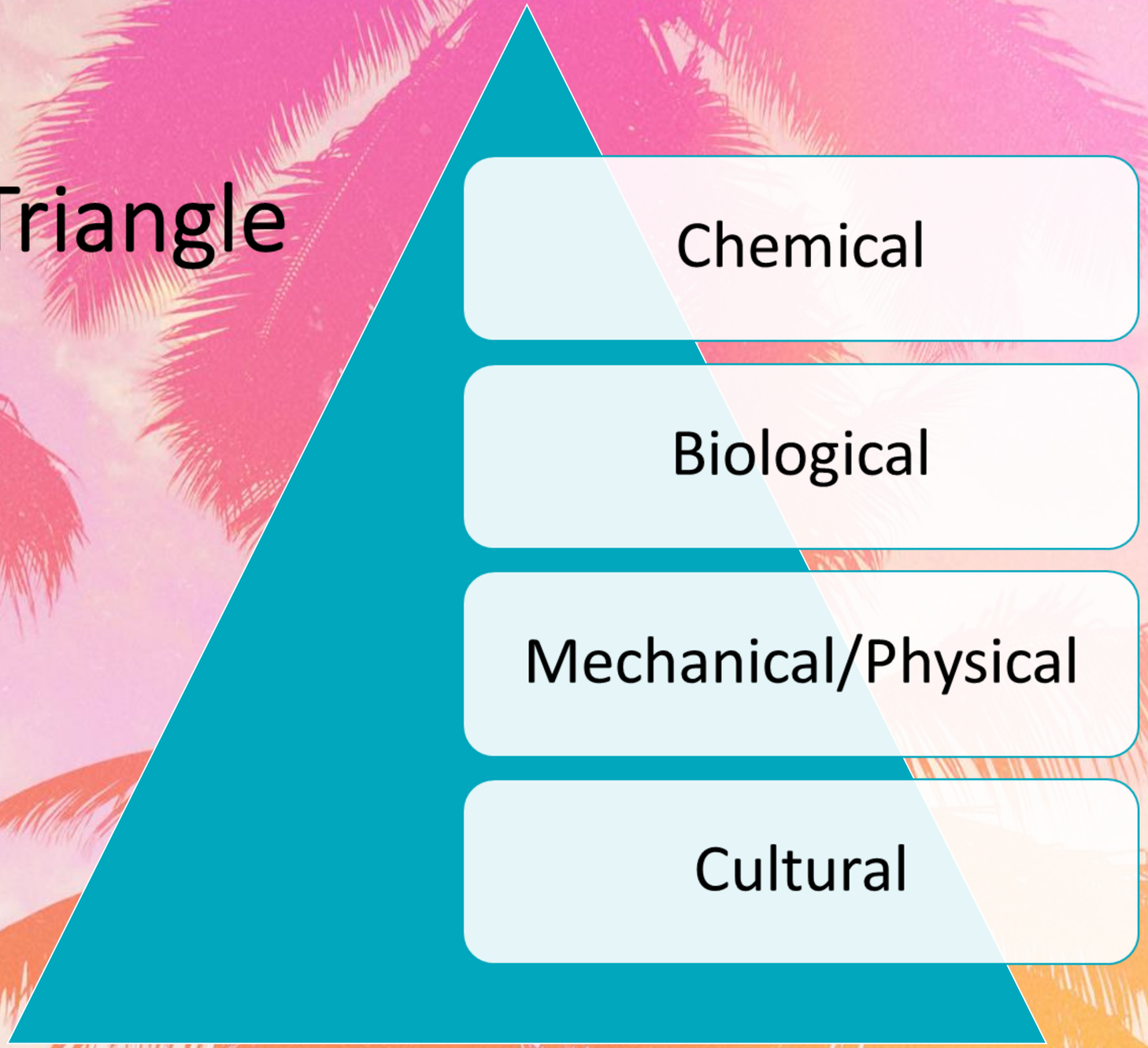
Integrated Pest Management (IPM)

- Most effective and safest way to manage pests on turfgrass and ornamentals

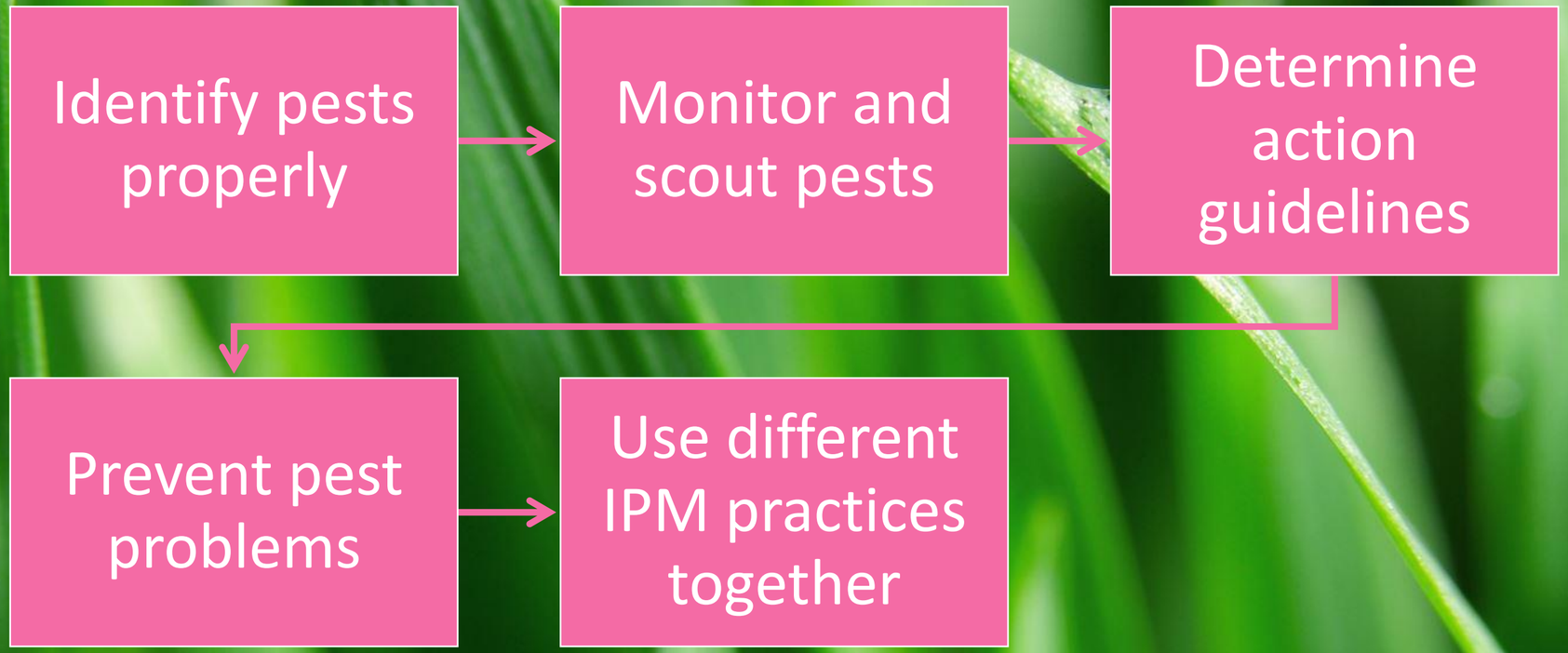
- Key word: Management
  - You cannot eliminate pests 100%
  - Aim to keep pest numbers and damage to an acceptable level (suppression)

- Uses a combination of management practices
  - Use pesticides only if pest levels show necessary
  - Selecting control methods that **limit the risk** to human health, beneficial organisms, and the environment

IPM Triangle



Steps in IPM


Identify pests properly
Monitor and scout pests
Determine action guidelines
Prevent pest problems
Use different IPM practices together

Thank You!

Bonnie C. Wells, DPM
UF/IFAS Extension Brevard County
Email: bcwells@ufl.edu
Twitter: @brevardplantdr