

Insect and Plant Disease Threats to Florida Horticulture

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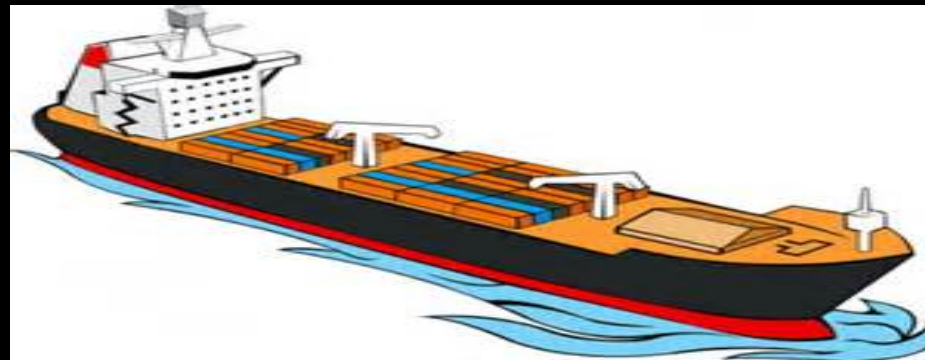
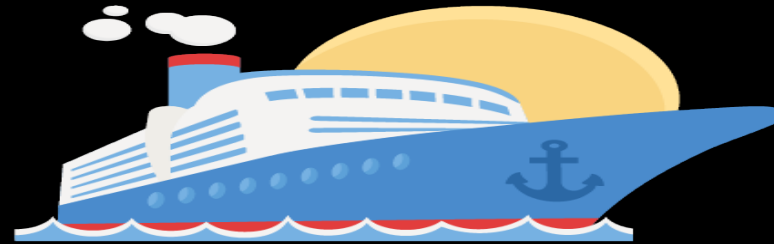
Division of Plant Industry



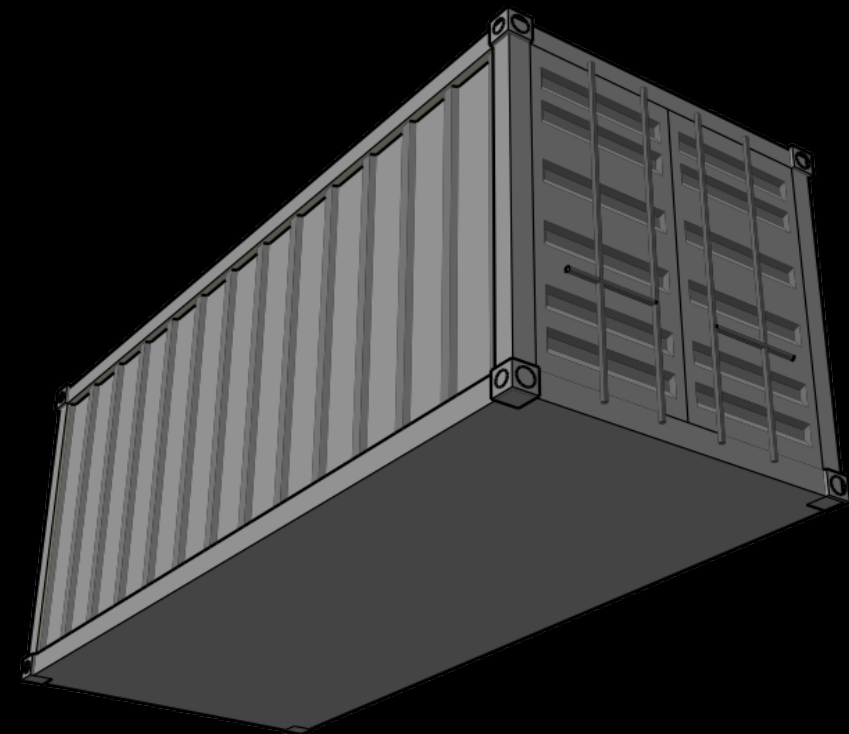
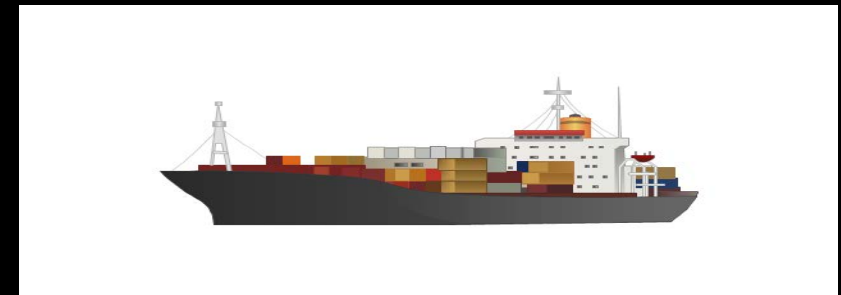
Florida Department of Agriculture and Consumer Services
Adam H. Putnam, Commissioner

Florida's Pathways:

- 12 International Airports
- 19 Major Commercial Airports
- 14 Deep Water Ports
- 370,000 Hotel Rooms
- 700 Campgrounds/100,000 campsites
 - 6 Million campers per year



Risk Pathway-Ports



Risk Pathway - Trucking



Dunnage-
wood
packing
material

Risk Pathway - Trains



Bulimulus sporadicus



Risk Pathway-Seasonal Imports





Elongate Hemlock Scale
Fiorinia externa



A close-up photograph of a hemlock branch showing numerous small, dark, oval-shaped Hemlock Scale insects attached to the needles. The needles are green and have a distinct white line down the center. The background is blurred, showing more of the tree's foliage.

Hemlock Scale
Hemiberlesia ithacae

A close-up photograph of a tree trunk showing a heavy infestation of white, woolly adelgid insects. The insects are clustered in dense, irregular patches, covering a significant portion of the bark. The background is dark and out of focus, showing some green foliage.

Balsam woolly adelgid
Adelges piceae

Pine needle scale
Chionaspis pinifoliae



Bemisia tabaci "Q"



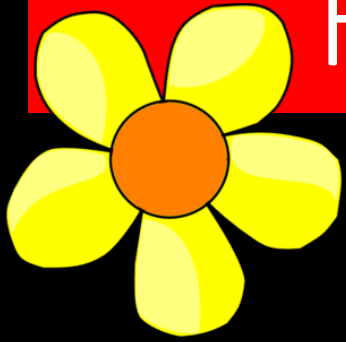
Bemisia tabaci "Q"

- April 2016 Palm Beach Co.
- Over 900 recorded Hosts (over 300 Hosts in FL)
- Molecular assay necessary
- Immune to most common pesticide used to suppress outbreaks i.e. Growth regulators, neonicotinoids
- Can vector plant viruses



Adult *Bemisia argentifolii* Bellows & Perring or *Bemisia tabaci* (Gennadius), B strain. Photograph by Scott Bauer, USDA.

Risk pathway – Seasonal imports



- Dogwood Anthracnose – *Discula destructiva*
- Fungal disease of *Cornus* spp.
- Introduced 1978



Risk Pathway – Pet Store



Coccographis nigrorubra



Glaphyra sp.

Photo by Paul E. Skelly, DPI

Not in Western Hemisphere



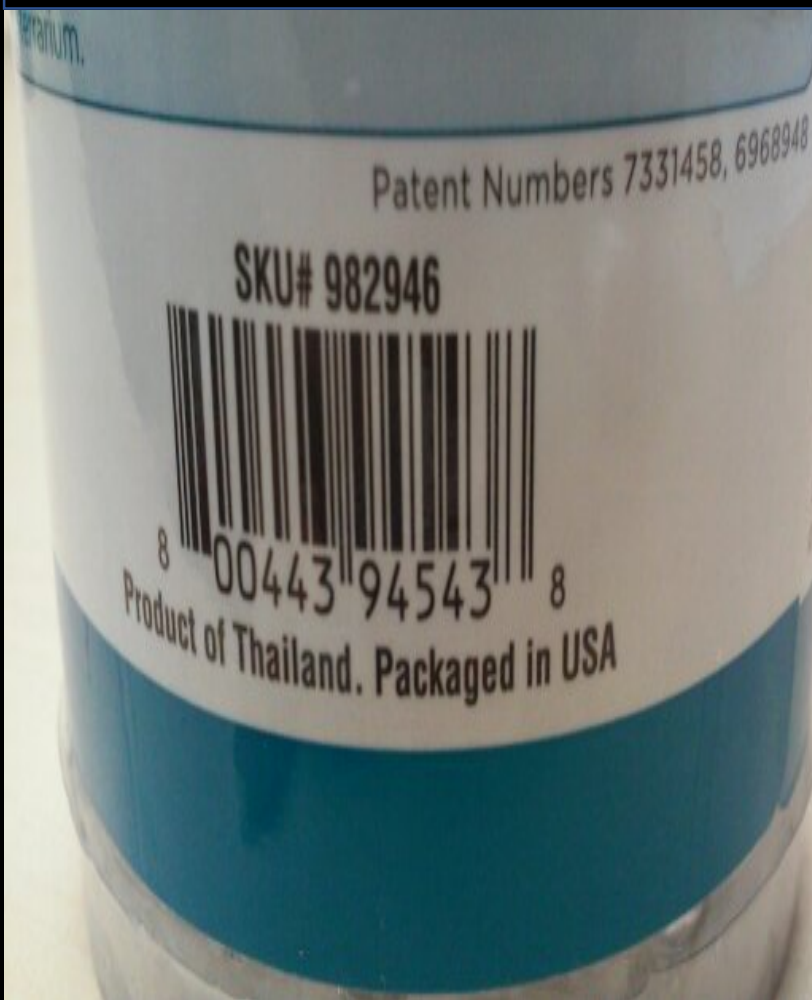
Amamiclytus sp.

Photo by Paul E. Skelly, DPI



Risk Pathway – Pet store

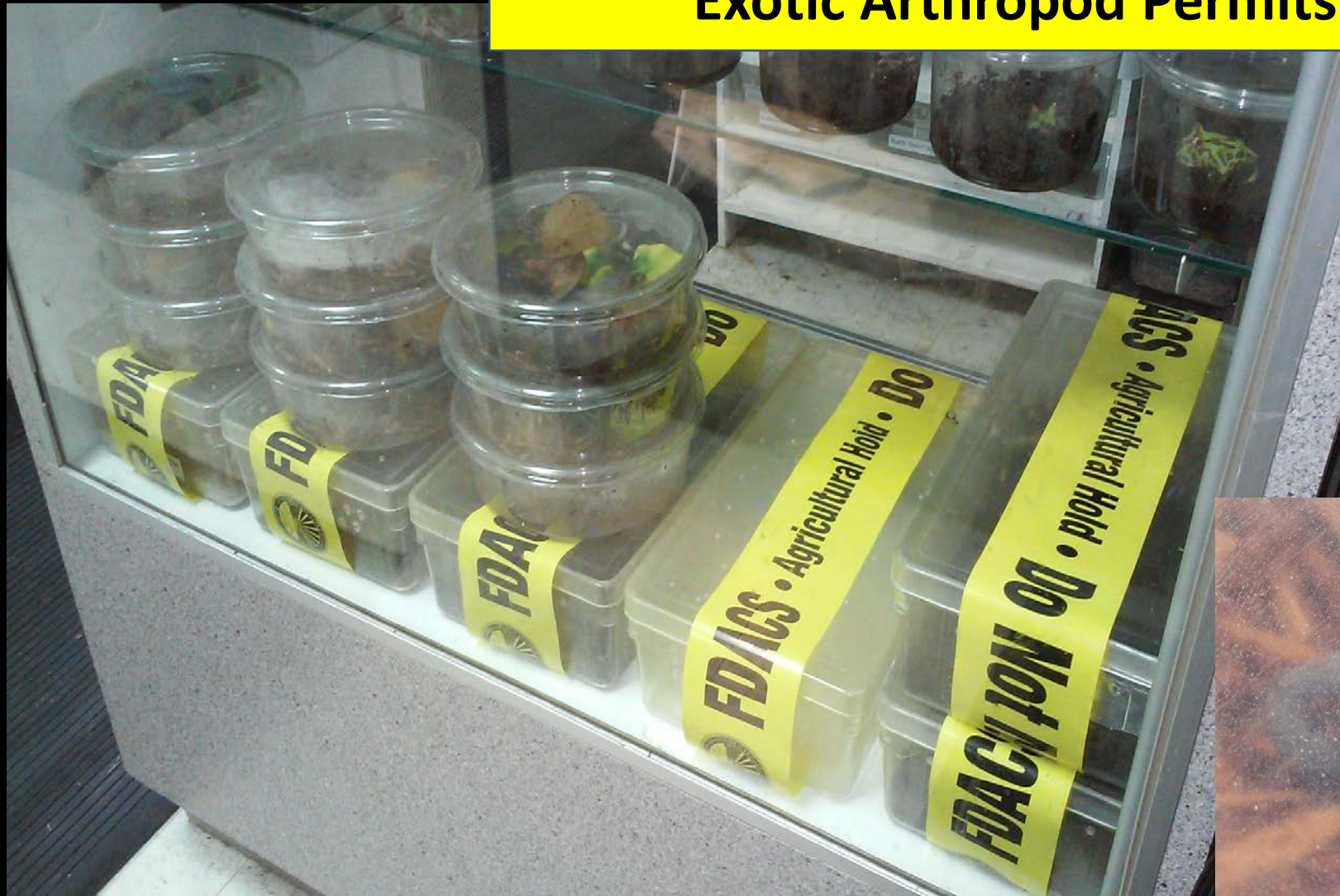
Coccus sp. on Asian Water Fern



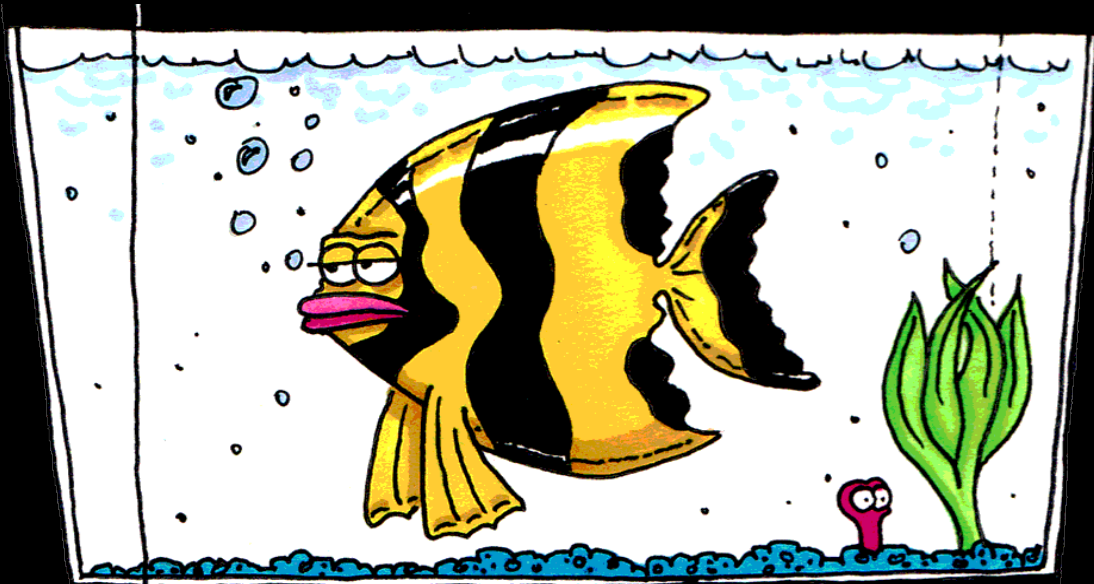


Risk Pathway – Pet store

Exotic Arthropod Permits



Risk Pathway-Aquarium Dumping



Risk Pathway - Craft/Hobby Stores





Community Gardens/Markets



Water Spinach
Ipomoea aquatica
Class I Prohibited Aquatic



Japanese Holly Fern Mottle Virus

Cyrtomium falcatum

- Observed since 2003 – AL, LA, MS, TX, AR, TN
- Report published 2009
- 1st found in Florida 2010
- Vector unknown - suspected thrips/mites



Potexvirus Alternanthera mosaic virus

Crossandra infundibuliformis

- 1st reported 1999 Australia
- No known insect vector
- Spread by contact – Sap
 - Touching/Handling
 - Infected cuttings/divisions
 - Mechanical
 - Tools, tables, benches
 - Leaf contact



Potexvirus Hosta Virus X

- Identified in 1996
- Found in Florida 2013
- No known insect vector
- Spread by contact – Sap
 - Touching/Handling
 - Infected cuttings/divisions
 - Plant to plant contact
 - Mechanical
 - Tools, tables, benches,



Tobamavirus Tobacco mosaic virus

- No known insect vector
- Spread by contact – Sap
 - Touching/Handling
 - Plant to plant contact
 - Tools
 - Propagation benches/tables
- Infected plant debris
 - Survive for months to years



Take your pick!

- Potyvirus Passiflora
Woodiness virus
- Potyvirus Passiflora
Mottle virus
- Potyvirus Passiflora
Crinkle virus
- Potyvirus Passiflora
Chlorosis virus
- Carlavirus Passionfruit
Latent virus
- Cowpea Aphid-borne
mosaic virus



Potyvirus Peanut Stunt virus

Arachis glabrata/Arachis pintoi

- 1st Found in VA in 1964 in cultivated peanuts
- 2002 Reported in forage legumes in FL
- Wide host range
- No known control



Potyvirus Peanut Mottle Virus

Arachis pintoi/Arachis glabrata

- 1st report in GA
1965 - crop peanuts
- 1st report in A.
glabrata - GA 2007
- Appears to be 1st
record in US
infecting A. pintoi
6/2017
- 8/2017 FL State
record in A.
glabrata



Cucumovirus cucumber mosaic virus

Adenium obesum

- Found in 1934
- Reputation – widest host range of any known plant virus
- > 1,200 hosts
- Leaf symptom “Shoestring effect”





Transmitted by:

- 60 Aphid species
- Infected “mother” stock
- Mechanically
- Seed
- Parasitic weeds i.e..
Dodder



Tospovirus Tomato chlorotic spot virus

- 1st reported in US – Florida 2012
- 8 virus species in genus
- Transmitted by thrips
- Significant losses in yield & quality



Kutilakesa pironii

- ❖ Fungal wound pathogen
- ❖ Causes stem galls & cankers
- ❖ 1955 in Florida on Croton species
- ❖ Commonly found on:
 - ❖ Pittosporum tobira
 - ❖ Hydrangea
 - ❖ Clerodendrum



Palm Weevil

Rhynchophorus cruentatus





RED PALM WEEVIL

Rhynchophorus ferrugineus

Worlds most destructive palm pest!

- Attracted to both healthy and damaged palms
- Discovered 2008-Caribbean island of Curacao - First find in the New World.
- In January 2010 Federal government **PROHIBITS** importation of live palms belonging to 17 genera into the United States.



DON'T MOVE FIREWOOD

Rule 5B-65 Firewood and Unprocessed Wood Products

- Effective 2010
- Local unprocessed firewood and wood products – 50 miles from point of origin



Final Thought Horticulture/Agriculture: Everyone has a role

