

CITRUS DISEASES AND PEST STUDY GUIDE FOR FLORIDA 4-H AND FFA JUDGING EVENTS



Citrus Diseases and Pest Study Guide for Florida 4-H and FFA Judging Events

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DISORDERS and NUTRITIONAL DEFICIENCIES



Copper Deficiency

- large dark green leaves
- gum pockets at nodes of twigs
- brownish scars on fruit, twigs, and leaves



Glyphosate (Contact Injury)

- injury spots on leaves
- may cause defoliation of leaves
- new growth after application may appear as small, narrow leaves



Iron Deficiency

- green veins on a light yellow to white colored leaf
- new growth exhibits symptoms first



Magnesium Deficiency

- inverted green V pattern
- remainder of leaf is yellow
- entire leaf yellowing may occur as deficiency progresses

DISORDERS and NUTRITIONAL DEFICIENCIES



Manganese Deficiency

- dark green veins with a lighter green background
- normal size and shaped leaves



Nitrogen Deficiency

- entire leaf becomes yellow
- no distinctive leaf pattern



Salt or Fertilizer Burn

- irregular dead areas on leaves
- injured areas are irregularly spaced
- brown in color



Zinc Deficiency

- small and narrow leaves with yellow mottle on green background
- green islands
- distance between leaves is reduced on stem

DISEASES and DISORDERS



Alternaria Brown Spot (leaves)

- initial brown spots develop yellow halos
- leaf lesions expand into circular irregular shapes that can cover a large portion of the leaf



Alternaria Brown Spot (fruit)

- fruit symptoms start as small dark specks
- lesions develop into either large black lesions or corky eruptions
- eruptions can fall off leaving craters on the fruit surface



Brown Rot

- light brown
- leathery to touch
- strong odor



Citrus Black Spot (leaves)

- younger lesions are reddish brown with light gray center
- older lesions are small, round, and sunken with a gray center, dark brown margin
- yellow halo

DISEASES and DISORDERS



Citrus Black Spot (Hard Spot)

- small, round, sunken lesions
- lesions have gray centers with brick red to black margins
- fungal structures inside lesion appear as tiny black dots



Citrus Black Spot (Cracked Spot)

- large, flat, dark brown lesions with raised cracks in surface
- occurs on green and mature fruit



Citrus Black Spot (False Melanose)

- numerous small, slightly raised tan to brown lesions
- occurs on green fruit



Citrus Black Spot (Virulent Spot)

- small, reddish, irregularly shaped lesions

DISEASES and DISORDERS



Citrus Blight

- general decline of the tree
- increased number of sprouts growing from the tree trunk or branches



Citrus Canker (leaves)

- early symptoms appear as slightly raised tiny blister-like lesions
- as lesions age, they turn tan to brown and a water soaked margin appears surrounded by a yellow ring or halo
- center of the lesion becomes raised and corky
- lesions are usually visible on both sides of the leaf



Citrus Canker (fruit)

- lesions are dark brown to black and raised
- often surrounded by yellow halo



Citrus Greening (leaves)

- blotchy mottle pattern (asymmetrical)
- yellow veins
- corky veins on mature leaves

DISEASES and DISORDERS



Citrus Greening (fruit)

- externally lopsided, misshapen, small
- color inversion off fruit rind (peel)
- internally curved central core, yellowing beneath the calyx button, and aborted (undeveloped) seeds



Citrus Scab (leaves)

- raised and sunken lesions on leaf
- tan to gray in color
- deforms leaf
- rough to touch
- wart-like



Citrus Scab (fruit)

- begins with slightly raised pink-brown lesions
- develops into wart-like, raised lesions
- color changes to yellowish brown to dark gray



Foot Rot

- bark cracking on trunk of tree
- gumming
- lesions can girdle trunk
- found near the crown to below soil line

DISEASES and DISORDERS



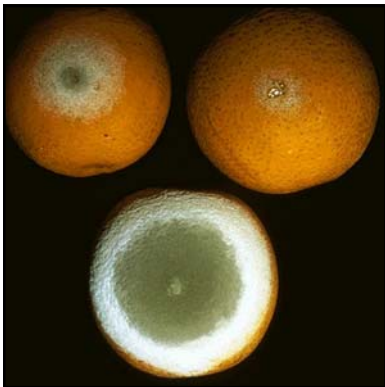
Greasy Spot (leaves)

- looks like drops of oil
- slightly raised
- yellow halo appears and then disappears with age



Greasy Spot Rind Blotch (Pink Pitting)

- symptoms begin as bluish specks between oil glands
- only on grapefruit
- lesions start pink but become brown or black 3-6 months after infection



Green Mold (Postharvest)

- enters only through injuries to peel
- area first appears soft then white and olive-green
- green area becomes surrounded by wide, white margin
- green mold will cover entire fruit



Melanose (leaves)

- small, raised lesions
- red to brown in color
- feels like sandpaper

DISEASES and DISORDERS



Melanose (fruit)

- lesions are reddish-brown and rough
- feels like sandpaper



Postbloom Fruit Drop

- flowers have peach to brown colored spots
- causes young, developing fruit to drop



Root Rot

- soft, water soaked roots
- root cortex comes off to touch leaving thread-like tips



Sooty Mold

- black ash-like covering on leaves, fruit and twigs
- rubs off easily

DISEASES and DISORDERS



Sour Rot (Postharvest)

- soft, slimy decay
- distinct sour odor
- often times seen after long periods of storage



Stem End Rot (Postharvest)

- leathery appearance beginning at the stem end stem end of the fruit and then spreading downward



Tristeza

- small leaves
- honeycombing below graft union
- only found on sour orange rootstock



Windscar

- light blemish on peel surface
- light brown
- no pattern

PESTS, PATHOGENS, PARASITES, AND PREDATORS



Aschersonia

- also known as friendly fungus
- red or yellow raised growth covering whitefly nymphs



Asian Citrus Psyllid

- 3 to 4 millimeters in size
- brown mottled body
- transparent wings
- feeds at a 90° angle



Black Citrus Aphid

- small, 1/15 inch long
- reddish brown to nearly black
- long legs



Blue Green Citrus Root Weevil

- 8 to 14 millimeter long
- bright blue-green to aqua in color

PESTS, PATHOGENS, PARASITES, AND PREDATORS



Brown Citrus Aphid

- 1.8 to 2.5 millimeters long
- dark brown to black in color



Caribbean Black Scale

- female is 3 to 5 millimeters long
- oval in shape
- ridges creates a distinct H pattern on back
- dark brown to black



Caribbean Fruit Fly

- adults are 12 to 15 millimeters long
- yellowish brown in color with brown bands on abdomen
- dark pattern on transparent wings



Chaff Scale

- irregularly rounded to oblong in shape
- color will vary, but is generally brownish
- found on twigs, leaves, and fruit
- no distinct markings on the body

PESTS, PATHOGENS, PARASITES, AND PREDATORS



Citrus Black Fly

- adult is 1.2 millimeters long
- small, four-winged
- black in color
- eggs are laid in a spiral pattern



Citrus Leafminer

- moth looks like a speck of dust
- larva causes damage on upper or under side of leaf
- larva creates a maze underneath leaf epidermis
- brown lines with a shiny, glaze appearance



Citrus Mealybug

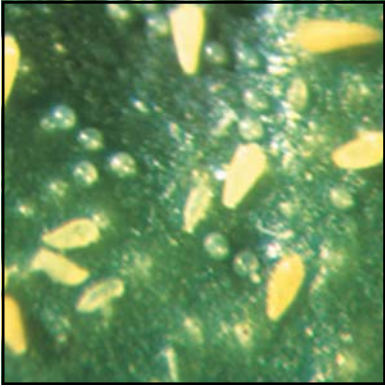
- 3 millimeters long
- soft oval shaped
- flattened and covered with a white powdery wax
- segmented body
- mobile
- located under and around the calyx button of fruit or where two pieces of fruit touch each other



Citrus Red Mite

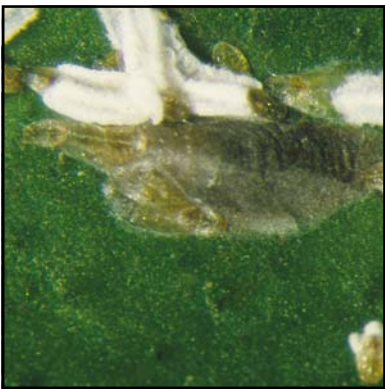
- female is about 0.5 millimeters long
- female is oval
- male is smaller than the female and has a tapering abdomen
- males and females are a deep red color
- the mite has eight legs

PESTS, PATHOGENS, PARASITES, AND PREDATORS



Citrus Rust Mite

- adult is 0.13 millimeters long
- elongated and wedge-shaped
- light yellow in color



Citrus Snow Scale

- female is 1.5 to 2.25 millimeters long
- female is shaped like an oyster shell with one ridge down her back
- females are dark brown in color and hard to see
- juvenile male is white to light yellow and has three ridges down his back
- adult male has wings
- found mostly on the trunk and limbs of the trees



Cottony Cushion Scale

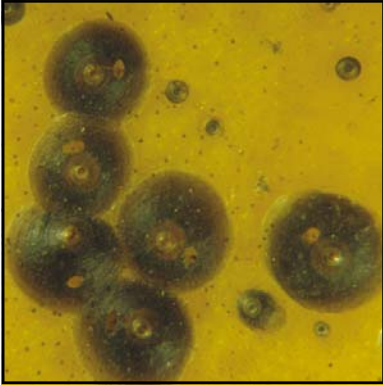
- 10 to 15 millimeters long (including egg sac)
- scale is broadly oval
- bright reddish brown in color with white egg sac



Diaprepes Root Weevil

- 9 to 20 millimeters long
- orange back with black lines

PESTS, PATHOGENS, PARASITES, AND PREDATORS



Florida Red Scale

- adult female is 2.02 to 2.2 millimeters long
- round in shape
- dark reddish brown with light brown center
- three concentric rings
- male is free-flying, gnat-like



Fuller's Rose Beetle

- about 8 millimeters long
- brownish to gray in color
- all female and flightless



Glover's Scale

- brown to purple in color
- looks like an exclamation point



Grasshopper (American)

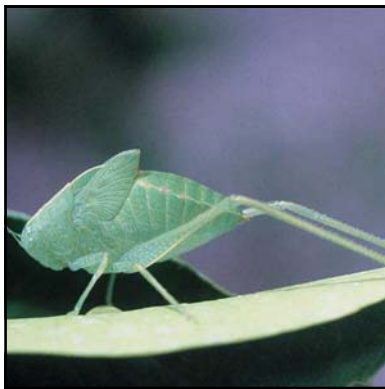
- 25 to 45 millimeters long
- light brown with black markings

PESTS, PATHOGENS, PARASITES, AND PREDATORS



Green Citrus Aphid

- 1.8 millimeters long
- green abdomen
- pale pink to dark brown thorax



Katydid

- 50 to 64 millimeters long
- bright green
- long, hairlike antennae
- 4 segmented legs



Lady Beetle

- many species
- number of black or white spots, if any, vary



Leaf Footed Plant Bug

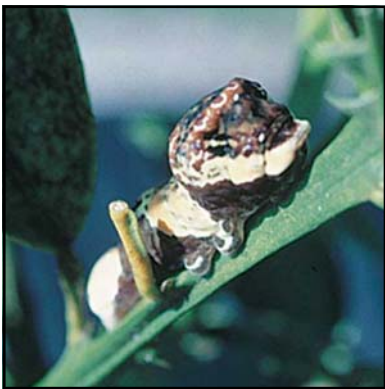
- 20 millimeters long
- dark brown
- yellow band across the body
- back legs look like a leaf

PESTS, PATHOGENS, PARASITES, AND PREDATORS



Mediterranean Fruit Fly

- 3.5 to 5 millimeters long
- yellowish body with white, brown and black accents
- two white bands on abdomen
- black spots on thorax



Orange Dog

- 35 to 65 millimeters in length
- brown and white caterpillar
- resembles bird droppings
- can give off foul odor when aroused
- projects red antennae when disturbed



Purple Scale

- 2 to 3 millimeters long
- purple to dark brown in color
- elongated and usually curved
- shaped like a comma



Red Imported Fire Ant

- 0.13 to 0.25 inch long
- reddish-brown to black in color

PESTS, PATHOGENS, PARASITES, AND PREDATORS



Six Spotted Mite

- 0.35 millimeters long
- pale yellow in color
- 1 to 3 pairs of small dark spots along each side of the body
- mite has eight legs



Southern Green Stink Bug

- female is 12 millimeters long; male is slightly smaller
- bright green
- oval shaped
- antennae has 5 segments



Texas Citrus Mite

- 0.4 millimeters long
- males more slender than females
- tan to brownish green
- dark green to black spots on upper side of body



Whitefly

- adult usually 2-3 millimeters long

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