Exotic Diseases of Citrus

CITRUS VARIEGATED CHLOROSIS (CVC)

CVC (upper side of leaf)

CVC (underside of leaf)

SWEET ORANGE SCAB (SOS)

Sweet Orange Scab

LEPROSIS

Leprosis (early symptoms)

Leprosis (advanced symptoms)

Leprosis on fruit

Leprosis on mature fruit

Leprosis bark scaling

CITRUS TRISTEZA

Citrus Tristeza Virus Stem-Pitting

PSEUDOCERCOSPORA FRUIT AND LEAF SPOT DISEASE

Pseudocercospora lesions on young flush

Pseudocercospora lesions on fully expanded fruit

Pseudocercospora lesions on mature fruit

For more information, contact the UF/IFAS Citrus Research and Education Center 863-956-1151, www.crec.ifas.ufl.edu, or your local county citrus extension agent: at http://citrusagents.ifas.ufl.edu

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### Plant Tissue Location
- **CITRUS VARIEGATED CHLOROSIS (CVC)**: Xylem
- **LEPROSIS**: Cytoplasm or nucleus of infected cells
- **PSEUDOCERCOSPORA FRUIT AND LEAF SPOT DISEASE**: Fruit rind and leaves
- **SWEET ORANGE SCAB (SOS)**: Fruit rind
- **CITRUS TRISTEZA VIRUS STEM-PITTING (CTV-SP)**: Phloem

### Spread
- **CITRUS VARIEGATED CHLOROSIS (CVC)**: Sharpshooters, graft-transmitted, possibly seed
- **LEPROSIS**: Several species of *Brevipalpus* mites
- **PSEUDOCERCOSPORA FRUIT AND LEAF SPOT DISEASE**: Windborne conidia, rain splash or movement of infected plant material
- **SWEET ORANGE SCAB (SOS)**: Requires moisture; presence of susceptible fruit; splash by raindrops
- **CITRUS TRISTEZA VIRUS STEM-PITTING (CTV-SP)**: Several species of aphids, budding and grafting

### Pathogen
- **CITRUS VARIEGATED CHLOROSIS (CVC)**: *Xylella fastidiosa* (Bacterium)
- **LEPROSIS**: *Citrus leprosis virus*
- **PSEUDOCERCOSPORA FRUIT AND LEAF SPOT DISEASE**: *Pseudocercospora angolensis* (Fungus)
- **SWEET ORANGE SCAB (SOS)**: *Elsinoë australis* (Fungus)
- **CITRUS TRISTEZA VIRUS STEM-PITTING (CTV-SP)**: *Citrus tristeza virus*

### Tree Symptoms
- **CITRUS VARIEGATED CHLOROSIS (CVC)**: Reduced vigor and growth; tree not killed, but becomes unproductive; symptoms may appear in one branch or the whole canopy
- **LEPROSIS**: Symptoms localized on fruit, leaves, or twigs
- **PSEUDOCERCOSPORA FRUIT AND LEAF SPOT DISEASE**: Premature defoliation and fruit drop
- **SWEET ORANGE SCAB (SOS)**: Unaffected
- **CITRUS TRISTEZA VIRUS STEM-PITTING (CTV-SP)**: Scattered pits after removing bark from affected plants; depressed areas in the bark

### Leaf Symptoms
- **CITRUS VARIEGATED CHLOROSIS (CVC)**: Severe chlorosis, reddish to brown lesions on the lower side corresponding to yellow areas on the upper surface; may resemble zinc deficiency in early stages
- **LEPROSIS**: Chlorotic at first then may become brown with or without a necrotic center; smooth to touch
- **PSEUDOCERCOSPORA FRUIT AND LEAF SPOT DISEASE**: Circular to irregularly shaped lesions that can coalesce with brown or grayish centers surrounded by a yellow halo
- **SWEET ORANGE SCAB (SOS)**: Unaffected
- **CITRUS TRISTEZA VIRUS STEM-PITTING (CTV-SP)**: Chlorosis and dieback may occur

### Stem/Twig Symptoms
- **CITRUS VARIEGATED CHLOROSIS (CVC)**: Unaffected
- **LEPROSIS**: Bark scaling, twig dieback
- **PSEUDOCERCOSPORA FRUIT AND LEAF SPOT DISEASE**: Unaffected
- **SWEET ORANGE SCAB (SOS)**: Unaffected
- **CITRUS TRISTEZA VIRUS STEM-PITTING (CTV-SP)**: Twigs are brittle; bark is abnormally thick; trunk and branches may have aropy appearance

### Fruit Symptoms
- **CITRUS VARIEGATED CHLOROSIS (CVC)**: Small and hard with high acid; fruit remains on the tree; may exhibit sunburn damage; normal color change
- **LEPROSIS**: Premature fruit drop, flat or depressed lesions with yellow halo; often with brown centers
- **PSEUDOCERCOSPORA FRUIT AND LEAF SPOT DISEASE**: Lesions are circular to irregularly shaped; young fruit has nipple-like swellings with yellow halo; young fruit can be mummified; mature fruit lesions are dark brown to black and generally flat or sunken with a yellow halo; single or coalescent
- **SWEET ORANGE SCAB (SOS)**: Young fruit have corky wart-like pustules; tan to gray in color; mature fruit lesions become smoother
- **CITRUS TRISTEZA VIRUS STEM-PITTING (CTV-SP)**: Small and misshapen

### Flowering
- **CITRUS VARIEGATED CHLOROSIS (CVC)**: Off-season bloom
- **LEPROSIS**: Unaffected
- **PSEUDOCERCOSPORA FRUIT AND LEAF SPOT DISEASE**: Unaffected
- **SWEET ORANGE SCAB (SOS)**: Unaffected
- **CITRUS TRISTEZA VIRUS STEM-PITTING (CTV-SP)**: Off-season bloom

### Varieties Affected
- **CITRUS VARIEGATED CHLOROSIS (CVC)**: Sweet orange
- **LEPROSIS**: Mainly sweet orange, mandarins
- **PSEUDOCERCOSPORA FRUIT AND LEAF SPOT DISEASE**: All citrus varieties
- **SWEET ORANGE SCAB (SOS)**: Sweet orange and tangerines
- **CITRUS TRISTEZA VIRUS STEM-PITTING (CTV-SP)**: Lime, grapefruit, sweet orange