UF IFAS Extension
UNIVERSITY of FLORIDA

Northewest Florida Rose Symposium

Matthew Orwat

UF / IFAS Extension Washington County

Hume's "Garden Roses"

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Who Was Hume?

- 1904- Hume became Professor of Botany and Horticulture at the Florida Agricultural College in Lake City, Florida, University of Florida's predecessor.
- Hume later became general manager Glen St. Mary Nurseries Company from 1917 to 1929, later serving as the company's president and then the chairman of its board of directors
- 1930 rejoined the faculty of the University of Florida
- 1938 appointed dean of the College of Agriculture
- 1947 Hume was appointed the university's interim president

Background of Cultivated Roses

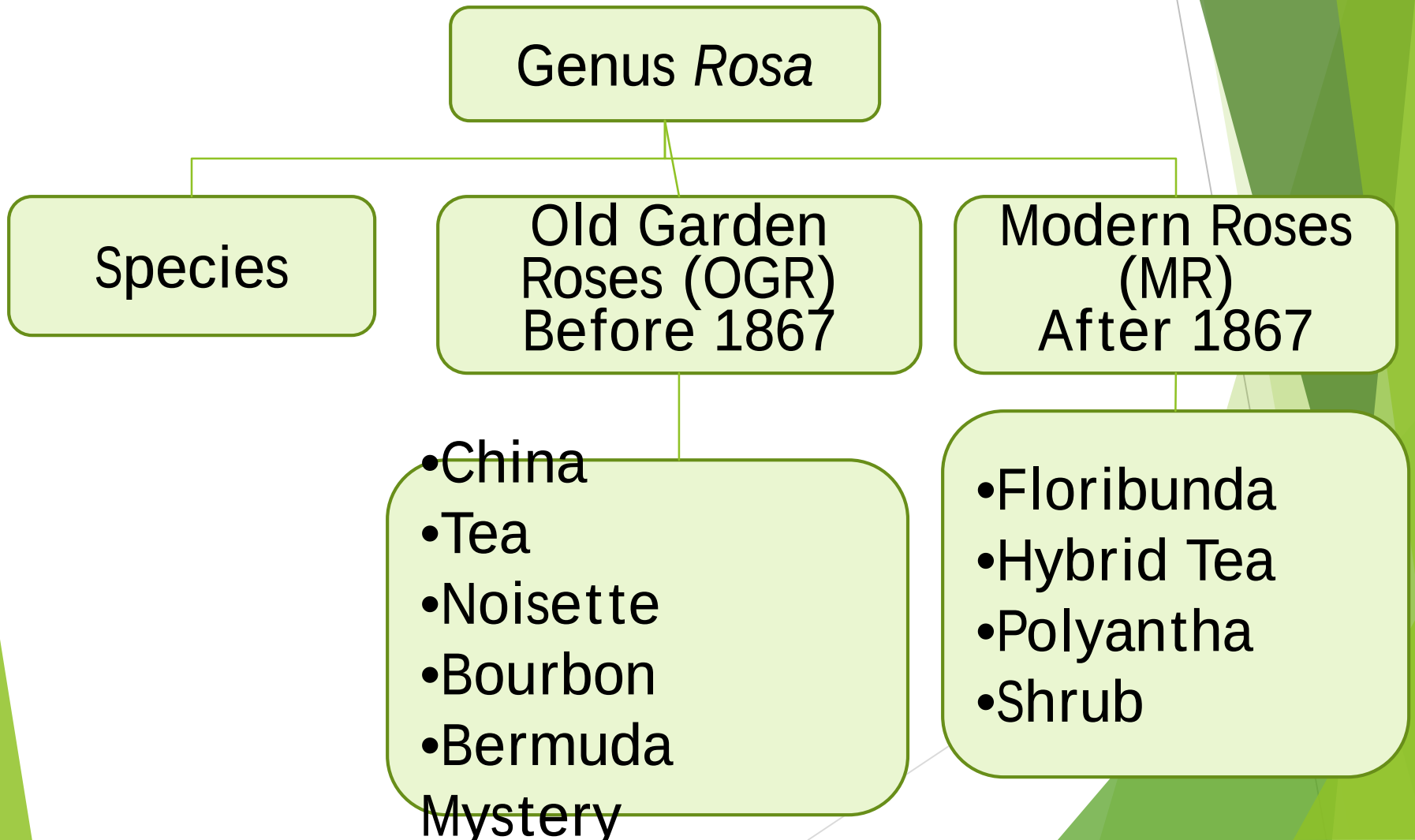
History and Taxonomy

Rose Classes

- Common Old Garden Rose Classes
- Damask
- Gallica
- Alba
- Centifolia
- Bourbon
- Tea
- China
- Hybrid Perpetual
- Noisette

- Common Modern Rose Classes
- Hybrid Tea
- Polyantha
- Floribunda
- Grandiflora
- Miniature
- Shrub

The World Federation of Rose Societies' Classification System



Rose Classes

- Many different classes
- + / - 23 in all, different people come up with different numbers
- How can the average gardener make sense of this?
- Which ones should you grow in Northwest Florida? (will answer later)
- Let's take a look at the most common classes

China Class

- China roses
- Originated from ancient Chinese varieties depicted in art over 2000 years old
- Brought repeat blooming characters to European Roses through extensive breeding in the 1800s
- Very free flowering
- Grow extremely well in hot climates and are very disease resistant
- Most should do GREAT in

Tea Class

- Tea Roses
- Originated from roses brought from China in the 1800s (R. gigantea)
- Named for their scent – like dry tea leaves
- Historically widely grown class throughout the deep south
- Wonderful for Florida – make large free flowering shrubs
- Cold tender - Cannot live north of zone 7
- Most in class would make PERFECT garden and landscape shrubs in Northwest Florida

Tea Class

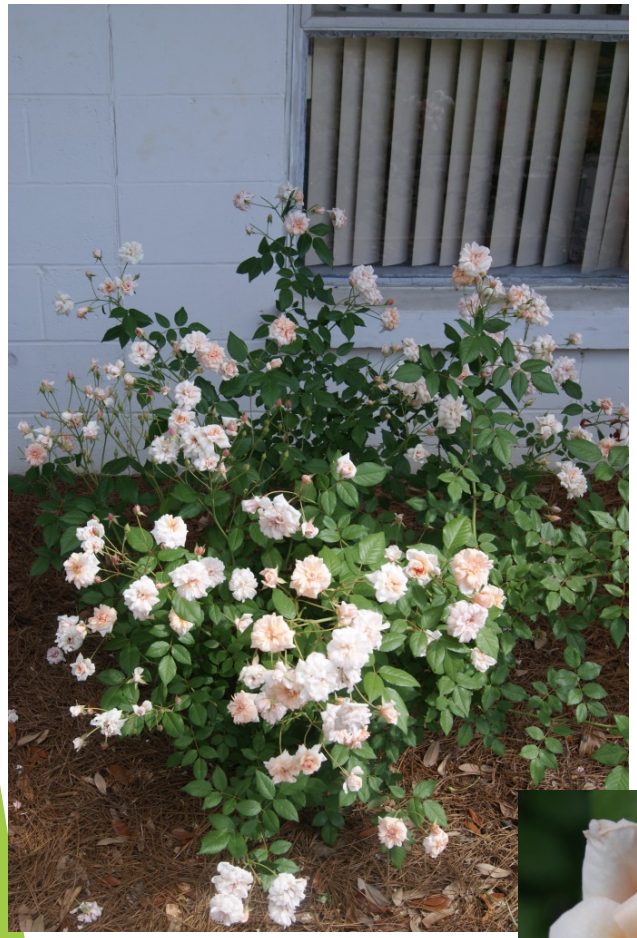
- Tea's and "Tea-Noisette originated around 1837

- They are derived from crosses between Rosa gigantea and forms of Rosa chinensis (Parks Yellow and Hume's Blush).

Noisette Class

- Noisette Class
- Started in the USA in the early 1800s
- Plants can be large bushes or vigorous climbers
- Easy to grow in Florida and free flowering !

Modern Rose Classes



Polyantha

- Class originated in the 1880s by breeding R. multiflora hybrids with other classes
- Low growing (usually) shrubs that are easy to grow.
- Very free flowering
- Usually disease resistant
- Most should do well in Florida

Modern Rose Classes

- Floribunda
- Started in the 1920s
- Derived from Hybrid Teas and Polyanthas and are kind of middle ground between the two
- Very free flowering small shrubs
- Some do well in Florida

Modern Rose Classes

- Hybrid Tea
- Originated in 1867 with the introduction of La France
- Dominant until 2000, with intro of Knockout series
- Some varieties hard to grow, others very easy to grow
- Usually free flowering

Modern Rose Classes

Shrubs

- Catch all
- Array of roses from very small to very large
- Many are great garden plants for the landscape

Climbers, Groundcovers

- Another ‘Catch all’
- Some repeat blooming, some once blooming
- Will cover a house, or just a mailbox
- Several may be trained to cascade down grading walls or embankments
- Several great performers for the deep south.

Rose Cultivars Recommended by Hume

- Climbing Roses:
- Fortune's Double Yellow
- Cl. Perle des Jardins
- Cl. White Maman Cochet
- Cl. Maman Cochet
- Reine Marie Henriette
- Cl. Radiance
- Devoniensis
- Chromatella
- Reve d' Or
- Rosa banksia
- Belle Portugaise
- Solfaterre

Rose Cultivars Recommended by Hume

- Shrubs:
- Cecile Brunner, Perle d'Or
- Lady Hillingdon, Isabella Sprunt
- La Marne
- Radiance, Red Radiance
- Duchesse de Brabant
- Feriherr von Marschall
- Safrano, Maman Cochet , White Maman Cochet
- Marie Van Houtte
- Mme Lombard
- Gruss an Teplitz
- K.A. Victoria
- Louis Philippe
- Frau Karl Drushki

Remember BMP's: Right Plant Right Place

- Choose the Right Size. How Much Space Do You Have? Do Not Crowd
- Is it resistant to disease? Can it withstand insect problems?
- Will it tolerate heat and drought?
- Many roses make great landscape shrubs and answer "yes" to these questions
- Texas A&M Tested roses are "Earthkind"
- UF IFAS is tested roses using similar methodologies

Polyanthas for Florida

- Pink Pet (Caldwell Pink
- White Pet
- La Marne
- Cecile Brunner (higher fertility requirement observed)
- Perle d' Or (higher fertility requirement observed)

Chinas For Florida

- Mutabilis
- Comtesse du Cayla
- Louis Philippe
- Cramoisi Superieur
- Smith’s Parish

Louis Philippe’

- Grown in Florida since the mid 1800s
- Found growing all over Florida, including abandoned home sites
- China - 1834
- Parentage – unknown
- Rose crimson
- Double blooms 2-3”

Teas For Florida

- Rosette Delizy
- Mme Antoine Mari
- Mme Antoine Rebe
- Mrs. Dudley Cross
- Mrs. B.R. Cant

Teas For Florida

- Mons. Tillier
- Madame Lombard
- Safrano
- Bon Selene
- Duchesse de Brabant
- Spice
- G. Nabonnand

‘Spice’

- Bermuda Mystery
- Introduction – unknown
- Parentage – unknown
- 3” double flowers
- White to light pink
- Growth 4-6’

‘Mrs. B. R. Cant’

- Tea - 1901
- Parentage – unknown
- Medium pink color
- Double blooms 3-5”
- Mature Size 8X8
- Free flowering
- Distinct Flushes of Bloom

‘Mrs. B. R. Cant’ – Pros/Cons

- Intermediate susceptibility to black spot and cercospora leafspot
- Low susceptibility to chilli thrips damage
- Minimal yellowing and defoliation
- Good cut flower
- Light fragrance
- Sprawling bush to 8-10 ft

Safrano / Marie van Houtte

Noisettes For Florida

- Champney's Pink Cluster
- Blush Noisette
- Reve d'Or
- Mme. Alfred Carriere
- Celine Forestier

Lafter

Rosa banksia ‘Lady Banks’

- Rampant growth 20-30’
- Climber
- Once Blooming
- Nearly disease free
- White and Yellow Forms
- Massive bloom

Fortune’s Double Yellow / Belle Portugaise

Shrubs For Florida

- Knockout Series (not yellow)
- Belinda's Dream (Northwest Florida only)
- Basye's Blueberry
- Commander Gillette
- Lafter
  - (a hybrid tea in name only)
  - Its sister Orange Ruffels
- Dr. Griffith Buck Selections

Take it Easy, 2015 introduction

- 2015 Introduction
- 15-25 Petals
- Disease Resistant
- Related to the Knock Out Series
- Upright bush
- Slight Fragrance
- Blooms in Cluster

Belinda's Dream

- Developed Dr. Basye
  - 1988
- Disease Resistant
- Shrub Rose
- Large Flowered
- Great in groups
- Plant 3-6 together
- Grows 4-5 feet
- Easy to keep in bounds

Knock Out®

- Modern**:** Shrub
- Introduced in 1999
- Seedling ‘Carefree Beauty’

  × Seedling ‘Razzle Dazzle’
- Cherry color
- 3”, single-petaled, single or clusters

Knock Out® - Pros/Cons

- Low susceptibility to black spot
- High susceptibility to Cercospora leaf spot
- Intermediate susceptibility to chilli thrips
- Continuous flowers;
  good cut
- A true “shrub-type” rose;
  4’; new foliage maroon

Drift Roses

Drift Series

Drift Roses

- Low Growing
- Very Free Flowering
- Cross between groundcover

And miniature roses

Mature Size: 1 ½ feet tall; 2-3 feet wide

Flower Color: Red, Pink, Coral, Peach, Apricot, Yellow

Deadheading spent flowers isn't necessary, but will encourage re-blooming and maintain a tidy appearance.

Low-Maintenance Roses

- ✓ Best performers state-wide from study:
  - Mrs. B. R. Cant – OGR/Tea
  - Spice – OGR/Bermuda
  - Louis Philippe – OGR/China
  - Knock Out – Modern (chilli thrips/Cercospora)

✓Remember OGRs “Sleep, Creep, Leap”

✓Prune lightly – Teas

✓Knockout: moderate to heavy pruning

✓Mulch well

Hume's Rose Philosophy

- "Rose time in the Lower South comes in spring and again in autumn"
- Winter time is too cold, and while "everblooming varieties continue to flower during the summer throughout all the region, high temperatures and heavy rainfall in many sections make it difficult to secure good blooms"
- Important to consider "too much shade, wrong exposure, and too many tree roots"
- Sunlight is best: "for half the day, preferably early morning until noon, or better still for ¾ of the day is essential to success"

Hume's Rose Philosophy

- Worst tree root issues:
  - Laurel Oak
  - Water Oak
  - Camphor
  - Magnolia

Roses cannot be pruned by rule:

- Treat each bush as a separate living unit
- Done in February for everblooming types
- Older shrub roses: cut out dead wood and twiggy growth is all that is necessary

Site Preparation

- Build A Raised Bed if soils are poor. You can use a variety of materials such as landscape timber, stone, plastic border
- With proper soil amendments: A good rich soil mixed with organic matter amendments such as compost and manure.
- Install drip irrigation. Individual watering is too much work and sprayed water will promote fungal disease
- If you prep well and plant the right varieties rose gardening is not too much work !!!!

Conclusion: Hume's Roses for Ease of care

- Hume had limited access to modern fungicides when book was published in 1929.
- Most of the roses he recommended in his 1929 edition are still in commerce and available.
- This fact gives evidence of their reliability, since most rose books from over 80 years ago are full of extinct selections
- His theme: Promote roses that are easy to care for, for the average home gardener
- Teas, Polyanthas, Noisettes etc. offer more variety to the modern gardener than knockout or the drift series.

Fertilization

- Get a soil test
- Review: N P K
- http://soilslab.ifas.ufl.edu/
- 8-8-8 or 8-0-8 with **micronutrients**
- Magnesium sulfate (Mg poor soils)
- Slow Release Fertilizers are excellent, especially for sandy soils (minimize leaching by “spoon-feeding” the plant)
- Commercial (chemical) or organic (compost and manure, blood meal, bone meal)
- **Or, a combination of both.** Roses love compost, manure, especially mushroom compost

Fertilization

- How Much ? Roses are heavy feeders
  - Quick Release: 8-0-8 or 8-8-8: Once a month from March to mid-October
  - About ½ to one cup per plant per application in the effective root zone
  - Try to keep pH between 5.5-6.0.
  - If pH tests high based on soil test, you can lower by using fertilizer that contains sulfur, such as camellia and azalea blends

Fertilization: Slow Release? Organic Matter?

- If using slow release only:
- Slow release can be applied every 2 months March-September at the label rates for roses
- Heat causes these to “dump” hence, greater frequency than usual
- Roses benefit from lots of organic matter
- Apply well rotted compost or manure 2 times a year in March and September
- Be careful of Mushroom Compost if pH is already high

Mg Deficiency

On the oldest leaves

Iron Deficiency

On the youngest leaves

Nitrogen Deficiency

All leaves will exhibit this !

A Few Questions – Show of Hands

- Did you learn an bmp for rose care (fertilization and water use) ?
- Will you use less / more specific targeted pesticides as a result of this presentation?
- Will you grow the right plant in the right place as a result of this presentation?
- Will you contact your extension office as a result of this presentation?

ROSE IPM

Integrated Pest Management

- IPM…
  - Combination of natural and applied control tactics
  - Attempts to reduce pests to acceptable levels
  - Doesn’t solely rely on pesticides

Keys…

- Knowing how to identify pests
- Know if control is warranted
- Know your pest control goals
- Know available control tactics
- Know how to evaluate tactic benefits
- Know effective tactics with minimal harm
- Know how to use strategy correctly
- Know to observe applicable regulations

Natural Controls

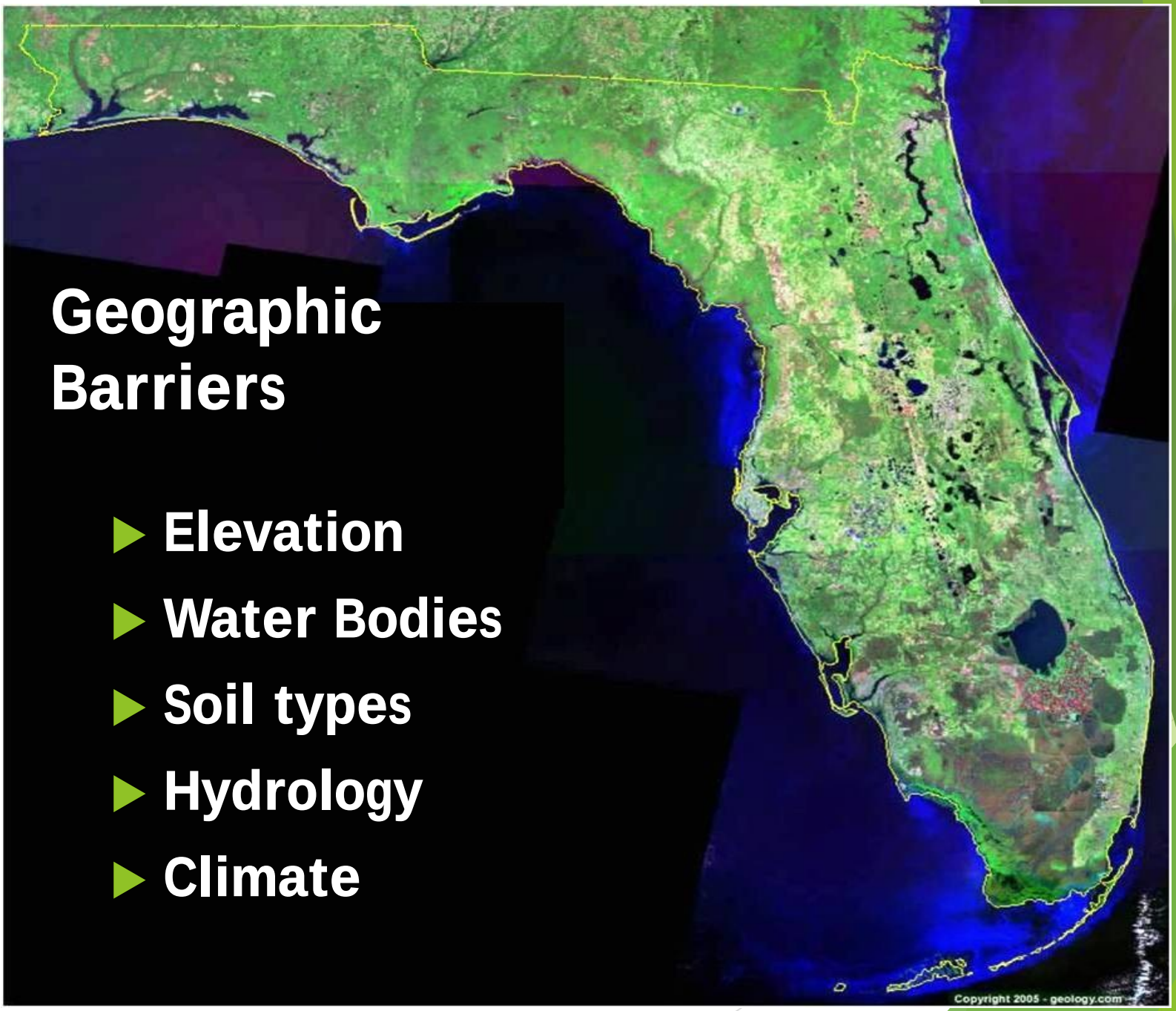
- Climate
- Natural enemies
- Geographic barriers
- Food and water supply
- Shelter

Climate

- Pest activity and reproduction affected by:
  - Temperature
  - Day length
  - humidity

Natural Enemies

- Various birds, reptiles, amphibians, fish and mammals
- Predatory and parasitic insects and insect-like organisms
- Pathogens often provide suppression


Geographic Barriers
Elevation
Water Bodies
Soil types
Hydrology
Climate
Copyright 2005 - geology.com

Food, Water, and Shelter

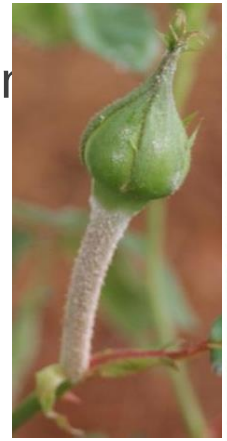
- Example: eliminate overhead irrigation to reduce fungal disease

Applied Controls

- Resistance
- Biological control
- Cultural control
- Mechanical control
- Sanitation
- Chemical control

Fungal Disease Problems

- There are three most common fungal diseases in Florida
- Blackspot
- Powdery Mildew
- Cerscospora
- Use preventative measures
- Treat with fungicide as needed: follow label directions
- Contact Control: Such as Daconil / Mancozeb
- Systemic: such as propaconizole (Honor Guard)
- Some roses are resistant and don't develop bad infections



Resistance

- **Works in 3 ways…**
  - **Rose Host chemicals repel pest or prevent pest from completing its life cycle**
  - **Rose Host is more vigorous than other varieties**
  - **Rose Host has physical characteristics that make it more difficult to attack, extra waxy leaf cuticle?**

Resistance

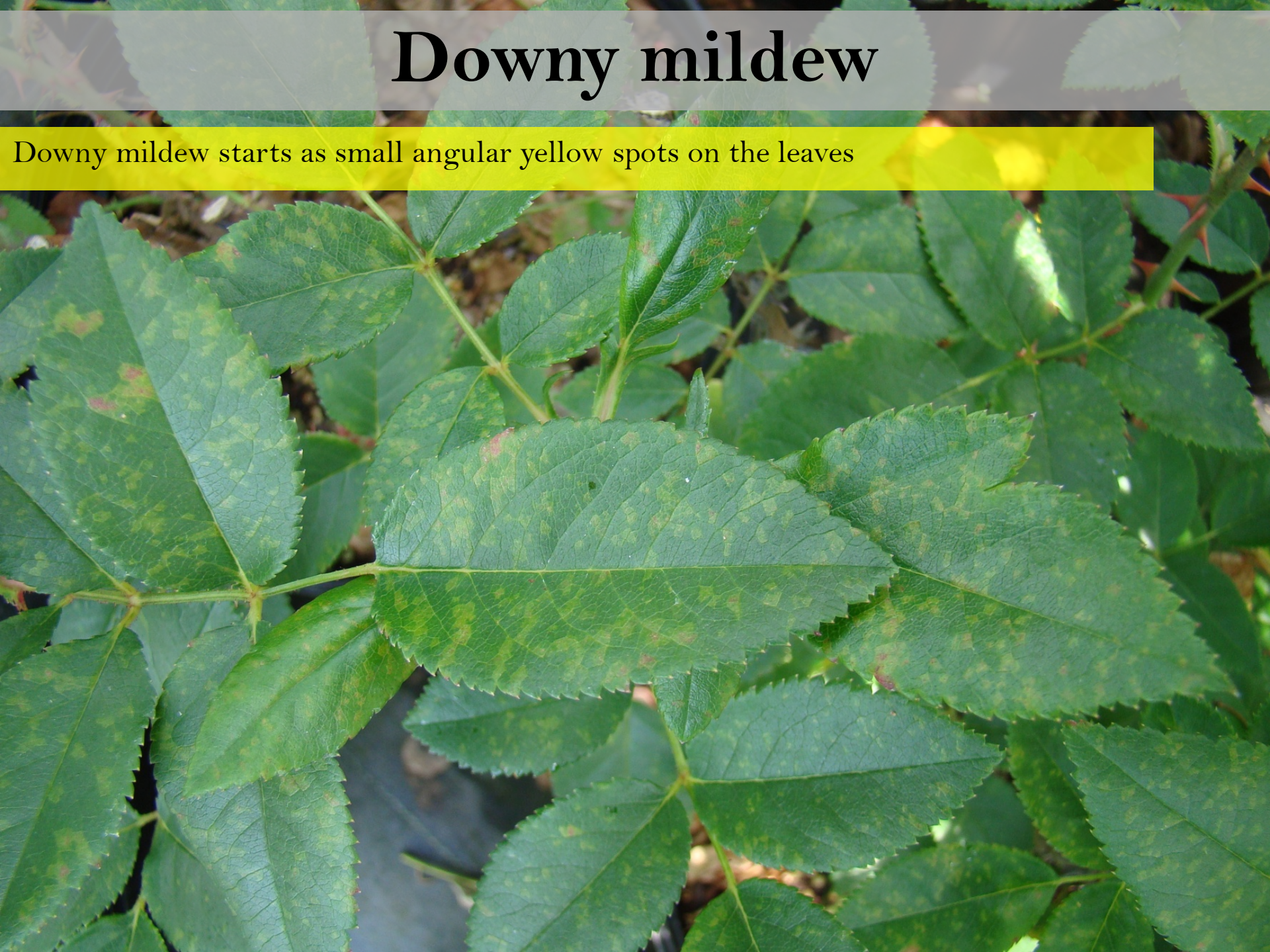
- Plant varieties that are proven to be resistant to fungal diseases or insect damage
- Many Earth Kind roses should be tried in Florida
- Roses tested in Florida through trials (mentioned in previous webinar)
- Some Specific Cultivars: Spice, Knock Out, Mrs. B.R Cant, roses of the Tea or China class, some shrubs

Diseases of relevance to Florida

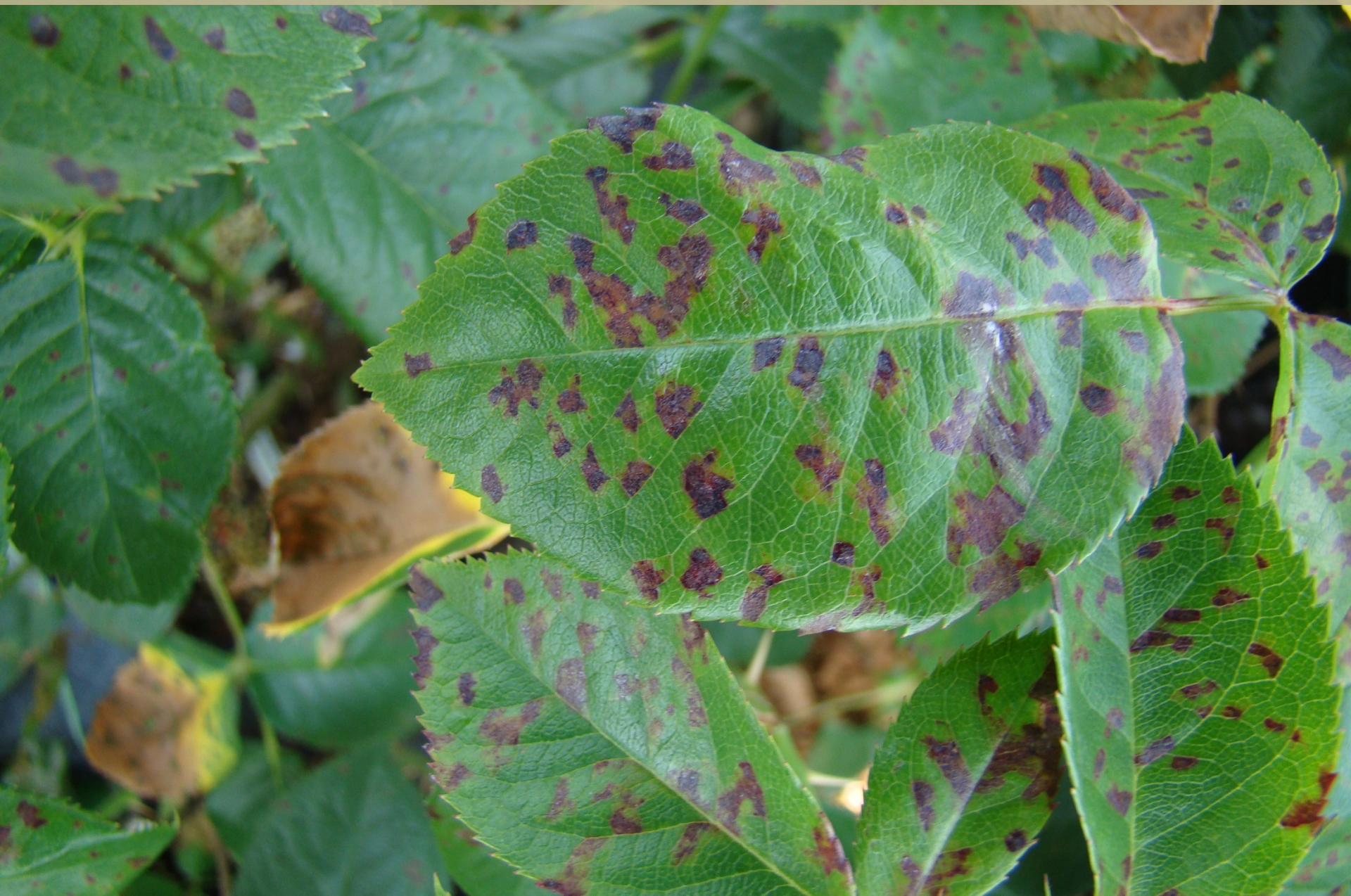
- Downy mildew
- Black spot
- Cercospora leaf spot
- Rose mosaic
- Crown gall

Downy mildew

Downy mildew starts as small angular yellow spots on the leaves



The yellow spots will turns purple in color. In severe cases purplish patches can be seen on the stems, peduncle, calyxes, and petals.



The biology and management options

- Sporangia may be produced for long periods of time when high humidity and low temperature persist.

less than85% humidity: no downy mildew

50-75°F: temperature for spore germination

41°F: no spore germination

81°F for 24 hrs: spores killed

- Sporangia germinate within 4 hours of leaf wetness, and sporulation may occur in 3 days under ideal conditions.
- Spores can survive for a month on dried, fallen leaves.

- **Management:**
- Cultural Control: Space plants adequately, and regular thinning and pruning operations will help to avoid canopy overlap.
- Mechanical Control: Infected plant parts should be destroyed to avoid seasonal carryover of the organism.
- Mechanical Control: Remove infected leaves as they fall, don't let them lie in leaf litter
- Downy mildew produce zoospores that can swim in free water on plant surfaces. They can keep swimming until they find the host tissue.
- Irrigation should be carefully monitored to prevent long duration of leaf wetness.

- **Preventative fungicide program :** >85% R.H. for more than 3 hours and cool weather conditions.
- **The key point: Do not wait to see downy mildew!.**

FRAC Code	Common Name	Trade name
11	strobilurins; azoxystrobin, trifloxystrobin	Heritage®, Compass®, Compass® O 50 WDG
19	Polyoxin D-zinc salt	Affirm™ WDG
33	Fosetyl-Al	Aliette® WDG, Flanker® WDG
	Phosphorus acid	Phostrol®, Rampart®, Fosphite®
40	Dimethomorph	Stature DM®
44	*Bacillus subtilis* strain QST 713	Cease™
M	Peroxide	Zerotol®
M1	Copper (hydroxide, oxychloride)	Champ® DP Dry Prill, Champ® Formula 2 Flowable, Kentan® DF, COC DF, COC WP
	Potassium phosphite/phosphate	Phorcephite™
	Clove oil, Rosemary oil, Thyme oil/ Neem oil	Sporatec®, Trilogy®

Black spot & Cercosproa

Black spot

Symptoms start as small black spots on the upper surface of the leaves. Lesions can vary in size on the leaf surfaces.

These spots may have unique feathery borders. Leaves turns yellow around the black spot lesions leading to severe defoliation. The defoliation usually starts on the lower leaves. Spots can be found on peduncles, fruits, and sepals if the infection is severe.

The biology and management options

- *M. rosae* can survive a wide range of temperatures from 59-81˚F, even though the optimum is 64˚F. This wide temperature range allows the disease to develop as long as adequate moisture is available during the season.
- The conidia must be wet for several hours (>7 hrs) to infect plant tissues.

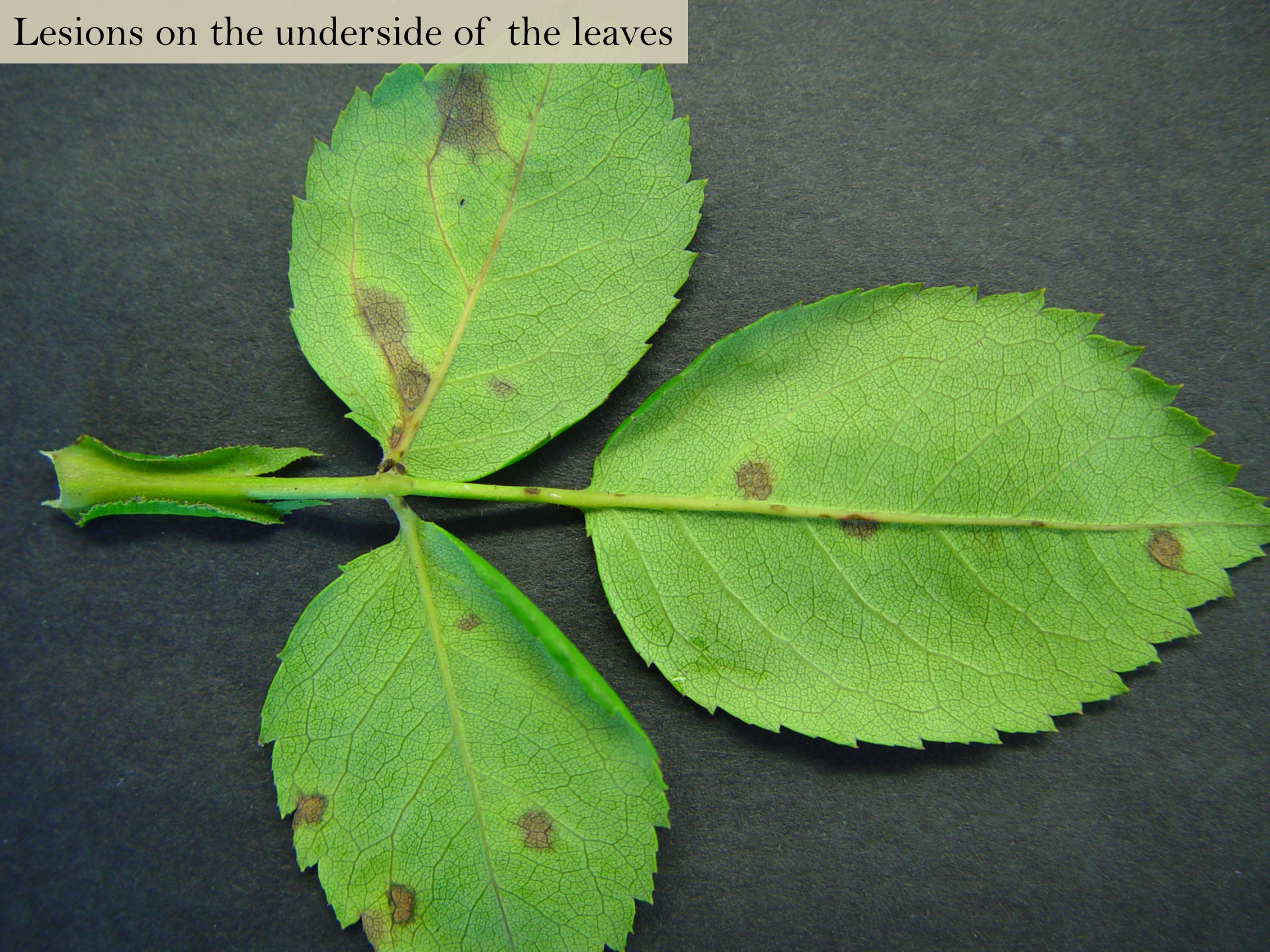
- **Management:**
- **Cultural Control:**Overhead irrigation should be carefully monitored to prevent long duration of leaf wetness.

- *M. rosae* do not survive in soil, and conidia adhering to tools do not survive more than 1 month.
- The fungus overwinters as mycelia in fallen leaves or in infected canes that may produce new acervuli or apothecia in which conidia and ascospores form each spring.

- **Management:**
- Mechanical Control Infected plant parts should be destroyed to avoid seasonal carryover of the organism.
- Resistance: Use highly resistant varieties. (The occurrence of pathogenic races of the fungus makes it difficult to develop resistant varieties)

Cercospora leaf spot

Symptoms are circular spots usually 2-10 mm in diameter. The initial symptoms usually have a small purplish area.


Lesions on the underside of the leaves

As the disease progresses, the older lesions have small necrotic areas. Subsequently, the centers of the spots turn tan. The disease causes severe defoliation in heavily infected plants

Additional Strategies

- When pruning roses in late winter, remove all left over leaves and dispose of them
- After roses are pruned, spray with a lime-sulfur product. This will kill lingering fungal spores and reduce disease in early spring
- Timing is critical: Do not spray on growing tissue (new leaves), it will burn

- **Chemical Control – Fungicide program.**

FRAC Code	Common Name	Trade name
3	Propiconazole	Honor Guard
	Myclobutanil	Eagle® 20EW, Prokoz® Hoist™
11	Trifloxystrobin	Compass®, Compass™ O 50 WDG
	Azoxystrobin	Heritage®
44	*Bacillus subtilis* strain QST 713	Cease™
M1	Copper (hydroxide, oxychloride, oxychloride sulfate)	Badge® SC, Badge® X2, C-O-C-S® WDG, Champ® DP Dry Prill, Kentan® DF
	Copper ammonium complex	Copper-Count®-N
M2	Sulfur	Cosavet® DF, Wettable Sulphur, Proganic Micronized Sulfur

FRAC Code	Common Name	Trade name
M3	Mancozeb	Dithane® 75DF, Fore® 80WP, Penncozeb™ 75DF
	Ferbam	Ferbam Granuflo®
	Maneb	Maneb 75DF, Maneb 80WP
	Ziram	Ziram 76DF
M4	Captan	Captan 50W, Captec® 4L, Captan 50 Wettable Powder,
M5	Chlorothalonil	Daconil Ultrex®, Daconil® Weather Stik®, Echo® 720, Ensign® 720, Ensign® 82.5%,
P	Extract of *Reynoutria sachalinensis*	Regalia®
	Potassium bicarbonate	MilStop®
	Clove oil; Rosemary oil; Thyme oil, Neem oil	Sporatec®, Trilogy®

**** Tank Mix Contact and Systemic fungicides for best results. Be sure to read the label so that you know products can be mixed safely !!!!***

Crown gall(*Agrobacterium tumefaciens*)

The bacterium *A. tumefaciens* enters the plant through wounds made during grafting, planting, pruning, or chewing insects. Often plants are infected in the nursery, and the disease develops later, after planting in the garden.

After the bacterium enters a wound, DNA is transferred from bacterium into the nuclear genome of the plant which transforms normal cells into tumor cells. The tumor cell formation becomes an autocatalytic process that continues independent of the bacterium.

Biology and Management options

- Bacterial activity is the highest during summer months.
- Pruning tools that cut through the galls or infected plant material spreads the disease around.
- The bacterium can survive in soil (~3 years), and be transported through water.

- Mechanical: Minimize plant injury.
- Mechanical: Infected plants and soil around it should be removed immediately.
- Cultural: Cutting, and pruning tools needs to be regularly disinfected between gardens to prevent carry over of the bacterium to healthy plants. If it is noticed in your garden or you have new plants you are not sure about, disinfect with 10% bleach solution or rubbing alcohol between each plant

Rose Mosaic Virus

- Dr. Malcolm Manners from Florida Southern College is a nationally recognized expert on Rose Mosaic Virus.
- "Rose mosaic is a complex of several viruses which cause similar symptoms in rose plants. The most important of these in the United States is *prunus* necrotic ringspot virus, a common disease of stone fruit trees . . . " – Malcolm Manners

This is the manuscript of a paper presented at the Fall, 1997 meeting of the Florida State Horticultural Society, and published in the proceedings of that meeting.

Proc. Fla. State Hort. Soc. 1997 Paper No. 107 Business Phone 941-680-4337, Ornamentals Section

Effects of Rose Mosaic Disease on the Performance of Hybrid Tea Roses in Florida. Malcolm M. Manners

Dept. of Citrus and Environmental Horticulture
Florida Southern College
111 Lake Hollingsworth DR
Lakeland, FL 33801-5698

Additional Index Words Rosa, prunus necrotic ringspot virus, apple mosaic virus.

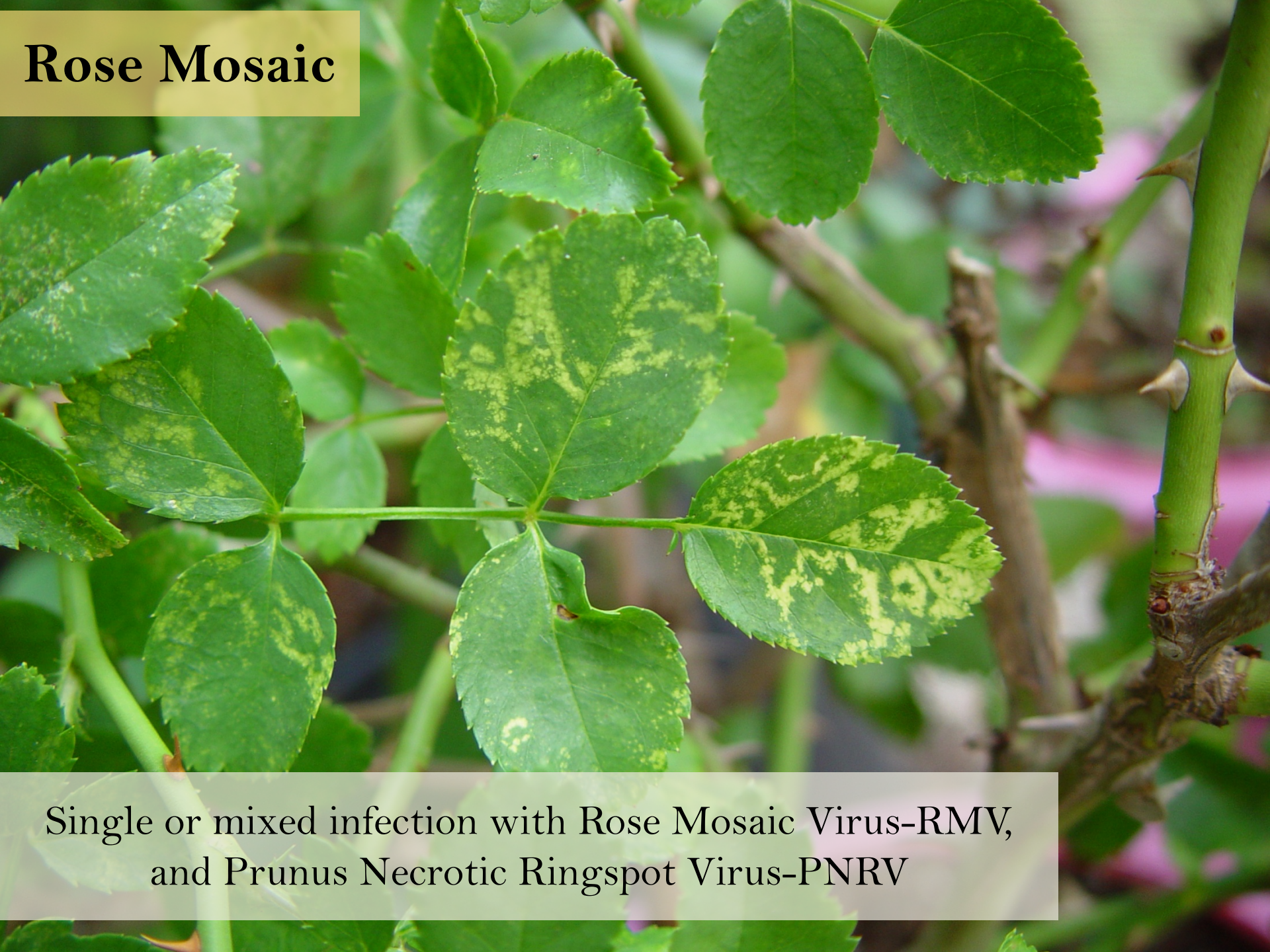
Abstract. A bed of 'Double Delight' Hybrid Tea rose (Rosa hybrid) grafted to 'Dr. Huey' rootstock, was grown in the Florida Southern College rose garden. Some plants were graft-inoculated with a mild strain of prunus necrotic ringspot virus (PNRSV) and others with a severe strain of apple mosaic virus (ApMV), the two major causes of rose mosaic disease. Virus-infected plants produced fewer flowers and shorter stems than did healthy controls, on the spring growth flush. Other growth flushes throughout the season did not show significant differences between treatments and control. No spread of either virus occurred over the 4-year period. During the fourth year, most of the ApMV-infected bushes died.

From: www.ars.org

Transmission of Rose Mosaic

- Rose mosaic is transmitted from infected rootstock to the scion wood during the grafting or budding process.
- Since in most nursery operations, new scion wood for next years' crop is taken from the current years crop, rose mosaic virus is thus perpetuated in this manner.
- Rose mosaic will persist in the scion until it is removed through heat therapy treatment.

Rose Mosaic



Single or mixed infection with Rose Mosaic Virus-RMV, and Prunus Necrotic Ringspot Virus-PNRV

The symptoms of rose mosaic are highly variable. These symptoms may appear only occasionally, depending on weather and plant growing conditions.

Mottling of the leaves

Management options

- **Management:** Use virus-indexed plants
- Timely removal of infected plants can reduce the spread of the disease
- Rose mosaic mostly reported in cultivars of American origin. Use resistant varieties when available.

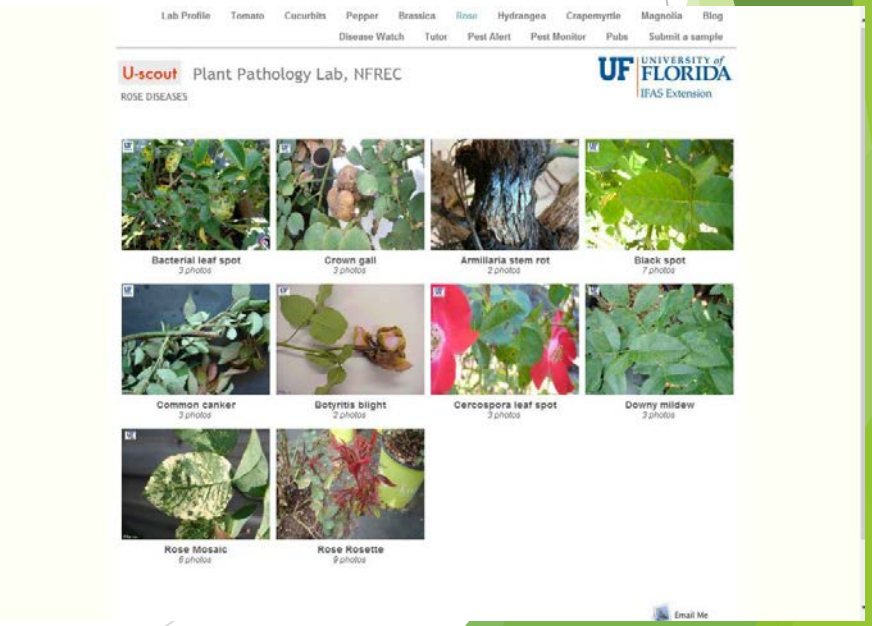
- Availability of Virus Treated / Indexed Stock:
- U.C. Davis Foundation Plant Services
- Virus tested rootstock available as hardwood cuttings for a fee.
- Virus tested scion available as bud-wood or softwood cuttings for a fee.

Foundation Plant Services Contact Information

- For additional information, contact:
- Foundation Plant Services
- University of California, One Shields Avenue, Davis, California 95616-8600
- Phone: (530) 752-3590
- Fax: (530) 752-2132
- E-mail: fps@ucdavis.edu
- Web: http://fps.ucdavis.edu
- http://fpms.ucdavis.edu/WebSitePDFs/Newsletters&Publications/RoseProgramBrochure.pdf

NFREC Pathology U-Scout

- http://nfrec.ifas.ufl.edu/paret/u-scout/Rose/Rose.html
- Disease database that is always being updated, check out this page to see more obscure diseases



Insect Management

- Aphids –
- Control with Dormant oil and insecticidal soap
- Beneficial insects will reduce their population

Insect Management

- Spider mites
- Miticides are not very effective and kill beneficia insects
- Best controlled by forceful streams of water directed at the underside of the lea tissue
- Repeat 2-3 times a week during infestation to disrupt life cycle and kill the mite

Insect or insect-like Pests

- Aphids
- Thrips
- Chili Thrips
- Spider Mites
- Rose Cane Borer
- Many insects can be successfully managed with dormant oils, insecticidal soap or forceful streams of water.

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Thanks for Listening

Your Feedback Appreciated