Managing Pest Problems with the 4 P's:

Pests

Prevention

Products

Procedures

Speaker: Al Lane

Agenda

PESTS: Naming and describing the most common insect problems & most common disease problems on residential properties on Long Island.

PREVENTION: How to prevent certain insect and disease problems on residential ornamentals by practicing proper cultural practices

PRODUCTS: Increasing applicator success by using the correct N.Y.S.D.E.C. legally labeled pesticides, along with minimum risk materials

PROCEDURES: Greater effective results using the correct insect and disease control methodology and application timing.

introduction

Todays session will cover the most prevalent insect and disease problems of 2021.

In most cases, a preventative treatment program will provide seasonal control of these recurring infestations.

By changing or adding different pesticides to your scheduled programs, will stop the infestation completely or greatly reduce future outbreaks. These future outbreaks will be much easier to control, if they occur at all.

Nothing is more expensive for the applicator than customer call backs and customer dissatisfaction with your service. These products and procedures will enable the applicator to achieve much better results with better customer and applicator satisfaction.

PRODUCTS:

1. Don’t continue year after year using the same pesticides

2. Vary your control materials on a 2 year schedule to achieve maximum control*

3. There are a few new DEC labeled combo products to consider
   a) If unsure in your diagnosing, using a combination product will achieve greater results
      - Spectro 90WG: swiss, rhizosphaera and rhabdocline needlecasts
      -Junction: anthracnose, pine needlecasts, cercospora, fungal leaf spots, sirococcus blight

4. Cease fungicide controls a wide range of fungal and bacterial diseases

5. Astro vs. Bifenthrin: second generation vs. fourth generation. The main reason being that synthetic pyrethroids break down in sunlight. Bifenthrin, being a newer formulation, last almost twice as long.

I want to mention a few products that are highly effective but often overlooked:

1. **Agri-Fos Plus: systemic fungicide***

   Agri-Fos Plus is highly effective as a soil application or a basal bark spray

   - **Phytophthora**
   - **Fire Blight**
   - **Anthracnose, suppression**
   - **Verticillium Wilt, suppression**
   - **Powdery Mildew**

2. **Pentra Bark: penetrating surfactant**

   Pentra Bark greatly increases the bark absorption of Agri-Fos Plus, usually 14-20 hours. Is a must additive for basal sprays. Sudden oak death, emerald ash borer, southern pine beetle, etc.

3. **Regalia: Use of Regalia Bio Fungicide preventatively boosts the plants natural defense mechanisms to protect against certain fungal and bacterial diseases, including powdery mildew (Crepe Myrtle), fire blight, certain rusts and phytophthora. Reports of 75% control have been reported.**

4. **Consider soil drenches and basal bark sprays***

The benefits of using systemic insecticides:

1. Plants are continuously protected throughout most of the growing season without the need for repeat applications
2. These insecticides are not susceptible to ultraviolet light degradations or "wash off" during watering
3. There is less unsightly residue on foliage

Systemic insecticides are those in which the active ingredient is taken up, primarily by plant roots and translocated within vascular tissues. Examples: imidacloprid, acephate, mefenoxam

Translaminar (local systemic activity): These materials penetrate leaf tissues and form a reservoir of active ingredient within the leaf. Examples: Abamectin, Distance, Spinosad, Acephate

REGALIA®

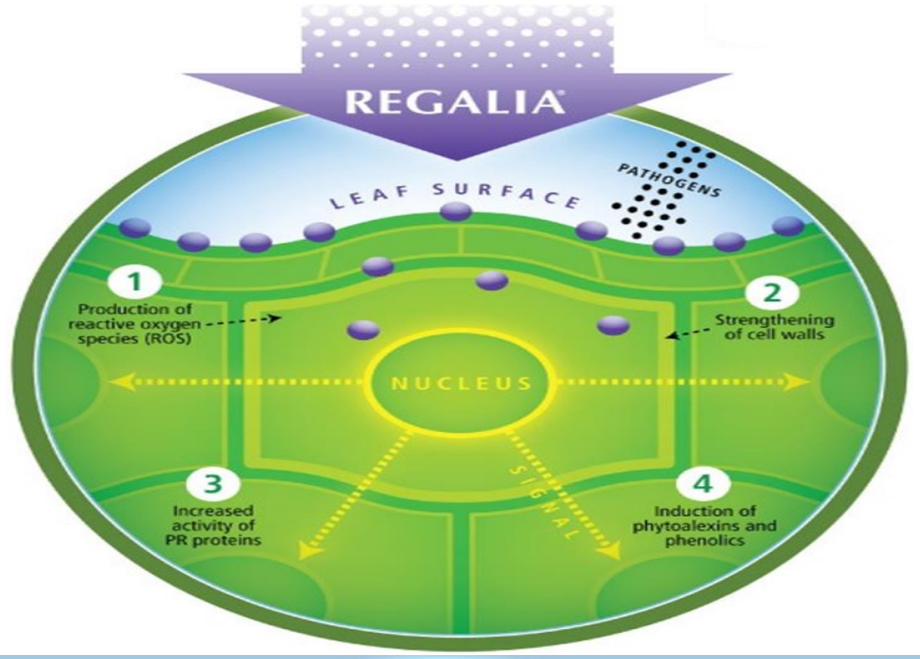
BIOFUNGICIDE

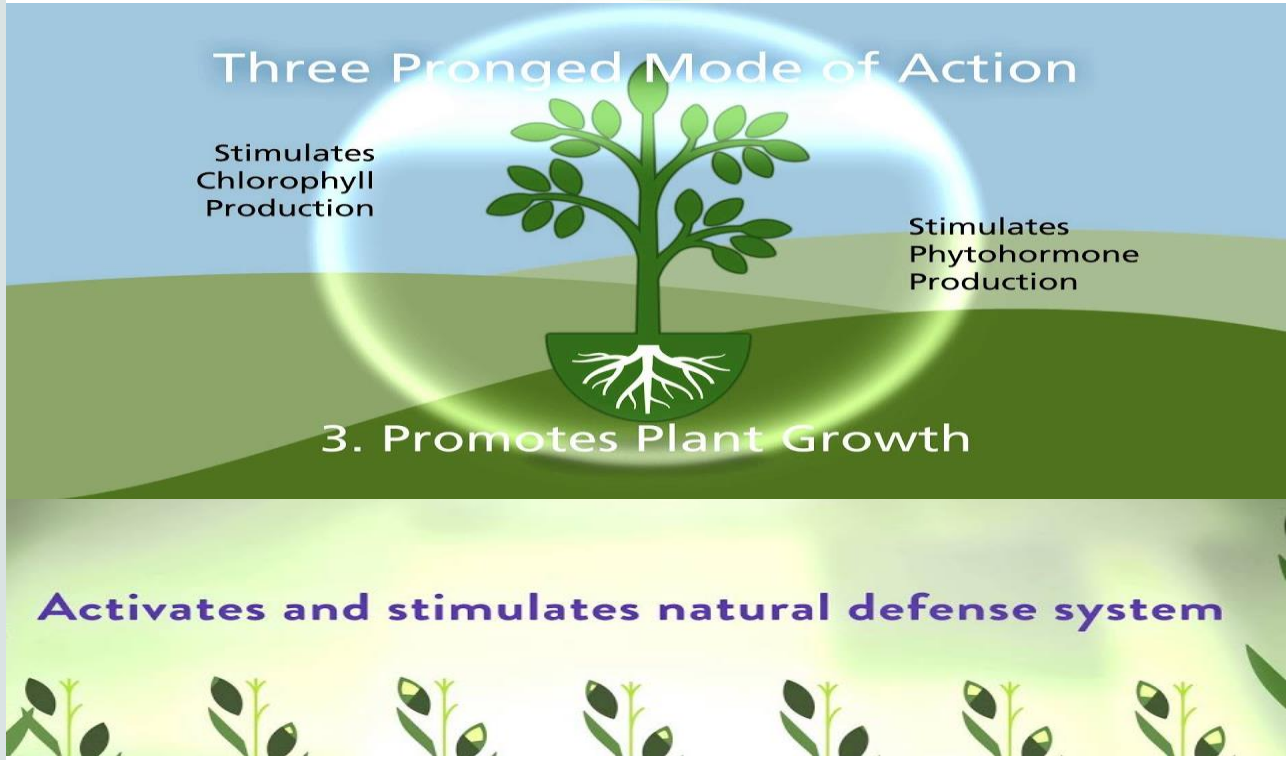
Active ingredient OMRI listed plant extract of Giant Knotweed (*Reynoutria sachalinensis*), boosts plant vigor and growth while stimulating the plant's ability to develop resistance to plant pathogens (induced systemic resistance). This developed resistance builds plant health as opposed to attacking the disease directly. Boost the plants natural defense mechanisms of many fungal and bacterial diseases. It is a preventative control material.

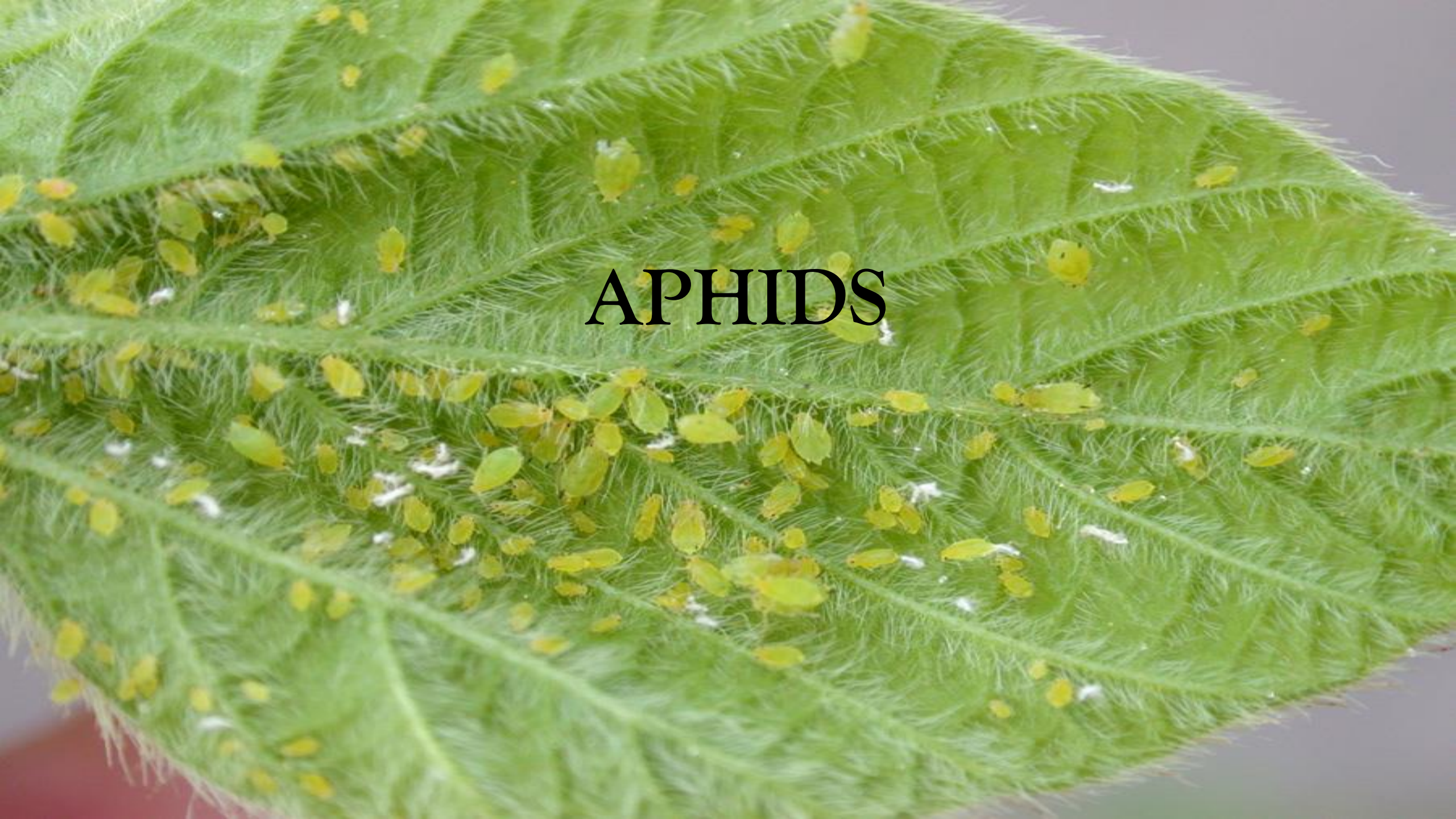
Regalia may be used preventively for:

1. Powdery mildew
2. Anthracnose
3. Blights, certain
4. Leaf spots, cercospora, Alternaria
5. Rust, certain

Regalia normally will not completely eliminate 100% of these diseases, it will greatly reduce the chance of infestation to enable your regular scheduled applications to fully control them with a minimum of applications.






APHIDS

APHIDS: Crepe Myrtle, multiple ornamentals

a) Reproduces faster than any other insect
b) Lifespan of an adult is one month
c) sexual maturity, 4-10 days to product live young offspring
d) Complex reproduction: asexual, generations are all female in Spring and Summer
e) aphids are easy to kill, but the prolific generations cannot be easily controlled (crepe myrtle sweet buds & flowers)

APHID CONTROL: No amount of applications using contact insecticides can be successful.

Certain plants that have sweet nectar in flowers and buds, Crepe Myrtle, lilac, hydrangea, etc. Early applications of a systemic control is the only way for seasonal control.

Products to use:
Imidacloprid
Acephate 97
Abamectin
Abamectin Injection (Vivid II)
Distance IGR (suppression)

ERIOPHYID MITES

Eriophyid Mites: Rust, Gall Mites, Blister Mite

a) Major problem on Privet, Beech, Spruce, Hemlock, etc.
b) Microscopic, must use 25-30X power eye loupe
c) commonly on top surface of leaf
d) distinctive carrot shape and usually host specific
e) can transmit plant diseases – BLD
f) 3-4 generations yearly
g) damage can consist of leaf-bud galls and blisters

Eriophyid Mites Control

1. Horticultural Oils & Soaps
2. Abamectin
3. Eco Via / Essentria
4. Carbaryl


ARBORVITAE
LEAFMINER

Arborvitae Leaf Miner

a) damage usually appears late Summer
b) under a 30 power eye loupe, the tiny worms can be seen early Spring through Summer
c) very closely resembles Pestalotiopsis damage
d) Adult moth can be controlled during June to suppress new egg laying for the following year

LEAFMINER DAMAGE VS. PESTALOTIOPSIS DAMAGE

Arborvitae Leaf Miner Controls:

Adults:
Eco Via
Essentria*
Conserve SC
Imidacloprid

Larvae:
Imidacloprid
Conserve SC
Core-Tect Tablet

SPIDER MITES

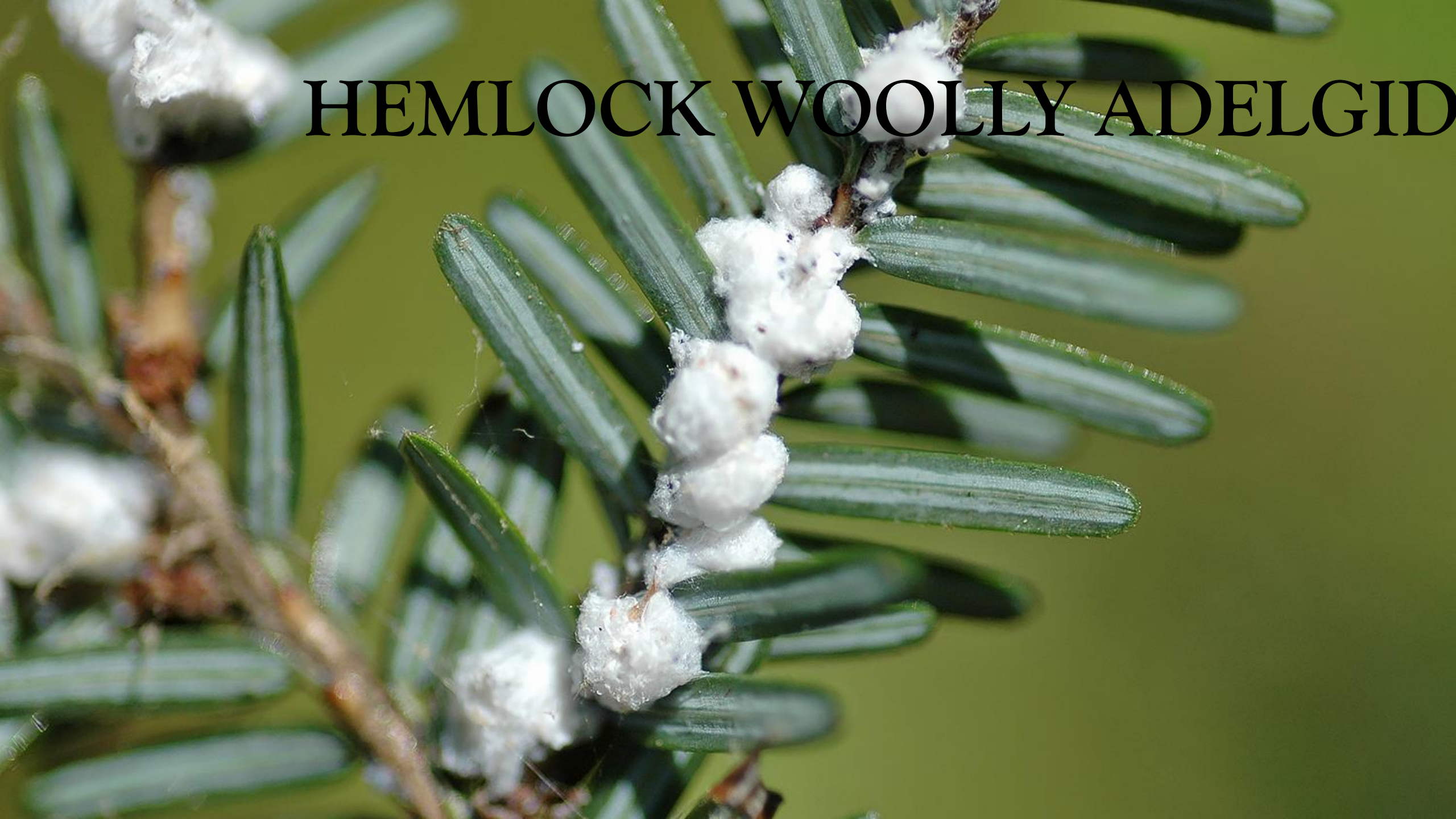
Spider Mites: two spotted, southern and European red, spruce mite

a) Infest almost all deciduous trees, broad leaved evergreens and needled evergreens
b) Cool season mite; attains higher populations in Spring and Fall. Temperatures above 82° results in big population declines
c) On Long Island, 6+ generations yearly
d) Overwinter on the host plant*
e) Very common on Cryptomeria and Alberta Spruce

Spider Mite Control:

1. **Horticultural Oils & Soaps**
2. **Neem Oil**
3. **Eco Via / Essentria IC3**
4. **Floramite / Actuate**
5. **Organocide**
6. **Abamectin**

HEMLOCK WOOLLY ADELGID

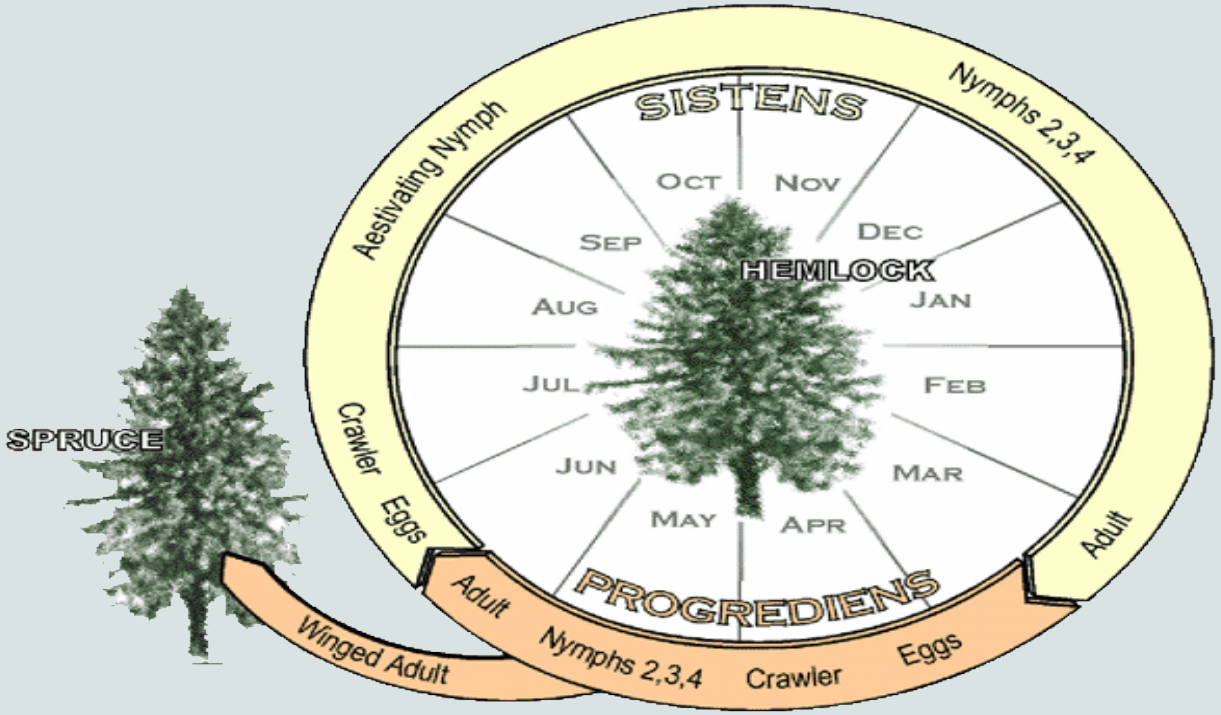


Hemlock Woolly Adelgid: We are in a new resurgence after a few years of decreased infestations

a) So named due to its covering of a secreted white woolly substance
b) Easily dispensed by wind, birds and rain*
c) Tiny piercing / sucking insect feeds on the young branches where the needle meets the branch. Large populations will kill branches within 2 years
d) Mid-April the eggs hatch and a small % has wings to infest other trees. Has been shown to infest Spruce
e) Nymphs feed and develop during late fall and winter. Mature by February thus completing the 2 generation cycle

Hemlock Woolly Adelgid Controls:

1. **Horticultural Oils**
2. **M-Pede**
3. **Eco Via**
4. **Imidacloprid**
5. **Core-Tect Tablets**
6. **Abamectin Injection (Vivid II)**
7. **Dinocide (SLN)**
8. **Safari 20SG (SLN)**
9. **Zylam (SLN)**



WHITE PRUNICOLA SCALE

White Prunicola Scale: Privet, Boxwood, Laurel, Euonymus, Magnolia, Forsythia, Holly, Cherry, Lilac, etc.

a) Has become more common last 3 years
b) If untreated will usually kill the ornamental within 3 years
c) Is an armored scaled and therefore harder to treat*
d) There has been 2 generations for years, the last 2 years on Long Island generally has 3 generations*
e) The insect overwinters as adult fertilized females. Eggs are deposited under the scale insect. With warm Springs in late April to mid-May eggs will hatch in 2-3 weeks. The young crawlers emerge and look for a suitable feeding site.
f) Crawlers of the spring generation continue feeding, rapidly increase in size emerging in size mid-May to mid-June. And are present mid-July to early August*
g) As the crawlers feed, they gradually secrete a waxy material that they use to construct their armored coverings.
h) Females lay the eggs of the summer generation throughout July. Those eggs hatch in 1 to 2 weeks. Development of the summer and fall generations tends to occur much faster. The summer generation feeds until it matures in late August or early September. The fall brood generally feeds until October, when it matures, or overwinters.

CONTROLS: Horticultural oils as a dormant application in fall and/or Spring
Treating crawlers in mid-June, August and October: neem oil, M-Pede, cyfluthrin, Lambda cyhalothrin, acephate, baseline


FALL WEBWORM

Fall Webworm:
Becoming a major problem the past 3 years. Usually will not kill a mature tree, but can severely impede growth the following year on young trees. Mainly unsightly to customers

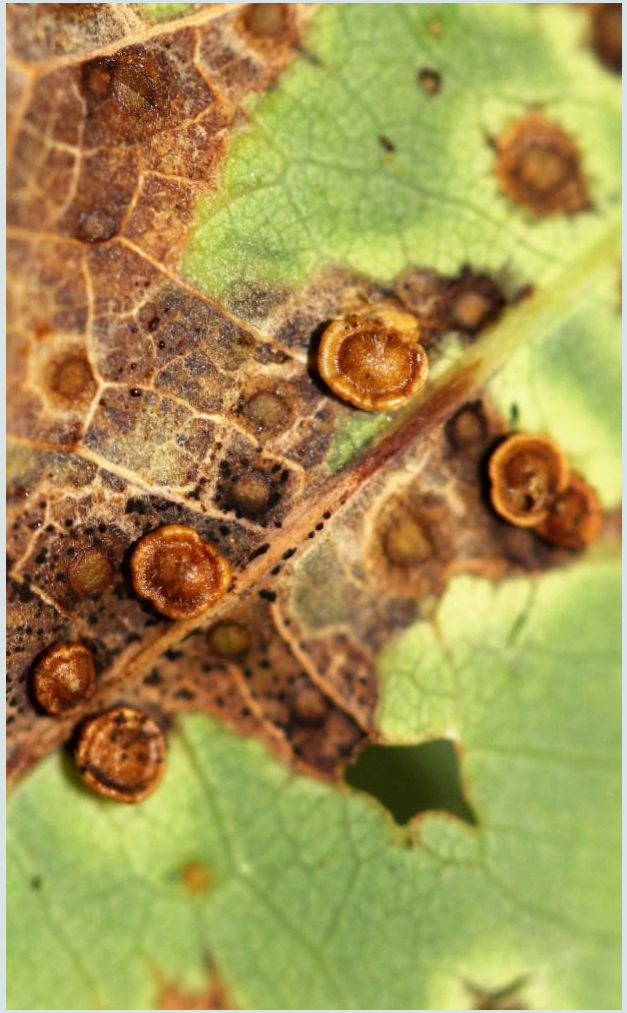
CONTROLS: Horticultural Oil & Soaps, Eco Via, Sevin SL, Essentria, Grandevo PTO, Acephate 97, Foray XG, Baseline will all control if the web is penetrated

CYNIPID GALL WASP

Cynipid Wasp Gall: Gall Wasp

a) On Long Island, commonly infects white oaks or to a lesser extent red oaks
b) Is very intermittent on Long Island, but usually active in a 2-3 year cycle with 6-10 years in-between infestations of high numbers
c) Will defoliate the tree in July-August
d) Generally recognized as non-curable but can be controlled

CONTROLS: Inject-a-cide B, Sevin SL

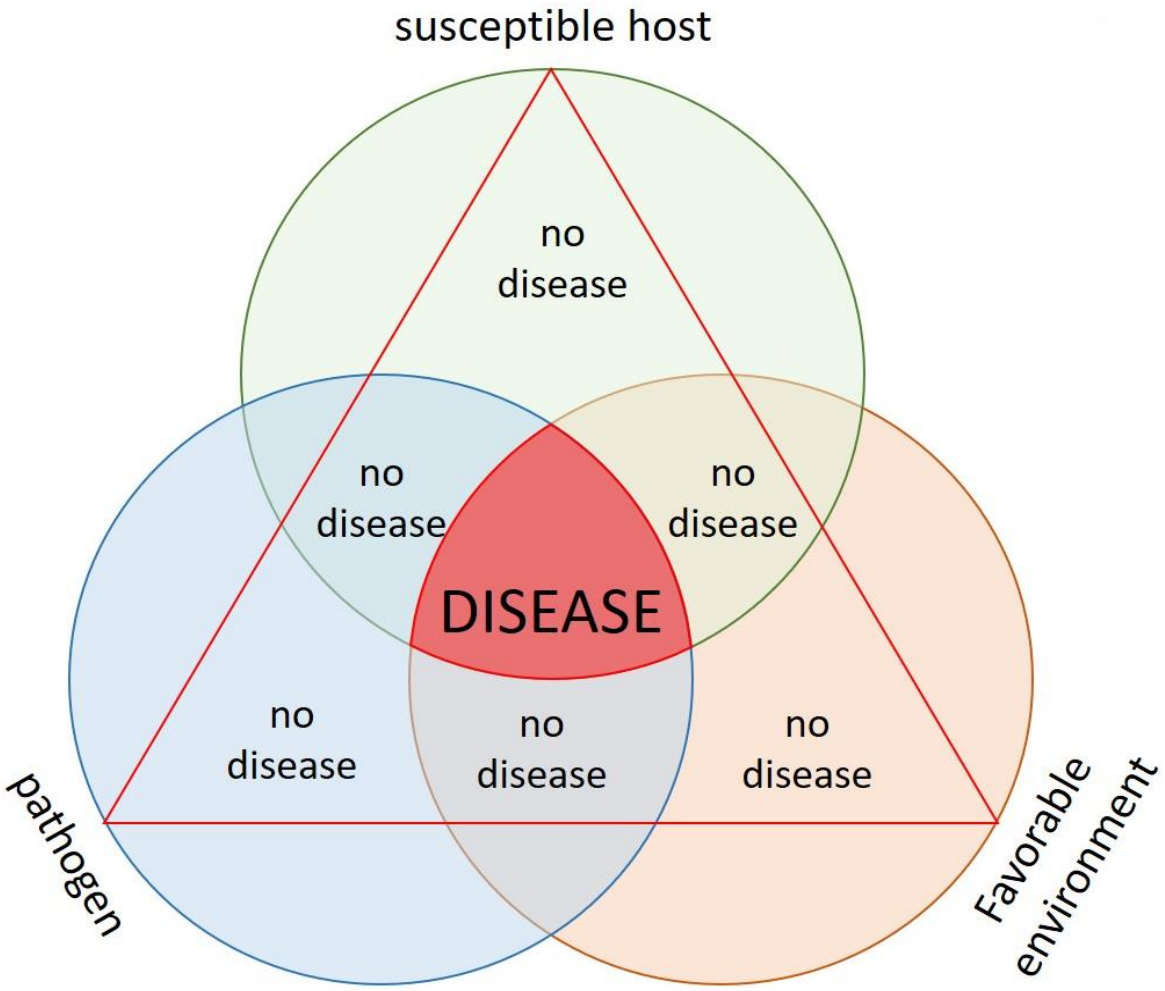


Diseases: Plant diseases are much more difficult to diagnose and cure.

The applicator must realize the capabilities of available control materials.

Most disease control pesticides are preventative materials.
They MUST be ON or IN the plant within 24-72 hours after initial infection.

All plant diseases start when a DISEASE TRIANGLE occurs.



All disease control pesticides requires multiple applications to protect the unaffected parts of the plant.

POWDERY MILDEW

POWDERY MILDEW: Crepe Myrtle, Lilac, Dogwood, Euonymus, etc.
Have you been wondering why Crepe Myrtle have been infected with huge outbreaks of aphids AND powdery mildew?

a) University studies have shown high insect populations spread the spores
b) High humidity is conducive to powdery mildew
c) Easily spread by rain, irrigation, birds, insects, wind, etc.
d) Unsightly, abnormal growth and vigor, leaf curling and late flowering
e) Starts on lower branches

PREVENTION & CONTROLS: High humidity promulgates the rapid growth of powdery mildew

a) Light mulch, 2”-3” maximum
b) Cease, *Bacillus subtilis*
c) Neem Oil
d) MilStop
e) Concert II (propiconazole + chlorothalonil
f) Propiconazole
g) Thiophanate methyl
h) Copper Soap
i) Armada 50WG


VOLUTELLA BLIGHT

VOLUTELLA BLIGHT, Boxwood

a) **American and English varieties**
b) **Volutella more prevalent this year***
c) **Infection and spread occur in Spring**
d) **68°-77° most favorable**
e) **Salmon colored spores on leaf underside of last years leaves will spread to new growth**
f) **Dead leaves stay on affected branches**
g) **Loose bark and girdled branches**

PREVENTION & CONTROLS: Application of fungicide should start just before new growth emerges

1. Topbuxus (preventative)
2. Manzate Max T&O
3. Chlorothalonil

VOLUTELLA BLIGHT: CUPPING / NO LEAF DROP


PEAR TRELLIS RUST

Pear Trellis Rust: Callery (Bradford) Pear

100% control has been achieved, but we'll repeat the methodology for 2 year control

PROCEDURE:

a) the most important application for 2 year control is the soil drench using 20 oz. of Thiophanate Methyl (TM 4.5) per 100 gallons of H_2O.

Apply 1 qt. per square foot of canopy spread*

This application should be applied when the tree is in full flower*

b) Follow up foliar application in 3 weeks*

Depending on previous time infected, may take 2 years to get full control

CONTROL:

TM 4.5 is a restricted use fungicide in NY* (caution label)

1. **one of the few fungicides that provides both contact, systemic and preventative results.**
2. **by the time pear leaves start showing leaf spots it is too late to achieve results (that season)**


ANTHRACNOSE

Anthracnose: fungal
Dogwood, Sycamore, White Oak, Maple

a) Cool, wet Springs are conducive to this fungus
b) Every plant exhibits different areas of infestation on its leaves*, which causes misdiagnosing
c) One symptom is common on the vast majority of different plants, can be seen under a 30 power eye loupe
d) Leaf spots can be brown, yellow or black but all will be sunken spots on the leaf with a darker center eye

CONTROLS:

1. Cease
2. Liquid Copper
3. Manzate Max T&O
4. Thiophanate Methyl
5. Junction (new product, Copper + Mancozeb)
6. Camelot O
7. Tebuconazole 3.6F

BEECH LEAF DISEASE

Beech Leaf Disease, BLD, a new disease that is caused by a microscopic nematode, *Litylenchus crenatae mccannii*.

a) At this stage we don't know if it will be a yearly problem or will be a 1-2 year phenomenon like the dripping nut disease
b) First observed in Ohio, Michigan in 2018- it has rapidly spread east to Connecticut, Pennsylvania, New York and Maryland
c) Some experts have recently blamed a tiny plant nematode, but many others are skeptical that is the whole story*

CONTROLS: We have developed a control program for BLD that has shown promising results

1. **Sevin SL**
2. **Agri-Fos Plus**
3. **Reliant Dry Granular**
4. **Regalia**
5. **Azatin O**
6. **TriStar SL***


NEEDLECAST

Needlecast: Blue Spruce, Norway Spruce, Douglas Fir, Pine

a) Three types of needlecast most common on Long Island
   1. Swiss Needlecast
   2. Rhizosphaera Needlecast
   3. Rhabdocline Needlecast

b) All needlecasts are fungal

c) Rule of Thumb:
   1. Spruce - Rhizosphaera
   2. Douglas Fir – Swiss & Rhabdocline
   3. Blue Spruce - Rhizosphaera
   4. Pine - Lophodermium

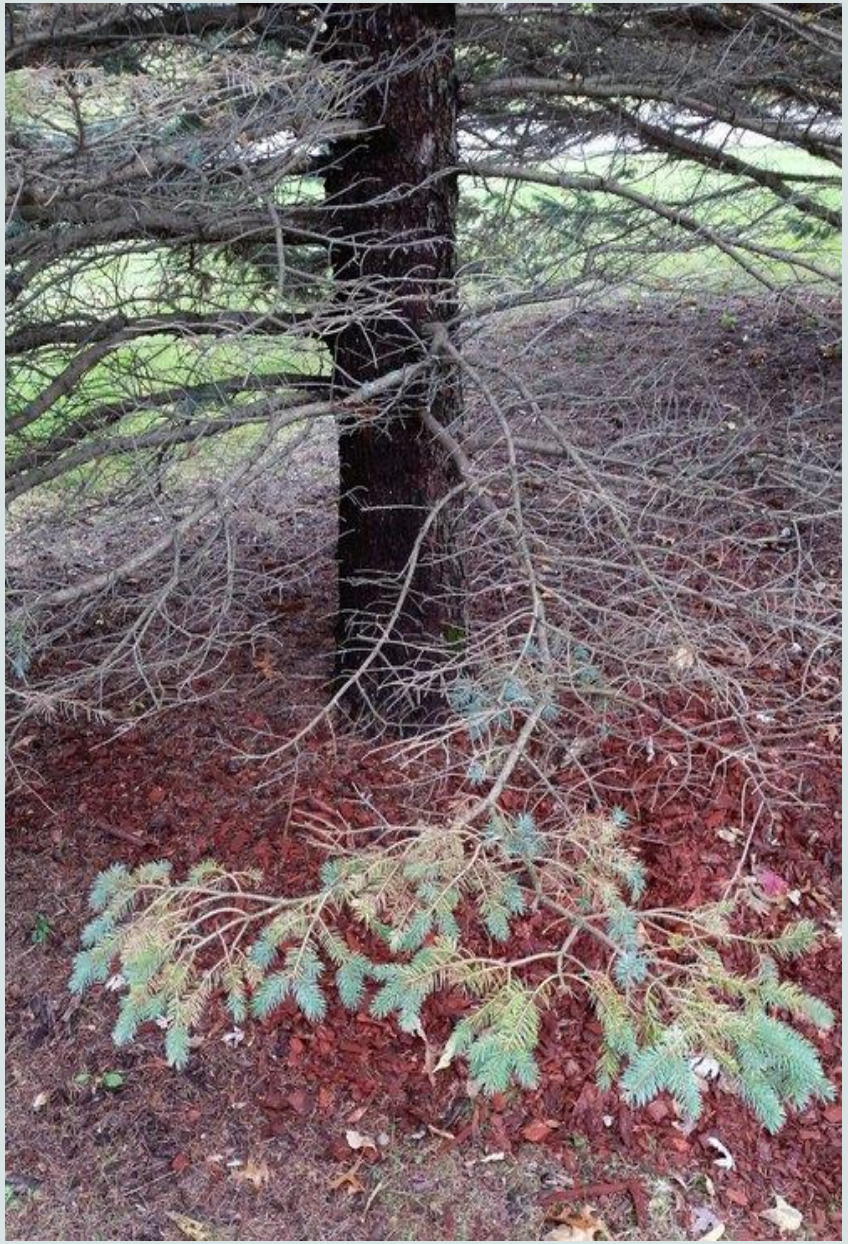
CONTROLS:
   1. Chlorothalonil
   2. Concert II : propiconazole + chlorothalonil
   3. Junction : mancozeb + copper
   3. Manzate Max (lophodermium only)

PROCEDURE:

The disease initial infection starts in the April/May of year one, but generally doesn't start showing visible symptoms until the following Spring and summer, May/August.

One applications should be applied at the time of obvious infection, but the next Spring a 2-3 app program should be started.

First application when the new shoots ¾" – 1 ¼" elongated, #2 & 3 if needed at 2 week intervals*



RHIZOPHAERA NEEDLECAST

SWISS NEEDLECAST

RHABDOCLINE NEEDLECAST

OAK WILT

Oak Wilt

a) Disease that affects the xylem of red and white oak
b) Will kill an old/mature red oak in 1-2 months. Usually when signs of infestation are noticed it is too late for treatment
c) White Oaks usually take 2-3 years (or more) to die. Treatment should start immediately upon initial symptoms and usually can be saved
d) Oak Wilt spread by bark beetles and nitidulid beetles
e) Was a Suffolk county problem, but is now rapidly spreading to Massapequa, Seaford, Bellmore, etc.

CONTROLS:

1. Trunk injections w/ propiconazole
2. Reliant Dry Granular
3. Agri-Fos Plus (soil drench & basal bark)

2021 Common Problems:
Leyland Cypress & Crepe Myrtle

Leyland Cypress: Disease & Insect Problems

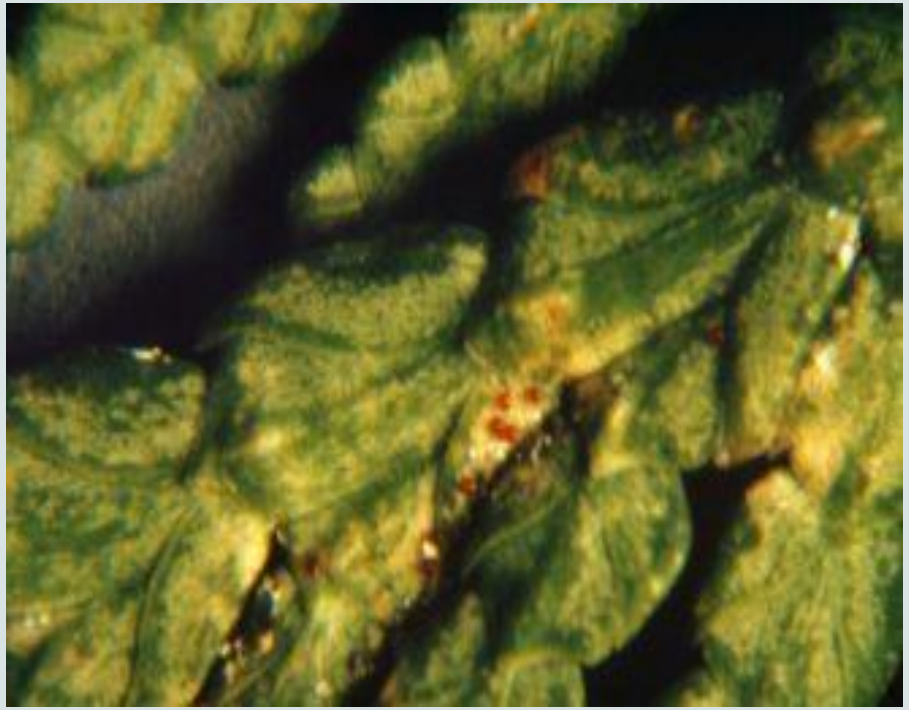
This overplanted conifer, used mainly as a property boundary or privacy row, is now one of the most problem prone ornamentals.

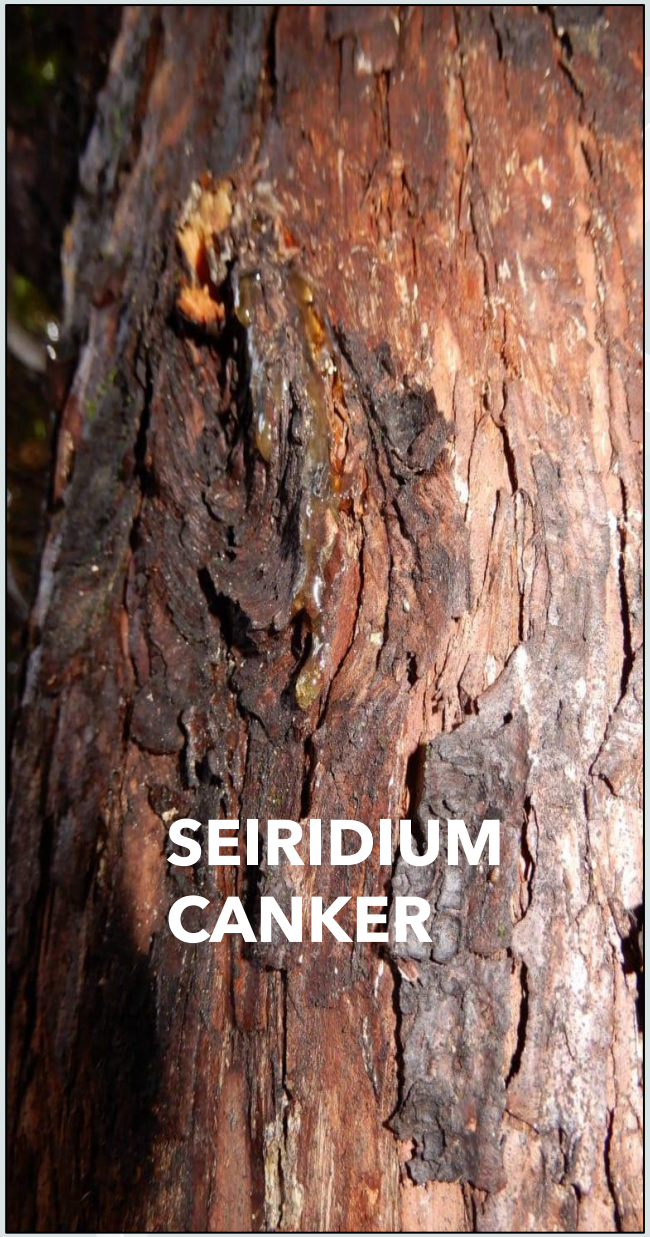
Due to their fast growing capabilities, they develop disease problems promulgated by the lack of air movement, lack of sunlight in lower branches, irrigation systems that constantly and consistently keep the bottom 2-3 feet of the plant wet and improper pruning.*

Leyland Cypress: Insect Problems

1. Bagworm
2. Spruce Spider Mites
3. Juniper Scale (overuse of pesticides, cool weather)

CONTROL: Azadirachtin is a systemic insecticide that controls all 3 problem insects. It is taken up by the roots and leaves.





Due to a poor growing environment they develop a variety of diseases:

1. Cercospora
2. Seiridium Canker
3. Phytophthora Root Rot

Cercospora Needle Blight: affects 2-3 year growth usually appears in summer months, start on lower inner branches, usually seen on the North and West side of tree, spores develop late Spring to Summer.

Effective Control: Thiophanate Methyl as a foliar and ground drench

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Seiridium Canker: damage usually starts in random branches and works inward toward the trunk. Cankers are often accompanied by resin flow, are oval or elongated in shape, sunken with a raised edge, needles fall of rapidly.

Effective Control: Thiophanate Methyl as a foliar and ground drench

Phytophthora Root Rot: primarily a problem in soils with poor drainage. Usually young plants, up to 3-4 years are affected until they develop a larger root mass. Foliage becomes stunted, sparse and change colors; yellow, tan purple.

Effective Control: Thiophanate Methyl as a foliar and ground drench

Crepe Myrtles: Disease & Insect Problems

Crepe Myrtle is a beautiful late season flowering ornamental that has 2 major problems developing the past two years*

Powdery Mildew affects leaves, flowers and new shoots. The disease is most serious in wet, damp, shady locations. Air circulation is critical around Crepe Myrtle. High humidity, day and/or night is conducive. The lower branches are most susceptible and spread easily to the parts of the plant.

CONTROL: PROPICONAZOLE, THIOPHANATE METHYL, COPPER SOAP, MILSTOP

Crepe Myrtle Aphid:

This aphid is only found on Crepe Myrtle. They overwinter as eggs on the plant and hatch in the Spring. As we've reviewed, aphids have a phenomenal reproduction rate and a systemic insecticide is the only way for control.

CONTROL: SYSTEMIC CONTROLS

1. **ACEPHATE**
2. **IMIDACLOPRID, (fall/early Spring)**
3. **ABAMECTIN***
4. **ABAMECTIN INJECTION**

THANK YOU FOR JOINING US!