

The Plant Disease Clinic and Weed Identification Lab Annual Report 2018



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**The Plant Disease Clinic
2018 Annual Report**

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Acknowledgements

The Plant Disease Clinic depends on an industrious staff of both full-time and part-time employees to prepare culture media, isolate pathogens from plant tissue, measure soil pH, extract nematodes from plant tissue, maintain records, answer the telephone, keep track of samples, and send out reports. In 2018, diagnoses in the Plant Disease Clinic in Blacksburg were performed by Mary Ann Hansen and Elizabeth Bush, with valuable assistance from Ella Reeves and Kate Costello.

Plant Clinic staff consult with many faculty and staff in various departments in order to make complete, accurate diagnoses and recommendations. We would like to thank the following people for their helpful assistance during the past year:

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We would also like to thank Mr. Todd Powell of TSP Software for designing and continuing to support the Plant Clinic database ("PClinic"). The database has given us the ability to keep complete records of Plant Clinic samples and to mail reports to Extension Offices electronically. Information on purchasing PClinic can be obtained from the Clinic at <clinic@vt.edu>.

Kate Costello painstakingly compiled the annual report. The annual report can be viewed on-line at <<https://www.ppws.vt.edu/extension/plant-disease-clinic/reports.html>>.

Introduction

The annual report for the Plant Disease Clinic located on the Virginia Tech campus in Blacksburg is presented in the following pages. Plant specimens that were submitted to and diagnosed at the Agricultural Research and Extension Centers throughout the Commonwealth are not included in this report. Note that the number of diagnoses performed was higher than the number of samples received because some samples are diagnosed with more than one problem.

For pathogens that could be identified to species or for which only one species is known to occur on the host plant in question, the species name is listed. For those diseases in which one of several species could have been involved, the epithet is listed as "sp." The Plant Disease Clinic does not routinely identify pathogens to species because species identification can sometimes be a very time-consuming process and often has little bearing on control recommendations. Most pathogens were assumed to be the cause of the disease if they were cultured in high numbers from the plant tissue or identified by molecular techniques, if they were reported in the literature to be pathogens of the particular host plant, and if they were reported to cause the observed symptoms.

Viral problems were, for the most part, either diagnosed by an antibody test involving the use of immunostrips or they were sent to a private lab for antibody testing at a cost to the grower. In some cases, identification of the specific virus was not desired by the client. In those cases, if symptoms indicated a virus infection, the diagnosis is listed simply as "virus".

Soil samples for nematode assays were forwarded to the Nematode Assay Laboratory. Nematode diseases were diagnosed by extracting nematodes from soil or plant tissue. Samples must include at least 1 pint of soil for nematode assays. Nematode assays were routinely performed on samples of plant species known to be affected by nematodes, e.g. boxwood. Nematode populations in the sample were compared to damage threshold levels to make a control recommendation. Threshold levels have been developed in research trials for many, but not all, crops grown in Virginia.

The phrase "Cause of Problem Unknown" is used for plant samples from which no pathogen could be isolated and for which no obvious environmental or cultural condition could be associated with the problem. Trees have more samples in this category and in the category "Insufficient Sample" than any other type of plant. Tree problems are more difficult to diagnose in a clinic setting than problems of annual plants for several reasons. First, tree problems often develop over the course of several years and current symptoms may be related to stressful conditions that occurred in previous years. Also, it is difficult for growers to supply an appropriate plant specimen for diagnosis since the causes of many tree diseases are in the trunk or roots.

Some insect problems are also listed in this report. Insect damage is often mistaken for disease, and samples with insect damage are sometimes submitted to the Plant Disease Clinic rather than the Insect Identification Lab. We make a preliminary diagnosis of insect damage on these samples and refer them to Mr. Eric Day in the Insect Identification Lab. The final diagnosis on all samples of insect damage is performed by Mr. Day. Samples

with known insect problems should be sent directly to the Insect ID Lab with the appropriate form.

We also receive digital images and email messages regarding plant problems. For the most part, it is difficult to diagnose diseases without a plant sample; however, diseases with unique symptoms can sometimes be diagnosed from an image or a description. Images are most useful when submitted with a plant sample. Total numbers of email and digital image inquiries are listed on p.3.

Reports are mailed electronically to the local Extension office from which the sample originated. Upon request, we will simultaneously send electronic reports to one or more individual Extension personnel. Since implementing electronic mailing, we have discontinued faxing or mailing hard copies of reports. Relevant fact sheets for some diseases are available on the Web at <http://pubs.ext.vt.edu/category/plant-diseases.html>.

DISEASE HIGHLIGHTS 2018

The Plant Disease Clinic performed 2163 disease diagnoses and identifications on 1650 plant samples in 2018. Highlights of the 2018 season are provided below.

The 2018 growing season provided excellent conditions for boxwood blight development and spread in Virginia. The Plant Disease Clinic received a record number of boxwood samples for diagnosis in 2018 (417 samples) and 188 of these were positive for boxwood blight. When boxwood blight first came into the state in 2011, it spread mainly on infected plants that were transported from one place to another and spread was slow, but after the sale of infected plants by a large retailer in 2016, the disease was introduced to many new landscapes in Virginia. It has since spread to new locations via pruning tools and other equipment, boxwood greenery and probably also on animals, in addition to spreading on infected plant material. Wet conditions and moderate temperatures, which were prevalent in fall of 2018, favored development and spread of the disease in many parts of Virginia.

Wet conditions also favored many bacterial and fungal diseases, some of which we diagnosed for the first time in 2018:

Field Crops

- Hemp (*Cannabis sativa*) – Fusarium Bud Rot (*Fusarium* sp.)
- Tobacco (*Nicotiana tabacum*) Hollow Stalk, caused by several species of *Pectobacterium*



Herbaceous Ornamentals and Herbs

Bacterial Diseases (Foliar)

- Anise hyssop (*Agastache* sp.) - *Xanthomonas campestris*
- False indigo (*Baptisia australis*) – *Burkholderia andropogonis*
- Leadwort (*Ceratostigma plumbaginoides*) - *Burkholderia andropogonis*
- Salvia (*Salvia* sp.) - *Acidovorax konjaci*
- St. Johnswort (*Hypericum calycinum*) - *Burkholderia andropogonis* and *B. gladioli*



Bacterial Leaf Spot on False Indigo

Viral Diseases

- Japanese holly fern (*Cyrtomium falcatum*) - Japanese Holly Fern Mottle Virus (JHFMV)



Etching, chlorosis and mottling on Japanese holly fern due to JHFMV

Fungal Diseases

- Camellia (*Camellia sinensis*) – Gray Leaf Spot (*Pestalotiopsis maculans*)
- Canna (*Canna glauca*) – Rust (*Puccinia thaliae*)
- Daylily (*Hemerocallis* sp.) – Southern Blight (*Sclerotium rolfsii*)
- Lily-of-the-Valley (*Convallaria majalis*)- Ascochyta Leaf Spot (*Ascochyta* sp.)



Camellia with Gray Leaf Spot



Ascochyta Leaf Spot on Lily-of-the-Valley

- Lobelia (*Lobelia* sp.) – Sclerotinia Stem Rot (*Sclerotinia sclerotiorum*)
- Sedge (*Carex pensylvanica*) - Rhizoctonia Aerial Blight (*Rhizoctonia solani*)
- Sunflower (*Helianthus* sp.) – Downy Mildew (*Plasmopara halstedii*)
- Tarragon (*Artemisia dracunculus*) – Fusarium Crown and Root Rot (*Fusarium* sp.)



Sunflower Downy Mildew

Tree and Small Fruits

- Apple (*Malus* sp.) – Rapid Apple Decline, a problem that occurs in high density apple orchards with young trees; the cause has not been determined
- Brambles – Broad mites (often confused with growth regulator chemical injury or other problems)
- Grape (*Vitis* sp.) – Zonate Leaf Spot (*Cristulariella moricola*)



Apple showing trunk cankers associated with Rapid Apple Decline (cause unknown)



*Distortion of foliage caused by broad mites (*Polyphagotarsonemus latus*)*



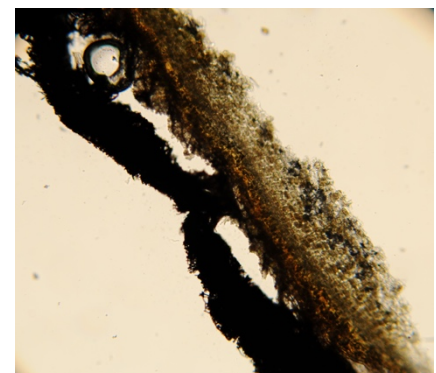
Zonate Leaf Spot on Grape

Trees and Woody Ornamentals

- Black Gum (*Nyssa sylvatica*) – Felt Fungus (*Septobasidium fumigatum*) – This fungus is not parasitic to the tree, but has a mutualistic/parasitic relationship with the scale insect with which it is associated.



Patches of felt fungus on black gum stems resemble sooty mold



Small chambers that protect the scale insect in the felt fungus that forms on black gum

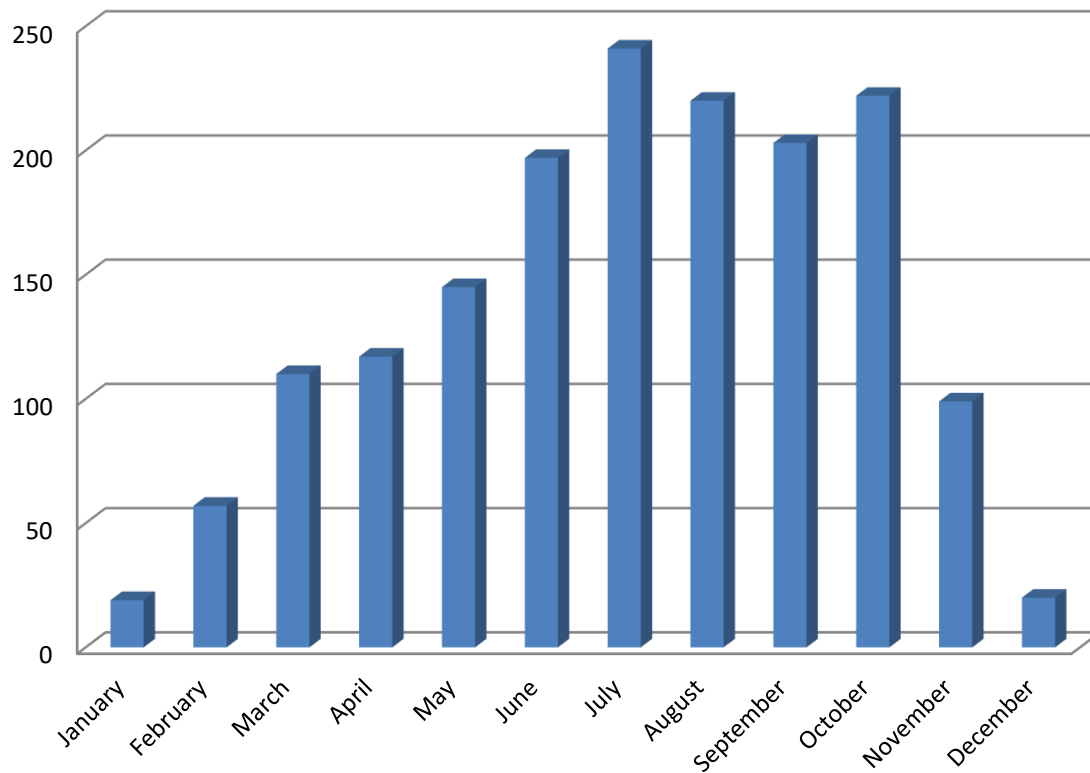
- Heather (*Calluna vulgaris*) – Web Blight (*Rhizoctonia solani*)

Monthly Submission Summary

Number of samples received by month

Month	# Samples
January	19
February	57
March	110
April	117
May	145
June	197
July	241
August	220
September	203
October	222
November	99
December	20
Total	1,650

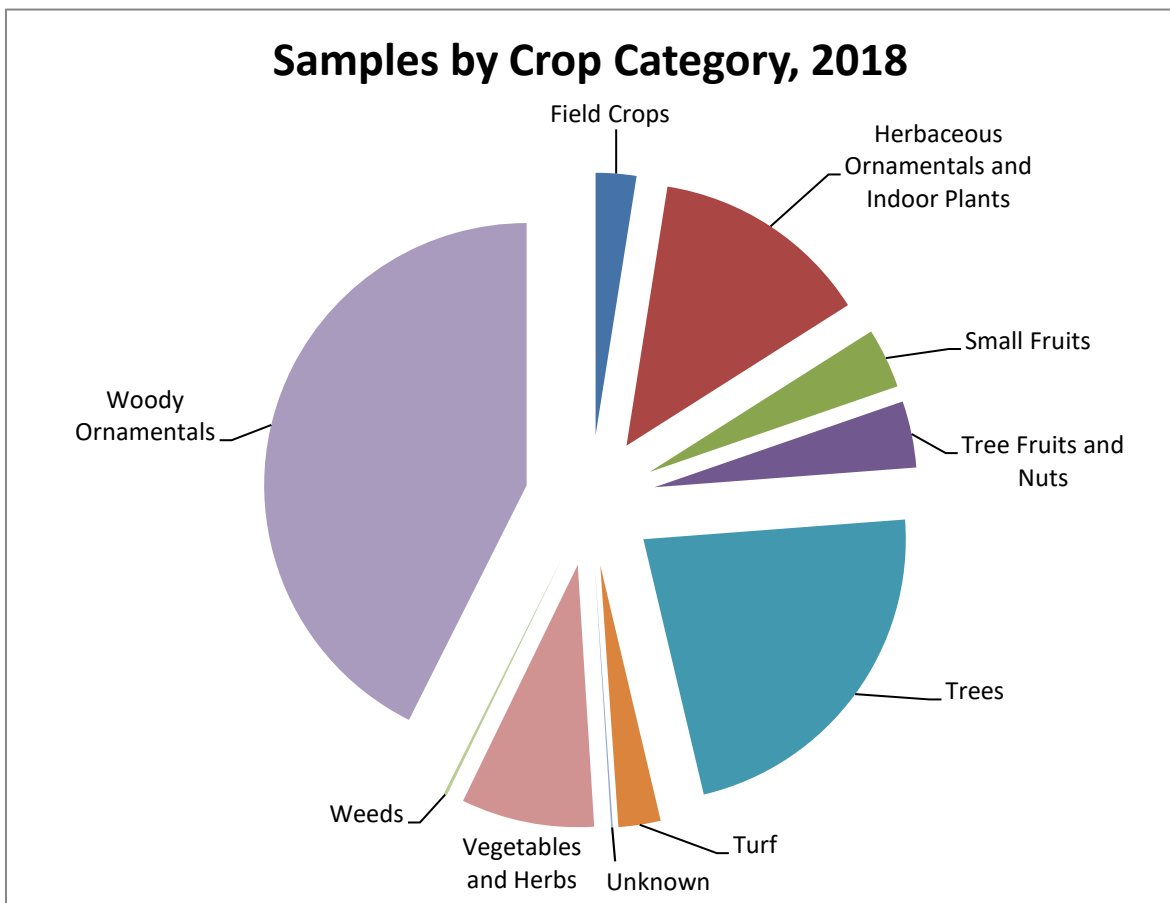
Number of Samples by Month, 2018



Samples by Crop Category

Sample totals by major crop categories, excluding plant identifications

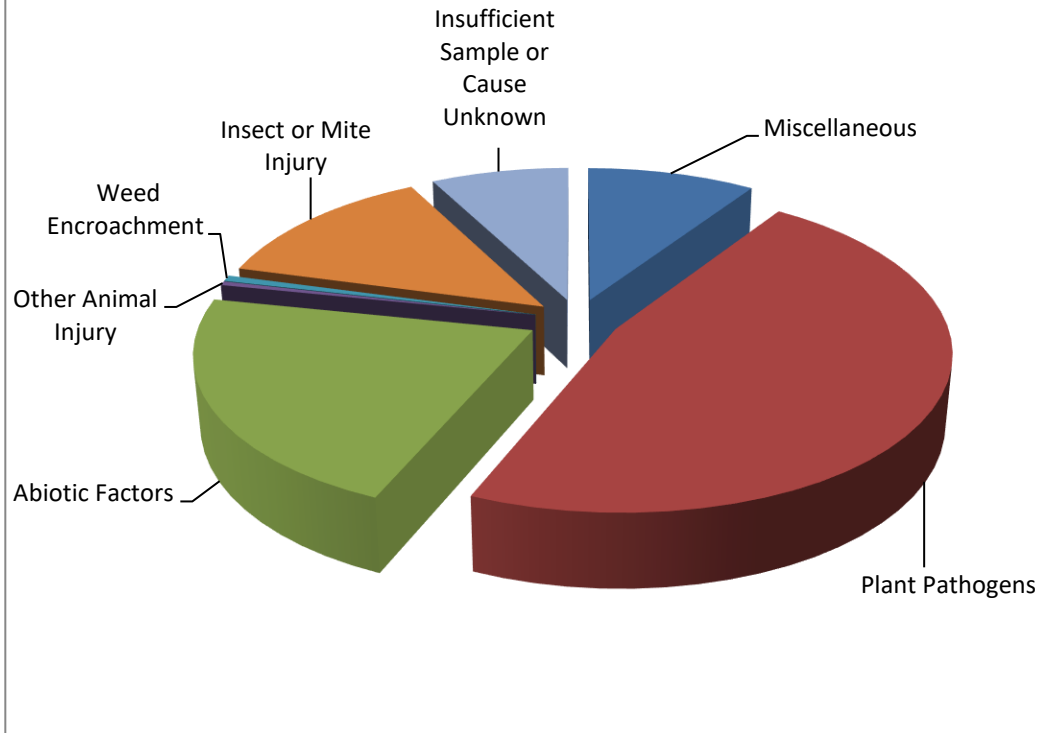
Crop Category	# of Samples	% of Total
Field Crops	41	2.5
Herbaceous Ornamentals and Indoor Plants	222	13.5
Small Fruits	60	3.7
Tree Fruits and Nuts	68	4.1
Trees	368	22.5
Turf	42	2.6
Unknown	1	0.1
Vegetables and Herbs	134	8.2
Weeds	3	0.2
Woody Ornamentals	698	42.6
Total	1,637	



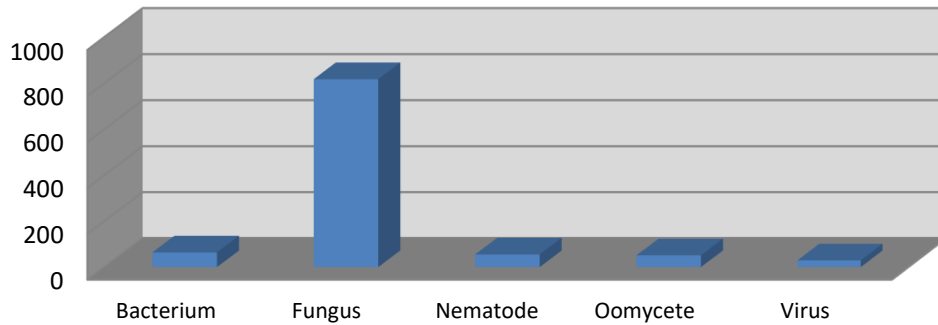
Diagnosis/ID Category Summary

	# of Diagnoses/IDs	% of Total
Plant Pathogens	1,017	47.0
Bacterium	64	
Fungus	818	
Nematode	55	
Oomycete	51	
Virus	29	
Abiotic Factors	472	21.8
Chemical	47	
Environmental/Cultural	414	
Physiological/Genetic	11	
Insect or Mite Injury	283	13.1
Insects or Mites	283	
Other Animal Injury	9	0.4
Birds	5	
Mammals	4	
Insufficient Sample or Cause Unknown	167	7.7
Insufficient sample or information	143	
Unknown	24	
Miscellaneous	198	9.2
Algae	2	
Lichen	15	
Normal Condition	7	
Other	173	
Parasitic Plant	1	
Weed Encroachment	4	0.2
Weed	4	
Identifications	13	0.6
Algae	1	
Fungi	7	
Plant	4	
Unable to Identify	1	
Total	2,163	
Digital Submissions (Email, Digital Pictures)	140	
Phone Calls	123	
Total	263	

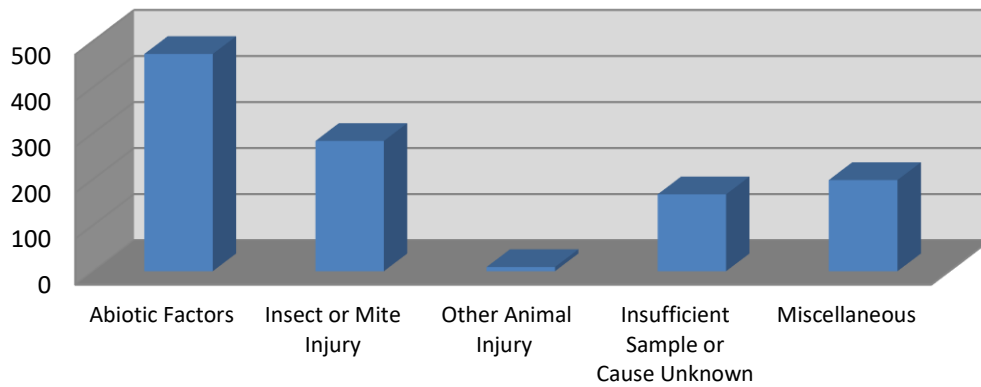
2018 Samples by Diagnosis Category



Plant Pathogens, 2018



Other Agents, 2018



Geographic Distribution of Samples Received in 2018

County	# of Samples	County	# of Samples
Out of State	10	LEE	2
ACCOMACK	6	LOUDOUN	21
ALBEMARLE	129	LOUISA	21
ALLEGHANY	1	LUNENBURG	2
AMELIA	5	LYNCHBURG CITY	70
AMHERST	7	MADISON	4
APPOMATTOX	2	MATHEWS	2
ARLINGTON	14	MECKLENBURG	3
AUGUSTA	44	MIDDLESEX	1
BATH	1	MONTGOMERY	124
BEDFORD	28	NELSON	117
BOTETOURT	11	NEW KENT	17
BRUNSWICK	1	NEWPORT NEWS CITY	24
CAMPBELL	3	NORTHAMPTON	6
CAROLINE	12	NORTHUMBERLAND	17
CARROLL	14	NOTTOWAY	3
CHESAPEAKE CITY	30	ORANGE	7
CHESTERFIELD	1	PAGE	3
CLARKE	3	PATRICK	5
CRAIG	1	PITTSYLVANIA	5
CULPEPER	29	PORTSMOUTH CITY	10
CUMBERLAND	2	POWHATAN	11
DANVILLE CITY	4	PRINCE EDWARD	3
DICKENSON	1	PRINCE WILLIAM	21
ESSEX	4	PULASKI	14
FAIRFAX	154	RAPPAHANNOCK	24
FAUQUIER	7	RICHMOND CITY	5
FLOYD	16	ROANOKE	40
FLUVANNA	4	ROCKBRIDGE	25
FRANKLIN	17	ROCKINGHAM	19
FREDERICK	20	RUSSELL	4
GILES	11	SCOTT	2
GLOUCESTER	2	SHENANDOAH	2
GOOCHLAND	11	SMYTH	2
GRAYSON	5	SOUTHAMPTON	5
GREENE	11	SPOTSYLVANIA	5
GREENSVILLE	1	STAFFORD	33
HALIFAX	2	SUFFOLK CITY	2
HAMPTON CITY	8	TAZEWELL	14
HANOVER	57	VIRGINIA BEACH	27
HENRICO	31	WARREN	3
HENRY	7	WASHINGTON	5
HIGHLAND	2	WESTMORELAND	16
ISLE OF WIGHT	8	WISE	6
JAMES CITY	14	WYTHE	11
KING GEORGE	1	YORK	126
KING WILLIAM	6	Total	1,650
LANCASTER	3		

Diagnosis Appendix

Information about diseases/pests diagnosed by the laboratory

Field Crops

Alfalfa

1 Alfalfa Common Leaf spot	<i>Pseudopeziza medicaginis</i>
1 Alfalfal Weevils	
1 Anthracnose	<i>Colletotrichum trifolii</i>
1 Sclerotinia Crown and Root Rot	<i>Sclerotinia trifoliorum</i>
2 Spring Black Stem and Leaf Spot	<i>Phoma medicaginis</i>
1 Suspect Spring Black Stem and Leaf Spot	<i>Phoma medicaginis</i>

7 Total for Alfalfa

Barley

1 Insufficient Sample

1 Total for Barley

Corn

1 Fusarium Ear Rot	<i>Fusarium sp.</i>
1 Low pH	
1 Nematodes	
1 Penicillium Seed Rot	<i>Penicillium sp.</i>
1 Seed Corn Maggots	

5 Total for Corn

Hemp

1 Anthracnose	<i>Collectotrichum dematium</i>
1 Fusarium Bud Rot	<i>Fusarium sp.</i>
1 Insufficient Sample	
1 Suspect Brown Blight	<i>Alternaria sp.</i>
1 Suspect Normal Senescence	

5 Total for Hemp

Hops

1	Alternaria Cone Disorder	<i>Alternaria alternata</i>
1	Aphids	
1	Cause of Problem Undetermined	
1	Downy Mildew	<i>Pseudoperonospora humuli</i>
2	Insects	
2	Insufficient Sample	
2	No Pathogens Found	
1	Suspect Downy Mildew	<i>Pseudoperonospora humuli</i>
1	Suspect Virus	
1	Thrips	

13 Total for Hops

Millet

1	Gray Leaf Spot	<i>Pyricularia grisea</i>
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1 Total for Millet

Orchardgrass

1	Anthracnose	<i>Colletotrichum graminicola</i>
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1 Total for Orchardgrass

Soybean

1	Anthracnose	<i>Colletotrichum sp.</i>
1	Charcoal Rot	<i>Macrophomina phaseolina</i>
2	Insects	
1	No Pathogens Found	
1	Physiological Leaf Spot	
1	Suspect Cultural Problem	

7 Total for Soybean

Sudangrass

1	Northern Corn Leaf Blight	<i>Setosphaeria turcica</i>
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1 Total for Sudangrass

Tobacco

1	Bacterial Soft Rot (Hollow Stalk)	<i>Unidentified Bacterium</i>
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1 Total for Tobacco

Herbaceous Ornamentals and Indoor Plants

Acanthus

1 No Pathogens Found

1 Total for Acanthus

African Violet

1 Low pH

1 Total for African Violet

Agastache

1 Bacterial Blight

Xanthomonas campestris

1 Suspect Bacterial Leaf Spot

Acidovorax konjaci

2 Total for Agastache

Ageratum

1 Abiotic Problem

1 Cucumber Mosaic Virus

2 Total for Ageratum

Air Potato

1 Suspect Chemical Injury

1 Total for Air Potato

Amaranth

1 Abiotic Problem

1 Total for Amaranth

Amaryllis

1 Colletotrichum

Colletotrichum sp.

1 Physiological Problem

2 Total for Amaryllis

Anemone

1 Botrytis Blight

Botrytis cinerea

1 Foliar Nematodes

Aphelenchoides sp.

2 Total for Anemone

Bedding Plants, Miscellaneous

1 Abiotic Problem

1 Broad Mites

Polyphagotarsonemus latus

2 Total for Bedding Plants, Miscellaneous

Bee Balm

2 Botrytis Stem Canker

Botrytis cinerea

2 Total for Bee Balm

Begonia

- 1 Environmental Stress
- 1 Insufficient Sample

2 Total for Begonia

Butterfly Weed

- 2 No Pathogens Found

2 Total for Butterfly Weed

Cactus

- 1 Suspect Cultural Problem

1 Total for Cactus

Calamondin Orange

- 1 Suspect Cultural Problem

1 Total for Calamondin Orange

Calibrachoa

- 1 Black Root Rot *Thielaviopsis basicola*

1 Total for Calibrachoa

Canna

- 2 Canna Yellow Mottle Virus
- 1 Rust *Puccinia thaliae*

3 Total for Canna

Ceratostigma

- 1 Bacterial Leaf Spot *Burkholderia gladioli*

1 Total for Ceratostigma

Chrysanthemum

- 1 Bacterial Leaf Spot *Pseudomonas cichorii*
- 1 Fusarium Wilt *Fusarium oxysporum*
- 1 Low pH

3 Total for Chrysanthemum

Cleome

- 1 Intumescence

1 Total for Cleome

Clivia

- 1 Suspect Cultural Problem

1 Total for Clivia

Coneflower

1 Excess Soluble Salts

1 Total for Coneflower

Coral Bells

1 Abiotic Problem

1 Bacterial Leaf Spot

Pseudomonas viridilivida

1 Botrytis Blight

Botrytis cinerea

1 Cold Injury

2 Foliar Nematodes

Aphelenchoides sp.

1 No Pathogens Found

1 Pythium Root Rot

Pythium sp.

8 Total for Coral Bells

Coreopsis

1 Bacterial Blight

Pseudomonas syringae

2 Bacterial Leaf Blight

Pseudomonas cichorii

2 Cause of Problem Undetermined

1 Cercospora Leaf Spot

Cercospora sp.

1 Phomopsis on leaves

Phomopsis sp.

7 Total for Coreopsis

Culver's Root

1 Insufficient Sample

1 Total for Culver's Root

Daffodil

1 No Pathogens Found

1 Total for Daffodil

Dahlia

1 Insects

1 Insufficient Sample

1 Suspect Abiotic Problem

3 Total for Dahlia

Daisy

1 Borers

1 No Pathogens Found

2 Total for Daisy

Daylily

- 1 Fusarium Root Rot *Fusarium sp.*
- 1 Lesion Nematodes *Pratylenchus sp.*
- 2 No Pathogens Found
- 1 Southern Blight *Sclerotium rolfsii*
- 1 Suspect Cultural Problem

6 Total for Daylily

Dianthus

- 3 Abiotic Problem
- 4 Fusarium Root Rot *Fusarium oxysporum*
- 1 Pythium Root Rot *Pythium sp.*
- 1 Suspect Environmental Stress

9 Total for Dianthus

Epimedium

- 1 Abiotic Problem
- 1 Anthracnose *Colletotrichum sp.*

2 Total for Epimedium

False Indigo

- 1 Bacterial Leaf Spot *Burkholderia andropogonis*

1 Total for False Indigo

Fern

- 1 Japanese Holly Fern Mottle Virus
- 1 Suspect Environmental Stress

2 Total for Fern

Foamflower

- 1 Environmental Stress

1 Total for Foamflower

Forget-me-not

- 1 Cultural Problem

1 Total for Forget-me-not

Foxglove

- 1 Alternaria Leaf Spot *Alternaria sp.*

1 Total for Foxglove

Gaillardia

- 1 Pythium Root Rot *Pythium sp.*
- 1 Tomato Spotted Wilt Virus

2 Total for Gaillardia

Gaura

1 Botrytis Blight *Botrytis cinerea*

1 Total for Gaura

Geranium

1 Bacterial Blight *Xanthomonas campestris*

1 Fungus Gnats

1 Fusarium Stem Rot *Fusarium sp.*

1 Low pH

1 Mites

1 Pythium Root Rot *Pythium sp.*

6 Total for Geranium

Gerbera Daisy

1 Thrips

1 Total for Gerbera Daisy

Gomphrena

1 Insects

1 Total for Gomphrena

Groundcherry

1 Anthracnose *Gloeosporium sp.*

1 Total for Groundcherry

Hellebore

1 Abiotic Problem

2 Bacterial Soft Rot *Pectobacterium carotovorum*

1 Black Leaf Spot *Coniothyrium hellebori*

2 Botrytis Blight *Botrytis cinerea*

1 Bulb Mite

1 Environmental Stress

1 Insufficient Sample

3 Pythium Root Rot *Pythium sp.*

1 Suspect Cold Injury

13 Total for Hellebore

Hosta

1 Anthracnose *Colletotrichum sp.*

1 Cold Injury

1 Environmental Stress

1 No Pathogens Found

4 Total for Hosta

Iceland Poppy

1 Abiotic Problem

1 Total for Iceland Poppy

Impatiens

1 Broad Mites *Polyphagotarsonemus latus*

1 Physiological Leaf Spot

1 Suspect Chemical Injury

3 Total for Impatiens

Iris

1 Bacterial Soft Rot *Pectobacterium sp.*

1 Total for Iris

Japanese Knotweed

1 Suspect Chemical Injury

1 Total for Japanese Knotweed

Lavender

5 Fusarium Root and Stem Rot *Fusarium sp.*

1 Gray Mold *Botrytis cinerea*

2 No Pathogens Found

1 Phytophthora Root Rot *Phytophthora nicotianae*

1 Suspect Environmental Stress

1 Suspect Fusarium Stem and Root Rot *Fusarium sp.*

11 Total for Lavender

Lily-of-the-valley

1 Ascochyta Leaf Spot *Ascochyta sp.*

1 Total for Lily-of-the-valley

Liriope

1 Fusarium Crown and Leaf Rot *Fusarium sp.*

1 Fusarium Root Rot *Fusarium sp.*

1 No Pathogens Found

3 Total for Liriope

Lisianthus

1 Fusarium Root and Stem Rot *Fusarium sp.*

1 Total for Lisianthus

Lobelia

1 Sclerotinia Stem Rot *Sclerotinia sclerotiorum*

1 Total for Lobelia

Lungwort

1 Abiotic Problem

1 Total for Lungwort

Milkweed

1 Bacterial Blight

Xanthomonas campestris

2 Insufficient Sample

3 Total for Milkweed

Mint

1 Abiotic Problem

1 Total for Mint

Miscanthus

1 Anthracnose

Colletotrichum dematium

1 Total for Miscanthus

Nemesia

1 Nutrient Deficiency

1 Total for Nemesia

Orange

1 No Pathogens Found

1 Total for Orange

Orchid

2 Cymbidium Mosaic Virus

2 Mites

1 No Pathogens Found

5 Total for Orchid

Ornamental Grass

1 Insufficient Sample

1 Total for Ornamental Grass

Pachysandra

1 Anthracnose

Colletotrichum sp.

1 Boxwood Blight

Calonectria pseudonaviculata

1 Cold Injury

11 Volutella Blight

Volutella pachysandrae

14 Total for Pachysandra

Pansy

- 1 Abiotic Problem
- 4 Anthracnose *Colletotrichum sp.*
- 1 Phytophthora Root and Stem Rot *Phytophthora nicotianae*
- 2 Suspect Anthracnose *Colletotrichum sp.*
- 1 Suspect Bacterial Leaf Spot *Acidovorax konjaci*
- 1 Suspect Environmental Stress

10 Total for Pansy

Peony

- 1 Bacterial Blight *Xanthomonas sp.*
- 3 Botrytis Blight *Botrytis cinerea*
- 1 Suspect Tobacco Rattle Virus

5 Total for Peony

Periwinkle

- 1 No Pathogens Found

1 Total for Periwinkle

Petunia

- 1 Cultural Problem
- 1 High pH
- 1 Phytophthora Root Rot *Phytophthora nicotianae*

3 Total for Petunia

Phlox

- 1 Anthracnose *Colletotrichum sp.*
- 1 Black Root Rot *Thielaviopsis basicola*
- 1 Botrytis Blight *Botrytis cinerea*
- 1 Fusarium Stem Rot *Fusarium sp.*
- 1 Mites
- 1 Thrips

6 Total for Phlox

Plant, Unknown

- 1 Abiotic Problem
- 1 Chemical Residue

2 Total for Plant, Unknown

Plants, Miscellaneous

- 1 Borers
- 1 Insufficient Sample
- 1 Soft Rot *Pectobacterium sp.*
- 1 Suspect Winter Injury

4 Total for Plants, Miscellaneous

Poinsettia

- 1 Abiotic Problem
- 1 Bacterial Canker *Curtobacterium flaccumfaciens*
- 1 Botrytis Stem Canker *Botrytis sp.*
- 1 No Pathogens Found

4 Total for Poinsettia

Primrose

- 1 Suspect Environmental Stress

1 Total for Primrose

Ranunculus

- 2 Botrytis Blight *Botrytis cinerea*

2 Total for Ranunculus

Red Hot Poker

- 1 Southern Blight *Sclerotium rolfsii*

1 Total for Red Hot Poker

Rubber Plant

- 1 Artillery Fungus *Sphaerobolus stellatus*

1 Total for Rubber Plant

Rudbeckia

- 1 Insufficient Sample
- 1 Pythium Root Rot *Pythium sp.*

2 Total for Rudbeckia

Russian Sage

- 1 Suspect Cultural Problem

1 Total for Russian Sage

Salvia

- 1 Abiotic Problem
- 1 Bacterial Blight *Acidovorax konjaci*
- 1 Physiological Leaf Spot

4 Total for Salvia

Sedge

- 1 Rhizoctonia Aerial Blight *Rhizoctonia sp.*

1 Total for Sedge

Sedum

5 Anthracnose	<i>Colletotrichum sp.</i>
1 Insufficient Sample	
1 Pythium Root Rot	<i>Pythium sp.</i>
4 Rhizoctonia Stem and Root Rot	<i>Rhizoctonia solani</i>
2 Web Blight	<i>Rhizoctonia solani</i>

13 Total for Sedum

Spurge

1 No Pathogens Found

1 Total for Spurge

Sunflower

1 Cercospora Leaf Spot	<i>Cercospora sp.</i>
1 Downy Mildew	<i>Plasmopara halstedii</i>

2 Total for Sunflower

Sweet Potato

1 Insufficient Sample

1 Total for Sweet Potato

Switchgrass

1 Bipolaris Leaf Spot	<i>Bipolaris sp.</i>
1 Suspect Virus	

2 Total for Switchgrass

Ti Plant

1 Mites

1 Total for Ti Plant

Toad Lily

1 Suspect Environmental Stress

1 Total for Toad Lily

Verbena

1 Black Root Rot	<i>Thielaviopsis basicola</i>
1 Pythium Root Rot	<i>Pythium sp.</i>

2 Total for Verbena

Vietnamese Snowflake

1 No Pathogens Found

1 Total for Vietnamese Snowflake

Wallflower

1 No Pathogens Found

1 Total for Wallflower

Zinnia

- 1 Abiotic Problem
- 1 Suspect Chemical Injury

2 Total for Zinnia

Small Fruits

Blackberry

2 Beetles	
1 Broad Mites	<i>Polyphagotarsonemus latus</i>
2 Cane Blight	<i>Coniothyrium fuckellii</i>
1 Cercospora Leaf Spot	<i>Cercospora rubi</i>
1 Crown Borers	
3 Insufficient Sample	
1 Orange Rust	<i>Arthuriomyces peckianus</i>
1 Spur Blight	<i>Didymella applanata</i>
1 Suspect Chemical Injury	
1 Suspect Rosette Disease	<i>Cercosporella rubi</i>
1 Virus	

15 Total for Blackberry

Blueberry

1 Abiotic Problem	
1 Beetles	
1 Botryosphaeria Dieback	<i>Botryosphaeria sp.</i>
2 Dagger Nematodes	<i>Xiphinema sp.</i>
2 Insufficient Sample	
2 Low pH	
2 Phomopsis Twig Blight	<i>Phomopsis vaccinii</i>
1 Physiological Leaf Spot	
1 Ring Nematodes	<i>Criconemella sp.</i>
1 Suspect Abiotic Problem	

14 Total for Blueberry

Fig

1 Insects	
1 Suspect Botryosphaeria Canker	<i>Botryosphaeria sp.</i>

2 Total for Fig

Grape

1	Abiotic Problem	
1	Bitter Rot	<i>Greeneria uvicola</i>
4	Black Rot	<i>Guignardia bidwellii</i>
1	Crown Gall	<i>Rhizobium (Agrobacterium) vitis</i>
1	Downy Mildew	<i>Plasmopara viticola</i>
2	Insufficient Sample	
1	Lichens	
1	Mites	
1	Phomopsis	<i>Phomopsis sp.</i>
2	Pierce's Disease	<i>Xylella fastidiosa</i>
1	Pseudocercospora Leaf Blight	<i>Pseudocercospora vitis</i>
1	Suspect Abiotic Problem	
1	Suspect Black Rot	<i>Guignardia bidwellii</i>
2	Suspect Cold Injury	
3	Suspect Grape Leafroll Assoc. Virus	
1	Suspect Pestalotiopsis Leaf Spot	<i>Pestalotiopsis sp.</i>
1	Suspect Winter Injury	
1	Wood Decay	
1	Zonate Leaf Spot	<i>Cristulariella moricola</i>

27 Total for Grape

Raspberry

1	Beetles	
1	Dagger Nematodes	<i>Xiphinema sp.</i>
2	Insufficient Sample	

4 Total for Raspberry

Strawberry

6	Anthracnose	<i>Collectotrichum sp.</i>
2	Gray Mold	<i>Botrytis cinerea</i>
1	Mites	
1	Phomopsis Leaf Blight	<i>Phomopsis obscurans</i>
1	Phytophthora Crown Rot	<i>Phytophthora cactorum</i>
1	Pythium Root Rot	<i>Pythium sp. Rhizoctonia</i>
1	Rhizoctonia Root Rot	<i>solani</i>
1	Rootworms	
1	Suspect Anthracnose Crown Rot	<i>Colletotrichum sp.</i>

15 Total for Strawberry

Wineberry

1	Suspect Chemical Injury	
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1 Total for Wineberry

Tree Fruits and Nuts

Apple

1 Abiotic Problem	
3 Bitter Rot	<i>Glomerella cingulata</i>
1 Black Rot	<i>Diplodia seriata</i>
3 Botryosphaeria Dieback	<i>Botryosphaeria sp.</i>
1 Cause of Problem Undetermined	
13 Cedar-Apple Rust	<i>Gymnosporangium juniperi-virginianae</i>
1 Cedar-Quince Rust	<i>Gymnosporangium clavipes</i>
1 Chemical Injury	
1 Codling Moths	
4 Curculios	
4 Fire Blight	<i>Erwinia amylovora</i>
1 Fly Speck	<i>Schizothyrium pomi</i>
1 Frogeye Leaf Spot	<i>Physalospora obtusa</i>
1 Frost Ring	
2 Insects	
1 No Pathogens Found	
1 Russetting	
1 Scab	<i>Venturia inaequalis</i>
1 Stinkbugs	
1 Suspect Abiotic Problem	
1 Suspect Alternaria Blotch	<i>Alternaria mali</i>
2 Suspect Rapid Apple Decline	
1 White Rot	<i>Botryosphaeria dothidea</i>

47 Total for Apple

Apricot

1 Mycosphaerella Leaf Spot	<i>Mycosphaerella sp.</i>
1 Suspect Insects	

2 Total for Apricot

Asian Pear

1 Fire Blight	<i>Erwinia amylovora</i>
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1 Total for Asian Pear

Cherry

2 Abiotic Problem	
1 Beetles	
1 Brown Rot	<i>Monilinia sp.</i>
1 Cherry Leaf Curl	<i>Taphrina cerasi</i>
2 Cherry Leaf Spot	<i>Blumeriella jaapii</i>
1 Cold Injury	
1 Lichens	
1 Mycosphaerella Leaf Spot	<i>Mycosphaerella sp.</i>
1 Sooty Mold	
1 Cause of Problem Undetermined	

12 Total for Cherry

Peach

2 Abiotic Problem	
1 Borers	
3 Brown Rot	<i>Monilinia fructicola</i>
4 Cultural Problem	
4 Curculios	
1 No Pathogens Found	
1 Suspect Brown Rot	<i>Monilinia fructicola</i>
1 Suspect Insects	

17 Total for Peach

Pear

1 Entomosporium Leaf Spot	<i>Entomosporium mespili</i>
1 Frost Injury	
1 Insects	
1 Insufficient Sample	
2 Rust	<i>Gymnosporangium sp.</i>
1 Sapsucker Injury	

7 Total for Pear

Pecan

2 Insufficient Sample	
1 Scab	<i>Cladosporium caryigenum</i>

3 Total for Pecan

Persimmon

1 Psyllids	
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1 Total for Persimmon

Plum

2 Black Knot

Dibotryon morbosum

2 Brown Rot

Monilinia fructicola

1 Curculios

1 Insects

6 Total for Plum

Pomegranate

1 Abiotic Problem

1 Total for Pomegranate

Walnut

1 Insufficient Sample

1 Total for Walnut

Trees

Arborvitae

- 5 Abiotic Problem
- 1 Cultural Problem
- 1 Environmental Stress
- 4 Insufficient Sample
- 1 Leafminers
- 7 Mites
- 1 No Pathogens Found
- 1 Normal Senescence
- 1 Pestalotiopsis Twig Blight *Pestalotiopsis funerea*
- 1 Suspect Seasonal Needle Drop

27 Total for Arborvitae

Ash

- 1 Felt Fungus
- 1 Suspect Chemical Injury
- 1 Suspect Emerald Ash Borer

3 Total for Ash

Autumn Olive

- 1 Insufficient Sample

1 Total for Autumn Olive

Beech

- 1 Beech Bark Disease *Nectria sp.*
- 1 Insects
- 1 Lichens
- 1 Suspect Cultural Problem

4 Total for Beech

Birch

- 1 Abiotic Problem
- 2 Chemical Injury
- 1 Insects

4 Total for Birch

Black Gum

- 1 Anthracnose *Discula sp.*
- 1 Insects
- 1 Insufficient Sample
- 3 Sooty Mold *Septobasidium fumigatum*

6 Total for Black Gum

Cedar

2 Brown Spot	<i>Lecanosticta acicola</i>
1 Cold Injury	
2 Insects	
2 Insufficient Sample	
2 No Pathogens Found	
1 Scales	
1 Suspect Chemical Injury	
1 Suspect Cultural Problem	
1 Suspect Winter Injury	

13 Total for Cedar

Chestnut

1 Deep Planting
1 Wood Decay

2 Total for Chestnut

Crabapple

2 Cedar-Apple Rust	<i>Gymnosporangium juniperi-virginiana</i>
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2 Total for Crabapple

Cryptomeria

1 Abiotic Problem	
4 Environmental Stress	
2 Pestalotiopsis Tip Blight	<i>Pestalotiopsis sp.</i>
1 Phomopsis Tip Blight	<i>Phomopsis sp.</i>
1 Scales	
1 Suspect Environmental Stress	

10 Total for Cryptomeria

Cypress

2 Bagworms	
4 Insufficient Sample	
1 Lichens	
5 No Pathogens Found	
1 Pestalotiopsis Needle Blight	<i>Pestalotiopsis sp.</i>
5 Seiridium Canker	<i>Seiridium sp.</i>
1 Suspect Environmental Stress	
17 Suspect Seiridium Canker	<i>Seiridium sp.</i>

36 Total for Cypress

Dogwood

2 Abiotic Problem	
2 Botryosphaeria Dieback	<i>Botryosphaeria sp.</i>
1 Cercospora Leaf Spot	<i>Cercospora sp.</i>
1 Environmental Stress	
1 Insects	
2 Insufficient Sample	
2 No Pathogens Found	
1 Plant Hairs	
3 Powdery Mildew	<i>Oidium sp.</i>
1 Septoria Leaf Spot	<i>Septoria cornicola</i>
1 Suspect Inonotus Root and Butt Rot	<i>Inonotus sp.</i>
1 Vole Injury	
3 Wood Decay	

21 Total for Dogwood

Douglas Fir

1 No Pathogens Found	
1 Swiss Needle Cast	<i>Phaeocryptopus gaeumannii</i>

2 Total for Douglasfir

Eastern Red Cedar

1 Abiotic Problem	
1 Cedar-Apple Rust	<i>Gymnosporangium juniperi-virginiana</i>
2 Mites	
3 No Pathogens Found	
3 Phomopsis Tip Blight	<i>Phomopsis juniperovora</i>

10 Total for Eastern Red Cedar

Eleagnus

1 Abiotic Problem	
1 Suspect Cultural Problem	
1 Suspect Environmental Stress	
1 Winter Injury	

4 Total for Eleagnus

Elm

1 Bacterial Scorch	<i>Xylella fastidiosa</i>
3 Dutch Elm Disease	<i>Ophiostoma ulmi</i>

5 Total for Elm

Falsecypress

1 Pestalotiopsis Twig Blight	<i>Pestalotiopsis sp.</i>
1 Seasonal Needle Drop	

3 Total for Falsecypress

Fir

- 2 Abiotic Problem
- 1 Insects
- 1 J-rooted
- 1 Lichens
- 2 Mites
- 1 No Pathogens Found
- 4 Phytophthora Root Rot *Phytophthora cinnamomi*
- 1 Spruce Mites
- 1 Suspect Environmental Stress
- 3 Weevils

20 Total for Fir

Ginkgo

- 1 Insufficient Information
- 2 Suspect Chemical Injury

3 Total for Ginkgo

Hackberry

- 1 Abiotic Problem
- 1 Leaf Gall Insects
- 2 Sooty Mold

4 Total for Hackberry

Hawthorn

- 1 Cedar-Quince Rust *Gymnosporangium clavipes*

1 Total for Hawthorn

Hemlock

- 1 Insufficient Sample
- 1 Mites
- 1 Scales

3 Total for Hemlock

Hickory

- 1 Insufficient Sample

1 Total for Hickory

Hornbeam

- 1 Anthracnose *Gloeosporium sp.*
- 1 Insects

2 Total for Hornbeam

Japanese Pagodatree

- 1 Phomopsis *Phomopsis sp.*

1 Total for Japanese Pagodatree

Linden

1 Suspect Abiotic Problem

1 Total for Linden

Magnolia

1 Abiotic Problem

1 Aphids

1 Canker (Unidentified Fungus)

1 Cold Injury

1 Freeze Damage

1 Insects

2 Insufficient Sample

1 Mites

1 Sapsucker Injury

1 Scales

1 Scorch

1 Sooty Mold

1 Suspect Environmental Stress

5 Winter Injury

19 Total for Magnolia

Maple

1	Abiotic Problem	
5	Anthraxnose	<i>Kabatiella apocrypta</i>
1	Beetles	
2	Botryosphaeria Dieback	<i>Botryosphaeria sp.</i>
1	Chemical Injury	
1	Eriophyid Mites	
1	Fusarium Canker	<i>Fusarium sp.</i>
1	Girdling Roots	
4	Insects	
5	Insufficient Sample	
2	Lichens	
1	Mites	
4	No Pathogens Found	
1	Oak Mistletoe	<i>Phoradendron leucarpum</i>
1	Phomopsis Dieback	<i>Phomopsis sp.</i>
6	Purple-eye Leaf Spot	<i>Phyllosticta minima</i>
1	Suspect Abiotic Problem	
1	Suspect Chemical Injury	
4	Suspect Cultural Problem	
1	Suspect Environmental Stress	
2	Suspect Purple-eye Leaf Spot	<i>Phyllosticta minima</i>
1	Winter Injury	
1	Wood Decay	
3	Zonate Leaf Spot	<i>Cristulariella pyramidalis</i>

51 Total for Maple

Mimosa

1	Suspect Mimosa Wilt	<i>Fusarium oxysporum f. sp. perniciusum</i>
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1 Total for Mimosa

Oak

4 Abiotic Problem	
1 Anthracnose	<i>Apiognomonina errabunda</i>
12 Bacterial Scorch	<i>Xylella fastidiosa</i>
2 Bacterial Wetwood	
1 Botryosphaeria Twig Canker	<i>Botryosphaeria quercuum</i>
1 Canker (Unidentified Fungus)	
3 Chemical Injury	
1 Hispidus Canker	<i>Inonotus hispidus</i>
2 Insect Galls	
4 Insects	
5 Insufficient Sample	
2 Mites	
2 No Pathogens Found	
5 Oak Leaf Button Galls	
1 Pestalotia	<i>Pestalotia sp.</i>
1 Phytophthora Root Rot	<i>Phytophthora cinnamomi</i>
1 Powdery Mildew	<i>Oidium sp.</i>
1 Saprophytic Fungus	
1 Squirrel Twig Pruning	
2 Suspect Abiotic Problem	
2 Suspect Chemical Injury	
1 Suspect Cold Injury	
1 Suspect Cultural Problem	
6 Tubakia Leaf Spot	<i>Tubakia dryina</i>
1 Wood Decay	

63 Total for Oak

Ornamental Cherry

2 Abiotic Problem	
1 Beetles	
4 Cercospora Leaf Spot	<i>Pseudocercospora (Cercospora) circum</i>
1 No Pathogens Found	
1 Scorch	
1 Sooty Mold	<i>Scorias spongiosa</i>
1 Stem Girdling Roots	

11 Total for Ornamental Cherry

Ornamental Pear

1 Chemical Injury	
1 Pear Leaf Blister Mites	
1 Sapsucker Injury	
1 Suspect Wood Decay	

4 Total for Ornamental Pear

Pine

- 1 Abiotic Problem
- 1 Cultural Problem
- 1 Diplodia Tip Blight *Diplodia pinea*
- 1 Dothistroma Needle Blight *Dothistroma pini*
- 2 Insufficient Sample
- 4 No Pathogens Found
- 1 Pales Weevils
- 1 Seasonal Needle Drop
- 1 Suspect Blue Stain Fungus
- 3 Suspect Environmental Stress
- 2 White Pine Weevils

18 Total for Pine

Ornamental Plum

- 1 Black Knot *Dibotryon morbosum*

1 Total for Plum

Poplar

- 1 Abiotic Problem
- 1 Sapsucker Injury

2 Total for Poplar

Redbud

- 1 Abiotic Problem
- 1 Botrytis Blight *Botrytis sp.*
- 2 Eriophyid Mites
- 1 Insects
- 1 Insufficient Sample
- 4 Mites
- 1 No Pathogens Found
- 1 Suspect Wood Decay

12 Total for Redbud

Sassafras

- 1 Septoria Leaf Spot *Septoria sp.*
- 1 Suspect Vole Injury

2 Total for Sassafras

Serviceberry

- 1 Chemical Injury
- 1 Powdery Mildew *Oidium sp.*
- 1 Rust *Gymnosporangium sp.*

3 Total for Serviceberry

Spruce

1	Bagworms	
1	Environmental Stress	
5	Insufficient Sample	
3	Mites	
1	No Pathogens Found	
11	Rhizosphaera Needle Cast	<i>Rhizosphaera kalkhoffii</i>
1	Stigmina Needle Cast	<i>Stigmina lautii</i>
2	Weevils	

25 Total for Spruce

Sycamore

1	Bacterial Scorch	<i>Xylella fastidiosa</i>
1	Insufficient Sample	
1	Suspect Anthracnose	<i>Gnomonia platani</i>
1	Suspect Bacterial Scorch	<i>Xylella fastidiosa</i>

4 Total for Sycamore

Trees, Miscellaneous

1	Chemical Injury	
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1 Total for Trees, Miscellaneous

Tulip Tree

1	Chemical Injury	
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1 Total for Tulip Tree

Willow

1	Cercospora Leaf Spot	<i>Cercospora salicina</i>
1	Cytospora Canker	<i>Cytospora sp.</i>
1	Scales	
1	Wood Decay	

4 Total for Willow

Yellowwood

1	No Pathogens Found	
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1 Total for Yellowwood

Zelkova

1	Cercospora Leaf Spot	<i>Cercospora sp.</i>
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1 Total for Zelkova

Turf

Bentgrass

- 3 Cyanobacteria
- 5 Environmental Stress
- 1 Pythium Root Rot *Pythium sp.*

9 Total for Bentgrass

Fescue

- 6 Brown Patch *Rhizoctonia solani*
- 1 Helminthosporium Blight *Drechslera dictyoides*
- 1 Insufficient Sample
- 1 Mites
- 1 Nimblewill Encroachment *Muhlenbergia schreberi*
- 3 No Pathogens Found
- 1 Roughstalk Bluegrass Encroachment *Poa trivialis*
- 1 Suspect Brown Patch *Rhizoctonia solani*
- 1 Suspect Chemical Injury
- 1 Suspect Cultural Problem
- 1 Suspect Excess Soil Moisture
- 1 Suspect Grubs
- 1 Weed Encroachment *Poa sp.*

20 Total for Fescue

Ryegrass

- 1 Gray Leaf Spot *Pyricularia grisea*
- 1 No Pathogens Found

2 Total for Ryegrass

St. Augustinegrass

- 2 Gray Leaf Spot *Pyricularia grisea*

2 Total for St. Augustinegrass

Turfgrass

- 1 Abiotic Problem
- 2 Algae
- 2 Brown Patch *Rhizoctonia solani*
- 1 Gray Leaf Spot *Pyricularia grisea*
- 3 Insufficient Sample
- 2 Low pH
- 1 No Pathogens Found
- 1 Suspect Cultural Problem
- 1 Weed Encroachment

14 Total for Turfgrass

Zoysia

1 Large Patch

Rhizoctonia solani

1 Low pH

1 No Pathogens Found

1 Weed Encroachment

4 Total for Zoysia

Vegetables and Herbs

Asparagus

- | | |
|--------------------------------------|----------------------------|
| 1 Cercospora Branchlet and Leaf Spot | <i>Cercospora asparagi</i> |
| 1 Fusarium Crown and Root Rot | <i>Fusarium oxysporum</i> |

2 Total for Asparagus

Basil

- | | |
|-------------------|------------------------------|
| 1 Abiotic Problem | |
| 2 Downy Mildew | <i>Peronospora belbahrii</i> |
| 1 Fusarium Wilt | <i>Fusarium oxysporum</i> |

4 Total for Basil

Bean

- | | |
|-----------------------------------|-------------------------------|
| 1 Beetles | |
| 1 Cercospora Leaf Spot and Blotch | <i>Cercospora sp.</i> |
| 1 Common Bacterial Blight | <i>Xanthomonas campestris</i> |
| 1 Fusarium Root Rot | <i>Fusarium solani</i> |
| 1 Insufficient Sample | |
| 2 Mites | |
| 1 Pythium Root Rot | <i>Pythium sp.</i> |
| 1 Rhizoctonia Stem and Root Rot | <i>Rhizoctonia solani</i> |

9 Total for Bean

Beet

- | | |
|--------------------------------|----------------------------|
| 1 Cercospora Leaf Spot | <i>Cercospora beticola</i> |
| 1 Heart Rot (Boron Deficiency) | |

2 Total for Beet

Cabbage

- | | |
|-------------------|---------------------------|
| 1 Abiotic Problem | |
| 1 Low pH | |
| 1 Wirestem | <i>Rhizoctonia solani</i> |

3 Total for Cabbage

Cantaloupe

- | | |
|---------------------------------|-----------------------------|
| 1 Alternaria Leaf Spot | <i>Alternaria alternata</i> |
| 1 No Pathogens Found | |
| 1 Rhizoctonia Stem and Root Rot | <i>Rhizoctonia solani</i> |

3 Total for Cantaloupe

Cauliflower

- | | |
|-------------------|--------------------------------|
| 1 Black Leaf Spot | <i>Alternaria brassicicola</i> |
|-------------------|--------------------------------|

1 Total for Cauliflower

Collards

1 Insects

1 Total for Collards

Cucumber

2 Anthracnose

Colletotrichum lagenarium

1 Downy Mildew

Pseudoperonospora cubensis

1 Fusarium Foot Rot

Fusarium solani

1 Insufficient Sample

1 Lack of Pollination

1 No Pathogens Found

1 Powdery Mildew

Golovinomyces cichoracearum

1 Suspect Cultural Problem

9 Total for Cucumber

Ginger

1 Excess Soluble Salts

1 Total for Ginger

Ginseng

1 Foliar Nematodes

Aphelenchoides sp.

1 Total for Ginseng

Kale

1 Cultural Problem

1 Insects

2 Total for Kale

Lettuce

1 Cultural Problem

1 High Soluble Salts

1 Physiological Problem

3 Total for Lettuce

Melon

1 Alternaria Leaf Spot

Alternaria alternata

2 Cucumber Beetles

1 No Pathogens Found

4 Total for Melon

Oregano

1 Web Blight *Rhizoctonia solani*

1 Total for Oregano

Pea

1 Fusarium Root Rot *Fusarium solani*

1 Rhizoctonia Stem and Root Rot *Rhizoctonia solani*

2 Total for Pea

Pepper

3 Bacterial Spot *Xanthomonas campestris*

1 Fertilizer Burn

1 Insufficient Sample

1 Pythium Root Rot *Pythium sp.*

1 Southern Blight *Sclerotium rolfsii*

1 Stinkbugs

1 Suspect Cultural Problem

1 Suspect Sunscald

1 Thrips

11 Total for Pepper

Potato

1 Common Scab *Streptomyces scabies*

1 Total for Potato

Pumpkin

1 Abiotic Problem

1 Bacterial Wilt *Erwinia tracheiphila*

1 Fusarium Fruit Rot *Fusarium sp.*

1 Powdery Mildew *Sphaerotheca fuliginea*

1 Suspect Nitrogen Deficiency

5 Total for Pumpkin

Rhubarb

1 Bacterial Crown and Stem Rot *Pectobacterium sp.*

1 Total for Rhubarb

Rosemary

1 High Soluble Salts

1 Total for Rosemary

Sage

1 Bacterial Leaf Spot *Pseudomonas syringae*

1 Total for Sage

Squash

1 Cercospora Leaf Spot	<i>Cercospora sp.</i>
1 Cultural Problem	
1 Downy Mildew	<i>Pseudoperonospora cubensis</i>
1 Measles	
1 Plectosporium Blight	<i>Plectosphaerella cucumerinum</i>
1 Squash Bugs	

6 Total for Squash

Sweet Corn

1 Cultural Problem	
1 Genetic Trait	
1 No Pathogens Found	
1 Northern Corn Leaf Blight	<i>Setosphaeria turcica</i>

4 Total for Sweet Corn

Swiss Chard

1 Insects	
1 Pythium Root Rot	<i>Pythium sp.</i>

2 Total for Swiss Chard

Tarragon

1 Fusarium Crown and Root Rot	<i>Fusarium sp.</i>
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1 Total for Tarragon

Tomato

2	Abiotic Problem	
1	Alternaria Stem Canker	<i>Alternaria alternata</i>
1	Bacterial Spot	<i>Xanthomonas campestris</i>
3	Bacterial Wilt	<i>Ralstonia solanacearum</i>
1	Beetles	
1	Blossom Drop	
4	Chemical Injury	
1	Cold Injury	
1	Early Blight	<i>Alternaria solani</i>
1	Ethylene Injury	
1	Fertilizer Burn	
6	Fusarium Crown and Root Rot	<i>Fusarium oxysporum</i>
4	Fusarium Wilt	<i>Fusarium oxysporum</i>
1	High Soluble Salts	
8	Insufficient Sample	
1	Leaf Mold	<i>Fulvia fulva</i>
1	Low pH	
1	Mites	
3	No Disease Found	
1	Physiological Spotting	
1	Root Knot Nematodes	<i>Meloidogyne incognita</i>
5	Septoria Leaf Spot	<i>Septoria lycopersici</i>
2	Suspect Chemical Injury	
1	Suspect Cultural Problem	
2	Suspect Nutrient Deficiency	
1	Suspect Nutrient Imbalance	
3	Tomato Spotted Wilt Virus	

58 Total for Tomato

Vegetables, Miscellaneous

1	Bird's Nest Fungus	<i>Cyathus sp.</i>
1	Insufficient Sample	

2 Total for Vegetables, Miscellaneous

Watermelon

2	Low pH	
1	No Pathogens Found	

3 Total for Watermelon

Zucchini

1	Blossom End Rot	
1	Insects	
1	Plectosporium Blight	<i>Plectosphaerella cucumerinum</i>

3 Total for Zucchini

Weeds

Weed

2 Insufficient Sample

2 Total for Weed

Woody Ornamentals

Aucuba

- 2 Cold Injury
- 1 Scales
- 1 Suspect Cold Injury
- 1 Winter Injury

5 Total for Aucuba

Azalea

- 1 High pH
- 1 Insufficient Sample
- 2 Lacebugs
- 2 Leaf and Flower Gall *Exobasidium vaccinii*
- 1 Lichens
- 3 No Pathogens Found
- 1 Suspect Environmental Stress

11 Total for Azalea

Barberry

- 1 Environmental Stress
- 1 Webworms

2 Total for Barberry

Bluebeard

- 1 Suspect Chemical Injury

1 Total for Bluebeard

Boxwood

6	Abiotic Problem	
188	Boxwood Blight	<i>Calonectria pseudonaviculata</i>
1	Cold Injury	
5	Colletotrichum Dieback	<i>Colletotrichum sp.</i>
1	Deep Planting	
6	English Boxwood Decline	<i>Paecilomyces buxi</i>
2	Environmental Stress	
2	Insects	
22	Insufficient Sample	
22	Leafminers	
1	Lesion Nematodes	<i>Pratylenchus sp. Macrophoma</i>
5	Lichens	
32	Macrophoma Leaf Spot	<i>candollei</i>
50	Mites	
17	Nematodes	
4	No Pathogens Found	
1	Normal Condition	
9	Phytophthora Root Rot	<i>Phytophthora nicotianae</i>
7	Possible Nematode Problem	
4	Psyllids	
1	Ring Nematodes	<i>Mesocriconema sp.</i>
2	Scales	
2	Spiral Nematodes	<i>Rotylenchus buxophilus</i>
3	Suspect Boxwood Blight	<i>Calonectria pseudonaviculata</i>
2	Suspect Chemical Injury	
1	Suspect Cultural Problem	
2	Suspect Environmental Stress	
1	Suspect Vole Injury	
7	Suspect Winter Injury	
113	Volutella Blight	<i>Volutella buxi</i>
1	Winter Injury	
1	Cause of Problem Undetermined	

521 Total for Boxwood

Butterfly Bush

1	Downy Mildew	<i>Peronospora harrotii</i>
1	Mites	

2 Total for Butterfly Bush

Camellia

1 Abiotic Problem	
2 Brown Blight	<i>Colletotrichum sp.</i>
2 Eriophyid Mites	
2 Gray Blight	<i>Pestalotiopsis maculans</i>
1 Insects	
1 Insufficient Sample	
1 Mites	
1 Normal Condition	
1 Sapsucker Injury	
1 Scales	
1 Winter Injury	

14 Total for Camellia

Cherrylaurel

5 Black Vine Weevils	
2 Botryosphaeria Dieback	<i>Botryosphaeria dothidea</i>
1 Cultural Problem	
1 Insufficient Information	
1 Insufficient Sample	
2 Mites	
1 No Pathogens Found	
2 Scales	
10 Shothole	
1 Sunscald	
1 Suspect Environmental Stress	
1 Suspect Mycosphaerella Leaf Spot	<i>Mycosphaerella sp.</i>

28 Total for Cherrylaurel

Cleyera

1 Suspect Cultural Problem	
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1 Total for Cleyera

Cotoneaster

1 Scales	
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1 Total for Cotoneaster

Crape Myrtle

- 1 Abiotic Problem
- 1 Aphids
- 1 Cause of Problem Undetermined
- 2 Insects
- 2 Lichens
- 1 Phomopsis Canker *Phomopsis sp.*
- 1 Scales
- 4 Sooty Mold
- 1 Winter Injury

14 Total for Crape Myrtle

English Ivy

- 1 Anthracnose *Colletotrichum trichellum*

1 Total for English Ivy

Euonymus

- 1 Insufficient Sample

1 Total for Euonymus

Filbert

- 1 Eastern Filbert Blight *Anisogramma anomala*

1 Total for Filbert

Flowering Quince

- 1 Botryosphaeria Dieback *Botryosphaeria sp.*
- 1 Suspect Cedar-Quince Rust *Gymnosporangium clavipes*

2 Total for Flowering Quince

Forsythia

- 1 Wood Decay

1 Total for Forsythia

Gardenia

- 1 Cold Injury
- 1 Insects
- 1 Insufficient Sample
- 1 Mites
- 1 Phoma Leaf Spot *Phoma sp.*
- 1 Sooty Mold
- 1 Suspect Winter Injury
- 1 Whiteflies

8 Total for Gardenia

Heather

- 1 Web Blight *Rhizoctonia solani*

1 Total for Heather

Hibiscus

- 1 Insects

1 Total for Hibiscus

Holly

- 2 Anthracnose *Glomerella sp.*
- 33 Black Root Rot *Thielaviopsis basicola*
- 1 Environmental Stress
- 1 Insects
- 14 Insufficient Sample
- 1 No Pathogens Found
- 2 Phytophthora Root Rot *Phytophthora cinnamomi*
- 1 Poor Drainage
- 4 Scales
- 1 Suspect Chemical Injury
- 1 Suspect Cold Injury
- 1 Suspect Cultural Problem
- 1 Suspect Environmental Stress
- 1 Suspect Poor Drainage
- 1 Suspect Winter Injury
- 1 Suspect Wood Decay
- 1 Thread Blight *Ceratobasidium ochroleucum*
- 3 Winter Injury

70 Total for Holly

Hydrangea

1 Anthracnose	<i>Colletotrichum sp.</i>
1 Bacterial Leaf Spot	<i>Xanthomonas campestris</i>
1 Botrytis Blight	<i>Botrytis cinerea</i>
1 Cercospora Leaf Spot	<i>Cercospora hydrangeae</i>
1 Chemical Injury	
3 Corynespora Leaf Spot	<i>Corynespora sp.</i>
1 Cultural Problem	
1 Insufficient Sample	
2 Phytophthora Root Rot	<i>Phytophthora cinnamomi</i>
1 Suspect Environmental Stress	

13 Total for Hydrangea

Hypericum

1 Bacterial Leaf Spot	<i>Burkholderia andropogonis</i>
1 Bacterial Leaf Spot	<i>Burkholderia gladioli</i>
1 Pythium Root Rot	<i>Pythium sp.</i>

3 Total for Hypericum

Indian Hawthorn

1 Entomosporium Leaf Spot	<i>Entomosporium mespili</i>
1 Suspect Entomosporium Leaf Spot	<i>Entomosporium mespili</i>

2 Total for Indian Hawthorn

Juniper

1 Abiotic Problem	
1 Botryosphaeria Dieback	<i>Botryosphaeria sp.</i>
1 Cedar-Quince Rust	<i>Gymnosporangium clavipes</i>
4 Insufficient Sample	
7 Mites	
4 No Pathogens Found	
2 Phomopsis Tip Blight	<i>Phomopsis juniperovora</i>

20 Total for Juniper

Lilac

1 Fungal Leaf Spot (Unidentified Pathogen)	
2 Insufficient Sample	
1 Powdery Mildew	<i>Microsphaera pencillata</i>

4 Total for Lilac

Linden

1 Insects

1 Total for Linden

Mahonia

- 1 Environmental Stress
- 1 Insufficient Sample

2 Total for Mahonia

Mountain Laurel

- 1 Mites
- 1 No Pathogens Found

2 Total for Mountain Laurel

Nandina

- 1 Abiotic Problem

1 Total for Nandina

Ninebark

- 1 No Pathogens Found
- 1 Powdery Mildew *Oidium sp.*

2 Total for Ninebark

Photinia

- 1 Anthracnose *Colletotrichum gloeosporioides*
- 3 Entomosporium Leaf Spot *Entomosporium mespili*

4 Total for Photinia

Pieris

- 1 Chemical Injury
- 1 Mites

2 Total for Pieris

Pittosporum

- 1 Botryosphaeria Dieback *Botryosphaeria sp.*
- 1 Phomopsis Canker *Phomopsis sp.*
- 1 Scales

3 Total for Pittosporum

Plants, Miscellaneous

- 2 Chemical Injury

2 Total for Plants, Miscellaneous

Privet

- 1 Abiotic Problem
- 1 Alternaria Leaf Spot *Alternaria alternata*
- 1 Cercospora Leaf Spot *Cercospora sp.*
- 2 Insufficient Sample
- 1 Suspect Environmental Stress

6 Total for Privet

Quince

1 Cause of Problem Undetermined

1 Total for Quince

Redbay

1 Insects

1 Total for Redbay

Rhododendron

1 Abiotic Problem

2 Botryosphaeria Dieback *Botryosphaeria sp.*

1 Mycosphaerella Leaf Spot *Mycosphaerella sp.*

1 No Pathogens Found

1 Pestalotia Leaf Spot *Pestalotia sp.*

3 Phytophthora Root Rot *Phytophthora cinnamomi*

1 Rootbound

10 Total for Rhododendron

Rose

1 Black Spot *Diplocarpon rosae*

2 Botrytis Blight *Botrytis cinerea*

1 Brown Canker *Cryptosporrella umbrina*

1 Common Canker *Coniothyrium fuckelii*

1 Cultural Problem

1 Do Not Suspect Rose Rosette Virus

1 Eriophyid Mites

2 Insects

5 Insufficient Sample

3 Mites

1 No Pathogens Found

1 Normal Condition

1 Rose Mosaic Virus

7 Rose Rosette Virus

1 Suspect Abiotic Problem

1 Suspect Botrytis Blight *Botrytis cinerea*

1 Suspect Cold Injury

1 Suspect Crown Gall *Agrobacterium tumefaciens*

2 Suspect Rose Rosette Disease

2 Thrips

36 Total for Rose

Russian Arborvitae

1 Suspect Environmental Stress

1 Total for Russian Arborvitae

Sarcococca

- 2 Mites
- 2 Volutella Blight *Volutella sp.*

4 Total for Sarcococca

Snowball Bush

- 1 Suspect Chemical Injury

1 Total for Snowball Bush

Spicebush

- 2 Cause of Problem Undetermined
- 1 No Pathogens Found

3 Total for Spicebush

Spirea

- 1 Suspect Chemical Injury
- 1 Suspect Environmental Stress

2 Total for Spirea

Stewartia

- 1 Chemical Injury

1 Total for Stewartia

Sweetspire

- 1 Phytophthora Root Rot *Phytophthora cinnamomi*

1 Total for Sweetspire

Viburnum

- 1 Artillery Fungus *Sphaerobolus stellatus*
- 1 Insufficient Sample
- 2 No Pathogens Found
- 2 Scales
- 1 Suspect Environmental Stress
- 1 Suspect Winter Injury

8 Total for Viburnum

Weigela

- 1 Insects
- 1 Mycosphaerella Leaf Spot *Mycosphaerella sp.*

2 Total for Weigela

Willow

- 1 Botryosphaeria Canker *Botryosphaeria dothidea*

1 Total for Willow

Yew

1 Abiotic Problem

1 Total for Yew

Yucca

1 Mycosphaerella Leaf Spot

Mycosphaerella sp.

1 Plant Bugs

2 Total for Yucca

Identification Appendix

1. Plants

Family: Anacardiaceae
Rhus copallinum

Winged Sumac

Family: Apiaceae
Angelica sp.

Angelica

Family: Celastraceae
Euonymus kiautschovicus

Spreading Euonymus

Family: Equisetaceae
Equisetum hyemale

Scouringrush Horsetail

2. Fungi

Family: Gastromycetes
Phallus impudicus

Stinkhorn

Family: Hysterangiaceae
Hysterangium sp.

Hysterangium

Family: Nidulariaceae
Cyathus sp.

Bird's Nest Fungus

Family: Polyporaceae
Daedaleopsis sp.

Polypore

Family: Russulaceae
Russula sp.

Russula

Family: Tricholomataceae
Tricholoma sp.

Tricholoma

Unable to Identify (1)

3. Other

Unable to Identify (2)