

The Plant Disease Clinic and Weed Identification Lab Annual Report 2015



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**The Plant Disease Clinic
2015 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 2015, diagnoses in the Plant Disease Clinic in Blacksburg were performed by Mary Ann Hansen and Elizabeth Bush, with valuable assistance from Katie Dougherty.

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>. We are also especially grateful to Mr. Andrew Mike for IT support during the year.

Ella Reeves painstakingly compiled the annual report. The annual report can be viewed on-line at <<http://oak.ppws.vt.edu/~clinic/>>.

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 that cause 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>.

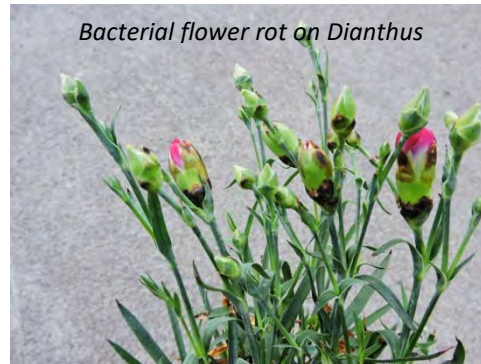
DISEASE HIGHLIGHTS 2015

The Plant Disease Clinic performed 1551 disease diagnoses and plant or mushroom identifications on 1241 plant samples in 2015. Highlights are provided below.

Plant problems diagnosed in the Virginia Tech Plant Disease Clinic for the first time in 2015:

Herbaceous Ornamentals

- Brugmansia – Tobacco Mosaic Virus
- Coneflower – coneflower rosette mites, which cause phyllody, or abnormal leaf formation, on flower heads; symptoms can resemble disease caused by a phytoplasma
- Dianthus – bacterial leaf spot, caused by *Burkholderia andropogonis*
- Dianthus – bacterial flower rot, caused by *Pseudomonas syringae* pv. *syringae*



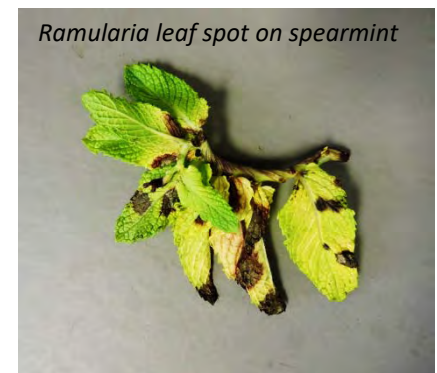
- Foamybells – bacterial blight, caused by *Pseudomonas syringae*
- Rudbeckia – downy mildew, caused by the oomycete *Plasmopara halstedii*
- Sedum – Pleospora leaf spot, caused by the fungus *Pleospora* sp.
- Water lily – Pseudocercospora leaf spot, caused by the fungus *Pseudocercospora* sp.

Field Crops

- Orchardgrass – stripe smut – *Ustilago striiformis*

Vegetables and Herbs

- Malabar spinach (not a true spinach: species = *Basella rubra*) – Alternaria leaf spot, caused by the fungus *Alternaria* sp.
- Spearmint – Ramularia leaf spot, caused by the fungus *Ramularia menthicola*



Trees and Woody Shrubs

- Hornbeam – thread blight, caused by the fungus *Ceratobasidium ochroleucum*
- Spirea – Cylindrocladium canker, caused by the fungus *Cylindrocladium scoparium*

Other Highlights

Diseases that were especially prevalent among 2015 Plant Clinic samples:



Phytophthora root rot was diagnosed in multiple host species, including blueberry, boxwood, fir, camellia, cherry laurel, Japanese holly, lavender, lilac, petunia, spruce, and yew. Many different species of the water mold *Phytophthora* cause root rot on woody plants. The disease is prevalent in most years in the heavy clay soils of the western part of Virginia because the pathogen thrives where there is free water.

Black root rot, caused by the fungus *Thielaviopsis basicola*, is common every year in Japanese holly, which is highly susceptible to this disease, and 2015 was no exception. Like *Phytophthora*, this pathogen also has a wide host range, although most susceptible species are herbaceous plants. Other plant species that were diagnosed with black root rot in 2015 include calibrachoa, pansy, violet, phlox and foxglove.



Leaf blister and leaf curl diseases, caused by fungi in the genus *Taphrina*, are common in cool, wet springs. **Peach leaf curl** and **oak leaf blister** were two diseases that were prevalent among samples sent to the Plant Disease Clinic in 2015. **Cercospora leaf spot of cherry**, caused by the fungus *Cercospora circumscissa*, was another common leaf disease seen in 2015.



Seiridium canker on Leyland cypress



The most common disease we see in Leyland cypress every year is the fungal disease, **Seiridium canker**, which causes dieback and sometimes death of the whole tree. In 2015, we diagnosed this disease in 31 Leyland cypress samples, following a harsh winter, which predisposed trees to the disease.

Boxwood blight, caused by the fungus *Calonectria pseudonaviculata*, which entered the state for the first time in 2011, has spread to 10 counties in

northern, eastern and southwest Virginia. Seven new cases were diagnosed on samples received by the Plant Disease Clinic in 2015. The boxwood blight pathogen causes leaf spotting, black stem cankers, and severe defoliation of susceptible boxwood. The leaf spot stage can sometimes be confused with leafminer damage. Of a total of 120 boxwood samples we received in 2015, 17 were referred to the Insect ID Lab for diagnosis of leafminer damage.

In 2015, we also investigated reports of massive **mortality of rosebay rhododendron** along the Blue Ridge Parkway in Floyd and Patrick Counties. We collected plant and soil samples from affected plants along the Blue Ridge Parkway to try to determine the cause of the symptoms. Although high levels of several different kinds of plant parasitic nematodes were found at the sites we visited, nematodes are unlikely to be the sole cause of plant mortality. Several fungi that attack stressed plants were also found, but none of these fungi are typically a primary cause of plant death. Our best guess at this point is that the problem is caused by a combination of factors, including environmental stress (e.g. earlier periods of drought), age of the plants, nematodes on the roots, and decay fungi. In all cases we have seen so far, the symptoms are affecting only large plants of the species *R. maximum* in forest or forest-edge settings. We believe that the plants have grown to a size at which they have maximized their use of water and nutrient resources in the soil. When stressful conditions, such as drought, occur, the plants are less likely to recover and they become more susceptible to weak pathogens that would not otherwise cause a problem.



We continue to receive many rose samples with **Rose Rosette Disease**, which is caused by a virus that is spread by an eriophyid mite. The virus becomes systemic in the plant and, thus, infected plants, including root pieces in the soil, should be removed completely to prevent spread.



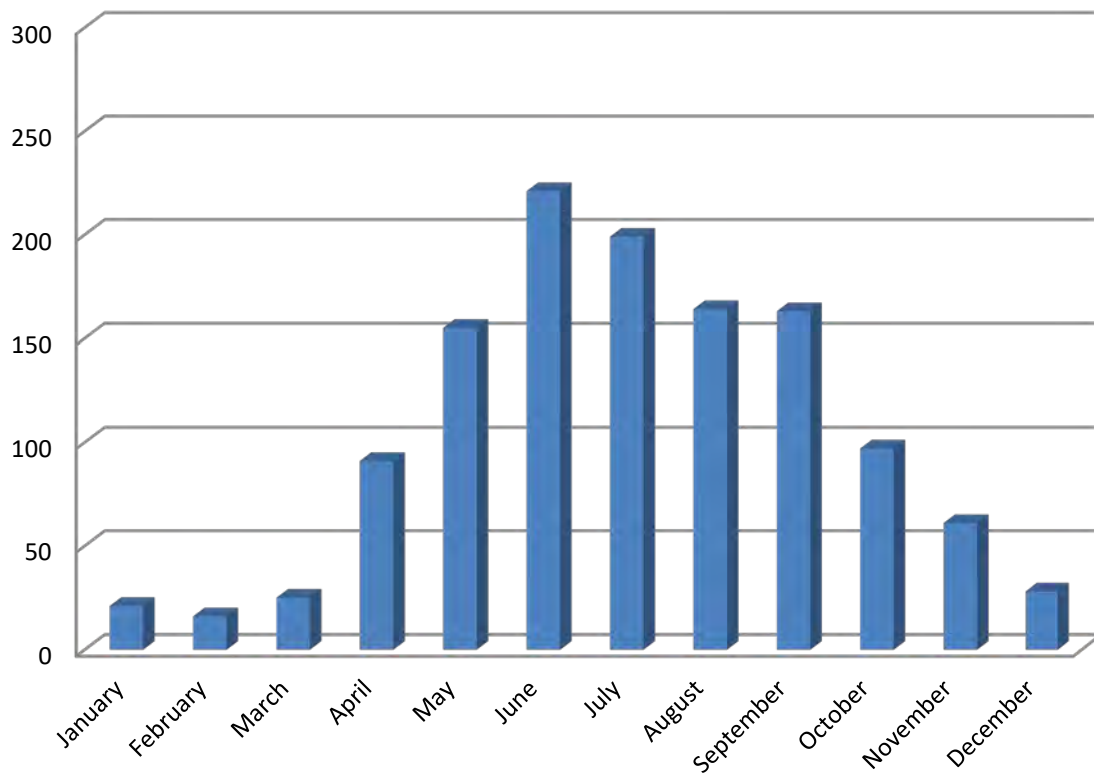
Another virus, **Tomato Spotted Wilt Virus**, which is spread by certain species of thrips, was common in tomato samples in 2015. Plants are often infected when thrips are present in the greenhouse, so care should be taken to avoid transplanting any symptomatic plants. This disease was also diagnosed in one pepper sample.

Monthly Submission Summary

Number of samples received by month

Month	# Samples
January	21
February	16
March	25
April	91
May	155
June	221
July	199
August	164
September	163
October	97
November	61
December	28
Total for 2015	1,241

Number of Samples by Month, 2015

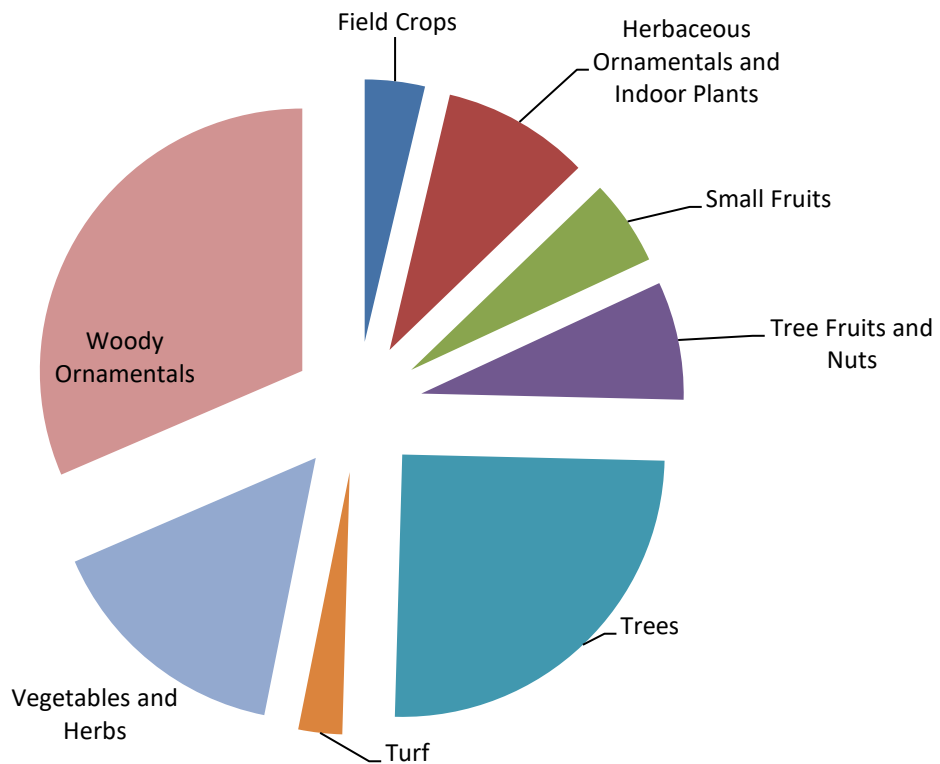


Samples by Crop Category

Sample totals by major crop categories, excluding plant identifications

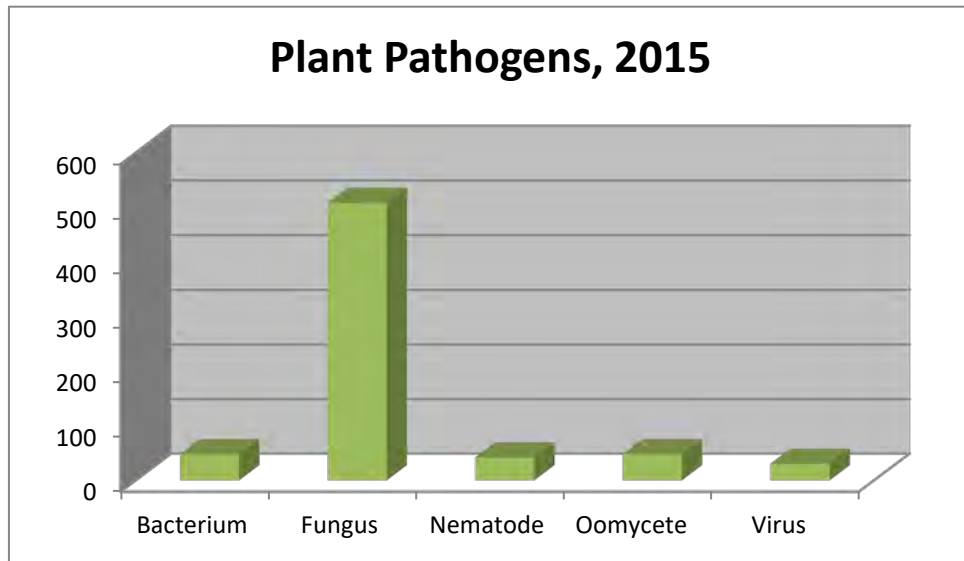
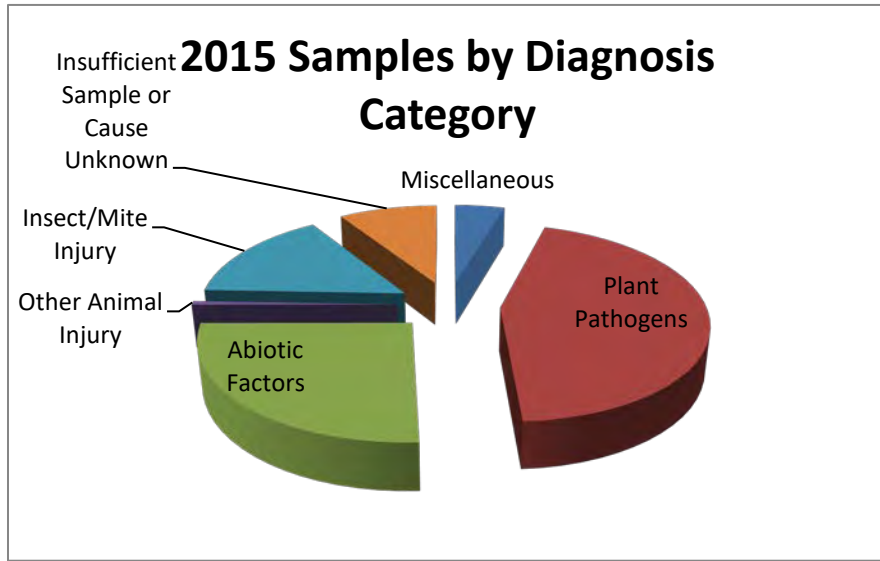
Crop Category	# of Samples	% of Total
Field Crops	45	3.7
Herbaceous Ornamentals and Indoor Plants	110	9.1
Small Fruits	64	5.3
Tree Fruits and Nuts	88	7.3
Trees	304	25.1
Turf	33	2.7
Vegetables and Herbs	186	15.4
Woody Ornamentals	381	31.5
Total	1,211	

Samples by Crop Category, 2015

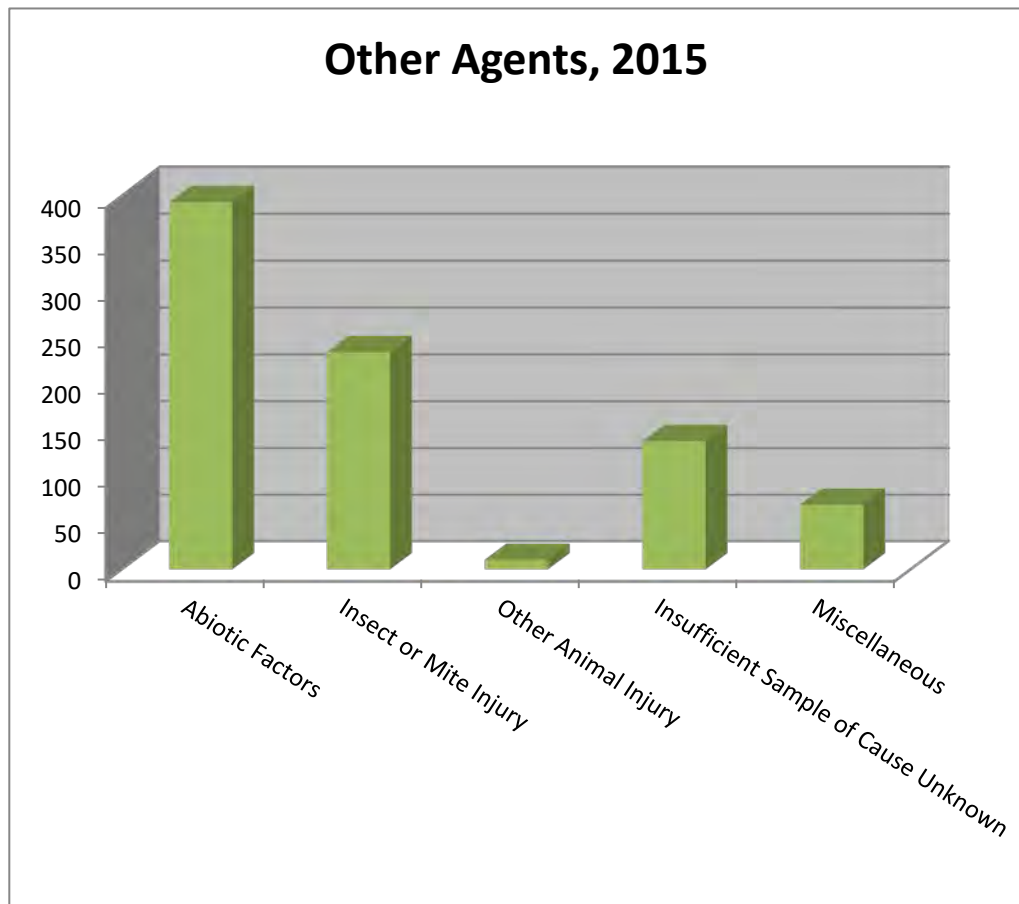


Diagnosis/ID Category Summary

	# of Diagnoses/IDs	% of Total
Plant Pathogens	676	43.60%
Bacterium	48	
Fungus	508	
Nematode	42	
Oomycete	48	
Virus	30	
Abiotic Factors	393	25.30%
Chemical	51	
Environmental/Cultural	339	
Mechanical	3	
Insect or Mite Injury	233	15.00%
Insects or Mites	233	
Other Animal Injury	10	0.60%
Birds	3	
Mammals	7	
Insufficient Sample or Cause Unknown	138	8.90%
Insufficient sample or information	131	
Unknown	7	
Miscellaneous	70	4.50%
Invertebrate	1	
Lichen	6	
Normal Condition	14	
Other	32	
Physiological/Genetic	14	
Phytoplasma	2	
Viroid	1	
Weed Encroachment	1	0.10%
Weed	1	
Identifications	30	1.90%
Fungi	5	
Plant	24	
Other	1	
Total	1551	
Other Assistance, 2015		
Type	# of Inquires	
Digital Submissions (Email, Digital Pictures)	210	
Phone Calls	75	



Other Agents, 2015



Geographic Distribution of Samples Received in 2015

County	# of Samples	County	# of Samples
Out of State	2	LEE	9
ACCOMACK,	6	LOUDOUN	22
ALBEMARLE	63	LOUISA	8
ALEXANDRIA CITY	11	LUNENBURG	3
ALLEGHANY	3	LYNCHBURG CITY	21
AMELIA	2	MADISON	4
AMHERST	2	MATHEWS	4
APPOMATTOX	5	MECKLENBURG	3
ARLINGTON	16	MIDDLESEX	2
AUGUSTA	21	MONTGOMERY	96
BATH	1	NELSON	59
BEDFORD	21	NEW KENT	17
BLAND	1	NEWPORT NEWS CITY	28
BOTETOURT	21	NORFOLK CITY	4
BRUNSWICK	2	NORTHAMPTON	2
BUCKINGHAM	2	NORTHUMBERLAND	42
CAMPBELL	3	NOTTOWAY	3
CAROLINE	2	ORANGE	1
CARROLL	9	PAGE	2
CHARLES CITY	1	PATRICK	6
CHESAPEAKE CITY	33	PITTSYLVANIA	24
CHESTERFIELD	1	PORTSMOUTH CITY	25
CRAIG	3	POWHATAN	18
CULPEPER	8	PRINCE EDWARD	4
CUMBERLAND	1	PRINCE WILLIAM	36
DANVILLE CITY	7	PULASKI	26
DICKENSON	1	RAPPAHANNOCK	8
ESSEX	2	RICHMOND	9
FAIRFAX	20	RICHMOND CITY	11
FAUQUIER	12	ROANOKE	26
FLOYD	30	ROCKBRIDGE	7
FLUVANNA	12	ROCKINGHAM	18
FRANKLIN	4	RUSSELL	3
FREDERICK	20	SHENANDOAH	5
GILES	6	SMYTH	3
GLOUCESTER	10	SOUTHAMPTON	5
GOOCHLAND	9	SPOTSYLVANIA	33
GRAYSON	1	STAFFORD	26
GREENE	1	SUFFOLK CITY	11
GREENSVILLE	8	TAZEWELL	10
HALIFAX	7	VIRGINIA BEACH	39
HAMPTON CITY	27	WASHINGTON	7
HANOVER	24	WESTMORELAND	27
HENRICO	9	WISE	8
HENRY	1	WYTHE	2
HIGHLAND	1	YORK	31
ISLE OF WIGHT	8	Total	1,241
JAMES CITY	17		
KING GEORGE	2		
LANCASTER	4		

Diagnosis Appendix

Information about diseases/ pests diagnosed by the laboratory

Field Crops	
Alfalfa	
1 Low pH	
1 Nematodes	
1 Suspect Leptosphaerulina Leaf Spot	<i>Leptosphaerulina briosiana</i>
3 Total for Alfalfa	
Barley	
1 Suspect Abiotic Problem	
1 Total for Barley	
Corn	
1 Diplodia Ear Rot	<i>Stenocarpella maydis</i>
1 Low pH	
1 Negative for Disease	
1 Northern Corn Leaf Blight	<i>Setosphaeria turcica</i>
1 Nutrient Deficiency	
1 Suspect Chemical Injury	
1 Thrips	
7 Total for Corn	
Cotton	
1 No Pathogens Found	
1 Total for Cotton	
Fescue	
1 Chinch Bugs	
1 Helminthosporium Leaf Spot	<i>Bipolaris sorokiniana</i>
1 Insufficient Sample	
2 Rust	<i>Puccinia sp.</i>
1 Suspect Brown Patch	<i>Rhizoctonia solani</i>
1 Suspect Cultural Problem	
7 Total for Fescue	
Foxtail Millet	
1 Helminthosporium Leaf Spot	<i>Helminthosporium sp.</i>
1 Total for Foxtail Millet	

Hops

- 2 Abiotic Problem
- 1 Apple Mosaic Virus
- 2 Downy Mildew *Pseudoperonospora humuli*
- 1 Insects
- 1 Insufficient Sample
- 1 Mites
- 3 No Pathogens Found

11 Total for Hops

Orchardgrass

- 1 Anthracnose *Colletotrichum graminicola*
- 3 Leaf Streak *Cercosporidium graminis*
- 1 Stripe Smut *Ustilago striiformis*

5 Total for Orchardgrass

Pasture

- 1 Slime Mold

1 Total for Pasture

Small Grain

- 1 Insects
- 1 Referred to ViTALS, Toxicology
- 1 Storage Mold *Aspergillus sp.*

3 Total for Small Grain

Sorghum

- 1 Flea Beetles
- 1 Sun Scald

2 Total for Sorghum

Soybean

- 1 Abiotic Problem
- 1 Charcoal Rot *Macrophomina phaseolina*
- 1 Dagger Nematodes *Xiphinema sp.*
- 1 Environmental Stress
- 1 Essex Syndrome *Fusarium oxysporum*
- 1 Healthy
- 1 Nutrient Deficiency
- 1 Suspect Abiotic Problem
- 1 Suspect Chemical Injury

9 Total for Soybean

Sudangrass

1 Billbugs

1 Total for Sudangrass

Herbaceous Ornamentals and Indoor Plants

Acorus

- 1 Pythium Root Rot *Pythium sp.*
- 1 Rhizoctonia Root Rot *Rhizoctonia solani*

2 Total for Acorus

African Violet

- 1 Suspect Environmental Stress

1 Total for African Violet

Agastache

- 1 Bacterial Leaf Spot *Xanthomonas campestris*
- 1 Cucumber Mosaic Virus

2 Total for Agastache

Aster

- 1 Suspect Environmental Stress

1 Total for Aster

Bee Balm

- 1 Negative for Foliar Disease
- 1 Pythium Root Rot *Pythium sp.*

2 Total for Bee Balm

Begonia

- 1 Environmental Stress
- 1 Negative for Impatiens Necrotic Spot Virus
- 1 Suspect Nutrient Imbalance
- 1 Suspect Vole Injury

4 Total for Begonia

Bleeding Heart

- 1 Bacterial Blight *Xanthomonas campestris pv. phaseoli*

1 Total for Bleeding Heart

Bluestar

- 1 Mites

1 Total for Bluestar

Browallia

- 1 Suspect Chemical Injury

1 Total for Browallia

Brugmansia

1 Tobacco Mosaic Virus *Tobacco Mosaic Virus*

1 Total for Brugmansia

Calendula

1 Suspect Chemical Injury

1 Total for Calendula

Calibrachoa

1 Black Root Rot *Thielaviopsis basicola*

1 Thrips

2 Total for Calibrachoa

Canna Lily

1 Canna Yellow Mottle Virus

1 Total for Canna Lily

Celosia

1 Suspect Chemical Injury

1 Total for Celosia

Coneflower

1 Coneflower Rosette Mites

1 Insufficient Sample

1 Negative for Disease

2 Negative for Root Disease

1 Suspect Coneflower Rosette Mite

6 Total for Coneflower

Coreopsis

- 1 Bacterial Leaf Blight *Pseudomonas cichorii*
- 1 Thrips

2 Total for Coreopsis

Dahlia

- 1 Insects
- 1 Mites
- 1 Suspect Virus

3 Total for Dahlia

Datura

- 1 Alternaria Leaf Blight *Alternaria sp.*

1 Total for Datura

Dianthus

- 1 Bacterial Flower Rot *Pseudomonas syringae pv. syringae*
- 2 Bacterial Leaf Spot *Burkholderia andropogonis*
- 1 Fusarium Stem Rot *Fusarium sp.*
- 2 Healthy
- 1 Slime Mold
- 2 Suspect Bacterial Leaf Spot *Burkholderia andropogonis*

9 Total for Dianthus

False Indigo

- 1 Mites
- 1 Physiological Leaf Spot
- 1 Suspect Environmental Stress

3 Total for False Indigo

Foamybells

- 2 Bacterial Blight *Pseudomonas syringae*
- 2 Botrytis Blight *Botrytis cinerea*

4 Total for Foamybells

Foxglove

- 1 Black Root Rot *Thielaviopsis basicola*

1 Total for Foxglove

Gardenia

- 1 Sooty Mold

1 Total for Gardenia

Gelsemiun

1 No Pathogens Found

1 Total for Gelsemiun

Heliopsis

1 Insufficient Sample

1 Total for Heliopsis

Hellebore

1 Mites

1 Suspect Environmental Stress

2 Total for Hellebore

Hollyhock

2 Rust

Puccinia malvacearum

2 Total for Hollyhock

Hosta

1 Hosta Virus X

1 Southern Blight

Sclerotium rolfsii

2 Total for Hosta

Iris

1 Bacterial Soft Rot

Erwinia sp.

1 Insects

2 Total for Iris

Jade

1 Powdery Mildew

Oidium sp.

1 Total for Jade

Japanese Forest Grass

1 Pythium Root Rot

Pythium sp.

1 Soluble Salts High

2 Total for Japanese Forest Grass

Larkspur

1 Negative for Virus

1 Southern Blight

Sclerotium rolfsii

1 Suspect Cold Injury

3 Total for Larkspur

Lavender

- 2 Abiotic Problem
- 1 Cultural Problem
- 1 Fusarium Root and Stem Rot *Fusarium sp.*
- 1 Healthy
- 1 Insects
- 1 Negative for Disease
- 1 Negative for Root Disease
- 2 Phytophthora Root Rot *Phytophthora sp.*
- 1 Web Blight *Rhizoctonia solani*

11 Total for Lavender**Lily**

- 1 Cucumber Mosaic Virus
- 1 Suspect Chemical Injury

2 Total for Lily**Liriope**

- 1 Anthracnose *Colletotrichum sp.*
- 1 Negative for Disease
- 2 Scales
- 1 Suspect Cultural Problem

5 Total for Liriope**Madagascar Periwinkle**

- 1 Botrytis Stem Canker *Botrytis cinerea*
- 1 Phytophthora Blight *Phytophthora nicotianae*
- 1 Rhizoctonia Stem and Root Rot *Rhizoctonia solani*
- 1 Rhizoctonia Stem Rot *Rhizoctonia solani*

4 Total for Madagascar Periwinkle**Mandevilla**

- 1 Suspect Chemical Injury

1 Total for Mandevilla**Marigold**

- 1 Suspect Alternaria Blight *Alternaria zinnae*

1 Total for Marigold**Mint**

- 1 Abiotic Problem
- 1 Environmental Stress

2 Total for Mint

Orchid

- 1 Cymbidium Mosaic Virus
- 1 Negative for Virus
- 1 No Pathogens Found

3 Total for Orchid

Ornamental Grass

- 1 Pythium Root and Crown Rot *Pythium sp.*

1 Total for Ornamental Grass

Ornamental Kale

- 1 Black Rot *Xanthomonas campestris pv. campestris*

1 Total for Ornamental Kale

Pachysandra

- 1 Negative for Boxwood Blight
- 1 Volutella Blight *Volutella pachysandrae*

2 Total for Pachysandra

Pansy

- 3 Black Root Rot *Thielaviopsis basicola*
- 1 Insects
- 2 Phytophthora Crown Rot *Phytophthora nicotianae*
- 1 Suspect Phytophthora Crown Rot *Phytophthora nicotianae*

7 Total for Pansy

Penstemon

- 1 Environmental Stress

1 Total for Penstemon

Peony

- 1 Bacterial Leaf Spot *Xanthomonas hortorum*
- 1 Negative for Disease
- 1 No Disease Found
- 1 No Pathogens Found

4 Total for Peony

Petunia

- 1 Phytophthora Root Rot *Phytophthora nicotianae*

1 Total for Petunia

Phlox

- 1 Black Root Rot *Thielaviopsis basicola*
- 1 Cercospora Leaf Spot *Cercospora sp.*
- 1 Stemphylium Leaf Spot *Stemphylium sp.*
- 1 Web Blight *Rhizoctonia solani*

4 Total for Phlox

Rubber Plant

- 1 Physiological Leaf Spot

1 Total for Rubber Plant

Rudbeckia

- 1 Borers
- 1 Downy Mildew *Plasmopara halstedii*
- 1 Suspect Chemical Injury

3 Total for Rudbeckia

Russian Sage

- 1 Four-lined Plant Bugs

1 Total for Russian Sage

Sedge

- 1 Environmental Stress
- 1 Suspect Cultural Problem

2 Total for Sedge

Sedum

- 1 Pleospora Leaf Spot *Pleospora sp.*

1 Total for Sedum

Sunflower

- 1 Abiotic Problem
- 1 Cultural Problem

2 Total for Sunflower

Veronica

- 1 Environmental Stress

1 Total for Veronica

Violet

- 1 Black Root Rot *Thielaviopsis basicola*

1 Total for Violet

Water Lily

1 Pseudocercospora Leaf Spot *Pseudocercospora sp.*

1 Total for Water Lily

Zinnia

1 Insects

1 Total for Zinnia

Small Fruits

Blackberry

1 Anthracnose	<i>Elsinoe veneta</i>
5 Cane Blight	<i>Coniothyrium fuckellii</i>
1 Cercospora Leaf Spot	<i>Cercospora rubi</i>
2 Dagger Nematode	<i>Xiphinema sp.</i>
1 Insects	
1 Insufficient Sample	
1 Mites	
1 No Disease Found	
1 No Pathogens Found	
1 Poor Pollination	
2 Spur Blight	<i>Didymella applanata</i>
1 Suspect Chemical Injury	

18 Total for Blackberry

Blueberry

1 Abiotic Problem	
1 Botryosphaeria Stem Blight	<i>Botryosphaeria dothidea</i>
1 Botrytis Fruit Rot	<i>Botrytis cinerea</i>
1 Dagger Nematodes	<i>Xiphinema sp.</i>
1 High pH	
1 High Soluble Salts	
2 Insects	
4 Insufficient Sample	
4 Low pH	
1 Negative for Disease	
1 Negative for Nematodes	
1 Negative for Root Disease	
1 No Pathogens Found	
3 Phytophthora Root Rot	<i>Phytophthora cinnamomi</i>
1 Sooty Mold	
1 Suspect Environmental Stress	
1 Webworms	
1 No Diagnosis or Sample Quality Entered	

27 Total for Blueberry

Fig

1 Botryosphaeria Dieback	<i>Botryosphaeria sp.</i>
1 Insects	
1 Negative for Root Disease	
1 Scales	

4 Total for Fig

Grape

2 Bitter Rot	<i>Greeneria uvicola</i>
1 Black Rot	<i>Guignardia bidwellii</i>
2 Chemical Injury	
1 Downy Mildew	<i>Plasmopara viticola</i>
3 Negative for Pierce's Disease	
1 No Pathogens Found	
2 Normal Condition	
1 Phomopsis Cane and Leaf Blight	<i>Phomopsis viticola</i>
1 Pierce's Disease	<i>Xylella fastidiosa</i>
3 Suspect Cold Injury	
1 Suspect Crown Gall	<i>Agrobacterium vitis</i>
1 Suspect Nutrient Imbalance	

19 Total for Grape**Raspberry**

1 Cane Blight	<i>Coniothyrium fuckellii</i>
1 Downy Mildew	<i>Peronospora sparsa</i>
1 Girdling Roots	
1 Orange Rust	<i>Arthuriomyces peckianus</i>
1 Powdery Mildew	<i>Sphaerotheca macularis</i>
1 Suspect Poor Pollination	

6 Total for Raspberry**Strawberry**

1 Abiotic Problem	
1 Anthracnose Crown Rot	<i>Colletotrichum gloeosporioides</i>
1 Cause of Problem Unknown	
1 Gray Mold	<i>Botrytis cinerea</i>
1 High Soluble Salts	
1 Insufficient Sample	
1 Mites	
1 No Pathogens Found	
2 Phomopsis Leaf Blight	<i>Phomopsis obscurans</i>
1 Phytophthora Crown and Root Rot	<i>Phytophthora cactorum</i>
1 Powdery Mildew	<i>Sphaerotheca macularis</i>
1 Suspect Abiotic Problem	
1 Suspect Cultural Problem	

14 Total for Strawberry

Tree Fruits and Nuts

Apple

1 Aphids	
1 Apple Bark Borer	<i>Synanthedon pyri</i>
1 Bitter Rot	<i>Glomerella cingulata</i>
2 Black Rot	<i>Botryosphaeria obtusa</i>
2 Borers	
1 Botryosphaeria Canker	<i>Botryosphaeria sp.</i>
6 Cedar-Apple Rust	<i>Gymnosporangium juniperi-virginianae</i>
1 Cold Injury	
3 Fire Blight	<i>Erwinia amylovora</i>
1 Frogeye Leaf Spot	<i>Physalospora obtusa</i>
1 Frost Cracking	
2 Insects	
3 Insufficient Sample	
1 Japanese Apple Rust	<i>Gymnosporangium yamadae</i>
1 Normal Condition	
1 Phytophthora Crown and Root Rot	<i>Phytophthora sp.</i>
1 Stinkbugs	
1 Suspect Abiotic Problem	
1 Suspect Black Rot	<i>Physalospora obtusa</i>
1 Suspect Fire Blight	<i>Erwinia amylovora</i>
1 Suspect Powdery Mildew	<i>Podosphaera leucotricha</i>
3 Woolly Apple Aphids	

36 Total for Apple

Asian Pear

- 1 Chemical Injury
- 1 Insects

2 Total for Asian Pear

Cherry

3 Cercospora Leaf Spot	<i>Cercospora circumscissa</i>
1 Chemical Injury	
1 Cicada Injury	
1 Insects	
5 Insufficient Sample	
1 Negative for Disease	
1 Negative for Root Disease	
1 Stinkbugs	
1 Suspect Cherry Leaf Spot	<i>Blumeriella jaapii</i>
1 Suspect Cold Injury	

16 Total for Cherry

Chestnut

1 Suspect Chemical Injury

1 Total for Chestnut**Crabapple**

1 Fire Blight

Erwinia amylovora

1 Scab

*Venturia inaequalis***2 Total for Crabapple****Nectarine**

1 Curculios

1 Total for Nectarine**Peach**

1 Brown Rot

Monilinia fructicola

1 Cold Injury

1 Curculios

4 Insufficient Sample

1 Negative for Phytoplasma

5 Peach Leaf Curl

Taphrina deformans

2 Physiological Leaf Spot

1 Suspect Cold Injury

1 Suspect Rusty Spot

*Podosphaera leucotricha***17 Total for Peach****Pear**

1 Abiotic Problem

1 Black Rot

Botryosphaeria obtusa

1 Entomosporium Leaf Spot

Entomosporium mespili

1 Mites

1 Mycosphaerella Leaf Spot

Mycosphaerella sp.

1 No Pathogens Found

1 Suspect Chemical Injury

1 Suspect Fire Blight

Erwinia amylovora

1 Thread Blight

*Ceratobasidium ochroleucum***9 Total for Pear**

Pecan

- 1 Abiotic Problem
- 1 Anthracnose *Colletotrichum gloeosporioides*
- 1 Black Nut Syndrome *Botryosphaeria sp.*
- 1 Eriophyid Mites
- 1 Insects
- 2 Poor Pollination
- 2 Scab *Cladosporium caryigenum*
- 1 Stinkbugs

10 Total for Pecan

Persimmon

- 1 Insufficient Sample
- 1 Sooty Blotch and Flyspeck
- 1 Suspect Cultural Problem
- 1 Suspect Persimmon Wilt *Nalanthamala diospyri*

4 Total for Persimmon

Plum

- 1 Black Knot *Dibotryon morbosum*
- 1 Curculios
- 1 Insects
- 2 Lichens

5 Total for Plum

Poplar

- 1 Negative for Disease

1 Total for Poplar

Trees

Alaska Cedar

1 Insufficient Sample

1 Total for Alaska Cedar

Arborvitae

1 Abiotic Problem

1 Chemical Residue

2 Cultural Problem

1 Environmental Stress

2 Insufficient Sample

9 Mites

1 Negative for Foliar Disease

2 Negative for Root Disease

3 No Pathogens Found

1 Pestalotiopsis Needle Blight

Pestalotiopsis sp.

2 Pestalotiopsis Twig Blight

Pestalotiopsis funerea

1 Phomopsis Tip Blight

Phomopsis sp.

2 Scales

28 Total for Arborvitae

Ash

1 Insects

1 Sooty Mold

2 Total for Ash

Beech

4 Anthracnose

Discula sp.

1 Scorch

5 Total for Beech

Birch

1 Cultural Problem

2 Insufficient Sample

3 Total for Birch

Black Locust

1 Insects

1 Total for Black Locust

Buckeye

1 Guignardia Blotch

Guignardia aesculi

1 Total for Buckeye

Cedar

1 Insufficient Sample

1 Total for Cedar

Cherry

2 Scales

1 Scorch

3 Total for Cherry

Chestnut

1 Cicada Injury

1 Cytospora Canker

Cytospora sp.

1 Environmental Stress

3 Total for Chestnut

Cryptomeria

1 Abiotic Problem

1 Environmental Stress

1 Insects

1 Negative for Disease

1 Negative for Foliar Disease

1 Negative for Root Disease

1 No Pathogens Found

1 Pestalotiopsis Tip Blight

Pestalotiopsis sp.

8 Total for Cryptomeria

Cypress

2 Abiotic Problem	
2 Bagworms	
1 Bark Beetles	
2 Cultural Problem	
1 Diplodia Tip Blight	<i>Sphaeropsis sapinea</i>
1 Insects	
3 Insufficient Sample	
1 Negative for Disease	
1 Negative for Root Disease	
1 Pestalotiopsis Tip Blight	<i>Pestalotiopsis sp.</i>
1 Sapsucker Injury	
4 Seiridium Canker	<i>Seiridium sp.</i>
6 Seiridium Canker	<i>Seiridium unicorne</i>
1 Suspect Cold Injury	
1 Suspect Root Problem	
21 Suspect Seiridium Canker	<i>Seiridium sp.</i>
1 Winter Injury	

50 Total for Cypress

Dawn Redwood

1 Pestalotiopsis Needle Blight	<i>Pestalotiopsis sp.</i>
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1 Total for Dawn Redwood

Dogwood

1 Abiotic Problem	
2 Discula Anthracnose	<i>Discula destructiva</i>
4 Insufficient Sample	
1 Negative for Root Disease	
1 Normal Condition	
9 Powdery Mildew	<i>Oidium sp.</i>
2 Spot Anthracnose	<i>Elsinoe corni</i>
1 Suspect Chemical Injury	
1 Suspect Vole Injury	
1 Thread Blight	<i>Ceratobasidium ochroleucum</i>

23 Total for Dogwood

Douglasfir

1 Insufficient Sample	
1 Negative for Disease	
5 Swiss Needle Cast	<i>Phaeocryptopus gaeumannii</i>

7 Total for Douglasfir

Eastern Red Cedar

- 1 Abiotic Problem
- 1 Mechanical Injury

2 Total for Eastern Red Cedar

Eleagnus

- 1 Abiotic Problem

1 Total for Eleagnus

Elm

- 3 Anthracnose *Gloeosporium ulmicola*
- 4 Black Spot *Gloeosporium ulmeum*
- 3 Botryosphaeria Dieback *Botryosphaeria sp.*
- 2 Lacebugs
- 3 Negative for Dutch Elm Disease
- 1 Negative for Phytoplasma
- 1 Sooty Mold

17 Total for Elm

Falsecypress

- 1 Mites
- 1 Normal Interior Needle Browning
- 1 Suspect Cultural Problem

3 Total for Falsecypress

Fir

- 1 Abiotic Problem
- 1 Environmental Stress
- 1 Negative for Disease
- 1 Phytophthora Root Rot *Phytophthora cinnamomi*
- 1 Rhizosphaera Needle Cast *Rhizosphaera sp.*
- 1 Suspect Environmental Stress
- 1 No Diagnosis or Sample Quality Entered

7 Total for Fir

Fringe Tree

- 1 Phyllosticta Leaf Spot *Phyllosticta chionanthe*

1 Total for Fringe Tree

Giant Sequoia

- 1 No Pathogens Found
- 1 Suspect Environmental Stress

2 Total for Giant Sequoia

Goldenchain Tree

- 1 Deep Planting
- 1 Environmental Stress
- 1 Scales

3 Total for Goldenchain Tree

Hawthorn

- 1 Cedar-Quince Rust *Gymnosporangium clavipes*

1 Total for Hawthorn

Hemlock

- 1 Insufficient Sample
- 1 Mites

2 Total for Hemlock

Hornbeam

- 1 Insects
- 1 Thread Blight *Ceratobasidium ochroleucum*

2 Total for Hornbeam

Magnolia

- 2 Environmental Stress
- 1 Negative for Root Disease
- 1 Suspect Cultural Problem
- 1 Weevils
- 1 Winter Injury

6 Total for Magnolia

Maple

2 Abiotic Problem	
4 Anthracnose	<i>Kabatella apocrypta</i>
2 Botryosphaeria Dieback	<i>Botryosphaeria sp.</i>
1 Deep Planting	
2 Insect Galls	
2 Insects	
7 Insufficient Sample	
1 Leaf Galls	
1 Leafhoppers	
1 Mites	
1 Negative for Bacterial Scorch	
1 Negative for Disease	
2 No Pathogens Found	
1 Phomopsis Dieback	<i>Phomopsis sp.</i>
9 Purple-eye Leaf Spot	<i>Phyllosticta minima</i>
3 Scales	
2 Sooty Mold	
1 Steganosporium	<i>Steganosporium sp.</i>
1 Suspect Purple-eye Leaf Spot	<i>Phyllosticta minima</i>
1 Winter Injury	
1 Wood Decay	

46 Total for Maple

Oak

2 Abiotic Problem	
2 Anthracnose	<i>Discula sp.</i>
1 Anthracnose	<i>Gloeosporium sp.</i>
7 Bacterial Scorch	<i>Xylella fastidiosa</i>
1 Chemical Injury	
1 Coryneum Twig Blight	<i>Coryneum sp.</i>
1 Gall Insects	
1 Inonotus Root and Butt Rot	<i>Inonotus dryadeus</i>
3 Insects	
2 Insufficient Sample	
1 Lichens	
1 Lightning Injury	
1 Mites	
3 Monochaetia Leaf Blotch	<i>Monochaetia monochaeta</i>
1 Negative for Bacterial Scorch	
2 No Pathogens Found	
7 Oak Leaf Blister	<i>Taphrina caerulescens</i>
3 Oak Leaf Button Galls	
1 Phyllosticta Leaf Spot	<i>Phyllosticta sp.</i>
2 Scales	
2 Spot Anthracnose	<i>Elsinoe quercus falcatae</i>
1 Suspect Cultural Problem	
1 Suspect Squirrel Damage	
1 Suspect Wood Decay	
3 Tubakia Leaf Spot	<i>Tubakia dryina</i>
1 Turkey Tail Fungus	<i>Trametes versicolor</i>
2 Wood Decay	
1 Wood Decay - Turkey Tails	<i>Trametes versicolor</i>

55 Total for Oak

Ornamental Cherry

1 Abiotic Problem	
1 Botryosphaeria Canker	<i>Botryosphaeria sp.</i>
2 Cercospora Leaf Spot	<i>Pseudocercospora (Cercospora) circumscissa</i>
1 Cherry Leaf Spot	<i>Blumeriella jaapii</i>
1 Cicada Injury	
2 Insufficient Sample	
1 Nectria Canker	<i>Nectria sp.</i>
1 Negative for Root Disease	

10 Total for Ornamental Cherry**Ornamental Pear**

3 Insufficient Sample	
1 Pear Leaf Blister Mites	
1 Pear Trellis Rust	<i>Gymnosporangium sabiniae</i>

5 Total for Ornamental Pear**Ornamental Plum**

1 Insufficient Sample

1 Total for Ornamental Plum**Pine**

1 Cyclaneusma Needle Cast	<i>Cyclaneusma minor</i>
1 Diplodia Tip Blight	<i>Diplodia pinea</i>
1 Dothistroma Needle Blight	<i>Dothistroma pini</i>
2 Insects	
6 Insufficient Sample	
1 Negative for Disease	
1 No Pathogens Found	
1 Ploioderma Needle Cast	<i>Ploioderma lethale</i>
1 Scales	
1 Suspect Blue Stain Fungus	
2 Suspect Cultural Problem	
1 Suspect Environmental Stress	
1 Suspect Procerum Root Disease	<i>Leptographium procerum</i>

20 Total for Pine**Plum**

1 Mites

1 Total for Plum

Poplar

1 Botryosphaeria Canker *Botryosphaeria dothidea*

1 Total for Poplar

Prunus

1 Insects

1 Scales

2 Total for Prunus

Redbud

1 Anthracnose *Kabatiella sp.*

1 Normal Condition

2 Total for Redbud

Serviceberry

1 Powdery Mildew *Oidium sp.*

1 Total for Serviceberry

Spruce

- 1 Abiotic Problem
- 1 Insufficient Sample
- 1 Mites
- 1 No Pathogens Found
- 1 Phytophthora Root Rot *Phytophthora nicotianae*
- 8 Rhizosphaera Needle Cast *Rhizosphaera kalkhoffii*
- 3 Stigmata Needle Cast *Stigmata lautii*
- 1 Suspect Winter Injury

17 Total for Spruce

Swamp Bay

- 1 Botryosphaeria Dieback *Botryosphaeria sp.*
- 1 Negative for Laurel Wilt
- 1 Sooty Mold

3 Total for Swamp Bay

Sweet Gum

- 1 Normal Condition

1 Total for Sweet Gum

Thorny Olive

- 1 Abiotic Problem

1 Total for Thorny Olive

Tree, Unknown

- 1 Insufficient Sample
- 1 Lichens

2 Total for Tree, Unknown

Trees, Miscellaneous

- 1 Suspect Chemical Injury

1 Total for Trees, Miscellaneous

Tulip Tree

- 1 Abiotic Problem
- 1 Suspect Fusarium Canker *Fusarium sp.*

2 Total for Tulip Tree

Willow

- 1 Adventitious Roots
- 1 Cytospora Canker *Cytospora sp.*
- 1 Cytospora Dieback *Cytospora sp.*
- 1 Insects
- 1 Scab *Venturia saliciperda*
- 1 Suspect Cercospora Leaf Spot *Cercospora sp.*
- 1 Suspect Wood Decay

7 Total for Willow

Yellowwood

- 1 Negative for Bacterial Scorch

1 Total for Yellowwood

Turf

Bentgrass

- 1 Environmental Stress
- 1 Insufficient Sample
- 1 Lance Nematodes *Hoplolaimus sp.*
- 1 Low pH
- 1 Negative for Nematodes

5 Total for Bentgrass

Bermudagrass

- 1 Suspect Fairy Ring

1 Total for Bermudagrass

Bluegrass

- 1 Abiotic Problem

1 Total for Bluegrass

Fescue

- 4 Brown Patch *Rhizoctonia solani*
- 1 Environmental Stress
- 2 No Pathogens Found
- 2 Suspect Environmental Stress

9 Total for Fescue

St. Augustinegrass

- 1 Chinch Bugs
- 8 Take-All *Gaeumannomyces graminis var. gramin.*

9 Total for St. Augustinegrass

Turfgrass

- 2 Brown Patch *Rhizoctonia solani*
- 1 Environmental Stress
- 1 Insufficient Sample
- 2 Red Thread *Laetisaria fuciformis*
- 1 Suspect Environmental Stress
- 1 Suspect Fairy Ring
- 1 Weed Encroachment

9 Total for Turfgrass

Zoysia

1 Large Patch

Rhizoctonia solani

1 Rust

Puccinia zoysiae

1 Weed Encroachment

3 Total for Zoysia

Vegetables and Herbs

Arugula

1 Insufficient Sample

1 Total for Arugula

Asparagus

1 Cercospora Branchlet and Leaf Spot *Cercospora asparagi*

1 Environmental Stress

1 Fusarium Crown and Root Rot *Fusarium oxysporum*

1 Suspect Nutrient Deficiency

4 Total for Asparagus

Basil

1 Abiotic Problem

1 Downy Mildew *Peronospora belbahrii*

1 No Pathogens Found

1 Thrips

1 Unable to Diagnose

5 Total for Basil

Bean

1 Alternaria Leaf and Pod Spot *Alternaria alternata*

1 Anthracnose *Colletotrichum lindemuthianum*

1 Cause of Problem Unknown

1 Insects

4 Insufficient Sample

1 Mites

1 Rhizoctonia Stem and Root Rot *Rhizoctonia solani*

10 Total for Bean

Broccoli

1 High Soluble Salts

1 Low pH

2 Total for Broccoli

Cabbage

1 Insects

1 Pythium Root Rot *Pythium sp.*

1 Wirestem *Rhizoctonia solani*

3 Total for Cabbage

Cantaloupe

- 1 Alternaria Leaf Blight *Alternaria cucumerina*
- 1 Chemical Injury
- 1 Insufficient Sample

3 Total for Cantaloupe

Cauliflower

- 1 Abiotic Problem

1 Total for Cauliflower

Celery

- 1 Suspect Chemical Injury

1 Total for Celery

Collards

- 1 Black Rot *Xanthomonas campestris*
- 1 Environmental Stress

2 Total for Collards

Cowpea

- 1 Chemical Injury
- 1 Nutrient Deficiency

2 Total for Cowpea

Cucumber

- 1 Alternaria Leaf Blight *Alternaria cucumerina*
- 2 Anthracnose *Colletotrichum lagenarium*
- 1 Insufficient Sample
- 1 Mites
- 1 Whiteflies

6 Total for Cucumber

Eggplant

- 1 Cultural Problem
- 1 Suspect Cultural Problem

2 Total for Eggplant

Herbs, Miscellaneous

- 1 Mites

1 Total for Herbs, Miscellaneous

Kale

- 1 Insects
- 1 Pythium Root Rot *Pythium sp.*

2 Total for Kale

Lettuce

- 1 Gray Mold *Botrytis cinerea*
- 1 Tipburn

2 Total for Lettuce

Lima Bean

- 1 Cercospora Leaf Spot and Blotch *Cercospora sp.*
- 1 Root Knot Nematodes *Meloidogyne sp.*

2 Total for Lima Bean

Malabar spinach

- 1 Alternaria Leaf Spot *Alternaria sp.*
- 1 Cultural Problem

2 Total for Malabar spinach

Okra

- 1 Insufficient Sample

1 Total for Okra

Onion

- 1 Tip Dieback

1 Total for Onion

Pea

- 1 Insufficient Sample
- 1 Suspect Virus

2 Total for Pea

Pepper

1 Abiotic Problem	
5 Bacterial Spot	<i>Xanthomonas campestris pv. vesicatoria</i>
1 Chemical Injury	
1 Cultural Problem	
1 Phytophthora Root and Stem Rot	<i>Phytophthora capsici</i>
1 Southern Blight	<i>Sclerotium rolfsii</i>
1 Sunscald	
1 Suspect Abiotic Problem	
1 Suspect Bacterial Spot	<i>Xanthomonas vesicatoria</i>
1 Suspect Cultural Problem	
1 Tomato Spotted Wilt Virus	

15 Total for Pepper**Potato**

2 Abiotic Problem	
1 Common Scab	<i>Streptomyces scabies</i>
1 Growth Cracks	
2 Insects	
2 Insufficient Sample	
1 Potato Leafhoppers	
1 Second Growth	
1 Suspect Chemical Injury	
1 Suspect Cultural Problem	
1 Wireworms	
1 No Diagnosis or Sample Quality Entered	

14 Total for Potato**Pumpkin**

2 Abiotic Problem	
3 Bacterial Soft Rot	<i>Erwinia carotovora</i>
1 Environmental Stress	
1 Fusarium Crown and Foot Rot	<i>Fusarium solani</i>
1 Insects	
2 Negative for Disease	
1 Squash Bugs	
1 Sunscald	
1 Suspect Cultural Problem	

13 Total for Pumpkin

Rosemary

- 1 High Soluble Salts
- 3 Low pH
- 1 Mites

5 Total for Rosemary

Spearmint

- 1 Ramularia Leaf Spot *Ramularia menthicola*

1 Total for Spearmint

Squash

- 1 Bacterial Wilt *Erwinia tracheiphila*
- 1 Chemical Injury
- 1 Insufficient Sample
- 1 Poor Pollination
- 1 Soft Rot *Erwinia carotovora*
- 1 Suspect Insects
- 1 Suspect Nutrient Imbalance

7 Total for Squash

Sweet Corn

- 1 Chemical Injury

1 Total for Sweet Corn

Sweet Potato

- 1 Root Knot Nematodes *Meloidogyne sp.*
- 1 Scurf *Monilochaetes infuscans*
- 1 Wireworms

3 Total for Sweet Potato

Tomato

7 Abiotic Problem	
3 Bacterial Canker	<i>Clavibacter michiganensis</i>
1 Bacterial Spot	<i>Xanthomonas campestris pv. vesicatoria</i>
1 Bacterial Wilt	<i>Ralstonia solanacearum</i>
1 Black Dot Root Rot	<i>Colletotrichum coccodes</i>
1 Botrytis Blight	<i>Botrytis cinerea</i>
1 Catfacing	
13 Chemical Injury	
1 Cold Injury	
1 Cucumber Mosaic Virus	
1 Dagger Nematode	<i>Xiphinema sp.</i>
1 Environmental Stress	
1 Fusarium Crown and Root Rot	<i>Fusarium oxysporum</i>
3 Fusarium Wilt	<i>Fusarium oxysporum</i>
1 Gray Leaf Spot	<i>Stemphylium sp.</i>
7 Insufficient Sample	
1 Mechanical Injury	
2 Mites	
1 Negative for Tomato Spotted Wilt	
4 No Pathogens Found	
2 Nutrient Deficiency	
1 Physiological Leaf Roll	
2 Physiological Leaf Spot	
1 Physiological Problem	
1 Powdery Mildew	<i>Oidium sp.</i>
1 Pythium Root Rot	<i>Pythium sp.</i>
1 Rhizopus Fruit Rot	<i>Rhizopus stolonifer</i>
2 Root Knot Nematodes	<i>Meloidogyne sp.</i>
10 Septoria Leaf Spot	<i>Septoria lycopersici</i>
1 Southern Blight	<i>Sclerotium rolfsii</i>
1 Stinkbugs	
3 Suspect Chemical Injury	
1 Suspect Cold Injury	
2 Suspect Cultural Problem	
1 Suspect Genetic Abnormality	
1 Suspect Nutrient Deficiency	
1 Tobacco Mosaic Virus	
9 Tomato Spotted Wilt Virus	
1 Zippering	
1 No Diagnosis or Sample Quality Entered	

95 Total for Tomato

Vegetables, Miscellaneous

1 Chemical Residue Injury

1 Total for Vegetables, Miscellaneous

Watermelon

1 Abiotic Problem

1 Total for Watermelon

Zucchini

1 Borers

1 Cucumber Beetles

2 Total for Zucchini

Woody Ornamentals

Abelia

- 1 Anthracnose *Colletotrichum sp.*
- 2 Cutting Rot *Colletotrichum sp.*
- 1 Suspect Cultural Problem

4 Total for Abelia

Aucuba

- 2 Insufficient Sample
- 1 No Pathogens Found

3 Total for Aucuba

Azalea

- 1 Cultural Problem
- 8 Insufficient Sample
- 2 Lacebugs
- 1 Mites
- 1 Negative for Phytophthora Root Rot
- 1 Negative for Root Disease
- 1 Negative for Root Rot
- 1 No Pathogens Found
- 1 Phomopsis Dieback *Phomopsis sp.*
- 2 Suspect Cultural Problem
- 1 Suspect High pH

20 Total for Azalea

Bay Laurel

- 1 Abiotic Problem

1 Total for Bay Laurel

Boxwood

4	Abiotic Problem	
1	Adventitious Roots	
7	Boxwood Blight	<i>Calonectria pseudonaviculata</i>
6	English Boxwood Decline	<i>Paecilomyces buxi</i>
1	Hyponectria Leaf Spot	<i>Hyponectria buxi</i>
7	Insufficient Sample	
17	Leafminers	
1	Lichens	
8	Macrophoma Leaf Spot	<i>Macrophoma candollei</i>
33	Mites	
23	Negative for Boxwood Blight	
5	Negative for Nematodes	
2	Negative for Root Disease	
21	Negative for Root Rot Fungi	
22	Nematodes	
1	No Pathogens Found	
1	Phytophthora Root Rot	<i>Phytophthora cinnamomi</i>
11	Phytophthora Root Rot	<i>Phytophthora nicotianae</i>
4	Possible Nematode Problem	
2	Psyllids	
1	Sooty Mold	
5	Spiral Nematodes	<i>Rotylenchus buxophilus</i>
1	Suspect Abiotic Problem	
1	Suspect Chemical Injury	
1	Suspect Cultural Problem	
1	Suspect Nutrient Deficiency	
55	Volutella Blight	<i>Volutella buxi</i>

242 Total for Boxwood

Burning Bush

1 Scales

1 Total for Burning Bush

Butterfly Bush

1 Rhizoctonia Root Rot *Rhizoctonia solani*

1 Total for Butterfly Bush

Camellia

- 1 Environmental Stress
- 2 Insufficient Sample
- 1 Phytophthora Root Rot *Phytophthora cinnamomi*
- 2 Scales
- 2 Sooty Mold
- 1 Winter Injury

9 Total for Camellia

Chaste Tree

- 1 Negative for Root Disease
- 1 No Pathogens Found

2 Total for Chaste Tree

Cherrylaurel

- 1 Black Vine Weevils
- 1 Borers
- 1 Cytospora Dieback *Cytospora sp.*
- 1 Insects
- 1 Insufficient Sample
- 1 Low pH
- 1 Mycosphaerella Leaf Spot *Mycosphaerella sp.*
- 1 Negative for Disease
- 3 Negative for Root Disease
- 1 No Pathogens Found
- 1 Phytophthora Root Rot *Phytophthora cinnamomi*
- 1 Suspect Chemical Injury
- 1 Suspect Cultural Problem
- 1 Weevils

16 Total for Cherrylaurel

Cotoneaster

- 2 Insects
- 1 Lacebugs
- 1 No Pathogens Found

4 Total for Cotoneaster

Crape Myrtle

- 1 Insects
- 1 Insufficient Sample
- 1 Low pH
- 2 Sooty Mold

5 Total for Crape Myrtle

Daphne

1 Insufficient Sample

1 Total for Daphne

Elaeagnus

1 Normal Condition

1 Total for Elaeagnus

English Ivy

2 Anthracnose

Colletotrichum trichellum

1 Cultural Problem

1 Insufficient Sample

1 Negative for Root Disease

1 Phytophthora Root Rot

Phytophthora nicotianae

6 Total for English Ivy

Euonymus

1 Anthracnose

Colletotrichum gloeosporioides

1 No Pathogens Found

1 Phomopsis Gall

Phomopsis sp.

3 Scales

6 Total for Euonymus

Filbert

1 Eastern Filbert Blight

Anisogramma anomala

1 Insects

2 Total for Filbert

Fothergilla

1 Abiotic Problem

1 Negative for Root Disease

2 Total for Fothergilla

Holly

1 Abiotic Problem	
1 Anthracnose	<i>Glomerella sp.</i>
1 Anthracnose Fruit Rot	<i>Colletotrichum sp.</i>
19 Black Root Rot	<i>Thielaviopsis basicola</i>
3 Cultural Problem	
1 Cutting Rot	<i>Fusarium sp.</i>
1 Insects	
15 Insufficient Sample	
3 Mites	
2 Negative for Disease	
2 Negative for Root Disease	
1 Phytophthora Root Rot	<i>Phytophthora cinnamomi</i>
1 Rootbound	
1 Sapsucker Injury	
2 Scales	
1 Seasonal Leaf Drop	
7 Sooty Mold	
2 Suspect Cultural Problem	
1 Suspect Sapsucker Injury	
3 Suspect Winter Injury	
1 Winter Injury	

69 Total for Holly

Hydrangea

2 Abiotic Problem
1 Chemical Injury
1 Cultural Problem
1 Four-lined Plant Bugs
1 No Pathogens Found
1 Suspect Chemical Injury
1 Suspect Cultural Problem
1 Thrips

9 Total for Hydrangea

Jasmine

1 Scales
1 Suspect Cold Injury

2 Total for Jasmine

Juniper

2 Abiotic Problem	
1 Cedar-Apple Rust	<i>Gymnosporangium juniperi-virginianae</i>
1 Cedar-Hawthorn Rust	<i>Gymnosporangium globosum</i>
1 Environmental Stress	
4 Insufficient Sample	
2 Kabatina Tip Blight	<i>Kabatina juniperi</i>
1 Lophodermium Needlecast	<i>Lophodermium juniperinum</i>
1 Low pH	
4 Mites	
3 Negative for Disease	
3 Negative for Foliar Disease	
1 Negative for Root Disease	
1 No Pathogens Found	
1 Pestalotiopsis Needle Blight	<i>Pestalotiopsis sp.</i>
1 Possible Vole Injury	
1 Scales	
2 Suspect Nutrient Deficiency	
3 Suspect Vole Injury	
1 No Diagnosis or Sample Quality Entered	

34 Total for Juniper

Leucothoe

1 Suspect Cultural Problem

1 Total for Leucothoe

Lilac

1 Negative for Leaf Disease

2 No Pathogens Found

1 Phytophthora Root Rot

Phytophthora nicotianae

1 Phytophthora Root Rot

Phytophthora sp.

5 Total for Lilac

Mountain Laurel

1 Abiotic Problem

1 Cercospora Leaf Spot

Cercospora kalmiae

2 Total for Mountain Laurel

Nandina

1 Anthracnose

Colletotrichum sp.

1 Phyllosticta Leaf Spot

Phyllosticta sp.

1 Suspect Virus

1 Winter Injury

4 Total for Nandina

Night Blooming Jasmine

1 Abiotic Problem

1 Total for Night Blooming Jasmine

Photinia

7 Entomosporium Leaf Spot

Entomosporium mespili

1 Insects

1 Powdery Mildew

Oidium sp.

1 Scales

1 Suspect Cold Injury

11 Total for Photinia

Pittosporum

1 Negative for Phytophthora Root Rot

1 Total for Pittosporum

Plants, Miscellaneous

- 1 Insufficient Sample
- 1 Lichens
- 1 No Pathogens Found
- 1 Normal Condition
- 1 Sooty Mold
- 1 Suspect Chemical Injury

6 Total for Plants, Miscellaneous

Privet

- 1 Abiotic Problem
- 1 Low pH
- 1 Mycosphaerella Leaf Spot *Pseudocercospora ligustri*
- 1 Suspect Abiotic Problem
- 1 Suspect Chemical Injury
- 1 Suspect Cold Injury
- 1 Suspect Winter Injury

7 Total for Privet

Pyracantha

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

2 Total for Pyracantha

Rhododendron

1 Botryosphaeria Dieback	<i>Botryosphaeria sp.</i>
2 Cercospora Leaf Spot	<i>Cercospora handelii</i>
1 Insufficient Sample	
1 Negative for Disease	
2 Negative for Root Disease	
1 No Pathogens Found	
1 Sooty Mold	
1 Suspect Armillaria Root Rot	<i>Armillaria sp.</i>
1 Suspect Botryosphaeria Dieback	<i>Botryosphaeria sp.</i>
1 Suspect Crown Gall	<i>Agrobacterium tumefaciens</i>
1 Weevils	
1 Winter Injury	
4 No Diagnosis or Sample Quality Entered	

18 Total for Rhododendron

Rose

1 Borers	
1 Botrytis Blight	<i>Botrytis cinerea</i>
2 Eriophyid Mites	
4 Insects	
1 Insufficient Sample	
1 Mites	
1 Negative for Disease	
2 Negative for Rose Rosette Virus	
2 No Disease Found	
1 Nutrient Deficiency	
7 Rose Rosette Virus	
1 Rose Slugs	
1 Suspect Chemical Injury	
1 Wood Decay	

26 Total for Rose

Sarcococca

1 Environmental Stress

1 Total for Sarcococca

Scotch Broom

1 Abiotic Problem

1 Total for Scotch Broom

Smoke Tree

1 Verticillium Wilt *Verticillium dahliae*

1 Total for Smoke Tree

Spicebush

1 Insufficient Sample

1 Total for Spicebush

Spirea

1 Cylindrocladium Canker *Cylindrocladium scoparium*

1 Total for Spirea

Sumac

1 No Pathogens Found

1 Total for Sumac

Sweetshrub

1 Frost Injury

1 Total for Sweetshrub

Viburnum

1 Insufficient Sample

1 Total for Viburnum

Wax Myrtle

1 Abiotic Problem

1 Scales

1 Sooty Mold

3 Total for Wax Myrtle

Weigela

1 Suspect Cultural Problem

1 Total for Weigela

White Baneberry

1 Cercospora Leaf Spot

Cercospora sp.

1 Thrips

2 Total for White Baneberry

Winterberry

1 Borers

1 Total for Winterberry

Yew

1 Insufficient Sample

1 Negative for Root Disease

1 Phytophthora Root Rot

Phytophthora sp.

3 Total for Yew

Identification Appendix

Information about samples submitted to the laboratory for identification

1. Higher Plants

Family: Apiaceae Osmorhiza sp.	Sweet Cicely
Family: Apocynaceae Apocynum cannabinum Asclepias incarnata	Hemp Dogbane Swamp Milkweed
Family: Asteraceae Baccharis halimifolia	High-tide Bush
Family: Caprifoliaceae Lonicera japonica	Japanese Honeysuckle
Family: Elaeagnaceae Elaeagnus umbellata	Autumn Olive
Family: Euphorbiaceae Euphorbia myrsinites	Blue Spurge
Family: Fagaceae Castanea mollissima	Chinese Chestnut
Family: Oleaceae Ligustrum sp.	Privet
Family: Poaceae Andropogon virginicus Cynodon dactylon Festuca arundinacea Poa annua Sorghum halapense	Broomsedge Bermudagrass Tall Fescue Annual Bluegrass Johnsongrass
Family: Rhamnaceae Sideroxylon lycioides	Buckthorn
Family: Rosaceae Prunus sp. Pyrus sp.	Cherry Pear
Family: Scrophulariaceae Paulownia tomentosa	Empress Tree
Family: Theaceae Camellia sp. Ternstroemia sp.	Camellia Ternstroemia
Family: Unable to Identify (3)	

2. Fungi

Family: Gasteromycetes

Lycoperdon sp.

Scleroderma geaster

Puffball

Earthball

Family: Mycenaceae

Mycena sp., Mycena

Mycena

Family: Phallaceae

Mutinus caninus

Dog Stinkhorn

Family: Unable to Identify