The Plant Disease Clinic and Weed Identification Lab Annual Report 2008

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Virginia Polytechnic Institute and State University
Blacksburg, Virginia

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2008 Annual Report

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Acknowledgements

The Plant Disease Clinic depends on a 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 2008, diagnoses in the Plant Disease Clinic in Blacksburg were performed by Mary Ann Hansen and Elizabeth Bush, with valuable assistance from Sarah Brooks.

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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The Weed Identification Clinic is operated by Dr. Scott Hagood with the assistance of Mr. Matt Goddard and Mr. Lloyd Hipkins. Mr. Tom Wieboldt, curator of the Herbarium in the Biology Department, performs many of the plant and weed identifications.

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. Dawen Xie for IT support during the year.

Sarah Brooks and Charlotte Oliver 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 and the Weed Identification 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 disease incitants if they were cultured in high numbers from the plant tissue, 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 “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 for making 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 occasionally receive digital images or 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 in addition to a plant sample. Total numbers of email and digital image inquiries are listed on page 4.

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://www.ext.vt.edu/pubs/plantdiseasefs/. For information on how to submit samples and complete the appropriate forms, please refer to the audiovisual training presentation on the VCE intranet.

CLINIC HIGHLIGHTS

In 2008 Elizabeth Bush passed the required tests to have our "clean" lab approved by the Animal and Plant Health Inspection Service for detection of the pathogen *Phytophthora ramorum*, cause of sudden oak death. This approval will allow our lab to make a final determination on any negative results obtained with the sensitive polymerase chain reaction (PCR) technique used to test plant samples for this pathogen. This should decrease the response time for samples submitted for a *Phytophthora ramorum* determination.

DISEASE HIGHLIGHTS

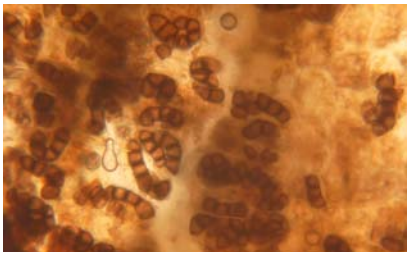
Drought continued in many areas of Virginia in 2008; however, sample numbers were higher than for the previous year (1546 samples in 2008 vs. 1385 samples in 2007). Disease highlights for various crop categories are presented below.

Field Crops

Clinic personnel participated in the statewide survey for Asian soybean rust, caused by the fungus *Phakopsora pachyrhizi,* again in 2008 by examining soybean leaves from sentinel plots for soybean rust weekly during the growing season. No rust was found on any of the samples submitted from the three sentinel plots monitored by the Plant Disease Clinic; however, in 2008 soybean rust was not found until October from commercial field samples analyzed by Dr. Pat Phipps at the Tidewater AREC. Because of the late appearance of the disease in Virginia soybeans, no fungicide treatment was recommended.

Charcoal root rot, caused by the fungus *Macrophomina phaseolina*, was again diagnosed in soybean fields. Plants are predisposed to this disease by drought, which was prevalent in many areas in 2008.

Herbaceous Ornamentals



Chlamydospores of the black root rot fungus, Thielaviopsis basicola*.*

Phytophthora root rot, which is prevalent in the Commonwealth, was found on the following herbaceous ornamental plants: coral bells, geranium, Madagascar periwinkle, petunia. This disease is usually associated with wet weather, but can also be a problem under excessive irrigation in dry years. Black root rot, a fungal disease that is common on Japanese holly, was found on zinnia in 2008. Although it is a common disease on petunia and creeping phlox, we had not seen it on zinnia before. We also diagnosed bacterial blight on Ranunculus, caused by *Xanthomonas campestris*.

Freesia sneak virus on freesia

A disease called Freesia Sneak Virus was detected for the first time in Virginia and the United States in freesias from a commercial grower. The virus that causes the disease is difficult to detect, but we enlisted the aid of researchers from the USDA-ARS Floral and Nursery Plants Research Unit, who were able to confirm the presence of this pathogen using a sensitive PCR technique. Symptoms consisted of discolored flecks on the foliage and resembled feeding by mites or thrips. The virus is transmitted by a soil-borne fungus.

Anthracnose of black cohosh, caused by the fungus Colletotrichum *sp.*

Anthracnose diseases were diagnosed on two crops we do not usually see: pitcher plant and black cohosh. Interest in growing black cohosh as a medicinal plant has increased in recent years, so we may see more of this foliar fungal disease in the future.

Diplodia tip blight on Austrian pine

Trees and Woody Ornamentals

Despite the dry weather in many areas, leaf diseases were prevalent on trees. In spring, spot anthracnose on dogwood, Dipodia tip blight on two- and three-needled pines, and oak leaf blister were prevalent. We also diagnosed anthracnose diseases and purple eye leaf spot on many maple samples. Bacterial scorch on oak and Pierce's disease of grape, both caused by the xylem-limited bacterium *Xylella fastidiosa*, were also diagnosed in 2008. No curative controls are available for this disease. Although we commonly diagnose Phytophthora root diseases on various plant species submitted to the Plant Clinic, we diagnosed a

Phytophthora disease on tulip tree (*Liriodendron tulipifera*) that we had not seen before: Phytophthora canker, caused by the water mold species *Phytophthora nicotianae*, which also commonly causes disease on a variety of herbaceous ornamentals. The disease appeared as a basal canker on the tree; however, no dieback in the canopy was observed. The fungicide Agri-Fos (a phosphorous acid compound) is labeled for use as a soil drench for control. This fungicide works by stimulating the tree's own defense system against the pathogen. We also saw the fungal disease Seiridium canker on a juniper sample. This disease is most common on Leyland cypress, but we occasionally see it on junipers. A sample with severe browning of older needles of false cypress turned out to be seasonal needle drop, normal senescence of the older needles.

Vegetables

Blossom end rot, a physiological disorder caused by calcium deficiency to developing fruit, was common on tomato on 2008. Drought often exacerbates blossom end rot. Another common diagnosis on tomato in 2008 was physiological leaf roll. On plants with this condition, leaves roll upward and inward, starting with older leaves and moving up the plant and leaves may become thickened. Growth and fruit production are not affected. Physiological leaf roll can also occur on pepper, eggplant and potato. It usually follows hot and dry environmental conditions, but the leaf rolling is permanent. The leaf rolling is thought to be a moisture conservation mechanism. Some cultivars, such as Pik Red, are genetically predisposed to this condition. This condition is also often associated with Tobacco mosaic virus infection.

Blossom end rot on tomato.

On pepper, we diagnosed the virus, Potato aucuba mosaic virus, which we had not seen before. Symptoms included crinkling and misshapen leaves, as well as yellowing on scattered leaves, centered on the veins.The virus is aphid-transmitted and plants submitted had high populations of aphids. It was not possible to say what proportion of the symptoms was due to the virus and what proportion to the aphids.

We also observed ashy stem blight, caused by the fungus *Macrophomina phaseolina*, on garden beans. This fungus is the same pathogen that causes charcoal rot on soybeans and root rot on Fraser fir. It is usually associated with dry soil conditions.

Potato aucuba mosaic virus on pepper

Turf

Take-all on Augustinegrass, caused by the fungus *Gaeumannomyces graminis* var. *graminis*, and large patch on zoysia, caused by *Rhizoctonia solani*, were common in turf samples.

Weeds

Diseases on weedy species included Cercospora leaf spot (a fungal disease) on lambsquarters and anthracnose, caused by a species of *Colletotrichum*, on milkweed.

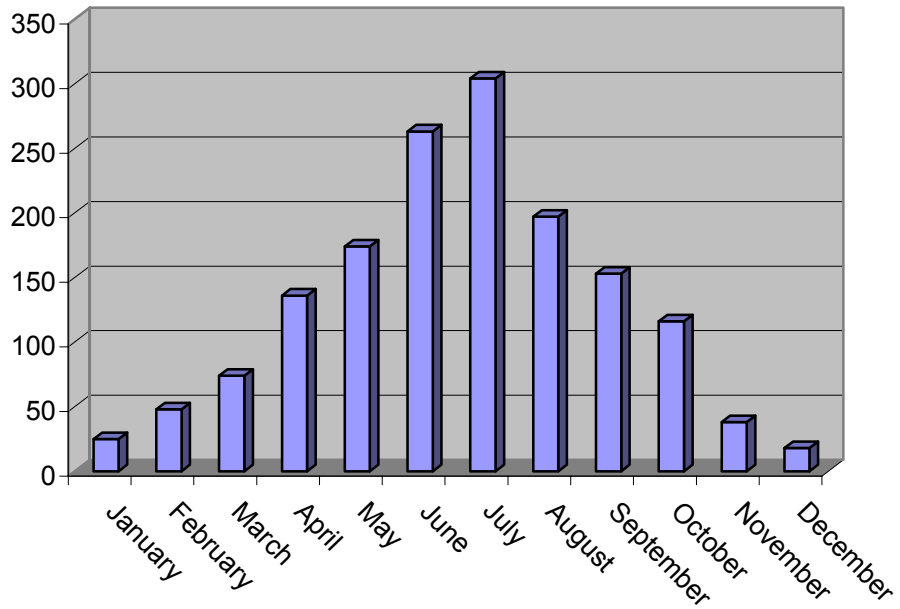
New Clinic Records for 2008

- Ashy stem blight on bean (*Macrophina phaseolina*)
- Anthracnose on black cohosh (*Colletotrichum* sp.)
- Freesia sneak virus on freesia
- Cercospora leaf spot on lambsquarters (*Cercospora* sp.)
- Anthracnose on milkweed (*Colletotrichum* sp.)
- Potato aucuba mosaic virus on pepper
- Phytophthora canker on tulip tree (*Phytophthora nicotianae*)
- Black root rot on zinnia (*Thielaviopsis basicola*)

Monthly Submission Summary

Month	# Samples
January	25
February	48
March	74
April	136
May	174
June	263
July	304
August	197
September	153
October	116
November	38
December	18
Grand Total	**1,546**

Number of Samples by Month

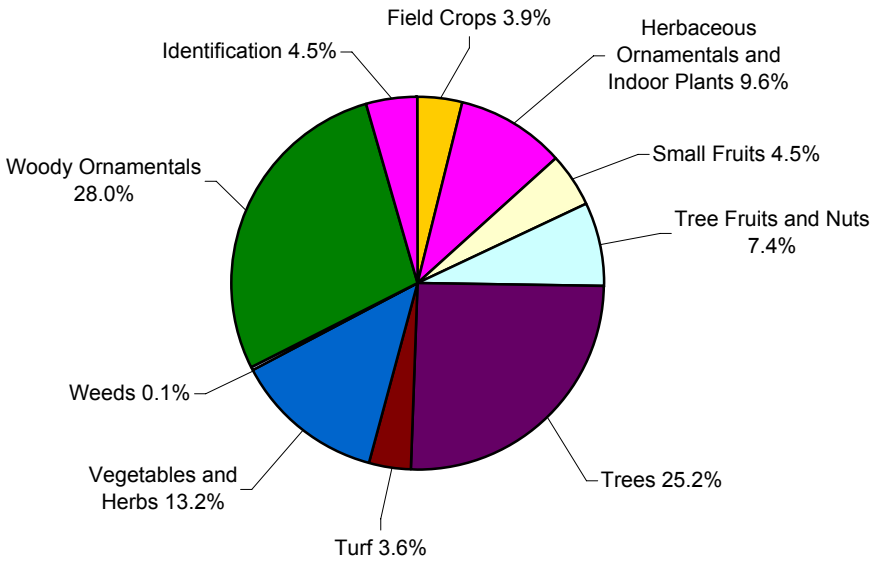


Crop Category Summary

Sample totals by major crop categories

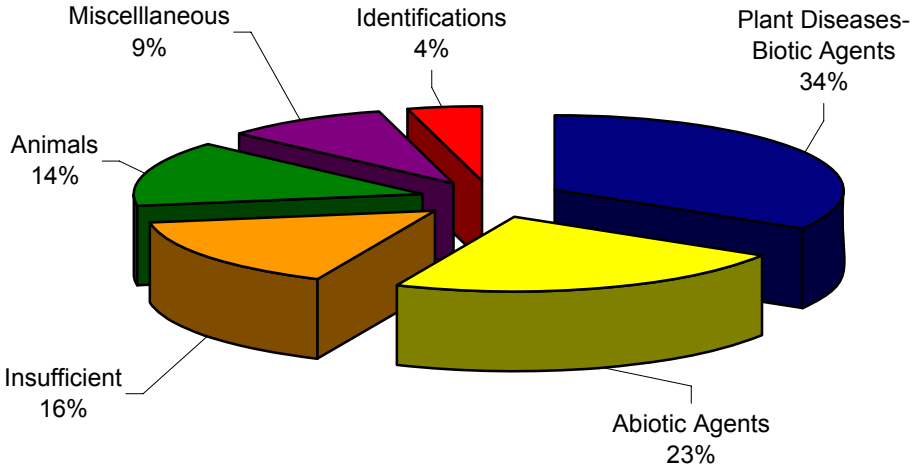
Crop Category	# of Samples	% of Total
Field Crops	60	3.9
Herbaceous Ornamentals and Indoor Plants	148	9.6
Small Fruits	69	4.5
Tree Fruits and Nuts	114	7.4
Trees	390	25.2
Turf	56	3.6
Vegetables and Herbs	204	13.2
Weeds	2	0.1
Woody Ornamentals	433	28.0
Identification	70	4.5
Total	**1,546**	

Samples by Crop Category



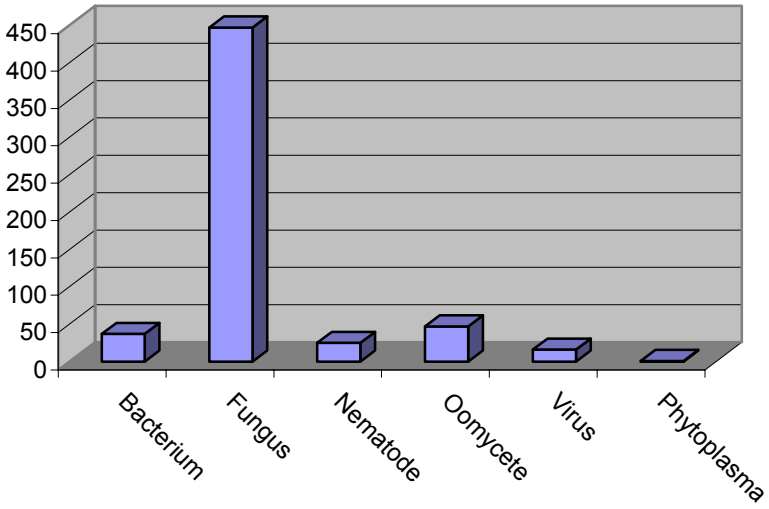
Diagnosis/Identification Category Summary		
	# of Diagnoses/IDs	% of Total
Plant Diseases - Biotic Agents	**573**	**33.5**
Bacterium	37	
Fungus	447	
Nematode	25	
Oomycete	47	
Virus	16	
Phytoplasma	1	
Abiotic Agents	**397**	**23.2**
Chemical	73	
Environmental/Cultural	261	
Mechanical	6	
Allelopathy	1	
Physiological/Genetic	56	
Insufficient Samples	**271**	**15.8**
Insufficient sample or information	264	
Unknown	7	
Animals	**244**	**14.3**
Birds	1	
Mammals	7	
Invertebrate	1	
Insects or Mites	235	
Miscellaneous	**157**	**9.2**
Lichen	11	
Normal Condition	11	
Other	134	
Weed	1	
Identifications	**69**	**4.0**
Algae	2	
Fungi	14	
Other Substance	2	
Plant	47	
Unable to Identify	4	
Total	**1711**	

2008 Samples by Diagnostic Category

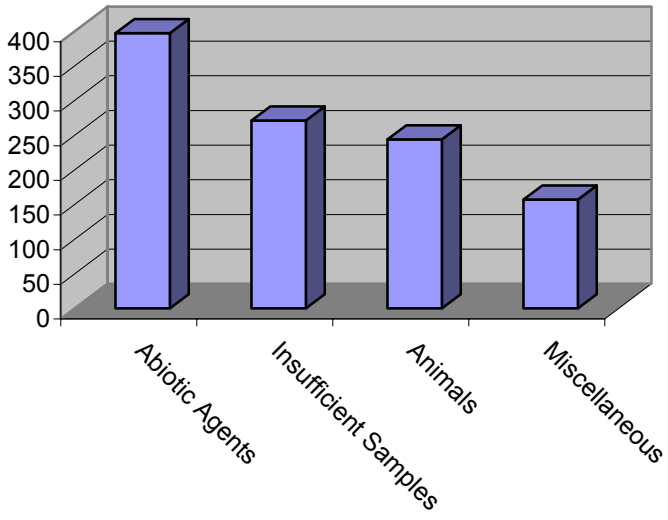


Other Assistance, 2008	
Type	**# of Inquires**
Email	82
Digital Images	133
Phone Calls	105

Plant Pathogens, 2008



Other Agents, 2008



County	# of Samples
Accomack	2
Albemarle	75
Alleghany	19
Amelia	12
Amherst	0
Appomattox	11
Arlington	15
Augusta	32
Bath	1
Bedford	3
Botetourt	5
Brunswick	5
Buckingham	5
Campbell	10
Caroline	2
Carroll	15
Chesapeake City	27
Chesterfield	9
Clarke	4
Craig	4
Culpeper	10
Cumberland	4
Danville City	22
Dickenson	3
Essex	13
Fairfax	38
Fauquier	15
Floyd	5
Fluvanna	19
Franklin	46
Frederick	40
Giles	19
Gloucester	3
Goochland	7
Grayson	1
Greene	7
Greensville	1
Halifax	2
Hampton City	23
Hanover	37
Henrico	92
Henry	6
Highland	1
Isle of Wight	2
James City	39
King and Queen	3
King George	14
Lancaster	11
Lee	6
Loudoun	19
Louisa	23
Lunenberg	9
Lynchburg City	36
Madison	12
Mathews	10
Mecklenburg	6
Middlesex	8
Montgomery	90
Nelson	53
New Kent	13
Newport News	3
Norfolk City	12
Northampton	1
Northumberland	22
Nottoway	8
Orange	6
Page	6
Patrick	5
Petersburg City	2
Pittsylvania	38
Portsmouth City	17
Powhatan	19
Prince Edward	1
Prince George	5
Prince William	7
Pulaski	14
Rappahanock	17
Richmond City	9
Richmond	2
Roanoke	56
Rockbridge	7
Rockingham	50
Russell	3
Scott	8
Shenandoah	7
Smyth	1
Southampton	1
Spotsylvania	36
Stafford	35
Suffolk City	3
Sussex	4
Tazewell	10
Virginia Beach	11
Warren	12
Washington	14
Westmoreland	25
Wise	7
Wythe	2
York	36
Total	**1,546**

Monthly Submission Summary 2008

Month	# Samples
January	2
February	12
March	20
April	40
May	40
June	50
July	69
August	63
September	42
October	50
November	21
December	3
Total	**412**

Crop Category Summary 2008

Crop	# of Samples
Alfalfa	4
Arboretum	1
City	1
Boat Ramp	1
Campground	1
Corn Field	5
English Ivy	1
Fallow (corn)	1
Field	4
Forage Grasses	9
Forest	4
Garden	35
Golf Course	2
Hay	31
Landscape	9
Meadow	4
Unknown	28
Oats	1
Pasture	86
Peanuts	1
Aquatic	33
Shoreline	8
Soybeans	3
Wetland	2
Timber	5
Tomatoes	1
Turf	125
Wheat	6
Total	**412**

County	# of Samples
Accomack	1
Albemarle	19
Alleghany	6
Amherst	3
Appomattox	20
Augusta	3
Bath	1
Bedford	1
Bland	3
Botetourt	12
Brunswick	1
Buckingham	2
Campbell	10
Carroll	1
Chesapeake	5
Chesterfield	2
City of Danville	1
City of Lynchburg	21
City of Norfolk	5
City of Portsmouth	2
Clarke	2
Craig	1
Culpeper	1
Cumberland	3
Dickenson	4
Dinwiddie	1
Fairfax	1
Fauquier	9
Fluvanna	4
Franklin	19
Frederick	10
Goochland	6
Greene	2
Halifax	1
Hampton	4
Hanover	5
Henrico	8
Highland	4
James City County	14

County	# of Samples
King and Queen	2
King George	4
Lee	6
Lousia	7
Lunenburg	5
Madison	1
Mecklenburg	3
Montgomery	11
Nelson	3
New Kent	2
Northumberland	7
Nottoway	2
Orange	1
Page	5
Patrick	3
Pittsylvania	36
Powhatan	3
Prince George	1
Pulaski	4
Rappahonnock	11
Richmond	1
Roanoke	9
Rockingham	6
Russell	3
Scott	1
Shenandoah	1
Smyth	2
South Hampton	1
Spotsylvania	21
Stafford	3
Suffolk	1
Sussex	2
Tazwell	2
Warren	2
Washington	4
Westmorland	9
Wythe	1
York	7
Yorktown	1
Total	**412**

Diagnosis Appendix

Information about diseases/pests diagnosed by the laboratory

Field Crops

Alfalfa

1	Low pH	
1	Pythium Root Rot	*Pythium sp.*
1	Violet Root Rot	*Rhizoctonia crocorum*
3	***Total for Alfalfa***	

Barley

1	Aphids	
1	Leaf Rust	*Puccinia hordei*
1	Low pH	
1	Net Blotch	*Pyrenophora teres*
2	Spot Blotch	*Bipolaris sorokiniana*
6	***Total for Barley***	

Bluegrass

1	Leaf Rust	*Puccinia graminis*
1	***Total for Bluegrass***	

Corn

1	Cause of Problem Unknown	
3	Cultural Problem	
1	Diplodia Ear Rot	*Stenocarpella maydis*
1	Fusarium Stalk Rot	*Fusarium moniliforme*
2	Fusarium Stalk Rot	*Fusarium sp.*
1	Insects	
1	Insufficient Sample	
2	Low pH	
1	Mites	
1	Nitrogen Deficiency	
1	Nutrient Deficiency	
1	Physiological Problem	
1	Referred to Nematology	
1	Rhizoctonia Crown and Root Rot	*Rhizoctonia solani*
18	***Total for Corn***	

Fescue

1	Anthracnose	*Colletotrichum graminicola*
1	Cultural Problem	
1	Environmental Stress	
3	***Total for Fescue***	

Foxtail Millet

1	Gray Leaf Spot	*Pyricularia grisea*
1	***Total for Foxtail Millet***	

Millet	
1 Insects	
1 Low pH	
2 Total for Millet	

Orchardgrass	
2 Leaf Streak	*Cercosporidium graminis*
1 Purple Leaf Spot	*Stagonospora arenaria*
3 Total for Orchardgrass	

Rye	
1 Cultural Problem	
1 Total for Rye	

Ryegrass	
1 Suspect Chemical Injury	
1 Total for Ryegrass	

Sorghum	
1 Insects	
1 Physiological Leaf Spot	
1 Suspect Environmental Stress	
3 Total for Sorghum	

Soybean	
1 Borers	
3 Charcoal Rot	*Macrophomina phaseolina*
1 Deer Injury	
2 Environmental Stress	
1 Fusarium Root Rot	*Fusarium oxysporum*
1 Negative for Asian Soybean Rust	
1 Negative for Disease	
1 Phomopsis Seed Decay	*Phomopsis sp.*
1 Physiological Leaf Spot	
2 Pod and Stem Blight	*Phomopsis sp.*
1 Purple Seed Stain	*Cercospora kukuchii*
1 Sunburn	
1 Suspect Essex Syndrome	*Fusarium oxysporum*
2 Suspect Virus	
19 Total for Soybean	

Tobacco	
1 Suspect Tobacco Etch Virus	
1 Total for Tobacco	

Wheat		
1	Ascochyta Leaf Spot	*Ascochyta tritici*
1	Cold Injury	
1	Cultural Problem	
1	Environmental Stress	
1	Frost Injury	
2	High pH	
2	Low pH	
1	Negative for Disease	
1	Nutritional Problem	
1	Powdery Mildew	*Erysiphe graminis*
12	***Total for Wheat***	

Herbaceous Ornamentals and Indoor Plants

African Violet

2	Cultural Problem	
1	Mites	
3	***Total for African Violet***	

Aster

1	Rhizoctonia Root Rot	*Rhizoctonia solani*
1	***Total for Aster***	

Bacopa

1	Botrytis Blight	*Botrytis cinerea*
2	Pythium Root Rot	*Pythium sp.*
3	***Total for Bacopa***	

Bee Balm

1	Insects	
1	***Total for Bee Balm***	

Canna Lily

1	Cultural Problem	
1	***Total for Canna Lily***	

Carnation

1	Negative for Disease	
1	***Total for Carnation***	

Chrysanthemum

1	Cultural Problem	
1	Pythium Root Rot	*Pythium sp.*
1	Pythium Stem and Root Rot	*Pythium sp.*
1	Suspect Cultural Problem	
4	***Total for Chrysanthemum***	

Clematis

1	Insufficient Sample	
1	***Total for Clematis***	

Cohosh	
1 Anthracnose	*Colletotrichum sp.*
1 Total for Cohosh	

Columbine	
1 Insufficient Sample	
1 Total for Columbine	

Coneflower	
1 Negative for Virus	
1 Southern Blight	*Sclerotium rolfsii*
2 Total for Coneflower	

Coral Bells	
1 Botrytis Blight	*Botrytis cinerea*
1 Phytophthora Crown and Root Rot	*Phytophthora sp.*
1 Phytophthora Root Rot	*Phytophthora nicotianae*
3 Total for Coral Bells	

Coreopsis	
1 Insects	
1 Insufficient Sample	
1 Physiological Leaf Spot	
3 Total for Coreopsis	

Dahlia	
1 Chemical Injury	
1 Insects	
2 Total for Dahlia	

Daisy	
3 Cultural Problem	
1 Negative for Disease	
1 Negative for Root Pathogens	
5 Total for Daisy	

Daylily	
1 Daylily Rust	*Puccinia hemerocallidis*
2 Mites	
3 Total for Daylily	

Dianthus	
1 Environmental Stress	
1 Fusarium Stem Rot	*Fusarium sp.*
1 Insects	
1 Pythium Root Rot	*Pythium sp.*
4 Total for Dianthus	

Eupatorium	
1 Cause of Problem Unknown	
1 Total for Eupatorium	

Euphorbia

1	Cultural Problem	
1	***Total for Euphorbia***	

Fern

1	Chemical Injury	
1	Environmental Stress	
1	Sporangia - Normal Condition	
3	***Total for Fern***	

Foxglove

1	Chemical Injury	
1	Insufficient Sample	
2	***Total for Foxglove***	

Freesia

1	Freesia Sneak Virus	
1	***Total for Freesia***	

Gardenia

1	Cultural Problem	
1	Environmental Stress	
1	Insufficient Sample	
1	Low pH	
1	Mechanical Injury	
1	Negative for Disease	
1	Nutrient Deficiency	
2	Scales	
1	Sooty Mold	
10	***Total for Gardenia***	

Geranium

1	Oedema	
1	Phytophthora Root Rot	*Phytophthora nicotianae*
2	***Total for Geranium***	

Gladiolus

1	Cultural Problem	
1	Mites	
2	***Total for Gladiolus***	

Hellebore

1	Black Leaf Spot	*Coniothyrium hellebori*
1	***Total for Hellebore***	

Hollyhock		
1	Rust	*Puccinia malvacearum*
1	***Total for Hollyhock***	

Hops		
1	Insufficient Sample	
1	***Total for Hops***	

Hosta		
2	Scorch	
1	Slugs	
3	Sunscorch	
6	***Total for Hosta***	

Impatiens		
1	Insufficient Sample	
1	Root Knot Nematodes	*Meloidogyne sp.*
2	***Total for Impatiens***	

Iris		
1	Environmental Stress	
2	Heterosporium Leaf Spot	*Heterosporium iridis*
3	***Total for Iris***	

Ivy Geranium		
1	Suspect Chemical Injury	
1	***Total for Ivy Geranium***	

Jade		
1	Environmental Stress	
1	Physiological Problem	
1	Scales	
1	Sunscald	
4	***Total for Jade***	

Lavender		
1	Pythium Root Rot	*Pythium sp.*
1	***Total for Lavender***	

Lemon		
1	Insufficient Sample	
1	***Total for Lemon***	

Lily		
1	Mites	
1	Negative for Disease	
1	Unknown	
3	***Total for Lily***	

Liriope	
1 Environmental Stress	
3 Fusarium Crown and Leaf Rot	*Fusarium sp.*
1 Physiological Leaf Spot	
5 Total for Liriope	

Lobelia	
1 Thrips	
1 Total for Lobelia	

Loosestrife	
1 Rhizoctonia Stem and Root Rot	*Rhizoctonia solani*
1 Total for Loosestrife	

Lotus	
1 Insufficient Sample	
1 Total for Lotus	

Madagascar Periwinkle	
3 Phytophthora Blight	*Phytophthora nicotianae*
1 Phytophthora Root and Stem Rot	*Phytophthora nicotianae*
4 Total for Madagascar Periwinkle	

Mandarin Orange	
1 Insufficient Sample	
1 Total for Mandarin Orange	

Marigold	
1 Mites	
1 Negative for Root Pathogens	
2 Total for Marigold	

Mondograss	
1 Anthracnose	*Colletotrichum sp.*
1 Total for Mondograss	

Obedient Plant	
1 Insects	
1 Total for Obedient Plant	

Orchid	
1 Cultural Problem	
1 Total for Orchid	

Pachysandra	
2 Environmental Stress	
1 Scorch	
1 Volutella Blight	*Volutella pachysandrae*
4 Total for Pachysandra	

Palm

1	Insufficient Sample	
1	***Total for Palm***	

Pansy

1	Pythium Root Rot	*Pythium sp.*
1	***Total for Pansy***	

Peony

1	Anthracnose	*Gloeosporium sp.*
1	Bacterial Leaf Spot	*Xanthomonas axonopodis pv. carotae*
3	Cladosporium Stem and Leaf Blotch	*Cladosporium paeoniae*
2	Insufficient Sample	
3	Powdery Mildew	*Erisyphe polygoni*
1	Suspect Chemical Injury	
11	***Total for Peony***	

Periwinkle

1	Anthracnose	*Colletotrichum sp.*
1	Environmental Stress	
4	Phoma Dieback	*Phoma sp.*
6	***Total for Periwinkle***	

Petunia

1	Botrytis Blight	*Botrytis cinerea*
2	Phytophthora Root and Stem Rot	*Phytophthora nicotianae*
1	Phytophthora Root Rot	*Phytophthora nicotianae*
1	Powdery Mildew	*Oidium sp.*
1	Tobacco Mosaic Virus	
6	***Total for Petunia***	

Phlox

1	Cultural Problem	
1	Insects	
1	Negative for Root Disease	
1	Physiological Leaf Spot	
1	Thrips	
5	***Total for Phlox***	

Pitcher Plant

1	Anthracnose	*Colletotrichum gloeosporioides*
1	***Total for Pitcher Plant***	

Plants, Miscellaneous

1	Insects	
1	***Total for Plants, Miscellaneous***	

Poppy		
1	Anthracnose	*Gloeosporium sp.*
1	***Total for Poppy***	

Primrose		
1	Environmental Stress	
1	***Total for Primrose***	

Ranunculus		
1	Bacterial Blight	*Xanthomonas campestris*
1	***Total for Ranunculus***	

Rudbeckia		
1	Cultural Problem	
2	Insects	
1	Insufficient Sample	
1	Ramularia Leaf Spot	*Ramularia sp.*
1	Suspect Yellows Disease	
6	***Total for Rudbeckia***	

Salvia		
1	Pythium Root Rot	*Pythium sp.*
1	***Total for Salvia***	

Schefflera		
1	Insufficient Sample	
1	***Total for Schefflera***	

Sedum		
1	Bacterial Stem Rot	*Erwinia chrysanthemi*
1	Chemical Injury	
2	***Total for Sedum***	

Spathiphyllum		
1	Cultural Problem	
1	***Total for Spathiphyllum***	

Tahitian Bridal Veil		
1	Excess Soluble Salts	
1	Low pH	
2	***Total for Tahitian Bridal Veil***	

Verbena		
1	Cultural Problem	
1	Insufficient Information	
2	***Total for Verbena***	

Veronica		
1	Rhizoctonia Crown and Root Rot	*Rhizoctonia solani*
1	***Total for Veronica***	

Zamioculcas		
1	Negative for Disease	
1	***Total for Zamioculcas***	

Zinnia		
1	Black Root Rot	*Thielaviopsis basicola*
1	***Total for Zinnia***	

Moss		
Irish Moss		
1	Brown Patch	*Rhizoctonia sp.*
1	***Total for Irish Moss***	

Small Fruits

Blackberry

1	Anthracnose	*Elsinoe veneta*
1	Borers	
1	Botryosphaeria Cane Canker	*Botryosphaeria dothidea*
2	Cane Blight	*Coniothyrium fuckellii*
1	Insects	
4	Insufficient Sample	
1	Suspect Raspberry Leaf Curl Virus	*Raspberry Leaf Curl Virus*
1	Virus	
12	***Total for Blackberry***	

Blueberry

2	Botryosphaeria Dieback	*Botryosphaeria sp.*
1	Cultural Problem	
3	Insufficient Sample	
1	Mammalian Injury	
3	Negative for Disease	
1	Negative for Root Disease	
1	Phytophthora Root Rot	*Phytophthora cinnamomi*
1	Suspect Environmental Stress	
1	Suspect Hail Injury	
14	***Total for Blueberry***	

Currant

1	Aphids	
1	***Total for Currant***	

Fig

1	Rust	*Cerotelium fici*
1	***Total for Fig***	

Grape		
1	Bitter Rot	*Greeneria uvicola*
7	Black Rot	*Guignardia bidwellii*
1	Chemical Injury	
1	Cold Injury	
1	Insect Galls	
1	Insects	
6	Insufficient Sample	
1	Lenticels	
1	Mechanical Injury	
1	Mites	
2	Negative for Pierce's Disease	*Xylella fastidiosa*
1	Petri Disease	*Phaeoacremonium spp.*
1	Phomopsis	*Phomopsis sp.*
1	Pierce's Disease	*Xylella fastidiosa*
1	Powdery Mildew	*Uncinula necator*
1	Scorch	
1	Sour Rot	
3	Suspect Chemical Injury	
2	Thrips	
34	***Total for Grape***	

Raspberry		
1	Cane Blight	*Coniothyrium fuckellii*
1	Cane Borers	
1	Chemical Injury	
1	Gray Mold	*Botrytis cinerea*
1	Insufficient Sample	
1	Japanese Beetles	
1	Negative for Disease	
1	Spider Mites	
8	***Total for Raspberry***	

Strawberry		
1	Cultural Problem	
1	Heat Stress	
1	Insects	
1	Insufficient Sample	
1	Phytophthora Crown Rot	*Phytophthora cactorum*
2	Pythium Root Rot	*Pythium sp.*
7	***Total for Strawberry***	

Tree Fruits and Nuts

Apple

4	Bitter Rot	*Glomerella cingulata*
2	Black Rot	*Physalospora obtusa*
1	Botryosphaeria Canker	*Botryosphaeria dothidea*
1	Botryosphaeria Dieback	*Botryosphaeria sp.*
9	Cedar-Apple Rust	*Gymnosporangium juniperi-virginianae*
5	Cedar-Quince Rust	*Gymnosporangium clavipes*
1	Codling Moths	
1	Diplodia Canker	*Diplodia mutila*
9	Fire Blight	*Erwinia amylovora*
1	Fly Speck	*Schizothyrium pomi*
1	Frogeye Leaf Spot	*Physalospora obtusa*
4	Insects	
4	Insufficient Sample	
1	Lichens	
1	Negative for Disease	
1	Plum Curculios	
1	Russetting	
1	Scales	
1	Sooty Blotch	*Gloeodes pomigena*
49	***Total for Apple***	

Apricot

2	Insufficient Sample	
2	***Total for Apricot***	

Asian Pear

1	Cedar-Quince Rust	*Gymnosporangium clavipes*
1	***Total for Asian Pear***	

Cherry

1	Black Knot	*Dibotryon morbosum*
1	Brown Rot	*Monilinia fructicola*
1	Cherry Leaf Spot	*Coccomyces hiemalis*
1	Cicada Injury	
1	Cultural Problem	
2	Insects	
4	Insufficient Sample	
1	Negative for Disease	
1	Negative for Phytophthora Root Rot	
1	Physiological Leaf Spot	
1	Suspect Winter Injury	
15	***Total for Cherry***	

Chestnut

1	Blue Mold	*Penicillium sp.*
1	Borers	
1	Poor Pollination	
3	***Total for Chestnut***	

Crabapple		
2	Black Rot	*Physalospora obtusa*
2	Insufficient Sample	
1	Lichens	
4	Scab	*Venturia inaequalis*
1	Suspect Chemical Injury	
10	***Total for Crabapple***	

Filbert		
1	Eastern Filbert Blight	*Anisogramma anomala*
1	***Total for Filbert***	

Fruit Trees, Misc.		
1	Chemical Injury	
1	Negative for Root Disease	
2	***Total for Fruit Trees, Misc.***	

Nectarine		
1	Peach Leaf Curl	*Taphrina deformans*
1	Scab	*Cladosporium carpophilum*
2	***Total for Nectarine***	

Peach		
3	Brown Rot	*Monilinia fructicola*
1	Cultural Problem	
1	Curculios	
5	Insufficient Sample	
1	Oriental Fruit Moths	
3	Peach Leaf Curl	*Taphrina deformans*
2	Scab	*Cladosporium carpophilum*
1	Suspect Brown Rot	*Monilinia fructicola*
1	Suspect Nutrient Deficiency	
18	***Total for Peach***	

Pear		
2	Chemical Injury	
2	Fire Blight	*Erwinia amylovora*
4	Insufficient Sample	
1	Negative for Disease	
1	Negative for Fire Blight	
1	Pear Leaf Blister Mites	
1	Powdery Mildew	*Oidium sp.*
1	Suspect Environmental Stress	
13	***Total for Pear***	

Pecan	
1 Girdlers	
1 Insects	
1 Pops	
3 Total for Pecan	

Plum	
2 Black Knot	*Dibotryon morbosum*
1 Brown Rot	*Monilinia fructicola*
2 Insufficient Sample	
1 Physiological Problem	
1 Suspect Brown Rot	*Monilinia fructicola*
7 Total for Plum	

Pomegranate	
1 Negative for Disease	
1 Sooty Mold	
2 Total for Pomegranate	

Walnut	
1 Environmental Stress	
1 Girdling Roots	
1 Mites	
3 Total for Walnut	

Trees

Arborvitae

1	Animal Urine Injury	
3	Environmental Stress	
3	Insufficient Sample	
1	Leafminers	
6	Mites	
5	Pestalotiopsis Twig Blight	*Pestalotiopsis funerea*
3	Physiological Problem	
1	Phytophthora Root Rot	*Phytophthora cinnamomi*
1	Seasonal Needle Drop	
1	Suspect Seasonal Needle Drop	
25	***Total for Arborvitae***	

Ash

1	Botryosphaeria Canker	*Botryosphaeria sp.*
1	Flower Galls	
2	***Total for Ash***	

Beech

2	Anthracnose	
1	Insufficient Sample	
3	Sooty Mold	*Scorias spongiosa*
6	***Total for Beech***	

Birch

1	Insects	
4	Insufficient Sample	
1	Leaf Galls	
1	Marssonina Blight	*Marssonina betulae*
1	Scales	
8	***Total for Birch***	

Black Gum

1	Physiological Leaf Spot	
1	Sooty Mold	
2	***Total for Black Gum***	

Buckeye

1	Insects	
1	***Total for Buckeye***	

Cherry

1	Insufficient Sample	
1	Physiological Leaf Spot	
1	Scorch	
3	***Total for Cherry***	

Chinafir	
1 Cultural Problem	
1 Total for Chinafir	

Chinkapin	
1 Insufficient Sample	
1 Total for Chinkapin	

Cottonwood	
1 Insufficient Sample	
1 Total for Cottonwood	

Cryptomeria	
2 Environmental Stress	
2 Mites	
1 Negative for Disease	
1 Pestalotiopsis Tip Blight	*Pestalotiopsis sp.*
6 Total for Cryptomeria	

Cypress	
2 Bagworms	
1 Environmental Stress	
1 Insects	
3 Insufficient Sample	
1 Negative for Disease	
1 Negative for Seiridium Canker	
1 Scales	
2 Seiridium Canker	*Seiridium unicorne*
7 Suspect Seiridium Canker	*Seiridium sp.*
19 Total for Cypress	

Dawn Redwood	
1 Negative for Disease	
1 Total for Dawn Redwood	

Dogwood	
1 Chemical Injury	
1 Cultural Problem	
1 Discula Anthracnose	*Discula destructiva*
1 Insects	
8 Insufficient Sample	
1 Negative for Root Disease	
1 Plant Hairs	
3 Powdery Mildew	*Oidium sp.*
3 Scorch	
1 Septoria Leaf Spot	*Septoria cornicola*
1 Sooty Mold	
9 Spot Anthracnose	*Elsinoe corni*
2 Suspect Chemical Injury	
1 Suspect Cultural Problem	
34 Total for Dogwood	

Douglasfir	
1 Diplodia Tip Blight	*Diplodia pinea*
1 Total for Douglasfir	

Eastern Red Cedar	
1 Cedar-Apple Rust	*Gymnosporangium juniperi-virginianae*
1 Cedar-Quince Rust	*Gymnosporangium clavipes*
1 Mites	
3 Total for Eastern Red Cedar	

Elm	
2 Black Spot	*Asteroma ulmeum*
1 Dutch Elm Disease	*Ophiostoma ulmi*
1 Hypoxylon Canker	*Hypoxylon sp.*
1 Insects	
1 Negative for Disease	
1 Suspect Environmental Stress	
7 Total for Elm	

Falsecypress	
2 Seasonal Needle Drop	
2 Total for Falsecypress	

Fir	
1 Environmental Stress	
1 Insufficient Sample	
1 Mites	
1 Normal Condition	
4 Total for Fir	

Fringe Tree	
1 Cause of Problem Unknown	
1 Total for Fringe Tree	

Gingko	
1 Insufficient Sample	
1 Total for Gingko	

Hackberry	
1 Insufficient Sample	
1 Leaf Gall Insects	
2 Total for Hackberry	

Hawthorn	
2 Cedar-Quince Rust	*Gymnosporangium clavipes*
2 Total for Hawthorn	

Hemlock	
1 High pH	
1 Insufficient Sample	
2 Woolly Adelgids	
4 Total for Hemlock	

Hickory	
1 Gnomonia Leaf Spot	*Gnomonia caryae*
3 Insect Galls	
4 Total for Hickory	

Honeylocust	
1 Environmental Stress	
1 Insects	
1 Mites	
3 Total for Honeylocust	

Japanese White Pine	
1 Girdling Roots	
1 Total for Japanese White Pine	

Magnolia	
1 Aphids	
1 Cold Injury	
3 Environmental Stress	
1 Girdling Roots	
2 Insufficient Sample	
1 Leafminers	
1 Lichens	
1 Mites	
1 Negative for Disease	
1 Powdery Mildew	*Oidium sp.*
1 Sooty Mold	
1 Squirrel Injury	
1 Suspect Cold Injury	
1 Suspect Environmental Stress	
1 Winter Injury	
18 Total for Magnolia	

Maple		
1	Anthracnose	*Colletotrichum acutatum*
6	Anthracnose	*Kabatiella apocrypta*
1	Botryosphaeria Canker	*Botryosphaeria dothidea*
1	Chimera	
1	Cicada Injury	
3	Cultural Problem	
3	Environmental Stress	
1	Eriophyid Mites	
1	Fusarium Canker	*Fusarium lateritium*
2	Insect Galls	
2	Insects	
12	Insufficient Sample	
2	Lichens	
1	Nectria Canker	*Nectria galligena*
1	Negative for Disease	
1	Negative for Root Disease	
1	Negative for Verticillium Wilt	
1	Negative for Xylella	
1	Phomopsis Dieback	*Phomopsis sp.*
12	Purple-eye Leaf Spot	*Phyllosticta minima*
2	Scorch	
1	Sooty Mold	
3	Suspect Chemical Injury	
1	Suspect Eutypella Canker	*Eutypella sp.*
61	***Total for Maple***	

Mimosa		
1	Suspect Mimosa Wilt	*Fusarium oxysporum f. sp. perniciosum*
1	***Total for Mimosa***	

Mountain Ash		
1	Insufficient Sample	
1	***Total for Mountain Ash***	

Oak	
4 Anthracnose	*Apiognomonia errabunda*
3 Bacterial Scorch	*Xylella fastidiosa*
1 Botryosphaeria Twig Canker	*Botryosphaeria quercuum*
2 Chemical Injury	
1 Environmental Stress	
3 Eriophyid Mites	
2 Gall Insects	
1 Gall Midges	
1 Ganoderma Butt Rot	*Ganoderma sp.*
1 Hypoxylon Canker	*Hypoxylon atropunctatum*
1 Insect Galls	
2 Insects	
7 Insufficient Sample	
3 Iron Chlorosis	
1 Leaf Skeletonizers	
1 Leptothyrium Leaf Spot	*Leptothyrium sp.*
2 Mites	
1 Negative for Disease	
1 Negative for Oak Wilt	
4 Oak Leaf Blister	*Taphrina caerulescens*
3 Oak Leaf Button Galls	
1 Phyllosticta Leaf Spot	*Phyllosticta sp.*
1 Pine-Oak Gall Rust	*Cronartium quercuum*
1 Powdery Mildew	*Phyllactinia corylea*
2 Scales	
1 Smooth Patch	
1 Sooty Mold	
1 Suspect Chemical Injury	
1 Suspect Frost Injury	
1 Tar Spot	*Phyllachora sp.*
1 Tubakia Leaf Spot	*Tubakia dryina*
56 Total for Oak	

Ornamental Cherry	
1 Cicada Injury	
1 Cold Injury	
2 Environmental Stress	
1 Insects	
4 Insufficient Sample	
1 Negative for Disease	
1 Phoma Leaf Spot	*Phoma sp.*
1 Scorch	
1 Suspect Cold Injury	
1 Suspect Cultural Problem	
14 Total for Ornamental Cherry	

Ornamental Pear		
2	Cedar-Quince Rust	*Gymnosporangium clavipes*
3	Cultural Problem	
2	Fire Blight	*Erwinia amylovora*
11	Insufficient Sample	
1	Negative for Fire Blight	
1	Pear Leaf Blister Mites	
2	Suspect Chemical Injury	
2	Suspect Cultural Problem	
1	Suspect Fire Blight	*Erwinia amylovora*
1	Wood Decay	
26	***Total for Ornamental Pear***	

Ornamental Plum		
1	Black Knot	*Dibotryon morbosum*
1	Insufficient Sample	
1	Suspect Chemical Injury	
3	***Total for Ornamental Plum***	

Palm		
1	Mites	
1	***Total for Palm***	

Pine		
1	Aphids	
1	Bacterial Wetwood	
1	Botryosphaeria Dieback	*Botryosphaeria sp.*
1	Brown Rot	
2	Cultural Problem	
2	Diplodia Tip Blight	*Diplodia pinea*
1	Dothistroma Needle Blight	*Dothistroma pini*
2	Environmental Stress	
1	Eriophyid Mites	
1	Girdling Roots	
2	Insects	
8	Insufficient Sample	
1	Low pH	
1	Mites	
2	Needle Rust	*Coleosporium sp.*
1	Negative for Needle Cast	
1	Normal Condition	
1	Pales Weevils	
1	Physiological Problem	
1	Phytophthora Root Rot	*Phytophthora cinnamomi*
1	Scales	
1	Sooty Mold	
1	Suspect Cytospora Canker	*Cytospora sp.*
1	Suspect Environmental Stress	
1	Weevils	
37	***Total for Pine***	

Redbud	
1 Cultural Problem	
2 Environmental Stress	
2 Insects	
2 Lichens	
1 Negative for Disease	
1 Scorch	
1 Suspect Botryosphaeria Dieback	*Botryosphaeria dothidea*
1 Wood Decay	*Cerrena unicolor*
11 Total for Redbud	

Serviceberry	
2 Cedar-Quince Rust	*Gymnosporangium clavipes*
1 Environmental Stress	
3 Total for Serviceberry	

Sourwood	
1 Insufficient Sample	
1 Total for Sourwood	

Spruce	
1 Cultural Problem	
5 Environmental Stress	
7 Insufficient Sample	
9 Mites	
1 Negative for Root Disease	
1 Physiological Problem	
4 Rhizosphaera Needle Blight	*Rhizosphaera kalkhoffii*
1 Sooty Mold	
5 Stigmina Needle Cast	*Stigmina lautii*
3 Suspect Cytospora Canker	*Cytospora sp.*
1 Suspect Squirrel Damage	
38 Total for Spruce	

Sweet Gum	
1 Nectria Canker	*Nectria cinnabarina*
1 Suspect Chemical Injury	
2 Total for Sweet Gum	

Sycamore	
1 Anthracnose	*Gnomonia platani*
1 Total for Sycamore	

Tree, Unknown	
1 Environmental Stress	
1 Insufficient Sample	
2 Total for Tree, Unknown	

Trees, Miscellaneous	
1 Chemical Injury	
1 Insects	
1 Insufficient Sample	
1 Scales	
1 Scorch	
1 Suspect Chemical Injury	
6 Total for Trees, Miscellaneous	

Tulip Tree	
1 Environmental Stress	
1 Phytophthora Canker	*Phytophthora nicotianae*
1 Scales	
3 Total for Tulip Tree	

Willow	
1 Cytospora Canker	*Cytospora sp.*
1 Environmental Stress	
1 Insufficient Sample	
1 Mites	
1 Negative for Disease	
1 Ramularia Leaf Spot	*Ramularia sp.*
6 Total for Willow	

Zelkova	
1 Cultural Problem	
1 Insufficient Sample	
2 Total for Zelkova	

Turf

Bermudagrass

1	Bermudagrass Decline	*Gaeumannomyces graminis*
1	***Total for Bermudagrass***	

Bluegrass

1	Powdery Mildew	*Erysiphe graminis*
1	***Total for Bluegrass***	

Fescue

5	Brown Patch	*Rhizoctonia solani*
1	Cultural Problem	
5	Environmental Stress	
2	Excess Thatch	
1	Gray Leaf Spot	*Pyricularia grisea*
1	Helminthosporium Leaf Spot	*Bipolaris sorokiniana*
2	Negative for Disease	
1	Normal Condition	
2	Rhizoctonia Blight	*Rhizoctonia solani*
2	Rust	*Puccinia graminis*
1	Suspect Dog Damage	
23	***Total for Fescue***	

Ryegrass

1	Negative for Disease	
1	***Total for Ryegrass***	

St. Augustinegrass

3	Gray Leaf Spot	*Pyricularia grisea*
1	Low pH	
9	Take-All	*Gaeumannomyces graminis*
13	***Total for St. Augustinegrass***	

Turfgrass

6	Brown Patch	*Rhizoctonia solani*
3	Environmental Stress	
1	Excess Thatch	
2	Insufficient Sample	
2	Negative for Disease	
1	Rhizoctonia Blight	*Rhizoctonia solani*
1	Slime Mold	
1	Weed Encroachment	
17	***Total for Turfgrass***	

Zoysia

1	Suspect Winter Dormancy	
1	Suspect Zoysia Patch	*Rhizoctonia solani*
1	Zoysia Patch	*Rhizoctonia solani*
3	***Total for Zoysia***	

Vegetables and Herbs		
Basil		
3	Fusarium Wilt	*Fusarium oxysporum*
1	Insects	
4	***Total for Basil***	
Bean		
1	Anthracnose	*Colletotrichum lindemuthianum*
1	Aphids	
1	Aschochyta Leaf Spot	*Phoma exigua var. exigua*
1	Ashy Stem Blight	*Macrophomina phaseoli*
1	Chemical Injury	
1	Fusarium Root Rot	*Fusarium solani*
1	High Soluble Salts	
1	Insufficient Sample	
1	Mites	
1	Rhizoctonia Stem and Root Rot	*Rhizoctonia solani*
1	Root Knot Nematodes	*Meloidogyne sp.*
1	Stinkbugs	
1	Suspect Chemical Injury	
1	Thrips	
14	***Total for Bean***	
Beet		
1	Cercospora Leaf Spot	*Cercospora beticola*
1	Insects	
2	***Total for Beet***	
Bitter Melon		
1	Negative for Disease	
1	Suspect Cultural Problem	
2	***Total for Bitter Melon***	
Broccoli		
1	Chemical Injury	
1	***Total for Broccoli***	
Brussels Sprouts		
1	Chemical Injury	
1	Insects	
2	***Total for Brussels Sprouts***	
Cantaloupe		
1	Damping-off	*Fusarium sp.*
1	***Total for Cantaloupe***	

Cucumber		
1	Angular Leaf Spot	*Pseudomonas lachrymans*
1	Anthracnose	*Colletotrichum sp.*
2	Cucumber Beetles	
2	Cultural Problem	
2	Insufficient Sample	
1	Low pH	
1	Suspect Damping Off	
10	***Total for Cucumber***	

Garlic		
1	Soft Rot	*Erwinia carotovora*
1	White Rot	*Sclerotium cepivorum*
2	***Total for Garlic***	

Jerusalem Artichoke		
1	Powdery Mildew	*Golovinomyces cichoracearum*
1	Rust	*Puccinia helianthi*
2	***Total for Jerusalem Artichoke***	

Mustard		
1	Cercosporella Leaf Spot	*Cercosporella brassicae*
1	***Total for Mustard***	

New Zealand Spinach		
1	Cercospora Leaf Spot	*Cercospora sp.*
1	***Total for New Zealand Spinach***	

Oregano	
1	Physiological Leaf Spot
1	***Total for Oregano***

Parsley	
1	High pH
1	Insects
1	Negative for Disease
3	***Total for Parsley***

Pea	
1	Environmental Stress
1	***Total for Pea***

Pepper	
1 Aphids	
1 Bacterial Spot	*Xanthomonas vesicatoria*
2 Blossom End Rot	
2 Chemical Injury	
1 Cultural Problem	
1 Flower and Flower Bud Drop	
1 Insufficient Information	
1 Low pH	
1 Negative for Disease	
1 Potato Aucuba Mosaic Virus	
1 Sclerotinia Stem Rot	*Sclerotinia sclerotiorum*
1 Southern Blight	*Sclerotium rolfsii*
1 Tomato Spotted Wilt Virus	
15 Total for Pepper	

Potato	
1 Chemical Injury	
2 Common Scab	*Streptomyces scabies*
1 Fusarium Dry Rot	*Fusarium solani*
1 Insects	
2 Insufficient Sample	
1 Root Knot Nematode	*Meloidogyne incognita*
1 Walnut Wilt	
9 Total for Potato	

Pumpkin	
1 Environmental Stress	
2 Fusarium Foot Rot	*Fusarium solani*
1 Insufficient Information	
1 Insufficient Sample	
1 Low pH	
1 Negative for Disease	
7 Total for Pumpkin	

Rhubarb	
1 Ascochyta Leaf Spot	*Ascochyta sp.*
1 Total for Rhubarb	

Rosemary	
3 Adventitious Roots	
1 Insects	
4 Total for Rosemary	

Sage	
1 Insects	
1 Total for Sage	

Spinach	
1 Suspect Chemical Injury	
1 Total for Spinach	

Squash		
2	Blossom End Rot	
1	Insects	
2	Insufficient Sample	
1	Phytophthora Blight	*Phytophthora capsici*
1	Squash Bugs	
1	Suspect Chemical Injury	
8	***Total for Squash***	

Sweet Corn		
2	Common Smut	*Ustilago maydis*
1	Genetic Abnormality	
1	Physiological Problem	
1	Rhizoctonia Damping-off	*Rhizoctonia sp.*
5	***Total for Sweet Corn***	

Swiss Chard		
2	Cercospora Leaf Spot	*Cercospora beticola*
2	***Total for Swiss Chard***	

Tomato		
1	Adventitious Roots	
1	Alternaria Stem Canker	*Alternaria alternata*
1	Anthracnose	*Colletotrichum sp.*
1	Aphids	
1	Bacterial Speck	*Pseudomonas syringae pv. tomato*
3	Bacterial Wilt	*Ralstonia solanacearum*
1	Blossom Drop	
7	Blossom End Rot	
1	Blotchy Ripening	
3	Catfacing	
1	Cause of Problem Unknown	
20	Chemical Injury	
1	Cracking	
1	Cucumber Mosaic Virus	
6	Cultural Problem	
2	Early Blight	*Alternaria solani*
1	Environmental Stress	
1	Fusarium Basal Stem Rot	*Fusarium oxysporum*
3	Fusarium Crown and Root Rot	*Fusarium oxysporum*
2	Fusarium Wilt	*Fusarium oxysporum*
3	Growth Cracks	
1	High pH	
1	High Soluble Salts	
1	Insects	
17	Insufficient Sample	
2	Magnesium Deficiency	
2	Mites	
4	Negative for Disease	
3	Negative for Virus	
3	Nutrient Deficiency	
1	Oedema	
3	Physiological Leaf Roll	
2	Physiological Leaf Spot	
3	Physiological Problem	
1	Root Knot Nematodes	*Meloidogyne sp.*
10	Septoria Leaf Spot	*Septoria lycopersici*
1	Southern Blight	*Sclerotium rolfsii*
3	Suspect Chemical Injury	
1	Suspect Cultural Problem	
1	Suspect Mechanical Injury	
1	Suspect Walnut Wilt	
6	Tobacco Mosaic Virus	
1	Uneven Ripening	
129	***Total for Tomato***	

Turnip		
1	Cercospora Leaf Spot	*Cercospora brassicicola*
1	Nutrient Deficiency	
2	***Total for Turnip***	

Vegetable Garden

1 Chemical Injury
1 Insects
1 Insufficient Sample
1 Mites
4 Total for Vegetable Garden

Watermelon

1 Insufficient Sample
1 Physiological Problem
2 Total for Watermelon

Zucchini

1 Insects
1 Total for Zucchini

Weeds		
Lambsquarters		
1	Cercospora Leaf Spot	*Cercospora beticola*
1	***Total for Lambsquarters***	
Milkweed		
1	Anthracnose	*Colletotrichum sp.*
1	***Total for Milkweed***	

Woody Ornamentals		
Abelia		
1	Environmental Stress	
1	Phytophthora Root Rot	*Phytophthora cinnamomi*
1	Suspect Cultural Problem	
3	***Total for Abelia***	
Aucuba		
2	Cold Injury	
1	Environmental Stress	
1	Insects	
1	Phomopsis Dieback	*Phomopsis sp.*
5	***Total for Aucuba***	
Azalea		
1	Aphids	
1	Cercospora Leaf Spot	*Cercospora sp.*
1	Cultural Problem	
1	Insects	
2	Insufficient Sample	
2	Lacebugs	
3	Leaf and Flower Gall	*Exobasidium vaccinii*
2	Lichens	
2	Negative for Disease	
2	Negative for Root Disease	
1	Normal Condition	
4	Phomopsis Dieback	*Phomopsis sp.*
1	Phytophthora Root Rot	*Phytophthora cinnamomi*
1	Phytophthora Root Rot	*Phytophthora nicotianae*
1	Sooty Mold	
1	Winter Injury	
26	***Total for Azalea***	
Barberry		
1	Environmental Stress	
1	Insects	
1	Insufficient Sample	
3	***Total for Barberry***	

Bay Laurel		
1	Coniothyrium Leaf Spot	*Coniothyrium sp.*
1	Environmental Stress	
2	***Total for Bay Laurel***	

Boxwood		
3	Cultural Problem	
4	English Boxwood Decline	*Paecilomyces buxi*
16	Insufficient Sample	
8	Leafminers	
4	Lesion Nematodes	*Pratylenchus sp.*
1	Low pH	
1	Low Soluble Salts	
1	Macrophoma Leaf Spot	*Macrophoma candollei*
13	Mites	
5	Negative for Disease	
1	Negative for Nematodes	
1	Negative for Phytophthora Root Rot	
5	Negative for Root Disease	
24	Negative for Root Rot Fungi	
2	Nematodes	
9	Phytophthora Root Rot	*Phytophthora nicotianae*
1	Pin Nematodes	*Paratylenchus sp.*
3	Possible Nematode Problem	
3	Ring Nematodes	*Mesocriconema sp.*
1	Root-Knot Nematode	*Meloidogyne sp.*
3	Scales	
1	Sheath Nematodes	*Hemicycliophora sp.*
4	Spiral Nematodes	*Rotylenchus buxophilus*
1	Stubby Root Nematodes	*Trichodorus sp.*
1	Stunt Nematodes	*Tylenchorhynchus sp.*
1	Suspect Vole Injury	
2	Volutella Blight	*Volutella buxi*
1	Winter Injury	
120	***Total for Boxwood***	

Butterfly Bush		
2	Environmental Stress	
1	Mites	
3	***Total for Butterfly Bush***	

Camellia		
1	Cultural Problem	
1	Insects	
2	Insufficient Sample	
1	Leaf and Flower Gall	*Exobasidium camelliae*
1	Negative for Disease	
1	Physiological Problem	
1	Scales	
8	***Total for Camellia***	

Cherrylaurel	
1 Black Vine Weevils	
2 Borers	
1 Botryosphaeria Dieback	*Botryosphaeria sp.*
1 Cultural Problem	
1 Deep Planting	
1 Insects	
10 Insufficient Sample	
2 Mycosphaerella Leaf Spot	*Mycosphaerella sp.*
1 Negative for Botryosphaeria	
4 Negative for Disease	
2 Negative for Root Disease	
2 Scales	
2 Scorch	
1 Shothole	*Xanthomonas pruni*
1 Suspect Botryosphaeria Dieback	*Botryosphaeria sp.*
1 Suspect Cultural Problem	
33 Total for Cherrylaurel	

Chinese Quince	
1 Scorch	
1 Total for Chinese Quince	

Cleyera	
1 Insufficient Sample	
1 Total for Cleyera	

Cotoneaster	
1 Fire Blight	*Erwinia amylovora*
1 Phytophthora Root Rot	*Phytophthora cambivora*
2 Total for Cotoneaster	

Crape Myrtle	
1 Insects	
1 Insufficient Sample	
1 Lichens	
2 Negative for Disease	
2 Powdery Mildew	*Erysiphe lagerstroemiae*
1 Suspect Environmental Stress	
1 Suspect Mechanical Injury	
9 Total for Crape Myrtle	

Daphne	
1 Environmental Stress	
1 Negative for Disease	
2 Total for Daphne	

English Ivy		
1	Anthracnose	*Colletotrichum trichellum*
1	Cultural Problem	
1	Environmental Stress	
1	Negative for Root Rot	
1	Oedema	
1	Phyllosticta Leaf Spot	*Phyllosticta sp.*
6	***Total for English Ivy***	

Euonymus		
1	Anthracnose	*Colletotrichum gloeosporioides*
1	Mites	
4	Scales	
6	***Total for Euonymus***	

Forsythia		
1	Insects	
1	Negative for Disease	
1	Phomopsis Gall	*Phomopsis sp.*
3	***Total for Forsythia***	

Hibiscus		
1	Insufficient Sample	
1	***Total for Hibiscus***	

Holly		
30	Black Root Rot	*Thielaviopsis basicola*
1	Botryosphaeria Dieback	*Botryosphaeria sp.*
2	Cold Injury	
3	Environmental Stress	
1	Girdling Roots	
2	Insects	
20	Insufficient Sample	
1	Mammalian Injury	
3	Mites	
3	Negative for Disease	
1	Negative for Root Disease	
2	Physiological Leaf Spot	
2	Phytophthora Root Rot	*Phytophthora cinnamomi*
2	Phytophthora Root Rot	*Phytophthora nicotianae*
3	Rootbound	
1	Sapsucker Injury	
4	Scales	
1	Suspect Black Root Rot	*Thielaviopsis basicola*
82	***Total for Holly***	

Hydrangea		
1	Anthracnose	*Colletotrichum sp.*
1	Borers	
3	Insufficient Sample	
1	Negative for Disease	
1	Negative for Root Disease	
1	Rhizoctonia Stem Rot	*Rhizoctonia sp.*
1	Scorch	
9	***Total for Hydrangea***	

Hypericum		
1	Cultural Problem	
1	Insects	
2	***Total for Hypericum***	

Inkberry		
3	Black Root Rot	*Thielaviopsis basicola*
1	Mycosphaerella Leaf Spot	*Mycosphaerella sp.*
1	Phytophthora Root Rot	*Phytophthora cinnamomi*
5	***Total for Inkberry***	

Japanese Plum Yew		
1	Negative for Disease	
1	***Total for Japanese Plum Yew***	

Jasmine		
1	Insects	
1	***Total for Jasmine***	

Juniper		
2	Cultural Problem	
2	Environmental Stress	
2	Insects	
9	Insufficient Sample	
3	Kabatina Tip Blight	*Kabatina juniperi*
7	Mites	
9	Negative for Disease	
3	Negative for Root Disease	
2	Negative for Tip Blight	
1	Normal Condition	
1	Seiridium Canker	*Seiridium unicorne*
1	Suspect Nutrient Deficiency	
42	***Total for Juniper***	

Lilac		
1	Chemical Injury	
2	Insufficient Sample	
1	Scorch	
1	Suspect Chemical Injury	
1	Wind Desiccation	
6	***Total for Lilac***	

Mahonia

1	Spine Spot	
1	***Total for Mahonia***	

Mountain Laurel

1	Botryosphaeria Dieback	*Botryosphaeria sp.*
1	Cercospora Leaf Spot	*Cercospora kalmiae*
2	Insufficient Sample	
4	***Total for Mountain Laurel***	

Nandina

1	Insufficient Sample	
1	***Total for Nandina***	

Photinia

4	Entomosporium Leaf Spot	*Entomosporium mespili*
1	Negative for Disease	
5	***Total for Photinia***	

Pieris

1	Environmental Stress	
1	Insufficient Sample	
1	Mites	
3	***Total for Pieris***	

Pittosporum

1	Insects	
1	Suspect Mechanical Injury	
2	***Total for Pittosporum***	

Plants, Miscellaneous

1	Botryosphaeria Canker	*Botryosphaeria sp.*
1	Insects	
3	Insufficient Sample	
1	Mites	
1	Negative for Disease	
7	***Total for Plants, Miscellaneous***	

Privet

1	Physiological Problem	
1	Suspect Cultural Problem	
2	***Total for Privet***	

Pyracantha

1	Lacebugs	
1	***Total for Pyracantha***	

Rhododendron

1	Borers	
5	Botryosphaeria Dieback	*Botryosphaeria sp.*
1	Cercospora Leaf Spot	*Cercospora handelii*
1	Cultural Problem	
1	Ganoderma Root and Butt Rot	*Ganoderma sp.*
6	Insufficient Sample	
2	Lacebugs	
1	Leaf and Flower Gall	*Exobasidium vaccinii*
1	Negative for Disease	
2	Negative for Root Disease	
1	Normal Condition	
1	Pestalotia Leaf Spot	*Pestalotia sp.*
1	Phytophthora Root Rot	*Phytophthora cinnamomi*
1	Plant Hairs - Normal Condition	
1	Rhizoctonia Root and Stem Rot	*Rhizoctonia sp.*
3	Scorch	
1	Suspect Botryosphaeria Dieback	*Botryosphaeria sp.*
1	Winter Injury	
31	***Total for Rhododendron***	

Rose

6	Black Spot	*Diplocarpon rosae*
1	Chemical Injury	
1	Common Canker	*Coniothyrium fuckelii*
1	Cultural Problem	
1	Environmental Stress	
1	Insects	
3	Insufficient Sample	
2	Mites	
1	Nectria Canker	*Nectria sp.*
1	Negative for Disease	
1	Negative for Root Disease	
1	Rose Rosette	
3	Suspect Chemical Injury	
1	Suspect Cold Injury	
1	Virus	
25	***Total for Rose***	

Russian Olive

1	Insufficient Sample	
1	***Total for Russian Olive***	

Shrub, Unknown

1	Scales	
1	***Total for Shrub, Unknown***	

Shrubs, Miscellaneous

1	Lichens	
1	Suspect Frost Injury	
2	***Total for Shrubs, Miscellaneous***	

Skimmia

1	Phytophthora Root Rot	*Phytophthora nicotianae*
1	***Total for Skimmia***	

Smoke Tree

1	Suspect Environmental Stress	
1	***Total for Smoke Tree***	

Spirea

1	Insufficient Sample	
1	Suspect Chemical Injury	
2	***Total for Spirea***	

Summersweet

1	Insects	
1	***Total for Summersweet***	

Viburnum

1	Botryosphaeria Dieback	*Botryosphaeria sp.*
1	Environmental Stress	
4	Insufficient Sample	
1	Suspect Chemical Injury	
7	***Total for Viburnum***	

Wax Myrtle

1	Physiological Leaf Spot	
1	***Total for Wax Myrtle***	

Wisteria

1	Bacterial Wetwood	
1	Wood Decay	
2	***Total for Wisteria***	

Yew

4	Insufficient Sample	
1	Negative for Disease	
5	***Total for Yew***	

Yucca

1	Coniothyrium Leaf Spot	*Coniothyrium concentricum*
1	Physiological Problem	
1	Plant Bugs	
3	***Total for Yucca***	

Identification Appendix

Information about samples submitted to the laboratory for identification

Higher Plants (45)

Family: Anacardiaceae	
Toxicodendron radicans	Poison Ivy
Family: Aceraceae	
Acer negundo	Boxelder
Family: Apocynaceae	
Apocynum cannabinum	Hemp Dogbane
Family: Aquifoliaceae	
Ilex opaca	American holly
Ilex verticillata	Winterberry
Family: Campanulaceae	
Campanula rapunculoides	Rover Bellflower
Family: Capparaceae	
Cleome hassleriana	Spider flower
Family: Caprifoliaceae	
Lonicera japonica	Japanese Honeysuckle
Lonicera sp.	Honeysuckle
Viburnum prunifolium	Blackhaw Viburnum (3)
Family: Elaeagnaceae	
Elaeagnus umbellata	Autumn Olive
Family: Fabaceae	
Desmodium paniculatum	Tick Trefoil
Family: Fagaceae	
Castanea mollissima	Chinese Chestnut
Quercus phellos	Willow Oak
Family: Hamamelidaceae	
Liquidambar styraciflua	Sweet Gum
Family: Magnoliaceae	
Magnolia sp.	Magnolia
Family: Nyctaginaceae	
Bougainvillea sp.	Bougainvillea
Family: Platanaceae	
Platanus occidentalis	Sycamore

Family: Poaceae	
Agrostis palustris	Creeping Bentgrass
Bromus catharticus	Rescuegrass
Microstegium vimineum	Japanese Stiltgrass
Schedonorus arundinaceus	Tall Fescue
Sorghum halapense	Johnsongrass
Stenotraphrum secondatum	St. Augustinegrass
Tripsacum dactyloides	Eastern Gamagrass
Zoysia japonica	Zoysiagrass
Family: Polygonaceae	
Polygonum cuspidatum	Japanese Knotweed
Family: Potamogetonaceae	
Potamogeton foliosis	Leafy Pondweed
Family: Punicaceae	
Punica granatum	Pomegranate
Family: Rosaceae	
Malus sp.	Crabapple
Prunus laurocerasus	Cherrylaurel
Prunus persica	Peach
Prunus sp.	Cherry (2)
Pyrus sp.	Pear (2)
Rubus arguta	Prickly Blackberry
Family: Rutaceae	
Poncirus trifoliata	Trifoliate Orange
Family: Salicaceae	
Populus sp.	Poplar
Family: Simaroubaceae	
Ailanthus altissima	Tree-of-Heaven
Family: Ulmaceae	
Celtis occidentalis	Hackberry
Family: Unknown	
Unknown	Plant Roots
Family: Urticaceae	
Boehmeria sp.	Boehmeria

Algae (3)

Fungi (14)

Family: Gasteromycetes

Scleroderma geaster	Earthball (6)

Family: Myxomycetes

Fuligo septica	Slime Mold

Family: Polyporaceae

Daedalea quercina	Thick-walled Maze Polypore
Ganoderma lucidum	Ganoderma
	Unknown Polypore (2)

Family: Lycoperdaceae

Calvatia sp.	Puffball

Family: Nidulariaceae

Cyathus sp.	Bird's Nest Fungus

Family: Geastraceae

Sphaerobolus stellatus	Artillery Fungus

Other Substance (8)

Crystalline Substance
Oat starch
Unable to Identify (6)