College of Agriculture, Food and Environment

Plant Pathology

Plant Disease Diagnostic Laboratory Summary

2021

by:

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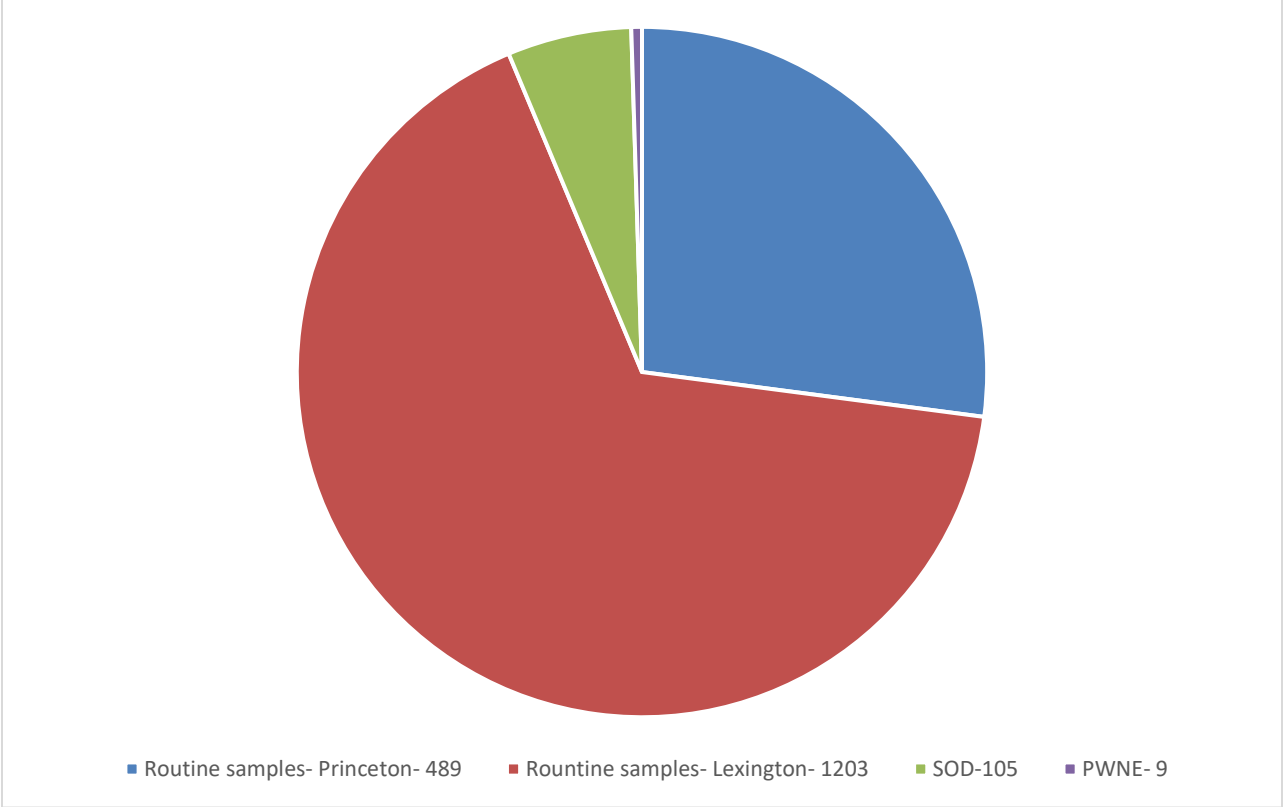
TABLE OF CONTENTS

INTRODUCTION

The Plant Disease Diagnostic Laboratory (Lexington and Princeton) processed 1806 plant samples. Many plant samples had more than one problem which added an additional 613 diagnoses, bringing the total number of diagnoses to 2419. The Lexington Laboratory diagnosed 1317 specimens, including 1203 routine plant samples, 105 samples from commercial nurseries surveyed for the Sudden Oak Death (SOD) pathogen, and 9 Eastern red cedar (*Juniperus virginiana*) samples from commercial lumber companies for pinewood nematode extraction (PWNE). The Princeton Laboratory diagnosed 489 routine plant specimens. Sample totals are summarized in Figure 1 below.

Figure 1: Plant Disease Diagnostic Laboratory – 2021



Total Samples	**1806**
+ Additional diagnoses	**613**
	2419

NATURE OF WORK

Plant disease diagnosis is an ongoing educational and research activity of the U.K. Department of Plant Pathology. During the 2021 growing season, samples were processed in the two branches of the Plant Disease Diagnostic Laboratory (PDDL), one on the U.K. campus in Lexington, and one at the U.K. Research and Education Center in Princeton.

Diagnosis of plant diseases requires keen observation and investigation into the possible causes of plant problems. Most visual diagnoses involve microscopy to determine which plant parts are affected and to identify the pathogen(s) involved. In addition, many specimens require special tests such as moist chamber incubation, pathogen isolation from plant tissue, enzyme-linked immunosorbent assay (ELISA), nematode extraction, or soil pH and soluble salts tests. The laboratory uses the polymerase-chain-reaction (PCR) technique for identification of certain pathogens.

A database of laboratory records is maintained to provide information used for conducting plant disease surveys, identifying new disease outbreaks, and formulating educational programs. In addition, information from the laboratory provides the basis for timely news of plant disease problems through the Kentucky Pest News newsletter, social media, radio, television, and plant health care workshops. Both laboratories report diagnoses of plant diseases to USDA-APHIS as part of the National Plant Diagnostic Network.

ACKNOWLEDGMENTS

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EXPLANATORY REMARKS

The UK-PDDL uses the PClinic database system to document samples received and record all pathogens, insects and other disorders observed on each plant sample. The main body of this report (Table 9) consists of three columns; the first column contains the total number of diagnoses, followed by columns for the diagnosis and causal agent.

Referrals and consultations: Insect problems were generally identified or verified by a specialist in the Entomology Department. Chemical injuries on all commercially grown crops were diagnosed by a weed control specialist or crop specialist. Specialists in other departments at UK also may have provided input on diagnoses of abiotic problems.

Table 1. SUMMARY OF DIAGNOSES[a] BY CROP CATEGORY AND CAUSAL AGENT TYPE

Crop Category	Abiotic Problems	Biotic[b] Problems	Chemical Injury	Inadequate Specimen	Insect Injury	Other[c]	Total Diagnoses
Agronomic							
Corn	24	72	4	0	5	10	115
Forages	8	37	1	1	3	4	54
Hemp	6	6	0	0	4	2	18
Small grains	14	17	1	0	2	2	36
Soybeans	33	70	15	2	9	10	139
Tobacco	51	99	17	1	0	6	174
Fruit							
Small fruit	11	59	4	1	14	9	98
Tree fruit	7	66	4	0	10	6	93
Herbs	1	13	0	0	0	5	19
Identifications	0	2	0	0	0	0	2
Ornamentals							
Herbaceous/ Houseplants	43	68	9	5	15	9	149
Turfgrass	16	46	0	0	1	4	67
Woody	206	509[d]	18	19	175	168[d]	1095
Vegetables	74	195	30	6	22	21	348
Miscellaneous	6	6	0	0	0	0	12
Total	**500**	**1265**	**103**	**35**	**260**	**256**	**2419**

[a]Counts and totals include all diagnoses entered into the PDDL database.
[b]Refer to Table 2 for further breakdown of this category.
[c]Includes the causal agent categories: No disease and Unknown.
[d]Totals include 105 SOD survey samples (7 fungal disease diagnoses; 98 samples with no disease) and 9 PWNE juniper with no disease.

Table 2. SUMMARY OF BIOTIC PROBLEMS[a] BY CROP CATEGORY					
Crop Category	**Bacterial**	**Fungal**	**Nematode**	**Virus**	**Other[b]**
Agronomic					
Corn	0	71	1	0	0
Forages	0	36	0	1	0
Hemp	0	6	0	0	0
Small grains	2	10	0	5	0
Soybeans	0	68	2	0	0
Tobacco	32	56	0	11	0
Fruit					
Small fruit	0	57	0	2	0
Tree fruit	7	58	0	0	1
Herbs	1	12	0	0	0
Identifications	0	1	0	0	1
Ornamentals					
Herbaceous/ Houseplants	7	59	0	2	0
Turfgrass	0	46	0	0	0
Woody	40	444[c]	0	6	19
Vegetables	22	162	4	7	0
Miscellaneous	0	6	0	0	0
Total	**111**	**1092**	**7**	**34**	**21**

[a]Counts and totals include all diagnoses entered into the PDDL database.
[b]Includes these categories: Animal (rodent and bird damage), Plant (plant identifications or parasitic plant) and Alga, Lichen and Phytoplasma.
[c]Totals includes 7 Sudden Oak Death (SOD) survey samples with problems caused by fungi.

Table 3. NUMBER OF ROUTINE PLANT SAMPLES AND DIAGNOSES BY CROP				
Crop Category and Crop	**No. of Samples**	**% Total Samples**	**No. of Diagnoses**	**% Total Diagnoses**
Agronomic				
Corn	83	4.60	115	4.75
Forages	35	1.94	54	2.23
Hemp	12	0.66	18	0.74
Small grains	27	1.50	36	1.49
Soybeans	85	4.71	139	5.75
Tobacco	140	7.75	174	7.19
Fruit				
Small fruit	76	4.21	98	4.05
Tree fruit	71	3.93	93	3.84
Herbs	17	0.94	19	0.79
Identifications	2	0.06	2	0.08
Ornamentals				
Herbaceous and Houseplants	123	6.81	149	6.16
Turfgrass	49	2.71	67	2.77
Woody[a]	808	44.80	1095	45.27
Vegetables	271	15.01	348	14.39
Miscellaneous	7	0.39	12	0.50
Total	**1806**	**100**	**2419**	**100**

[a]Includes 105 SOD survey samples and 9 PWNE juniper samples.

Table 4. SUMMARY OF ROUTINE SAMPLES RECEIVED BY GROWER TYPE AND CROP CATEGORY

	Grower Type							
	Commercial		Homeowner		Research		Institution	
Crop Group	**Ext[a]**	**NE[b]**	**Ext[a]**	**NE[b]**	**Ext[a]**	**NE[b]**	**Ext[a]**	**NE[b]**
Agronomic								
Corn	75	3	0	0	2	3	0	0
Forages	32	0	0	0	1	2	0	0
Hemp	4	6	0	0	0	2	0	0
Small grains	18	6	0	0	2	1	0	0
Soybeans	76	7	0	0	0	2	0	0
Tobacco	132	7	0	0	1	0	0	0
Fruit								
Small Fruit	41	13	16	0	3	2	1	0
Tree Fruit	17	0	53	1	0	0	0	0
Herbs	13	0	1	0	0	0	3	0
Identifications	0	0	2	0	0	0	0	0
Ornamental								
Herbaceous/ Houseplants	68	2	39	2	2	2	6	2
Turfgrass	15	9	22	1	0	0	0	2
Woody	160	73	388	25	1	0	18	143
Vegetable	150	4	91	1	9	11	5	0
Miscellaneous	0	0	0	0	0	7	0	0
Total	**801**	**130**	**612**	**30**	**21**	**32**	**33**	**147**
Total Grower Type	**931**		**642**		**53**		**180**	
Total No. of routine samples received =	1806							

[a]Ext = Extension samples submitted via County Extension Agents or Extension Specialists.
[b]NE = Non-extension samples submitted directly by the grower or other non-extension clients.

Table 5. NUMBER OF ROUTINE SAMPLES REFERRED TO OTHER DEPARTMENTS, UK LABORATORY FACILITIES OR OUTSIDE AGENCIES FOR DIAGNOSIS OR CONSULTATION

Department, Facility or Outside Agency	Total
Agdia, Inc.	10
Entomology Department	68
Forestry Department	11
Horticulture Department	71
Plant & Soil Sciences Department	163
Total no. of sample referrals	**323**
Total no. of plant specimens received	**1806**
% of specimens referred outside Diagnostic Lab for diagnosis	**17.8**

Table 6. SPECIAL LABORATORY TESTS[a] PERFORMED BY PLANT DISEASE DIAGNOSTIC LABORATORY

Test	No. of Tests
Culture	63
Incubation/Lab test	429
Microscope	1426
Molecular (PCR)	15
Nematode extraction	10[b]
Serological (ELISA)	292[c]
Soil tests	208
Visual examination	1223
Total	**3666**

[a]Many samples require more than one test and all tests performed in 2021 are recorded above.
[b]Includes 9 PWNE samples.
[c]Includes 105 samples for the SOD survey.

Table 7. NO. OF ROUTINE PLANT SAMPLES RECEIVED BY COUNTY AND CROP CATEGORY (KY AND OUT-OF-STATE SOURCES)

COUNTY	TOTAL	AGRONOMIC[a]	TOBACCO	FRUIT	ORNAMENTAL	VEGETABLE	OTHER
Adair	7	6	0	0	1	0	0
Allen	10	1	6	1	0	2	0
Anderson	14	1	0	1	12	0	0
Ballard	5	2	0	0	0	3	0
Barren	22	0	6	1	10	5	0
Bath	8	1	0	0	3	4	0
Bell	1	0	0	0	1	0	0
Boone	45	0	0	1	36	8	0
Bourbon	11	4	1	1	3	2	0
Boyd	2	0	0	0	2	0	0
Boyle	7	3	2	2	0	0	0
Bracken	1	0	0	0	1	0	0
Breckinridge	32	7	7	1	11	6	0
Bullitt	1	0	0	0	1	0	0
Butler	10	4	0	1	4	1	0
Caldwell	20	5	0	1	12	2	0
Calloway	27	4	17	0	5	1	0
Campbell	19	0	0	2	14	3	0
Carroll	0	0	0	0	0	0	0
Carter	4	0	1	0	3	0	0
Casey	22	5	0	2	8	7	0
Christian	52	11	12	0	21	8	0
Clark	9	2	2	0	4	1	0
Clay	10	0	0	2	6	2	0
Clinton	8	4	1	1	1	1	0
Crittenden	12	0	0	7	3	2	0
Cumberland	4	0	0	2	2	0	0
Daviess	70	17	7	5	32	9	0
Edmonson	3	1	0	0	1	1	0
Elliott	3	0	0	0	0	2	1
Estill	0	0	0	0	0	0	0
Fayette	322	16	3	12	266	18	7
Fleming	11	2	1	4	2	2	0
Floyd	1	0	0	0	0	1	0
Franklin	15	0	0	1	14	0	0
Fulton	4	0	0	0	4	0	0
Gallatin	5	0	0	0	4	1	0
Garrard	3	0	0	1	1	1	0
Grant	9	0	0	2	2	5	0
Graves	32	7	7	5	12	1	0
Grayson	5	0	0	0	2	3	0
Green	1	0	1	0	0	0	0
Greenup	5	0	0	1	4	0	0

COUNTY	TOTAL	AGRONOMIC[a]	TOBACCO	FRUIT	ORNAMENTAL	VEGETABLE	OTHER
Hancock	0	0	0	0	0	0	0
Hardin	14	6	1	0	6	1	0
Harlan	2	0	0	0	0	2	0
Harrison	15	4	4	2	5	0	0
Hart	10	1	1	0	6	2	0
Henderson	11	8	0	0	2	1	0
Henry	3	1	0	1	1	0	0
Hickman	3	1	0	1	0	1	0
Hopkins	10	1	0	1	8	0	0
Jackson	12	1	0	3	4	4	0
Jefferson	124	1	0	4	113	6	0
Jessamine	23	0	0	1	20	2	0
Johnson	2	0	0	0	0	2	0
Kenton	26	0	0	1	22	0	3
Knott	1	0	0	0	1	0	0
Knox	3	0	0	0	2	1	0
Larue	10	5	1	0	1	3	0
Laurel	22	0	0	2	14	6	0
Lawrence	1	0	0	1	0	0	0
Letcher	8	0	0	0	5	3	0
Lewis	7	0	0	0	6	1	0
Lincoln	21	2	1	2	14	2	1
Livingston	3	3	0	0	0	0	0
Logan	21	4	9	0	0	8	0
Lyon	7	5	0	0	2	0	0
Madison	12	1	0	3	5	3	0
Magoffin	0	0	0	0	0	0	0
Marion	22	7	1	1	10	3	0
Marshall	22	1	1	4	11	5	0
Martin	0	0	0	0	0	0	0
Mason	17	2	1	1	7	5	1
McCracken	24	5	3	2	8	6	0
McCreary	0	0	0	0	0	0	0
McLean	2	0	0	0	0	2	0
Meade	7	3	0	2	2	0	0
Menifee	11	0	0	7	2	2	0
Mercer	5	1	0	0	3	1	0
Metcalfe	8	0	4	0	1	3	0
Monroe	4	0	2	0	0	2	0
Montgomery	17	4	1	0	9	3	0
Morgan	6	0	0	1	4	1	0
Muhlenberg	7	1	0	1	5	0	0
Nelson	26	9	1	1	12	3	0
Nicholas	4	2	0	0	2	0	0
Ohio	6	2	0	4	0	0	0
Oldham	10	5	0	0	5	0	0

COUNTY	TOTAL	AGRONOMIC[a]	TOBACCO	FRUIT	ORNAMENTAL	VEGETABLE	OTHER
Owen	10	1	0	0	1	0	8
Owsley	2	0	0	0	0	2	0
Pendleton	4	0	0	0	3	0	1
Perry	1	0	0	0	1	0	0
Pike	13	0	0	1	0	12	0
Powell	1	0	0	0	1	0	0
Pulaski	21	1	0	1	14	4	1
Robertson	7	0	3	2	1	1	0
Rockcastle	4	0	0	0	3	1	0
Rowan	5	0	0	2	3	0	0
Russell	3	0	0	0	3	0	0
Scott	33	3	0	6	18	6	0
Shelby	63	3	1	4	48	7	0
Simpson	22	8	3	1	9	1	0
Spencer	3	0	0	0	3	0	0
Taylor	33	3	0	2	18	9	1
Todd	39	12	15	4	4	3	1
Trigg	19	3	3	1	7	5	0
Trimble	2	2	0	0	0	0	0
Union	2	2	0	0	0	0	0
Warren	20	5	5	3	5	2	0
Washington	1	1	0	0	0	0	0
Wayne	5	2	0	0	1	2	0
Webster	3	2	0	1	0	0	0
Whitley	9	0	0	1	1	7	0
Wolfe	5	0	4	0	0	1	0
Woodford	37	3	1	4	8	20	2
Out of state	14	1	0	11	0	2	0
Totals	1806	242	140	147	980	271	26

[a]Agronomic crops include corn, soybeans, forages, small grains, and hemp.

Table 8. NUMBER OF PRIMARY DIAGNOSES AND CONSULTATIONS MADE BY UK EXTENSION SPECIALISTS AND RESEARCHERS

Specialists/Researchers	Department	Consultations
Bailey, WA	Plant & Soil Sciences	28
Becker, DW	Horticulture	3
Bessin, RT	Entomology	22
Bradley, CA	Plant Pathology	9
Crocker, E	Forestry	1
Dunwell, WC	Horticulture	3
Dutton, SR	Horticulture	2
Eaton, M	Forestry	10
Fountain, WM	Horticulture	6
Gauthier, NW	Plant Pathology	46
Geneve, R	Horticulture	1
Green, JD	Plant & Soil Sciences	32
Knott, CA	Plant & Soil Sciences	8
Larson, J	Entomology	34
Lee, CD	Plant & Soil Sciences	9
Legleiter, T	Plant & Soil Sciences	50
Murdock, L	Plant & Soil Sciences	1
Owen, G	Horticulture	20
Pearce, RC	Plant & Soil Sciences	20
Pfeufer, EE	Plant Pathology	3
Phillips, T	Plant & Soil Sciences	1
Ritchey, EL	Plant & Soil Sciences	7
Rudolph, R	Horticulture	30
Smith, SR	Plant & Soil Sciences	3
Strang, JG	Horticulture	4
Teutsch, CD	Plant & Soil Sciences	3
Villaneuva, R	Entomology	12
Vincelli, P	Plant Pathology	6
Wise, KA	Plant Pathology	15
Wright, S	Horticulture	2

Table 9. DIAGNOSIS OF INDIVIDUAL SAMPLES BY CROP AND DISEASE/DISORDER		
CORN		
Corn		
1	Anthracnose leaf blight	*Colletotrichum graminicola*
1	Chemical injury suspected	*Chemical*
2	Charcoal rot	*Macrophomina phaseolina*
1	Cold injury suspected	*Abiotic disorder*
4	Common corn rust	*Puccinia sorghi*
15	Corn gray leaf spot	*Cercospora zeae-maydis*
2	Corn tar spot	*Phyllachora maydis*
1	Diplodia ear rot	*Stenocarpella (Diplodia) maydis*
2	Diplodia leaf streak	*Diplodia macrospora*
5	Diplodia stalk rot	*Stenocarpella (Diplodia) maydis*
5	Environmental stress; problem	*Abiotic disorder*
1	Fall armyworm	*Spodoptera frugiperda*
1	Fusarium stalk rot suspected	*Fusarium sp./spp.*
1	Genetic disorder suspected	*Abiotic disorder*
3	Genetic disorders - lesion mimic mutants	*Abiotic disorder*
3	Growth regulator effect suspected	*Chemical*
2	High pH	*Nutritional disorder*
1	Insect damage suspected	*Unidentified Insect*
2	Leafhoppers	*Family Cicadellidae*
1	Leaf spot- abiotic	*Abiotic disorder*
3	Magnesium deficiency	*Nutritional disorder*
10	No pathogen found	*Undetermined*
10	Northern corn leaf blight; leaf spot	*Setosphaeria (Exserohilum) turcica (turcicum)*
1	Nutritional deficiency	*Nutritional disorder*
1	Physiological responses (reddening)	*Abiotic disorder*
3	Planting too shallow	*Abiotic disorder*
1	Plant parasitic nematodes	*Unspecified Genera*
1	Potassium deficiency	*Nutritional disorder*
2	Pythium root and/or crown rot	*Pythium sp./spp.*
3	Rhizoctonia crown and root rot	*Rhizoctonia solani*
21	Southern corn rust	*Puccinia polysora*
2	Stalk rot	*Unidentified Agent*
1	Stink bug damage	*Unidentified Stink Bug*
2	Undetermined abiotic injury	*Abiotic disorder*
115	**Total for Corn**	

FORAGES		
Alfalfa		
1	Alfalfa weevil	*Hypera postica*
1	Anthracnose	*Colletotrichum trifolii*
1	Aphanomyces root rot	*Aphanomyces euteiches*

1	Chemical injury suspected	*Chemical*
2	Common leaf spot	*Pseudopeziza medicaginis*
1	High pH	*Nutritional disorder*
1	Insufficient sample; INAD	*Undetermined*
2	Leptosphaerulina leaf spot; blight	*Leptosphaerulina trifolii*
2	Low pH damage	*Nutritional disorder*
3	No pathogen found	*Undetermined*
2	Nutritional deficiency	*Nutritional disorder*
1	Poor nodulation (not on list)	*Abiotic disorder*
2	Rhizoctonia foliar/ aerial/ web blight	*Rhizoctonia solani*
2	Rhizoctonia root; crown rot	*Rhizoctonia sp./spp.*
2	Sclerotinia stem/ crown or root rot	*Sclerotinia trifoliorum*
1	Soil compaction	*Abiotic disorder*
8	Summer black stem; leaf spot	*Cercospora medicaginis*
33	**Total for Alfalfa**	

Clover		
1	Clover root curculio	*Sitona hispidulus (hispidula)*
1	Not on list	*Not On List*
1	Powdery mildew	*Erysiphe betae (polygoni)*
1	Unidentified virus	*Unidentified virus*
4	**Total for Clover**	

Fescue		
3	Brown patch	*Rhizoctonia sp./spp.*
1	Pythium root dysfunction	*Pythium sp./spp.*
4	**Total for Fescue**	

Orchardgrass		
1	Anthracnose	*Colletotrichum graminicola*
1	Cultural/environmental problem	*Abiotic disorder*
2	Leaf rust; rust	*Puccinia sp./spp.*
6	Leaf Streak	*Cercosporidium sp./spp.*
1	Spider mites	*Family Tetranychidae*
11	**Total for Orchardgrass**	

Sorghum		
1	Northern corn leaf blight; leaf spot	*Exserohilum turcicum*
1	**Total for Sorghum**	

Teff		
1	Rust	*Uromyces eragrostidis*
1	**Total for Teff**	

HEMP		
Hemp		
1	Broad mite	*Polyphagotarsonemus latus*
2	Cercospora leaf spot	*Cercospora sp./spp.*
1	Fusarium seed rot (decay)	*Fusarium sp./spp.*
1	Fusarium wilt	*Fusarium oxysporum*
1	Hemp russet mite	*Aculops cannabicola*
1	High soil moisture	*Abiotic disorder*
3	High temperature damage	*Abiotic disorder*
1	Leaf spot	*Bipolaris sp./spp.*
1	Leaf spot- abiotic	*Abiotic disorder*
1	Low pH	*Nutritional disorder*
1	No pathogen found	*Undetermined*
1	Rhizoctonia root rot	*Rhizoctonia sp./spp.*
1	Thrips	*Order Thysanoptera*
1	Twospotted spider mite	*Tetranychus urticae*
1	Undetermined injury or wound	*Undetermined*
18	**Total for Hemp**	

SOYBEAN		
Soybean		
4	Charcoal rot	*Macrophomina sp./spp.*
5	Chemical injury	*Chemical*
2	Diaporthe	*Diaporthe (Phomopsis) sp./spp.*
2	Environmental stress; problem	*Abiotic disorder*
3	Green stem disorder	*Not On List*
4	Growth regulator effect suspected	*Chemical*
6	Herbicide injury	*Chemical*
2	High pH	*Nutritional disorder*
1	Insect damage	*Unidentified Insect*
2	Insufficient sample; INAD	*Undetermined*
7	Leaf blight	*Cercospora kikuchii*
1	Leaf scorch	*Abiotic disorder*
1	Leaf spot- abiotic	*Abiotic disorder*
1	Low pH	*Nutritional disorder*
4	No pathogen found	*Undetermined*
2	Nutritional deficiency	*Nutritional disorder*
1	Phomopsis seed decay	*Phomopsis sp./spp.*
1	Phyllosticta leaf blight	*Phyllosticta sojicola*
2	Poor nodulation	*Not On List*
13	Potassium deficiency	*Nutritional disorder*
1	Purple seed-stain; leaf blight	*Cercospora kikuchii*
1	Pythium root and/or crown rot	*Pythium sp./spp.*

3	Red crown rot	*Calonectria ilicicola*
1	Rhizoctonia root rot	*Rhizoctonia sp./spp.*
7	Saprophytes	*Secondary Agents; Saprophytes;*
1	Slug damage	*Unidentified Slug*
7	Soil compaction	*Abiotic disorder*
6	Soybean anthracnose	*Glomerella glycines*
9	Soybean brown spot	*Septoria glycines*
2	Soybean downy mildew	*Peronospora manshurica*
2	Soybean cyst nematode (SCN)	*Heterodera glycines*
8	Soybean frogeye leaf spot	*Cercospora sojina*
7	Soybean Phytophthora root and stem rot	*Phytophthora sojae*
2	Soybean pod and stem blight	*Diaporthe (Phomopsis) phaseolorum*
3	Soybean stem canker	*Diaporthe phaseolorum*
2	Soybean sudden death syndrome	*Fusarium virguliforme*
2	Spider mite	*Tetranychus sp./spp.*
1	Target spot	*Corynespora cassiicola*
2	Thrips	*Frankliniella sp./spp.*
3	Twospotted spider mite	*Tetranychus urticae*
5	Undetermined abiotic injury	*Abiotic disorder*
139	**Total for Soybean**	

	SMALL GRAINS	
Cowpea		
1	Foliar distortion	*Unidentified Agent*
1	**Total for Cowpea**	

Oats		
1	Freeze; frost; cold damage	*Abiotic disorder*
1	**Total for Oats**	

Rape; Canola		
1	Crucifer bacterial black rot	*Xanthomonas campestris*
1	**Total for Rape; Canola**	

Rye		
1	Chemical injury suspected	*Chemical*
2	Head blight	*Fusarium graminearum*
1	No pathogen found	*Undetermined*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
2	Rye leaf rust	*Puccinia recondita*
1	Soil compaction	*Abiotic disorder*
1	Take-all	*Gaeumannomyces sp./spp.*
9	**Total for Rye**	

Sorghum		
1	Grain mold	*Various Fungi*
1	Mold	*Unidentified Fungus*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Soil compaction	*Abiotic disorder*
1	Sorghum gray leaf spot	*Cercospora sorghi*
5	**Total for Sorghum**	

Wheat		
1	Bacterial streak; black chaff	*Xanthomonas campestris*
2	Barley yellow dwarf	*BYDV-PAV*
1	Cereal yellow dwarf	*CYDV*
4	Cultural/environmental problem	*Abiotic disorder*
2	Fall armyworm	*Spodoptera frugiperda*
1	Freeze; frost; cold damage	*Abiotic disorder*
1	High soil moisture	*Abiotic disorder*
1	Low soil moisture	*Abiotic disorder*
3	Soil compaction	*Abiotic disorder*
1	Undetermined abiotic injury	*Abiotic disorder*
2	Virus infection suspected	*Viruses*
19	**Total for Wheat**	

	TOBACCO	
Tobacco		
1	Alfalfa mosaic	*Alfalfa Mosaic Virus (AMV)*
24	Angular leaf spot	*Pseudomonas syringae pv. tabaci*
35	Black shank	*Phytophthora nicotianae*
1	Boron deficiency	*Nutritional disorder*
2	Brown spot	*Alternaria alternata*
3	Chemical injury suspected	*Chemical*
4	Cold injury suspected	*Abiotic disorder*
8	Cultural problems/poor practices	*Abiotic disorder*
4	Frogeye leaf spot	*Cercospora nicotianae*
1	Fusarium wilt	*Fusarium oxysporum*
8	Growth regulator effect suspected	*Chemical*
1	Hail damage	*Abiotic disorder*
6	Herbicide injury suspected	*Chemical*
3	High soil moisture	*Abiotic disorder*
1	Insufficient sample; INAD	*Undetermined*
1	Leaf spot- abiotic	*Abiotic disorder*
3	Low pH damage	*Nutritional disorder*
2	Manganese toxicity suspected	*Nutritional disorder*
1	Nitrogen deficiency	*Nutritional disorder*

6	No pathogen found	*Undetermined*
2	Poor germination	*Abiotic disorder*
3	Potassium deficiency	*Nutritional disorder*
10	Pythium root and/or crown rot	*Pythium sp./spp.*
8	Soil compaction	*Abiotic disorder*
1	Soreshin (Rhizoctonia stem rot)	*Rhizoctonia sp./spp.*
3	Target spot	*Rhizoctonia sp./spp.*
8	Tobacco hollow stalk	*Erwinia carotovora carotovora*
9	Tomato spotted wilt	*Tomato Spotted Wilt Virus*
6	Transplant shock; stress	*Abiotic disorder*
3	Undetermined abiotic injury	*Abiotic disorder*
1	Viruses	*Viruses*
5	Weather fleck	*Abiotic disorder*
174	**Total for Tobacco**	

SMALL FRUIT

Blackberry

6	Anthracnose	*Elsinoe veneta*
2	Cane and leaf rust	*Kuehneola uredinis*
2	Cane blight; canker	*Coniothyrium fuckelii*
3	Cercospora leaf spot	*Cercospora sp./spp.*
1	Double blossom (Rosette)	*Cercosporella rubi*
2	Freeze; frost; cold damage	*Abiotic disorder*
1	Growth regulator effect suspected	*Chemical*
1	Insect damage	*Unidentified Insect*
1	No pathogen found	*Undetermined*
1	Orange rust	*Gymnoconia nitens*
1	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
1	Raspberry crown borer	*Pennisetia marginata*
2	Septoria leaf and cane spot	*Sphaerulina westendorpii*
1	Soil compaction	*Abiotic disorder*
2	Spider mites	*Family Tetranychidae*
1	Unidentified virus	*Unidentified virus*
28	**Total for Blackberry**	

Blueberry

1	Armillaria root rot	*Armillaria sp./spp.*
1	Blueberry mosaic (BMV) suspected	*Ophiovirus Blueberry Mosaic Virus*
1	Canker; Stem blight; Dieback	*Botryosphaeria dothidea*
2	Herbicide injury suspected	*Chemical*
1	High pH	*Nutritional disorder*
1	Insufficient sample; INAD	*Undetermined*
3	No pathogen found	*Undetermined*
7	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*

1	Stem canker	*Botryosphaeria corticis*
18	**Total for Blueberry**	

Gooseberry		
1	Anthracnose	*Unidentified Fungus*
1	**Total for Gooseberry**	

Grape		
1	Aphids	*Family Aphididae*
2	Black rot	*Guignardia bidwellii*
1	Chemical injury suspected	*Chemical*
3	Foliar distortion	*Unidentified Agent*
1	Grape anthracnose; birds-eye rot	*Elsinoe ampelina*
10	Grape downy mildew	*Plasmopara viticola*
1	Grape phylloxera	*Daktulosphaira vitifoliae*
1	Japanese beetle	*Popillia japonica*
3	Scald; scorch	*Abiotic disorder*
1	Undetermined abiotic injury	*Abiotic disorder*
24	**Total for Grape**	

Raspberry		
1	Anthracnose	*Elsinoe veneta*
1	Cane blight; canker	*Coniothyrium fuckelii*
1	Insects	*Class insecta*
2	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
5	**Total for Raspberry**	

Strawberry		
1	Botrytis fruit rot	*Botrytis sp./spp.*
1	Cold injury suspected	*Abiotic disorder*
1	Cultural/environmental problem	*Abiotic disorder*
1	Freeze; frost; cold damage	*Abiotic disorder*
2	Leaf spot; blight	*Mycosphaerella fragariae*
2	No pathogen found	*Undetermined*
3	Phomopsis leaf blight	*Phomopsis obscurans*
1	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Slime mold	*Class Myxomycetes; Myxomycota*
1	Slug damage	*Unidentified Slug*
1	Spider mite	*Family Tetranychidae*
2	Strawberry black root rot complex	*Various Fungi*
3	Twospotted spider mite	*Tetranychus urticae*
1	Unidentified caterpillar	*Unidentified Caterpillar*

22	**Total for Strawberry**	

TREE FRUIT		
Apple		
1	Apple powdery mildew	*Podosphaera leucotricha*
6	Apple scab	*Venturia inaequalis*
1	Bitter rot	*Colletotrichum sp./spp.*
9	Cedar-apple rust	*Gymnosporangium juniperi-virginianae*
1	Chemical injury suspected	*Chemical*
1	Fire blight	*Erwinia amylovora*
2	Freeze; frost; cold damage	*Abiotic disorder*
7	Frogeye leaf spot	*Botryosphaeria obtusa*
3	Herbicide injury suspected	*Chemical*
1	Japanese beetle	*Popillia japonica*
1	Low pH	*Nutritional disorder*
1	No pathogen found	*Undetermined*
3	Plum curculio	*Conotrachelus nenuphar*
1	Rosy apple aphid	*Dysaphis plantaginea*
1	Scald; scorch	*Abiotic disorder*
5	Sooty blotch flyspeck complex	*Various fungi*
1	Spot anthracnose	*Elsinoe sp./spp.*
5	Thread blight	*Ceratobasidium (Corticium) ochroleucum (stevensii)*
1	Undetermined injury or wound	*Undetermined*
51	**Total for Apple**	

Cherry		
1	Anthracnose	*Colletotrichum sp./spp.*
1	Brown rot; blossom and twig blight	*Monilinia fructicola*
1	Leaf spot; shothole	*Blumeriella jaapii*
3	**Total for Cherry**	

Nectarine		
1	Brown rot; blossom and twig blight	*Monilinia fructicola*
1	Phyllosticta leaf spot	*Phyllosticta sp./spp.*
1	Stonefruit bacterial spot	*Xanthomonas campestris pv. Pruni*
3	**Total for Nectarine**	

Pawpaw		
2	Anthracnose	*Colletotrichum sp./spp.*
2	**Total for Pawpaw**	

Peach

3	Brown rot; blossom and twig blight	*Monilia fructicola*
1	Canker- unidentified fungus	*Unidentified Fungus*
1	Cultural/environmental problem	*Abiotic disorder*
1	Frosty mildew	*Mycosphaerella sp./spp.*
1	Greater peachtree borer	*Synanthedon exitisoa*
1	No pathogen found	*Undetermined*
3	Scab	*Cladosporium carpophilum*
3	Stonefruit bacterial spot	*Xanthomonas campestris pv. Pruni*
14	**Total for Peach**	

Pear		
2	Bacterial blight; bacterial blossom blast	*Pseudomonas syringae pv. syringae*
1	Freeze; frost; cold damage	*Abiotic disorder*
1	White rot	*Botryosphaeria dothidea*
1	Undetermined injury	*Undetermined*
5	**Total for Pear**	

Pecan		
1	Lichens	*Lichenes*
1	No pathogen found	*Undetermined*
1	Pecan anthracnose	*Colletotrichum gloeosporioides*
2	Pecan; hickory scab	*Cladosporium caryigenum*
1	Pecan leaf casebearer	*Acrobasis juglandis*
1	Pecan nut casebearer	*Acrobasis nuxvorella*
2	Pecan weevil	*Curculio caryae*
1	Undetermined injury or wound	*Undetermined*
10	**Total for Pecan**	

Plum		
1	Bacterial leaf spot	*Xanthomonas sp./spp.*
1	Black knot	*Apiosporina morbosa*
2	Brown rot; blossom and twig blight	*Monilinia fructicola*
1	No pathogen found	*Undetermined*
5	**Total for Plum**	

HERBS		
Basil		
2	Downy mildew	*Peronospora belbahrii*
1	No pathogen found	*Undetermined*
1	Rhizoctonia stem and root rot	*Rhizoctonia sp./spp.*
4	**Total for Basil**	

Cilantro

1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	**Total for Cilantro**	

Ginger		
1	Bacterial soft rot	*Erwinia sp./spp.*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Rhizoctonia stem and root rot	*Rhizoctonia sp./spp.*
3	**Total for Ginger**	

Lavender		
1	High soluble salt	*Nutritional disorder*
4	No pathogen found	*Undetermined*
1	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
3	Rhizoctonia root rot	*Rhizoctonia sp./spp.*
10	**Total for Lavender**	

Sage		
1	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
1	**Total for Sage**	

IDENTIFICATIONS		
Fungus ID Request		
1	Velvet blue spread	*Terana caerulea*
1	**Total for Woody Ornamental**	
Plant Id Request		
1	Kentucky bluegrass	*Poa pratensis*
1	**Total for Plant Id Request**	

MISCELLANEOUS		
Arabidopsis		
1	Cultural/environmental problem	*Abiotic disorder*
3	High soluble salt	*Nutritional disorder*
4	Pythium damping-off	*Pythium sp./spp.*
8	**Total for Arabidopsis**	

Chia

1	Corynespora leaf spot	*Corynespora cassiicola*
1	**Total for Chia**	

Dichondra		
1	Dichondra rust	*Puccinia dichondrae*
1	**Total for Dichondra**	

Not Found On List		
1	Boron deficiency	*Nutritional disorder*
1	High soil moisture	*Abiotic disorder*
2	**Total for Not Found On List**	

HERBACEOUS ORNAMENTALS		
Aster		
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	**Total for Aster**	

Banana (Ornamental)		
1	Non-pathogenic; Saprophyte	*Secondary Agents; Saprophytes; Unspecif.*
1	**Total for Banana (Ornamental)**	

Begonia		
1	High soluble salt	*Nutritional disorder*
1	Spider mite injury	*Unidentified Spider Mite*
1	Undetermined abiotic injury	*Abiotic disorder*
3	**Total for Begonia**	

Boston Fern		
1	High soluble salt	*Nutritional disorder*
1	Low pH; high soluble salt damage	*Nutritional disorder*
2	**Total for Boston Fern**	

Bugle-weed		
3	Southern Blight	*Athelia (Sclerotium) rolfsii*
3	**Total for Bugle-weed**	

Buttercup; Crowfoot		
1	Cultural/environmental problem	*Abiotic disorder*
1	High soluble salt	*Nutritional disorder*
2	**Total for Buttercup; Crowfoot**	

Christmas Fern		
1	Bacterial soft rot	*Erwinia sp./spp.*
1	**Total for Christmas Fern**	

Chrysanthemum		
1	Aphids	*Family Aphididae*
1	Ascochyta ray blight	*Stagonosporopsis chrysanthemi*
2	Bacterial leaf spot	*Pseudomonas cichorii*
2	Fusarium wilt	*Fusarium oxysporum*
2	High pH	*Nutritional disorder*
1	High soil moisture	*Abiotic disorder*
1	Insufficient sample	*Undetermined*
1	Leaf scorch	*Abiotic disorder*
1	Mold	*Unidentified Fungus*
3	No pathogen found	*Undetermined*
1	Nutritional deficiency	*Nutritional disorder*
10	Pythium root and/or crown rot	*Pythium sp./spp.*
3	Rhizoctonia foliar/ aerial/ web blight	*Rhizoctonia solani*
1	Spider mite injury	*Unidentified Spider Mite*
1	Transplant shock; stress	*Abiotic disorder*
1	Undetermined abiotic injury	*Abiotic disorder*
32	**Total for Chrysanthemum**	

Clematis		
1	Ascochyta blight	*Ascochyta sp./spp.*
1	**Total for Clematis**	

Cosmos		
1	Geometrid moth	*Eupithecia miserulata*
1	**Total for Cosmos**	

Dahlia		
1	Anthracnose basal rot; crown rot	*Colletotrichum sp./spp.*
1	High soluble salt	*Nutritional disorder*
2	Insufficient sample	*Undetermined*
1	No pathogen found	*Undetermined*
1	Powdery mildew	*Erysiphe sp./spp.*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Rhizoctonia root rot	*Rhizoctonia sp./spp.*
8	**Total for Dahlia**	

Daylily		
1	Undetermined injury	*Undetermined*

1	**Total for Daylily**	

Dropseeds		
1	Smut	*Ustilago sp./spp.*
1	**Total for Dropseeds**	

Euphorbia		
1	Rhizoctonia stem and root rot	*Rhizoctonia sp./spp.*
1	**Total for Euphorbia**	

Geranium		
1	Bacterial leaf spot	*Unidentified Bacteria*
1	Black root rot	*Berkeleyomyces (Thielaviopsis) basicola*
1	Cultural/environmental problem	*Abiotic disorder*
1	High soluble salt	*Nutritional disorder*
2	Iron toxicity	*Nutritional disorder*
2	Low soil moisture	*Abiotic disorder*
1	No pathogen found	*Undetermined*
1	Sclerotinia blight	*Sclerotinia sclerotiorum*
1	Undetermined abiotic injury	*Abiotic disorder*
11	**Total for Geranium**	

Goldenseal		
1	Cultural/environmental problem	*Abiotic disorder*
1	**Total for Goldenseal**	

Hellebore		
1	Genetic disorder suspected	*Abiotic disorder*
1	**Total for Hellebore**	

Hollyhock		
2	Mallow rust; hollyhock rust	*Puccinia malvacearum*
2	**Total for Hollyhock**	

Hosta		
1	Anthracnose	*Colletotrichum sp./spp.*
1	**Total for Hosta**	

Impatiens		
1	Impatiens necrotic spot	*Impatiens Necrotic Spot Virus*
1	Pythium root and/or crown rot	*Pythium sp./spp.*

2	**Total for Impatiens**	

Iris		
3	Bacterial soft rot	*Erwinia sp./spp.*
3	Iris borer	*Macronoctua onusta*
2	Pythium root and/or crown rot	*Pythium sp./spp.*
8	**Total for Iris**	

Lilyturf		
2	Crown and root rot	*Phytophthora sp./spp.*
2	**Total for Lilyturf**	

Marigold		
1	Chemical injury suspected	*Chemical*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Rhizoctonia root rot	*Rhizoctonia sp./spp.*
3	**Total for Marigold**	

Milkweed		
1	Chemical injury suspected	*Chemical*
1	**Total for Milkweed**	

New Guinea Impatiens		
2	Broad mite	*Polyphagotarsonemus latus*
1	High soluble salt	*Nutritional disorder*
1	Insufficient sample	*Undetermined*
1	Rhizoctonia foliar/ aerial/ web blight	*Rhizoctonia solani*
1	Thrips	*Order Thysanoptera*
1	Twospotted spider mite	*Tetranychus urticae*
7	**Total for New Guinea Impatiens**	

Ostrich Fern		
1	Cultural/environmental problem	*Abiotic disorder*
1	**Total for Ostrich Fern**	

Pachysandra		
1	Growth regulator effect suspected	*Chemical*
1	Leaf and stem blight	*Volutella pachysandrae*
2	**Total for Pachysandra**	

Parrot Flower

1	Twospotted spider mite	*Tetranychus urticae*
1	**Total for Parrot Flower**	

Peony		
1	Botrytis blight	*Botrytis sp./spp.*
1	Glyphosate injury suspected	*Chemical*
3	Growth regulator effect suspected	*Chemical*
2	Rhizoctonia root rot	*Rhizoctonia sp./spp.*
7	**Total for Peony**	

Periwinkle		
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	**Total for Periwinkle**	

Petunia		
1	High pH damage	*Nutritional disorder*
2	High soluble salt	*Nutritional disorder*
3	Pythium root and/or crown rot	*Pythium sp./spp.*
1	White mold (stem rot)	*Sclerotinia sclerotiorum*
7	**Total for Petunia**	

Phlox		
1	Anthracnose basal rot; Crown rot	*Colletotrichum sp./spp.*
1	Black root rot	*Berkeleyomyces (Thielaviopsis) basicola*
1	Growth regulator effect suspected	*Chemical*
3	**Total for Phlox**	

Poinsettia		
1	Poinsettia mosaic (PNMVA)	*Unassigned Poinsettia Mosaic Virus*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Undetermined abiotic injury	*Abiotic disorder*
3	**Total for Poinsettia**	

Rudbeckia		
1	Septoria leaf spot	*Septoria sp./spp.*
1	**Total for Rudbeckia**	

Sedges		
1	No pathogen found	*Undetermined*
1	**Total for Sedges**	

Stonecrop		
1	Growth regulator effect suspected	*Chemical*
1	**Total for Stonecrop**	

Strawflower		
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Rhizoctonia stem and root rot	*Rhizoctonia sp./spp.*
2	**Total for Strawflower**	

Sweetpotato		
1	Nutritional deficiency	*Nutritional disorder*
1	**Total for Sweetpotato**	

Sword Fern		
1	Freeze; frost; cold damage	*Abiotic disorder*
1	**Total for Sword Fern**	

Verbena		
1	Aphids	*Family Aphididae*
1	Cold injury suspected	*Abiotic disorder*
1	High soluble salt	*Nutritional disorder*
1	Low soil moisture	*Abiotic disorder*
1	No pathogen found	*Undetermined*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
6	**Total for Verbena**	

Wormwood; Artemisia		
1	No pathogen found	*Undetermined*
1	**Total for Wormwood; Artemisia**	

INDOOR PLANTS		
Curry-leaf tree		
1	Leaf scorch	*Abiotic disorder*
1	**Total for Curry-leaf Tree**	

Fig		
1	Insect damage	*Unidentified Insect*
1	Physiological responses (fruit drop)	*Abiotic disorder*
2	**Total for Fig**	

Hibiscus		
1	Leaf scorch	*Abiotic disorder*
1	Nutritional disorder	*Nutritional disorder*
2	**Total for Hibiscus**	

Jade Plant		
1	Oedema; edema	*Abiotic disorder*
1	**Total for Jade Plant**	

Lemon		
1	Mealybugs	*Family Pseudococcidae*
1	Scald; scorch	*Abiotic disorder*
2	**Total for Lemon**	

Malabar Chestnut		
1	Cultural/environmental problem	*Abiotic disorder*
1	**Total for Malabar Chestnut**	

Mandevilla		
1	Rhizoctonia root rot	*Rhizoctonia sp./spp.*
1	**Total for Mandevilla**	

Orchids; Dendrobium		
1	Anthracnose; Colletotrichum leaf spot	*Colletotrichum sp./spp.*
1	Cultural/environmental problem	*Abiotic disorder*
2	**Total for Orchids; Dendrobium**	

Schefflera		
1	Insufficient information	*Undetermined*
1	**Total for Schefflera**	

	TURFGRASS	
Bentgrass		
1	Anthracnose	*Colletotrichum graminicola*
6	Black layer of turfgrass	*Abiotic disorder*
1	Dense thatch layer	*Abiotic disorder*
2	Excessive water	*Abiotic disorder*
4	Pythium root dysfunction	*Pythium sp./spp.*
5	Take-all	*Gaeumannomyces graminis var. avenae*

19	**Total for Bentgrass**	

Bermudagrass		
1	Root decline of warm season grasses	*Gaeumannomyces graminis var. graminis*
1	Spring dead spot	*Ophiosphaerella sp./spp.*
2	**Total for Bermudagrass**	

Bluegrass		
1	High soil moisture	*Abiotic disorder*
1	Melting out (Turfgrass)	*Drechslera sp./spp.*
1	Southern Blight	*Athelia (Sclerotium) rolfsii*
3	Summer patch	*Magnaporthe poae*
6	**Total for Bluegrass**	

Crabgrass		
1	Ergot	*Claviceps sp./spp.*
1	**Total for Crabgrass**	

Fescue		
1	Anthracnose	*Colletotrichum graminicola*
11	Brown patch	*Rhizoctonia sp./spp.*
2	Cultural/environmental problem	*Abiotic disorder*
1	Dollar spot	*Clarireedia homoeocarpa*
1	Environmental stress; problem	*Abiotic disorder*
2	Heat stress	*Abiotic disorder*
1	Insect damage	*Unidentified Insect*
2	Melting out (Turfgrass)	*Drechslera sp./spp.*
2	No pathogen found	*Undetermined*
1	Pink snow mold; Monographella patch	*Monographella nivalis*
1	Pythium root rot	*Pythium sp./spp.*
4	Red thread	*Laetisaria fuciformis*
1	Undetermined abiotic injury	*Abiotic disorder*
30	**Total for Fescue**	

Grasses		
1	Anthracnose	*Colletotrichum sp./spp.*
1	Brown patch	*Rhizoctonia sp./spp.*
1	Leaf rust; rust	*Puccinia sp./spp.*
3	**Total for Grasses**	

Ryegrass		
1	Brown patch	*Rhizoctonia sp./spp.*

3	Gray leaf spot	*Pyricularia grisea*
4	**Total for Ryegrass**	

Turfgrass		
2	No pathogen found	*Undetermined*
2	**Total for Turfgrass**	

WOODY ORNAMENTALS		
Almond		
1	Cultural/environmental problem	*Abiotic disorder*
1	Oriental fruit moth (OFM)	*Grapholita molesta*
2	**Total for Almond**	

Arborvitae		
2	Arborvitae leafminer	*Argyresthia thuiella*
11	Decline; dieback	*Abiotic disorder*
2	Environmental stress; problem	*Abiotic disorder*
2	Mites	*Order acari*
4	No pathogen found	*Undetermined*
6	Pestalotiopsis needle blight; tip blight	*Pestalotiopsis sp./spp.*
3	Phomopsis dieback; tip blight; canker	*Phomopsis sp./spp.*
2	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
4	Spider mite injury	*Unidentified Spider Mite*
6	Transplant shock; stress	*Abiotic disorder*
42	**Total for Arborvitae**	

Ash		
1	Decline; dieback	*Abiotic disorder*
1	Mycosphaerella leaf spot	*Mycosphaerella effigurata*
2	**Total for Ash**	

Azalea		
5	Azalea lace bug	*Stephanitis pyriodes*
1	Cercospora leaf spot	*Cercospora sp./spp.*
1	Iron deficiency	*Nutritional disorder*
1	Insufficient sample; INAD	*Undetermined*
1	Lichens	*Lichenes*
9	**Total for Azalea**	

Beech		
1	Canker	*Biscogniauxia sp./spp.*
1	Undetermined injury	*Undetermined*

2	**Total for Beech**	

Birch		
1	Cicada egg-laying injury	*Unidentified Cicada*
1	Cryptocline leaf spot	*Cryptocline betularum*
1	Dieback; canker	*Nectria sp./spp.*
2	Foliar distortion	*Unidentified Agent*
1	High pH	*Nutritional disorder*
1	Iron deficiency	*Nutritional disorder*
1	Leaf scorch	*Abiotic disorder*
1	No pathogen found	*Undetermined*
1	Oystershell scale	*Lepidosaphes ulmi*
1	Spiny witch-hazel aphid	*Hamamelistes spinosus*
11	**Total for Birch**	

Black Gum		
1	Canker; Stem blight; Dieback	*Botryosphaeria dothidea*
1	Dieback; canker; twig blight	*Botryosphaeria sp./spp.*
1	Transplant shock; stress	*Abiotic disorder*
3	**Total for Black Gum**	

Boston ivy		
1	Phyllosticta leaf spot	*Phyllosticta sp./spp.*
1	**Total for Boston ivy**	

Boxwood		
1	Algae	*General*
1	Black root rot	*Berkeleyomyces (Thielaviopsis) basicola*
56	Boxwood blight; leaf and stem blight	*Calonectria pseudonaviculatum*
39	Boxwood leafminer	*Monarthropalpus flavus (buxi)*
2	Boxwood psyllid	*Psylla buxi*
56	Boxwood Volutella canker	*Volutella buxi*
1	Cottony cushion scale	*Icerya purchasi*
2	Cultural/environmental problem	*Abiotic disorder*
5	Freeze; frost; cold damage	*Abiotic disorder*
1	High soil moisture	*Abiotic disorder*
1	Insufficient information	*Undetermined*
3	Insufficient sample	*Undetermined*
1	Leaf spot- abiotic	*Abiotic disorder*
2	Lichens	*Lichenes*
40	Macrophoma dieback	*Macrophoma sp./spp.*
8	No pathogen found	*Undetermined*
3	Nutritional disorder	*Nutritional disorder*

1	Oedema; edema	*Abiotic disorder*
1	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
3	Salt damage	*Abiotic disorder*
2	Scald; scorch	*Abiotic disorder*
1	Sooty mold	*Unidentified Fungus*
1	Transplant shock; stress	*Abiotic disorder*
1	Undetermined injury	*Undetermined*
11	Winter injury; winter desiccation	*Abiotic disorder*
244	**Total for Boxwood**	

Buckthorn		
1	Cultural/environmental problem	*Abiotic disorder*
1	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
2	**Total for Buckthorn**	

Butterfly Bush		
1	Herbicide injury suspected	*Chemical*
1	**Total for Butterfly Bush**	

Catalpa		
1	No pathogen found	*Undetermined*
1	**Total for Catalpa**	

Cherry		
4	Decline; dieback	*Abiotic disorder*
1	Fire blight	*Erwinia amylovora*
1	Growth regulator effect suspected	*Chemical*
2	Gummosis	*Abiotic disorder*
1	Insect damage	*Unidentified Insect*
1	Japanese beetle	*Popillia japonica*
7	Leaf spot; shothole	*Blumeriella jaapii*
1	Leucostoma canker	*Leucostoma sp./spp.*
1	Lichens	*Lichenes*
1	Pear sawfly	*Caliroa cerasi*
1	Phomopsis leaf spot	*Phomopsis sp./spp.*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Rhizoctonia root rot	*Rhizoctonia sp./spp.*
2	San Jose scale	*Diaspidiotus perniciosus*
4	Stonefruit bacterial spot	*Xanthomonas campestris pv. Pruni*
1	Transplant shock; stress	*Abiotic disorder*
1	Wood rot; white rot	*Irpex lacteus*
31	**Total for Cherry**	

Cherry laurel		
2	Bacterial leaf spot	*Xanthomonas campestris pv. pruni*
1	Crown gall	*Agrobacterium sp./spp.*
1	Growth regulator effect suspected	*Chemical*
1	High soil moisture	*Abiotic disorder*
1	Oedema; edema	*Abiotic disorder*
1	Peachtree borer	*Synanthedon exitisoa*
2	Transplant shock; stress	*Abiotic disorder*
1	Undetermined abiotic injury	*Abiotic disorder*
1	Winter injury	*Abiotic disorder*
11	**Total for Cherry laurel**	

Cotoneaster		
1	Lace bugs	*Family Tingidae*
1	**Total for Cotoneaster**	

Crabapple		
3	Apple scab	*Venturia inaequalis*
1	Lichens	*Lichenes*
1	No pathogen found	*Undetermined*
5	**Total for Crabapple**	

Crape Myrtle		
1	Crapemyrtle aphid	*Sarucallis (Tinocallis) kahawaluokalani*
1	Glyphosate injury suspected	*Chemical*
1	Powdery mildew	*Erysiphe sp./spp.*
1	Sooty mold	*Unidentified fungus*
4	**Total for Crape Myrtle**	

Cryptomeria		
1	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
1	**Total for Cryptomeria**	

Dogwood		
7	Decline; dieback	*Abiotic disorder*
6	Dogwood anthracnose	*Discula destructiva*
13	Dogwood powdery mildew	*Erysiphe pulchra*
1	Iron deficiency	*Nutritional disorder*
3	Leaf scorch	*Abiotic disorder*
2	Lichens	*Lichenes*
15	Spot anthracnose	*Elsinoe corni*

5	Transplant shock; stress	*Abiotic disorder*
52	**Total for Dogwood**	

Douglas-fir		
1	Swiss needle cast	*Phaeocryptopus gaeumanni*
1	**Total for Douglas-fir**	

Elderberry		
1	Transplant shock; stress	*Abiotic disorder*
1	**Total for Elderberry**	

Elm		
5	Anthracnose; black spot	*Stegophora ulmea*
1	Cicada egg-laying injury	*Unidentified Cicada*
2	Elmgrass root aphid (Elm sack gall)	*Tetraneura ulmi*
1	Insect damage	*Unidentified Insect*
1	Insufficient sample	*Undetermined*
1	Leaf spot	*Unidentified Fungus*
1	No pathogen found	*Undetermined*
1	Transplant shock; stress	*Abiotic disorder*
1	Unknown abiotic disorder	*Abiotic disorder*
14	**Total for Elm**	

Euonymus		
1	Crown gall	*Agrobacterium sp./spp.*
1	Decline; dieback	*Abiotic disorder*
2	Euonymus scale	*Unaspis euonymi*
1	Lichens	*Lichenes*
1	Oedema; edema	*Abiotic disorder*
1	Spider mite injury	*Unidentified Spider Mite*
1	Thread blight	*Ceratobasidium (Corticium) ochroleucum (stevensii)*
8	**Total for Euonymus**	

Falsecypress		
1	Bagworm	*Thyridopteryx ephemeraeformis*
1	Decline; dieback	*Abiotic disorder*
1	Environmental stress; problem	*Abiotic disorder*
2	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
1	Transplant shock; stress	*Abiotic disorder*
6	**Total for Falsecypress**	

Filbert

2	Eastern filbert blight	*Cryptosporella anomala*
2	**Total for Filbert**	

Fir		
1	Elongate hemlock scale	*Fiorinia externa*
1	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
1	Transplant shock; stress	*Abiotic disorder*
3	**Total for Fir**	

Fringetree		
1	Decline; dieback	*Abiotic disorder*
1	**Total for Fringetree**	

Ginkgo		
2	Growth regulator effect suspected	*Chemical*
1	Insufficient sample	*Undetermined*
3	**Total for Ginkgo**	

Hackberry		
1	Abnormal plant growth	*Abiotic disorder*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
2	**Total for Hackberry**	

Hawthorn		
1	Cedar-hawthorn rust	*Gymnosporangium globosum*
1	Cedar-quince rust	*Gymnosporangium clavipes*
1	Hawthorn leafminer	*Profenusa collaris*
3	**Total for Hawthorn**	

Hemlock		
1	Conifer rust mite	*Nalepella sp./spp.*
2	Elongate hemlock scale	*Fiorinia externa*
1	Spruce spider mite	*Oligonychus ununguis*
1	Transplant shock; stress	*Abiotic disorder*
5	**Total for Hemlock**	

Hickory		
1	Canker	*Biscogniauxia sp./spp.*
1	Hickory leaf stem gallmakers	*Phylloxera sp./spp.*
2	**Total for Hickory**	

Holly		
4	Black root rot	*Berkeleyomyces (Thielaviopsis) basicola*
1	Canker- unidentified fungus	*Unidentified Fungus*
1	Cold injury suspected	*Abiotic disorder*
2	Cottony camellia scale	*Pulvinaria floccifera*
1	Cultural/environmental problem	*Abiotic disorder*
5	Decline; dieback	*Abiotic disorder*
1	Dieback; canker; twig blight	*Botryosphaeria sp./spp.*
2	Euonymus scale	*Unaspis euonymi*
1	Herbicide injury suspected	*Chemical*
1	Japanese maple scale	*Lopholeucaspis japonica*
1	Mulberry whitefly	*Tetraleurodes mori*
3	No pathogen found	*Undetermined*
1	Poor pruning practice	*Abiotic disorder*
1	Sooty mold	*Unidentified Fungus*
1	Southern red mite	*Oligonychus ilicis*
1	Spider mites	*Family Tetranychidae*
3	Thread blight	*Ceratobasidium (Corticium) ochroleucum (stevensii)*
2	Transplant shock; stress	*Abiotic disorder*
1	Undetermined injury or wound	*Undetermined*
1	Whiteflies	*Family Aleyrodidae*
1	Winter injury	*Abiotic disorder*
35	**Total for Holly**	

Honeylocust		
1	Cottony maple scale	*Neopulvinaria innumerabilis*
1	Passalora leaf spot	*Passalora sp./spp.*
2	**Total for Honeylocust**	

Hornbeam		
1	Anthracnose	*Gloeosporium sp./spp.*
1	Whiteflies	*Family Aleyrodidae*
2	**Total for Hornbeam**	

Horsechestnut		
1	Leaf blotch	*Guignardia aesculi*
1	**Total for Horsechestnut**	

Hydrangea		
1	Alternaria leaf spot	*Alternaria sp./spp.*
2	Bacterial leaf spot	*Xanthomonas campestris*
2	Botrytis blight	*Botrytis sp./spp.*

3	Chemical injury suspected	*Chemical*
1	Foliar distortion	*Unidentified Agent*
5	Fungal leaf spot	*Cercospora hydrangeae*
2	Glyphosate injury suspected	*Chemical*
1	Growth regulator effect suspected	*Chemical*
1	Hemlock-Hydrangea rust	*Pucciniastrum hydrangeae*
1	Leaf scorch	*Abiotic disorder*
4	No pathogen found	*Undetermined*
2	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Slug damage	*Unidentified Slug*
1	Twospotted spider mite	*Tetranychus urticae*
28	**Total for Hydrangea**	

Juniper		
1	Cedar-apple rust	*Gymnosporangium juniperi-virginianae*
1	Cedar-quince rust	*Gymnosporangium clavipes*
3	Decline; dieback	*Abiotic disorder*
1	Dieback; canker; twig blight	*Botryosphaeria sp./spp.*
1	Fletcher scale	*Parthenolecanium fletcheri*
1	Insufficient sample	*Undetermined*
1	Kabatina tip blight; needle blight	*Kabatina juniperi*
1	No pathogen found	*Undetermined*
2	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
1	Sooty mold	*Unidentified fungus*
2	Spider mite	*Family Tetranychidae*
2	Transplant shock; stress	*Abiotic disorder*
17	**Total for Juniper**	

Katsura Tree		
1	No pathogen found	*Undetermined*
1	**Total for Katsura Tree**	

Kentucky Coffee Tree		
1	No pathogen found	*Undetermined*
1	**Total for Kentucky Coffee Tree**	

Leucothoe		
1	Dieback; canker; twig blight	*Botryosphaeria sp./spp.*
1	Leaf spot	*Unidentified Fungus*
2	**Total for Leucothoe**	

Leyland Cypress

1	Dieback; canker; twig blight	*Botryosphaeria sp./spp.*
1	Minute cypress scale	*Carulaspis minima*
2	**Total for Leyland Cypress**	

Lilac		
1	Cicada egg-laying injury	*Unidentified Cicada*
1	Decline; dieback	*Abiotic disorder*
1	Leaf scorch	*Abiotic disorder*
1	Leaf spot	*Pseudocercospora sp./spp.*
1	Lichens	*Lichenes*
1	Oedema; edema	*Abiotic disorder*
1	Transplant shock; stress	*Abiotic disorder*
7	**Total for Lilac**	

Linden		
1	Insect damage	*Unidentified Insect*
1	Transplant shock; stress	*Abiotic disorder*
2	**Total for Linden**	

Magnolia		
1	Insufficient sample	*Undetermined*
2	Magnolia leafminer	*Phyllocnistis magnoliella*
2	No pathogen found	*Undetermined*
1	Phomopsis leaf spot	*Phomopsis sp./spp.*
1	Powdery mildew	*Oidium sp./spp.*
1	Thrips	*Order Thysanoptera*
3	Winter injury	*Abiotic disorder*
1	Yellow-poplar weevil	*Odontopus calceatus*
12	**Total for Magnolia**	

Maple		
6	Anthracnose (Monostichella leaf spot)	*Monostichella hysteroidea*
1	Bacterial leaf scorch	*Xylella fastidiosa*
1	Bark beetles; Ambrosia beetles	*Family Scolytidae*
1	Cicada egg-laying injury	*Unidentified Cicada*
1	Cottony maple scale	*Neopulvinaria innumerabilis*
1	Decline; dieback	*Abiotic disorder*
4	Gloomy scale	*Melanaspis tenebricosa*
1	Ice damage	*Abiotic disorder*
1	Insect damage	*Unidentified Insect*
1	Insufficient information	*Undetermined*
1	Insufficient sample	*Undetermined*
1	Leaf scorch	*Abiotic disorder*

4	Lichens	*Lichenes*
2	Maple anthracnose	*Aureobasidium apocryptum*
17	Maple decline	*Complex*
4	Maple leaf blister	*Taphrina carveri*
2	No pathogen found	*Undetermined*
2	Phyllosticta leaf spot	*Phyllosticta sp./spp.*
1	Powdery mildew	*Phyllactinia sp./spp.*
1	Sooty mold	*Unidentified fungus*
1	Spider mite injury	*Unidentified Spider Mite*
5	Transplant shock; stress	*Abiotic disorder*
1	Wood decay fungus	*Unidentified fungus*
1	Woolly aphids	*Family Aphididae; Adelgidae*
61	**Total for Maple**	

Mulberry		
1	Bark beetles; Ambrosia beetles	*Family Scolytidae*
1	Fusarium canker	*Fusarium sp./spp.*
2	**Total for Mulberry**	

Oak		
20	Actinopelte leaf spot	*Tubakia dryina*
14	Anthracnose	*Apiognomonia sp./spp.*
20	Bacterial leaf scorch	*Xylella fastidiosa*
2	Canker	*Biscogniauxia sp./spp.*
1	Cankerworms	*Family Geometridae*
2	Cicada egg-laying injury	*Unidentified Cicada*
6	Decline; dieback	*Abiotic disorder*
1	Dieback; canker; twig blight	*Botryosphaeria sp./spp.*
1	Environmental stress; problem	*Abiotic disorder*
1	Fall webworm	*Hyphantria cunea*
1	Freeze; frost; cold damage	*Abiotic disorder*
2	Gall wasps	*Family Cynipidae*
1	Gouty oak gall wasp	*Callirhytis quercus*
1	Growth regulator effect suspected	*Chemical*
1	Iron deficiency	*Nutritional disorder*
1	Insect damage	*Unidentified Insect*
3	Insect gall	*Insect Gall*
2	Jumping oak gall wasp	*Neuroterus saltatorius*
3	Lace bugs	*Family Tingidae*
1	Leaf scorch	*Abiotic disorder*
1	Leaf skeletonizers	*Family Zygaenid*
3	Leaf spot	*Monochaetia sp./spp.*
1	Lecanium scales	*Lecanium sp./spp.*
1	May beetles	*Family Scarabaeidae*

6	No pathogen found	*Undetermined*
2	Oak leaf blister	*Taphrina caerulescens*
4	Oak powdery mildew	*Erysiphe (Oidium) alphitoides*
2	Oak shothole leafminer	*Agromyza viridula*
2	Oak twig canker and dieback	*Botryosphaeria quercuum*
2	Spider mite injury	*Unidentified Spider Mite*
1	Transplant shock; stress	*Abiotic disorder*
1	Wood decay fungus	*Unidentified fungus*
110	**Total for Oak**	

Pear		
1	Cedar-quince rust	*Gymnosporangium clavipes*
6	Fire blight	*Erwinia amylovora*
1	Japanese maple scale	*Lopholeucaspis japonica*
1	Lichens	*Lichenes*
3	Pear decline	*Abiotic disorder*
1	Wood decay fungus	*Unidentified fungus*
13	**Total for Pear**	

Persimmon		
1	Canker- unidentified fungus	*Unidentified fungus*
1	**Total for Persimmon**	

Photinia		
1	Scale insects	*Order homoptera*
1	**Total for Photinia**	

Pine		
4	Decline; dieback	*Abiotic disorder*
3	Diplodia tip blight; canker	*Diplodia sapinea*
4	Dothistroma needle blight	*Dothistroma pini*
1	Environmental stress; problem	*Abiotic disorder*
1	Fall needle drop	*Abiotic disorder*
2	Insufficient sample; INAD	*Undetermined*
2	No pathogen found	*Undetermined*
4	Pine bark adelgid	*Pineus strobi*
1	Pine needle scale	*Chionaspis pinifoliae*
5	White pine decline	*Abiotic disorder*
1	Winter injury	*Abiotic disorder*
28	**Total for Pine**	

Privet		
2	Decline; dieback	*Abiotic disorder*

1	Undetermined injury or wound	*Undetermined*
3	**Total for Privet**	

Prunus		
1	Glyphosate injury suspected	*Chemical*
1	**Total for Prunus**	

Redbud		
1	Anthracnose	*Unidentified Fungus*
1	Insufficient sample	*Undetermined*
1	Lichens	*Lichenes*
1	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
1	Transplant shock; stress	*Abiotic disorder*
5	**Total for Redbud**	

Rhododendron		
1	Decline; dieback	*Abiotic disorder*
2	Dieback; canker; twig blight	*Botryosphaeria sp./spp.*
1	Insufficient information	*Undetermined*
1	Lace bug	*Stephanitis sp./spp.*
1	Lichens	*Lichenes*
2	Phytophthora dieback; blight	*Phytophthora sp./spp.*
1	Transplant shock; stress	*Abiotic disorder*
1	Winter injury	*Abiotic disorder*
10	**Total for Rhododendron**	

Rose		
1	Armillaria root rot	*Armillaria sp./spp.*
1	Armored scales	*Family Diaspididae*
1	Black spot	*Diplocarpon rosae*
1	Growth regulator effect suspected	*Chemical*
1	Insufficient information	*Undetermined*
1	No pathogen found	*Undetermined*
1	Normal plant growth	*Undetermined*
1	Poor pruning practice	*Abiotic disorder*
1	Powdery mildew	*Sphaerotheca sp./spp.*
1	Rose brown canker	*Cryptosporella umbrina*
5	Rose rosette disease	*Rose rosette-associated*
3	Rose rust	*Phragmidium sp./spp.*
11	Roseslug (sawfly)	*Endelomyia sp./spp.*
1	Spider mite injury	*Unidentified Spider Mite*
3	Spot anthracnose	*Elsinoe rosarum*
2	Undetermined injury or wound	*Undetermined*

35	**Total for Rose**	

Sassafras		
1	Anthracnose	*Colletotrichum sp./spp.*
2	Dieback; canker; twig blight	*Botryosphaeria sp./spp.*
2	Insufficient sample	*Undetermined*
7	Laurel wilt	*Harringtonia lauricola*
2	Mechanical damage	*Abiotic disorder*
7	No pathogen found	*Undetermined*
1	Undetermined injury	*Undetermined*
22	**Total for Sassafras**	

Smoke Tree		
2	Smoke-tree rust	*Pileolaria cotini-coggyriae*
1	Verticillium wilt	*Verticillium sp./spp.*
3	**Total for Smoke Tree**	

Spice Bush		
1	Canker	*Cryptodiaporthe sp./spp.*
1	Emaravirus	*Emaravirus sp./spp.*
3	Laurel wilt	*Harringtonia lauricola*
5	**Total for Spice Bush**	

Spirea		
1	Botrytis blight	*Botrytis sp./spp.*
1	Transplant shock; stress	*Abiotic disorder*
2	**Total for Spirea**	

Spruce		
1	Bagworm	*Thyridopteryx ephemeraeformis*
5	Decline; dieback	*Abiotic disorder*
1	Dieback; canker; twig blight	*Botryosphaeria sp./spp.*
2	Dothistroma needle blight	*Dothistroma sp./spp.*
1	Insufficient sample	*Undetermined*
2	Lichens	*Lichenes*
3	No pathogen found	*Undetermined*
3	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
11	Rhizosphaera needle cast	*Rhizosphaera kalkhoffii*
5	Spider mite injury	*Unidentified Spider Mite*
4	Stigmina needle blight	*Stigmina lautii*
2	Transplant shock; stress	*Abiotic disorder*
1	Undetermined injury	*Undetermined*
41	**Total for Spruce**	

Sumac		
1	No pathogen found	*Undetermined*
1	**Total for Sumac**	

Sweetgum		
2	Decline; dieback	*Abiotic disorder*
1	Leaf spot	*Unidentified Fungus*
3	**Total for Sweetgum**	

Sycamore		
2	Bacterial leaf scorch	*Xylella fastidiosa*
1	Cytospora canker; Dieback	*Cytospora sp./spp.*
1	Dieback; canker	*Nectria sp./spp.*
1	Dieback; canker; twig blight	*Botryosphaeria sp./spp.*
1	Japanese beetle	*Popillia japonica*
2	Powdery mildew	*Erysiphe sp./spp.*
3	Sycamore anthracnose	*Apiognomonia veneta*
2	Sycamore lace bug	*Corythucha ciliata*
13	**Total for Sycamore**	

Taxus		
1	Cottony camellia scale	*Pulvinaria floccifera*
3	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
3	Taxus decline; dieback	*Abiotic disorder*
7	**Total for Taxus**	

Tree Of Heaven		
1	Herbicide injury/exposure suspected	*Chemical*
1	**Total for Tree Of Heaven**	

Tulip Tree		
1	Leaf scorch	*Abiotic disorder*
1	No pathogen found	*Undetermined*
3	Physiological responses (summer leaf drop)	*Abiotic disorder*
2	Powdery mildew	*Erysiphe liriodendri*
1	Root girdling	*Abiotic disorder*
1	Tuliptree scale	*Toumeyella liriodendri*
9	**Total for Tulip Tree**	

Viburnum		
1	Aphids	*Family Aphididae*

1	Cicada egg-laying injury	*Unidentified Cicada*
1	Decline; dieback	*Abiotic disorder*
3	**Total for Viburnum**	

Walnut		
1	Canker- unidentified fungus	*Unidentified Fungus*
1	No pathogen found	*Undetermined*
2	**Total for Walnut**	

Waver Ash; Stinking Ash		
1	Alternaria leaf spot	*Alternaria sp./spp.*
1	Spider mite injury	*Unidentified Spider Mite*
2	**Total for Waver Ash; Stinking Ash**	

Willow		
1	Cercospora leaf spot	*Cercospora sp./spp.*
1	Decline; dieback	*Abiotic disorder*
1	Dieback; canker; twig blight	*Botryosphaeria sp./spp.*
1	Insect damage	*Unidentified Insect*
1	Leaf spot	*Pseudocercospora sp./spp.*
1	Poplar; willow Cytospora canker	*Valsa (Cytospora) sordida (chrysosperma)*
6	**Total for Willow**	

Yellowwood		
2	Anthracnose	*Gloeosporium sp./spp.*
1	Growth regulator effect suspected	*Chemical*
3	**Total for Yellowwood**	

PWNE		
Juniper		
9	PWNE-no pathogen found	*Undetermined*
9	**Total for Juniper**	

***PHYTOPHTHORA RAMORUM* NURSERY SURVEY**		
Azalea		
39	No pathogen found	*Undetermined*
1	Phytophthora dieback; blight	*Phytophthora sp./spp.*
40	**Total for Azalea**	

Lilac		
1	No pathogen found	*Undetermined*

1	**Total for Lilac**	

Pieris		
13	No pathogen found	*Undetermined*
3	Phytophthora dieback; blight	*Phytophthora sp./spp.*
16	**Total for Pieris**	

Rhododendron		
14	No pathogen found	*Undetermined*
2	Phytophthora dieback; blight	*Phytophthora sp./spp.*
16	**Total for Rhododendron**	

Viburnum		
31	No pathogen found	*Undetermined*
1	Phytophthora dieback; blight	*Phytophthora sp./spp.*
32	**Total for Viburnum**	

VEGETABLES		
Asparagus		
1	Bacterial soft rot	*Erwinia sp./spp.*
1	Cercospora blight	*Cercospora asparagi*
1	Insect damage	*Unidentified Insect*
3	**Total for Asparagus**	

Bean		
2	Bean angular leaf spot	*Phaeoisariopsis griseola*
2	Bean anthracnose	*Colletotrichum lindemuthianum*
1	Cercospora leaf spot	*Cercospora canescens*
1	Fusarium root rot	*Fusarium sp./spp.*
1	No pathogen found	*Undetermined*
1	Pythium fruit rot; Cottony leak	*Pythium sp./spp.*
1	Rhizoctonia stem and root rot	*Rhizoctonia sp./spp.*
1	Soil compaction	*Abiotic disorder*
1	Southern Blight	*Athelia (Sclerotium) rolfsii*
2	Twospotted spider mite	*Tetranychus urticae*
1	Undetermined abiotic injury	*Abiotic disorder*
14	**Total for Bean**	

Bok Choy; Chinese Cabbage		
1	Crucifer bacterial black rot	*Xanthomonas campestris*
1	Insect damage	*Unidentified Insect*
2	**Total for Bok Choy; Chinese Cabbage**	

Broccoli		
1	Animal damage	*Abiotic disorder*
1	Cercospora leaf spot	*Cercospora sp./spp.*
1	White mold (stem rot)	*Sclerotinia sclerotiorum*
3	**Total for Broccoli**	

Brussels-sprouts		
1	Pythium damping-off	*Pythium sp./spp.*
1	Rhizoctonia damping-off	*Rhizoctonia sp./spp.*
2	**Total for Brussels-sprouts**	

Cabbage		
1	Nutrient imbalance	*Nutritional disorder*
1	Pythium damping-off	*Pythium sp./spp.*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Rhizoctonia damping-off	*Rhizoctonia sp./spp.*
1	Rhizoctonia stem and root rot	*Rhizoctonia sp./spp.*
1	Undetermined abiotic injury	*Abiotic disorder*
6	**Total for Cabbage**	

Cantaloupe		
1	Cold injury suspected	*Abiotic disorder*
1	Growth regulator effect suspected	*Chemical*
1	Striped cucumber beetle	*Acalymma vittatum*
3	**Total for Cantaloupe**	

Cauliflower		
1	Growth regulator effect suspected	*Chemical*
1	No pathogen found	*Undetermined*
2	**Total for Cauliflower**	

Cole Crops		
1	Crucifer bacterial black rot	*Xanthomonas campestris*
1	**Total for Cole Crops**	

Corn		
1	Abnormal plant growth	*Abiotic disorder*
1	Corn (common) smut	*Ustilago maydis*
1	Corn gray leaf spot	*Cercospora zeae-maydis*
1	Cultural/environmental problem	*Abiotic disorder*

1	Genetic disorder suspected - lesion mimic mutant	*Abiotic disorder*
1	Lesion nematodes	*Pratylenchus sp./spp.*
1	No pathogen found	*Undetermined*
1	Phosphorus deficiency	*Nutritional disorder*
1	Planting too shallow	*Abiotic disorder*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Pythium stalk rot	*Pythium aphanidermatum*
1	Soil compaction	*Abiotic disorder*
1	Southern corn rust	*Puccinia polysora*
1	Undetermined injury	*Undetermined*
1	Zinc deficiency	*Nutritional disorder*
15	**Total for Corn**	

Cucumber		
1	Abnormal plant growth	*Abiotic disorder*
1	Anthracnose	*Colletotrichum orbiculare*
1	Cold injury suspected	*Abiotic disorder*
3	Cucurbit downy mildew	*Pseudoperonospora cubensis*
1	Insufficient sample	*Undetermined*
1	Leaf scorch	*Abiotic disorder*
1	Phytotoxicity	*Chemical*
1	Potassium deficiency	*Nutritional disorder*
1	Powdery mildew	*Podosphaera xanthii*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
2	Undetermined injury	*Undetermined*
14	**Total for Cucumber**	

Eggplant		
1	Aphids	*Family Aphididae*
1	Flea beetles	*Subfamily Alticinae*
1	Insufficient sample	*Undetermined*
1	Phoma leaf spot	*Phoma sp./spp.*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
5	**Total for Eggplant**	

Garlic		
1	Fusarium basal rot	*Fusarium oxysporum*
1	**Total for Garlic**	

Kale		
1	Black spot	*Alternaria brassicae*
1	High pH damage	*Nutritional disorder*

1	Pythium damping-off	*Pythium sp./spp.*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Rhizoctonia damping-off	*Rhizoctonia sp./spp.*
1	Rhizoctonia root rot	*Rhizoctonia sp./spp.*
1	Soil compaction	*Abiotic disorder*
7	**Total for Kale**	

Lettuce		
2	Bacterial soft rot	*Erwinia sp./spp.*
4	Drop (Sclerotinia rot)	*Sclerotinia sp./spp.*
4	Leaf /stem blight; Rot; Gray mold	*Botrytis cinerea*
1	Lettuce mosaic (LMV)	*Potyvirus Lettuce Mosaic Virus*
1	No pathogen found	*Undetermined*
1	Potyvirus group	*Potyvirus group*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
2	Rhizoctonia bottom rot	*Rhizoctonia solani*
16	**Total for Lettuce**	

Melon		
1	Alternaria leaf blight and spot	*Alternaria cucumerina*
1	Cercospora leaf spot	*Cercospora citrullina*
1	Cucumber beetles	*Subfamily Galerucinae*
1	Cucurbit bacterial wilt	*Erwinia tracheiphila*
3	Cucurbit powdery mildew	*Golovinomyces cichoracearum*
7	**Total for Melon**	

Okra		
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	**Total for Okra**	

Onion		
1	Bacterial soft rot	*Erwinia sp./spp.*
1	Blue mold rot	*Penicillium sp./spp.*
1	Fusarium basal rot	*Fusarium oxysporum f. sp. cepae*
1	Undetermined abiotic injury	*Abiotic disorder*
4	**Total for Onion**	

Pea		
1	Rhizoctonia stem and root rot	*Rhizoctonia sp./spp.*
1	**Total for Pea**	

Pepper

2	Aphids	*Family Aphididae*
4	Broad mite	*Polyphagotarsonemus latus*
1	Cercospora leaf spot	*Cercospora sp./spp.*
1	Cultural/environmental problem	*Abiotic disorder*
1	Freeze; frost; cold damage	*Abiotic disorder*
2	Herbicide injury/exposure suspected	*Chemical*
1	High soluble salt	*Nutritional disorder*
1	Insufficient sample	*Undetermined*
1	Iron deficiency	*Nutritional disorder*
1	Mechanical damage	*Abiotic disorder*
6	Pepper bacterial spot	*Xanthomonas campestris pv. vesicatoria*
1	Phytophthora blight; root rot	*Phytophthora capsici*
4	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Rhizoctonia root rot	*Rhizoctonia sp./spp.*
1	Rhizoctonia stem and root rot	*Rhizoctonia sp./spp.*
1	Root problems	*Abiotic disorder*
1	Southern blight	*Athelia (Sclerotium) rolfsii*
30	**Total for Pepper**	

Potato		
2	Bacterial soft rot	*Unidentified bacterium*
1	Fusarium dry rot	*Fusarium solani f.sp. caeruleum*
1	Insufficient information	*Undetermined*
1	Physiological responses (internal sprouts)	*Abiotic disorder*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Rhizoctonia stem and root rot	*Rhizoctonia sp./spp.*
7	**Total for Potato**	

Pumpkin		
1	Cercospora leaf spot	*Cercospora citrullina*
1	Cucurbit angular leaf spot	*Pseudomonas syringae pv. lachrymans*
3	Cucurbit downy mildew	*Pseudoperonospora cubensis*
1	Cucurbit gummy stem blight	*Didymella bryoniae*
1	Fusarium crown rot; foot rot	*Fusarium solani f.sp. cucurbitae*
1	Fusarium fruit rot	*Fusarium sp./spp.*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Squash vine borer	*Melittia cucurbitae*
10	**Total for Pumpkin**	

Radish		
1	White mold	*Sclerotinia sp./spp.*
1	**Total for Radish**	

Spinach		
1	High pH damage	*Nutritional disorder*
2	Pythium root and/or crown rot	*Pythium sp./spp.*
3	**Total for Spinach**	

Squash		
3	Anthracnose	*Colletotrichum orbiculare*
1	Bacterial soft rot	*Erwinia sp./spp.*
1	Chemical injury suspected	*Chemical*
1	Cucurbit downy mildew	*Pseudoperonospora cubensis*
1	Cucurbit gummy stem blight	*Didymella bryoniae*
2	Cucurbit powdery mildew	*Golovinomyces cichoracearum*
1	Genetic disorder suspected	*Abiotic disorder*
1	Microdochium blight	*Plectosphaerella cucumerina*
3	No pathogen found	*Undetermined*
2	Powdery mildew	*Podosphaera sp./spp.*
1	Twospotted spider mite	*Tetranychus urticae*
1	Undetermined abiotic injury	*Abiotic disorder*
18	**Total for Squash**	

Swiss Chard		
1	Pythium damping-off	*Pythium sp./spp.*
1	Rhizoctonia damping-off	*Rhizoctonia sp./spp.*
2	**Total for Swiss Chard**	

Tomato		
1	Anthracnose (black dot root rot)	*Colletotrichum coccodes*
1	Aphids	*Family Aphididae*
1	Blind plants	*Abiotic disorder*
3	Blossom end rot	*Abiotic disorder*
1	Buckeye rot	*Phytophthora sp./spp.*
1	Catface	*Abiotic disorder*
3	Chemical injury suspected	*Chemical*
2	Cultural/environmental problem	*Abiotic disorder*
6	Early blight; leaf spot	*Alternaria solani*
1	Ethylene exposure	*Abiotic disorder*
1	Flea beetles	*Subfamily Alticinae*
1	Freeze; frost; cold damage	*Abiotic disorder*
1	Fusarium root; crown rot	*Fusarium sp./spp.*
1	Fusarium wilt	*Fusarium oxysporum*
2	Glyphosate injury suspected	*Chemical*
16	Growth regulator effect suspected	*Chemical*
2	Herbicide injury/exposure suspected	*Chemical*
2	High pH damage	*Nutritional disorder*

1	High soil moisture	*Abiotic disorder*
6	High soluble salt	*Nutritional disorder*
2	Insufficient sample	*Undetermined*
7	Leaf mold	*Passalora fulva*
2	Leaf scorch	*Abiotic disorder*
1	Low pH	*Nutritional disorder*
3	Magnesium deficiency	*Nutritional disorder*
1	Manganese toxicity	*Nutritional disorder*
1	Mechanical damage	*Abiotic disorder*
7	No pathogen found	*Undetermined*
4	Nutrient imbalance	*Nutritional disorder*
1	Nutritional deficiency	*Nutritional disorder*
2	Nutritional problem suspected	*Nutritional disorder*
1	Physiological leaf roll	*Abiotic disorder*
1	Phytophthora fruit rot (buckeye fruit rot)	*Phytophthora capsici*
1	Pythium damping-off	*Pythium sp./spp.*
13	Pythium root and/or crown rot	*Pythium sp./spp.*
3	Rhizoctonia root rot	*Rhizoctonia sp./spp.*
1	Ripe rot	*Colletotrichum sp./spp.*
3	Root-knot nematodes	*Meloidogyne sp./spp.*
1	Russeting	*Abiotic disorder*
1	Scald; scorch	*Abiotic disorder*
5	Septoria leaf spot	*Septoria lycopersici*
1	Sour rot	*Geotrichum sp./spp.*
5	Southern Blight	*Athelia (Sclerotium) rolfsii*
1	Tobacco mosaic	*Tobacco Mosaic Virus (TMV)*
1	Tomato bacterial speck	*Pseudomonas tomato*
1	Tomato bacterial spot	*Xanthomonas sp./spp.*
2	Tomato Fusarium wilt (Races 1 and 2)	*Fusarium oxysporum f.sp. lycopersici*
2	Tomato pith necrosis	*Pseudomonas sp./spp.*
3	Tomato spotted wilt	*Tomato Spotted Wilt Vir (TSWV)*
1	Twospotted spider mite	*Tetranychus urticae*
4	Undetermined injury	*Undetermined*
1	Unidentified virus	*Unidentified Virus*
1	Walnut wilt/ juglone toxicity suspected	*Abiotic disorder*
9	White mold (stem rot); timber rot	*Sclerotinia sclerotiorum*
146	**Total for Tomato**	

Turnip		
2	Black spot	*Alternaria brassicae*
1	Flea beetles	*Subfamily Alticinae*
1	Root maggots; General	*Family Anthomyiidae*
2	Soil compaction	*Abiotic disorder*
1	Turnip aphid	*Hyadaphis (Lipaphis) pseudobrassicae (erysimi)*
1	White mold	*Sclerotinia sp./spp.*

8	**Total for Turnip**	

Watermelon		
2	Anthracnose	*Colletotrichum orbiculare*
1	Cercospora leaf spot	*Cercospora sp./spp.*
1	Cucurbit gummy stem blight	*Didymella (Ascochyta) bryoniae (cucumis)*
1	Growth regulator effect suspected	*Chemical*
1	High soil moisture	*Abiotic disorder*
3	No pathogen found	*Undetermined*
1	Poor pollination	*Abiotic disorder*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Rhizoctonia crown rot	*Rhizoctonia sp./spp.*
2	Rhizoctonia foliar/ aerial/ web blight	*Rhizoctonia solani*
1	Unidentified bacteria	*Unidentified Bacteria*
1	White mold (Stem rot)	*Sclerotinia sclerotiorum*
16	**Total for Watermelon**	