College of Agriculture, Food and Environment

Plant Pathology

Plant Disease Diagnostic Laboratory Summary

2022

by:

J.W. Beale, C.A. Bradley, N.A. Gauthier, S.J. Long, P. Vincelli and K.A. Wise

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Agronomic crops **13**
Corn 13
Forages 14
Hemp 15
Soybeans 15
Small grains 16
Tobacco 16
Fruit crops **17**
Small fruits 17
Tree fruits 18
Herbs **20**
Identifications **21**
Miscellaneous **22**
Ornamentals **22**
Herbaceous 22
Indoor Plants 28
Turfgrass 30
Woody ornamentals 31
Phytophthora ramorum trace forward 46
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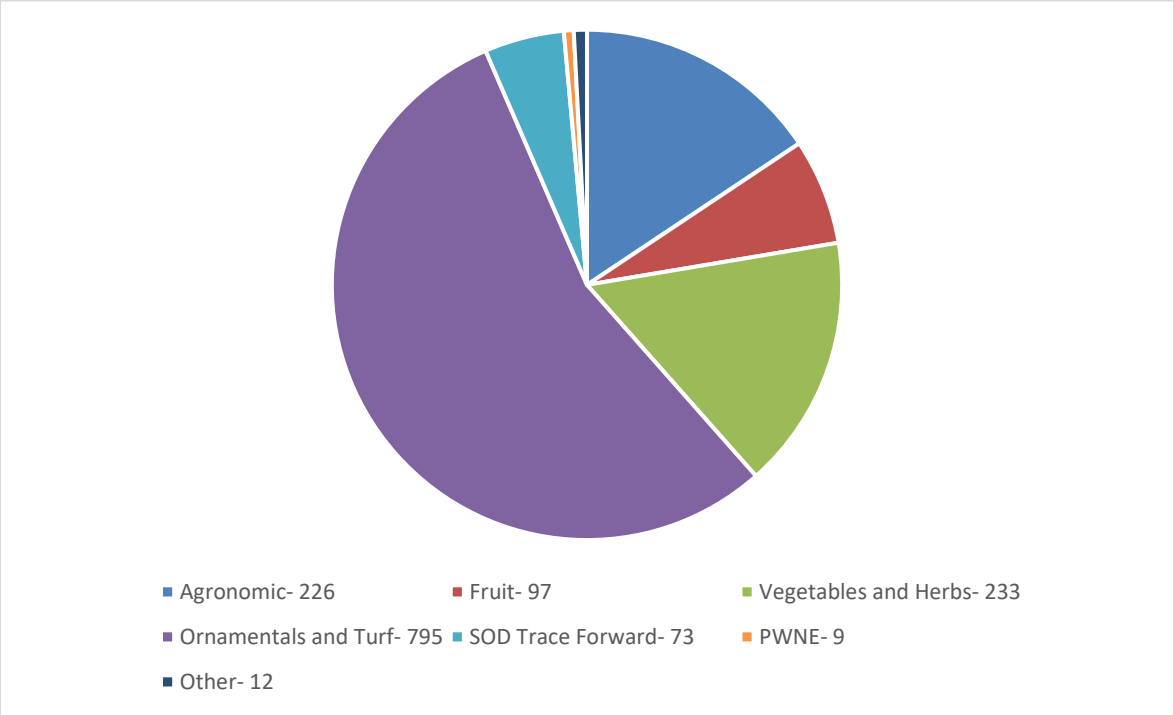
INTRODUCTION

The UK Plant Disease Diagnostic Laboratory (PDDL) processed 1445 plant samples in 2022. Many plant samples had more than one problem which added an additional 530 diagnoses, bringing the total number of diagnoses to **1975**. Of the samples submitted, the majority (94.3%) were routine plant samples, while a few samples were submitted for specific testing including 73 samples from commercial nurseries involved in a Sudden Oak Death (SOD) pathogen trace forward event and 9 Eastern red cedar (*Juniperus virginiana*) samples from commercial lumber companies for pinewood nematode extraction (PWNE). Sample totals by crop category are summarized in Figure 1 below.

Figure 1. Plant Disease Diagnostic Laboratory- 2022 samples



Routine samples	**1363**
Trace forward	**73**
Pinewood nematode	**9**
+ **Additional diagnoses**	**530**
	1975

NATURE OF WORK

Plant disease diagnosis is an ongoing educational and research activity of the UK Department of Plant Pathology. Near the end of 2021, Brenda Kennedy, diagnostician at the UK Research and Education Center in Princeton, announced her retirement. Shortly after this announcement, the building housing the Princeton PDDL was destroyed in the December 2021 tornado. Consequently, all samples were processed in the Plant Disease Diagnostic Laboratory (PDDL) on the UK campus in Lexington during the 2022 growing season.

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. All plant disease diagnoses entered in the database are reported 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. Suspected 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	13	33	6	0	1	0	53
Forages	5	22	0	0	3	0	30
Hemp	0	2	0	0	0	0	2
Small grains	1	2	0	0	0	0	3
Soybeans	25	57	8	1	1	2	94
Tobacco	34	75	10	2	1	1	123
Fruit							
Small fruit	9	26	7	2	3	10	57
Tree fruit	13	34	3	1	13	3	67
Herbs	11	7	3	0	2	1	24
Identifications	1	3	0	0	0	0	4
Ornamentals							
Herbaceous/ Houseplants	46	85	0	5	20	23	179
Turfgrass	19	32	0	0	1	4	56
Woody	229	427[d]	27	19	162	127	991
Vegetables	65	164	27	3	10	13	282
Miscellaneous	2	3	1	1	2	1	10
Total	**473**	**972**	**92**	**34**	**219**	**185**	**1975**

[a]Counts and totals include all diagnoses entered in 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]Total includes 73 SOD trace forward samples and 9 PWNE juniper.

Table 2. SUMMARY OF BIOTIC PROBLEMS[a] BY CROP CATEGORY					
Crop Category	**Bacterial**	**Fungal**	**Nematode**	**Virus**	**Other[b]**
Agronomic					
Corn	0	33	0	0	0
Forages	2	20	0	0	0
Hemp	0	2	0	0	0
Small grains	0	2	0	0	0
Soybeans	0	48	8	1	0
Tobacco	19	47	0	9	0
Fruit					
Small fruit	0	26	0	0	0
Tree fruit	5	29	0	0	0
Herbs	1	6	0	0	0
Identifications	0	2	0	0	1
Ornamentals					
Herbaceous/ Houseplants	11	70	0	3	1
Turfgrass	0	31	0	0	1
Woody	27	384	0	5	11
Vegetables	15	127	10	12	0
Miscellaneous	0	3	0	0	0
Total	**80**	**830**	**18**	**30**	**14**

[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.

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	40	2.77	53	2.68
Forages	17	1.18	30	1.52
Hemp	2	0.14	2	0.10
Small grains	3	0.21	3	0.15
Soybeans	67	4.64	94	4.76
Tobacco	97	6.71	123	6.23
Fruit				
Small fruit	47	3.25	57	2.89
Tree fruit	50	3.46	67	3.39
Herbs	15	1.04	24	1.22
Identifications	4	0.28	4	0.20
Ornamentals				
Herbaceous and Houseplants	131	9.07	179	9.06
Turfgrass	40	2.77	56	2.84
Woody[a]	706	48.86	991	50.18
Vegetables	218	15.09	282	14.28
Miscellaneous	8	0.55	10	0.51
Total	**1445**	**100**	**1975**	**100**

[a]Includes 73 SOD trace forward 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	35	0	0	0	5	0	0	0
Forages	15	2	0	0	0	0	0	0
Hemp	0	2	0	0	0	0	0	0
Small grains	3	0	0	0	0	0	0	0
Soybeans	60	7	0	0	0	0	0	0
Tobacco	80	11	0	0	4	2	0	0
Fruit								
Small Fruit	22	0	25	0	0	0	0	0
Tree Fruit	12	1	35	0	0	0	2	0
Herbs	9	1	3	1	0	0	0	1
Identifications	0	0	3	0	0	0	0	1
Ornamental								
Herbaceous/ Houseplants	85	5	31	3	1	0	3	3
Turfgrass	4	9	24	0	0	1	0	2
Woody	153	127	382	9	1	0	25	9
Vegetable	121	5	75	3	5	2	6	1
Miscellaneous	4	0	0	0	0	3	0	1
Total	**603**	**170**	**578**	**16**	**16**	**8**	**36**	**18**
Total Grower Type	**773**		**594**		**24**		**54**	
Total No. of routine samples received = 1445								

[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.	9
Entomology Department	29
Forestry Department	2
Horticulture Department	46
Plant & Soil Sciences Department	119
Total no. of sample referrals	**205**
Total no. of plant specimens received	**1445**
% of specimens referred outside Diagnostic Lab for diagnosis	**14.2**

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

Test	No. of Tests
Culture	71
Incubation/Lab test	248
Microscope	1108
Molecular (PCR)	5
Nematode extraction	9[b]
Serological (ELISA)	309
Soil tests	171
Visual examination	632
Total	**2553**

[a]Many samples require more than one test and all tests performed in 2022 are recorded above.
[b]Includes 9 PWNE samples.

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	4	1	0	0	3	0	0
Allen	11	1	2	0	5	3	0
Anderson	7	1	0	0	4	2	0
Ballard	0	0	0	0	0	0	0
Barren	28	1	8	1	12	6	0
Bath	3	1	1	0	0	1	0
Bell	12	0	0	2	2	8	0
Boone	51	0	0	1	37	12	1
Bourbon	13	3	2	0	8	0	0
Boyd	2	0	0	0	2	0	0
Boyle	5	2	1	0	1	1	0
Bracken	2	0	1	0	1	0	0
Breckinridge	38	5	11	5	7	9	1
Bullitt	3	0	0	0	3	0	0
Butler	3	3	0	0	0	0	0
Caldwell	6	5	1	0	0	0	0
Calloway	9	1	6	0	2	0	0
Campbell	20	0	0	0	16	2	2
Carlisle	1	0	0	0	1	0	0
Carroll	0	0	0	0	0	0	0
Carter	9	0	0	0	8	1	0
Casey	14	0	0	3	2	9	0
Christian	33	3	9	1	12	8	0
Clark	11	0	1	0	10	0	0
Clay	1	0	0	0	0	1	0
Clinton	4	1	1	0	2	0	0
Crittenden	3	0	0	1	1	1	0
Cumberland	1	0	0	0	0	1	0
Daviess	52	17	1	0	32	2	0
Edmonson	3	1	0	0	2	0	0
Elliott	0	0	0	0	0	0	0
Estill	3	0	0	0	2	1	0
Fayette	248	2	7	11	208	13	7
Fleming	2	1	0	1	0	0	0
Floyd	0	0	0	0	0	0	0
Franklin	7	1	0	0	6	0	0
Fulton	0	0	0	0	0	0	0
Gallatin	7	0	1	0	1	4	1
Garrard	9	0	1	0	4	3	0
Grant	5	1	0	2	0	2	0
Graves	11	3	1	3	4	0	0
Grayson	6	2	0	0	3	1	0
Green	5	1	4	0	0	0	0
Greenup	6	0	0	2	2	2	0

COUNTY	TOTAL	AGRONOMIC[a]	TOBACCO	FRUIT	ORNAMENTAL	VEGETABLE	OTHER
Hancock	0	0	0	0	0	0	0
Hardin	25	2	0	4	17	2	0
Harlan	0	0	0	0	0	0	0
Harrison	10	4	2	0	3	1	0
Hart	20	3	2	9	3	3	0
Henderson	9	4	0	0	5	0	0
Henry	7	3	2	0	2	0	0
Hickman	1	1	0	0	0	0	0
Hopkins	9	0	0	3	5	0	1
Jackson	5	0	0	1	2	2	0
Jefferson	119	0	0	1	112	1	5
Jessamine	18	0	0	2	13	3	0
Johnson	0	0	0	0	0	0	0
Kenton	23	0	0	3	20	0	0
Knott	1	0	0	0	0	1	0
Knox	3	0	0	0	2	1	0
Larue	7	2	0	0	2	3	0
Laurel	15	0	0	2	5	8	0
Lawrence	3	0	0	0	2	1	0
Leslie	1	0	0	0	1	0	0
Letcher	5	0	0	0	1	4	0
Lewis	12	7	1	4	0	0	0
Lincoln	13	3	1	2	6	1	0
Livingston	0	0	0	0	0	0	0
Logan	4	0	1	0	2	0	1
Lyon	11	5	0	0	2	4	0
Madison	3	0	0	0	2	1	0
Magoffin	1	0	0	0	0	1	0
Marion	10	1	0	0	6	3	0
Marshall	10	2	0	2	5	1	0
Martin	0	0	0	0	0	0	0
Mason	30	0	1	2	22	5	0
McCracken	20	1	4	2	10	3	0
McCreary	1	0	0	0	1	0	0
Mclean	4	1	0	0	1	2	0
Meade	9	3	0	1	3	2	0
Menifee	7	0	0	4	1	2	0
Mercer	9	0	0	0	6	3	0
Metcalfe	6	0	1	1	2	2	0
Monroe	5	1	1	0	1	2	0
Montgomery	25	2	3	3	15	2	0
Morgan	0	0	0	0	0	0	0
Muhlenberg	9	0	2	1	5	1	0
Nelson	16	1	0	2	12	1	0
Nicholas	1	0	1	0	0	0	0
Ohio	1	1	0	0	0	0	0

COUNTY	TOTAL	AGRONOMIC[a]	TOBACCO	FRUIT	ORNAMENTAL	VEGETABLE	OTHER
Oldham	11	3	0	0	8	0	0
Owen	6	0	2	0	0	0	4
Owsley	0	0	0	0	0	0	0
Pendleton	2	0	0	1	1	0	0
Perry	0	0	0	0	0	0	0
Pike	12	0	0	1	7	3	1
Powell	1	0	0	0	1	0	0
Pulaski	29	3	0	1	18	7	0
Robertson	1	0	0	0	1	0	0
Rockcastle	3	1	0	0	0	2	0
Rowan	3	0	0	0	2	0	1
Russell	6	4	0	1	0	1	0
Scott	26	2	0	0	22	2	0
Shelby	44	3	3	2	32	4	0
Simpson	16	0	1	0	15	0	0
Spencer	6	1	0	0	5	0	0
Taylor	31	0	1	0	21	8	1
Todd	31	2	6	1	6	16	0
Trigg	4	0	0	1	3	0	0
Trimble	7	0	0	2	4	1	0
Union	3	0	0	0	3	0	0
Warren	4	0	0	0	4	0	0
Washington	7	2	0	0	5	0	0
Wayne	5	2	0	0	3	0	0
Webster	0	0	0	0	0	0	0
Whitley	11	0	0	1	7	3	0
Wolfe	8	0	0	2	1	5	0
Woodford	19	2	3	1	11	1	1
Out of state	0	0	0	0	0	0	0
Totals	1445	129	97	97	878	217	27

[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
Bessin, RT	Entomology	10
Clayton, K	Plant & Soil Sciences	1
Crocker, E	Forestry	1
Dutton, SR	Horticulture	7
Fountain, WM	Horticulture	1
Gauthier, NW	Plant Pathology	1
Green, JD	Plant & Soil Sciences	83
Larson, J	Entomology	19
Lee, CD	Plant & Soil Sciences	4
Legleiter, T	Plant & Soil Sciences	3
Owen, G	Horticulture	19
Pearce, RC	Plant & Soil Sciences	26
Phillips, T	Plant & Soil Sciences	1
Rudolph, R	Horticulture	14
Smith, SR	Plant & Soil Sciences	1
Springer, M	Forestry	1
Strang, JG	Horticulture	4
Wise, KA	Plant Pathology	4
Wright, S	Horticulture	1

Table 9. DIAGNOSIS OF INDIVIDUAL SAMPLES BY CROP AND DISEASE/DISORDER

CORN

Corn		
1	Anthracnose stalk rot	*Colletotrichum graminicola*
1	Black mold	*Aspergillus niger*
1	Charcoal rot	*Macrophomina sp./spp.*
3	Chemical injury suspected	*Chemical*
1	Corn gray leaf spot	*Cercospora zeae-maydis*
1	Corn stalk rot	*Fusarium graminearum*
1	Corn tar spot	*Phyllachora maydis*
1	Curvularia leaf spot	*Curvularia lunata*
3	Diplodia ear rot	*Stenocarpella (Diplodia) maydis*
1	Ear rot (Gibberella ear rot)	*Fusarium graminearum*
1	Fusarium ear rot	*Fusarium sp./spp.*
1	Fusarium stalk rot	*Fusarium subglutinans*
1	Growth regulator effect suspected	*Chemical*
1	Heat stress	*Abiotic disorder*
2	Herbicide injury/exposure suspected	*Chemical*
1	Insect damage	*Unidentified insect*

1	Leaf scorch	*Abiotic disorder*
1	Leaf spot- abiotic	*Abiotic disorder*
1	Low pH damage	*Nutritional disorder*
3	Magnesium deficiency	*Nutritional disorder*
2	Mold	*Unidentified fungus*
1	Physiological responses (reddening)	*Abiotic disorder*
1	Planting too shallow	*Abiotic disorder*
1	Potassium deficiency	*Nutritional disorder*
3	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Rhizoctonia root rot	*Rhizoctonia sp./spp.*
1	Soil compaction	*Abiotic disorder*
10	Southern corn rust	*Puccinia polysora*
2	Stalk rot; Crown rot; Seedling blight	*Fusarium verticillioides*
2	Trichoderma ear rot	*Trichoderma viride*
1	Unknown abiotic disorder	*Abiotic disorder*
1	Wind damage	*Abiotic disorder*
53	**Total for Corn**	

	FORAGES	
Alfalfa		
1	Anthracnose	*Colletotrichum trifolii*
1	Bacterial leaf spot	*Xanthomonas sp./spp.*
1	Clover root curculio	*Sitona hispidulus (hispidula)*
1	Cultural/environmental problem	*Abiotic disorder*
1	Freeze; frost; cold damage	*Abiotic disorder*
1	Insect damage	*Unidentified insect*
1	Pythium damping-off	*Pythium sp./spp.*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
3	Rhizoctonia root; crown rot	*Rhizoctonia sp./spp.*
1	Summer black stem; leaf spot	*Cercospora medicaginis*
12	**Total for Alfalfa**	

Clover		
1	Bacterial leaf spot	*Xanthomonas sp./spp.*
1	Insect damage	*Unidentified insect*
1	Pythium damping-off	*Pythium sp./spp.*
3	**Total for Clover**	

Fescue		
1	Gray leaf spot	*Pyricularia grisea*

1	**Total for Fescue**	

Little Bluestem		
1	Leaf rust; rust	*Puccinia sp./spp.*
1	**Total for Little Bluestem**	

Orchardgrass		
3	Anthracnose; Colletotrichum leaf spot	*Colletotrichum sp./spp.*
2	Drought stress damage	*Abiotic disorder*
6	Leaf Streak	*Cercosporidium sp./spp.*
1	Soil compaction	*Abiotic disorder*
12	**Total for Orchardgrass**	

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

HEMP

Hemp		
2	Septoria leaf spot	*Septoria sp./spp.*
2	**Total for Hemp**	

SOYBEAN

Soybean		
1	Animal damage	*Abiotic disorder*
2	Charcoal rot	*Macrophomina phaseolina*
2	Chemical injury suspected	*Chemical*
2	Drought stress damage	*Abiotic disorder*
5	Growth regulator effect suspected	*Chemical*
1	Herbicide injury/exposure suspected	*Chemical*
1	High soil moisture	*Abiotic disorder*
1	Insufficient information	*Undetermined*
1	Leaf scorch	*Abiotic disorder*
1	Low pH damage	*Nutritional disorder*
2	No pathogen found	*Undetermined*
1	Nutritional deficiency	*Nutritional disorder*
1	Poor nodulation	*Abiotic disorder*
4	Potassium deficiency	*Nutritional disorder*
1	Potyvirus group	*Potyvirus group*

1	Purple seed-stain; leaf blight	*Cercospora kikuchii*
1	Red crown rot	*Calonectria ilicicola*
1	Rhizoctonia foliar/ aerial/ web blight	*Rhizoctonia solani*
2	Rhizoctonia root rot	*Rhizoctonia sp./spp.*
2	Root-knot nematodes	*Meloidogyne sp./spp.*
13	Soil compaction	*Abiotic disorder*
4	Soybean anthracnose	*Glomerella glycines*
2	Soybean brown spot	*Septoria glycines*
6	Soybean cyst nematode (SCN)	*Heterodera glycines*
2	Soybean downy mildew	*Peronospora manshurica*
3	Soybean frogeye leaf spot	*Cercospora sojina*
4	Soybean Phytophthora root and stem rot	*Phytophthora sojae*
1	Soybean pod and stem blight	*Diaporthe phaseolorum*
2	Soybean stem canker	*Diaporthe phaseolorum*
23	Soybean sudden death syndrome	*Fusarium virguliforme*
1	Trochanter mealybug	*Pseudococcus sorghiellus*
94	**Total for Soybean**	

SMALL GRAINS

Sorghum		
1	Grain mold	*Unidentified fungus*
1	Northern corn leaf blight; Leaf spot	*Exserohilum turcicum*
2	**Total for Sorghum**	

Wheat		
1	Soil compaction	*Abiotic disorder*
1	**Total for Wheat**	

TOBACCO

Tobacco		
1	Alfalfa mosaic	*Alfalfa Mosaic Virus (AMV)*
8	Angular leaf spot	*Pseudomonas syringae tabaci*
2	Bacterial soft rot; blackleg	*Pectobacterium carotovorum subsp. carotovorum*
27	Black shank	*Phytophthora nicotianae*
3	Boron deficiency	*Nutritional disorder*
1	Excessive water	*Abiotic disorder*
1	Frenching/ high soil moisture	*Abiotic disorder*
4	Frogeye leaf spot	*Cercospora nicotianae*
3	Fusarium wilt	*Fusarium oxysporum*

7	Growth regulator effect suspected	*Chemical*
1	Hail damage	*Abiotic disorder*
2	Herbicide injury suspected	*Chemical*
2	High pH damage	*Nutritional disorder*
1	High soluble salt	*Nutritional disorder*
2	Insufficient sample	*Undetermined*
1	Low pH damage	*Nutritional disorder*
1	Manganese toxicity	*Nutritional disorder*
1	No pathogen found	*Undetermined*
1	Phytotoxicity	*Chemical*
2	Potassium deficiency	*Nutritional disorder*
7	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Rhizoctonia root rot	*Rhizoctonia sp./spp.*
2	Scald; scorch	*Abiotic disorder*
4	Soil compaction	*Abiotic disorder*
5	Soreshin (Rhizoctonia stem rot)	*Rhizoctonia sp./spp.*
1	Spider mite	*Family Tetranychidae*
9	Tobacco hollow stalk; leaf rot	*Erwinia carotovora carotovora*
8	Tomato spotted wilt	*Tomato Spotted Wilt Virus (TSWV)*
11	Transplant shock; stress	*Abiotic disorder*
3	Unknown abiotic disorder	*Abiotic disorder*
1	Weather fleck (Ozone damage)	*Abiotic disorder*
123	**Total for Tobacco**	

SMALL FRUIT

Blackberry		
3	Anthracnose	*Elsinoe veneta*
1	Cane blight; canker	*Coniothyrium fuckelii*
1	Cercospora leaf spot	*Cercospora sp./spp.*
1	Double blossom (Rosette)	*Cercosporella rubi*
1	Growth regulator effect suspected	*Chemical*
1	Insufficient sample	*Undetermined*
1	No pathogen found	*Undetermined*
1	Raspberry crown borer	*Pennisetia marginata*
1	Rednecked cane borer	*Agrilus ruficollis*
1	Spur blight	*Didymella applanata*
12	**Total for Blackberry**	

Blueberry		
2	Blueberry leaf spot; Phomopsis leaf spot	*Phomopsis vaccinii*
1	Decline; dieback	*Abiotic disorder*

1	Dieback; canker; twig blight	*Botryosphaeria sp./spp.*
2	High soluble salt	*Nutritional disorder*
1	Iron deficiency	*Nutritional disorder*
2	Low pH damage	*Nutritional disorder*
9	No pathogen found	*Undetermined*
2	Pestalotiopsis canker/ dieback	*Pestalotiopsis sp./spp.*
1	Phyllosticta leaf spot	*Phyllosticta sp./spp.*
1	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
1	Scald; scorch	*Abiotic disorder*
23	**Total for Blueberry**	

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

Grape		
3	Growth regulator effect suspected	*Chemical*
1	Herbicide injury/exposure suspected	*Chemical*
4	**Total for Grape**	

Raspberry		
2	Anthracnose	*Elsinoe veneta*
1	Growth regulator effect suspected	*Chemical*
1	Insufficient sample	*Undetermined*
4	**Total for Raspberry**	

Strawberry		
2	Anthracnose fruit rot	*Colletotrichum sp./spp.*
2	Cultural/environmental problem	*Abiotic disorder*
1	Japanese beetle	*Popillia japonica*
1	Leaf spot; blight	*Mycosphaerella fragariae*
2	Phomopsis leaf blight	*Phomopsis obscurans*
2	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
1	Rhizoctonia foliar/ aerial/ web blight	*Rhizoctonia solani*
2	Strawberry black root rot complex	*Various fungi*
13	**Total for Strawberry**	

TREE FRUIT

Apple		
1	Apple blotch; Leaf spot; Twig canker	*Phyllosticta arbutifolia*

2	Apple scab	*Venturia inaequalis*
1	Armillaria root rot	*Armillaria sp./spp.*
4	Cedar-apple rust	*Gymnosporangium juniperi-virginianae*
1	Fire blight	*Erwinia amylovora*
2	Freeze; frost; cold damage	*Abiotic disorder*
2	Frogeye leaf spot	*Botryosphaeria obtusa*
1	Insufficient sample	*Undetermined*
1	Marssonina Blotch	*Diplocarpon mali*
1	No pathogen found	*Undetermined*
1	Phoma leaf spot	*Phoma sp./spp.*
1	Phomopsis dieback; tip blight; canker	*Phomopsis sp./spp.*
1	Plum curculio	*Conotrachelus nenuphar*
1	Rosy apple aphid	*Dysaphis plantaginea*
1	Soil compaction	*Abiotic disorder*
1	Sooty blotch flyspeck complex	*Various fungi*
1	Thread blight	*Ceratobasidium (Corticium) ochroleucum*
23	**Total for Apple**	

Cherry		
2	Brown rot; blossom and twig blight	*Monilinia fructicola*
1	Japanese maple scale	*Lopholeucaspis japonica*
1	Leaf spot; shothole	*Blumeriella jaapii*
1	Lecanium scales	*Lecanium sp./spp.*
5	**Total for Cherry**	

Nectarine		
1	Brown rot; blossom and twig blight	*Monilinia fructicola*
1	**Total for Nectarine**	

Pawpaw		
2	No pathogen found	*Undetermined*
1	Transplant shock; stress	*Abiotic disorder*
3	**Total for Pawpaw**	

Peach		
2	Brown rot; blossom and twig blight	*Monilinia fructicola*
2	Cultural/environmental problem	*Abiotic disorder*
1	Decline; dieback	*Abiotic disorder*
1	Nutritional deficiency	*Nutritional disorder*
1	Oriental fruit moth	*Grapholita molesta*
2	Phytotoxicity	*Chemical*

3	Plum curculio	*Conotrachelus nenuphar*
1	San Jose scale	*Diaspidiotus perniciosus*
2	Scab	*Fusicladium carpophilum*
2	Stonefruit bacterial spot	*Xanthomonas campestris pv. pruni*
2	Transplant shock; stress	*Abiotic disorder*
19	**Total for Peach**	

Pear		
1	Bitter pit	*Abiotic disorder*
1	Bitter rot	*Colletotrichum sp./spp.*
1	Cedar-quince rust	*Gymnosporangium clavipes*
1	Cicada egg-laying injury	*Unidentified cicada*
1	Fabraea leaf and fruit spot	*Diplocarpon mespili*
1	Fire blight	*Erwinia amylovora*
1	Leaf spot	*Undetermined*
2	Spider mite injury	*Unidentified spider mite*
1	Stink bug damage	*Unidentified stink bug*
1	Transplant shock; stress	*Abiotic disorder*
11	**Total for Pear**	

Plum		
2	Black knot	*Apiosporina morbosa*
1	Herbicide injury/exposure suspected	*Chemical*
1	Pocket plum; pocket gall	*Taphrina pruni*
1	Stonefruit bacterial spot	*Xanthomonas campestris pv. pruni*
5	**Total for Plum**	

HERBS

Basil		
1	Botrytis blight	*Botrytis sp./spp.*
1	Downy mildew	*Peronospora belbahrii*
2	**Total for Basil**	

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

Cilantro		
1	Bacterial soft rot	*Erwinia sp./spp.*
1	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*

2	**Total for Cilantro**	

Lavender		
1	Glyphosate injury suspected	*Chemical*
4	High soil moisture	*Abiotic disorder*
1	High soluble salt	*Nutritional disorder*
1	No pathogen found	*Undetermined*
1	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
1	Soil compaction	*Abiotic disorder*
5	Winter injury	*Abiotic disorder*
14	**Total for Lavender**	

Rosemary		
1	Powdery mildew	*Oidium sp./spp.*
1	Spider mite	*Family Tetranychidae*
1	Thrips	*Order Thysanoptera*
3	**Total for Rosemary**	

Russian Sage		
1	Glyphosate injury suspected	*Chemical*
1	**Total for Russian Sage**	

Sweet Marjoram		
1	Rhizoctonia foliar/ aerial/ web blight	*Rhizoctonia solani*
1	**Total for Sweet Marjoram**	

IDENTIFICATIONS		
Mushroom		
1	Earthstars	*Family Geastraceae*
1	Poison pie mushroom	*Hebeloma sp./spp.*
2	**Total for Mushroom**	

Plant		
1	Leaf scorch	*Abiotic disorder*
1	Pear	*Pyrus sp./spp.*
2	**Total for Plant Identification**	

MISCELLANOUS		
Chia		
1	Thrips	*Order Thysanoptera*
1	Whiteflies	*Family Aleyrodidae*
2	**Total for Chia**	

Giant Ragweed		
1	Growth regulator effect suspected	*Chemical*
1	**Total for Giant Ragweed**	

Mixed Plant Material		
1	Smut	*Ustilago sp./spp.*
1	**Total for Mixed Plant Material**	

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

Not Found On List		
1	High soil moisture	*Abiotic disorder*
1	Insufficient sample	*Undetermined*
2	**Total for Not Found On List**	

Salvia; Sage		
1	Fertilizer injury	*Nutritional disorder*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
2	**Total for Salvia; Sage**	

Soil		
1	Southern blight	*Athelia (Sclerotium) rolfsii*
1	**Total for Soil**	

HERBACEOUS ORNAMENTALS		
Anemone		
1	Insufficient sample	*Undetermined*
1	**Total for Anemone**	

Banana (Ornamental)

1	Spider mite injury	*Unidentified spider mite*
1	**Total for Banana (Ornamental)**	

Bells of Ireland		
1	High pH damage	*Nutritional disorder*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Rhizoctonia root rot	*Rhizoctonia sp./spp.*
3	**Total for Bells of Ireland**	

Big Bluestem		
1	Excessive water	*Abiotic disorder*
1	**Total for Big Bluestem**	

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

Buttercup; Crowfoot		
4	Foliar distortion	*Unidentified agent*
4	High pH damage	*Nutritional disorder*
2	Insufficient sample	*Undetermined*
4	Nutrient imbalance	*Nutritional disorder*
14	**Total for Buttercup; Crowfoot**	

Calendula		
1	Phytoplasma disease	*Phytoplasma sp./spp.*
1	**Total for Calendula**	

Chrysanthemum		
5	Fusarium wilt	*Fusarium oxysporum f.sp. chrysanthemi*
2	High pH; low soluble salt damage	*Nutritional disorder*
1	Iron deficiency	*Nutritional disorder*
4	No pathogen found	*Undetermined*
1	Nutritional disorder suspected	*Nutritional disorder*
2	Phosphorus deficiency	*Nutritional disorder*
7	Pythium root and/or crown rot	*Pythium sp./spp.*
4	Rhizoctonia foliar/ aerial/ web blight	*Rhizoctonia solani*
1	Rhizoctonia root rot	*Rhizoctonia sp./spp.*
27	**Total for Chrysanthemum**	

Clematis		
1	Botrytis blight	*Botrytis sp./spp.*
1	High soluble salt	*Nutritional disorder*
1	Mechanical damage	*Abiotic disorder*
3	**Total for Clematis**	

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

Curry Plant		
1	Insect damage	*Unidentified insect*
1	**Total for Curry Plant**	

Dahlia		
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Tomato spotted wilt	*Tomato Spotted Wilt Virus (TSWV)*
2	**Total for Dahlia**	

Daisy		
1	Fertilizer injury	*Nutritional disorder*
1	**Total for Daisy**	

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

Forget-me-not		
1	High soil moisture	*Abiotic disorder*
1	Rhizoctonia stem and root rot	*Rhizoctonia sp./spp.*
2	**Total for Forget-me-not**	

Fuchsia		
1	Botrytis blight	*Botrytis sp./spp.*
1	**Total for Fuchsia**	

Geranium		
1	Iron toxicity	*Nutritional disorder*

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

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

Heuchera; Coral Bells		
1	Leaf scorch	*Abiotic disorder*
2	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
2	Rhizoctonia stem and root rot	*Rhizoctonia sp./spp.*
1	Septoria leaf spot	*Septoria sp./spp.*
6	**Total for Heuchera; Coral Bells**	

Hosta		
1	Hosta virus X (HVX)	*Potexvirus Hosta Virus X*
1	No pathogen found	*Undetermined*
1	Southern blight	*Athelia (Sclerotium) rolfsii*
3	**Total for Hosta**	

Iris		
3	Bacterial soft rot	*Erwinia sp./spp.*
1	Insufficient sample	*Undetermined*
4	**Total for Iris**	

Larkspur		
1	Cercospora leaf spot	*Cercospora sp./spp.*
1	Cyclamen mite	*Phytonemus (Steneotarsonemus) pallidus*
2	**Total for Larkspur**	

Lisianthus		
1	Insufficient sample	*Undetermined*
1	**Total for Lisianthus**	

Mexican Petunia		
1	Eriophyid mite	*Family Eriophyidae*
1	**Total for Mexican Petunia**	

Milkweed		
1	Insect damage	*Unidentified insect*
1	Thrips	*Order Thysanoptera*
2	**Total for Milkweed**	

Million Bells		
1	Aphids	*Family Aphididae*
1	Botrytis blight	*Botrytis sp./spp.*
1	Iron deficiency	*Nutritional disorder*
9	No pathogen found	*Undetermined*
3	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Thrips damage	*Unidentified thrips*
16	**Total for Million Bells**	

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

New Guinea Impatiens		
1	Botrytis blight	*Botrytis sp./spp.*
2	Broad mite	*Polyphagotarsonemus latus*
1	Low pH; high soluble salt damage	*Nutritional disorder*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
5	**Total for New Guinea Impatiens**	

Ostrich Fern		
1	Nutrient imbalance	*Nutritional disorder*
1	Rhizoctonia root rot	*Rhizoctonia sp./spp.*
2	**Total for Ostrich Fern**	

Pachysandra		
1	Euonymus scale	*Unaspis euonymi*
4	Leaf and stem blight	*Volutella pachysandrae*
5	**Total for Pachysandra**	

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

Periwinkle

1	Black root rot	*Berkeleyomyces (Thielaviopsis) basicola*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
2	**Total for Periwinkle**	

Petunia		
1	Basal shoot proliferation (Leafy gall)	*Rhodococcus fascians*
1	Calcium deficiency	*Nutritional disorder*
1	Fertilizer injury	*Nutritional disorder*
1	Phosphorus deficiency	*Nutritional disorder*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
5	**Total for Petunia**	

Phlox		
1	Black root rot	*Berkeleyomyces (Thielaviopsis) basicola*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
2	**Total for Phlox**	

Pincushion Flower		
2	Crown gall	*Agrobacterium sp./spp.*
2	**Total for Pincushion Flower**	

Pinks		
2	Anthracnose basal rot; crown rot	*Colletotrichum sp./spp.*
1	Fusarium stem rot	*Fusarium sp./spp.*
3	**Total for Pinks**	

Poinsettia		
1	Alternaria leaf spot	*Alternaria euphorbiicola*
1	Corynespora leaf spot	*Corynespora cassiicola*
1	Nutritional deficiency	*Nutritional disorder*
1	Oedema; edema	*Abiotic disorder*
5	Pythium root and/or crown rot	*Pythium sp./spp.*
9	**Total for Poinsettia**	

Rudbeckia		
1	Rudbeckia psyllid	*Bactericera antennata*
1	**Total for Rudbeckia**	

Snapdragon		
1	High pH damage	*Nutritional disorder*

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

Sunflower		
1	Cultural/environmental problem	*Abiotic disorder*
1	Cutworm	*Family Noctuidae*
1	No pathogen found	*Undetermined*
1	Rhizoctonia stem and root rot	*Rhizoctonia sp./spp.*
4	**Total for Sunflower**	

Sweetpotato		
1	Aphids	*Family Aphididae*
1	Basal shoot proliferation (Leafy gall)	*Rhodococcus fascians*
1	Thrips	*Order Thysanoptera*
3	**Total for Sweetpotato**	

Tickseed		
1	Powdery mildew	*Unidentified fungus*
1	Spider mite	*Family Tetranychidae*
2	**Total for Tickseed**	

Zinnia		
1	Bacterial leaf spot	*Xanthomonas sp./spp.*
3	Bacterial soft rot	*Erwinia sp./spp.*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Spider mite	*Family Tetranychidae*
1	Undetermined injury	*Undetermined*
3	Unknown abiotic disorder	*Abiotic disorder*
10	**Total for Zinnia**	

INDOOR PLANTS

Bougainvillea		
1	Leaf scorch	*Abiotic disorder*
1	**Total for Bougainvillea**	

Camellia		
1	Potyvirus group	*Potyvirus group*
1	**Total for Camellia**	

Dracaena		
1	Leaf scorch	*Abiotic disorder*
1	**Total for Dracaena**	

Fig		
1	Fig rust	*Cerotelium fici*
1	Normal plant growth	*Undetermined*
1	Scald; scorch	*Abiotic disorder*
1	Spider mite injury	*Unidentified spider mite*
4	**Total for Fig**	

Gardenia		
1	Leaf spot- abiotic	*Abiotic disorder*
1	Mealybugs	*Family Pseudococcidae*
2	**Total for Gardenia**	

Jade Plant		
1	Freeze; frost; cold damage	*Abiotic disorder*
1	Thrips	*Order Thysanoptera*
2	**Total for Jade Plant**	

Orchids		
1	Anthracnose; Colletotrichum leaf spot	*Colletotrichum sp./spp.*
2	Rhizoctonia root rot	*Rhizoctonia sp./spp.*
3	**Total for Orchids**	

Philodendron		
1	Leaf scorch	*Abiotic disorder*
2	Oedema; edema	*Abiotic disorder*
3	**Total for Philodendron**	

Schefflera		
1	Soft scales	*Family Coccidae*
1	**Total for Schefflera**	

TURFGRASS		
Bentgrass		
2	Black layer of turfgrass	*Abiotic disorder*
1	Dense thatch layer	*Abiotic disorder*
1	Moisture stress	*Abiotic disorder*
2	Pythium root dysfunction	*Pythium sp./spp.*
1	Take-all	*Gaeumannomyces graminis var. avenae*
7	**Total for Bentgrass**	

Bermudagrass		
1	Flower smut	*Ustilago cynodontis*
1	**Total for Bermudagrass**	

Bluegrass		
3	Curvularia blight; Leaf spot	*Curvularia sp./spp.*
1	High soluble salt	*Nutritional disorder*
3	No pathogen found	*Undetermined*
3	Summer patch	*Magnaporthe poae*
10	**Total for Bluegrass**	

Fescue		
1	Animal urine damage	*Abiotic disorder*
2	Anthracnose	*Colletotrichum graminicola*
3	Brown patch	*Rhizoctonia sp./spp.*
4	Chilling injury	*Abiotic disorder*
4	Cultural/environmental problem	*Abiotic disorder*
1	European crane fly	*Tipula paludosa*
1	Gray leaf spot	*Pyricularia grisea*
1	High soil moisture	*Abiotic disorder*
2	Leaf rust; rust	*Puccinia sp./spp.*
1	Nimblewill	*Muhlenbergia schreberi*
1	Pythium root dysfunction	*Pythium sp./spp.*
2	Red thread	*Laetisaria fuciformis*
1	Undetermined injury	*Undetermined*
24	**Total for Fescue**	

Ryegrass		
1	Brown patch	*Rhizoctonia sp./spp.*
2	Curvularia blight; Leaf spot	*Curvularia sp./spp.*
1	Gray leaf spot	*Pyricularia grisea*
2	Pythium blight; cottony blight	*Pythium sp./spp.*

6	**Total for Ryegrass**	

Turfgrass		
1	Brown patch	*Rhizoctonia sp./spp.*
1	Cultural/environmental problem	*Abiotic disorder*
1	Flooding injury	*Abiotic disorder*
1	Natural senescence	*Abiotic disorder*
1	No pathogen found	*Undetermined*
1	Summer patch	*Magnaporthe poae*
6	**Total for Turfgrass**	

Zoysia Grass		
1	Melting out (Turfgrass)	*Drechslera sp./spp.*
1	Pythium blight; cottony blight	*Pythium sp./spp.*
2	**Total for Zoysia Grass**	

WOODY ORNAMENTALS

Arborvitae		
1	Arborvitae leafminer	*Argyresthia thuiella*
1	Arborvitae needle blight	*Phyllosticta thujae*
1	Bagworm	*Thyridopteryx ephemeraeformis*
1	Cultural/environmental problem	*Abiotic disorder*
7	Decline; dieback	*Abiotic disorder*
1	Dieback; canker; twig blight	*Botryosphaeria sp./spp.*
2	Environmental stress; problem	*Abiotic disorder*
1	Freeze; frost; cold damage	*Abiotic disorder*
3	Leaf scorch	*Abiotic disorder*
5	Pestalotiopsis needle blight; tip blight	*Pestalotiopsis sp./spp.*
6	Phomopsis dieback; tip blight; canker	*Phomopsis sp./spp.*
5	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
1	Seiridium canker	*Seiridium unicorne*
6	Spider mite injury	*Unidentified spider mite*
4	Transplant shock; stress	*Abiotic disorder*
1	Undetermined injury	*Undetermined*
1	Winter injury	*Abiotic disorder*
47	**Total for Arborvitae**	

Ash		
1	Wood rot fungus	*Perenniporia sp./spp.*
1	**Total for Ash**	

Aucuba		
1	Spider mite injury	*Unidentified spider mite*
1	**Total for Aucuba**	

Azalea		
2	Azalea lace bug	*Stephanitis pyriodes*
1	Cultural/environmental problem	*Abiotic disorder*
1	Decline; dieback	*Abiotic disorder*
1	Foliar distortion	*Unidentified agent*
1	Japanese beetle	*Popillia japonica*
1	Leaf scorch	*Abiotic disorder*
1	Mechanical damage	*Abiotic disorder*
2	Spider mite injury	*Unidentified spider mite*
1	Winter injury	*Abiotic disorder*
11	**Total for Azalea**	

Bayberry		
1	Winter injury	*Abiotic disorder*
1	**Total for Bayberry**	

Beech		
1	Burls; adventitious growth	*Abiotic disorder*
1	Canker	*Hypoxylon sp./spp.*
1	Transplant shock; stress	*Abiotic disorder*
3	**Total for Beech**	

Birch		
1	Armillaria root rot	*Armillaria sp./spp.*
1	Bark beetles; Ambrosia beetles	*Family Scolytidae*
1	Herbicide injury/exposure suspected	*Chemical*
1	Iron deficiency	*Nutritional disorder*
1	Transplant shock; stress	*Abiotic disorder*
5	**Total for Birch**	

Black Gum		
1	Cultural/environmental problem	*Abiotic disorder*
1	Sooty mold	*Unidentified fungus*
1	Sourgum scale	*Chionaspis (Phenacaspis) nyssae*
1	Transplant shock; stress	*Abiotic disorder*

4	**Total for Black Gum**	

Boxwood		
26	Boxwood blight; leaf and stem blight	*Calonectria pseudonaviculatum*
46	Boxwood leafminer	*Monarthropalpus flavus (buxi)*
4	Boxwood psyllid	*Psylla buxi*
80	Boxwood Volutella canker	*Volutella buxi*
1	Cultural/environmental problem	*Abiotic disorder*
2	Decline; dieback	*Abiotic disorder*
1	Excessive water	*Abiotic disorder*
1	Foliar distortion	*Unidentified agent*
2	Freeze; frost; cold damage	*Abiotic disorder*
2	High soil moisture	*Abiotic disorder*
1	Insufficient information	*Undetermined*
2	Insufficient sample	*Undetermined*
3	Leaf scorch	*Abiotic disorder*
2	Lichens	*Lichenes*
1	Low pH damage	*Nutritional disorder*
51	Macrophoma dieback	*Macrophoma sp./spp.*
7	No pathogen found	*Undetermined*
1	Nutritional disorder suspected	*Nutritional disorder*
1	Oedema; edema	*Abiotic disorder*
1	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
1	Poor root development	*Abiotic disorder*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Root problems	*Abiotic disorder*
1	Scald; scorch	*Abiotic disorder*
6	Spider mite injury	*Unidentified spider mite*
3	Transplant shock; stress	*Abiotic disorder*
1	Undetermined injury	*Undetermined*
17	Winter injury; winter desiccation	*Abiotic disorder*
266	**Total for Boxwood**	

Butterfly Bush		
1	Glyphosate injury suspected	*Chemical*
1	Insufficient sample	*Undetermined*
2	**Total for Butterfly Bush**	

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

Cedar		
1	Decline; dieback	*Abiotic disorder*
1	Lichens	*Lichenes*
2	**Total for Cedar**	

Cherry		
2	Insect damage	*Unidentified insect*
1	Leaf spot; shothole	*Blumeriella jaapii*
2	Stonefruit bacterial spot	*Xanthomonas campestris pv. pruni*
4	Transplant shock; stress	*Abiotic disorder*
9	**Total for Cherry**	

Cherry laurel		
1	Bacterial leaf spot	*Xanthomonas campestris pv. pruni*
1	Decline; dieback	*Abiotic disorder*
2	Freeze; frost; cold damage	*Abiotic disorder*
1	High soil moisture	*Abiotic disorder*
1	Insect damage	*Unidentified insect*
1	Insufficient sample	*Undetermined*
4	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
3	Transplant shock; stress	*Abiotic disorder*
14	**Total for Cherry laurel**	

Chestnut		
1	Actinopelte leaf spot	*Dicarpella dryina*
1	Insufficient sample	*Undetermined*
1	Transplant shock; stress	*Abiotic disorder*
3	**Total for Chestnut**	

Chokeberry		
1	Mycosphaerella leaf spot	*Mycosphaerella sp./spp.*
1	**Total for Chokeberry**	

Cotoneaster		
1	Fusarium canker	*Fusarium sp./spp.*
1	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
1	Transplant shock; stress	*Abiotic disorder*
3	**Total for Cotoneaster**	

Crabapple		
1	Apple scab	*Venturia inaequalis*
1	Cicada egg-laying injury	*Unidentified cicada*
1	Herbicide injury/exposure suspected	*Chemical*
1	Japanese beetle	*Popillia japonica*
4	**Total for Crabapple**	

Crape Myrtle		
1	Powdery mildew	*Oidium sp./spp.*
1	**Total for Crape Myrtle**	

Cryptomeria		
2	Pestalotiopsis needle blight; tip blight	*Pestalotiopsis sp./spp.*
1	Winter injury	*Abiotic disorder*
3	**Total for Cryptomeria**	

Dogwood		
1	Decline; dieback	*Abiotic disorder*
1	Dieback; canker; twig blight	*Botryosphaeria sp./spp.*
5	Dogwood anthracnose	*Discula destructiva*
1	Dogwood leaf spot	*Septoria cornicola*
5	Dogwood powdery mildew	*Erysiphe pulchra*
2	Growth regulator effect suspected	*Chemical*
1	Lichens	*Lichenes*
1	No pathogen found	*Undetermined*
1	Nutritional disorder suspected	*Nutritional disorder*
1	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
3	Spot anthracnose	*Elsinoe corni*
6	Transplant shock; stress	*Abiotic disorder*
1	Undetermined injury	*Undetermined*
1	Wood boring insect damage	*Unidentified insect*
30	**Total for Dogwood**	

Elderberry		
1	Decline; dieback	*Abiotic disorder*
2	Growth regulator effect suspected	*Chemical*
3	**Total for Elderberry**	

Elm		
1	Anthracnose; black spot	*Stegophora ulmea*
1	Cultural/environmental problem	*Abiotic disorder*

1	Dieback; canker; twig blight	*Botryosphaeria sp./spp.*
2	Dutch elm disease	*Ophiostoma sp./spp.*
2	Freeze; frost; cold damage	*Abiotic disorder*
1	Insect damage	*Unidentified insect*
1	Insufficient sample	*Undetermined*
3	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
2	Soil compaction	*Abiotic disorder*
14	**Total for Elm**	

Euonymus		
1	Aphids	*Family Aphididae*
1	Decline; dieback	*Abiotic disorder*
2	Eriophyid mites	*Family Eriophyidae*
3	Spider mite injury	*Unidentified spider mite*
1	Unspecified pathology	*Xanthomonas sp./spp.*
8	**Total for Euonymus**	

Falsecypress		
2	Decline; dieback	*Abiotic disorder*
1	Pestalotiopsis needle blight; tip blight	*Pestalotiopsis sp./spp.*
1	Tip blight	*Kabatina sp./spp.*
4	**Total for Falsecypress**	

Filbert		
1	Aphids	*Family Aphididae*
1	Eastern filbert blight	*Cryptosporella anomala*
1	Sooty mold	*Unidentified fungus*
3	**Total for Filbert**	

Fir		
1	Mechanical damage	*Abiotic disorder*
1	Nutritional disorder suspected	*Nutritional disorder*
1	Phomopsis dieback; tip blight; canker	*Phomopsis sp./spp.*
3	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
1	Soil compaction	*Abiotic disorder*
7	**Total for Fir**	

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

Forsythia		
1	High soil moisture	*Abiotic disorder*
1	Mechanical damage	*Abiotic disorder*
1	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
3	**Total for Forsythia**	

Fringetree		
1	Lace bugs	*Family Tingidae*
1	Leaf scorch	*Abiotic disorder*
2	**Total for Fringetree**	

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

Hackberry		
1	Powdery mildew	*Erysiphe sp./spp.*
1	Sooty mold	*Unidentified fungus*
1	Wood rot fungus	*Perenniporia sp./spp.*
3	**Total for Hackberry**	

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

Hibiscus		
1	Dieback; canker; twig blight	*Botryosphaeria sp./spp.*
1	**Total for Hibiscus**	

Hickory		
1	Anthracnose	*Gnomonia caryae*
1	Insect damage	*Unidentified Insect*
2	**Total for Hickory**	

Holly		
7	Black root rot	*Berkeleyomyces (Thielaviopsis) basicola*
1	Cottony camellia scale	*Pulvinaria floccifera*
10	Decline; dieback	*Abiotic disorder*
1	Freeze; frost; cold damage	*Abiotic disorder*

2	High soil moisture	*Abiotic disorder*
1	Holly leafminer complex	*Phytomyza sp./spp.*
1	Lichens	*Lichenes*
3	No pathogen found	*Undetermined*
1	Oedema; edema	*Abiotic disorder*
1	Rhizoctonia root rot	*Rhizoctonia sp./spp.*
2	Spider mite injury	*Unidentified spider mite*
5	Transplant shock; stress	*Abiotic disorder*
1	Whiteflies	*Family Aleyrodidae*
1	Winter injury	*Abiotic disorder*
37	**Total for Holly**	

Honeylocust		
1	Wood rot fungus	*Ganoderma sp./spp.*
1	Wood rot fungus	*Inonotus sp./spp.*
2	**Total for Honeylocust**	

Honeysuckle		
1	Honeysuckle leafminer	*Swezeyula lonicerae*
1	**Total for Honeysuckle**	

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

Hydrangea		
3	Bacterial leaf spot	*Xanthomonas campestris*
2	Decline; dieback	*Abiotic disorder*
3	Fungal leaf spot	*Cercospora hydrangeae*
1	Glyphosate injury suspected	*Chemical*
1	Growth regulator effect suspected	*Chemical*
1	High soil moisture	*Abiotic disorder*
1	Leaf scorch	*Abiotic disorder*
1	No pathogen found	*Undetermined*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
3	Spider mite injury	*Unidentified spider mite*
1	Transplant shock; stress	*Abiotic disorder*
18	**Total for Hydrangea**	

Juniper		
1	Cedar-quince rust	*Gymnosporangium clavipes*

1	Decline; dieback	*Abiotic disorder*
1	Dieback; canker; twig blight	*Botryosphaeria sp./spp.*
1	Freeze; frost; cold damage	*Abiotic disorder*
1	Insufficient sample	*Undetermined*
1	Lichens	*Lichenes*
1	Mycorrhizal fungus	*Unidentified fungus*
1	Needle blight	*Phyllosticta sp./spp.*
1	No pathogen found	*Undetermined*
1	Pestalotiopsis needle blight; tip blight	*Pestalotiopsis sp./spp.*
1	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
2	Spider mite injury	*Unidentified spider mite*
2	Winter injury	*Abiotic disorder*
15	**Total for Juniper**	

Leucothoe		
1	Phyllosticta leaf spot	*Phyllosticta sp./spp.*
1	Transplant shock; stress	*Abiotic disorder*
2	**Total for Leucothoe**	

Leyland Cypress		
1	Insufficient sample	*Undetermined*
1	Needle blight	*Phyllosticta sp./spp.*
1	Pestalotiopsis needle blight; tip blight	*Pestalotiopsis sp./spp.*
2	Seiridium canker	*Seiridium unicorne*
5	**Total for Leyland Cypress**	

Lilac		
3	Decline; dieback	*Abiotic disorder*
1	Leaf scorch	*Abiotic disorder*
2	Leaf spot	*Pseudocercospora sp./spp.*
1	Sooty mold	*Unidentified fungus*
1	Wood decay fungus	*Steccherinum ochraceum*
8	**Total for Lilac**	

Linden		
1	Japanese beetle	*Popillia japonica*
1	**Total for Linden**	

Locust		
1	Cultural/environmental problem	*Abiotic disorder*
1	Herbicide injury/exposure suspected	*Chemical*

2	**Total for Locust**	

Magnolia		
1	Chemical injury suspected	*Chemical*
2	Decline; dieback	*Abiotic disorder*
1	Dieback; canker; twig blight	*Botryosphaeria sp./spp.*
1	Growth regulator effect suspected	*Chemical*
1	Lichens	*Lichenes*
1	Magnolia scale	*Neolecanium cornuparvum*
1	No pathogen found	*Undetermined*
1	Phomopsis dieback; tip blight; canker	*Phomopsis sp./spp.*
1	Sooty mold	*Unidentified fungus*
1	Thread blight	*Ceratobasidium (Corticium) ochroleucum*
2	Yellow-poplar weevil	*Odontopus calceatus*
13	**Total for Magnolia**	

Maple		
1	Bacterial leaf scorch	*Xylella fastidiosa*
1	Bacterial wetwood; slime flux	*Various pathogens*
1	Calico scale	*Eulecanium cerasorum*
1	Cottony mapleleaf scale	*Pulvinaria acericola*
1	Dieback; canker	*Nectria sp./spp.*
1	Dieback; canker; twig blight	*Botryosphaeria sp./spp.*
2	Gloomy scale	*Melanaspis tenebricosa*
2	Growth regulator effect suspected	*Chemical*
2	Herbicide injury/exposure suspected	*Chemical*
1	Insect damage	*Unidentified insect*
2	Insufficient sample	*Undetermined*
2	Japanese beetle	*Popillia japonica*
1	Japanese maple scale	*Lopholeucaspis japonica*
1	Leaf scorch	*Abiotic disorder*
1	Leaf spot	*Phloeospora sp./spp.*
3	Maple anthracnose	*Aureobasidium apocryptum*
15	Maple decline	*Complex*
2	Maple leaf blister	*Taphrina carveri*
1	Maple leaf spot	*Phyllosticta minima*
3	Maple spindle gall mite	*Vasates aceriscrumena*
1	Mechanical damage	*Abiotic disorder*
7	No pathogen found	*Undetermined*
2	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
2	Powdery mildew	*Phyllactinia sp./spp.*
1	Scale insects	*Order Homoptera*

1	Sooty mold	*Unidentified fungus*
1	Southwest injury	*Abiotic disorder*
1	Spider mite injury	*Unidentified spider mite*
8	Transplant shock; stress	*Abiotic disorder*
2	Undetermined injury	*Undetermined*
1	Wood decay fungus	*Unidentified fungus*
71	**Total for Maple**	

Mimosa		
1	Insufficient sample	*Undetermined*
1	**Total for Mimosa**	

Mountain Laurel		
1	Transplant shock; stress	*Abiotic disorder*
1	**Total for Mountain Laurel**	

Oak		
9	Actinopelte leaf spot	*Tubakia dryina*
4	Anthracnose	*Apiognomonia sp./spp.*
1	Aphids	*Family Aphididae*
14	Bacterial leaf scorch	*Xylella fastidiosa*
1	Canker	*Hypoxylon sp./spp.*
3	Cicada egg-laying injury	*Unidentified Cicada*
1	Cultural/environmental problem	*Abiotic disorder*
3	Decline; dieback	*Abiotic disorder*
2	Growth regulator effect suspected	*Chemical*
1	Herbicide injury/exposure suspected	*Chemical*
4	High soil moisture	*Abiotic disorder*
2	Insufficient sample	*Undetermined*
1	Iron deficiency	*Nutritional disorder*
1	Lace bugs	*Family Tingidae*
1	Leaf scorch	*Abiotic disorder*
3	Lecanium scales	*Lecanium sp./spp.*
3	Lichens	*Lichenes*
1	Mite damage	*Unidentified mite*
1	Mycorrhizal fungus	*Unidentified fungus*
3	No pathogen found	*Undetermined*
1	Oak powdery mildew	*Erysiphe (Oidium) alphitoides*
7	Oak twig canker and dieback	*Botryosphaeria quercuum*
1	Obscure scale	*Melanaspis obscura*
1	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
2	Spider mite injury	*Unidentified spider mite*

1	Transplant shock; stress	*Abiotic disorder*
1	Wood decay fungus	*Unidentified fungus*
73	**Total for Oak**	

Pear		
1	Cicada egg-laying injury	*Unidentified Cicada*
1	Fire blight	*Erwinia amylovora*
2	Herbicide injury/exposure suspected	*Chemical*
1	Leaf scorch	*Abiotic disorder*
1	Pear decline	*Abiotic disorder*
6	**Total for Pear**	

Persimmon		
1	Cultural/environmental problem	*Abiotic disorder*
1	Insufficient sample	*Undetermined*
1	Phomopsis dieback; tip blight; canker	*Phomopsis sp./spp.*
1	Phomopsis leaf spot	*Phomopsis sp./spp.*
4	**Total for Persimmon**	

Pine		
1	Brown spot; needle blight	*Mycosphaerella dearnessii*
1	Decline; dieback	*Abiotic disorder*
3	Diplodia tip blight; canker	*Diplodia sapinea*
1	Dothistroma needle blight	*Dothistroma pini*
1	Elongate hemlock scale	*Fiorinia externa*
1	No pathogen found	*Undetermined*
4	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
3	Pine bark adelgid	*Pineus strobi*
5	White pine decline	*Abiotic disorder*
20	**Total for Pine**	

Plum		
1	Stonefruit bacterial spot	*Xanthomonas campestris pv. pruni*
1	**Total for Plum**	

Privet		
1	Animal urine damage	*Abiotic disorder*
1	Oedema; edema	*Abiotic disorder*
2	**Total for Privet**	

Redbud		
2	Dieback; canker; twig blight	*Botryosphaeria sp./spp.*
1	Herbicide injury/exposure suspected	*Chemical*
1	Insufficient sample	*Undetermined*
1	No pathogen found	*Undetermined*
1	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
6	**Total for Redbud**	

Rhododendron		
1	Anthracnose; Colletotrichum leaf spot	*Colletotrichum sp./spp.*
1	Leaf spot	*Pestalotiopsis sp./spp.*
1	No pathogen found	*Undetermined*
1	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
1	Phytophthora dieback; blight	*Phytophthora sp./spp.*
1	Transplant shock; stress	*Abiotic disorder*
1	Winter injury	*Abiotic disorder*
7	**Total for Rhododendron**	

Rose		
1	Black spot	*Diplocarpon rosae*
2	Growth regulator effect suspected	*Chemical*
1	Herbicide injury/exposure suspected	*Chemical*
1	Insufficient sample	*Undetermined*
1	No pathogen found	*Undetermined*
1	Phomopsis dieback; tip blight; canker	*Phomopsis sp./spp.*
1	Powdery mildew	*Sphaerotheca sp./spp.*
3	Rose mosaic	*Ilarvirus Prunus Necrotic Ringspot Virus*
2	Rose rosette disease suspected	*Rose rosette-associated*
1	Roseslug	*Endelomyia sp./spp.*
2	Spider mite injury	*Unidentified spider mite*
1	Transplant shock; stress	*Abiotic disorder*
17	**Total for Rose**	

Rose-of-sharon		
1	Insufficient light	*Abiotic disorder*
1	**Total for Rose-of-sharon**	

Sassafras		
2	Laurel wilt	*Harringtonia lauricola*
1	Mechanical damage	*Abiotic disorder*
4	No pathogen found	*Undetermined*

7	**Total for Sassafras**	

Spice Bush		
1	No pathogen found	*Undetermined*
1	**Total for Spice Bush**	

Spruce		
1	Cytospora canker	*Cytospora kunzei*
3	Decline; dieback	*Abiotic disorder*
4	Dothistroma needle blight	*Dothistroma sp./spp.*
1	Lichens	*Lichenes*
2	No pathogen found	*Undetermined*
1	Pestalotiopsis needle blight; tip blight	*Pestalotiopsis sp./spp.*
2	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
18	Rhizosphaera needle cast	*Rhizosphaera kalkhoffii*
1	Scald; scorch	*Abiotic disorder*
1	Soil compaction	*Abiotic disorder*
12	Spider mite injury	*Unidentified spider mite*
1	Spruce spider mite	*Oligonychus ununguis*
7	Stigmina needle blight	*Stigmina lautii*
1	Termites	*Order Isoptera*
1	Transplant shock; stress	*Abiotic disorder*
56	**Total for Spruce**	

St. Johnswort		
1	No pathogen found	*Undetermined*
1	**Total for St. Johnswort**	

Sumac		
1	Anthracnose	*Gloeosporium sp./spp.*
1	Fusarium wilt	*Fusarium oxysporum*
4	No pathogen found	*Undetermined*
1	Wilt and stem rot	*Fusarium oxysporum*
7	**Total for Sumac**	

Sweetgum		
1	Cicada egg-laying injury	*Unidentified cicada*
2	Cultural/environmental problem	*Abiotic disorder*
1	Leaf spot	*Unidentified fungus*
1	No pathogen found	*Undetermined*
5	**Total for Sweetgum**	

Sycamore		
2	Bacterial leaf scorch	*Xylella fastidiosa*
1	Cicada egg-laying injury	*Unidentified cicada*
3	Decline; dieback	*Abiotic disorder*
1	Insect damage	*Unidentified insect*
1	Mycosphaerella leaf spot	*Mycosphaerella sp./spp.*
1	Powdery mildew	*Oidium sp./spp.*
2	Sycamore anthracnose	*Apiognomonia veneta*
4	Sycamore lace bug	*Corythucha ciliata*
15	**Total for Sycamore**	

Taxus		
1	Cottony camellia scale	*Pulvinaria floccifera*
1	Fletcher scale	*Parthenolecanium fletcheri*
1	No pathogen found	*Undetermined*
1	Pestalotiopsis needle blight; tip blight	*Pestalotiopsis sp./spp.*
3	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
1	Scald; scorch	*Abiotic disorder*
6	Taxus decline; dieback	*Abiotic disorder*
14	**Total for Taxus**	

Tulip Tree		
1	Insufficient sample	*Undetermined*
1	Sooty mold	*Unidentified fungus*
1	Transplant shock; stress	*Abiotic disorder*
1	Tuliptree scale	*Toumeyella liriodendri*
1	Whiteflies	*Family Aleyrodidae*
5	**Total for Tulip Tree**	

Umbrella Pine		
1	Heat stress	*Abiotic disorder*
1	**Total for Umbrella Pine**	

Viburnum		
1	Anthracnose; Colletotrichum leaf spot	*Colletotrichum sp./spp.*
2	Decline; dieback	*Abiotic disorder*
1	Leaf spot	*Unidentified fungus*
1	No pathogen found	*Undetermined*
1	Spot anthracnose	*Sphaceloma sp./spp.*
6	**Total for Viburnum**	

Walnut		
1	Pestalotiopsis canker/ dieback	*Pestalotiopsis sp./spp.*
1	Phomopsis dieback; tip blight; canker	*Phomopsis sp./spp.*
2	**Total for Walnut**	

Willow		
1	Dieback; canker; twig blight	*Botryosphaeria sp./spp.*
1	Herbicide injury/exposure suspected	*Chemical*
1	Rust	*Melampsora sp./spp.*
1	Sooty mold	*Unidentified fungus*
4	**Total for Willow**	

Witchhazel		
1	Gall-forming aphid	*Hormaphis hamamelidis*
1	**Total for Witchhazel**	

Yellowwood		
1	Wood decay fungus	*Unidentified fungus*
1	**Total for Yellowwood**	

Zelkova		
1	Freeze; frost; cold damage	*Abiotic disorder*
1	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
1	Soil compaction	*Abiotic disorder*
3	**Total for Zelkova**	

	***PHYTOPHTHORA RAMORUM* TRACE FORWARD**	
Azalea		
36	No pathogen found	*Undetermined*
34	**Total for Azalea**	

Pieris		
18	No pathogen found	*Undetermined*
18	**Total for Pieris**	

Rhododendron		
19	No pathogen found	*Undetermined*

19	**Total for Rhododendron**	

PINEWOOD NEMATODE EXTRACTION		
Juniper		
1	Insufficient sample	*Undetermined*
8	PWNE-no pathogen found	*Undetermined*
9	**Total for Juniper**	

VEGETABLES		
Asparagus		
1	Asparagus Fusarium crown rot	*Fusarium oxysporum f.sp. asparagi*
1	Crown rot; root rot; stem rot	*Phytophthora sp./spp.*
2	**Total for Asparagus**	
Bean		
3	Bean angular leaf spot	*Phaeoisariopsis griseola*
2	No pathogen found	*Undetermined*
1	Potyvirus group	*Potyvirus group*
5	Rhizoctonia stem and root rot	*Rhizoctonia sp./spp.*
1	Scald; scorch	*Abiotic disorder*
1	Spider mite	*Family Tetranychidae*
2	Thrips damage	*Unidentified thrips*
1	Undetermined injury	*Undetermined*
16	**Total for Bean**	
Beet		
1	Southern blight	*Athelia (Sclerotium) rolfsii*
1	**Total for Beet**	
Broccoli		
1	Bacterial soft rot	*Erwinia sp./spp.*
1	**Total for Broccoli**	
Brussels-sprouts		
1	Manganese toxicity	*Nutritional disorder*
1	**Total for Brussels-sprouts**	
Cabbage		

1	Crucifer bacterial black rot	*Xanthomonas campestris*
1	Herbicide injury/exposure suspected	*Chemical*
1	Oedema; edema	*Abiotic disorder*
3	**Total for Cabbage**	

Carrot		
1	Root-knot nematodes	*Meloidogyne sp./spp.*
1	**Total for Carrot**	

Corn (Sweet)		
1	Anthracnose leaf blight	*Colletotrichum graminicola*
1	Cultural/environmental problem	*Abiotic disorder*
1	Fertilizer injury	*Nutritional disorder*
1	Leaf spot- abiotic	*Abiotic disorder*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Rhizoctonia root rot	*Rhizoctonia sp./spp.*
3	Southern corn rust	*Puccinia polysora*
9	**Total for Corn (Sweet)**	

Cucumber		
2	Anthracnose	*Colletotrichum orbiculare*
1	Cucurbit downy mildew	*Pseudoperonospora cubensis*
2	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Scald; scorch	*Abiotic disorder*
2	Target spot	*Corynespora cassiicola*
8	**Total for Cucumber**	

Eggplant		
1	Herbicide injury/exposure suspected	*Chemical*
1	**Total for Eggplant**	

Garlic		
1	Bulb mite	*Rhizoglyphus sp./spp.*
1	Fusarium root rot	*Fusarium sp./spp.*
1	Undetermined injury	*Undetermined*
3	**Total for Garlic**	

Kale		
1	Crucifer bacterial black rot	*Xanthomonas campestris*
1	**Total for Kale**	

Lettuce		
1	Aphids	*Family Aphididae*
1	Drop (Sclerotinia rot)	*Sclerotinia sp./spp.*
1	No pathogen found	*Undetermined*
1	Nutritional disorder suspected	*Nutritional disorder*
1	Powdery mildew	*Golovinomyces cichoracearum*
2	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Root-knot nematodes	*Meloidogyne sp./spp.*
8	**Total for Lettuce**	

Melon		
1	Bacterial soft rot	*Erwinia sp./spp.*
1	Cucurbit bacterial wilt	*Erwinia tracheiphila*
1	Cucurbit downy mildew	*Pseudoperonospora cubensis*
1	Cucurbit gummy stem blight	*Didymella bryoniae*
1	Growth cracks	*Abiotic disorder*
1	Microdochium blight	*Plectosphaerella cucumerina*
6	**Total for Melon**	

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

Onion		
1	Cutworms	*Family Noctuidae*
1	**Total for Onion**	

Pea		
1	Herbicide injury/exposure suspected	*Chemical*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
2	**Total for Pea**	

Pepper		
2	Broad mite	*Polyphagotarsonemus latus*
2	Foliar distortion	*Unidentified agent*
1	Herbicide injury/exposure suspected	*Chemical*
1	High temperature damage	*Abiotic disorder*
1	Pepper bacterial spot	*Xanthomonas campestris pv. vesicatoria*

3	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Rhizoctonia stem and root rot	*Rhizoctonia sp./spp.*
1	Southern blight	*Athelia (Sclerotium) rolfsii*
1	Sunscald	*Abiotic disorder*
1	Tomato spotted wilt	*Tomato Spotted Wilt Virus (TSWV)*
14	**Total for Pepper**	

Potato		
1	Bacterial soft rot	*Unidentified bacterium*
3	Fusarium dry rot	*Fusarium solani f.sp. caeruleum*
1	Physiological responses (enlarged lenticels)	*Abiotic disorder*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Rhizoctonia root rot	*Rhizoctonia sp./spp.*
1	Russeting	*Abiotic disorder*
8	**Total for Potato**	

Pumpkin		
2	Anthracnose	*Colletotrichum orbiculare*
4	Bacterial soft rot	*Erwinia sp./spp.*
1	Manganese toxicity	*Nutritional disorder*
1	Microdochium blight	*Plectosphaerella cucumerina*
2	No pathogen found	*Undetermined*
1	Phytophthora crown rot; root rot; stem rot	*Phytophthora sp./spp.*
1	Rhizoctonia root rot	*Rhizoctonia sp./spp.*
4	Scald; scorch	*Abiotic disorder*
1	Wet rot; Fruit rot	*Choanephora cucurbitarum*
17	**Total for Pumpkin**	

Radish		
1	Normal plant growth	*Undetermined*
1	**Total for Radish**	

Rhubarb		
1	Sunscald	*Abiotic disorder*
1	**Total for Rhubarb**	

Squash		
2	Cucurbit downy mildew	*Pseudoperonospora cubensis*
1	Herbicide injury/exposure suspected	*Chemical*
1	No pathogen found	*Undetermined*
1	Poor pollination	*Abiotic disorder*

1	Unidentified virus	*Unidentified virus*
1	Wet rot; fruit rot	*Choanephora cucurbitarum*
1	Zucchini yellow mosaic (ZYMV)	*Potyvirus Zucchini Yellow Mosaic Virus*
8	**Total for Squash**	

Sweetpotato		
1	Fusarium root rot	*Fusarium sp./spp.*
2	Growth cracks	*Abiotic disorder*
1	Intumescence	*Abiotic disorder*
1	Physiological responses (lenticel proliferation)	*Abiotic disorder*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Rhizoctonia stem and root rot	*Rhizoctonia sp./spp.*
1	Sweetpotato scurf	*Monilochaetes infuscans*
8	**Total for Sweetpotato**	

Swiss Chard		
1	Bacterial soft rot	*Erwinia sp./spp.*
1	Fusarium root rot	*Fusarium sp./spp.*
2	**Total for Swiss Chard**	

Tomato		
1	Alternaria fruit rot and spot	*Alternaria sp./spp.*
1	Bacterial canker	*Clavibacter michiganensis*
1	Blossom end rot	*Abiotic disorder*
4	Botrytis blight	*Botrytis sp./spp.*
1	Cercospora leaf mold	*Pseudocercospora fuligena*
1	Chemical injury suspected	*Chemical*
2	Early blight; leaf spot	*Alternaria solani*
2	Ethylene exposure suspected	*Abiotic disorder*
1	Excessive water	*Abiotic disorder*
2	Freeze; frost; cold damage	*Abiotic disorder*
1	Fusarium stem rot	*Fusarium sp./spp.*
6	Fusarium wilt	*Fusarium oxysporum*
1	Glyphosate injury suspected	*Chemical*
16	Growth regulator effect suspected	*Chemical*
1	Heat stress	*Abiotic disorder*
1	High pH damage	*Nutritional disorder*
4	High soluble salt	*Nutritional disorder*
2	High temperature damage	*Abiotic disorder*
1	Insect damage	*Unidentified insect*
2	Insufficient sample	*Undetermined*

1	Iron deficiency	*Nutritional disorder*
3	Leaf mold	*Passalora fulva*
2	Leaf scorch	*Abiotic disorder*
1	Low pH damage	*Nutritional disorder*
1	Low pH; high soluble salt damage	*Nutritional disorder*
1	Magnesium deficiency	*Nutritional disorder*
2	No pathogen found	*Undetermined*
1	Nutritional deficiency	*Nutritional disorder*
2	Nutritional disorder suspected	*Nutritional disorder*
1	Phoma rot	*Phoma destructiva*
2	Physiological leaf roll	*Abiotic disorder*
1	Physiological responses	*Abiotic disorder*
1	Physiological silvering	*Abiotic disorder*
4	Phytotoxicity	*Chemical*
1	Potassium deficiency	*Nutritional disorder*
1	Powdery mildew	*Leveillula taurica*
1	Pythium damping-off	*Pythium sp./spp.*
20	Pythium root and/or crown rot	*Pythium sp./spp.*
4	Rhizoctonia stem and root rot	*Rhizoctonia sp./spp.*
1	Ripe rot	*Colletotrichum sp./spp.*
8	Root-knot nematodes	*Meloidogyne sp./spp.*
3	Scald; scorch	*Abiotic disorder*
8	Septoria leaf spot	*Septoria lycopersici*
2	Soil compaction	*Abiotic disorder*
8	Southern blight	*Athelia (Sclerotium) rolfsii*
1	Spider mite injury	*Unidentified spider mite*
1	Target spot	*Corynespora cassiicola*
1	Thrips	*Order Thysanoptera*
1	Tobacco mosaic	*Tobacco Mosaic Virus (TMV)*
1	Tomato bacterial spot	*Xanthomonas sp./spp.*
7	Tomato spotted wilt	*Tomato Spotted Wilt Virus (TSWV)*
2	Undetermined injury	*Undetermined*
2	Unknown abiotic disorder	*Abiotic disorder*
3	White mold (stem rot); timber rot	*Sclerotinia sclerotiorum*
1	Zinc deficiency	*Nutritional disorder*
151	**Total for Tomato**	

Turnip		
1	Crucifer bacterial black rot	*Xanthomonas campestris*
1	**Total for Turnip**	

Watermelon

1	Freeze; frost; cold damage	*Abiotic disorder*
1	Insufficient sample	*Undetermined*
1	Pythium root and/or crown rot	*Pythium sp./spp.*
1	Spider mite injury	*Unidentified spider mite*
1	Unspecified pathology	*Plectosphaerella sp./spp.*
5	**Total for Watermelon**	