



Plant Diseases in Kentucky

**Plant Disease Diagnostic Laboratory
Summary**

2013

by:

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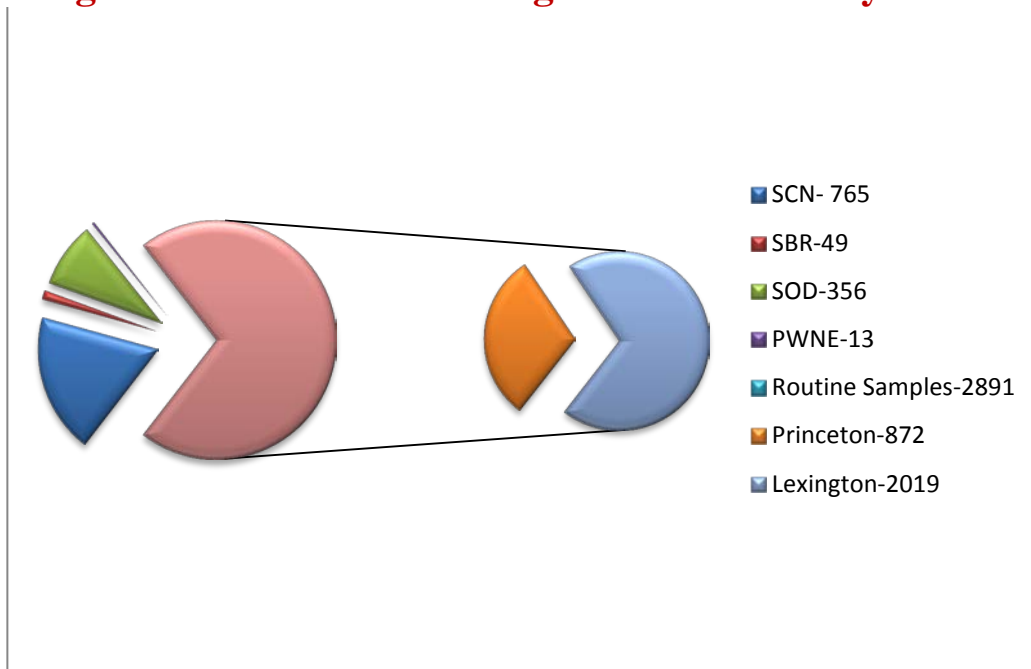
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INTRODUCTION

The Plant Disease Diagnostic Laboratory (Lexington and Princeton) processed 3309 plant samples. Plant samples with more than one problem numbered 429 bringing the total number of actual diagnoses to 3738. The Lexington Laboratory diagnosed 2388 specimens, including 2019 routine plant samples, 356 samples from commercial nurseries surveyed for the Sudden Oak Death (SOD) pathogen, and 13 eastern red cedar (*Juniperus virginiana*) samples from commercial lumber companies for pinewood nematode extraction (PWNE). The Princeton Laboratory diagnosed 1686 specimens, including 872 routine plant samples and 49 Soybean Rust (SBR) sentinel plot samples. In addition, 765 soil samples were submitted to the Princeton Laboratory exclusively for soybean cyst nematode (SCN) analysis. Sample totals are summarized in Figure 1 below.

Figure 1: Plant Disease Diagnostic Laboratory – 2013



Total Samples	4074
<u>Samples with >1 diagnosis</u>	<u>429</u>
	4503

NATURE OF WORK

Plant disease diagnosis is an ongoing educational and research activity of the U.K. Department of Plant Pathology. There are 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, radio and television tapes, and plant health care workshops. Both laboratories meet Homeland Security regulations for reporting all diagnoses of plant diseases to USDA-APHIS on a real-time basis. A web-based UK Digital Consulting System (DCS) is also available to assist County Extension Agents and Specialists with plant disease issues. Via the DCS, Extension Agents submit images and request advice about plant problems, including how and where best to collect physical samples for submission to the PDDL.

WEATHER SUMMARY

Temperatures in the first half of the year tended to be normal or slightly above normal, while temperatures in mid-summer were below normal. Average rainfall was consistently higher than normal in much of the state during most months of the year. Wet conditions enhanced early development of foliar diseases, and continued soil saturation promoted root and crown diseases later in the season. Detailed Kentucky weather information is available from the UK AgWeather Center at <http://www.wagwx.ca.uky.edu>.

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UK Extension Specialists and Researchers (Sample diagnosis/consultation – see Table 9);

Kentucky Integrated Pest Management Program; Southern Plant Diagnostic Network (Supplemental funding).

EXPLANATORY REMARKS

In the main body of this report, three columns of numbers appear following the diagnosis and causal agent sections. The first column indicates the number of primary diagnoses, the second column contains the number of secondary diagnoses and the third column is the total of columns 1 and 2. The primary diagnosis is the main, or frequently, the only problem observed on a plant sample. If a second problem of equal or lesser importance was observed, it was entered as the secondary diagnosis. Occasionally, a problem may have only been diagnosed as a secondary problem, and not as a primary problem, thus a zero (0) will appear in the primary diagnosis column.

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 DIAGNOSES¹ BY CROP CATEGORY AND CAUSAL AGENT TYPE**

Crop Category	Abiotic Problems	Biotic² Problems	Chemical Injury	Inadequate Specimen	Insect Injury	Other³	Total Diagnoses
<u>Agronomic</u>							
Corn	36	27	12	1	3	11	90
Forages	3	47	1	0	6	2	59
Small grains	21	28	1	2	0	4	56
Soybeans	34	711 ^a	7	2	8	183 ^a	945
Tobacco	163	147	33	0	10	26	379
<u>Fruit</u>							
Small fruit	19	148	10	10	14	48	249
Tree fruit	16	146	2	4	24	15	207
<u>Herbs</u>	2	2	0	1	2	2	9
<u>Identifications</u>	0	35	0	6	0	3	44
<u>Ornamentals</u>							
<u>Herbaceous and</u>							
Houseplants	24	120	3	2	21	27	197
Turfgrass	22	82	0	1	0	20	125
Woody	197	462 ^b	52	9	225	562 ^b	1507
<u>Vegetables</u>	84	332	56	29	55	72	628
<u>Miscellaneous</u>	1	3	0	2	0	2	8
<u>Total</u>	622	2290	177	69	368	977	4503

¹ All counts and totals include primary diagnoses plus secondary diagnoses.

² Refer to Table 2 for a further breakdown of this category.

³ "Other" includes the causal agent categories: No disease and Unknown.

^a Numbers include 2 soybean samples with and 47 soybean samples without Asian Soybean Rust from the SBR sentinel plot system; and 643 soil samples with and 122 soil samples without Soybean Cyst Nematodes.

^b Numbers include 356 SOD samples with 59 problems caused by fungi and 297 with no diseases, and 13 juniper samples without pinewood nematode.

Table 2.**SUMMARY OF BIOTIC PROBLEMS¹ BY CROP CATEGORY**

Crop Category	Bacterial	Fungal	Nematode	Virus	Other²
<u>Agronomic</u>					
Corn	1	25	0	1	0
Forages	0	47	0	0	0
Small grains	0	11	0	17	0
Soybeans	0	66 ^a	643 ^b	0	2
Tobacco	11	105	0	31	0
<u>Fruit</u>					
Small fruit	1	141	0	6	0
Tree fruit	23	121	0	0	2
<u>Herbs</u>					
	0	2	0	0	0
<u>Identifications</u>					
	0	16	0	0	19
<u>Ornamentals</u>					
<u>Herbaceous and</u>					
Houseplants	6	108	1	4	1
Turfgrass	1	81	0	0	0
Woody	53	370 ^c	1	22	16
<u>Vegetables</u>					
	47	244	6	35	0
<u>Miscellaneous</u>					
	0	3	0	0	0
<u>Total</u>	143	1340	651	116	40

¹ All counts and totals include primary diagnoses plus secondary diagnoses.

² Other includes these categories: Animal (rodent and bird damage), Plant (plant identifications or parasitic plant) and Algae, Lichen and Phytoplasma.

^a Number includes 2 soybean leaf samples with Asian soybean rust.

^b Number includes 643 soil samples with Soybean Cyst Nematodes (SCN).

^c Number includes 59 Sudden Oak Death (SOD) samples with problems caused by fungi.

Table 3.**NUMBER OF PLANT SAMPLES BY CROP CATEGORY**

Crop Category	Number of Plant Specimens	Percentage of Total Plant Specimens
Agronomic (-Tobacco + 49 SBRs)	323	9.76
Tobacco	312	9.43
Fruit	397	12.00
Herbs	8	0.24
Identifications	44	1.33
Ornamentals (+ 356 SODs, +13 PWNEs)	1676	50.65
Vegetables	541	16.35
Miscellaneous	8	0.24
Total Plant Samples (w/ SBRs, SCRs, & SODs)	3309	100

Table 4.**SUMMARY OF DIAGNOSES BY CROP CATEGORY AND CROP**

Crop Category and Crop	Number of Primary Diagnoses¹	Number of Secondary Diagnoses²	Total Diagnoses³
<u>Agronomic</u>			
Corn	71	19	90
Forages	46	13	59
Small grains	49	7	57
Soybeans	922 ^a	23	945
Tobacco	312	67	379
<u>Fruit</u>			
Small fruit	221	28	249
Tree fruit	176	31	208
<u>Herbs</u>			
	8	1	9
<u>Identifications</u>			
	44	na	45
<u>Ornamentals</u>			
Herbaceous and			
Houseplants	176	21	199
Turfgrass	104	21	124
Woody	1396 ^b	111	1504
<u>Vegetables</u>			
	541	87	627
<u>Miscellaneous</u>			
	8	0	8
<u>Total</u>	4074	429	4503

¹ The number of primary diagnoses corresponds to the number of different specimens examined.

² If a second problem was evident on the plant specimen it was considered the secondary diagnosis. See "Explanatory Remarks."

³ Total diagnoses equals the number of primary plus the number of secondary diagnoses.

^a Soybean plant samples + 765 SCN soil samples + 49 SBR soybean samples

^b Numbers include + 356 SOD samples, + 13 PWNE samples

Table 5.**SUMMARY OF ROUTINE SAMPLES RECEIVED BY GROWER TYPE AND CROP GROUP**

Crop Group	Grower Type							
	Commercial		Homeowner		Research		Institution	
	Ext ¹	NE ²	Ext ¹	NE ²	Ext ¹	NE ²	Ext ¹	NE ²
<u>Agronomic</u>								
Corn	61	8	0	0	1	1	0	0
Forages	40	5	0	0	0	1	0	0
Small grains	45	2	0	0	0	2	0	0
Soybeans	93	9	0	0	2	2	0	2
Tobacco	281	21	0	0	0	9	1	0
<u>Fruit</u>								
Small Fruit	149	2	65	1	1	2	1	0
Tree Fruit	24	1	142	4	1	3	1	0
<u>Herbs</u>								
	2	0	4	1	0	0	0	1
<u>Identifications</u>								
	2	2	33	4	0	1	1	1
<u>Ornamental</u>								
<u>Herbaceous and</u>								
Houseplants	79	10	66	5	0	5	10	1
Turfgrass	15	24	47	2	0	2	3	11
Woody	92	128	754	17	4	2	17	13
<u>Vegetable</u>								
	277	8	224	6	3	4	11	8
<u>Miscellaneous</u>								
	1	0	3	0	1	3	0	0
<u>Total</u>	1161	220	1338	40	13	37	45	37
<u>Total/Grower Type</u>	1381		1378		50		82	

Total number of routine samples received = 2891

¹ Ext = Extension samples submitted via County Extension Agents or Extension Specialists.

² NE = Non-extension samples submitted directly by the grower or other non-extension clients.

Table 6.

**NUMBER OF ROUTINE SAMPLES REFERRED TO OTHER DEPARTMENTS,
UK LABORATORY FACILITIES OR OUTSIDE AGENCIES FOR DIAGNOSIS***

Department, Facility or outside agency	Crop Category					Total
	Agronomic	Fruit	Ornamental	Vegetable	Other	
Agdia, Inc.	13	2	3	5	0	23
Entomology Department	1	2	24	3	0	40
Horticulture Department	0	1	0	1	0	2
Plant & Soil Sciences Department	42	0	3	4	1	50
					<u>Total</u>	115
					<u>Total number of routine plant specimens</u>	2891
					<u>Percent of specimens referred outside Diagnostic Lab for diagnosis</u>	4.0

* Numbers do not reflect the total number of diagnoses and/or consultations conducted by other departments (See Table 9).

Table 7.

**SPECIAL LABORATORY TESTS PERFORMED
BY PLANT DISEASE DIAGNOSTIC LABORATORY***

Test	Number of Tests
Polymerase Chain Reaction (PCR)	9
Bioassay	3
Culturing	16
Enzyme-linked Immunosorbent Assay (ELISA) (223 routine plant samples, +356 SOD)	579
Microscope (1647 routine plant samples + 49 SBR)	1696
Nematode extraction	
Pinewood nematode (PWN)	13
Soybean cyst nematode (SCN)	765
Soil tests	41
Visual	952
Total	4074

*** Based on 2891 routine plant samples, 49 SBR, 765 SCN, 13 PWNE and 356 SOD samples = 4074**

Note: Some samples may have required more than one test but only the definitive test was recorded.

Table 8.
NUMBER OF ROUTINE PLANT SAMPLES RECEIVED BY COUNTY AND CROP CATEGORY
(KY AND OUT-OF-STATE SOURCES) ¹

COUNTY	Total	Agronomic ²	Tobacco	Fruit	Ornamental	Vegetable	Other
ADAIR	16	5	1	3	4	3	0
ALLEN	25	1	1	3	1	19	0
ANDERSON	15	3	1	5	4	2	0
BALLARD	14	6	3	1	3	1	0
BARREN	28	5	3	4	13	3	0
BATH	15	1	4	0	5	5	0
BELL	6	1	0	0	3	2	0
BOONE	59	0	0	8	45	3	3
BOURBON	16	3	3	0	8	2	0
BOYD	23	0	0	1	11	10	1
BOYLE	45	7	5	2	18	9	4
BRACKEN	4	0	1	0	3	0	0
BREATHITT	7	0	0	2	0	4	1
BRECKINRIDGE	85	7	34	7	16	21	0
BULLITT	8	1	0	0	4	3	0
BUTLER	9	2	0	1	3	2	1
CALDWELL (+UKREC)	83	26	3	13	24	12	5
CALLOWAY	41	3	12	3	15	6	2
CAMPBELL	16	0	0	1	11	4	0
CARLISLE	1	0	0	1	0	0	0
CARROLL	10	0	2	0	7	1	0
CARTER	15	2	2	0	7	1	3
CASEY	45	3	3	8	8	23	0
CHRISTIAN	79	13	17	6	17	25	1
CLARK	24	0	3	3	14	4	0
CLAY	9	0	1	3	0	5	0
CLINTON	21	6	3	0	6	6	0
CRITTENDEN	19	3	0	5	5	2	4
CUMBERLAND	11	1	0	3	4	3	0
DAVISS	127	13	16	7	60	29	2
EDMONSON	12	1	0	4	2	5	0
ELLIOTT	5	0	0	1	1	3	0
ESTILL	13	2	2	2	6	1	0
FAYETTE (+Lex. campus)	287	10	13	14	220	22	8
FLEMING	40	16	15	1	8	0	0
FLOYD	0	0	0	0	0	0	0
FRANKLIN	52	5	2	1	38	4	2
FULTON	0	0	0	0	0	0	0
GALLATIN	3	0	0	0	1	2	0
GARRARD	14	1	4	0	9	0	0
GRANT	12	0	1	7	1	3	0
GRAVES	25	4	10	1	7	3	0
GRAYSON	12	2	1	3	1	5	0
GREEN	16	4	8	1	3	0	0
GREENUP	16	1	0	5	9	1	0
HANCOCK	8	0	1	2	5	0	0
HARDIN	12	3	4	0	1	4	0
HARLAN	7	0	0	2	3	2	0
HARRISON	12	0	2	5	3	1	1

COUNTY	Total	Agronomic ²	Tobacco	Fruit	Ornamental	Vegetable	Other
HART	7	0	1	1	2	3	0
HENDERSON	54	19	2	9	14	10	0
HENRY	33	3	6	7	13	4	0
HICKMAN	3	1	0	0	1	1	0
HOPKINS	29	2	3	5	13	6	0
JACKSON	14	0	2	3	7	2	0
JEFFERSON	53	0	0	1	40	11	1
JESSAMINE	31	1	0	3	22	5	0
JOHNSON	0	0	0	0	0	0	0
KENTON	40	0	0	3	29	7	1
KNOTT	3	0	0	1	2	0	0
KNOX	4	0	0	0	1	3	0
LARUE	14	0	2	2	3	6	1
LAUREL	21	1	0	4	10	6	0
LAWRENCE	9	0	0	7	1	1	0
LEE	0	0	0	0	0	0	0
LESLIE	0	0	0	0	0	0	0
LETCHER	8	0	0	1	1	6	0
LEWIS	17	4	0	0	12	1	0
LINCOLN	103	14	5	13	22	49	0
LIVINGSTON	15	3	0	0	10	1	1
LOGAN	13	3	0	1	6	3	0
LYON	23	4	1	2	9	6	1
McCRACKEN	54	3	0	16	30	5	0
McCREARY	0	0	0	0	0	0	0
McLEAN	8	2	4	1	0	1	0
MADISON	30	0	0	6	18	5	1
MAGOFFIN	1	0	0	0	1	0	0
MARION	32	6	6	3	12	5	0
MARSHALL	43	3	1	4	24	11	0
MARTIN	0	0	0	0	0	0	0
MASON	16	0	2	1	5	8	0
MEADE	22	5	1	0	12	4	0
MENIFEE	2	0	0	0	2	0	0
MERCER	63	4	3	5	43	7	1
METCALFE	52	0	5	45	1	1	0
MONROE	10	2	0	3	1	3	1
MONTGOMERY	16	1	4	3	4	4	0
MORGAN	11	0	2	4	1	4	0
MUHLENBERG	44	12	5	6	10	10	1
NELSON	20	4	1	1	12	2	0
NICHOLAS	15	1	5	3	5	1	0
OHIO	5	1	1	2	1	0	0
OLDHAM	47	3	0	4	34	6	0
OWEN	9	3	6	0	0	0	0
OWSLEY	3	0	0	0	2	1	0
PENDELTON	1	0	1	0	0	0	0
PERRY	2	0	0	0	2	0	0
PIKE	9	0	0	1	6	2	0
POWELL	3	0	0	1	0	2	0
PULASKI	48	5	12	2	16	9	4
ROBERTSON	5	0	1	1	3	0	0
ROCKCASTLE	0	0	0	0	0	0	0
ROWAN	4	0	1	0	1	2	0

COUNTY	Total	Agronomic ²	Tobacco	Fruit	Ornamental	Vegetable	Other
RUSSELL	13	0	1	3	4	5	0
SCOTT	48	1	5	6	35	1	0
SHELBY	52	3	4	8	36	1	0
SIMPSON	19	6	3	0	7	3	0
SPENCER	5	1	0	0	4	0	0
TAYLOR	24	4	5	0	9	6	0
TODD	50	18	10	2	10	10	0
TRIGG	35	5	2	7	15	2	4
TRIMBLE	4	1	0	0	3	0	0
UNION	4	3	0	1	0	0	0
WARREN	73	3	1	33	30	2	4
WASHINGTON	7	1	1	0	3	2	0
WAYNE	6	2	1	0	1	2	0
WEBSTER	13	1	1	5	2	4	0
WHITLEY	24	0	0	10	6	7	1
WOLFE	6	0	0	3	1	2	0
WOODFORD	51	2	9	4	32	4	0
Out-of-State	10	3	3	0	2	1	1

TOTALS

¹ Does include SBR (58) survey samples but not SCN (mixed specialist research and county samples), SOD samples (collected by nursery inspectors), or PWNE samples (collected by nursery inspectors).

² Agronomic crops include corn, soybeans, forages, and small grains but in this particular case, it excludes tobacco.

Table 9.

THE NUMBER OF CASES IN WHICH UK EXTENSION SPECIALISTS, DIAGNOSTICIANS OR RESEARCHERS WERE INVOLVED IN MAKING A PRIMARY DIAGNOSIS AND THE NUMBER OF CASES IN WHICH THEY SERVED AS CONSULTANTS.

Specialists, Researchers, Diagnosticians	Department	Number of cases	
		Primary Diagnosis ¹	Consultations ²
LEXINGTON			
Beale, JW (Diagnostician)	Plant Pathology	1848	28
Berberich, SG	Horticulture	1	0
Bessin, RT	Entomology	25	25
Coolong, TW	Horticulture	0	4
Dutton, SR	Horticulture	0	1
Fountain, WM	Horticulture	1	2
Gauthier, NW	Plant Pathology	0	15
Green, JD	Plant & Soil Sciences	21	72
Lee, CD	Plant & Soil Sciences	7	10
Long, SJ	Plant Pathology	481	0
Newton, B	Entomology	1	0
Pearce, RC	Plant & Soil Sciences	6	28
Phillips, TD	Plant & Soil Sciences	1	0
Seebold, KW	Plant Pathology	9	72
Smith, SR	Plant & Soil Sciences	0	1
Strang, JG	Horticulture	4	1
Townsend, LH	Entomology	49	24
Vincelli, P	Plant Pathology	8	22
Williams, DW	Plant & Soil Sciences	0	1
Wright, S	Horticulture	4	5
PRINCETON			
Bailey, WA	Plant & Soil Sciences	21	36
Becker, DW	Horticulture	0	2
Dunwell, WC	Horticulture	18	9
Herbek, JH	Plant & Soil Sciences	3	3
Hershman, DE	Plant Pathology	24	14
Johnson, DW	Entomology	5	5
Kennedy, BS (Diagnostician)	Plant Pathology	684	52
Knott, CA	Plant & Soil Sciences	2	3
Lacefield, GD	Plant & Soil Sciences	1	2
Martin, JR	Plant & Soil Sciences	19	12
Murdock, LW	Plant & Soil Sciences	11	7
Ritchey, EL	Plant & Soil Sciences	3	3
Yielding, TL	Plant Pathology	51	0
OTHER			
Wurts, WA	KSU	1	0

¹ The specialist or diagnostician making the primary diagnosis.

² In some cases, more than one person was consulted, however, only one name can be entered into the computer database. Therefore, these numbers may indicate fewer consultations than were actually performed.

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1° DIAGs</i>	<i>#2° DIAGs</i>	<i>TOTAL</i>
AGRONOMIC CROPS					
<u>CORN</u>					
CORN (Zea)					
Chemical injury	-	growth regulator	1	0	1
	-	herbicide	7	0	7
	-	unknown	1	0	1
Cultural	-	plant density	1	0	1
	-	planting depth	4	0	4
Ear/Kernel rot	-	Fusarium	1	0	1
	-	Stenocarpella	1	0	0
	-	Trichoderma	1	0	1
	-	yeast	1	0	1
Environmental stresses	-	compaction	6	9	15
	-	wet feet	1	0	1
Gray leaf spot	-	Cercospora	2	4	6
Holus spot	-	Pseudomonas	1	0	1
Insect injury			3	0	3
No disease, inadequate sample			11	0	11
Nutritional	-	anthocyanin accumulation	1	0	1
	-	fertilizer burn	1	0	1
	-	magnesium deficiency	6	0	6
	-	nitrogen deficiency	2	0	2
	-	phosphorus deficiency	1	0	1
	-	potassium deficiency	1	0	1
	-	zinc deficiency	1	0	1
Physical injury			1	0	1
Poor ear development	-	environmental	1	0	1
Purple leaf sheath	-	complex	1	0	1
Root rot	-	Pythium	1	0	1
	-	Rhizoctonia	0	1	1
Root/stem rot	-	Fusarium	1	0	1
Rust, common	-	Puccinia	1	2	3
Rust, Southern	-	Puccinia	3	0	3
Stalk rot	-	Fusarium	0	1	1
	-	Stenocarpella	1	0	1
Virus	-	complex	1	0	1

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1° DIAGs</i>	<i>#2° DIAGs</i>	<i>TOTAL</i>
<u>FORAGES</u>					
ALFALFA (Medicago)					
	Anthracnose	- Colletotrichum	2	4	6
	Crown rot	- Mycoleptoiscus	1	0	1
		- Rhizoctonia	1	0	1
		- Sclerotinia	1	0	1
	Crown/root rot	- Phoma	0	1	1
		- Rhizoctonia	2	0	2
	Crown/stem rot	- Sclerotinia	1	0	1
	Downy mildew	- Peronospora	1	0	1
	Environmental stresses	- cold injury	1	0	1
	Insect injury		1	5	6
	Leaf spot	- Leptosphaerulina	5	0	5
	No disease, inadequate sample		1	0	1
	Nutritional	- boron deficiency	2	0	2
	Root rot	- Aphanomyces	1	0	1
		- Pythium	2	0	2
		- Rhizoctonia	2	0	2
	Summer black stem	- Cercospora	14	2	16
BERMUDAGRASS (Cynodon)					
	Blight	- Ascochyta	1	0	1
CLOVER (Trifolium)					
	Root/stem rot	- Fusarium	1	0	1
FESCUE (Festuca)					
	No disease		1	0	1
GAMAGRASS (Tripasum)					
	Rust	- Puccinia	1	0	1
ORCHARDGRASS (Dactylis)					
	Leaf streak	- Cercosporidium	4	0	4
RYEGRASS (Lolium)					
	Chemical	- herbicide	1	0	1

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1° DIAGs</i>	<i>#2° DIAGs</i>	<i>TOTAL</i>
<u>SOYBEAN</u>					
SOYBEAN (Glycine)					
	Anthracnose	- Colletotrichum	2	0	2
	Asian soybean rust	- Phakopsora	3	0	3
	Brown spot	- Septoria	2	1	3
	Chemical injury	- growth regulator	3	0	3
		- herbicide	3	0	3
		- unknown	1	0	1
	Cultural	- late harvest	1	0	1
		- wet feet	0	1	1
	Downy mildew	- Peronospora	8	2	10
	Environmental stresses	- compaction	8	3	11
		- wet feet	1	0	1
	Frogeye	- Cercospora	8	4	12
	Inadequate specimen, no disease		16	0	16
	(samples without Asian Soybean Rust)		47	0	47
	Insect injury		5	3	8
	Leaf blight	- Cercospora	1	1	2
	Leaf spot	- Phyllosticta	0	2	2
	Nutritional	- nitrogen deficiency	3	0	3
		- poor nodulation	3	2	5
		- potassium deficiency	12	0	12
	Physical injury		2	0	2
	Purple seed	- Cercospora	1	0	1
	Root rot	- Phytophthora	1	0	1
		- Pythium	2	1	3
		- Rhizoctonia	1	2	3
	Root/stem rot	- Phytophthora	2	0	2
	Southern blight	- Sclerotium	2	0	2
	Soybean cyst nematode	- Heterodera			
		* in soil samples	643	0	643
		* absent in soil samples	122		122
		(*soil submitted to Nematode Analysis Laboratory)			
	Stem canker	- Diaporthe	7	0	7
	Sudden death	- Fusarium	12	1	13

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1° DIAGs</i>	<i>#2° DIAGs</i>	<i>TOTAL</i>
<u>SMALL GRAINS</u>					
BARLEY (Hordeum)					
	Environmental stresses	- compaction	1	0	1
		- freeze	1	0	1
OAT (Avena)					
	Crown rust	- Puccinia	1	0	1
	Environmental stresses	- cold injury	1	0	1
RICE (Oryza)					
	Root rot	- Pythium	1	0	1
	Environmental stresses	- wet feet	0	1	0
SORGHUM (Sorghum)					
	Virus	- unknown	1	0	1
TRITICALE (x Triticosecale)					
	Environmental stresses	- freeze	1	0	1
WHEAT (Triticum)					
	Chemical injury	- unknown	1	0	1
	Environmental stresses	- cold injury	3	0	3
		- compaction	2	0	2
		- freeze	3	0	3
		- frost injury	0	1	1
	Head blight	- Fusarium	6	0	6
	Leaf spot	- Septoria	0	1	1
	No disease, inadequate sample		5		5
	Nutritional	- general	1	0	1
		- low fertility	1	0	1
		- nitrogen deficiency	3	2	5
	Powdery mildew	- Erysiphe	0	1	1
	Rust (stripe)	- Puccinia	1	0	1
	Virus	- Barley yellow dwarf	13	0	13
		- Wheat streak mosaic	1	0	1
		- Wheat spindle streak mosaic	2	0	2

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1° DIAGs</i>	<i>#2° DIAGs</i>	<i>TOTAL</i>
		<u>TOBACCO</u>			
	TOBACCO (Nicotiana)				
	Angular leaf spot	- Pseudomonas	3	1	4
	Black shank	- Phytophthora	35	0	35
	Black leg	- Erwinia	2	1	3
	Blue mold	- Peronospora	2	0	2
	Brown spot	- Alternaria	1	1	2
	Chemical injury	- fungicide	5	0	5
		- growth regulator	9	0	9
		- herbicide	8	4	12
		- oil	1	0	1
		- sucker agent	2	0	2
		- unknown	7	0	7
	Cultural	- transplant shock	32	3	35
		- wet feet	2	0	2
	Damping-off	- Rhizoctonia	3	0	3
	Distortion	- environmental	3	0	3
	Environmental	- cold injury	4	0	4
		- compaction	8	3	11
		- hail	2	0	2
		- heat injury	2	0	2
		- lightning	2	0	2
		- stresses	4	0	4
		- sun/weather scald	4	2	6
		- weather fleck	0	3	3
		- wet feet	7	1	8
	False broomrape	- unknown	1	0	1
	Frenching	- metabolites	4	0	4
	Frogeye	- Cercospora	3	3	6
	Hollow stalk	- Erwinia	4	0	4
	Inadequate specimen, no disease		26		26
	Insect injury		3	7	10
	Leaf spot	- environmental	20	5	25
		- physiological	3	0	3
	Nutritional	- acid soil	4	2	6
		- copper deficiency	0	1	1
		- general	0	1	1
		- low fertility	1	0	1
		- manganese toxicity	5	0	5
		- nitrogen deficiency	6	1	7

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1° DIAGs</i>	<i>#2° DIAGs</i>	<i>TOTAL</i>
TOBACCO (Nicotiana) (cont'd)					
		- pH high	0		1
		- phosphorus deficiency	4	1	5
		- potassium deficiency	2	0	2
		- soluble salts	3	2	5
		- temp. phosphorus def.	6	3	9
	Physical injury	- driving rain	2	0	2
	Root rot	- Pythium	17	8	25
		- Rhizoctonia	6	4	10
	Root/stem rot	- Pythium	2	1	3
		- Rhizoctonia	0	1	1
	Sore shin	- Rhizoctonia	6	1	7
	Storage mold	- unknown	1	0	1
	Target spot	- Rhizoctonia	6	1	7
	Virus	- alfalfa mosaic	4	1	5
		- POTY complex	1	0	1
		- Tomato spotted wilt	16	5	21
		- unknown	4	0	4
	Weather fleck	- ozone	1	0	1
	Wilt	- Fusarium	4	0	4

FRUIT CROPS

SMALL FRUIT

BLUEBERRY (Vaccinium)

Canker	- Botryosphaeria	2	0	2
	- Fusicoccum	1	0	1
	- Phoma	1	0	1
Chemical	- growth regulator	2	0	2
Cultural	- wet feet	1	0	1
	- girdling root	0	1	1
Environmental stresses	- compaction	2	2	4
Inadequate specimen, no disease		35		35
Insect injury		2	0	2
Nutritional	- acid soil	0	2	2
	- soluble salts	1	0	1
Root rot	- Phytophthora	49	0	49
Twig blight	- Phomopsis	1	0	1

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1° DIAGs</i>	<i>#2° DIAGs</i>	<i>TOTAL</i>
BRAMBLES - BLACKBERRY, and RASPBERRY (Rubus)					
	Anthracnose	- Elsinoe	3	1	4
	Cane blight	- Leptosphaeria	2	0	2
	Cane/leaf rust	- Kuehneloa	3	1	4
	Crown/root rot	- Armillaria	1	0	1
	Chemical	- herbicide	1	0	1
	Cultural	- overwatering	1	0	1
	Double blossom	- Cercospora	1	0	1
	Environmental stresses	- compaction	1	0	1
		- physiological	1	0	1
		- stress	1	0	1
		- wet feet	1	0	1
	Inadequate sample, no disease		8		8
	Insect injury		7	0	7
	Leaf spot	- Cercospora	0	1	1
	Orange rust	- Gymnoconia	1	0	1
	Physical injury	- pruning	1	0	1
	Root rot	- Phytophthora	1	2	3
		- Rhizoctonia	1	0	1
	Spur blight	- Didymella	1	0	1
	Virus	- raspberry ringspot	1	1	2
	White drupelet	- physiological	1	0	1
GRAPE (Vitis)					
	Anthracnose	- Elsinoe	7	1	8
	Bitter rot	- Melanconium	5	0	5
	Black rot	- Guignardia	18	0	18
	Chemical injury	- fungicide	2	0	2
		- growth regulator	5	0	5
	Downy mildew	- Plasmopara	2	1	3
	Inadequate sample, no disease		10		10
	Insect injury		2	0	2
	Leaf blight	- Pestalotia	0	2	2
		- Pseudocercospora	2	3	5
	Leaf spot	- Phomopsis	1	0	1
	Nutritional	- potassium deficiency	2	0	2

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1° DIAGs</i>	<i>#2° DIAGs</i>	<i>TOTAL</i>
STRAWBERRY (Fragaria)					
	Angular leaf spot	- Xanthomonas	1	0	1
	Anthracnose	- Colletotrichum	3	1	4
	Black root rot	- Rhizoctonia	1	0	1
		- Pythium	0	1	1
	Crown rot	- fungal	1	0	1
	Environmental	- brown cap	1	0	1
	Fruit decay	- Botrytis	2	1	3
		- Rhizoctonia	1	0	1
	Inadequate sample, no disease		5		5
	Insect injury		1	2	3
	Leaf blight	- Phomopsis	6	1	7
	Leaf blotch	- Gnomonia	1	0	1
	Leaf scorch	- Diplocarpon	1	0	1
	Leaf spot	- Mycosphaerella	6	0	6
	Leather rot	- Phytophthora	1	0	1
	No disease, inadequate sample		6		6
		Virus	- strawberry mild yellow edge	1	0
		- strawberry mottle	0	1	1
	Web blight	- Rhizoctonia	1	0	1

TREE FRUIT

APPLE (Malus)					
	Anthracnose	- Colletotrichum	1	0	1
	Bitter rot	- Glomerella	9	1	10
	Black rot	- Botryosphaeria	1	2	3
	Canker	- unknown	1	0	1
	Cedar apple rust	- Gymnosporangium	35	1	36
	Chemical	- unknown	1	0	1
	Collar rot	- Phytophthora	2	0	2
	Cultural	- transplant shock	1	0	1
		- wet feet	1	1	2
	Environmental stresses	- compaction	0	1	1
		- frost injury	2	0	2
	Fire blight	- Erwinia	7	0	7
	Flyspeck	- Schizothyrium	3	4	7
	Frogeye	- Botryosphaeria	5	5	10
	Insect injury		7	5	12
	No disease		5		5

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1° DIAGs</i>	<i>#2° DIAGs</i>	<i>TOTAL</i>
APPLE (Malus) (cont'd)					
	Physical injury	- unknown	1	1	2
	Powdery mildew	- Podosphaera	1	0	1
	Scab	- Venturia	4	1	5
	Sooty blotch	- Gloeodes	1	4	5
	White rot	- Botryosphaeria	1	1	2
CHERRY (Prunus)					
	Bacterial canker	- Pseudomonas	1	0	1
	Bacterial spot	- Xanthomonas	1	0	1
	Brown rot	- Monilinia	1	0	1
	Canker	- Leucostoma	1	0	1
	Cultural	- no pollination	1	0	1
		- transplant shock	1	0	1
	Environmental	- winter injury	1	0	1
	Fire blight	- Erwinia	1	0	1
	Insect injury		2	0	2
	Leaf spot	- Cercospora	1	0	1
	Powdery mildew	- Podosphaera	0	1	1
PEACH, APRICOT and NECTARINE (Prunus)					
	Anthraxnose	- Colletotrichum	1	0	1
	Bacterial spot	- Xanthomonas	6	0	6
	Brown rot	- Monilinia	10	0	10
	Canker	- Cytospora	2	0	2
	Cultural	- transplant shock	1	0	1
	Environmental stresses	- winter injury	0	1	1
	Insect injury		5	0	5
	Leaf curl	- Taphrina	2	0	2
	No disease		2		2
	Scab	- Cladosporium	5	2	7
PEAR (Pyrus)					
	Bitter rot	- Glomerella	1	0	1
	Chemical injury	- growth regulator	1	0	1
	Environmental stresses	- freeze injury	1	0	1
		- wind damage	1	0	1
		- winter injury	1	0	1
	Fire blight	- Erwinia	5	0	5
	Inadequate sample, no disease		9		9

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PEAR (Pyrus) (cont'd)					
	Leaf spot	- unknown	2	0	2
	Root rot	- Pythium	1	0	1
	Thread blight	- Corticium	1	0	1
PECAN (Carya)					
	Insect injury		4	0	4
	No disease		1		1
	Poor kernel fill	- unknown	1	0	1
PLUM (Prunus)					
	Bacterial spot	- Xanthomonas	1	0	1
	Black knot	- Apiosporina	6	0	6
	Inadequate sample		1		1
	Insect injury		1	0	1
	Lichen		1	0	1
	Sooty mold	- species	1	0	1
HERBS					
BASIL (Ocimum)					
	Nutritional	- nitrogen deficiency	0	1	1
	Scald	- environmental	1	0	1
	Wilt	- Fusarium	1	0	1
GARLIC (Allium)					
	Purple blotch	- Alternaria	1	0	1
GINSENG (Panax)					
	Inadequate sample		1		1
LAVENDER (Lavandula)					
	No disease		1		1
HOPS (Humulus)					
	Leaf spot	- Mycosphaerella	1	0	1
LAVENDER (Lavandula)					
	Root rot	- Pythium	1	0	1

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Oregano (ORIGANUM)					
	Insect injury		1	0	1
SAGE (Salvia)					
	Insect injury		1	0	1

MISCELLANEOUS

CHIA (Salvia)					
	Environmental stresses	- wet feet	1	0	1
MULCH					
	Slime mold	- species	1	0	1
STILT GRASS (Microstegium)					
	Leaf spot	- Bipolaris	1	0	1
UNKNOWN					
	Inadequate specimen, no disease		4		4
	Mold	- species	1	0	1

IDENTIFICATIONS

FUNGAL IDENTIFICATIONS

Basidiomycete	- polypore	1	1
Inadequate specimen		4	4
Inonotus	- dryadeus	1	1
Irpes	- lacteus	1	1
Lepiota	- lutea	1	1
Naematoloma	- species	1	1
Omphalotus	- olearius	1	1
Panaeolus	- foenisecii	1	1
Pulcherricium	- caeruleum	1	1
Sarcosphaera	- species	1	1
Scleroderma	- aurantium	2	2
	- species	1	1
Slime mold	- species	2	2
Trametes	- elegans	1	1
Tremella	- species	1	1

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LICHEN IDENTIFICATIONS					
Lichen		- species	1		1
PLANT IDENTIFICATIONS					
Arum		- italicum	1		1
Dactylis		- species	1		1
Diopyros		- virginiana	1		1
Elaeagnus		- umbellata	1		1
Fagus		- grandifolia	1		1
Gloeocapsa		- speices	1		1
Inadequate specimen			5		5
Juniperus		- virginiana	1		1
Morus		- species	1		1
Muhlenbergia		- schreberi	1		1
Nostoc		- species	7		7
Pyrus		- calleryana	1		1
Quercus		- species	1		1

ORNAMENTALS

HERBACEOUS ORNAMENTALS and INDOOR PLANTS

ADENOCARPUS (Adenocarpus)					
Cultural		- wet feet	0	1	1
Root rot		- Pythium	1	0	1
AFRICAN VIOLET (Saintpaulia)					
Insect injury			1		1
AMSONIA (Amsonia)					
Rust		- Coleosporium	1	0	1
ANEMONE (Anemone)					
Foliar nematode		- Aphelenchoides	1	0	1
ANGELONIA (Angelonia)					
Root rot		- Pythium	1	0	1

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BEGONIA (Begonia)					
	Leaf spot/blight	- Xanthomonas	1	0	1
	Nutritional	- fertilizer burn	1	0	1
	Root rot	- Rhizoctonia	1	0	1
BELLS OF IRELAND (Moluccella)					
	Root rot	- Pythium	1	0	1
BLACKEYED SUSAN					
	Insect injury		1	0	1
	No disease		1		1
CALIBRACHOA (Calibrachoa)					
	No disease		2		2
CAMELLIA (Camellia)					
	Inadequate sample, no disease		2		2
CATHARANTHUS (Catharanthus)					
	Aerial blight	- Phytophthora	4	0	4
	Nutritional	- soluble salts	1	0	1
CELOSIA (Celosia)					
	Virus	- Alternanthera mosaic	1	0	1
CHRYSANTHEMUM (Chrysanthemum)					
	Bacterial spot	- Pseudomonas	1	0	1
	Chemical injury	- insecticide	1	0	1
	Environmental stresses	- sunscald	0	1	1
	Insect injury		1	2	3
	Leaf scorch	- unknown	1	0	1
	Leaf spot	- Cercospora	0	1	1
	No disease		1		1
	Nutritional	- general	1	0	1
		- low fertility	1	0	1
		- soluble salts	1	0	1
	Root rot	- Pythium	1	0	1
		- Rhizoctonia	1	2	3
	Root/stem rot	- Pythium	2	0	2
	Web blight	- Rhizoctonia	3	0	3
	Wilt	- Fusarium	5	0	5

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CLEMATIS (Clematis)					
	Leaf spot	- Phyllosticta	1	0	1
	No disease		1		1
COLEUS (Coleus)					
	No disease		1		1
COLOCASIA (Colocasia)					
	Root rot	- Pythium	1	0	1
CONE FLOWER (Echinacea)					
	Aster yellows	- Phytoplasma	1	0	1
	Crown rot	- Rhizoctonia	1	0	1
	No disease		1		1
CORAL BELLS (Heuchera)					
	Insect injury		1	0	1
COREOPSIS (Coreopsis)					
	Root rot	- Pythium	1	0	1
COSMOS (Cosmos)					
	Stem rot	- Rhizoctonia	1	0	1
DAHLIA (Dahlia)					
	Root rot	- Pythium	1	0	1
		- Rhizoctonia	0	1	0
DAISY (Leucanthemum)					
	Leaf spot	- Phyllosticta	1	0	1
	Root rot	- Pythium	1	0	1
		- Rhizoctonia	0	1	1
DATURA (Datura)					
	Chemical injury	- herbicide	1	0	1
DAYLILY (Hemerocallis)					
	Anthrachnose	- Colletotrichum	2	0	2
	Insect injury		3	2	5
	No disease		1		1

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DAYLILY (Hemerocallis) (cont'd)					
	Root rot	- Rhizoctonia	1	0	1
DIANTHUS (Dianthus)					
	Anthraxnose	- Colletotrichum	1	0	1
	Insect injury		1	0	1
DRACAENA (Dracaena)					
	No disease		1		1
GARDENIA (Gardenia)					
	Insect injury		1	0	1
GERANIUM (Pelargonium)					
	Environmental stresses	- cold injury	1	0	1
	No disease, inadequate sample		3		3
	Root rot	- Pythium	3	0	3
		- Rhizoctonia	0	2	2
GERBER DAISY (Gerbera)					
	Nutritional	- soluble salts	1	0	1
	Root rot	- Pythium	1	0	1
GLADIOLUS (Gladiolus)					
	Insect injury		1	0	1
	No disease		1		1
GLOXINIA (Gloxinia)					
	Virus	- impatiens necrotic spot	1	0	1
GOLDENROD (Solidago)					
	Stem rot	- Sclerotinia	1	0	1
HELLEBORE (Helleborus)					
	Virus	- unknown	1	0	1
HIBISCUS (Hibiscus)					
	No disease		2		2

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HOLLYHOCK (Althaea)					
	Leaf spot	- Cercospora	1	0	1
	Rust	- Puccinia	4	0	4
HOSTA (Hosta)					
	Anthraxnose	- Colletotrichum	1	0	1
IMPATIENS (Impatiens)					
	Downy mildew	- Plasmopara	7	0	7
	Insect injury		3	1	4
	Nutritional	- high pH	0	1	1
		- low fertility	2	0	2
	Stem rot	- Rhizoctonia	1	0	1
IRIS (Iris)					
	Bacterial soft rot	- Erwinia	1	0	1
	Insect injury		0	1	1
	Leaf spot	- Heterosporium	1	0	1
IVY (Hedera)					
	Bacterial spot	- Xanthomonas	1	0	1
JADE PLANT (Crassula)					
	No disease		2		2
KALANCHOE (Kalanchoe)					
	Powdery mildew	- species	1	0	1
LEMON (Citrus)					
	Anthraxnose	- Colletotrichum	1	0	1
LIRIOPE (Liriope)					
	Anthraxnose	- Colletotrichum	2	1	3
	Crown rot	- Phytophthora	1	0	1
	Leaf spot	- Alternaria	1	0	1
LUNGWORT (Pulmonaria)					
	Root/crown rot	- Rhizoctonia	1	0	1
MISCANTHUS (Miscanthus)					
	No disease		1		1

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1° DIAGs</i>	<i>#2° DIAGs</i>	<i>TOTAL</i>
NORFOLK ISLAND PINE (Araucaria)					
	No disease		1		1
ORCHID (Cymbidium)					
	Anthraxnose	- Colletotrichum	1	0	1
ORNAMENTAL (unknown)					
	Leaf spot	- fungal	1	0	1
PACHYSANDRA (Pachysandra)					
	Leaf/stem blight	- Volutella	2	0	2
PANSY (Viola)					
	Black root rot	- Thielaviopsis	1	0	1
	Blight	- Botrytis	1	0	1
	Root rot	- Pythium	1	0	1
	Root/stem rot	- Rhizoctonia	1	0	1
PENNISETUM (Pennisetum)					
	Environmental stresses	- wet feet	1	0	1
PEONY (Paeonia)					
	Anthraxnose	- Gloeosporium	1	0	1
	Environmental stresses	- cold injury	2	0	2
	Leaf blotch	- Cladosporium	1	2	3
	No disease		1		1
	Powdery mildew	- Erysiphe	2	0	2
PETUNIA (Petunia)					
	Aerial blight	- Phytophthora	1	0	1
	Black root rot	- Thielaviopsis	3	0	3
	Blight	- Botrytis	3	0	3
	No disease		4		4
	Root rot	- Pythium	2	0	2
		- Rhizoctonia	1	0	1
	Stem rot	- Sclerotinia	2	0	2

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1° DIAGs</i>	<i>#2° DIAGs</i>	<i>TOTAL</i>
POINSETTIA (Euphorbia)					
	Cultural	- unknown	1	0	1
	No disease		1		1
	Nutritional	- general	1	0	1
		- magnesium deficiency	1	0	1
	Root/ stem rot	- Pythium	1	0	1
POLYGONUM (Polygonum)					
	Environmental stresses	- wet feet	1	0	1
PUA KENI KENI (Fragrea)					
	Chemical injury	- growth regulator	1	0	1
RANUNCULUS (Ranunculus)					
	Black root rot	- Thielaviopsis	1	0	1
SANSEVIERIA (Sansevieria)					
	Cultural	- wet feet	1	0	1
	Root rot	- Pythium	0	1	1
SCAEVOLA (Scaevola)					
	No disease		1		1
SCHEFFLERA (Schefflera)					
	Insect injury	- spider mite	1	0	1
SNAPDRAGON (Antirrhinum)					
	Root rot	- Pythium	1	0	1
	Rust	- Puccinia	1	0	1
SPATHIPHYLLUM (Spathiphyllum)					
	No disease		1		1
SPIREA (Spirea)					
	Powdery mildew	- Oidium	1	0	1
STARRY ROSINWEED (Silphium)					
	Leaf spot	- Ascochyta	1	0	1

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SUNFLOWER (Helianthus)					
	Leaf spot	- Alternaria	1	0	1
	Root/stem rot	- Fusarium	1	0	1
TORENIA (Torenia)					
	Mutation	- genetic	1	0	1
VERBENA (Verbena)					
	Blight	- Psuedomonas	1	0	1
	Virus	- unknown	1	0	1
VERONICA					
	No disease		1		1
VINCA (Vinca)					
	Canker/ dieback	- Phoma	2	0	2
	Insect injury		1	0	1
	Root/stem rot	- Rhizoctonia	1	0	1
ZINNIA (Zinnia)					
	Bacterial spot	- Xanthomonas	1	0	1
	Blight	- Botrytis	1	0	1
	Chemical	- herbicide	0	1	1
	Nutritional	- fertilizer burn	1	0	1
		- soluble salts	1	0	1
	Root rot	- Pythium	1	0	1
	Root/stem rot	- Fusarium	1	0	1
<u>TURFGRASS</u>					
BENTGRASS (Agrostis)					
	Anthrachnose	- Colletotrichum	3	3	6
	Bacterial wilt	- Xanthomonas	1	0	1
	Cultural	- layering	2	3	5
	Dollar spot	- Sclerotinia	1	0	1
	Environmental stresses	- general	1	0	1
		- wet feet	1	2	3
		- winter injury	0	1	1
	No disease		1		1
	Root rot	- Pythium	14	3	17

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1° DIAGs</i>	<i>#2° DIAGs</i>	<i>TOTAL</i>
BENTGRASS (Agrostis) (cont'd)					
	Snow mold	- Coprinus	0	1	1
	Summer patch	- Magnaporthe	0	1	1
	Take-all patch	- Gaeumannomyces	2	0	2
BERMUDAGRASS (Cynodon)					
	Large patch	- Rhizoctonia	1	0	1
	No disease		1		1
BLUEGRASS (Poa)					
	Cultural	- wet feet	0	1	1
	No disease		1		1
	Powdery mildew	- Oidium	1	0	1
	Root rot	- Pythium	2	0	2
	Rust	- Puccinia	1	0	1
	Summer patch	- Magnaporthe	3	0	3
FESCUE (Festuca)					
	Brown patch	- Rhizoctonia	12	0	12
	Cultural	- improper light	0	1	1
		- mowing	3	0	3
		- thatch layer	0	1	1
		- wet feet	1	0	1
	Environmental	- drought	1	0	1
	Inadequate specimen, no disease		13		13
	Red thread	- Laetisaria	2	0	2
	Root rot	- Pythium	1	0	1
	Rust	- Puccinia	1	0	1
	Summer patch	- Magnaporthe	1	0	1
RYEGRASS (Lolium)					
	Anthracnose	- Colletotrichum	0	1	1
	Blight	- Pythium	1	0	1
	Brown patch	- Rhizoctonia	1	0	1
	Gray leaf spot	- Pyricularia	4	0	4
	Leaf spot	- Curvularia	1	3	4
	No disease		2		2
	Pink snow mold	- Microdochium	1	0	1
	Root decline	- Gaeumannomyces	2	0	2
	Root rot	- Pythium	3	0	3

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TURF (unspecified)					
	Brown patch	- Rhizoctonia	2	0	2
	Environmental stresses	- wet feet	1	1	2
	No disease		4		4
	Nutritional	- general	1	0	1
	Red thread	- Laetisaria	2	0	2
	Slime mold	- species	4	0	4
	Smut	- Ustilago	1	0	1
	Summer patch	- Magnaporthe	1	0	1
<u>WOODY ORNAMENTALS</u>					
ALMOND (Prunus)					
	Insect injury		1	0	1
ARBORVITAE (Thuja)					
	Chemical injury	- growth regulator	2	0	2
	Cultural	- transplant shock	5	0	5
	Environmental	- drought	1	0	1
		- stresses	2	0	2
		- wet feet	1	0	1
		- winter drying	3	1	4
	Insect injury		10	1	11
	Leaf blackening	- unknown	1	0	1
	Needle drop	- normal	2	0	2
	No disease		8		8
	Physical injury	- unknown	1	0	1
	Root rot	- Phytophthora	4	0	4
	Twig blight	- Kabatina	0	1	1
		- Pestalotiopsis	2	1	3
ASH (Fraxinus)					
	Anthracnose	- Apiognomonia	4	0	4
	Canker	- Botryosphaeria	0	1	1
	Environmental	- cold injury	1	0	1
	Insect injury		4	2	6
	Leaf spot	- Cercospora	3	0	3
		- unknown	1	0	1
	Lichen	- species	0	1	1
	No disease		7		7

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ASPEN (Populus)					
	Leaf spot	- Marssonina	1	0	1
AUCUBA (Aucuba)					
	Environmental	- sun scald	1	0	1
AZALEA - See listing under RHODODENDRON					
BALDCYPRESS (Taxodium)					
	No disease		2		2
BARBERRY (Berberis)					
	No disease		3		3
	Root rot	- Rhizoctonia	1	0	1
BASSWOOD (Tilia)					
	No disease		1		1
BEARBERRY (Arctostaphylos)					
	No disease		1		1
BEECH (Fagus)					
	Anthracnose	- Discula	3	0	3
	Bleeding canker	- Phytophthora	1	0	1
	Canker	- Nectria	1	0	1
	Insect injury		0	1	1
BIRCH (Betula)					
	Chemical	- herbicide	1	0	1
	Cultural	- transplant shock	0	1	1
	Insect injury		4	0	4
	Leaf spot	- Cryptocline	3	0	3
		- Septoria	1	0	1
	No disease		1		1
BLACK GUM (Tupelo)					
	No disease		1		1
BOXWOOD (Buxus)					
	Canker	- Pseudonectria	4	6	10
	Cultural	- oedema	1	0	1
		- transplant shock	2	0	2

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BOXWOOD (Buxus) (cont'd)					
	Environmental stress	- general	2	0	2
		- winter injury	2	0	2
	Insect injury		12	2	14
	Leaf blight	- Macrophoma	4	4	8
	No disease		4		4
	Physical injury	- unknown	1	0	1
BUCKEYE (Aesculus)					
	Chemical	- growth regulator	1	0	1
BUTTERFLY BUSH (Buddleia)					
	Insect injury		2	0	2
	No disease		1		1
	Physical injury	- unknown	1	0	1
CATALPA (Catalpa)					
	No disease		2		2
	Wilt	- Verticillium	1	0	1
CEDAR (Cedrus)					
	Cultural	- wet feet	1	0	1
	Needle blight	- Pestalotiopsis	1	0	1
CHAMAECYPARIS (Chamaecyparis)					
	Canker	- Seiridium	1	0	1
	Environmental	- winter injury	1	0	1
CHERRY (Prunus)					
	Bacterial canker	- Pseudomonas	4	0	4
	Bacterial spot	- Xanthomonas	4	0	4
	Environmental	- freeze	1	0	1
	Fire blight	- Erwinia	1	0	1
	Insect injury		6	0	6
	No disease		6		6
CHERRYLAUREL (Prunus)					
	Bacterial spot	- Xanthomonas	3	1	4
	Canker	- unknown	1	0	1

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CHERRYLAUREL (Prunus) (cont'd)					
	Chemical	- unknown	1	0	1
	Cultural	- transplant shock	3	1	4
	Environmental stresses	- winter drying	1	1	2
	Insect injury		8	2	10
	Leaf spot	- algal	1	0	1
	No disease		4		4
	Root rot	- Phytophthora	3	0	3
CHESTNUT (Castanea)					
	Root rot	- Phytophthora	1	0	1
CLEMATIS (Clematis)					
	Leaf spot	- Ascochyta	1	0	1
		- Phyllosticta	1	0	1
	No disease		1		1
CINNAMON (Cinnamomum)					
	Leaf spot	- Phyllosticta	1	0	1
COTONEASTER (Cotoneaster)					
	Fire blight	- Erwinia	1	0	1
COTTONWOOD (Populus)					
	Leaf rust	- Melampsora	1	0	1
CRABAPPLE (Malus)					
	Canker	- Phomopsis	1	0	1
	Chemical	- herbicide	1	0	1
	Cultural	- transplant shock	1	0	1
	Fire blight	- Erwinia	0	1	1
	Frogeye leaf spot	- Botryosphaeria	2	0	2
	Insect injury	- cicada	1	0	1
	Leaf spot	- Phoma	2	0	2
	Lichen	- species	0	1	1
	No disease		1		1
	Scab	- Venturia	1	0	1
	Sooty mold	- species	0	1	1

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CRAPEMYRTLE (Lagerstroemia)					
	Chemical	- herbicide	1	0	1
	Insect injury	- aphid	1	0	1
	Leaf spot	- Cristulariella	1	0	1
	No disease		4		4
	Powdery mildew	- Erysiphe	2	0	2
	Sooty mold	- species	0	1	1
CYPRESS (Cupressus)					
	No disease		1		1
DEODURA CEDAR (Cedrus)					
	Cultural	- transplant shock	1	0	1
DOGWOOD (Cornus)					
	Anthrachnose	- Discula	2	0	2
	Bacterial scorch	- Xylella	1	0	1
	Chemical injury	- unknown	1	0	1
	Cultural	- transplant shock	2	1	3
	Environmental stresses	- cold injury	1	0	1
	Insect injury		2	0	2
	Leaf scorch	- unknown	1	0	1
	Leaf spot	- Cercospora	1	0	1
	Lichen	- species	0	1	1
	No disease		11		11
	Nutritional	- iron deficiency	1	0	1
		- fertilizer burn	1	0	1
	Powdery mildew	- Erysiphe	3	0	3
DOUGLAS FIR (Pseudotsuga)					
	No disease		1		1
	Twig blight	- Phomopsis	1	0	1
DOVE TREE (Davidia)					
	Root rot	- Phytophthora	1	0	1
ELDERBERRY (Sambucus)					
	No disease		1		1
ELM (Ulmus)					
	Anthrachnose	- Asteroma	1	0	1
	Black spot	- Stegophora	1	0	1

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ELM (Ulmus) (cont'd)					
	Canker	- Botryosphaeria	1	0	1
	Cultural	- transplant shock	1	0	1
	Dutch elm disease	- Ophiostoma	2	0	2
	Elm yellows	- phytoplasma	2	0	2
	Environmental stresses	- general	1	0	1
	Insect injury		3	0	3
	No disease		3		3
	Physical injury	- rodent	1	0	1
	Wet wood	- bacterial	1	0	1
EUONYMUS (Euonymus)					
	Environmental stresses	- sunscald	1	0	1
	Insect injury		6	1	7
	No disease		1		1
	Physical injury	- unknown	2	0	2
	Powdery mildew	- Microsphaera	2	0	2
FILBERT (Corylus)					
	Blight	- Ansigramma	2	0	2
FIR (Abies)					
	Canker	- Botryosphaeria	1	0	1
	No disease		2		2
FORSYTHIA (Forsythia)					
	No disease		2		2
	Root/collar rot	- Phytophthora	2	0	2
FRINGE TREE (Chionanthus)					
	Anthraxnose	- Discula	1	0	1
	No disease		1		1
GARDENIA (Gardenia)					
	Nutritional	- soluble salts	1	0	1
GINKGO (Ginkgo)					
	Chemical	- growth regulator	1	0	1
	No disease		3		3

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GOLDENRAINTREE (Koelreuteria)					
	Insect injury	- cicada	1	0	1
HACKBERRY (Celtis)					
	Chemical injury	- herbicide	1	0	1
	Insect injury	- scale	2	0	2
	No disease		1		1
HAWTHORN (Crataegus)					
	Cedar/Hawthorn rust	- Gymnosporangium	3	0	3
	Cedar/Quince rust	- Gymnosporangium	5	1	6
	Fire blight	- Erwinia	0	1	1
	Insect injury		1	0	1
HEMLOCK (Tsuga)					
	Insect injury		6	0	6
	No disease		2		2
HIBISCUS (Hibiscus)					
	Anthrachnose	- Colletotrichum	1	0	1
	Chemical injury	- growth regulator	1	0	1
HICKORY (Carya)					
	Chemical injury	- herbicide	1	0	1
	Insect injury		7	1	8
HOLLY (Ilex)					
	Black root rot	- Thielaviopsis	2	0	2
	Canker	- Botryosphaeria	2	0	2
	Chemical	- growth regulator	1	0	1
	Cultural	- transplant shock	2	1	3
	Dieback	- unknown	1	0	1
	Environmental stresses		7	3	10
	Insect injury		9	2	11
	No disease		14		14
	Nutritional	- iron deficiency	1	0	1
		- general	1	0	1
		- pH high	3	0	3
	Root rot	- Armillaria	1	0	1
		- Rhizoctonia	1	0	1
	Sooty mold	- species	0	1	1

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HONEYLOCUST (Gleditsia)					
	Insect injury	- spider mite	1	0	1
	No disease		1		1
HONEYSUCKLE (Lonicera)					
	Leaf blight	- Insolibasidium	1	0	1
	No disease		2		2
HOPHORNBEAM (Ostrya)					
	Root rot	- Pythium	1	0	1
	Sooty mold	- species	1	0	1
HORNBEAM (Carpinus)					
	No disease		1		1
HORSECHESTNUT (Aesculus)					
	Leaf blotch	- Guignardia	1	0	1
HYDRANGEA (Hydrangea)					
	Bacterial spot	- Xanthomonas	1	0	1
	Chemical injury	- glyphosate	1	0	1
		- growth regulator	2	0	2
	Environmental stresses		2	0	2
	Insect injury		1	1	2
	Leaf spot	- Cercospora	5	0	5
		- unknown	0	1	1
	No disease		4		4
	Root rot	- Phytophthora	1	0	1
	Rust	- Pucciniastrum	1	0	1
JUNIPER and RED CEDAR (Juniperus)					
	Cedar-apple rust	- Gymnosporangium	1	0	1
	Canker	- Botryosphaeria	1	0	1
	Environmental stresses		1	0	1
	Insect injury		2	1	3
	No disease		4		4
	*(samples without pinewood nematode)		13		13
	Twig blight	- Kabatina	2	0	2
		- Phomopsis	2	0	2

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KERRIA (Kerria)					
	No disease		1		1
LEYLAND CYPRESS (X Cupressocyparis)					
	Canker	- Cytospora	1	0	1
		- Seiridium	1	0	1
	Cultural	- transplant shock	1	1	2
	Environmental stresses		4	0	4
	Lichen	- species	1	0	1
	No disease		2		2
LINGONBERRY (Vaccinium)					
	No disease		1		1
LILAC (Syringa)					
	Cultural	- transplant shock	1	0	1
	Insect injury		1	0	1
	Leaf scorch	- unknown	1	0	1
	No disease		8		8
LOCUST (Robinia)					
	Insect injury	- leaf miner	1	0	1
MAGNOLIA (Magnolia)					
	Canker	- Botryosphaeria	0	1	1
	Cultural	- transplant shock	2	0	2
	Environmental stresses		8	1	9
	Insect injury		1	0	1
	Leaf burn	- environmental	1	0	1
	Leaf spot	- unknown	1	0	1
	No disease		5		5
MAHONIA (Mahonia)					
	Environmental stresses	- winter drying	1	0	1
	Inadequate sample, no disease		2		2
MAPLE (Acer)					
	Anthraxnose	- Kabatiella	18	2	20
	Bacterial scorch	- Xylella	3	0	3
	Bleeding canker	- Phytophthora	1	0	1
	Canker	- Botryosphaeria	1	0	1

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MAPLE (Acer) (cont'd)					
	Chemical	- glyphosate	1	0	1
	Cultural	- girdling root	2	0	2
		- transplant shock	5	0	5
	Decline	- environmental	2	0	2
	Dieback	- Botryosphaeria	1	0	1
	Environmental stresses		3	0	3
	Inadequate specimen, no disease		22		22
	Insect injury		10	0	10
	Leaf scorch	- unknown	2	0	2
	Leaf spot	- Phyllosticta	1	0	1
	Lichen	- species	2	1	3
	Physical injury	- unknown	1	3	4
	Sooty mold	- speices	2	0	2
	Tar spot	- Rhytisma	0	1	1
	Wilt	- Verticillium	3	0	3
MIMOSA (Albizzia)					
	Inadequate specimen, no disease		3		3
	Wilt	- Fusarium	3	0	3
MT. LAUREL (Kalmia)					
	Leaf blight	- Phytophthora	1	0	1
	Leaf spot	- unknown	1	0	1
	No disease		1		1
MULBERRY (Morus)					
	Leaf spot	- Cylindrosporium	1	0	1
		- Phloeospora	5	0	5
	No disease		1		1
	Popcorn disease	- Ciboria	1	0	1
NINEBARK (Physocarpus)					
	Powdery mildew	- Sphaerotheca	1	0	1
	No disease		1		1
OAK (Quercus)					
	Air pollution	- Ozone	1	0	1
	Anthracnose	- Apiognomonia	5	2	7
	Bacterial scorch	- Xylella	20	0	20
	Canker	- Nectria	1	0	1

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OAK (Quercus) (cont'd)					
	Chemical injury		6	0	6
	Cultural	- transplant shock	2	0	2
	Decline	- unknown	1	0	1
	Environmental stresses		0	2	2
	Inadequate specimen, no disease		20		20
	Insect injury		30	8	38
	Leaf blister	- Taphrina	1	0	1
	Leaf scorch	- unknown	1	0	1
	Leaf spot	- fungal	1	0	1
		- Tubakia	10	5	15
		- unknown	3	0	3
	Lichen	- species	1	0	1
	Nutritional	- iron deficiency	12	0	12
	Physical injury	- rodent	0	1	1
	Powdery mildew	- species	5	2	7
	Rust	- Cronartium	1	0	1
	Sooty mold	- species	1	0	1
	Wetwood	- bacterial	1	0	1
OSMANTHUS (Osmanthus)					
	No disease		1		1
PAULOWNIA (Paulownia)					
	Insect injury	- unknown	1	0	1
PAWPAW (Asimina)					
	Insect injury	- aphid	1	0	1
PEACH (Prunus)					
	Insect injury	- scale	2	0	2
	Leaf curl	- Taphrina	1	0	1
	No disease		1		1
PEAR (Pyrus)					
	Chemical injury	- growth regulator	2	0	2
		- herbicide	1	0	1
	Cultural	- transplant shock	2	0	2
	Decline	- environmental	1	0	1
	Environmental stresses		3	0	3
	Fire blight	- Erwinia	8	1	9

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1° DIAGs</i>	<i>#2° DIAGs</i>	<i>TOTAL</i>
PEAR (Pyrus) (cont'd)					
	Insect injury		2	0	2
	Leaf scorch	- unknown	1	0	1
	Leaf spot	- Phloeospora	1	0	1
		- unknown	1	0	1
	Lichen	- species	1	0	1
	No disease		6		6
	Powdery mildew	- species	0	1	1
PERSIMMON (Diospyros)					
	Leaf spot	- Cercospora	1	0	1
PIERIS (Pieris)					
	Leaf blight	- Phytophthora	2	0	2
	No disease		14		14
PINE (Pinus)					
	Air pollution	- ozone	2	0	2
	Chemical injury	- growth regulator	6	0	6
	Collar rot	- Phytophthora	1	0	1
	Cultural	- transplant shock	2	0	2
	Insect injury		7	1	8
	No disease		16		16
	Needle blight	- Dothistroma	4	0	4
	Physical injury	- exhaust	1	0	1
		- sapsucker	0	1	1
		- unknown	1	1	2
	Root rot	- Phytophthora	1	0	1
	Tip blight	- Diplodia	7	0	7
	Twig blight	- unknown	1	0	1
	White pine decline	- environmental	11	1	12
	White pine root decline	- Verticicladiella	1	0	1
PLUM (Prunus)					
	Black knot	- Apiosporina	2	0	2
POPLAR (Populus)					
	Canker	- unknown	1	0	1
	Leaf spot	- Marssonina	1	1	2

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PRIVET (Ligustrum)					
	Chemical	- herbicide	1	0	1
	Insect injury	- spider mite	1	0	1
PRUNUS (Prunus)					
	Leaf spot	- unknown	1	0	1
REDBUD (Cercis)					
	Anthracnose	- Kabatiella	1	0	1
	Canker	- Botryosphaeria	1	0	1
	Chemical injury	- unknown	1	0	1
	Cultural	- transplant stress	2	0	2
	Insect injury		3	0	3
	Leaf scorch	- unknown	1	0	1
	Leaf spot	- Cercospora	2	0	2
	No disease		5		5
REDWOOD (Sequoia)					
	No disease		1		1
	Needle blight	- Cercospora	1	0	1
RHODODENDRON and AZALEA (Rhododendron)					
	Blight	- Phytophthora	1	0	1
	Decline	- unknown	1	0	1
	Dieback	- Botryosphaeria	1	0	1
	Environmental	- poor site	1	0	1
		- sunscald	1	0	1
	Insect injury		9	1	10
	Leaf blight	- Phytophthora	54	0	54
	Leaf spot	- Pestalotia	1	0	1
		- Phomopsis	1	0	1
	Lichen	- species	1	1	2
	No disease		225		225
	Nutritional	- iron deficiency	1	0	1
	Root rot	- Phytophthora	2	0	2
ROSE (Rosa)					
	Black spot	- Diplocarpon	7	2	9
	Canker	- Coniothyrium	3	0	3
	Chemical injury	- glyphosate	3	0	3
		- growth regulator	8	0	8

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ROSE (Rosa) (cont'd)					
		- herbicide	3	1	4
Cultural		- transplant shock	0	2	2
		- wet feet	1	0	1
Downy mildew		- Peronospora	3	1	4
Environmental stresses			1	1	2
Inadequate sample, no disease			14		14
Insect injury			18	5	23
Leaf spot		- Cercospora	0	1	1
Powdery mildew		- Sphaerotheca	3	0	3
Virus		- Rose mosaic	2	0	2
		- Rose rosette	21	0	21
Wood decay		- Basidiomycete	0	1	1
SASSAFRAS (Sassafras)					
Wood decay		- Basidiomycete	1	0	1
SERVICEBERRY (Amelanchier)					
Leaf scorch		- environmental	1	0	1
No disease			1		1
SMOKETREE (Cotinus)					
Wilt		- Verticillium	2	0	2
SPRUCE (Picea)					
Chemical injury		- growth regulator	1	0	1
Cultural		- transplant shock	7	0	7
Decline		- unknown	2	0	2
Environmental stresses			3	0	3
Inadequate sample; no disease			19		19
Insect injury			9	0	9
Lichen		- species	1	0	1
Needle blight		- Stigmina	0	2	2
Needle cast		- Rhizosphaera	16	3	19
Root rot		- Phytophthora	2	0	2
Tip blight		- Sphaeropsis	1	0	1
STEWARTIA (Stawartia)					
Cultural		- transplant shock	1	1	2
Inadequate sample			1		1

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SWEET GUM (Liquidambar)					
	Environmental stresses		1	0	1
	No disease		1		1
SYCAMORE (Platanus)					
	Anthracnose	- Apiognomonia	1	1	2
	Bacterial leaf scorch	- Xylella	1	0	1
	Chemical	- herbicide	1	0	1
	Insect injury	- lacebug	0	1	1
	Leaf spot	- unknown	1	0	1
	Powdery mildew	- Microsphaera	1	0	1
TAXUS (Taxus)					
	Chemical injury	- herbicide	1	0	1
	Cultural	- transplant shock	2	0	2
	Environmental stresses	- poor soil	1	0	1
	Insect injury		2	0	2
	No disease		11		11
	Root rot	- Phytophthora	3	0	3
TULIPTREE (Liriodendron)					
	Leaf spot	- fungal	2	0	2
	No disease		2		2
	Nutritional	- iron deficiency	1	0	1
UNKNOWN (wood ornamentals)					
	Insect injury		2	0	2
	No disease		1		1
	Powdery mildew	- Oidium	1	0	1
VIBURNUM (Viburnum)					
	Environmental stresses	- wet feet	1	0	1
	Insect injury		1	1	2
	Leaf blight	- Phytophthora	3		3
	No disease		45		45
	Physical injury	- unknown	1	0	1
WALNUT (Juglans)					
	Leaf spot	- Cylindrosporium	3	0	3
	No disease		5		5
	Wood decay	- Basidiomycete	1	0	1

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WEIGELA (Weigela)					
	Cultural	- transplant shock	0	1	1
	Insect injury		1	1	2
	Leaf scorch	- unknown	1	0	1
WILLOW (Salix)					
	Canker	- Botryosphaeria	1	0	1
	Leaf spot	- Cercospora	3	0	3
	No disease		1		1
	Nutritional	- general	1	0	1
WISTERIA (Wisteria)					
	No disease		1		1
WITCHHAZEL (Hamamelis)					
	Leaf blight	- Phyllosticta	1	0	1
	No disease		1		1
YELLOWWOOD (Cladrastis)					
	Cultural	- transplant shock	0	1	1

VEGETABLES

ASPARAGUS (Asparagus)					
	Blight	- Cercospora	1	0	1
	Crown rot	- Fusarium	1	0	1
	Insect injury	- beetle	2	0	2
BEAN (Phaseolus)					
	Angular leaf spot	- Phaeoisariopsis	2	0	2
	Anthrachnose	- Colletotrichum	2	1	3
	Bacterial blight	- Xanthomonas	2	0	2
	Blight	- Pythium	1	0	1
	Chemical injury		3	0	3
	Environmental stresses	- sunscald	1	0	1
	Inadequate specimen, no disease		7		7
	Insect injury		5	3	8
	Leaf spot	- Cercospora	2	0	2
	Nutritional	- fertilizer burn	1	0	1
	Root rot	- Pythium	3	0	3

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BEAN (Phaseolus) (cont'd)					
	Root/stem rot	- Rhizoctonia	6	1	7
	Rust	- Puccinia	0	1	1
BROCCOLI - See listing under CRUCIFERS					
BRUSSELS SPROUTS- See listing under CRUCIFERS					
CABBAGE - See listing under CRUCIFERS					
CANTALOUPE - See listing under CUCURBITS					
CARROT (Daucus)					
	Leaf blight	- Alternaria	1	0	1
CORN, SWEET and POPCORN (Zea)					
	Bacterial stalk rot	- Erwinia	1	0	1
	Chemical	- herbicide	3	0	3
	Ear/kernel rot	- Fusarium	1	0	1
	Environmental stresses		1	0	1
	Inadequate sample, no disease		2		2
	Northern leaf blight	- Setosphaeria	2	0	2
	Smut	- Ustilago	1	0	1
CRUCIFERS - BROCCOLI, BRUSSELS SPROUTS, CABBAGE , KALE, TURNIP (Brassica)					
	Anthracnose	- Colletotrichum	1	0	1
	Bacterial soft rot	- Erwinia	1	0	1
	Brown heart	- boron deficiency	1	0	1
	Chemical	- growth regulator	1	0	1
		- herbicide	1	0	1
		- unknown	2	0	2
	Inadequate sample, no disease		7		7
	Insect injury		3	0	3
	Leaf spot	- Mycosphaerella	1	0	1
	Nutritional	- nitrogen deficiency	1	0	1
	Root rot	- Pythium	1	0	1
	Root/stem rot	- Rhizoctonia	0	1	1
	White leaf spot	- Pseudocercopora	1	0	1

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CUCUMBER- See listing under CUCURBITS					
CUCURBITS - CANTALOUPE, CUCUMBER, MELON (Cucumis), GOURD, PUMPKIN, SQUASH (Cucurbita) and WATERMELON (Citrullus)					
	Angular leaf spot	- Pseudomonas	4	0	4
	Anthracnose	- Colletotrichum	5	0	5
	Bacterial wilt	- Erwinia	4	1	5
	Blight	- Plectosporium	2	1	3
	Chemical injury	- herbicide	1	0	1
		- unknown	2	0	2
	Downy mildew	- Pseudoperonospora	12	0	12
	Environmental stresses		5	0	5
	Fruit rot	- Fusarium	2	0	2
		- Phytophthora	1	0	1
	Ground stain	- Physiological	1	0	1
	Gummy stem blight	- Didymella	6	2	8
	Inadequate specimen, no disease		28		28
	Insect injury		5	4	9
	Leaf spot	- Alternaria	1	0	1
		- Cercospora	1	2	3
		- physiological	0	1	1
	Nutritional	- general	1	1	2
		- nitrogen deficiency	0	1	1
		- unknown	1	0	1
	Physiological unknown	- unknown	1	0	1
	Pollination problem	- unknown	2	0	2
	Powdery mildew	- Podosphaera	7	3	10
	Root knot nematode	- Meloidogyne	1	0	1
	Root rot	- Fusarium	2	0	2
		- Pythium	1	0	1
		- Rhizoctonia	1	0	1
	Southern blight	- Sclerotium	1	0	1
	Virus	- POTY	1	1	2
	Weather fleck	- ozone	1	0	1
	Yellow vine decline	- Serratia	1	0	1
EGGPLANT (Solanum)					
	Chemical injury	- herbicide	1	0	1
	Insect injury		2	0	2

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KALE - See listing under CRUCIFERS					
LETTUCE (Lactuca)					
	Environmental stresses	- freeze injury	1	0	1
OKRA (Abelmoschus)					
	Chemical injury	- herbicide	1	0	1
		- unknown	1	0	1
	Insect injury	- aphid	1	0	1
ONION (Allium)					
	Bacterial soft rot	- Erwinia	1	0	1
	Insect injury	- thrips	1	0	1
	Rot	- Sclerotinia	0	1	1
PEA (Pisum)					
	Bacterial blight	- Pseudomonas	2	0	2
	No disease		1		1
PEPPER (Capsicum)					
	Bacterial spot	- Xanthomonas	13	2	15
	Chemical injury	- growth regulator	1	0	1
	Environmental stresses		3	0	3
	Fruit decay	- Fusarium	1	0	1
	Inadequate sample, no disease		4		4
	Insect injury		2	1	3
	No disease		6		6
	Nutritional	- fertilizer burn	1	0	1
		- soluble salts	2	0	2
	Physical injury	- unknown	0	1	1
	Root rot	- Fusarium	1	0	1
		- Pythium	3	0	3
		- Rhizoctonia	0	1	1
	Root/Stem rot	- Phytophthora	1	0	1
POTATO (Solanum)					
	Bacterial soft rot	- Erwinia	0	2	2
	Chemical injury	- herbicide	1	0	1
		- unknown	2	0	2
	Dry rot	- Fusarium	2	0	2
	Insect injury		3	1	4
	Late blight	- Phytophthora	1	0	1

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POTATO (Solanum) (cont'd)					
	Leak	- Pythium	2	0	2
	No disease		7		7
	Pink rot	- Phytophthora	1	0	1
	Root knot nematode	- Meloidogyne	3	0	3
	Root rot	- Rhizoctonia	1	0	1
	Scab	- Streptomyces	3	0	3
	Southern blight	- Sclerotium	1	0	1
	Stem rot	- Rhizoctonia	1	0	1
PUMPKIN - See listing under CUCURBITS					
RHUBARB (Rheum)					
	Crown rot	- Phytophthora	1	0	1
	Leaf spot	- Ascochyta	1	0	1
SPINACH (Tragopogon)					
	Environmental stresses	- sunscald	0	1	1
	Nutritional	- magnesium deficiency	1	0	1
SQUASH - See listing under CUCURBITS					
SWEETPOTATO (Ipomoea)					
	Bacterial soft rot	- Erwinia	0	1	1
	Dry rot	- Fusarium	0	1	1
	Environmental stresses	- chilling injury	1	0	1
	Growth crack	- moisture stress	0	1	1
	Insect injury		2	0	2
	Scurf	- Monilochaetes	3	0	3
TOMATO (Lycopersicon)					
	Anthraxnose	- Colletotrichum	1	1	2
	Bacterial canker	- Clavibacter	2	0	2
	Bacterial spot	- Xanthomonas	4	1	5
	Blight	- Botrytis	2	0	2
	Blossom end rot	- calcium deficiency/dry	0	1	1
	Blotchy ripening	- environmental	1	0	1
	Buckeye rot	- Phytophthora	4	0	4

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TOMATO (Lycopersicon) (cont'd)					
	Bull plant	- genetic mutation	0	1	1
	Catfacing	- environmental	0	1	1
	Chemical injury	- fungicide	1	0	1
		- glyphosate	2	1	3
		- growth regulator	22	0	22
		- herbicide	4	0	4
		- insecticide	1	0	1
		- unknown	6	0	6
	Cultural	- high temperature	1	1	2
		- transplant shock	1	0	1
		- wet feet	1	0	1
	Damping off	- Pythium	1	0	1
	Early blight	- Alternaria	15	3	18
	Environmental stresses		9	3	12
	Fruit spot	- physiological	1	0	1
	Gray mold	- Botrytis	0	1	1
	Inadequate specimen, no disease		45		45
	Insect injury		12	7	19
	Late blight	- Phytophthora	4	0	4
	Leaf blight	- Botrytis	1	0	1
	Leaf mold	- Fulvia	6	5	9
	Leaf scorch	- unknown	3	0	3
	Leaf spot	- Phoma	1	3	4
		- physiological	1	0	1
		- Septoria	32	5	37
	Nutritional	- acid soil	1	0	1
		- fertilizer burn	2	0	2
		- general	2	0	2
		- low fertility	2	0	2
		- magnesium deficiency	2	0	2
		- nitrogen deficiency	2	0	2
		- soluble salts	8	2	10
	Physical injury	- unknown	1	2	3
	Pith necrosis	- Pseudomonas	2	0	2
	Powdery mildew	- Leveillula	3	0	3
	Root knot nematode	- Meloidgoyne	2	0	2
	Root rot	- Pythium	14	3	17
		- Rhizoctonia	0	1	1
	Root/Stem rot	- Pythium	1	0	1

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TOMATO (Lycopersicon) (cont'd)					
	Silvering	- environmental	1	0	1
	Sour rot	- Geotrichum	0	10	
	Southern blight	- Sclerotium	2	0	2
	Stem canker	- Botrytis	1	0	1
	Stem rot	- Sclerotinia	13	0	13
	Virus	- Tobacco mosaic	3	0	3
		- Tomato spotted wilt	25	3	28
		- unknown	2	0	2
	White core	- environmental	1	0	1
	Wilt	- Fusarium	14	4	18
	Yellow shoulder	- unknown	1	0	1
TURNIP - See under CRUCIFERS					
WATERMELON - See listing under CUCURBITS					
TOTALS			4074	426	4503