



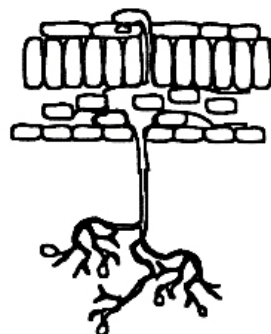
COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF KENTUCKY • COLLEGE OF AGRICULTURE

PLANT DISEASES

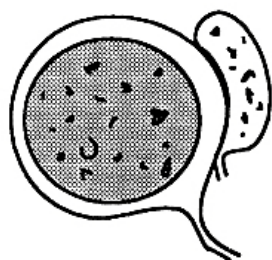


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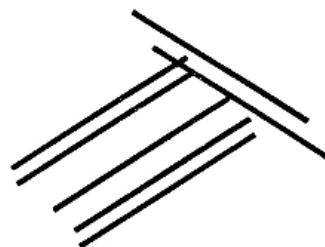
KENTUCKY



Plant Disease Diagnostic Laboratory Summary



1995



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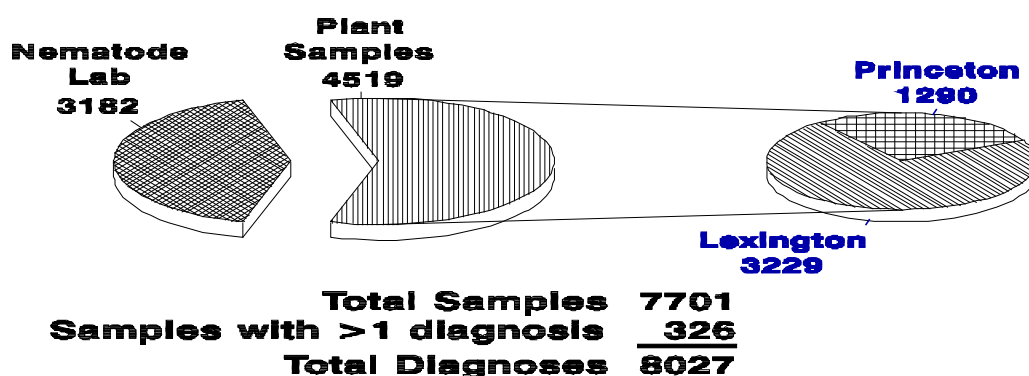
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INTRODUCTION

The Plant Disease Diagnostic Lab (Lexington and Princeton) handled 4519 plant samples and 3182 nematode soil samples during 1995. Samples with more than one problem numbered 326, bringing the total number of actual diagnoses to 4846. The Lexington Lab diagnosed 3229 specimens. The Princeton Lab's specimens totaled 4472; of this number 1290 were plant samples and 3182 were soil samples submitted, exclusively, for soybean cyst nematode analysis. A total of 2154 of the nematode samples were submitted by researchers and 1028 were submitted by commercial growers through the county Extension offices, Kentucky Seed Improvement Association, Total Ag Services of KY, or through a program funded by the Kentucky Soybean Association.

These numbers are summarized in Figure 1 below:

PLANT DISEASE DIAGNOSTIC LAB, TOTALS 1995



HIGHLIGHTS

The year of 1995 was a year of extremes for Kentucky weather. Generally mild and dry conditions occurred in the first significant weather period from February to about mid April which promoted early field work and planting. A shift to extremely wet and prolonged cool period from mid April through part of June halted most field work, created replanting problems and resulted in root growth and development problems later in the growing season. Twenty-nine (29) confirmed tornadoes occurred in May, three (3) times the normal number for the entire year, according to the National Weather Service. After June, the rainfall pattern turned dry with increasingly warmer temperatures as the summer progressed; to near record levels by August. Extremely hot August temperatures and the persistently dry summer hindered crop growth and development to the point of reducing crop yields. This was the third hottest August in over 100 years for most locations in the state. Nearly twice the normal number of days with temperatures equal to or greater than 90 F were reported statewide. A return to wet conditions in October, due in part to the remnants of hurricane Opal promoted tobacco stripping conditions but provided little relief to improve crop yield and provided some delay to harvest operations and field working conditions. The first hard freeze of the fall season occurred on November 4 with temperatures in the teens to low 20s. November and December were both cold and relatively dry which caused considerable delays with stripping of tobacco. Snowfall for November and December was generally 2 to 4 inches above normal.

The big news in tobacco this year was **Blue Mold** and more specifically, a 'metalaxyl' ("Ridomil")

resistant strain of the fungus, *Peronospora tabacina*, that causes the disease. Data from several sources confirmed that Ridomil-resistant Blue Mold was moved about the U.S. early in the season on transplants grown in some southeastern states. Kentucky brokers and growers bought infected plants and had them shipped to Kentucky thus bringing the disease directly to Kentucky farms. The state label for the protectant fungicide "Dithane DF" was amended in early June to allow field use and the fungicide "Aliette" was granted a state label for blue mold control in mid-July. Many failures in control of the disease in the field were due to the lack of sufficient spray equipment and application technique. **Black Shank** samples increased over 1994 but still were not as large as 1993 by approximately fifty percent. Tobacco infected with viruses such as **Virus Complex** and **Streak** showed a sharp decline but levels of **Tomato Spotted Wilt** were up dramatically over 1994. The incidence of the disease was at low levels in fields but its occurrence was much more widespread throughout the western and central portions of the state. **Fusarium Wilt** showed a decrease over 1994 levels.

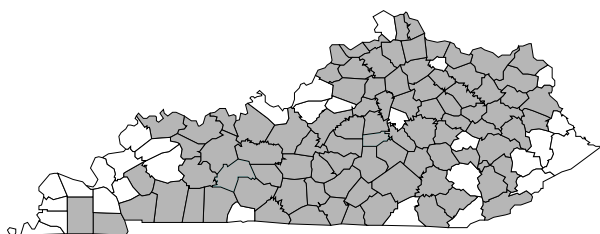


Figure 2. Incidence of Blue Mold in Field sites, 1995.

Corn diseases were relatively few but **Gray Leaf Spot** was a problem with certain varieties and the practice of reduced tillage. More problems were due to herbicide injury, many caused by unceasing high winds which made for an increase in drift problems.

Soybean diseases were at very low levels for 1995. **Soybean Cyst Nematode** still remains the major yield-limiting disease factor in the majority of soybean producing acreage.

Problems in small grain, primarily wheat, were at low levels, except for **Head Scab** in the central portion of the state and **Barley Yellow Dwarf Virus** which was up from 1994 levels. **Septoria Leaf Complex**, and **Glume Blotch** levels were similar to the low levels of 1994 and 1993.

Forages, in general, did not suffer from any major disease problems. **Rhizoctonia Damping-off** was found in several fields in central Kentucky of spring-seeded alfalfa. **Leaf Spot** of Millet, caused by the fungus *Pyricularia* was on the increase with wet and warm spring temperatures.

The incidence of diseases on vegetable crops was also light. However, **Bacterial Diseases** on tomato and pepper were once again noteworthy and difficult to control. **Late Blight** on potato and tomato was noted at higher levels. **Powdery and Downy Mildews** were also noted on cucurbit and crucifer crops and will continue to be monitored closely.

Fire Blight was seen at much higher levels than in 1994 but primary **Apple Scab** infections were very light due to a dry period during initial leaf development.

Powdery Mildew on Dogwood was once again seen in many areas of the state as it had been in 1994. Five more counties were added to **Dogwood Anthracnose** list bringing the count to 60.

In addition to the day to day diagnosis of samples, **monitoring** of several organisms and the diseases they cause are conducted by the diagnostic laboratory during the year. In addition to Blue Mold on tobacco and Dogwood Anthracnose, mentioned above, **Bacterial Leaf Scorch** are watched very closely because of their deadly potential. As a result, Sugar maple (*Acer saccharum*) was identified for the first time in the U.S. as a host of the bacterium which causes Bacterial Leaf Scorch. The viruses Tomato Spotted Wilt and Impatiens Necrotic Spot are also monitored to alert tobacco and commercial vegetable growers and the floral greenhouse industry, respectively. The detection of soybean cyst nematodes in new areas of the state and on commercial ornamental stock for export is also conducted. In all, a major activity of the laboratory is to serve as an educational resource to County Extension Agents and Extension Specialists for assistance in the diagnosis of plant diseases, common, complex, and new.

EXPLANATORY REMARKS

As you examine the main body of this report, you will notice three columns of numbers following the diagnosis and causal agent sections. The first column indicates the number of primary diagnoses, the second column the number of secondary diagnoses and the third column is the total of the previous two. 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 never as a primary problem (e.g. *Lophodermium needlecast* on Pine). In these cases, a zero (0) will appear in the primary diagnosis column to indicate the absence of samples with that particular problem.

No disease: This indicates that no pathogen was observed on the specimen submitted, and that based on the sample and information provided, we were unable to pinpoint an exact abiotic or biotic cause of the problem, if there was one.

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 by the crop specialist in the Agronomy or Horticulture Departments. On a number of occasions we also consulted with crop specialists in other departments to diagnose or verify abiotic problems.

Root problems: Samples designated as having a "root problem" had above ground symptoms suggestive of root disfunction and/or evidence of root degeneration, however, a specific biotic or abiotic cause could not be determined.

ACKNOWLEDGEMENTS

Special thanks must go to Carolyn England for entering most of the sample record data into the database at Lexington. Carolyn spent many hours performing this task due to the resignation of the plant diagnostician, Brian Eshenaur, May 1, 1995. Our new Lexington diagnostician, Ms. Julie Beale, also worked very hard to straighten out the Lexington diagnostic forms and the database during her first few months on the job.

Two technicians within the department of Plant Pathology have made significant contributions to the Plant Diagnostic Laboratories. Shari Dutton is working with the specialists in Lexington providing laboratory support for special research projects and demonstrations and was extremely valuable in running the assay for the "Ridomil-resistant" strain of the fungus which causes blue mold. As the technician in charge of performing all soybean cyst nematode extractions and counting, Debbie Morgan has been dutifully carrying out her responsibilities since 1985 in the Nematode Laboratory at Princeton. In addition, although Jack Doney primarily has research responsibilities, he does contribute in many ways to the performance of the laboratories. Thanks also go to Tom Priddy, Ag. Engineering - Meteorology, for providing the summary of weather conditions for 1995.

We also wish to thank the College of Agriculture's extension specialists and researchers who served as consultants to the diagnostic lab in 1995. Their services ranged from making actual diagnoses to providing answers to plant, insect, weed or pesticide questions. These individuals are too numerous to mention here (see Table 9) but we are grateful nonetheless to each for their valuable assistance.

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	35	52	25	4	22	23	161
Forages	10	48	4	1	6	14	83
Rapeseed (Canola)	0	0	0	0	0	0	0
Small grains	27	85	7	4	3	17	143
Soybeans	16	3213*	12	1	1	10	3253
Tobacco	379	1162	86	30	8	120	1785
<u>Fruit</u>							
Small fruit	6	58	1	3	9	21	98
Tree fruit	21	128	8	5	30	28	220
<u>Herbs</u>							
	2	8	0	0	4	3	17
<u>Identification</u>							
	0	43	0	1	0	0	44
<u>Ornamentals</u>							
Herbaceous and Houseplants	63	163	10	3	28	47	314
Turfgrass	12	97	0	8	0	25	142
Woody	323	480	47	34	198	201	1283
<u>Vegetables</u>							
	76	271	28	29	21	47	472
<u>Miscellaneous</u>							
	2	4	0	1	0	5	12
<u>Total</u>							
	972	5812	228	124	330	561	8027

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.

* Includes 3182 samples sent to the Nematode Analysis Laboratory in Princeton.

Table 2.

SUMMARY OF BIOTIC PROBLEMS BY CROP CATEGORY.

Crop Category	Bacterial	Fungal	Nematode	Virus	Other¹
<u>Agronomic</u>					
Corn	10	38	0	4	0
Forages	1	47	0	0	0
Rapeseed (Canola)	0	0	0	0	0
Small grains	3	43	0	39	0
Soybeans	0	29	3183	1	0
Tobacco	111	892	1	149	9
<u>Fruit</u>					
Small fruit	2	56	0	0	0
Tree fruit	40	86	0	0	2
<u>Herbs</u>					
	1	7	0	0	0
<u>Identification</u>					
	0	19	0	0	24
<u>Ornamentals</u>					
Herbaceous and Houseplants	17	120	0	25	1
Turfgrass	0	97	0	0	0
Woody	45	414	11	7	3
<u>Vegetables</u>					
	72	157	2	39	1
<u>Miscellaneous</u>					
	0	4	0	0	0
<u>Total</u>	302	2009	3197	264	40

¹ Other includes these categories: Animal (rodent and bird damage), Plant (plant identifications), and Algae, Lichen and MLO (mycoplasma-like organism).

Table 3.

NUMBER OF SPECIMENS BY CROP CATEGORY, EXPRESSED AS PERCENTAGES

Crop Category	Number of Specimens	Percentage of Total Specimens
Agronomic (-Tobacco)	394	8.7
Tobacco	1680	37.2
Fruit	292	6.5
Herbs	16	0.3
Identifications	42	0.9
Ornamentals	1666	36.9
Vegetables	417	9.2
Miscellaneous	12	0.3
Total Specimens	4519	100.0

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	139	22	161
Forages	75	8	83
Rapeseed (Canola)	0	0	0
Small grains	119	24	143
Soybeans	3243	10	3253
Tobacco	1680	105	1785
<u>Fruit</u>			
Small fruit	91	7	98
Tree fruit	201	19	220
<u>Herbs</u>			
	16	1	17
<u>Identification</u>			
	42	2	44
<u>Ornamentals</u>			
Herbaceous and Houseplants	300	14	314
Turfgrass	136	6	142
Woody	1230	53	1283
<u>Vegetables</u>			
	417	55	472
<u>Miscellaneous</u>			
	12	0	12
<u>Total</u>			
	7701	326	8027

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.

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

Crop Group	Grower Type							
	Commercial		Homeowner		Research		Institution	
	Ext ¹	Non-Ext ²	Ext ¹	Non-Ext ²	Ext ¹	Non-Ext ²	Ext ¹	Non-Ext ²
<u>Agronomic</u>								
Corn	135	3	0	0	1	0	0	0
Forages	69	2	1	0	2	1	0	0
Small grains	109	7	0	0	2	1	0	0
Soybeans	770	132	0	0	2340	1	0	0
Tobacco	1585	41	0	0	48	3	2	1
<u>Fruit</u>								
Small Fruit	32	0	56	1	2	0	0	0
Tree Fruit	52	2	142	3	1	0	1	0
<u>Herbs</u>								
	6	0	10	0	0	0	0	0
<u>Identification</u>								
		0	0	36	1	4	0	1
<u>Ornamental</u>								
Herbaceous and Houseplants	129	17	131	4	5	0	13	1
Turfgrass	47	0	83	0	3	0	3	0
Woody	114	5	1060	11	7	2	27	4
<u>Vegetable</u>								
0			211	8	177	4	17	0
<u>Miscellaneous</u>								
0		5	1	1	0	4	1	0
<u>Total</u>	3264	218	1697	24	2436	9	47	6
<u>Total/Grower Type</u>	3482		1721		2445		53	
<u>Total number of samples received</u> = 7701								

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

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

Table 6.

**NUMBER OF 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.	1	0	0	0	0	1
Agronomy Department	88	0	3	2	1	94
Entomology Department	8	10	97	7	4	126
Horticulture Department	0	1	3	2	5	11
Penn State Univ.	0	0	2	0	0	2
Regulatory Services	0	0	0	0	1	1
Univ. of Tennessee	1	0	0	0	0	1
<u>Total</u>						236
<u>Total number of plant samples</u>						4519
<u>Percent of plant samples referred outside Diagnostic Lab for diagnosis</u>						5.2

* 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.

Test	Number of Cases
AgDia, Inc.	3
Culturing	41
Incubation	183
Nematode extraction (total = 3186)	
Pinewood nematode	4
Soybean cyst nematode	3182
Soil tests (total = 111)	
pH	90
Saturated media extract/pH	6
Soluble salts	3
pH/Soluble Salts	9
Soil bioassays	3
Tissue Test (total = 25)	
Quick Nitrate Test	25
Virus assays (total = 58)	
Electron Microscope	8
ELISA	49
Indicator plants	1

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

COUNTY	Total	Agronomic ¹	Tobacco	Fruit	Ornamental	Vegetable	Other
ADAIR	15	4	6	0	5	0	0
ALLEN	28	0	20	2	4	2	0
ANDERSON	8	0	5	0	3	0	0
BALLARD	23	2	11	2	5	2	1
BARREN	31	0	13	1	15	2	0
BATH	24	3	15	1	4	0	1
BELL	21	0	0	5	11	3	1
BOONE	77	0	7	0	50	17	3
BOURBON	65	6	35	5	19	0	0
BOYD	6	0	0	1	3	2	0
BOYLE	50	7	11	4	27	1	0
BRACKEN	9	1	8	0	0	0	0
BREATHITT	25	0	14	0	5	6	0
BRECKINRIDGE	53	8	27	2	9	6	1
BULLITT	51	1	7	3	33	4	3
BUTLER	34	4	22	5	1	2	0
CALDWELL	136	30	38	17	33	15	3
CALLOWAY	96	3	52	8	27	6	0
CAMPBELL	50	0	13	5	28	3	1
CARLISLE	37	11	15	1	6	4	0
CARROLL	12	0	9	0	3	0	0
CARTER	61	0	29	4	23	1	4
CASEY	36	6	14	2	1	13	0
CHRISTIAN	146	12	48	12	63	11	0
CLARK	37	3	28	0	1	5	0
CLAY	16	0	4	2	5	5	0
CLINTON	16	0	14	1	1	0	0
CRITTENDEN	28	6	0	8	8	4	2
CUMBERLAND	14	1	11	0	2	0	0
DAVIESS	265	23	72	14	81	73	2
EDMONSON	39	1	16	7	4	10	1
ELLIOTT	7	0	3	0	2	2	0
ESTILL	16	2	4	3	5	1	1
FAYETTE	339	13	60	22	220	17	7
FLEMING	45	0	29	5	10	1	0
FLOYD	20	0	0	7	10	3	0
FRANKLIN	67	6	14	5	40	1	1
FULTON	4	3	0	0	0	1	0
GALLATIN	13	0	10	0	2	1	0
GARRARD	7	0	2	0	4	1	0
GRANT	13	0	7	2	4	0	0
GRAVES	86	8	59	5	10	3	1
GRAYSON	8	2	3	0	2	1	0
GREEN	39	0	24	4	8	3	0
GREENUP	4	0	1	0	3	0	0
HANCOCK	43	7	31	1	1	2	1
HARDIN	64	4	13	4	33	5	5
HARLAN	12	0	1	2	8	1	0
HARRISON	32	1	23	2	5	1	0
HART	28	3	16	2	2	5	0
HENDERSON	65	17	4	3	36	4	1
HENRY	33	3	19	0	10	1	0
HICKMAN	3	2	0	0	1	0	0
HOPKINS	43	6	11	0	16	8	2
JACKSON	22	0	11	0	8	1	2
JEFFERSON	87	3	3	2	76	0	3
JESSAMINE	64	5	28	2	24	5	0
JOHNSON	4	0	2	0	1	1	0
KENTON	25	2	3	0	19	1	0
KNOTT	13	0	4	3	4	2	0
KNOX	14	1	4	1	8	0	0

COUNTY	Total	Agronomic ¹	Tobacco	Fruit	Ornamental	Vegetable	Other
LARUE	31	5	17	1	6	2	0
LAUREL	31	2	11	3	10	4	1
LAWRENCE	11	0	9	1	1	0	0
LEE	4	0	1	1	2	0	0
LESLIE	6	0	1	1	2	2	0
LETCHER	1	0	0	1	0	0	0
LEWIS	12	2	4	0	5	1	0
LINCOLN	17	2	7	0	6	0	1
LIVINGSTON	6	0	2	0	2	1	2
LOGAN	82	7	50	6	17	2	0
LYON	19	1	9	0	9	0	0
McCRACKEN	101	1	6	10	78	6	0
McCREARY	2	0	0	0	2	0	0
McLEAN	21	5	6	6	1	3	0
MADISON	104	7	58	2	28	3	6
MAGOFFIN	2	0	1	0	0	1	0
MARION	26	4	8	4	8	2	0
MARSHALL	63	0	5	4	35	19	0
MARTIN	4	0	0	0	4	0	0
MASON	18	1	9	1	2	4	1
MEADE	24	6	11	1	6	0	0
MENIFEE	9	1	4	1	2	1	0
MERCER	36	3	11	0	18	4	0
METCALFE	5	0	4	0	1	0	0
MONROE	12	1	8	1	1	1	0
MONTGOMERY	55	2	36	3	12	2	0
MORGAN	19	1	4	1	7	6	0
MUHLENBERG	49	5	18	3	20	3	0
NELSON	23	4	8	2	8	0	1
NICHOLAS	15	1	6	3	4	0	1
OHIO	15	4	7	1	1	2	0
OLDHAM	50	3	16	0	25	6	0
OWEN	18	2	10	0	6	0	0
OWSLEY	27	0	17	1	1	8	0
PENDELTON	22	0	20	0	1	1	0
PERRY	8	0	3	0	4	1	0
PIKE	0	0	0	0	0	0	0
POWELL	14	0	4	3	6	1	0
PULASKI	28	5	1	2	18	2	0
ROBERTSON	7	0	5	1	1	0	0
ROCKCASTLE	8	0	4	2	2	0	0
ROWAN	35	1	13	6	11	3	1
RUSSELL	49	0	17	5	22	5	0
SCOTT	33	2	14	1	15	1	0
SHELBY	83	11	19	5	42	5	1
SIMPSON	15	3	7	0	5	0	0
SPENCER	3	1	1	0	1	0	0
TAYLOR	34	6	13	2	8	4	1
TODD	45	4	35	2	2	1	1
TRIGG	36	2	15	1	16	3	0
TRIMBLE	25	1	16	2	2	4	0
UNION	37	26	2	1	7	0	1
WARREN	130	13	31	3	69	13	1
WASHINGTON	31	1	13	1	14	2	0
WAYNE	67	6	41	3	7	10	0
WEBSTER	31	6	10	2	6	6	1
WHITLEY	22	0	11	2	7	2	0
WOLFE	20	1	14	0	3	0	2
WOODFORD	40	12	14	3	10	1	0
Out-of-State	49	3	40	0	4	1	1
TOTALS	4519	394	1680	292	1666	417	70

¹ 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 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			
Anderson, RG	Horticulture	1	7
Bitzer, MJ	Agronomy	9	8
Bessin, RT	Entomology	43	13
Eshenaur, BC (Diagnostician)	Plant Pathology	656	2
Fountain, WM	Horticulture	4	0
Green, JD	Agronomy	10	10
Hartman, JR	Plant Pathology	947	15
Henning, JC	Agronomy	2	0
Jarlors, UE	Plant Pathology	0	8
Jones, TR	Horticulture	0	1
Nesmith, WC	Plant Pathology	1117	8
Palmer, GK	Agronomy	83	3
Pearce, RC	Agronomy	4	1
Powell, AJ	Agronomy	1	0
Potter, MF	Entomology	0	1
Rowell, AB	Horticulture	2	1
Strang, JG	Horticulture	4	1
Townsend, LH	Entomology	79	9
Vincelli, PC	Plant Pathology	272	4
Weston, LA	Horticulture	0	1
Witt, ML	Horticulture	1	0
Witt, WW	Agronomy	2	1
PRINCETON			
Bachi, PR (Diagnostician)	Plant Pathology	1129	118
Brown, GR	Horticulture	4	4
Dunwell, WC	Horticulture	15	20
Herbek, JH	Agronomy	2	4
Hershman, DE	Plant Pathology	23	12
Johnson, DW	Entomology	2	12
Lacefield, GD	Agronomy	2	3
Martin, JR	Agronomy	28	21
Murdock, LW	Agronomy	4	8
Maksymowicz, WC	Agronomy	71	58
Wolfe, DE	Horticulture	1	0

¹ The specialist or diagnostician signing the Plant Diagnostic Form was considered the primary diagnoser.

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>
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AGRONOMIC CROPS

CORN (*Zea*)

Anthracnose	- Colletotrichum	1	0	1
Bacterial stalk rot	- Erwinia	5	0	5
Blue-eye (kernal)	- Penicillium	1	0	1
Chemical injury	- herbicide, growth regulator	25	0	25
Crazy top	- Sclerophthora	2	0	2
Damping-off	- Fusarium	1	0	1
Ear/Kernel rots	- Aspergillus	1	1	2
	- Diplodia	2	0	2
	- Fusarium	2	1	3
Environmental	- compaction	8	0	8
	- other stresses	8	3	11
Gray leaf spot	- Cercospora	13	3	16
Holcus spot	- Pseudomonas	3	0	3
Inadequate specimen, no disease		26		26
Insect injury		13	9	22
Nutritional	- zinc deficiency	3	0	3
	- others	8	1	9
Purple leaf sheath	- complex	2	0	2
Root rot	- Rhizoctonia	1	0	1
Rootless	- environmental	1	0	1
Rust, common	- Puccinia	1	0	1
Seedling blight	- Fusarium	1	1	2
	- Rhizoctonia	1	0	1
Southern leaf blight	- Cochliobulus	0	1	1
Stalk Rot	- Diplodia	1	0	1
	- Fusarium	1	0	1
	- Gibberella	0	1	1
Stewart's wilt	- Erwinia	2	0	2
Variegation	- genetic	1	0	1
Virus	- maize chlorotic dwarf	2	0	2
	- maize dwarf mosaic	1	1	2
Yellow leaf blight	- Phyllosticta	1	0	1

FORAGES

ALFALFA (*Medicago*)

Anthracnose	- Colletotrichum	1	0	1
Bacterial wilt	- Clavibacter	1	0	1
Chemical injury	- herbicide, insecticide	3	0	3
Crown/stem rot	- Sclerotinia	6	0	6
Damping-off	- Rhizoctonia	8	0	8
Downy mildew	- Peronospora	1	0	1
Environmental stresses		2	2	4
Inadequate specimen, no disease		13		13
Insect injury		4	2	6
Leaf spot	- Leptosphaerulina	6	2	8
	- Phoma	1	0	1
	- Stemphylium	0	1	1
Nutritional	- acid soil	4	0	4

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1 DIAGs</i>	<i>#2 DIAGs</i>	<i>TOTAL</i>
ALFALFA [cont]					
Root rot		- Aphanomyces	3	0	3
		- Pythium	1	0	1
		- Rhizoctonia	1	0	1
Southern blight		- Athelia	1	0	1
Spring black stem		- Phoma	1	0	1
Summer black stem		- Cercospora	7	0	7
CLOVER (Trifolium)					
Chemical injury		- growth regulator	1	0	1
Crown/stem rot		- Sclerotinia	2	0	2
No disease			1		1
Spring black stem		- Phoma	1	0	1
FESCUE (Fescuta)					
Environmental stress			1	0	1
MILLET (Panicum)					
Leaf spot		- Pyricularia	2	0	2
ORCHARDGRASS (Dactylis)					
Ergot		- Claviceps	1	0	1
No disease			1		1
<u>SOYBEAN</u>					
SOYBEAN (Glycine)					
Anthracnose		- Colletotrichum	1	0	1
Charcoal rot		- Macrophomina	4	0	4
Chemical injury		- herbicide, growth reg.	8	2	10
		- unknown	2	0	2
Cultural		- planting date	2	0	2
Downy mildew		- Peronospora	1	0	1
Environmental stresses			7	3	10
Frogeye		- Cercospora	0	1	1
Inadequate specimen, no disease			11		11
Insect injury			1	0	1
Leaf spot		- Septoria	1	0	1
Mutation		- genetic	1	0	1
Nutritional		- acid soil	0	1	1
		- potassium deficiency	1	0	1
		- manganese deficiency	1	0	1
Root/stem rot		- Fusarium	0	2	2
		- Phytophthora	3	0	3
		- Rhizoctonia	10	0	10
Soybean cyst nematode - on plant samples heterodera			0	1	1
		* in soil samples	2469		2469
		* absent in soil samples	713		713
(* soil submitted to Nematode Analysis Laboratory)					
Stem canker		- Diaporthe	1	0	1
Sudden death syndrome		- Fusarium	5	0	5
Virus		- bean pod mottle	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>SMALL GRAINS</u>					
BARLEY (<i>Hordeum</i>)					
	Environmental	- freeze injury	1	0	1
OAT (<i>Avena</i>)					
	Nutritional	- nitrogen deficiency	1	0	1
RYE (<i>Secale</i>)					
	Leaf spot	- Pyricularia	2	0	1
	No disease		2		2
SORGHUM (<i>Sorghum</i>)					
	Inadequate specimen, no disease		2		2
	Root rot	- Pythium	1	0	1
WHEAT (<i>Triticum</i>)					
	Black chaff	- Xanthomonas	1	0	1
	Black head mold	- Cladosporium	1	0	1
	Chemical injury	- growth regulator, herbicide	4	2	6
		- unknown	1	0	1
	Downy mildew	- Sclerophthora	1	0	1
	Environmental	- cold injury	6	2	8
		- other stresses	8	3	11
	Eyespot	- Pseudocecosporella	0	1	1
	Glume blotch	- Septoria	1	1	2
	Head scab	- Fusarium	10	1	11
	Inadequate specimen, no disease		17		17
	Insect injury		1	2	3
	Leaf blight	- Pseudomonas	0	2	2
	Leaf blotch	- Septoria	0	1	1
	Leaf spot	- physiological	0	1	1
	Nutritional	- acid soil	1	0	1
		- general	1	0	1
		- nitrogen deficiency	3	0	3
	Powdery mildew	- Erysiphe	8	2	10
	Rust/leaf	- Puccinia	1	1	2
	Seed rot	- Aspergillus	1	0	1
	Seedling blight	- Fusarium	1	0	1
	Sharp eyespot	- Rhizoctonia	2	0	2
	Take-all	- Gaeumannomyces	6	0	6
	Tan spot	- Pyrenophora	1	0	1
	Virus	- barley yellow dwarf	25	3	28
		- soilborne mosaic	1	0	1
		- spindle streak mosaic	4	2	6
		- streak mosaic	3	0	3
		- unknown	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>TOBACCO</u>					
TOBACCO (Nicotiana)					
Algae		- blue green, unknown	9	0	9
Angular leaf spot		- Pseudomonas	49	4	53
Anthracnose		- Colletotrichum	1	1	2
Bacterial soft rot		- Erwinia	22	4	26
Black root rot		- Thielaviopsis	44	4	48
Black shank		- Phytophthora	191	4	195
Blackleg		- Erwinia	18	9	27
Blue mold		- Peronospora	378	4	382
Brown spot		- Alternaria	1	2	3
Charcoal rot		- Macrophomina	1	0	1
Chemical injury		- disinfectant	1	0	1
		- fungicide	5	1	6
		- growth regulator	26	2	28
		- herbicide	30	3	33
		- insecticide	1	0	1
		- unknown	18	1	19
Collar rot		- Sclerotinia	8	1	9
Cultural		- transplant shock	3	0	3
		- others	13	3	16
Damping-off		- Pythium	4	0	4
		- Rhizoctonia	8	0	8
Early suckering		- environmental	3	0	3
Environmental		- cold injury	35	2	37
		- compaction	12	1	13
		- lightning	15	0	15
		- wet feet	15	1	16
		- weather scald	15	1	16
		- others	1	4	5
		- unknown	2	0	2
False broomrape		- unknown	2	0	2
Frenching		- metabolites	3	0	3
Frogeye		- Cercospora	41	6	47
Hollow stalk		- Erwinia	5	0	5
Improper curing		- greening	1	0	1
Inadequate specimen, no disease, unknown		150		150	
Insect injury			6	2	8
Leaf spot		- Alternaria	3	1	4
		- physiological	2	0	2
		- unknown	1	0	1
Mutation		- genetic	1	1	2
Nutritional		- acid soil	31	6	37
		- ammonia fertilizer	4	0	4
		- calcium deficiency	1	0	1
		- general	9	1	10
		- fertilizer burn	40	1	41
		- potassium deficiency	13	0	13
		- manganese toxicity	46	0	46
		- nitrogen deficiency	6	2	8
		- pH high	6	0	6
		- phosphorus deficiency	19	1	20

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1 DIAGs</i>	<i>#2 DIAGs</i>	<i>TOTAL</i>
TOBACCO (cont)					
		- soluble salts	10	2	12
		- urea toxicity	1	0	1
Oedema		- physiological	1	0	1
Physical injuries			5	0	5
Root knot nematode		- Meloidogyne	1	0	1
Root problem		- unknown	5	0	5
Root rot		- Pythium	23	6	29
		- Rhizoctonia	10	0	10
Soreshin		- Rhizoctonia	27	0	27
Stem rot		- Fusarium	1	0	1
Stunt		- Mycorrhizae	1	0	1
Target spot		- Rhizoctonia	91	12	103
Virus		- Alfalfa mosaic	13	2	15
		- complex	8	1	9
		- Potato Virus Y	1	0	1
		- poty virus	5	1	6
		- Tobacco etch	8	2	10
		- Tobacco mosaic	2	0	2
		- Tobacco ringspot	3	0	3
		- Tobacco streak	1	0	1
		- Tomato spotted wilt	93	5	98
		- unknown	3	1	4
Weather fleck		- ozone	2	0	2
Wilt		- Fusarium	3	1	4

FRUIT CROPS

SMALL FRUITS

BLUEBERRY (Vaccinium)

Canker		- unknown	1	0	1
No disease			1		1
Nutritional		- acid soil	1	0	1
		- iron deficiency	0	1	1
		- soluble salts	1	0	1
Root problem		- unknown	1	0	1

BRAMBLES - BLACKBERRY, and RASPBERRY (Rubus)

Anthraxnose		- Elsinoe	3	0	3
Cane blight		- Leptosphaeria	5	0	5
Chemical injury		- herbicide	1	0	1
Crown gall		- Agrobacterium	1	1	2
Environmental		- sunscald	1	0	1
Inadequate specimen, no disease			8		8
Insect injury			4	0	4
Leaf spot		- Septoria	2	0	2
		- Sphaerulina	1	0	1
Root rot		- Phytophthora	3	0	3
Rust, cane/leaf		- Kuehneola	1	0	1
Rust, orange		- Gymnoconia	1	0	1

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1 DIAGs</i>	<i>#2 DIAGs</i>	<i>TOTAL</i>
CURRENT and GOOSEBERRY (Ribes)					
	Leaf spot	- Septoria	1	0	1
	No disease		1		1
	Powdery mildew	- Sphaerotheca	1	0	1
GRAPE (Vitis)					
	Anthracnose	- Elsinoe	1	0	1
	Black rot	- Guignardia	12	0	12
	Bunch rot	- Botrytis	1	0	1
	Cane blight/spot	- Phomopsis	3	0	3
	Canker	- Botryosphaeria	1	0	1
	Insect injury		2	0	2
	No disease		6		6
	Scorch	- physiological	1	0	1
STRAWBERRY (Fragaria)					
	Anthracnose	- Colletotrichum	1	0	1
	Black root	- complex	6	0	6
		- Rhizoctonia	2	0	2
		- unknown	1	0	1
	Gray mold	- Botrytis	1	1	2
	Inadequate specimen, no disease		7		7
	Insect injury		1	2	3
	Leaf blight	- Phomopsis	2	1	3
	Leaf spot	- Mycosphaerella	1	1	2
	Nutritional	- nitrogen deficiency	1	0	1
	Powdery mildew	- Sphaerotheca	1	0	1
	Slime mold	- species	1	0	1
<u>TREE FRUITS</u>					
APPLE (Malus)					
	Bitter rot	- Glomerella	9	0	9
	Black rot	- Botryosphaeria	1	1	2
	Burr knot	- unknown	0	1	1
	Canker rot	- Botryosphaeria	1	0	1
	Cedar apple rust	- Gymnosporangium	0	1	1
	Cedar hawthorn rust	- Gymnosporangium	14	0	14
	Chemical injury	- herbicide	2	0	2
		- others	4	0	4
	Collar rot	- Phytophthora	1	0	1
	Crown gall	- Agrobacterium	1	0	1
	Dieback	- unknown	1	0	1
	Environmental stresses		3	1	4
	Fire blight	- Erwinia	34	0	34
	Flyspeck	- Schizothyrium	3	3	6
	Frogeye	- Botryosphaeria	6	1	7
	Inadequate specimen, no disease		19		19
	Insect injury		9	2	11
	Nutritional	- general	1	0	1

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1 DIAGs</i>	<i>#2 DIAGs</i>	<i>TOTAL</i>
APPLE [cont]					
	Pollination problem	- unknown	1	0	1
	Powdery mildew	- Podosphaera	2	0	2
	Russet	- environmental	1	0	1
	Sooty blotch	- Gloeodes	2	5	7
	Thread blight	- Ceratobasidium	1	0	1
	Wood decay	- basidiomycete	1	0	1
CHERRY (Prunus)					
	Black knot	- Apiosporina	1	0	1
	Canker	- fungal	1	0	1
	Chemical injury	- herbicide	1	0	1
	Environmental stresses		7	0	7
	Gummosis	- unknown	1	0	1
	Inadequate specimen, no disease		5		5
	Insect injury		3	0	3
	Leaf spot	- Blumeriella	3	0	3
	Lichen	- species	1	0	1
	Root rot	- Phytophthora	1	0	1
	Wood decay	- Oxyporus	1	0	1
PEACH, NECTARINE and APRICOT (Prunus)					
	Bacterial spot	- Xanthomonas	1	0	1
	Brown rot	- Monilinia	1	1	2
	Canker	- Leucostoma	1	0	1
	Collar rot	- Phytophthora	1	0	1
	Fruit rot	- Rhizopus	1	0	1
	Gummosis	- injury	1	0	1
		- unknown	1	0	1
	Insect injury		5	2	7
	No disease		4		4
	Insect injury		3	1	4
	Scab	- Cladosporium	2	0	2
		- Fusicladium	2	0	2
PEAR (Pyrus)					
	Chemical injury	- unknown	1	0	1
	Environmental	- cold injury	1	0	1
	Fire blight	- Erwinia	5	0	5
	No disease		2		2
	Russet	- unknown	1	0	1
PECAN (Carya)					
	Insect injury		6	0	6
	No disease		1		1
	Scab	- Fusicladium	0	1	1
PLUM (Prunus)					
	Black knot	- Apiosporina	14	0	14
	Inadequate specimen, no disease		2		2
	Insect injury		3	0	3
	Lichen	- species	1	0	1

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1 DIAGs</i>	<i>#2 DIAGs</i>	<i>TOTAL</i>
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HERBS

BAY (Laurus)

Environmental	- sunscald	1	0	1
Nutritional	- general	1	0	1

GARLIC (Allium)

Bacterial soft rot	- Erwinia	1	0	1
Insect injury		3	0	3

GINSENG (Panax)

Anthracnose	- Colletotrichum	1	0	1
Blight	- Alternaria	3	0	3
No disease		1		1
Root rot	- Phytophthora	1	0	1

LAVENDER (Lavandula)

Root rot	- fungal	1	0	1
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PARSLEY (Petroselinum)

Insect injury		1	0	1
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SAGE (Salvia)

No disease		2		2
Root rot	- Pythium	1	0	1

IDENTIFICATIONS

FUNGAL IDENTIFICATION

Agaricus	- species	1		1
Basidiomycete	- mushroom	1		1
Basidiomycete	- puffball	1		1
Cantharellus	- species	1		1
Clitocybe	- species	2		2
Fungal	- unknown	1		1
Inadequate specimen		1		1
Lepiota	- cepaestipes	1		1
Mutinus	- caninus	1		1
Mycena	- species	1		1
Scleroderma	- aurantium	1		1
	- species	1		1
Slime mold	- species	3		3
Sooty mold	- species	1		1
Sporobolomyces	- species	1		1
Stemphylium	- species	1		1
Suillus	- species	1		1

LICHEN IDENTIFICATION

Lichen	- species	1		1
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<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1 DIAGs</i>	<i>#2 DIAGs</i>	<i>TOTAL</i>
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PLANT IDENTIFICATIONS

Aralia	- spinosa	1		1
Broussonetia	- papyrifera	1		1
Castanea	- species	1		1
Chaenomeles	- speciosa	1		1
Cucurbita	- species	2		2
Euonymus	- atropurpurea	1		1
Juglans	- ailanthifoli	1		1
Liverwort	- species	1		1
Momordica	- charantia	1		1
Nyssa	- aquatica	1		1
Paspalum	- species	1		1
Paulownia	- tomentosa	2		2
Pinus	- strobis	1		1
Populus	- species	1		1
Prunus	- species	2		2
Pyrus	- calleryana	2		2
Sorghum	- species	1		1
Ulmus	- parvifolia	1		1
Unknown		1		1

MISCELLANEOUS

ALFALFA SOIL

Aphanomyces	- euteiches	1	0	1
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FORAGE SOIL

No disease		3		3
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HOUSEPLANT

Inadequate specimen		1		1
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KENAF (Hibiscus)

Cultural	- oedema	1	0	1
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MORNING GLORY (Ipomoea)

White rust	- Albugo	1	0	1
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NIGHTSHADE (Solanum)

Damping-off	- Rhizoctonia	1	0	1
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SOIL

No disease		1		1
Nutritional	- acid soil	1	0	1
Pythium	- species	1	0	1

TOBACCO SOIL

No disease		1		1
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<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1 DIAGs</i>	<i>#2 DIAGs</i>	<i>TOTAL</i>
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ORNAMENTALS

HERBACEOUS ORNAMENTALS and INDOOR PLANTS

AFRICAN VIOLET (Saintpaulia)

Insect injury			2	0	2
No disease			1		1

AJUGA (Ajuga)

Bacterial soft rot	- Erwinia		1	0	1
No disease			1		1
Southern blight	- Athelia		4	0	4

ALOE (Aloe)

No disease			1		1
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AMARANTH (Gomphrena)

Leaf spot	- Alternaria		1	0	1
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AMARYLLIS (Amaryllis)

Leaf scorch	- unknown		1	0	1
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ANEMONE (Anemone)

Root rot	- Rhizoctonia		1	0	1
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ASTER (Aster)

No disease			2		2
Root rot	- Phytophthora		1	0	1

BEGONIA (Begonia)

Environmental	- stress		1	0	1
Gray mold	- Botrytis		1	0	1
Leaf spot	- physiological		1	0	1
No disease			1		1

BENJAMIN FIG (Ficus)

Environmental	- stress		4	0	4
Insect injury			0	1	1
Sooty mold	- species		1	0	1

BERGENIA (Bergenia)

Black root rot	- Thielaviopsis		1	0	1
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BLACK SNAKE ROOT (Cimicifuga)

Leaf spot	- Ascochyta		1	0	1
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CACTUS (various)

Insect injury			1	0	1
No disease			1		1

CALCEOLARIA (Calceolaria)

Virus	- impatiens necrotic spot		1	0	1
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<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1 DIAGs</i>	<i>#2 DIAGs</i>	<i>TOTAL</i>
CANDYTUFT (Iberis)					
	Root/stem rot	- Pythium	1	0	1
CHRYSANTHEMUM (Chrysanthemum)					
	Chemical injury	- unknown	1	0	1
	Cultural	- overwatering	0	1	1
	Environmental stresses		2	0	2
	Gray mold	- Botrytis	1	0	1
	Insect injury		3	1	4
	Leaf blight	- Alternaria	1	0	1
	Leaf spot	- Cyldrosporium	1	0	1
	No disease		8		8
	Nutritional	- acid soil	1	0	1
		- calcium deficiency	1	0	1
		- magnesium deficiency	1	0	1
		- soluble salts	1	0	1
	Root rot	- Pythium	1	0	1
	Root/stem rot	- Rhizoctonia	3	1	4
	Wilt	- Fusarium	1	0	1
CINERARIA (Senecio)					
	Virus	- impatiens necrotic spot	1	0	1
CLEMATIS (Clematis)					
	Chemical injury	- herbicide	1	0	1
	Nutritional	- nitrogen deficiency	1	0	1
COLUMBINE (Aquilegia)					
	Insect injury		1	0	1
CONEFLOWER (Dracopis)					
	No disease		1		1
CORABELLS (Heuchera)					
	Root rot	- Rhizoctonia	1	0	1
COREOPSIS (Coreopsis)					
	Root rot	- Pythium	1	0	1
		- Rhizoctonia	1	0	1
CYCLAMEN (Cyclamen)					
	Virus	- impatiens necrotic spot	1	0	1
DAHLIA (Dahlia)					
	Gray mold	- Botrytis	0	1	1
	Insect injury		1	0	1
DAISY (Chrysanthemum)					
	Root rot	- Fusarium	1	0	1
DAYLILY (Hemerocallis)					
	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>
DELPHINIUM (Delphinium)					
	Southern blight	- Athelia	1	0	1
DIANTHUS (Dianthus)					
	Bacterial leaf spot	- Pseudomonas	1	0	1
DIEFFENBACHIA (Dieffenbachia)					
	Anthraxnose	- Colletotrichum	1	0	1
	Bacterial soft rot	- Erwinia	2	0	2
	Environmental	- cold injury	1	0	1
DRACAENA (Dracaena)					
	Cultural	- oedema	1	0	1
	No disease		1		1
ERYNGIUM (Eryngium)					
	Stem rot	- Sclerotinia	1	0	1
EUCALYPTUS (Eucalyptus)					
	Environmental	- stress	1	0	1
FERN (various)					
	Environmental	- stress	1	0	1
	No disease		2		2
	Nutritional	- soluble salts	1	0	1
FOXGLOVE (Digitalis)					
	Crown rot	- Rhizoctonia	2	0	2
	Insect injury		1	0	1
FUCHSIA (Fuchsia)					
	Bacterial soft rot	- Erwinia	1	0	1
	Insect injury		1	0	1
GARDENIA (Gardenia)					
	Environmental	- stress	1	0	1
	Leaf spot	- Pestalotia	1	0	1
GERANIUM (Pelargonium)					
	Anthraxnose	- Colletotrichum	1	0	1
	Bacterial blight	- Xanthomonas	9	0	9
	Black root rot	- Thielaviopsis	0	1	1
	Chemical injury	- fumigant	1	0	1
	Cultural	- oedema	6	0	6
		- overwatering	1	0	1
	Damping-off	- unknown	1	0	1
	Environmental	- stress	1	0	1
	Gray mold	- Botrytis	3	0	3
	Inadequate specimen, no disease		5		5
	Nutritional	- general	2	0	2
		- nitrogen deficiency	2	0	2
		- pH high	2	0	2
	Virus	- unknown	2	0	2

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1 DIAGs</i>	<i>#2 DIAGs</i>	<i>TOTAL</i>
GERBERA (Gerbera)					
	Root rot	- Pythium	1	0	1
GOATSBEAR (Aruncus)					
	Root rot	- Rhizoctonia	1	0	1
GOLDENSEAL (Hydrastis)					
	Blight	- Botrytis	1	0	1
HESPERIS (Hesperis)					
	Crown rot	- Phytophthora	1	0	1
HOLLYHOCK (Althaea)					
	Insect injury		1	0	1
	Rust	- Puccinia	2	0	2
HOSTA (Hosta)					
	Chemical injury	- herbicide	1	0	1
	Crown rot	- Pythium	0	2	2
	Insect injury		1	0	1
	No disease		1		1
	Root rot	- Rhizoctonia	1	0	1
	Southern blight	- Athelia	1	0	1
	Stem rot	- Sclerotinia	1	0	1
IMPATIENS (Impatiens)					
	Cultural	- overwatering	1	0	1
	Dodder	- dodder	1	0	1
	Environmental stresses		4	0	4
	Gray mold	- Botrytis	3	0	3
	Inadequate specimen, no disease		6		6
	Insect injury		2	0	2
	Nutritional	- general	2	0	2
		- nitrogen deficiency	1	0	1
	Root rot	- Rhizoctonia	2	0	2
	Virus	- Impatiens necrotic spot	8	0	8
		- unknown	2	0	2
IRIS (Iris)					
	Chemical injury	- growth regulator	1	0	1
	Leaf spot	- Heterosporium	1	0	1
		- Mycosphaerella	1	0	1
IVY (various)					
	Bacterial spot	- Xanthomonas	2	0	2
	Environmental	- winter injury	1	0	1
	Insect injury		2	0	2
	Leaf spot	- Colletotrichum	3	0	3
	No disease		1		1
	Root rot	- Rhizoctonia	2	1	3

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JACK-IN-THE-PULPIT (Arisaema)					
	Rust	- Uromyces	1	0	1
JADEPLANT (Crassula)					
	Cultural	- oedema	1	0	1
	Insect injury		1	0	1
JAPANESE LANTERN (Physalis)					
	Cultural	- oedema	1	0	1
	No disease		1		1
LARKSPUR (Delphinium)					
	Stem rot	- Fusarium	1	0	1
LILY (Lilium)					
	Chemical injury	- growth regulator	0	1	1
	Insect injury		1	0	1
	No disease		1		1
	Virus	- lily symptomless	1	0	1
		- unknown	1	0	1
LISIANTHUS (Lisianthus)					
	Gray mold	- Botrytis	1	0	1
MARIGOLD (Tagetes)					
	Gray mold	- Botrytis	1	0	1
	Leaf spot	- Alternaria	2	0	2
	Insect injury		1	0	1
	No disease		1		1
NORFOLK ISLAND PINE (Araucaria)					
	Environmental	- stress	2	0	2
ORCHID (various)					
	No disease		1		1
	Virus	- unknown	2	0	2
PACHYSANDRA (Pachysandra)					
	Blight	- Volutella	1	0	1
	Leaf/stem blight	- Pseudonectria	3	0	3
	No disease		1		1
PALM (various)					
	No disease		1		1
PANSY (Viola)					
	Black root rot	- Thielaviopsis	1	0	1
	Leaf spot	- Alternaria	1	0	1
		- fungal	1	0	1
	Root rot	- Rhizoctonia	1	0	1

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PEONY (Paeonia)					
	Gray mold	- Botrytis	2	0	2
	Stem rot	- Sclerotinia	1	0	1
	Wilt	- Verticillium	2	0	2
PETUNIA (Petunia)					
	Root rot	- Fusarium	1	0	1
	Root/stem rot	- Rhizoctonia	2	0	2
PHLOX (Phlox)					
	Leaf spot	- Phyllosticta	1	0	1
	Powdery mildew	- Erysiphe	1	0	1
	Southern blight	- Athelia	1	0	1
	Stem rot	- Fusarium	1	0	1
	Virus	- impatiens necrotic spot	1	0	1
	Wilt	- Verticillium	1	0	1
PLEOMELE (Pleomele)					
	Leaf/stem rot	- Erwinia	1	0	1
PLUMERIA (Plumeria)					
	Environmental	- stress	1	0	1
POINSETTIA (Euphorbia)					
	Cultural	- overwatering	2	0	2
	Inadequate specimen, no disease		4		4
	Insect injury		1	0	1
	Root rot	- Pythium	1	1	2
	Root/stem rot	- fungal	1	0	1
		- Fusarium	1	0	1
		- Rhizoctonia	1	0	1
PORTULACA (Portulaca)					
	No disease		1		1
	Virus	- potex	1	0	1
		- unknown	2	0	2
POTENTILLA (Potentilla)					
	Root problem	- unknown	1	0	1
PRIMROSE (Primula)					
	Virus	- impatiens necrotic spot	1	0	1
RUDBECKIA (Rudbeckia)					
	Damping-off	- Rhizoctonia	1	0	1
	Southern blight	- Athelia	1	0	1
SCHEFFLERA (Brassaia)					
	Anthracnose	- Colletotrichum	0	1	1
	Cultural	- oedema	1	0	1
	Insect injury		5	1	6
	Leaf spot	- Alternaria	1	0	1

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SEDUM (Sedum)					
	Leaf spot	- Phyllosticta	1	0	1
SHAMROCK (Oxalis)					
	No disease		1		1
SNAPDRAGON (Antirrhinum)					
	Damping-off	- Rhizoctonia	2	0	2
	Gray mold	- Botrytis	1	0	1
	Stem rot	- Fusarium	1	0	1
	Walnut wilt	- juglone	1	0	1
SPATHIPHYLLUM (Spathiphyllum)					
	Anthraxnose	- Colletotrichum	1	0	1
SPIDER PLANT (Chlorophytum)					
	Environmental	- stress	1	0	1
STATICE (Limonium)					
	Leaf spot	- Cercospora	1	0	1
TREE TOMATO (Cyphomandra)					
	Insect injury		1	0	1
TURTLEHEAD (Chelone)					
	No disease		1		1
VERONICA (Veronica)					
	No disease		2		2
	Nutritional	- general	1	0	1
VINCA (Vinca)					
	Canker/dieback	- Phomopsis	2	0	2
	Chemical	- herbicide	2	0	2
	Gray mold	- Botrytis	3	0	3
	Leaf blight	- Sclerotinia	1	0	1
	Nutritional	- nitrogen deficiency	1	0	1
	Root rot	- Rhizoctonia	2	0	2
	Southern blight	- Athelia	1	0	1
	Wilt	- Phytophthora	1	0	1
VIOLET (Viola)					
	Cultural	- oedema	1	0	1
WANDERING JEW (Zebrina)					
	Virus	- unknown	1	0	1
YUCCA (Yucca)					
	Leaf spot	- Coniothyrium	2	0	2
ZINNIA (Zinnia)					
	Leaf spot	- Alternaria	1	0	1

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<u>TURFGRASS</u>					
BENTGRASS (Agrostis)					
	Anthracnose	- Colletotrichum	5	0	5
	Blight	- Pythium	5	2	7
	Brown patch	- Rhizoctonia	4	0	4
	Gray leaf spot	- Cercospora	1	0	1
	Inadequate specimen, no disease		13		13
	Leaf blight	- Leptosphaerulina	2	0	2
	Leaf spot	- Rhizoctonia	1	0	1
	Local dry spot	- environmental	2	0	2
	Nutritional	- general	1	0	1
	Root rot	- Rhizoctonia	1	0	1
	Summer patch	- Magnaporthe	2	0	2
	Take-all	- Gaeumannomyces	1	0	1
BLUEGRASS (Poa)					
	Cultural	- heavy thatch	1	0	1
	Melting out	- Dreschlera	1	0	1
	Necrotic ring spot	- Leptosphaeria	1	1	2
	No disease		2		2
	Nutritional	- fertilizer burn	1	0	1
	Powdery mildew	- Erysiphe	1	0	1
	Red Thread	- Laetisaria	2	0	2
	Rust	- Puccinia	1	0	1
	Slime mold	- species	1	0	1
	Summer patch	- Magnaporthe	6	0	6
FESCUE (Festuca)					
	Anthracnose	- Colletotrichum	0	2	2
	Brown patch	- Rhizoctonia	22	0	22
	Cultural	- heavy thatch	2	0	2
	Environmental	- stress	3	0	3
	Inadequate specimen, no disease		7		7
	Necrotic ring spot	- Leptosphaeria	1	0	1
	Nutritional	- soluble salts	1	0	1
	Red Thread	- Laetisaria	2	0	2
	Scab	- Fusarium	1	0	1
	Slime mold	- species	3	0	3
	Summer patch	- Magnaporthe	1	0	1
RYEGRASS (Lolium)					
	Blight	- Pythium	2	0	2
	Brown patch	- Rhizoctonia	7	0	7
	Gray leaf spot	- Pyricularia	3	0	3
	Leaf blight	- Leptosphaerulina	2	0	2
	No disease		1		1
	Rust	- Puccinia	0	1	1

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TURF (various)					
	Brown patch	- Rhizoctonia	3	0	3
	Dollar spot	- Lanzia./Moell.	1	0	1
	inadequate specimen, no disease		9		9
	Necrotic ring spot	- Leptosphaeria	2	0	2
	Nutritional	- fertilizer burn	1	0	1
	Powdery mildew	- Erysiphe	1	0	1
	Red Thread	- Lactisaria	1	0	1
	Root rot	- Rhizoctonia	1	0	1
	Slime mold	- species	2	0	2
	Smut	- species	1	0	1
ZOYSIA (Zoysia)					
	No disease		1		1
	Root rot	- Rhizoctonia	1	0	1
<u>WOODY ORNAMENTALS</u>					
ALDER (Alnus)					
	Insect injury		1	0	1
ARBORVITAE (Thuja)					
	Environmental	- decline	1	0	1
	Inadequate specimen, no disease		5		5
	Insect injury		2	0	2
	Needle drop	- normal	1	0	1
	Sooty mold	- species	1	0	1
ASH (Fraxinus)					
	Anthracnose	- Discula	2	0	2
	Canker	- Botryosphaeria	1	0	1
	Cultural	- transplant shock	2	0	2
	Environmental	- stress	1	0	1
	Fireblight	- Erwinia	1	0	1
	Insect injury		3	0	3
	Leaf scorch	- drought			
	Leaf spot	- Cercospora	2	0	2
	No disease		1		1
	Wilt	- Verticillium	1	0	1
AZALEA - See listing under RHODODENDRON					
BARBERRY (Berberis)					
	Canker	- Botryosphaeria	1	0	1
	Cultural	- poor plants	1	0	1
	Environmental	- winter injury	3	0	3
	Inadequate specimen		1		1
	Insect injury		1	0	1

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BEECH (Fagus)	Insect injury		1	0	1
BIRCH (Betula)	Decline	- unknown	1	0	1
	Environmental	- decline	1	0	1
	Leaf scorch	- unknown	1	0	1
	Leaf spot	- Gloeosporium	1	0	1
		- Marssonina	1	0	1
	No disease		2		2
BOXWOOD (Buxus)	Canker	- Pseudonectria	2	0	2
	Environmental stresses		2	0	2
	Insect injury		1	0	1
	No disease		1		1
	Nutritional	- general	1	0	1
BUCKEYE (Aesculus)	Leaf blotch	- Guignardia	1	0	1
	No disease		1		1
BUTTERFLY BUSH (Buddleia)	No disease		1		1
CHERRY (Prunus)	Environmental	- winter injury	1	0	1
	No disease		4		4
CHESTNUT (Castanea)	Leaf spot	- physiological	1	0	1
COTONEASTER (Cotoneaster)	Insect injury		1	0	1
CRABAPPLE (Malus)	Chemical	- burn	1	0	1
	Fire blight	- Erwinia	10	0	10
	Frogeye	- Botryosphaeria	1	0	1
	Insect injury		2	1	3
	No disease		1		1
	Scab	- Venturia	3	0	3
CYPRESS (Cupressocyparis)	No disease		1		1
	Nutritional	- unknown	1	0	1
	Tip blight	- Kabatina	1	0	1
DEUTZIA (Deutzia)	Environmental	- drought	1	0	1

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DOGWOOD (Cornus)					
	Anthracnose	- Discula	13	0	13
	Canker	- Botryosphaeria	2	0	2
	Chemical injury	- growth regulator	5	0	5
		- herbicide	1	0	1
	Collar rot	- Phytophthora	1	0	1
	Cultural	- poor plants	1	0	1
		- transplant shock	13	0	13
	Environmental stresses		23	0	23
	Inadequate specimen, no disease		15		15
	Insect injury		3	0	3
	Leaf scorch	- environmental	4	0	4
		- unknown	1	0	1
	Leaf spot	- physiological	1	0	1
		- Septoria	5	0	5
	Lichen	- species	0	1	1
	Nutritional	- pH high	1	0	1
	Powdery mildew	- species	50	5	50
	Spot anthracnose	- Elsinoe	6	0	6
DOUGLAS FIR (Pseudotsuga)					
	Cultural	- transplant shock	1	0	1
ELM (Ulmus)					
	Anthracnose	- Gloeosporium	3	0	3
	Dutch elm disease	- Ceratocystis	4	0	4
	Environmental	- stress	1	0	1
	Inadequate specimen, no disease		4		4
	Insect injury		6	0	6
	Leaf spot	- unknown	0	1	1
EUONYMUS (Euonymus)					
	Chemical injury	- herbicide	1	0	1
	Crown gall	- Agrobacterium	1	0	1
	Cultural	- transplant shock	2	0	2
	Environmental stresses		2	1	3
	Insect injury		8	1	9
	Mutation	- genetic	1	0	1
	No disease		9		9
	Nutritional	- potassium deficiency	1	0	1
		- pH high	1	0	1
	Powdery mildew	- Microsphaera	2	0	2
	Root problem	- unknown	1	0	1
FIR (Abies)					
	Environmental	- stress	1	0	1
	No disease		6		6
	Root problem	- unknown	1	0	1
	Root rot	- Phytophthora	1	0	1

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FORSYTHIA (Forsythia)					
	Chemical injury	- growth regulator	1	0	1
	Environmental	- poor soil	1	0	1
	Root rot	- Phytophthora	2	0	2
	Stem gall	- Phomopsis	1	0	1
	Wilt	- Fusarium	1	0	1
	Wood decay	- unknown	1	0	1
FRINGETREE (Chionanthus)					
	Leaf spot	- Cercospora	1	0	1
GINKO (Ginko)					
	Environmental	- scorch	1	0	1
GOLDENRAINTREE (Koelreuteria)					
	Leaf spot	- Cercospora	1	0	1
	Insect injury		0	1	1
	Physical injury	- mower	1	0	1
HAWTHORN (Crataegus)					
	Cedar-quince rust	- Gymnosporangium	1	0	1
	Inadequate specimen, no disease		3		3
	Insect injury		1	0	1
	Root rot	- Xylaria	1	0	1
HEMLOCK (Tsuga)					
	Bark crack	- environmental	1	0	1
	Cultural	- transplant shock	3	0	3
	Environmental stresses		4	1	5
	Inadequate specimen, no disease		2		2
	Insect injury		2	0	2
	Root problem	- unknown	1	0	1
	Root rot	- Phytophthora	3	0	3
HIBISCUS (Hibiscus)					
	Anthracnose	- Colletotrichum	1	0	1
	Chemical injury	- growth regulator	2	0	2
	Inadequate specimen, no disease		4		4
	Insect injury		1	0	1
HICKORY (Carya)					
	Insect injury		3	0	3
HOLLY (Ilex)					
	Anthracnose	- Gloeosporium	1	0	1
	Black root rot	- Thielaviopsis	18	0	18
	Chemical injury	- unknown	1	0	1
	Cultural	- improper depth	1	0	1
		- transplant shock	2	1	3
	Environmental stresses		6	0	6
	Inadequate specimen, no disease		13		13

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HOLLY [cont]					
	Insect injury		2	1	3
	Leaf scorch	- unknown	1	0	1
	Leaf spot	- fungal	1	1	2
	Nutritional	- iron deficiency	1	1	2
	Sooty mold	- species	1	0	1
HONEYSUCKLE (Lonicera)					
	Insect injury		1	0	1
	No disease		1		1
HORNBEAM (Carpinus)					
	Insect injury		1	0	1
HYDRANGEA (Hydrangea)					
	Blight	- Botrytis	1	0	1
	Canker	- Botryosphaeria	1	0	1
	Insect injury		1	0	1
	No disease		1		1
JUNIPER and RED CEDAR (Juniperus)					
	Blight	- Cercospora	1	0	1
	Cedar/apple rust	- Gymnosporangium	4	0	4
	Cedar/quince rust	- Gymnosporangium	2	0	2
	Cultural	- poor plants	2	0	2
		- transplant shock	1	0	1
	Environmental stresses		6	1	7
	Insect injury		8	4	12
	Leaf spot	- Cercospora	2	0	2
	No disease		8		8
	Root problem	- unknown	1	0	1
	Root rot	- Phytophthora	1	0	1
	Slime mold	- species	1	0	1
	Twig blight	- Kabatina	20	0	20
		- Phomopsis	2	0	2
	Wood decay	- Fomes	1	0	1
KATSURATREE (Cercidiphyllum)					
	Sapstreak	- Ceratocystis	1	0	1
LILAC (Syringa)					
	Bacterial blight	- Pseudomonas	1	0	1
	Inadequate specimen		1		1
	Insect injury		2	0	2
	Leaf spot	- Gloeosporium	1	0	1
		- Heterosporium	1	0	1
		- Phyllosticta	2	0	2
		- physiological	1	0	1
	Powdery mildew	- Microsphaera	3	1	4
	Root rot	- Rhizoctonia	1	0	1

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LINDEN (Tilia)	No disease		1		1
LOCUST (Robinia)	Canker	- Thyronectria	1	0	1
	Cultural	- transplant shock	1	0	1
	Insect injury		1	1	2
MAGNOLIA (Magnolia)	Cultural	- transplant shock	1	0	1
	Environmental stresses		6	0	6
	Insect injury		4	1	5
	Powdery mildew	- species	1	0	1
	Sooty mold	- species	0	1	1
	Wilt	- Verticillium	1	0	1
MAHONIA (Mahonia)	Environmental	- winter injury	1	0	1
MAPLE (Acer)	Anthracnose	- Discula	2	0	2
		- Kabatiella	9	0	9
	Bacterial scorch	- Xylella	2	0	2
	Chemical injury	- growth regulator	1	0	1
		- herbicide	1	0	1
		- unknown	1	0	1
	Cultural	- transplant shock	10	0	10
	Decline	- unknown	2	0	2
	Environmental stresses		14	0	14
	Girdling root	- cultural	4	0	4
	Inadequate specimen, no disease		17		17
	Insect injury		15	2	17
	Leaf scorch	- environmental	2	0	2
		- unknown	2	0	2
	Leaf spot	- Phyllosticta	5	0	5
		- physiological	2	0	2
	Nutritional	- soluble salts	1	0	1
	Root problem	- unknown	2	0	2
	Root rot	- Pythium	1	0	1
	Sooty mold	- species	1	0	1
	Tar spot	- Rhytisma	1	0	1
	Wilt	- Verticillium	10	0	10
MICROBIOTA (Microbiota)	Environmental	- stress	1	0	1
	No disease		1		1
MULBERRY (Morus)	Leaf spot	- Septoria	1	0	1
	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>
NANDINA (Nandina)					
	Root rot	- Pythium	1	0	1
OAK (Quercus)					
	Anthracnose	- Apiognomonia	4	0	4
	Bacterial scorch	- Xylella	11	0	11
	Canker	- fungal	1	0	1
	Chemical injury	- growth regulator	5	0	5
		- herbicide	2	0	2
	Cultural	- transplant shock	5	0	5
	Environmental stresses		7	0	7
	Inadequate specimen, no disease		17		17
	Insect injury		35	2	37
	Leaf blister	- Taphrina	5	0	5
	Leaf spot	- Elsinoe	2	0	2
		- Tubakia	20	1	21
	Nutritional	- general	1	0	1
		- pH high	1	0	1
	Powdery mildew	- species	1	3	4
	Root rot	- Ganoderma	1	0	1
	Wilt	- Ceratocystis	1	0	1
	Wood decay	- unknown	1	0	1
PAULOWNIA (Paulownia)					
	Chemical injury	- growth regulator	1	0	1
	Nutritional	- fertilizer burn	1	0	1
PEAR (Pyrus)					
	Chemical injury	- growth regulator	1	0	1
		- unknown	1	0	1
	Cultural	- oedema	1	0	1
		- transplant shock	3	0	3
	Fire blight	- Erwinia	13	0	13
	Insect injury		3	1	4
	Leaf scorch	- environmental	2	0	2
		- unknown	1	0	1
	Leaf spot	- Fabraea	1	0	1
		- Phoma	1	0	1
		- Phyllosticta	1	0	1
	No disease		3		3
	Wood decay	- basidiomycete	2	0	2
PECAN (Carya)					
	Insect injury		1	0	1
	No disease		2		2
PERSIMMON (Diospyros)					
	Anthracnose	- Colletotrichum	1	0	1
PIERIS (Pieris)					
	No disease		2		2
	Root rot	- Phytophthora	1	0	1

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1 DIAGs</i>	<i>#2 DIAGs</i>	<i>TOTAL</i>
PINE (Pinus)					
	Air pollution	- ozone	1	0	1
	Brown spot	- Mycosphaerella	0	1	1
	Canker	- Atropellis	3	0	3
	Chemical injury	- herbicide	1	0	1
		- unknown	2	0	2
	Cultural	- drought	1	0	1
		- poor plants	1	0	1
		- transplant shock	8	0	8
	Dieback	- unknown	1	0	1
	Environmental stresses		16	3	19
	Inadequate specimen, no disease		28		28
	Insect injury		16	3	19
	Needle cast	- Lophodermium	8	0	8
		- Rhizosphaera	1	0	1
	Needle drop	- normal	1	0	1
	Needle rust	- Coleosporium	3	0	3
	Needle tip burn	- environmental	2	0	2
		- unknown	3	0	3
	Nutritional	- pH high	1	0	1
	Physical injury	- mower	1	0	1
		- unknown	1	0	1
	Pinewood nematode	- Bursaphelencus	11	0	11
	Root problem	- unknown	1	0	1
	Root rot	- Phytophthora	3	0	3
	Sooty mold	- species	4	0	4
	Tip blight	- Sphaeropsis	20	0	20
	White pine decline	- environmental	31	1	32
	White pine root decline	- Verticicladiella	4	0	4
PLUM (Prunus)					
	Black knot	- Apiosporina	4	0	4
	Environmental	- cold injury	1	0	1
	Insect injury		1	0	1
	No disease		1		1
	Root/crown rot	- Phytophthora	1	0	1
POPLAR (Populus)					
	Anthraxnose	- Discula	1	0	1
	Leaf spot	- Marssonina	1	0	1
	No disease		3		3
PRIVET (Ligustrum)					
	Environmental	- decline	1	0	1
	Insect injury		1	0	1
	No disease		1		1
PYRACANTHA (Pyracantha)					
	Canker	- Botryosphaeria	1	0	1
	Fire blight	- Erwinia	1	0	1
	Scab	- Spilocaea	2	0	2

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1 DIAGs</i>	<i>#2 DIAGs</i>	<i>TOTAL</i>
REDBUD (Cercis)					
	Anthracnose	- Monostichella	1	0	1
	Canker	- Botryosphaeria	1	0	1
	Cultural	- transplant shock	1	0	1
	Inadequate specimen, no disease		5		5
	Insect injury		1	0	1
	Leaf spot	- Mycosphaera	1	0	1
		- Physiological	1	0	1
RHODODENDRON and AZALEA (Rhododendron)					
	Crown rot	- Phytophthora	1	0	1
	Cultural	- transplant shock	3	0	3
	Dieback	- Botryosphaeria	7	1	8
		- Phomopsis	1	0	1
	Environmental stresses		5	0	5
	Gray blight	- Pestalotiopsis	1	0	1
	Inadequate specimen, no disease		12		12
	Insect injury		17	1	18
	Leaf/flower gall	- Exobasidium	5	0	5
	Leaf spot	- Entomosporium	0	1	1
		- Septoria	1	0	1
	Nutritional	- pH high	1	0	1
	Powdery mildew	- species	2	0	2
	Root rot	- Phytophthora	5	0	5
ROSE (Rosa)					
	Black spot	- Diplocarpon	8	0	8
	Bud/twig blight	- Botrytis	1	0	1
	Chemical injury	- herbicide	3	0	3
		- unknown	1	0	1
	Common canker	- Leptosphaeria	2	0	2
	Crown gall	- Agrobacterium	2	0	2
	Cultural	- flooding	1	0	1
		- transplant shock	1	0	1
	Environmental stresses		2	0	2
	Gray mold	- Botrytis	1	0	1
	Inadequate specimen, no disease		10		10
	Insect injury		0	3	3
	Nutritional	- fertilizer burn	1	0	1
		- general	1	0	1
		- pH high	1	0	1
	Powdery mildew	- Sphaerotheca	6	0	6
	Root rot	- Pythium	1	1	2
		- Rhizoctonia	1	0	1
	Rosette	- unknown	2	0	2
	Virus	- potyvirus	1	0	1
		- rose mosaic	6	0	6
SASSAFRAS (Sassafras)					
	Environmental	- decline	1	0	1

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1 DIAGs</i>	<i>#2 DIAGs</i>	<i>TOTAL</i>
SERVICEBERRY (Amelanchier)					
	Cultural	- transplant shock	1	0	1
	Leaf spot	- Entomosporium	1	0	1
SMOKETREE (Cotinus)					
	Wilt	- Verticillium	1	0	1
SOURWOOD (Oxydendrum)					
	Chemical injury	- unknown	1	0	1
SPIREA (Spirea)					
	Chemical injury	- growth regulator	1	0	1
SPRUCE (Picea)					
	Canker	- Leucostoma	6	0	6
	Chemical injury	- growth regulator	1	0	1
		- unknown	2	0	2
	Cultural	- transplant shock	5	0	5
	Environmental stresses		7	0	7
	Inadequate specimen, no disease		19		19
	Insect injury		17	1	18
	Needle cast	- Rhizosphaera	3	0	3
	Sooty mold	- species	1	0	1
SUMAC (Rhus)					
	Environmental	- poor soil	2	0	2
		- wet feet	1	0	1
	No disease		1		1
SWEETGUM (Liquidambar)					
	Bacterial scorch	- Xylella	1	0	1
	Chemical injury	- herbicide	1	0	1
	Cultural	- transplant shock	1	0	1
	Environmental	- stress	1	0	1
	No disease		2		2
SYCAMORE and PLANETREE (Platanus)					
	Anthraxnose	- Apiognomonina	10	0	10
	Insect injury		1	0	1
	Leaf scorch	- unknown	1	0	1
	No disease		1		1
	Physical injury	- unknown	1	0	1
TAXUS (Taxus)					
	Chemical injury	- growth regulator	5	0	5
	Cultural	- black plastic	1	0	1
		- oedema	1	0	1
		- planting depth	1	0	1
		- transplant shock	1	0	1
	Environmental stresses		4	1	5
	Inadequate specimen, no disease		15		15

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1 DIAGs</i>	<i>#2 DIAGs</i>	<i>TOTAL</i>
TAXUS [cont]					
Nutritional		- acid soil	3	0	3
		- soluble salts	1	0	1
Physical injury		- mower	1	0	1
		- pruning	3	0	3
Root problem		- unknown	3	0	3
Root rot		- Phytophthora	1	0	1
Slime mold		- species	1	0	1
TULIPTREE (Liriodendron)					
Anthracnose		- Gloeosporium	2	0	2
Chemical injury		- herbicide	1	0	1
Environmental stresses			2	0	2
Girdling root		- cultural	1	0	1
Insect injury			3	0	3
No disease			2		2
Physical injury		- wind	1	0	1
Powdery mildew		- species	2	2	4
VIBURNUM (Viburnum)					
Anthracnose		- Cercospora	2	0	2
Chemical injury		- growth regulator	1	0	1
Insect injury			4	0	4
No disease			2		2
Nutritional		- soluble salts	1	0	1
WALNUT (Juglans)					
Anthracnose		- Gnomonia	1	0	1
Insect injury			1	0	1
No disease			1		1
WILLOW (Salix)					
Canker		- Valsa	1	0	1
Crown gall		- Agrobacterium	1	0	1
Insect injury			1	0	1
WISTERIA (Wisteria)					
Environmental		- drought	1	0	1
YELLOWWOOD (Cladrastis)					
No disease			1		1
Nutritional		- potassium deficiency	1	0	1
ZELKOVA (Zelkova)					
Canker		- Botryosphaeria	1	0	1

VEGETABLES

ASPARAGUS (*Asparagus*)

Leaf spot	- Cercospora	1	0	1
No disease		1		1

BEAN (*Phaseolus*)

Air pollution	- ozone	1	0	1
Anthracnose	- Colletotrichum	4	0	4
Ashy stem blight	- Macrophomina	1	0	1
Chemical injury	- growth regulator	1	0	1
	- unknown	2	0	2
Downy mildew	- Phytophthora	1	0	1
Environmental	- stress	1	0	1
Inadequate specimen, no disease		6		6
Insect injury		4	1	5
Leaf spot	- Ascochyta	1	0	1
	- Cercospora	1	0	1
	- Phoma	1	0	1
Root problem	- unknown	1	0	1
Root/stem rot	- Fusarium	1	0	1
	- Rhizoctonia	5	0	5
Virus	- Bean common mosaic	1	0	1
	- complex	1	0	1
	- unknown	2	0	2
Yeast spot	- Nematospora	1	0	1

CABBAGE - See listing under **CRUCIFERS**

CANTALOUPE - See listing under **CUCURBITS**

CORN, SWEET (*Zea*)

Bacterial stalk rot	- Erwinia	2	0	2
Barren stalk	- complex	1	0	1
Chemical injury	- herbicide	1	0	1
Environmental	- stress	0	1	1
Gray leaf spot	- Cercospora	1	0	1
Inadequate specimen, no disease		2		2
No ear	- genetic	2	0	2
Nutritional	- phosphorus deficiency	0	1	1
Virus	- Maize dwarf mosaic	0	1	1

CRUCIFERS - CABBAGE, MUSTARD and TURNIP (*Brassica*)

Bacterial soft rot	- Erwinia	1	0	1
Blackleg	- Leptosphaeria	1	0	1
Black rot	- Xanthomonas	2	0	2
Cultural	- late planting	0	1	1
	- transplant shock	1	0	1
Downy Mildew	- Peronospora	2	1	3
Environmental stresses		3	0	3
Inadequate specimens, no disease		3		3
Leaf spot	- Cercospora	1	0	1

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1 DIAGs</i>	<i>#2 DIAGs</i>	<i>TOTAL</i>
CRUCIFERS - CABBAGE, MUSTARD and TURNIP (Brassica) [cont]					
Nutritional		- fertilizer burn	1	0	1
		- general	1	0	1
		- manganese toxicity	1	0	1
Physiological		- oedema	1	0	1
Wire stem		- Rhizoctonia	1	0	1
CUCUMBER - See listing under CUCURBITS					
CUCURBITS - CANTALOUPE, CUCUMBER (Cucumis), PUMPKIN, SQUASH, GOURD (Cucurbita) and WATERMELON (Citrulis)					
Anthracnose		- Colletotrichum	1	0	1
Bacterial wilt		- Erwinia	10	0	10
Blossom-end-rot		- calcium deficiency/dry	1	0	1
Chemical injury		- pesticide	1	0	1
		- herbicide	2	0	2
Damping-off		- Pythium	1	0	1
		- Rhizoctonia	1	0	1
Downy mildew		- Peronospora	1	1	2
Environmental		- stress	1	1	2
Fruit decay		- Fusarium	2	0	2
Gummy stem blight		- Didymella	5	1	6
Inadequate specimen, no disease			16		16
Insect injury			5	0	5
Powdery mildew		- Sphaerotheca	1	0	1
Root rot		- Fusarium	1	1	1
		- Pythium	2	0	3
Root/stem rot		- Rhizoctonia	1	0	1
Virus		- complex	1	0	1
		- cucumber mosaic	1	0	1
		- watermelon mosaic	5	0	5
Wilt		- Fusarium	2	0	2
LETTUCE (Lactuca)					
Insect injury			1	0	1
ONION (Allium)					
Root rot		- unknown	1	0	1
PEA (Pisum)					
Common bacterial blight		- Xanthomonas	1	0	1
Environmental		- winter injury	1	0	1
No disease			1		1
Root rot		- Pythium	1	0	1
Root/stem rot		- Rhizoctonia	1	0	1
PEANUT (Arachis)					
Black root rot		- Thielaviopsis	1	0	1

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1 DIAGs</i>	<i>#2 DIAGs</i>	<i>TOTAL</i>
PEPPER (Capsicum)					
	Algae	- green	1	0	1
	Anthracnose	- Colletotrichum	1	1	2
	Bacterial soft rot	- Erwinia	1	1	2
	Bacterial spot	- Xanthomonas	12	2	14
	Blight	- Phytophthora	1	0	1
	Blossom end rot	- calcium deficiency/dry	2	0	2
	Chemical injury	- burn	1	0	1
		- herbicide	1	0	1
	Cultural	- overwatering	1	0	1
	Environmental	- sunscald	0	1	1
	Fruit rot	- Alternaria	1	0	1
	Insect injury		2	1	3
	No disease		9		9
	Root/stem rot	- Rhizoctonia	4	0	4
	Stem blight	- Sclerotinia	1	0	1
	Virus	- alfalfa mosaic	1	0	1
		- cucumber mosaic	0	1	1
		- tobacco etch	4	1	5
		- tomato spotted wilt	4	1	5
POTATO (Solanum)					
	Air pollution	- ozone	1	0	1
	Black leg	- Erwinia	3	0	3
	Canker	- Rhizoctonia	1	0	1
	Dry rot	- Fusarium	1	0	1
	Early blight	- Alternaria	3	0	3
	Environmental	- wet feet	1	0	1
	Inadequate specimen, no disease		3		3
	Insect injury		2	0	2
	Late blight	- Phytophthora	6	0	6
	Nutritional	- general	1	0	1
PUMPKIN - See listing under CUCURBITS					
RHUBARB (Rheum)					
	Crown rot	- bacterial	1	0	1
		- Colletotrichum	1	0	1
	Southern blight	- Athelia	1	0	1
SPINACH (Spinacia)					
	Environmental	- stress	1	0	1
SQUASH - See listing under CUCURBITS					
SWEET POTATO (Ipomoea)					
	Cultural	- poor planting	1	0	1
	Root crack	- unknown	1	0	1
	Scurf	- Monilochaete	6	0	6

<i>CROP</i>	<i>DIAGNOSIS</i>	<i>CAUSAL AGENT</i>	<i>#1 DIAGs</i>	<i>#2 DIAGs</i>	<i>TOTAL</i>
TOMATO (<i>Lycopersicon</i>)					
	Air pollution	- ethylene	2	0	2
	Bacterial canker	- Clavibacter	7	2	9
	Bacterial soft rot	- Erwinia	6	1	7
	Bacterial speck	- Pseudomonas	4	4	8
	Bacterial spot	- Xanthomonas	8	3	11
	Bacterial wilt	- Pseudomonas	1	0	1
	Black root rot	- Thielaviopsis	1	0	1
	Blossom end rot	- calcium deficiency/dry	3	0	3
	Buckeye rot	- Phytophthora	1	0	1
	Catfacing	- environmental	3	0	3
	Chemical injury	- growth regulator	5	2	7
		- herbicide	11	0	11
		- unknown	1	0	1
	Cultural	- high temperature	1	0	1
		- overwatering	1	0	1
	Early blight	- Alternaria	29	4	33
	Environmental stresses		10	1	11
	Growth crack	- environmental	1	0	1
	Inadequate specimen, no disease		35		35
	Insect injury		3	2	5
	Late blight	- Phytophthora	3	1	4
	Leaf mold	- Cladosporium	0	1	1
	Leaf spot	- bacterial	1	0	1
		- Septoria	18	6	24
	Nutritional	- general	4	1	5
		- maganesium deficiency	4	0	4
		- manganese deficiency	0	1	1
		- nitrogen deficiency	1	1	2
		- pH high	1	0	1
		- soluble salts	2	0	2
	Physical injury	- unknown	1	0	1
		- wind/sand	1	0	1
	Physiological	- leaf roll	2	0	2
		- unknown	1	0	1
	Root knot nematode	- Meloidogyne	2	0	2
	Root rot	- Pythium	1	0	1
	Root/stem rot	- Rhizoctonia	2	1	3
	Southern blight	- Athelia	1	0	1
	Stem rot	- Sclerotinia	3	1	4
	Virus	- alfalfa mosaic	1	0	1
		- cucumber mosaic	2	0	2
		- tomato spotted wilt	12	0	12
	Walnut wilt	- juglone	2	0	2
	Wilt	- Fusarium	6	1	7
		- Verticillium	0	1	1

TURNIP - See listing under CRUCIFERS

WATERMELON - See listing under CUCURBITS

TOTALS **7701** **327** **8028**

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