COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF KENTUCKY • COLLEGE OF AGRICULTURE

Plant Diseases in Kentucky

Plant Disease Diagnostic Laboratory Summary

1997

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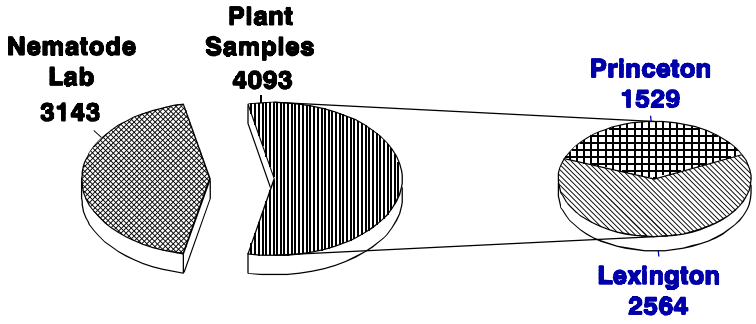
INTRODUCTION

The Plant Disease Diagnostic Lab (Lexington and Princeton) handled 4093 plant samples and 3143 nematode soil samples during 1997. Samples with more than one problem numbered 641, bringing the total number of actual diagnoses to 4734. The Lexington Lab diagnosed 2564 specimens. The Princeton Lab's specimens totaled 4672; of this number 1529 were plant samples and 3143 were soil samples submitted, exclusively, for soybean cyst nematode analysis. A total of 1871 of the nematode samples were submitted by researchers and 1272 were submitted by commercial growers through the county Extension offices, Total Ag Services of KY, Precision 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 1997



Total Samples	7236
Samples with >1 diagnosis	641
Total Diagnoses	7877

HIGHLIGHTS

Weather:

Weather for 1997 was extremely variable. In January, temperatures averaged 33 degrees across the state, which was 1 degree above normal. Departure from normal high temperatures ranged from 3 degrees below normal in the west to 5 degrees above normal in the east. Departure from normal low temperatures ranged from 1 degree below normal in the west to 3 degrees above normal in the east. Temperatures during the first, third, and final full weeks of February were well above normal. Weekly rainfall in February was generally below normal. Much higher than normal temperatures and an extreme surplus rainfall dominated the month of March; in fact, it was the wettest March this century. Tornadoes whipped across Central, Bluegrass, and Southeast locations causing major damage, numerous injuries, and at least one death in Hart County. For the state as a whole, April was the eighth coldest in the last 103 years. Rainfall was generally below average. Heavy rainfall in late May raised monthly totals from near normal to much above normal for most of the state with cool temperatures registering as one of the five coolest in the past 100 years. Slightly below normal temperatures with above average rainfall was common across the state for the month of June. Lexington and Louisville recorded their third wettest June in history. Temperatures for July were below normal in the first half and above normal for the second half. Rainfall, statewide, was 2.88 inches below normal. Temperatures and rainfall for August were near to slightly below normal. Record low temperatures were recorded on September 4-5 and near record lows occurred during the

fourth week of September, while the third full week saw 6-10 degrees above normal for most of the week. Rainfall was below normal. Dry conditions with above normal temperatures continued in October until frost/freezing temperatures and dry conditions ended the 1997 growing season during the remainder of the month. November averaged 3 degrees below normal and precipitation was slightly below normal. The first half of December saw below normal temperatures with the remainder of the month receiving above normal temperatures. Precipitation was 1.64 inches below normal.

Tobacco:

Blue Mold was once again a widespread problem with sample numbers almost exactly that of 1996. Many tests were run to determine if the `metalaxyl' ("Ridomil") resistant strain of the fungus, *Peronospora tabacina*, was once again present in the state. A Section 18 Specific Emergency Exemption was granted for the field use of the fungicide "Acrobat MZ" on May 21. The first confirmed plants infected with the Blue Mold fungus was on June 13 from a site in Christian County on the border with Todd County. **Black Shank** samples nearly doubled from 1996 numbers and the link with infection by the fungus, *Rhizoctonia*, was strengthened. The lack of sunny and dry weather early in the season, caused a delay of typical symptoms of this disease. For the second year in a row there were very few cases of **Tomato Spotted Wilt** virus. Samples with aphid-borne virus complex in burley were reduced due to the widespread planting of resistant varieties, especially `Tennessee 90'. A small but significant number of samples from the float production system were found with **Black Root Rot**.

Other agronomic crops:

Corn diseases were relatively few with no samples infected with viruses and **Gray Leaf Spot** numbers down from 1996. **Stenocarpella (Diplodia) Ear Rot** was a notable problem in some areas. Soybean diseases were again very low, but **Stem Canker** samples increased dramatically. **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 a few areas of the state. **Septoria Leaf Complex**, and **Glume Blotch** levels were similar to the low levels seen the last four years. **Downy Mildew** samples increased; a possible sign of things to come with more no-till wheat being planted. Forages, in general, did not suffer from any major disease problems.

Fruits:

There were no major disease problems with tree or small fruits. One interesting disease was **Brown Rot** of Prunus sp. seen as a flower and stem blight early in the season in western Kentucky. Samples of **Frogeye** on apple were once again on the increase.

Vegetables:

The incidence of diseases on vegetable crops was light and overall numbers of commercial samples were down due to greatly reduced acreage in Daviess County. Downy mildew on Cucurbit crops increased due to the weather in the late summer. Incidences of **Late Blight** on tomato were reduced from 1996 levels and no cases were found on potatoes.

Landscape Plant Disease Observations:

Deciduous tree diseases. The various anthracnose fungi were very active on ash *(Discula),* maple *(Kabatiella* and *Discula),* sycamore *(Apiognomonia),* and oak *(Apiognomonia).* In spring, infected ash leaves littered the ground and sycamores were forced to push out 3-4 new flushes of growth as a result of anthracnose-caused loss of shoots and foliage. Anthracnose was even found on beech and on yellowwood this year. Spring rains also resulted in unusually high levels of cedar rusts *(Gymnosporangium* spp) of hawthorns and of flowering crabapple scab *(Venturia inaequalis)* this year. Rust susceptible hawthorns showed significant tip dieback following twig infections in the tree while scab susceptible crabapples were practically defoliated by August. Dogwood powdery mildew *(Microsphaera sp.),* a disease of little importance five years ago, now has become very serious in many landscapes. Oak leaf spot *(Tubakia sp.)* along with oak anthracnose is severely affecting some established, but young red oaks, causing twig and branch dieback. Branch dieback also follows many years of bacterial leaf scorch *(Xylella fastidiosa)* symptoms in large, mature pin oaks. Oak leaf blister *(Taphrina coerulescens),* and maple tar spot *(Rhytisma acerinum)* though widespread this year, are not damaging diseases.

A widely observed abiotic weather-related problem of prunus species, maples, especially Japanese maples, and other woody plants was the sudden collapse of shoots and foliage at the first onset of warm weather in June. This dieback could be attributed either to winter freeze or spring frost injury to cambium and phloem tissues. A variety of canker diseases could later be found on many of these same cold-injured woody plants.

Needle evergreen tree diseases. Pine problems persist. Maturing Austrian and Scots pines continue to die from tip blight *(Sphaeropsis sapinea)* and pine wilt nematode *(Bursaphelenchus xylophilus).* We observed established white pines declining either from root disturbance or from having been planted into soils with high clay content, high pH levels, or heavy compaction.

Shrub diseases. Two uncommon problems, rose rust *(Phragmidium mucronatum)* and lilac bacterial blight (Pseudomonas syringae) were observed this year. Black root rot *(Chalara elegans)* of hollies remains a problem Taxus, junipers, and other shrubs suffered root rot (most likely *Phytophthora* spp.) worsened by high soil moisture levels. Rhododendrons facing environmental stresses such as cold, heat, drought, or poor soils showed cankers *(Botryosphaeria dothidea* and others) which caused wilt and branch dieback. Azalea leaf and flower gall *(Exobasidiurn vaccinii)* was common.

Perennial and annual plant diseases. Iris leaf spot *(Heterosporium)* was devastating in some locations. Southern stem blight *(Sclerotium rolfsii)* was common on hostas and other perennials. Rusts *(Puccinia* spp) of geranium and of hollyhock were widespread.

Landscape lawn diseases. Powdery mildew *(Erisiphe sp.)* and rust *(Puccinia sp.)* appeared in Kentucky bluegrass and perennial ryegrass lawns in spring and summer. Tall fescue root and crown infections *(Rhizoctonia solani)* were noticed this season.

Disease Monitoring:

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** is watched very closely because of its deadly potential to landscape trees. 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.

Educational Resource:

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.

ACKNOWLEDGEMENTS

Two technicians within the department of Plant Pathology have continued to make 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 1997.

Support from the Kentucky Integrated Pest Management program for supplemental funding in support of additional diagnostic testing and part-time laboratory assistance is gratefully acknowledged.

We also wish to thank the College of Agriculture's extension specialists and researchers who served as consultants to the diagnostic laboratory in 1997. 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.

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.

Table 1.

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

Crop	Abiotic	Biotic[2]	Chemical	Inadequate	Insect	Other[3]	Total

Category	Problems	Problems	Injury	Specimen	Injury		Diagnoses
Agronomic							
Corn	39	24	9	2	7	9	90
Forages	40	35	0	1	17	11	104
Rapeseed (Canola)	0	0	0	0	0	0	0
Small grains	24	40	11	2	1	13	91
Soybeans	30	3209*	14	4	0	14	3264
Tobacco	489	980	152	39	13	114	1787
Fruit							
Small fruit	18	34	3	3	8	8	74
Tree fruit	41	116	1	4	45	45	252
Herbs	4	6	0	0	1	3	14
Identification	0	51	0	0	0	0	51
Ornamentals							
Herbaceous and Houseplants	56	92	7	13	18	36	222
Turfgrass	27	79	1	2	0	32	141
Woody	423	458	25	22	182	280	1390
Vegetables	69	203	20	26	21	47	386
Miscellaneous	0	2	1	0	1	0	4
Total	1260	5329	244	118	314	612	7877

[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 3143 samples sent to the Nematode Analysis Laboratory in Princeton.

Table 2.

SUMMARY OF BIOTIC PROBLEMS BY CROP CATEGORY.

Crop Category	Bacterial	Fungal	Nematode	Virus	Other[1]
Agronomic					

Corn	5	19	0	0	0
Forages	0	34	0	0	1
Rapeseed (Canola)	0	0	0	0	0
Small grains	2	13	0	25	0
Soybeans	0	54	2515	2	0
Tobacco	68	862	3	46	1
Fruit					
Small fruit	0	34	0	0	0
Tree fruit	11	105	0	0	0
Herbs	0	5	1	0	0
Identification	0	17	0	0	34
Ornamentals					
Herbaceous and Houseplants	14	75	1	1	2
Turfgrass	0	79	0	0	0
Woody	18	431	1	2	6
Vegetables	39	109	4	51	0
Miscellaneous	0	1	0	0	1
Total	157	1838	2525	127	45

[1] Other includes these categories: Animal (rodent and bird damage), Plant (plant identifications), and Algae, Lichen and Phytoplasma.

Table 3.

NUMBER OF PLANT SPECIMENS BY CROP CATEGORY, EXPRESSED AS PERCENTAGES

Crop Category	Number of Specimens	Percentage of Total Specimens
Agronomic (-Tobacco)	341	8.3
Tobacco	1485	36.3
Fruit	275	6.7
Herbs	14	0.3
Identifications	51	1.3
Ornamentals	1577	38.5
Vegetables	346	8.5
Miscellaneous	4	0.1
Total Specimens	4093	100.0

Table 4.

SUMMARY OF DIAGNOSES BY CROP CATEGORY AND CROP.

Crop Category and Crop	Number of Primary Diagnoses[1]	Number of Secondary Diagnoses[2]	Total Diagnoses[3]
Agronomic			
Corn	76	14	90
Forages	86	18	104
Rapeseed (Canola)	0	0	0
Small grains	78	13	91
Soybeans	3244	27	3271
Tobacco	1485	302	1787
Fruit			
Small fruit	64	10	74
Tree fruit	211	41	252
Herbs	14	0	14
Identification	51	0	51
Ornamentals			
Herbaceous and Houseplants	204	18	222
Turfgrass	128	13	141
Woody	1245	145	1390
Vegetables	346	40	386
Miscellaneous	4	0	4
Total	7236	641	7877

[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 "Expanatory 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.

	Grower Type							
	Commercial		Homeowner		Research		Institution	
Crop Group	Ext[1]	Non-Ext[2]	Ext[1]	Non-Ext[2]	Ext[1]	Non-Ext[2]	Ext[1]	Non-Ext[2]
Agronomic								
Corn	72	3	0	0	0	1	0	0
Forages	80	2	1	0	0	3	0	0
Small grains	61	9	0	0	0	8	0	0
Soybeans	1133	235	0	0	4	1872	0	0
Tobacco	1355	55	0	0	0	74	1	0
Fruit								
Small Fruit	22	0	38	3	0	1	0	0
Tree Fruit	52	0	141	4	0	13	1	0
Herbs	8	0	5	0	0	1	0	0
Identification	4	0	42	3	0	0	2	0
Ornamental								
Herbaceous and Houseplants	61	7	122	1	0	5	8	0
Turfgrass	43	0	65	0	0	3	13	4
Woody	104	0	1091	20	0	7	23	0
Vegetable	100	6	168	5	0	66	1	0
Miscellaneous	0	0	3	0	0	1	0	0
Total	3095	317	1676	36	4	2055	49	4
Total/Grower Type	3412		1712		2059		53	

Total number of samples received = 7236

[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					
	Agronomic	**Fruit**	**Ornamental**	**Vegetable**	**Other**	**Total**
AgDia, Inc.	13	0	4	55	0	72
Agronomy Department	32	0	4	1	1	38
Entomology Department	6	21	30	2	0	59
Horticulture Department	0	0	3	4	0	7
Cornell University	1	0	0	0	0	1
North Carolina State Univ.	9	0	0	1	0	10
					Total	187
					Total number of plant samples	4093
					Percent of plant samples referred outside Diagnostic Lab for diagnosis	4.6

* 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 Cases
Culturing	52
Enzyme-linked Immunosorbent Assay (ELISA)	31
Incubation	375
Metalaxyl susceptible/resistant	36
Nematode extraction (total = 3148)	
Pinewood nematode	5
Soybean cyst nematode	3143
Soil tests (total = 111)	
pH	189
Saturated media extract/pH	3
Soluble salts	7
pH/Soluble Salts	214
soil bioassay	5
Tissue Test (total = 5)	
Quick Nitrate Test	5

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	3	1	1	0	1	0	0
ALLEN	46	2	20	5	13	6	0
ANDERSON	17	1	7	0	10	0	0
BALLARD	19	1	11	1	5	1	0
BARREN	20	3	12	0	5	0	0
BATH	13	4	8	1	4	0	0
BELL	32	0	0	7	18	7	0
BOONE	79	0	9	2	65	7	3
BOURBON	37	6	13	0	17	2	1
BOYD	71	0	1	4	64	2	0
BOYLE	21	1	4	1	13	2	0
BRACKEN	7	0	4	0	2	1	0
BREATHITT	12	0	5	1	6	0	0
BRECKINRIDGE	65	6	41	3	10	5	0
BULLITT	55	0	3	11	35	5	1
BUTLER	26	7	13	2	2	2	0
CALDWELL	110	26	31	7	32	10	4
CALLOWAY	129	10	42	7	61	9	0
CAMPBELL	23	0	5	1	14	3	0
CARLISLE	40	7	17	5	8	3	0
CARROLL	12	0	5	0	6	0	1
CARTER	54	0	31	1	16	2	4
CASEY	31	2	16	5	5	2	0
CHRISTIAN	122	10	41	16	48	7	0
CLARK	55	2	18	0	28	6	1
CLAY	4	0	2	0	1	1	0
CLINTON	14	1	10	1	2	0	0
CRITTENDEN	30	3	0	8	16	0	3
CUMBERLAND	17	2	4	0	5	4	2
DAVIESS	195	24	49	25	68	28	1
EDMONSON	29	3	15	1	7	2	1
ELLIOTT	8	0	5	0	0	1	2
ESTILL	18	1	4	8	5	0	0
FAYETTE	337	13	51	26	169	72	6
FLEMING	38	2	21	6	3	3	2
FLOYD	7	1	0	0	4	2	0
FRANKLIN	66	2	9	4	43	5	3
FULTON	7	6	0	0	1	0	0
GALLATIN	3	0	3	0	0	0	0
GARRARD	8	0	4	0	3	0	1
GRANT	29	1	15	3	10	0	0
GRAVES	72	7	37	5	20	2	1
GRAYSON	8	1	4	0	3	0	0
GREEN	14	1	8	0	4	1	0
GREENUP	19	1	3	0	14	1	0
HANCOCK	52	6	29	0	12	2	3
HARDIN	32	7	14	2	9	0	0
HARLAN	14	0	3	1	8	1	1
HARRISON	23	4	16	0	1	2	0
HART	7	1	6	0	0	0	0
HENDERSON	41	13	8	2	13	4	1
HENRY	37	2	29	1	4	1	0
HICKMAN	3	2	0	0	0	1	0
HOPKINS	50	4	13	2	30	1	0
JACKSON	22	0	13	1	5	1	2
JEFFERSON	46	0	1	0	42	2	1
JESSAMINE	34	1	15	1	16	0	1
JOHNSON	7	0	4	1	0	2	0
KENTON	51	0	4	1	41	2	3
KNOTT	0	0	0	0	0	0	0
KNOX	2	0	0	1	1	0	0

COUNTY	Total	Agronomic[1]	Tobacco	Fruit	Ornamental	Vegetable	Other
LARUE	18	2	13	0	0	2	1
LAUREL	31	1	17	1	10	2	0
LAWRENCE	15	1	9	1	3	1	0
LEE	19	0	2	13	4	0	0
LESLIE	7	0	0	0	4	3	0
LETCHER	7	0	0	1	4	1	1
LEWIS	12	2	10	0	0	0	0
LINCOLN	12	0	8	0	2	2	0
LIVINGSTON	18	5	2	1	9	1	0
LOGAN	50	4	22	2	15	7	1
LYON	15	0	9	0	3	2	1
McCRACKEN	30	2	4	1	14	4	5
McCREARY	0	0	0	0	0	0	0
McLEAN	16	2	13	0	1	0	0
MADISON	85	4	41	7	30	2	0
MAGOFFIN	4	0	3	0	1	0	0
MARION	20	3	8	0	6	2	0
MARSHALL	83	1	4	6	62	8	2
MARTIN	0	0	0	0	0	0	0
MASON	36	2	28	1	5	0	0
MEADE	16	2	4	1	6	3	0
MENIFEE	9	1	6	0	0	2	0
MERCER	17	1	12	0	3	1	0
METCALFE	8	0	7	0	1	0	0
MONROE	8	1	5	0	1	0	1
MONTGOMERY	56	3	30	2	19	1	1
MORGAN	17	1	10	3	2	1	0
MUHLENBERG	51	2	19	4	19	5	2
NELSON	26	2	6	0	17	1	0
NICHOLAS	13	1	10	0	2	0	0
OHIO	14	3	6	0	4	1	0
OLDHAM	24	0	7	0	12	5	0
OWEN	19	2	14	0	2	1	0
OWSLEY	17	0	11	0	4	2	0
PENDELTON	3	1	2	0	0	0	0
PERRY	6	0	5	0	1	0	0
PIKE	0	0	0	0	0	0	0
POWELL	1	0	0	1	0	0	0
PULASKI	66	6	30	0	25	5	0
ROBERTSON	19	0	17	2	0	0	0
ROCKCASTLE	14	0	9	0	1	4	0
ROWAN	28	1	14	1	12	0	0
RUSSELL	28	2	3	2	13	7	1
SCOTT	44	2	10	17	10	4	1
SHELBY	66	5	23	3	35	0	0
SIMPSON	20	3	8	1	7	1	0
SPENCER	6	0	3	0	3	0	0
TAYLOR	37	5	20	1	7	4	0
TODD	60	9	33	3	5	10	0
TRIGG	45	8	14	3	16	4	0
TRIMBLE	7	0	5	0	2	0	0
UNION	11	5	0	1	3	2	0
WARREN	129	20	39	5	61	3	1
WASHINGTON	22	4	11	1	5	1	0
WAYNE	70	4	43	1	11	11	0
WEBSTER	41	10	17	2	10	2	0
WHITLEY	30	0	16	2	10	1	0
WOLFE	8	0	8	0	0	0	0
WOODFORD	61	10	10	6	29	4	2
Out-of-State	54	0	48	0	6	0	0
TOTALS	4093	341	1485	275	1577	346	69

[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	13
Beale, JW (Diagnostician)	Plant Pathology	1907	19
Bessin, RT	Entomology	14	28
Bitzer, MJ	Agronomy	8	3
Fountain, WM	Horticulture	2	13
Green, JD	Agronomy	23	8
Hartman, JR	Plant Pathology	26	16
Henning, JC	Agronomy	1	0
Nesmith, WC	Plant Pathology	243	173
Palmer, GK	Agronomy	44	11
Pearce, RC	Agronomy	8	17
Powell, AJ	Agronomy	1	0
Rowell, AB	Horticulture	2	10
Siegel, MR	Plant Pathology	1	0
Strang, JG	Horticulture	0	2
Tekrony, DM	Agronomy	0	1
Townsend, LH	Entomology	34	13
Vincelli, PC	Plant Pathology	268	35
Witt, ML	Horticulture	0	1
PRINCETON			
Bachi, PR (Diagnostician)	Plant Pathology	1337	116
Brown, GR	Horticulture	10	14
Dunwell, WC	Horticulture	2	6
Herbek, JH	Agronomy	3	8
Hershman, DE	Plant Pathology	39	11
Johnson, DW	Entomology	3	1
Kirkland, DL	Regulatory Services	1	1
Lacefield, GD	Agronomy	2	8
Martin, JR	Agronomy	26	22
Murdock, LW	Agronomy	22	8
Maksymowicz, WC	Agronomy	64	42
Rasnake, M	Agronomy	1	1
Wurts, WA	Kentucky State	0	1

[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.

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
		AGRONOMIC CROPS			
CORN (Zea)					
	Chemical injury	- herbicide, growth regulator	9	0	9
	Ear/Kernel rots	- Aspergillus	2	0	2
		- Diplodia	3	0	3
		- Fusarium	4	0	4
	Environmental	- stresses	8	2	10
	Gray leaf spot	- Cercospora	2	0	2
	Holcus spot	- Pseudomonas	2	0	2
	Inadequate specimen, no disease		11		11
	Insect injury		4	3	7
	Nutritional	- magnesium deficiency	2	1	3
		- zinc deficiency	15	1	16
		- others	7	3	10
	Root rot	- Fusarium	0	2	2
		- Pythium	1	0	1
		- Rhizoctonia	1	0	1
	Rootless	- environmental	1	0	1
	Rust, common	- Puccinia	1	0	1
	Stalk Rot	- Diplodia	1	0	1
		- Erwinia	1	1	2
		- Gibberella	1	0	1
	Stewart's wilt	- Erwinia	1	0	1
		FORAGES			
ALFALFA (Medicago)					
	Crown/root rot	- complex	3	0	3
		- Fusarium	0	1	1
	Crown/stem rot	- Sclerotinia	5	0	5
	Environmental stresses		10	3	13
	Inadequate specimen, no disease		12		12
	Insect injury		13	4	17
	Leaf spot	- Leptosphaerulina	12	1	13
		- fungal	0	1	1
	Nutritional	- acid soil	5	1	6
		- boron deficiency	11	1	12
		- potassium deficiency	0	1	1
		- poor nodulation	1	0	1
	Root rot	- Phytophthora	1	0	1
		- Rhizoctonia	0	1	1
	Stem canker	- Rhizoctonia	2	0	2
LESPEDEZA (Lespedeza)					
	Plant	- Dodder	1	0	1
MATUA (Bromus)					
	Powdery.mildew	- species	1	0	1

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
MILLET (Panicum)					
	Cultural	- planted too early	1	0	1
	Leaf spot	- Pyricularia	3	1	4
	Nutritional	- nitrogen deficiency	1	1	2
ORCHARDGRASS (Dactylis)					
	Environmental	- stresses	2	0	2
	Leaf spot	- Cercospora	0	1	1
RYEGRASS (Lolium)					
	Rust	- Puccinia	1	0	1
TIMOTHY (Phleum)					
	Environmental	- drought	1	0	1
		SOYBEAN			
SOYBEAN (Glycine)					
	Anthracnose	- Colletotrichum	0	1	1
	Brown spot	- Septoria	2	1	3
	Charcoal rot	- Macrophomina	0	1	1
	Chemical injury	- herbicide, growth reg.	12	2	14
	Downy mildew	- Peronospora	0	1	1
	Environmental stresses		7	6	13
	Frogeye	- Cercospora	0	2	2
	Inadequate specimen, no disease		17		17
	Insect injury		1	0	1
	Nutritional	- acid soil	4	0	4
		- manganese deficiency	2	0	2
		- phosphorus deficiency	1	0	1
		- poor nodulation	1	0	1
		- potassium deficiency	7	1	8
	Pod stem blight	- Diaporthe	1	0	1
	Root problem	- unknown	1	0	1
	Root/stem rot	- Fusarium	4	1	5
		- Rhizoctonia	6	2	8
	Soybean cyst nematode - on plant samples		6	7	13
	Heterodera	* in soil samples	2503		2503
		* absent in soil samples	640		640
	(*soil submitted to Nematode Analysis Laboratory)				
	Southern blight	- Athelia	3	0	3
	Stem canker	- Diaporthe	15	1	16
	Sudden death syndrome	- Fusarium	12	1	13

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
		SMALL GRAINS			
BARLEY (Hordeum)					
	Nutritional	- nitrogen	1	0	1
RICE (Oryzae)					
	No disease		1		1
WHEAT (Triticum)					
	Bacterial streak	- Xanthomonas	2	0	2
	Chemical injury	- herbicide	8	3	11
	Downy mildew	- Sclerophthora	3	0	3
	Environmental stresses		17	2	19
	Flecking	- physiological	1	0	1
	Glume blotch	- Septoria	1	0	1
	Head scab	- Fusarium	5	2	7
	Inadequate specimen, no disease		14		14
	Insect injury		1	0	1
	Leaf blotch	- Septoria	0	1	1
	Nutritional	- nitrogen deficiency	4	0	4
	Powdery mildew	- Erysiphe	0	1	1
	Seed decay	- Fusarium	1	0	1
	Take-all	- Gaeumannomyces	5	0	5
	Tan spot	- Pyrenophora	1	0	1
	Virus	- Barley yellow dwarf	7	3	10
		- Wheat spindle streak mosaic	12	3	15
		TOBACCO			
TOBACCO (Nicotiana)					
	Air pollution	- ethylene	0	1	1
		- sulfur dioxide	1	0	1
	Algae	- blue green	1	0	1
	Angular leaf spot	- Pseudomonas	22	7	29
	Anthracnose	- Colletotrichum	1	2	3
	Bacterial black stalk	- Erwinia	1	0	1
	Bacterial leaf spot	- Pseudomonas	5	0	5
	Bacterial soft rot	- Erwinia	9	0	9
	Black root rot	- Thielaviopsis	11	0	11
	Black shank	- Phytophthora	237	5	242
	Blackleg	- Erwinia	17	2	19
	Blue mold	- Peronospora	176	6	182
	Brown spot	- Alternaria	7	5	12
	Chemical injury	- burn	2	0	2
		- disinfectant	0	1	1
		- fungicide	6	0	6
		- growth regulator	22	0	22
		- herbicide	84	4	88
		- insecticide	2	0	2
		- sucker agent	8	1	9
		- unknown	19	2	21

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
Collar rot	- Sclerotinia		15	0	15
Cultural	- various problems		17	3	20
Damping-off	- Rhizoctonia		4	0	4
Early flowering	- environmental		4	0	4
Environmental	- cold injury		60	12	72
	- compaction		20	9	29
	- drought		2	0	2
	- heat injury		6	0	6
	- lightning		3	0	3
	- wet feet		27	4	31
	- weather scald		16	1	17
	- others		25	13	38
False broomrape	- unknown		3	1	4
Frenching	- metabolites		1	1	2
Frogeye	- Cercospora		8	8	16
Hollow stalk	- Erwinia		4	0	4
Inadequate specimen, no disease			150		150
Insect injury			11	2	13
Leaf breakdown	- physiological		1	0	1
Leaf rot	- Botrytis		1	0	1
Leaf scorch	- unknown		1	0	1
Leaf spot	- physical injury		2	0	2
	- physiological		17	3	20
Nutritional	- acid soil		24	7	31
	- alkalinity		2	2	4
	- boron deficiency		1	0	1
	- calcium deficiency		1	0	1
	- fertilizer burn		34	8	42
	- general		17	10	27
	- potassium deficiency		12	1	13
	- manganese toxicity		26	1	27
	- nitrogen deficiency		13	1	14
	- pH high		0	1	1
Nutritional [cont]	- phosphorus deficiency		10	1	11
	- temporary phosphorus		24	8	32
	- soluble salts		9	10	19
Physical injuries			3	1	4
Physiological	- leaf breakdown		5	0	5
Powdery mildew	- Oidium		1	0	1
Ragged spot	- Ascochyta		2	1	3
Root knot nematode	- Meloidogyne		3	0	3
Root problem	- unknown		3	0	3
Root rot	- Fusarium		0	1	1
	- Pythium		52	3	55
Slime mold	- unknown		1	0	1
Soft rot	- Phythium		1	0	1
	- Rhizopus		1	0	1
Soreshin	- Rhizoctonia		49	126	175
Stem rot	- Fusarium		3	0	3
	- Pseudomonas		1	1	2
	- Rhizoctonia		18	0	18
Storage mold	- fungal		1	0	1

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
	Target spot	- Rhizoctonia	85	11	96
	Variegation	- genetic	2	0	2
	Virus	- Alfalfa mosaic	6	0	6
		- complex	6	3	9
		- Impatiens necrotic spot	0	6	6
		- poty virus	3	1	4
		- Tobacco etch	2	0	2
		- Tobacco mosaic	4	0	4
		- Tobacco ringspot	4	0	4
		- Tobacco streak	3	0	3
		- Tomato spotted wilt	7	0	7
		- unknown	1	0	1
	Weather fleck	- ozone	2	0	2
	Wilt	- Fusarium	15	5	20

FRUIT CROPS

SMALL FRUITS

BLUEBERRY (Vaccinium)

Environmental stresses		4	0	4
No disease		3		3
Nutritional	- soluble salts	1	0	1

BRAMBLES - BLACKBERRY, and RASPBERRY (Rubus)

Anthracnose	- Elsinoe	9	2	11
Cane blight	- Leptosphaeria	1	0	1
Cane canker	- Phoma	1	0	1
Chemical injury	- herbicide	2	0	2
Cultural	- high temperature	0	1	1
Dieback	- Ascospora	1	0	1
Environmental stresses		10	0	10
Insect injury		0	6	6
Leaf spot	- Septoria	1	0	1
	- Sphaerulina	1	0	1
No disease		3		3
Root rot	- Phytophthora	1	0	1
Rust, orange	- Gymnoconia	3	0	3

CURRANT (Ribes)

Leaf scorch	- unknown	1	0	1

GRAPE (Vitis)

Anthracnose	- Elsinoe	2	0	2
Black rot	- Guignardia	5	0	5
Cane blight/spot	- Phomopsis	1	0	1
Chemical injury	- growth regulator	1	0	1
Downy mildew	- Plasmopora	1	0	1
Inadequate specimen, no disease		3		3
Insect injury		1	1	2
Leaf scorch	- environmental	1	0	1

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
STRAWBERRY (Fragaria)					
	Black root	- Rhizoctonia	2	0	2
	Inadequate specimen, no disease		2		2
	Leaf spot	- Mycosphaerella	4	0	4
	Red Stele	- Phytophthora	1	0	1
		TREE FRUITS			
APPLE (Malus)					
	Bitter rot	- Glomerella	1	0	1
	Black rot	- Botryosphaeria	1	0	1
	Cedar apple rust	- Gymnosporangium	18	4	22
	Chemical injury	- growth regulator	1	0	1
	Cultural	- improper depth	1	0	1
		- transplant shock	1	0	1
	Environmental stresses		8	0	8
	Fire blight	- Erwinia	6	0	6
	Frogeye	- Botryosphaeria	27	3	30
	Fruit decay	- Penicillium	1	0	1
	Inadequate specimen, no disease		26		26
	Insect injury		13	22	35
	Nutritional	- general	0	1	1
		- nitrogen deficiency	1	0	1
	Russett	- unknown	1	0	1
	Scab	- Venturia	11	1	12
	Sooty blotch	- Gloeodes	0	3	3
	White root rot	- Corticium	1	0	1
	White rot	- Botryosphaeria	2	0	2
CHERRY (Prunus)					
	Bacterial canker	- Pseudomonas	1	0	1
	Black knot	- Apiosporina	1	0	1
	Brown rot	- Monilinia	1	0	1
	Environmental stresses		10	0	10
	Leaf spot	- Blumeriella	1	0	1
	No disease		4		4
PEACH, NECTARINE, and APRICOT (Prunus)					
	Bacterial spot	- Xanthomonas	1	0	1
	Black knot	- Apiosporina	1	0	1
	Brown rot	- Monilinia	4	0	4
	Canker	- Leucostoma	1	0	1
	Cultural	- deep planting	1	0	1
	Environmental stresses		1	1	2
	Inadequate specimen, no disease		9		9
	Insect injury		3	0	3
	Nutritional	- general	2	0	2
		- nitrogen deficiency	2	0	2
	Physical injury	- unknown	1	0	1
	Scab	- Cladosporium	1	3	4

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
PEAR (Pyrus)					
	Cultural	- transplant shock	1	0	1
	Environmental	- wet feet	1	0	1
	Fire blight	- Erwinia	2	0	2
	Leaf scorch	- unknown	1	0	1
	Leaf spot	- Fabraea	1	0	1
	No disease		5		5
	Physiological	- over ripe	1	0	1
	White rot	- Botryosphaeria	1	0	1
PECAN (Carya)					
	Environmental	- stress	1	2	3
	Insect injury		5	0	5
	Internal breakdown	- physiological	1	0	1
	Inadequate specimen, no disease		4		4
	Nutritional	- general	0	1	1
PLUM (Prunus)					
	Bacterial spot	- Xanthomonas	1	0	1
	Black knot	- Apiosporina	10	0	10
	Brown rot	- Monilinia	1	0	1
	Leaf spot	- fungal	1	0	1
		- physiological	1	0	1
		- Septoria	1	0	1
	No disease		1		1
	Plum pockets	- Taphrina	3	0	3
		HERBS			
BASIL (Ocimum)					
	Crown/stem rot	- Fusarium	1	0	1
	Environmental	- stress	1	0	1
	No disease		1		1
	Nutritional	- general	1	0	1
GINSENG (Panax)					
	Blight	- Alternaria	3	0	3
	Root knot nematode	- Meloidogyne	1	0	1
MINT (Mentha)					
	Insect injury		1	0	1
ROSEMARY (Rosmarinus)					
	Blight	- Botrytis	1	0	1
SAGE (Salvia)					
	Nutritional	- fertilizer burn	1	0	1
		- soluble salts	1	0	1
SWEET WOODRUFF (Galium)					
	No disease		1		1

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
		IDENTIFICATIONS			
FUNGAL IDENTIFICATION					
	Ascomycete	- species	1		1
	Basidiomycete	- mushroom	1		1
		- unknown	1		1
	Daedalea	- confragosa	1		1
	Exidia	- glandulosa	1		1
	Ganoderma	- species	1		1
	Gyrodon	- meruliodes	1		1
	Morchela	- esculenta	1		1
	Mutinus	- caninus	3		3
	Psilocybe	- cubensis	1		1
	Slime mold	- species	5		5
PLANT IDENTIFICATIONS					
	Asimia	- triloba	1		1
	Coprosma	- species	1		1
	Cornus	- alternifolia	1		1
		- racemosa	1		1
	Crassula	- argentea	1		1
	Cucurbita	- species	1		1
	Gymnocladus	- dioicus	1		1
	Koellia	- species	1		1
	Lonicera	- japonica	1		1
		- tatarica	1		1
	Lycopodium	- flabelliform	1		1
	Magnolia	- acuminata	1		1
	Muhlenbergia	- schreberi	1		1
	Nicotiana	- dark	2		2
	Perilla	- species	1		1
	Physostegia	- virginiana	1		1
	Picea	- pungens	1		1
	Poa	-species	2		2
	Pothos	- hermaphroditus	1		1
	Prunus	- serotina	1		1
	Pyrus	- species	2		2
	Rhamnus	- cathartica	1		1
	Vine	-species	2		2
	Wisteria	- species	1		1
	unknown		4		4
		MISCELLANEOUS			
	HOUSE				
	Algae	- species	1	0	1
SOIL					
	Black shank	- Phytophthora	1	0	1
	Chemical injury	- polymer	1	0	1
	No disease		1		1

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*

ORNAMENTALS

HERBACEOUS ORNAMENTALS and INDOOR PLANTS

AEGOPODIUM (Aegopodium)				
Leaf blight	- Septoria	1	0	1
No disease		1		1
AFRICAN VIOLET (Saintpaulia)				
Inadequate specimen		1		1
Insect injury		1	0	1
AJUGA (Ajuga)				
Crown rot	- Athelia	1	0	1
ALYSSUM (Alyssum)				
No disease		1		1
AMARANTH (Amaranthus)				
Environmental	- stress	1	0	1
Nutritional	- general	0	1	1
ANEMONE (Anemone)				
Inadequate specimen		2		2
BEGONIA (Begonia)				
Root rot	- Oidium	1	0	1
BENJAMIN FIG (Ficus)				
No disease		1		1
CACTUS (various)				
Cultural	- improper light	1	0	1
CALADIUM (Caladium)				
Environmental	- wet feet	1	0	1
No disease		1		1
Root rot	- unknown	1	0	1
CHRYSANTHEMUM (Chrysanthemum)				
Bacterial leaf spot	- Pseudomonas	1	1	2
Cultural	- transplant shock	1	0	1
Gray mold	- Botrytis	0	1	1
Inadequate specimen, no disease		4		4
Insect injury		1	0	1
Nutritional	- calcium deficiency	1	0	1
	- fertilizer burn	1	0	1
	- general	2	3	5
Root problem	- unknown	1	0	1
Root rot	- Pythium	1	0	1
Root/stem rot	- Rhizoctonia	5	0	5

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
CLEMATIS (Clematus)					
	Environmental	- cold injury	1	0	1
	No disease		1		1
CONEFLOWER (Dracopis)					
	Aster yellows	- phytoplasma	1	0	1
	Environmental	- wet feet	1	0	1
	Soft rot	- Erwinia	0	1	1
CYPHOMANDRA (Cyphomandra)					
	Cultural	- over watering	1	0	1
	Insect injury		0	1	1
DAHLIA (Dahlia)					
	Insect injury		1	0	1
	No disease		2		2
DELPHINIUM (Delphinium)					
	Crown/root rot	- Rhizoctonia	1	0	1
	No disease		1		1
DIFFENBACHIA (Diffenbachia)					
	Nutritional	- fertilizer burn	1	0	1
DRACAENA (Dracaena)					
	No disease		1		1
FERN (various)					
	Nutritional	- fertilizer burn	1	0	1
FICUS (Ficus)					
	Cultural	- low light	0	1	1
	Insect injury		1	0	1
	Root rot	- Phytophthora	1	0	1
	Twig blight	- Phomopsis	1	0	1
FOXGLOVE (Digitalis)					
	Insect injury		1	0	1
FUCHSIA (Fuchsia)					
	Stem rot	- Phytophthora	1	0	1
GARDENIA (Gardenia)					
	Insect injury		1	0	1
GERANIUM (Pelargonium)					
	Cultural	- over watering	1	0	1
		- unknown	1	0	1
	Environmental stresses		1	1	2
	Gray mold	- Botrytis	1	0	1
	Insect injury		1	0	1
	No disease		3		3

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
GERANIUM (Pelargonium) (cont)					
	Nutritional	- acid soil	1	0	1
		- general	2	1	3
		- iron toxicity	2	0	2
		- nitrogen deficiency	1	0	1
	Root rot	- Pythium	1	1	2
	Rust	- Puccinia	2	0	2
GLADIOLUS (Gladiolus)					
	No disease		1		1
GOLDENROD (Solidago)					
	Inadequate specimen		1		1
HOLLYHOCK (Althaea)					
	Leaf spot	- alternaria	1	0	1
HOSTA (Hosta)					
	No disease		1		1
	Southern blight	- Athelia	2	0	2
IMPATIENS (Impatiens)					
	Bacterial leaf spot	- Pseudomonas	2	0	2
	Chemical injury	- insecticide	0	1	1
		- pesticide	1	0	1
	Crown rot	- Rhizoctonia	2	0	2
	Environmental	- cold injury	1	1	2
	Inadequate specimen, no disease		4		4
	Insect injury		2	0	2
	Nutritional	- general	3	0	3
		- nitrogen deficiency	1	0	1
	Root rot	- Pythium	1	1	2
	Root/stem rot	- Rhizoctonia	2	0	2
	Sooty mold	- species	1	0	1
IRIS (Iris)					
	Environmental	- cold injury	1	0	1
	Leaf spot	- Heterosporium	3	0	3
		- Mycosphaerella	1	0	1
IVY (various)					
	Bacterial spot	- Xanthomonas	1	0	1
	Cultural	- transplant shock	1	0	1
	Leaf spot	- Guignardia	1	0	1
		- Phyllosticta	1	0	1
JOE-PYE-WEED (Eupatorium)					
	Chemical injury	- growth regulator	1	0	1
KALANCHOE (Kalanchoe)					
	Insect injury		1	0	1

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
LACE FLOWER (Trachymene)					
	No disease		1		1
LAVATERA (Lavatera)					
	Inadequate specimen		1		1
LEMON (Citrus)					
	No disease		1		1
LICORICE PLANT (Glycyrrhiza)					
	Inadequate specimen		1		1
	Root/stem rot	- Rhizoctonia	1	0	1
LILY (Lilium)					
	Anthracnose	- Colletotrichum	1	0	1
	Gray mold	- Botrytis	2	0	2
	Inadequate specimen, no disease		2		2
	Virus	- unknown	1	0	1
LIRIOPE (Liriope)					
	Anthracnose	- Colletotrichum	1	0	1
LOBELIA (Lobelia)					
	Environmental	- cold injury	1	0	1
LUPINE (Lupinus)					
	Environmental	- stress	1	0	1
	Root rot	- Rhizoctonia	1	0	1
MALLOW (Sphaeralcea)					
	Environmental	- cold injury	1	0	1
MANDAVILLA (Mandavilla)					
	Insect injury		1	0	1
MARIGOLD (Tagetes)					
	Crown gall	- Agrobacterium	1	0	1
	Gray mold	- Botrytis	1	0	1
MAYAPPLE (Podophyllum)					
	Rust	- Puccinia	1	0	1
MILKWEED (Asclepias)					
	Environmental	- cold injury	2	0	2
MISCANTHUS (Miscanthus)					
	No disease		1		1
MONARDA (Monarda)					
	Leaf scorch	- winter drying	1	0	1
	Rust	- Puccinia	1	0	1

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
MONKEY-FLOWER (Mimulus)					
	Insect injury		1	0	1
OLEANDER (Nerium)					
	Cultural	- transplant shock	1	0	1
ORANGE (Citrus)					
	Insect injury		1	0	1
	Nutritional	- general	1	0	1
ORCHID (various)					
	Brown spot	- Pseudomonas	4	0	4
	Cultural	- oedema	1	0	1
	No disease		1		1
	Root problem	- unknown	1	0	1
PACHYSANDRA (Pachysandra)					
	Anthracnose	- Colletotrichum	1	0	1
	Leaf/stem blight	- Pseudonectria	1	0	1
	Root rot	- Rhizoctonia	1	0	1
PALM (various)					
	No disease		1		1
PANSY (Viola)					
	Gray mold	- Botrytis	1	0	1
	Leaf spot	- Cercospora	1	0	1
	No disease		1		1
	Physical injury	- bird	1	0	1
PENSTEMON (Penstemon)					
	Environmental	- cold injury	1	0	1
PEONY (Paeonia)					
	Chemical injury	- herbicide	1	0	1
	Gray mold	- Botrytis	2	0	2
	No disease		1		1
	Red spot	- Cladosporium	1	0	1
PETUNIA (Petunia)					
	Black root rot	- Thielaviopsis	1	0	1
	Chemical injury	- herbicide	1	0	1
	Gray mold	- Botrytis	1	0	1
	No disease		1		1
	Nutritional	- boron deficiency	1	0	1
	Powdery mildew	- Oidium	1	0	1
PHLOX (Phlox)					
	Crown rot	- Rhizoctonia	1	0	1
	Leaf scorch	- physiological	1	0	1
	No disease		2		2
	Powdery mildew	- Erisyphe	1	0	1

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
POINSETTIA (Euphorbia)					
	Chemical injury	- fungicide	2	0	2
	Inadequate specimen, no disease		2		2
	Nutritional	- general	1	0	1
	Root rot	- Pythium	2	0	2
		- Rhizoctonia	0	1	1
PORTULACA (Portulaca)					
	No disease		1		1
PRAYER PLANT (Maranta)					
	Insect injury		1	0	1
SCAEVOLA (Scaevola)					
	No disease		1		1
SCHEFFLERA (Brassaia)					
	Insect injury		2	0	2
	Sooty mold	- species	1	0	1
SEDUM (Sedum)					
	Stem rot	-Fusarium	1	0	1
SENECIO (Senecio)					
	Gray mold	- Botrytis	1	0	1
SNAPDRAGON (Antirrhinum)					
	No disease		1		1
	Stem rot	- Fusarium	1	0	1
SPATHIPHYLLUM (Spathiphyllum)					
	Cultural	- underwatering	1	0	1
	Environmental	- stress	1	0	1
SPIDERWORT (Tradescantia)					
	Bacterial leaf spot	- bacterial	1	0	1
STREPTOCARPELLO (Streptocarpus)					
	Environmental	- cold injury	1	0	1
TULIP (Tulipa)					
	Blight	- Botrytis	1	0	1
	Bulb rot	- Fusarium	1	0	1
	Environmental	- cold injury	1	0	1
	No disease		1		1
VINCA (Vinca)					
	Black root rot	- Thielaviopsis	1	1	2
	Canker/dieback	- Phomopsis	1	0	1
	Environmental	- cold injury	1	0	1
	Gray mold	- Botrytis	2	0	2
	Root rot	- Pythium	1	0	1

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
VIOLET (Viola)					
	Cultural	- unknown	2	0	2
YUCCA (Yucca)					
	Insect injury		1	0	1
ZINNIA (Zinnia)					
	Bacterial spot	- Xanthomonas	1	1	2
	Leaf spot	- Alternaria	1	0	1
		TURFGRASS			
BENTGRASS (Agrostis)					
	Anthracnose	- Colletotrichum	3	0	3
	Crown rot	- Pythium	2	0	2
	Environmental stresses		4	0	4
	No disease		8		8
	Pink snow mold	- Microdochium	1	0	1
	Root deterioration	- unknown	2	0	2
	Root rot	- Pythium	1	0	1
	Take-all patch	- Gaeumannomyces	3	0	3
BERMUDA (Cyndon)					
	Brown patch	- Rhizoctonia	4	0	4
	No disease		3		3
BLUEGRASS (Poa)					
	Anthracnose	- Colletotrichum	2	0	2
	Cultural	- heavy thatch	2	0	2
	Environmental	- wet feet	1	0	1
	No disease		2		2
	Necrotic ring spot	- Leptosphaeria	2	1	3
	Red thread	- Laetisaria	1	0	1
	Slime mold	- species	1	0	1
	Summer patch	- Magnaporthe	4	0	4
FESCUE (Festuca)					
	Anthracnose	- Colletotrichum	0	1	1
	Brown patch	- Rhizoctonia	15	3	18
	Chemical injury	- herbicide	1	0	1
	Environmental stresses		4	2	6
	Fairy ring	- Basidiomycete	1	0	1
	Inadequate specimen, no disease		8		8
	Necrotic ring spot	- Leptosphaeria	0	1	1
	Nutritional	- fertilizer burn	2	0	2
	Red thread	- Laetisaria	1	0	1
	Rust	- Puccinia	0	1	1
	Slime mold	- species	2	0	2
	Stripe smut	- Ustilago	0	1	1
	Summer patch	- Magnaporthe	2	0	2
	White blight	- Meanotus	1	0	1

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
RYEGRASS (Lolium)					
	Brown patch	- Rhizoctonia	1	0	1
	Gray leaf spot	- Pyricularia	2	0	2
	Leaf spot	- Drechslera	1	0	1
	No disease		3		3
	Nutritional	- fertilizer burn	1	0	1
	Patch disease	- unknown	1	0	1
TURF (unspecified)					
	Brown patch	- Rhizoctonia	6	2	8
	Cultural	- heavy thatch	3	0	3
	Environmental stresses		3	0	3
	Necrotic ring spot	- Leptosphaeria	1	0	1
	No disease		9		9
	Nutritional	- fertilizer burn	1	0	1
		- pH high	1	1	2
	Pink snow mold	- Microdochium	1	0	1
	Powdery mildew	- Erysiphe	1	0	1
	Red thread	- Laetisaria	1	0	1
	Root problem	- unknown	1	0	1
	Rust	- Puccinia	2	0	2
	Slime mold	- species	1	0	1
	Smut	- Ustilago	1	0	1
	Summer patch	- Magnaporthe	2	0	2

WOODY ORNAMENTALS

ALDER (Alnus)					
	Slime mold	- species	1	0	1
ALMOND (prunus)					
	Brown rot	- Monilinia	1	0	1
APPLE (Malus; weeping)					
	Fire blight	- Erwinia	1	0	1
ARBORVITAE (Thuja)					
	Cultural	- improper light	1	0	1
		- transplant shock	2	0	2
	Environmental stresses		8	1	9
	Heart rot	- unknown	1	0	1
	Insect injury		2	1	3
	Leaf scorch	- winter drying	2	0	2
	No disease		6		6
	Physical injury	- water	1	0	1
	Root problem	- unknown	1	0	1
	Twig blight	- Phomopsis	1	0	1

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
ASH (Fraxinus)					
	Anthracnose	- Apiognomonia	19	0	19
		- Discula	1	0	1
		- Kabatiella	1	0	1
	Insect injury		5	2	7
	Leaf spot	- Mycosphaerella	1	0	1
	No disease		2		2
AZALEA - See listing under RHODODENDRON					
BARBERRY (Berberis)					
	No disease		2		2
BEECH (Fagus)					
	Anthracnose	- Discula	1	0	1
	Cultural	- transplant shock	1	0	1
	Environmental	- stress	0	1	1
BIRCH (Betula)					
	Chemical	- unknown	1	0	1
	Decline	- environmental	1	0	1
	Environmental	- stress	1	0	1
	Leaf spot	- Marssonina	1	0	1
	No disease		2		2
BLACKGUM (Nyssa)					
	Leaf spot	- Mycosphaerella	1	0	1
	No disease		1		1
BOXELDER (Acer)					
	Environmental	- cold injury	1	0	1
	No disease		1		1
	Wood decay	- unknown	1	0	1
BOXWOOD (Buxus)					
	Canker	- Macrophoma	1	0	1
		- Pseudonectria	3	0	3
	Cultural	- transplant shock	1	0	1
	Environmental stresses		5	0	5
	Inadequate specimen, no disease		2		2
	Insect injury		2	0	2
	Twig blight	- Phoma	1	0	1
BUCKEYE (Aesculus)					
	Environmental	- cold injury	1	1	2
	Powdery mildew	- species	1	0	1
BUDDLEIA (Buddleia)					
	Insect injury		1	0	1
CHAMAECYPARIS (Chamaecyparis)					
	No disease		3		3

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
CHERRY (Prunus)					
	Black knot	- Apiosporina	1	0	1
	Brown rot	- Monilinia	1	0	1
	Cultural	- transplant shock	2	0	2
	Environmental stresses		3	0	3
	Insect injury		0	1	1
	Leaf spot	- Coccomyces	1	0	1
	No disease		1		1
CLEMATIS (Clematis)					
	No disease		2		2
COTONEASTER (Cotoneaster)					
	Cultural	- transplant shock	1	0	1
	No disease		1		1
CRABAPPLE (Malus)					
	Cedar/Apple rust	- Gymnosporangium	1	0	1
	Environmental stresses		0	3	3
	Frogeye	- Botryosphaeria	1	1	2
	Inadequate specimen, no disease		3		3
	Scab	- Venturia	24	1	25
CRAPEMYRTLE (Lagerstroemia)					
	No disease		1		1
	Powdery mildew	- Erysiphe	1	0	1
CYPRESS (Cupressocyparis)					
	Cultural	- poor planting	1	0	1
		- transplant shock	1	0	1
	Insect injury		1	0	1
	No disease		1	0	1
DAPHNE (Daphne)					
	Root rot	- Rhizoctonia	1	0	1
DOGWOOD (Cornus)					
	Anthracnose	- Discula	5	2	7
	Chemical injury	- unknown	1	0	1
	Cultural	- transplant shock	1	4	5
	Decline	- unknown	4	0	4
	Environmental stresses		13	6	19
	Inadequate specimen, no disease		14		14
	Leaf scorch	- environmental	2	1	3
		- unknown	2	0	2
	Leaf spot	- Septoria	3	2	5
	Powdery mildew	- Oidium	52	6	58
	Spot anthracnose	- Elsinoe	1	0	1

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
ELM (Ulmus)					
	Dutch elm disease	- Ceratocystis	2	0	2
	Environmental stresses		3	0	3
	Inadequate specimen, no disease		10		10
	Insect injury		1	1	2
	Leaf spot	- Gloeosporium	1	1	2
EUONYMUS (Euonymus)					
	Anthracnose	- Colletotrichum	1	0	1
		- Gloeosporium	1	0	1
	Crown gall	- Agrobacterium	3	0	3
	Cultural	- transplant shock	1	0	1
	Inadequate specimen, no disease		7		7
	Insect injury		12	0	12
	Leaf scorch	- environmental	1	0	1
FIR (Abies)					
	Environmental	- compaction	1	0	1
	No disease		5		5
	Tip blight	- Sphaeropsis	1	0	1
FORSYTHIA (Forsythia)					
	No disease		1		1
GINKO (Ginko)					
	Environmental stresses		2	0	2
GOLDENCHAIN TREE (Laburnum)					
	Insect injury		1	0	1
HACKBERRY (Celtis)					
	Insect injury		1	0	1
HAWTHORN (Crataegus)					
	Cedar-quince rust	- Gymnosporangium	10	0	10
	Insect injury		1	1	2
	Leaf blight	- Entomosporium	0	1	1
	No disease		1		1
	Physical injury	- unknown	1	0	1
HAZELNUT (Corylus)					
	Cultural	- pollination	1	0	1
HEMLOCK (Tsuga)					
	Cultural	- transplant shock	4	0	4
	Environmental stresses		4	0	4
	Inadequate specimen, no disease		6		6
	Insect injury		3	0	3

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
HIBISCUS (Hibiscus)					
	Charcoal rot	- Macrophomina	1	0	1
	Chemical injury	- growth regulator	2	0	2
	Environmental	- cold injury	1	0	1
	Insect injury		1	0	1
	No disease		1		1
HICKORY (Carya)					
	Insect injury		4	0	4
	Pollination problem	- unknown	1	0	1
HOLLY and INKBERRY (Ilex)					
	Black root rot	- Thielaviopsis	8	0	8
	Cultural	- transplant shock	6	1	7
	Environmental stresses		9	2	11
	Inadequate specimen, no disease		16		16
	Insect injury		2	1	3
	Leaf spot	- Cercospora	3	0	1
		- fungal	1	1	2
		- Phyllosticta	0	1	1
	Nutritional	- general	1	0	1
		- pH high	1	0	1
	Root problem	- unknown	3	0	3
HONEYLOCUST (Gleditsia)					
	Canker	- Thyronectria	1	0	1
	Insect injury		2	0	2
	No disease		1		1
	Powdery mildew	- Microsphera	1	0	1
HORNBEAM (Carpinus)					
	No disease		1		1
HORECHESTNUT (Aesculus)					
	Leaf blotch	- Guignardia	1	0	1
HYDRANGEA (Hydrangea)					
	Cultural	- transplant shock	1	0	1
	Environmental stresses		1	1	2
	Gray mold	- Botrytis	1	0	1
	Leaf spot	- Cercospora	1	0	1
	Root problem	- unknown	1	0	1
JASMINE (Jasminum)					
	No disease		1		1
	Virus	- unknown	1	0	1

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
JUNIPER and RED CEDAR (Juniperus)					
	Cedar/apple rust	- Gymnosporangium	5	0	5
	Cedar/quince rust	- Gymnosporangium	1	0	1
	Cultural	- transplant shock	3	0	3
	Environmental stresses		8	3	11
	Insect injury		2	0	2
	No disease		15		15
	Nutritional	- soluble salts	1	0	1
	Root problem	- unknown	3	0	3
	Twig blight	- Kabatina	2	0	2
		- Phomopsis	6	0	6
KATSURATREE (Cercidiphyllum)					
	No disease		1		1
LILAC (Syringa)					
	Bacterial blight	- Pseudomonas	2	1	3
	Cultural	- transplant shock	1	0	1
	Environmental	- cold injury	1	0	1
	Leaf scorch	- environmental	1	0	1
		- unknown	2	0	2
	Leaf spot	- Cercospora	0	1	1
	Powdery mildew	- Microsphaera	1	0	1
	Root problem	- unknown	1	0	1
LINDEN (Tilia)					
	Environmental	- cold injury	1	0	1
LOCUST (Robinia)					
	Insect injury		4	1	5
MAGNOLIA (Magnolia)					
	Cultural	- transplant shock	1	0	1
	Environmental stresses		11	2	13
	Insect injury		3	0	3
	Leaf scorch	- winter drying	3	0	3
	Leaf spot	- fungal	2	0	2
		- Phyllosticta	2	0	2
	No disease		3		3
	Physical injury	- squirrel	1	0	1
	Sooty mold	- species	0	2	2
MAPLE (Acer)					
	Anthracnose	- Apiognomonia	1	0	1
		- Discula	12	1	13
		- Gloeosporium	1	0	1
		- Kabatiella	15	2	17
	Canker	- Cytospora	1	0	1
	Chemical injury	-unknown	1	0	1
	Cultural	- transplant shock	4	1	5
	Decline	- environmental	2	0	2
		- unknown	4	0	4

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
MAPLE (Acer) (cont)					
	Environmental stresses		35	8	43
	Inadequate specimen, no disease		20		20
	Insect injury		15	7	22
	Leaf blight	- Discosia	0	1	1
	Leaf scorch	- environmental	4	0	4
		- unknown	4	0	4
	Leaf spot	- fungal	1	0	1
		- Marssonina	1	0	1
		- Phyllosticta	8	3	11
	Root problem	- unknown	5	0	5
	Sooty mold	- species	1	0	1
	Tar spot	- Rhytisma	5	0	5
	Wilt	- Verticillium	6	0	6
	Wood decay	- unknown	1	0	1
MOUNTAIN ASH (Sorbus)					
	No disease		2		2
	Scab	- Venturia	1	0	1
MOUNTAIN LAUREL (Kalmia)					
	No disease		1		1
MULBERRY (Morus)					
	Leaf spot	- Cercospora	1	0	1
NINEBARK (Physocarpus)					
	Environmental	- cold injury	1	0	1
OAK (Quercus)					
	Anthracnose	- Apiognomonia	5	1	6
		- Kabatiella	1	0	1
	Bacterial scorch	- Xylella	4	0	4
	Canker	- Cryphonectria	1	0	1
		- Cytospora	1	0	1
		- unknown	1	0	1
	Chemical injury	- burn	0	1	1
		- herbicide	1	0	1
	Cultural	- Oedema	0	1	1
	Environmental stresses		9	1	10
	Inadequate specimen, no disease		7		7
	Insect injury		16	4	20
	Leaf blister	- Taphrina	18	2	20
	Leaf spot	- Elsinoe	2	2	4
		- Gloeosporium	1	0	1
		- Monochaetia	1	0	1
		- Tubakia	5	0	5
	Nutritional	- iron deficiency	4	0	4
	Physical injury	- various	2	2	4
	Powdery mildew	- species	2	0	2
	Root/butt rot	- fungal	1	0	1
	Wood decay	- Ganoderma	1	0	1

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
PAW PAW (Asimina)					
	Environmental	- compaction	1	0	1
PEAR (Pyrus)					
	Bacterial spot	- Pseudomonas	2	0	2
	Chemical injury	- growth regulator	4	0	4
	Cultural	- transplant shock	3	1	4
	Environmental stresses		4	0	4
	Fire blight	- Erwinia	4	0	4
	Leaf scorch	- unknown	1	0	1
	No disease		9		9
PERSIMMON (Diospyros)					
	Anthracnose	- Gloeosporium	1	0	1
	Environmental	- winter injury	1	0	1
PHOTINIA (Photinia)					
	Leaf spot	- Entomosporium	3	0	3
PIERIS (Pieris)					
	No disease		1		1
	Root problem	- unknown	1	0	1
PINE (Pinus)					
	Air pollution	- ozone	1	0	1
	Brown spot	- Mycosphaerella	6	1	7
	Canker	- Acropellis	1	0	1
		- Cenangium	1	0	1
	Chemical injury	- growth regulator	1	0	1
		- herbicide	1	0	1
	Cultural	- transplant shock	11	0	11
	Decline	- unknown	3	0	3
	Eastern gall rust	- Cronartium	1	0	1
	Environmental stresses		18	2	20
	Girdling root	- cultural	1	0	1
	Inadequate specimen, no disease		55		55
	Insect injury		19	7	26
	Needle bending	- environmental	1	0	1
	Needle cast	- Lophodermium	1	0	1
	Needle drop	- normal	4	0	4
	Needle rust	- Coleosporium	1	0	1
	Needle tip burn	- unknown	1	0	1
	Nutritional	- acid soil	0	1	1
		- pH high	0	1	1
	Physical injury	- fire	1	0	1
		- unknown	1	0	1
	Pinewood nematode	- Bursaphelencus	1	0	1
	Root problem	- unknown	5	0	5
	Sooty mold	- species	6	2	8
	Tip blight	- Sphaeropsis	21	0	21
	White pine decline	- environmental	17	2	19

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
PLUM (Prunus)					
	Black knot	- Apiosporina	15	0	15
	Brown rot	- Monilinia	1	0	1
	Environmental	- cold injury	2	0	2
	Leaf spot	- Coccomyces	1	0	1
		- fungal	0	1	1
POPLAR and COTTONWOOD (Populus)					
	Anthracnose	- Colletotrichum	1	0	1
		- fungal	1	0	1
	Canker	- Cryptodiaporthe	2	0	2
		- Fusarium	1	0	1
	Leaf spot	- Marssonina	1	0	1
		- Mycosphaerella	1	0	1
	No disease		2		2
PRIVET (Ligustrum)					
	Environmental	- stress	1	0	1
	Inadequate specimen		1		1
	Root rot	- unknown	1	0	1
PYRACANTHA (Pyracantha)					
	Environmental	- cold injury	1	0	1
REDBUD (Cercis)					
	Anthracnose	- Kabatiella	1	0	1
	Chemical injury	- herbicide	1	0	1
	Environmental	- stress	1	0	1
	No disease		1		1
REDWOOD (Sequoia)					
	Environmental	- stress	1	0	1
RHODODENDRON and AZALEA (Rhododendron)					
	Chemical injury	- dog urine	1	0	1
	Cultural	- oedema	1	0	1
		- transplant shock	3	2	5
	Environmental stresses		8	1	9
	Insect injury		9	3	12
	Leaf burn	- unknown	1	0	1
	Leaf/flower gall	- Exobasidium	3	0	3
	Leaf scorch	- winter drying	3	0	3
	Leaf spot	- Cercospora	1	0	1
		- Septoria	1	0	1
	Lichen	- species	1	0	1
	No disease		10		10
	Nutritional	- fertilizer burn	3	0	3
		- iron deficiency	0	1	1
		- pH high	0	2	2
		- soluble salts	1	0	1
	Physical injury	- rodent	1	0	1
	Root problem	- unknown	2	0	2

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
RHODODENDRON and AZALEA (Rhododendron) (cont)					
	Root rot	- Phytophthora	1	0	1
	Sooty mold	- species	1	0	1
	Twig blight	- Pestalotiopsis	1	0	1
ROSE (Rosa)					
	Black spot	- Diplocarpon	2	1	3
	Bud/twig blight	- Botrytis	2	0	2
	Canker	- Coniothyrium	1	1	2
	Chemical injury	- herbicide	1	0	1
	Cultural	- low light	1	0	1
		- transplant shock	1	0	1
	Environmental stresses		2	1	3
	Insect injury		1	0	1
	No disease		5		5
	Nutritional	- acid soil	0	1	1
		- fertilizer burn	1	0	1
		- potassium deficiency	1	0	1
	Powdery mildew	- Sphaerotheca	3	0	3
	Rosette	- unknown	3	0	3
	Rust	- Phragmidium	1	0	1
	Virus	- rose mosaic	1	0	1
RUSSIAN-OLIVE (Eleagnus)					
	Canker	- Nectria	1	0	1
SASSAFRAS (Sassafras)					
	Chemical injury	- growth regulator	2	0	2
	No disease		1		1
SERVICEBERRY (Amelanchier)					
	Chemical injury	- unknown	1	0	1
SMOKETREE (Cotinus)					
	No disease		2		2
SPIREA (Spirea)					
	Environmental	- cold injury	1	1	2
	Fasciation	- unknown	1	0	1
	Inadequate specimen, no disease		2		2
	Leaf spot	- Cercospora	1	0	1
SPRUCE (Picea)					
	Canker	- Leucostoma	1	0	1
	Chemical injury	- various	3	0	3
	Cultural	- transplant shock	7	2	9
	Environmental stresses		10	0	10
	Inadequate specimen, no disease		29		29
	Insect injury		27	2	29
	Needle cast	- Rhizosphaera	2	1	3
	Nutritional	- acid soil	0	2	2
	Root problem	- unknown	1	0	1

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
SWEETGUM (Liquidambar)					
	Bleeding canker	- Botryosphaeria	1	0	1
	Environmental stresses		2	0	2
	Insect injury		0	1	1
	No disease		1		1
SYCAMORE and PLANETREE (Platanus)					
	Anthracnose	- Apiognomonia	6	0	6
TAXUS (Taxus)					
	Chemical	- herbicide	0	1	1
	Cultural	- transplant shock	7	0	7
	Dieback	- unknown	2	0	2
	Environmental stresses		14	3	17
	Inadequate specimen, no disease		14		14
	Insect injury		1	0	1
	Nutritional	- acid soil	1	0	1
	Root problem	- unknown	1	0	1
	Root rot	- Phytophthora	3	0	3
	Slime mold	- species	1	0	1
	Twig blight	- Phyllosticta	1	0	1
TULIPTREE (Liriodendron)					
	Environmental stresses		3	0	3
	Insect injury		6	0	6
	Powdery mildew	- Oidium	1	0	1
	Sooty mold	- species	1	4	5
VIBURNUM (Viburnum)					
	Cultural	- oedema	1	0	1
	Environmental	- wet feet	0	1	1
	Insect injury		5	0	5
	Leaf scorch	- unknown	2	0	2
	No disease		2		2
	Root problem	- unknown	1	0	1
WALNUT (Juglans)					
	Anthracnose	- Gnomonia	1	0	1
	Cultural	- transplant shock	1	0	1
	Insect injury		1	0	1
WEIGELA (Weigela)					
	No disease		1		1
WITCHHAZEL (Hamamelis)					
	Environmental	- stress	1	0	1
WILLOW (Salix)					
	Crown gall	- Agrobacterium	1	0	1
	Environmental	-cold injury	1	0	1
	Insect injury		1	0	1
	Rust	- Melamspora	1	0	1

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
YELLOWWOOD (Cladrastis)					
	Anthracnose	- Discula	1	0	1
		- Gloeosporium	2	0	2
	Canker	- Botryosphaeria	1	0	1
	No disease		3	0	3

VEGETABLES

ASPARAGUS (Asparagus)					
	Crown rot	- Fusarium	1	0	1
	Inadequate specimen		1		1
	Insect injury		1	0	1
	Environmental	- cold injury	0	1	1
BEAN (Phaseolus)					
	Anthracnose	- Colletotrichum	2	1	3
	Common blight	- Xanthomonas	1	0	1
	Environmental stresses		4	0	4
	Inadequate specimen, no disease		7		7
	Insect injury		1	2	3
	Leaf spot	- Cercospora	3	0	3
	Physiological	- root initiation	1	0	1
	Root rot	- Pythium	1	0	1
	Root/stem rot	- Fusarium	1	0	1
		- Rhizoctonia	2	1	3
	Rust	- Uromyces	1	0	1
CABBAGE - See listing under CRUCIFERS					
CANTALOUPE - See listing under CUCURBITS					
CORN, SWEET (Zea)					
	Chemical injury	- herbicide	1	0	1
	Cultural	- over mature	1	0	1
	Environmental	- stress	1	0	1
	Holcus leaf spot	- Pseudomonas	2	0	2
	Inadequate specimen, no disease		6		6
	Insect injury		2	0	2
	No ear	- physiological	1	0	1
	Nutritional	- fertilizer burn	1	0	1
	Root/stem rot	- Rhizoctonia	1	0	1

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
CRUCIFERS - CABBAGE, KALE and TURNIP (Brassica)					
	Anthracnose	- Colletotrichum	1	0	1
	Black leg	- Leptosphaeria	1	0	1
	Black rot	- Xanthomonas	0	1	1
	Black spot	- Alternaria	0	2	2
	Cultural	- high temperature	1	0	1
		- oedema	1	0	1
	Downy mildew	- Peronospora	1	0	1
	Environmental stresses		2	0	2
	Insect injury		1	0	1
	Leaf spot	- Cercosporella	1	0	1
	No disease		4		4
	Wire stem	- Rhizoctonia	1	1	2
CUCUMBER - See listing under CUCURBITS					
CUCURBITS - CANTALOUPE, CUCUMBER (Cucumis), PUMPKIN, SQUASH, GOURD (Cucurbita) and WATERMELON (Citrulis)					
	Bacterial spot	- bacterial	1	0	1
	Bacterial wilt	- Erwinia	11	0	11
	Chemical injury	- herbicide	3	0	3
		- unknown	1	0	1
	Crown/root rot	- Fusarium	1	0	1
	Cultural	- high temperature	1	0	1
	Downy mildew	- Peronospora	5	0	5
	Fruit decay	- Fusarium	1	0	1
	Fruit rot	- Choanephora	2	0	2
	Fruit spot	- unknown	2	0	2
	Gummy stem blight	- Didymella	1	0	1
	Inadequate specimen, no disease		20		20
	Insect injury		3	1	4
	Nutritional	- fertilizer burn	1	0	1
		- nitrogen deficiency	1	0	1
	Powdery mildew	- Erysiphe	2	0	2
	Root/stem rot	- Fusarium	0	1	1
	Virus	- cucumber mosaic	7	0	7
		- potyvirus	2	1	3
		- watermelon mosaic II	40	0	40
	Wilt	- Fusarium	1	0	1
EGGPLANT (Solanum)					
	Cultural	- oedema	1	0	1
LETTUCE (Lactuca)					
	Inadequate specimen		1		1
ONION (Allium)					
	Environmental	- stress	2	0	2
	Insect injury		1	0	1
	No disease		1		1
	Nutritional	- general	0	1	1

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
PEA (Pisum)					
	Bacterial blight	- Pseudomonas	0	1	1
	Root rot	- Pythium	0	1	1
	Root/stem rot	- Rhizoctonia	2	0	2
PEANUT (Arachis)					
	Leaf spot	- Leptosphaerulina	0	1	1
	Stem blight	- Sclerotinia	1	0	1
PEPPER (Capsicum)					
	Bacterial spot	- Erwinia	1	0	1
		- Xanthomonas	6	0	6
	Cultural	- high temperature	1	0	1
	Insect injury		1	0	1
	No disease		4		4
	Nutritional	- acid soil	1	0	1
POTATO (Solanum)					
	Canker	- Rhizoctonia	1	0	1
	Environmental	- wet feet	0	2	2
	Inadequate specimen, no disease		3		3
	Insect injury		1	0	1
	Root rot	- Phytophthora	2	0	2
	Scab	- Streptomyces	1	0	1
PUMPKIN - See listing under CUCURBITS					
RADISH (Rheum)					
	Black rot	- Xanthomonas	1	0	1
	Insect injury		1	0	1
	Soft rot	- Erwinia	1	0	1
RHUBARB (Rheum)					
	Crown rot	- Rhizoctonia	1	0	1
	Environmental	- cold injury	1	0	1
	Inadequate specimen		1		1
SPINACH (Spinacia)					
	No disease		2		2
SQUASH - See listing under CUCURBITS					
SUGAR BEET (Beta)					
	Anthracnose	- Colletotrichum	1	0	1
	Environmental	- cold injury	1	0	1
	Leaf spot	- Cercospora	3	0	3
SWEET POTATO (Ipomoea)					
	Cultural	- improper curing	1	0	1
	Environmental	- intumescence	1	0	1
	Growth crack	- environmental	0	2	2
	Scurf	- Monilochaete	6	0	6

CROP	*DIAGNOSIS*	*CAUSAL AGENT*	*#1º DIAGs*	*#2º DIAGs*	*TOTAL*
TOMATO (Lycopersicon)					
	Anthracnose	- Colletotrichum	1	0	1
	Bacterial speck	- Pseudomonas	5	0	5
	Bacterial spot	- Xanthomonas	1	0	1
	Blossom end rot	- calcium deficiency/dry	2	2	4
	Buckeye rot	- Phytophthora	2	0	2
	Chemical injury	- growth regulator	7	1	8
		- herbicide	2	0	2
		- insecticide	1	0	1
		- unknown	3	0	3
	Cultural	- high temperature	1	0	1
	Early blight	- Alternaria	8	2	10
	Environmental stresses		9	1	10
	Gray mold	- Botrytis	4	0	4
	Inadequate specimen, no disease		21		21
	Insect injury		3	2	5
	Late blight	- Phytophthora	1	1	2
	Leaf mold	- Cladosporium	2	0	2
	Leaf rot	- Phoma	1	0	1
	Leaf spot	- Septoria	11	3	14
	Nutritional	- calcium deficiency	1	0	1
		- fertilizer burn	4	0	4
		- general	2	1	3
		- iron deficiency	1	0	1
		- maganesium deficiency	3	1	4
		- phosphorus deficiency	0	1	1
		- potassium deficiency	1	1	2
		- soluble salts	1	0	1
	Physical injury	- hail	1	0	1
	Physiological	- internal white tissue	1	0	1
		- leaf roll	1	0	1
		- uneven ripening	2	0	2
	Pith necrosis	- Pseudomonas	3	0	3
	Powdery mildew	- Oidiopsis	0	1	1
	Root knot nematode	- Meloidogyne	2	2	4
	Root problem	- unknown	2	0	2
	Root/stem rot	- Fusarium	2	0	2
		- Rhizoctonia	1	1	2
	Southern blight	- Sclerotium	6	0	6
	Soft rot	- Erwinia	1	0	1
	Stem canker	- Alternaria	1	0	1
	Stem rot	- Botrytis	2	0	2
		- Sclerotinia	2	0	2
	Virus	- alfalfa mosaic	1	0	1
	Walnut wilt	- juglone	1	0	1
	Wilt	- Fusarium	2	0	2
TURNIP - See listing under CRUCIFERS					
WATERMELON - See listing under CUCURBITS					
TOTALS			**7236**	**642**	**7878**