The Plant Disease Clinic and Weed Identification Laboratory  
2003 Annual Report 

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Acknowledgements

The Plant Disease Clinic depends on a industrious staff of both full-time and part-time employees to prepare culture media, isolate pathogens from plant tissue, measure soil pH, extract nematodes from soil and plant tissue, maintain records, answer the telephone, keep track of samples, and send out reports. In 2003, diagnoses in the Plant Disease Clinic in Blacksburg were performed by Mary Ann Hansen, and Nina Hopkins, with valuable assistance from Shannon Hill.

Plant Clinic staff consult with many faculty and staff in various departments in order to make complete, accurate diagnoses and recommendations. We would like to thank the following people for their helpful assistance during the past year:

**Plant Pathology, Physiology, and Weed Science**
- Dr. Anton Baudoin
- Mr. Josh Beam
- Dr. Kevin Bradley
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- Dr. Jeff Derr
- Dr. Jon Eisenback
- Dr. Gary Griffin
- Dr. Scott Hagood
- Mr. Lloyd Hipkins
- Dr. Chuan Hong
- Dr. Chuck Johnson
- Mr. Phil Keating
- Mr. Claude Kenley
- Dr. George Lacy
- Dr. Pat Phipps
- Dr. Curt Roane
- Mr. Peter Sforza
- Dr. Jay Stipes
- Dr. Erik Stromberg
- Dr. Sue Tolin
- Dr. Keith Yoder

**Horticulture**
- Dr. Tony Bratsch
- Dr. Roger Harris
- Dr. Joyce Latimer
- Dr. Richard Marini
- Dr. Ron Morse
- Dr. Alex Niemiera
- Dr. Holly Scoggins
- Dr. Greg Welbaum
- Dr. Jerry Williams
- Dr. Tony Wolf

**Entomology**
- Mr. Eric Day
- Mr. Shahrooz Feizabadi
- Dr. Doug Pfeiffer
- Dr. Rod Youngman

**Crop, Soil, and Environmental Sciences**
- Dr. Mark Alley
- Dr. Dan Brann
- Dr. David Chalmers
- Dr. Steve Donohue
- Dr. Erik Ervin
- Mr. Steve Heckendorn
- Ms. Pat Hipkins

**Biology**
- Dr. Orson Miller
- Mr. Tom Wieboldt

** Fisheries and Wildlife**
- Dr. Jim Parkhurst

The Weed Identification Clinic is operated by Dr. Scott Hagood with the assistance of Mr. Josh Beam and Mr. Lloyd Hipkins. Mr. Tom Wieboldt, curator of the Herbarium in the Biology Department, performs many of the plant and weed identifications.

We would also like to thank Mr. Todd Powell of TSP Software for designing and continuing to support the Plant Clinic database (“PClinic”). The database has given us the ability to keep complete records of Plant Clinic samples and to mail reports to Extension Offices electronically. Information on purchasing PClinic can be obtained from the Clinic at <clinic@vt.edu>. We are also especially grateful to Mr. Shahrooz Feizabadi for maintaining our computer system and network.

Introduction

The annual report for the Plant Disease Clinic and the Weed Identification Clinic located on the Virginia Tech campus in Blacksburg is presented in the following pages. Results of the soil assays performed by the Nematode Assay Laboratory are not included, nor are plant specimens which were submitted to and diagnosed at the Agricultural Research and Extension Centers throughout the Commonwealth. Note that the number of diagnoses performed was higher than the number of samples received because some samples have more than one problem.

For those pathogens that could be identified to species or for which only one species is known to occur on the host plant in question, the species name is listed. For those diseases in which one of several species could have been involved, the epithet is listed as "sp." The Plant Disease Clinic did not routinely identify pathogenic organisms to species since species identification can sometimes be a very time-consuming process and often has little bearing on control recommendations. Most pathogens were assumed to be disease incitants if they were cultured in sufficient numbers from the plant tissue, if they were reported in the literature to be pathogens of the particular host plant, and if they were reported to cause the observed symptoms.

Viral problems were, for the most part, diagnosed by the ELISA (Enzyme-Linked Immunosorbent Serological Assay) method by Agdia, Inc. or by Agdia’s immunostrip testing system. Host inoculation was also used to identify viruses in some specimens. In some cases, identification of the specific virus was not desired by the client. In those cases, if symptoms indicated a virus infection, the diagnosis is listed simply as "virus".

Nematode diseases were diagnosed by extracting nematodes from soil or plant tissue. Samples must include at least 1 pint of soil for nematode assays. Nematode assays were routinely performed on samples of plant species known to be affected by nematodes, e.g. boxwood. Nematode populations in the sample were compared to damage threshold levels in making a control recommendation. Threshold levels have been developed in research trials for many, but not all, crops grown in VA.

The phrase "Cause of Problem Unknown" is used for specimens for which no pathogen could be isolated and for which no obvious environmental or cultural condition could be associated with the problem. Trees have more specimens in this category and in the category "Insufficient Sample" than any other type of plant. Tree problems are more difficult to diagnose in a clinic setting than problems of annual plants for several reasons. First, tree problems often develop over the course of several years and current symptoms may be related to stressful conditions that occurred in previous years. Also, it is difficult for growers to supply an appropriate plant specimen for diagnosis since the causes of many tree diseases occur in the trunk or roots.

Some insect problems are also listed in this report. Insect damage is often mistaken for disease, and samples with insect damage are sometimes submitted to the Plant Disease Clinic rather than the Insect Identification Lab. We make a preliminary diagnosis of insect damage on these samples and refer them to Mr. Eric Day in the Insect Identification Lab. The final diagnosis on all samples of insect damage is performed by Mr. Day.

Reports are now mailed electronically to the Extension Office email address. Upon request, we will simultaneously send electronic reports to one or more individual Extension personnel. Since implementing electronic mailing, we have discontinued faxing reports. For the time being, we are continuing to send a copy of the original diagnostic form submitted by the agent back to the Extension office through the Extension Distribution Center if a diagnostic form with carbon copies is submitted with the sample. Any factsheets or additional printed information is attached to this form. The new diagnostic forms available through the Extension Distribution Center do not have carbon copies. For samples submitted with these forms, we send out only the electronic report. Any comments or questions about reports or plant problems can be emailed to us at <clinic@vt.edu>.

For information on how to submit samples and complete the appropriate forms, please refer to the following web site for an audiovisual web presentation: http://www.ext.vt.edu/vce/staffdev/anrtraining/
### Monthly Submission Report
**Number of Samples Received by Month**

#### 2003

<table>
<thead>
<tr>
<th>Month</th>
<th># of Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>20</td>
</tr>
<tr>
<td>February</td>
<td>27</td>
</tr>
<tr>
<td>March</td>
<td>60</td>
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<tr>
<td>April</td>
<td>130</td>
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<tr>
<td>May</td>
<td>190</td>
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<td>June</td>
<td>191</td>
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<td>July</td>
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<td>August</td>
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<td>September</td>
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<td>October</td>
<td>68</td>
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<td>November</td>
<td>31</td>
</tr>
<tr>
<td>December</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1227</strong></td>
</tr>
</tbody>
</table>

![Number of Samples by Month]
## Crop Category Report
### Sample Totals by Major Crop
### 2003

<table>
<thead>
<tr>
<th>Crop</th>
<th># of Samples</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trees</td>
<td>333</td>
<td>27.1%</td>
</tr>
<tr>
<td>Woody Ornamentals</td>
<td>290</td>
<td>23.6%</td>
</tr>
<tr>
<td>Herbaceous Ornamentals</td>
<td>185</td>
<td>15.1%</td>
</tr>
<tr>
<td>Vegetables and Herbs</td>
<td>103</td>
<td>8.4%</td>
</tr>
<tr>
<td>Tree Fruits and Nuts</td>
<td>90</td>
<td>7.3%</td>
</tr>
<tr>
<td>Turf</td>
<td>80</td>
<td>6.5%</td>
</tr>
<tr>
<td>Field Crops</td>
<td>75</td>
<td>6.1%</td>
</tr>
<tr>
<td>Small Fruits</td>
<td>47</td>
<td>3.8%</td>
</tr>
<tr>
<td>Other</td>
<td>24</td>
<td>2.2%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1227</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

### Samples by Crop Category

- **Trees**: 27.1%
- **Woody Ornamentals**: 23.6%
- **Herbaceous Ornamentals**: 15.1%
- **Vegetables and Herbs**: 8.4%
- **Tree Fruits and Nuts**: 7.3%
- **Turf**: 6.5%
- **Field Crops**: 6.1%
- **Small Fruits**: 3.8%
- **Other**: 2.2%
### Diagnostic Category Report
#### Distribution of Diagnoses by Major Diagnostic Category
2003

<table>
<thead>
<tr>
<th>Category</th>
<th># of Diagnoses</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Plant Diseases-Biotic Agents</strong></td>
<td>601</td>
<td>44.9</td>
</tr>
<tr>
<td>Bacterium (49)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fungus (509)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nematode (23)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virus (20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Plant Injury-Abiotic Agents</strong></td>
<td>376</td>
<td>28.1</td>
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<tr>
<td>Chemical (61)</td>
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<td></td>
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<tr>
<td>Environmental/cultural (307)</td>
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<tr>
<td>Mechanical (8)</td>
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<td></td>
</tr>
<tr>
<td><strong>Plant Injury-Insects or Mites</strong></td>
<td>97</td>
<td>7.2</td>
</tr>
<tr>
<td>Insects Or Mites (97)</td>
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<td></td>
</tr>
<tr>
<td><strong>Plant Injury-Animals</strong></td>
<td>7</td>
<td>0.5</td>
</tr>
<tr>
<td>Birds (1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mammals (6)</td>
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<td></td>
</tr>
<tr>
<td><strong>Insufficient Sample or Cause Unknown</strong></td>
<td>148</td>
<td>11</td>
</tr>
<tr>
<td>Insufficient Sample Or Information (136)</td>
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<tr>
<td>Unknown (12)</td>
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<tr>
<td><strong>Miscellaneous</strong></td>
<td>62</td>
<td>5.1</td>
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<tr>
<td>Normal Condition (10)</td>
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<tr>
<td>Other (34)</td>
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<tr>
<td>Physiological/genetic (18)</td>
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<tr>
<td><strong>Weed Encroachment</strong></td>
<td>2</td>
<td>0.1</td>
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<td>Weed (2)</td>
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<tr>
<td><strong>Identifications</strong></td>
<td>40</td>
<td>3</td>
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<tr>
<td>Algae (1)</td>
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</tr>
<tr>
<td>Fungi (15)</td>
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<tr>
<td>Plant (21)</td>
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</tr>
<tr>
<td>Unable To Identify (3)</td>
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<tr>
<td><strong>Total</strong></td>
<td>1340</td>
<td>100%</td>
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</tbody>
</table>

#### 2003 Samples by Diagnostic Category

- **Plant Diseases-Biotic Agents**: 44.9%
- **Weed Encroachment**: 0.1%
- **Identifications**: 3.0%
- **Plant Injury-Insects or Mites**: 7.2%
- **Plant Injury-Abiotic Agents**: 28.1%
- **Insufficient Sample or Cause Unknown**: 11.0%
- **Miscellaneous**: 5.1%
- **Plant Injury-Animals**: 0.5%
Plant Pathogens, 2003

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<tr>
<td>Bacterium</td>
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<tr>
<td>Nematode</td>
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<tr>
<td>Virus</td>
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Other Assistance, 2003

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<tbody>
<tr>
<td>E-mail</td>
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<tr>
<td>Digital Images</td>
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<td>Phone Calls</td>
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Other Agents, 2003

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<tr>
<td>Environmental/Cultural</td>
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<tr>
<td>Insufficient Sample or Information</td>
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</tr>
<tr>
<td>Insects or Mites</td>
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<td>Chemical</td>
<td>100</td>
</tr>
<tr>
<td>Other</td>
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</tr>
<tr>
<td>Physiological/Genetic</td>
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<tr>
<td>Unknown</td>
<td>10</td>
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<tr>
<td>Normal Condition</td>
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<tr>
<td>Mechanical</td>
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</table>
### Distribution of Samples by County

**2003**

<table>
<thead>
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<th>County</th>
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<th>County</th>
<th># of Samples</th>
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<tr>
<td>Accomack</td>
<td>2</td>
<td>Lancaster</td>
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<tr>
<td>Albemarle</td>
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<td>Lee</td>
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<td>Loudoun</td>
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<tr>
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<td>Louisa</td>
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<tr>
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<td>Amherst</td>
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<td>Mathews</td>
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<td>Mecklenburg</td>
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<td>Bath</td>
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<td>Middlesex</td>
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<td>Bedford</td>
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<td>Montgomery</td>
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<td>Bland</td>
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<td>Nelson</td>
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<td>Newport News (IC)</td>
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<tr>
<td>Chesapeake (IC)</td>
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<td>Patrick</td>
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<td>Culpeper</td>
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<td>Frederick</td>
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<tr>
<td>King and Queen</td>
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<td>King George</td>
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<td>York</td>
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<td>King William</td>
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<td>Out-of-state</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>1227</strong></td>
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<td></td>
</tr>
</tbody>
</table>
2003 Samples by District

- Out of State: 0.4%
- Southeast: 6.9%
- Central: 9.1%
- Southwest: 19.1%
- Northern: 32.6%
- Northeast: 24.0%
- Northwest: 7.8%

Samples by Submitter Type, 2003

- Extension Agent or Staff: 87.6%
- Extension Specialist: 0.4%
- Winchester AREC: 0.2%
- Southern Piedmont AREC: 0.1%
- Eastern Shore AREC: 0.1%
- Insect ID: 0.9%
- Horticulture: 0.5%
- Master Gardener: 0.2%
- Walk-in/Direct Mail-in: 10.1%
## Weed Identification Lab

### Monthly Submission Report

#### Number of Samples Received by Month

<table>
<thead>
<tr>
<th>Month</th>
<th># of Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>3</td>
</tr>
<tr>
<td>February</td>
<td>3</td>
</tr>
<tr>
<td>March</td>
<td>19</td>
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### Sample Totals by Crop

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### Distribution of Samples by County
#### 2003

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<td><strong>Total</strong></td>
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</table>
### Summary of Diagnoses by Plant

#### 2003

#### FIELD CROPS

**ALFALFA**

1. Boron Deficiency  
2. Environmental Stress  
2. Leafhoppers  
6. Leptosphaerulina Leaf Spot (Leptosphaerulina briosiana)  
1. Rhizoctonia Stem and Leaf Blight (Rhizoctonia solani)  
9. Spring Black Stem and Leaf Spot (Phoma medicaginis)  
1. Suspect Boron Deficiency  

---

22 Total for Alfalfa

**BARLEY**

1. Frost Injury  
1. Scab (Fusarium graminearum)  
1. Spot Form of Net Blotch (Pyrenophora teres)  

---

3 Total for Barley

**BLUEGRASS**

1. Brown Patch (Rhizoctonia solani)  

---

1 Total for Bluegrass

**CORN**

1. Chemical Injury  
1. Environmental Stress  
1. Insufficient Information  
1. Insufficient Sample  
2. Low pH  
1. Nematodes  
1. Northern Corn Leaf Spot (Cochliobolus carbonum)  
1. Nutrient Deficiency  
1. Red Root Rot  
1. Soil Compaction  
1. Southern Corn Leaf Blight  
1. Southern Rust  
1. Southern Corn Leaf Blight (Bipolaris maydis)  
1. Suspect Genetic Abnormality  
1. Zinc Deficiency  

---

15 Total for Corn
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<td><strong>FESCUE</strong></td>
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<td>1 Ergot</td>
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<td>1 Scab</td>
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<td><strong>Total for Fescue</strong></td>
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<td>1 Anthracnose</td>
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<td>2 Leaf Streak</td>
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<tr>
<td>1 Negative for Virus</td>
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<tr>
<td>1 Powdery Mildew</td>
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<td>1 Secondary Basidiomycete</td>
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<td><strong>Total for Orchardgrass</strong></td>
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<td><strong>PEANUT</strong></td>
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<td>1 Low pH</td>
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<td>1 Spot Blotch</td>
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<td><strong>TIMOTHY</strong></td>
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<td>1 Drechslera Leaf Streak</td>
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<td>1 Thrips</td>
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<td><strong>Total for Timothy</strong></td>
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</table>

| 10 |
TOBACCO

1 Black Leg                      Erwinia carotovora s. atroseptica
1 Suspect Black Leg              Erwinia carotovora

----

2 Total for Tobacco

WHEAT

1 Ascochyta Leaf Spot            Ascochyta tritici
1 Chemical Injury
1 Environmental Stress
1 Fusarium Seedling Blight      Fusarium moniliforme
2 Insufficient Sample
3 Negative for Black Chaff
1 Negative for Root Disease
2 Powdery Mildew                 Erysiphe graminis
2 Powdery Mildew Resistant Reaction
1 Scab                           Fusarium graminearum
1 Sharp Eyespot                  Rhizoctonia solani
2 Stagonospora Leaf and Glume Blotch
1 Suspect Wheat Streak Mosaic Virus
3 Tan Spot                       Stagonospora nodorum
1 Wheat Spindle Streak Mosaic Virus

----

23 Total for Wheat
HERBACEOUS ORNAMENTALS AND INDOOR PLANTS

AFRICAN VIOLET
1 Crystalline Material
1 Excess Soluble Salts
1 Suspect Water Spots
----
3 Total for African Violet

AJUGA
1 Environmental Stress
----
1 Total for Ajuga

ANEMONE
1 Foliar Nematodes
1 Pythium Root Rot
----
2 Total for Anemone

ARTEMISIA
1 Web Blight
----
1 Total for Artemisia

BEGONIA
1 Insufficient Sample
1 Pythium Root Rot
1 Southern Blight
1 Suspect Chemical Injury
----
4 Total for Begonia

BELLFLOWER
1 Chemical Injury
----
1 Total for Bellflower

BLEEDING HEART
1 Tobacco Rattle Virus
----
1 Total for Bleeding Heart

CANDY LILY
1 Heterosporium Leaf Spot
----
1 Total for Candy Lily

CANDYTUFT
1 Downy Mildew
----
1 Total for Candytuft
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<tr>
<td>1 Pythium Stem and Root Rot</td>
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<tr>
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<td>4 Total for Chrysanthemum</td>
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<td>COLEUS</td>
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<td>1 Fusarium Stem and Root Rot</td>
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<td>1 Mealybugs</td>
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Plant Disease Clinic

DAYLILY
1 Insects
2 Leaf Streak \( \text{Aureobasidium microstictum} \)
2 Suspect Chemical Injury
----
5 Total for Daylily

DIANTHUS
1 Physiological Problem
1 Rhizoctonia Stem Rot \( \text{Rhizoctonia solani} \)
----
2 Total for Dianthus

DRACAENA
1 Cultural Problem
----
1 Total for Dracaena

EUCALYPTUS
1 Insufficient Sample
----
1 Total for Eucalyptus

FALSE INDIGO
1 Insufficient Sample
----
1 Total for False Indigo

FOXGLOVE
2 Environmental Stress
----
2 Total for Foxglove

FUCHSIA
1 Cultural Problem
----
1 Total for Fuchsia

GARDENIA
1 Insects
----
1 Total for Gardenia

GERANIUM
2 Bacterial Leaf Spot \( \text{Xanthomonas campestris pv. pelargonii} \)
1 Fertilizer Burn
2 Low pH
1 Nutrient Deficiency
----
6 Total for Geranium
GLADIOLUS
1 Insects
----
1 Total for Gladiolus

GOLDEN MARGUERITE
1 Pythium Root Rot Pythium sp.
----
1 Total for Golden Marguerite

GOUD
1 Poor Pollination
----
1 Total for Gourd

HOSTA
1 Southern Blight Sclerotium rolfsii
1 Suspect Chemical Injury
1 Suspect Southern Blight Sclerotium rolfsii
----
3 Total for Hosta

IMPATIENS
1 Cause of Problem Unknown
1 Cold Injury
3 Impatiens Necrotic Spot Virus
1 Rhizoctonia Root Rot Rhizoctonia solani
1 Suspect Insect Injury
1 Thrips
----
8 Total for Impatiens

IRIS
1 Heterosporium Leaf Spot Heterosporium iridis
1 Soft Rot Erwinia carotovora
----
2 Total for Iris

JAPANESE FOREST GRASS
1 Gray Leaf Spot Pyricularia grisea
----
1 Total for Japanese Forest Grass

LARKSPUR
1 Environmental Stress
----
1 Total for Larkspur

LILY
1 Botrytis Blight Botrytis elliptica
----
1 Total for Lily
LILY-OF-THE-VALLEY
1 Southern Blight  Sclerotium rolfsii
1 Total for Lily-of-the-valley

LIRIOPE
1 Frost Injury
1 Salt Injury
1 Scorch
1 Suspect Fusarium Crown Rot  Fusarium sp.
2 Winter Injury
1 Total for Liriope

LISIANTHUS
1 Fusarium Root and Stem Rot  Fusarium sp.
1 Suspect Thrips
1 Total for Lisianthus

LOOSESTRIFE
1 Insufficient Sample
1 Southern Blight  Sclerotium rolfsii
1 Total for Loosestrife

MADAGASCAR PERIWINKLE
1 Nutrient Deficiency
1 Phytophthora Blight  Phytophthora parasitica
1 Pythium Root Rot  Pythium sp.
1 Total for Madagascar Periwinkle

MALLOW
1 Rust  Puccinia malvacearum
1 Total for Mallow

MARIGOLD
1 Suspect Chemical Injury
1 Total for Marigold

MEADOWSWEET
1 Suspect Anthracnose  Colletotrichum sp.
1 Total for Meadowsweet

MEXICAN HEATHER
1 Negative for Disease
1 Total for Mexican Heather
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<td>Bacterial Brown Spot</td>
<td>Acidovorax avenae ss. cattleyae</td>
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<td>Mesophyll Cell Collapse</td>
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<td>Botrytis Blight</td>
<td>Botrytis cinerea</td>
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<td>Cold Injury</td>
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<td></td>
<td>Pythium Root Rot</td>
<td>Pythium sp.</td>
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<td>Suspect Chemical Injury</td>
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<td>PEONY</td>
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<td>Botrytis cinerea</td>
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<td>Cladosporium Stem and Leaf Blotch</td>
<td>Cladosporium paeonie</td>
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<td>Suspect Nutrient Imbalance</td>
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Plant Disease Clinic

PETUNIA
1 Nutrient Deficiency
1 Thrips
----
2 Total for Petunia

PHACELIA
1 Insufficient Sample
----
1 Total for Phacelia

PHLOX
1 Downy Mildew Peronospora phlogina
2 Powdery Mildew Erysiphe cichoracearum
----
3 Total for Phlox

PHORMIUM
1 Suspect Vole Injury
----
1 Total for Phormium

PITCHER PLANT
1 Negative for Pythium
1 Suspect Chemical Injury
----
2 Total for Pitcher Plant

PLANT, UNKNOWN
1 Insects
1 Insufficient Sample
----
2 Total for Plant, Unknown

POINSETTIA
2 Bacterial Leaf Spot Xanthomonas campestris pv. poinsett.
1 Chemical Injury
1 Cold Injury
1 Normal Condition
1 Nutrient Deficiency
----
6 Total for Poinsettia

PRIMROSE
2 Physiological Response
----
2 Total for Primrose

PRIVET
2 Winter Injury
----
2 Total for Privet
Plant Disease Clinic

RANUNCULUS
1 Bacterial Blight Pseudomonas syringae pv. maculicola
1 Total for Ranunculus

ROSE CAMPION
1 Fusarium Crown Rot Fusarium avenaceum
1 Total for Rose Campion

RUDBECKIA
1 Adequate, Sample and Information
1 Insufficient Sample
2 Total for Rudbeckia

RUSSIAN SAGE
1 Physiological Problem
1 Total for Russian Sage

SALVIA
1 Bacterial Leaf Spot Pseudomonas cichorii
1 Chemical Injury
2 Pythium Root Rot Pythium debaryanum
4 Total for Salvia

SCABIOSA
1 Powdery Mildew Erisyphe polygoni
1 Total for Scabiosa

SCAEVOLA
1 Botrytis Blight Botrytis cinerea
1 Nutrient Deficiency
2 Total for Scaevola

SEDGE
1 Chemical Injury
1 Total for Sedge

SEDUM
1 Bacterial Stem Rot Erwinia chrysanthemi
1 Cladosporium Blight Cladosporium sp.
2 Total for Sedum
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SMALL FRUITS

BLACKBERRY
2 Cane Blight  Leptosphaeria coniothyrium
1 Cane and Leaf Rust  Kuehneola uredinis
1 Gray Mold  Botrytis cinerea
1 Mites
1 Orange Rust  Gymnoconia peckiana
1 Psyllids
----
7 Total for Blackberry

BLUEBERRY
1 Cause of Problem Unknown
1 Phytophthora Root Rot  Phytophthora cinnamomi
----
2 Total for Blueberry

FIG
1 Insufficient Sample
1 Scales
----
2 Total for Fig

GRAPE
1 Anthracnose  Elsinoe ampelina
1 Bitter Rot  Greeneria uvicola
3 Black Rot  Guignardia bidwellii
2 Botryosphaeria Dieback  Botryosphaeria sp.
1 Botrytis Bunch Rot  Botrytis cinerea
2 Cause of Problem Unknown
2 Chemical Injury
1 Cold Injury
1 Crown Gall  Agrobacterium vitis
1 Cultural Problem
1 Eriophyid Mites
1 Nonspecific Fruit Rot
1 Petri Disease  Phaeoacremonium sp.
2 Phomopsis Cane and Leaf Blight  Phomopsis viticola
1 Phylloxera Galls
2 Powdery Mildew  Uncinula necator
1 Zonate Leaf Spot  Cristulariella moricola
----
24 Total for Grape

RASPBERRY
1 Cane Blight  Coniothyrium fuckellii
1 Cane Botrytis  Botrytis cinerea
1 Cause of Problem Unknown
1 Pythium Root Rot  Pythium sp.
----
4 Total for Raspberry
STRAWBERRY
1 Angular Leaf Spot Xanthomonas fragariae
2 Anthracnose Colletotrichum acutatum
1 Cultural Problem
3 Dendrophoma Leaf Blight Dendrophoma obscurans
1 Environmental Stress
2 Frost Injury
1 Leaf Scorch Marssonia fragariae
1 Negative for Anthracnose
1 Phytophthora Crown Rot Phytophthora cactorum
1 Rhizoctonia Leaf Blight Rhizoctonia solani
1 Suspect Frost Injury
1 Suspect Nutrient Deficiency
----
16 Total for Strawberry

WINEBERRY
1 Negative for Disease
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1 Total for Wineberry
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24
1 Suspect Mechanical Injury
----
47 Total for Dogwood

DOUGLASFIR
1 Gray Mold  Botrytis cinerea
1 Pythium Root Rot  Pythium sp.
----
2 Total for Douglasfir

ELM
4 Black Spot  Gloeosporium ulmeum
2 Dutch Elm Disease  Ophiostoma ulmi
1 Eriophyid Mites
1 Negative for Dutch Elm Disease
1 Negative for Root Disease
----
9 Total for Elm

FALSECYPRESS
1 Botrytis Blight  Botrytis cinerea
1 Environmental Stress
1 Web Blight  Rhizoctonia solani
----
3 Total for Falsecypress

FIR
2 Chemical Injury
3 Cultural Problem
1 Deep Planting
1 Environmental Stress
1 Girdling Roots
2 Insufficient Sample
6 Phytophthora Root Rot  Phytophthora sp.
----
16 Total for Fir

GOLDEN-RAIN-TREE
1 Suspect Bacterial Scorch  Xylella fastidiosa
----
1 Total for Golden-rain-tree

HAWTHORN
1 Cedar-Quince Rust  Gymnosporangium clavipes
----
1 Total for Hawthorn

HEMLOCK
2 Environmental Stress
1 Eriophyid Mites
----
3 Total for Hemlock
Plant Disease Clinic

HICKORY
1 Leaf Stem Gall Insects
1 Total for Hickory

IRONWOOD
1 Cultural Problem
1 Environmental Stress
2 Total for Ironwood

JUNIPER
1 Cytospora Blight
1 Kabatina Tip Blight
1 Mites
3 Total for Juniper

KATSURA TREE
1 Negative for Disease
1 Total for Katsuratree

LINDEN
1 Cultural Problem
1 Environmental Stress
2 Total for Linden

LONDON PLANETREE
1 Anthracnose
1 Bird's Nest Fungus
2 Total for London Planetree

MAGNOLIA
1 Alternaria Leaf Spot
1 Chemical Injury
2 Environmental Stress
1 Insufficient Sample
1 Mites
1 Normal Condition
5 Winter Injury
12 Total for Magnolia

MAPLE
9 Anthracnose
1 Botryosphaeria Canker
2 Environmental Stress
1 Eriophyid Mites
2 Frost Injury
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**MIMOSA**

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**OAK**

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### Ornamental Pear

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<td><strong>24</strong></td>
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</table>

### Poplar

<table>
<thead>
<tr>
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<th>Count</th>
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<tbody>
<tr>
<td>Botryosphaeria Dieback</td>
<td>1</td>
</tr>
<tr>
<td>Fusarium Canker</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total for Poplar</strong></td>
<td><strong>2</strong></td>
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</tbody>
</table>

### Prunus

<table>
<thead>
<tr>
<th>Issue</th>
<th>Count</th>
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<tbody>
<tr>
<td>Black Knot</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total for Prunus</strong></td>
<td><strong>2</strong></td>
</tr>
</tbody>
</table>
REDBUD
2 Botrytis Blight Botrytis cinerea
1 Chemical Injury
1 Insufficient Sample
1 Mites
1 Negative for Disease
----
6 Total for Redbud

SERVICEBERRY
1 Aphids
1 Botryosphaeria Canker Botryosphaeria dothidea
1 Cedar-Quince Rust Gymnosporangium clavipes
1 Suspect Chemical Injury
----
4 Total for Serviceberry

SPRUCE
1 Cultural Problem
10 Environmental Stress
2 Insufficient Sample
6 Mites
1 Negative for Disease
1 Nutrient Deficiency
3 Rhizosphaera Needle Blight Rhizosphaera kalkhoffii
1 Seasonal Needle Drop
----
25 Total for Spruce

SWEET GUM
1 Botryosphaeria Canker Botryosphaeria dothidea
----
1 Total for Sweet Gum

SYCAMORE
2 Anthracnose Gnomonia platani
----
2 Total for Sycamore

TREES, MISCELLANEOUS
1 Chemical Injury
----
1 Total for Trees, Miscellaneous

TULIP TREE
1 Chemical Injury
1 Sooty Mold
1 Tarspot Ectostroma liriodendri
----
3 Total for Tulip Tree
<table>
<thead>
<tr>
<th>Disease</th>
<th>Cause</th>
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<tbody>
<tr>
<td>Willow</td>
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<tr>
<td>Adventitious Roots</td>
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<tr>
<td>Anthracnose</td>
<td>Gloeosporium sp.</td>
</tr>
<tr>
<td>Crown Gall</td>
<td>Agrobacterium tumefaciens</td>
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<tr>
<td>Cytospora Canker</td>
<td>Cytospora sp.</td>
</tr>
<tr>
<td>Suspect Cytospora Canker</td>
<td>Cytospora sp.</td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Total for Willow</td>
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</tr>
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<table>
<thead>
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<th>Disease</th>
<th>Cause</th>
</tr>
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<tbody>
<tr>
<td>Yellowwood</td>
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<tr>
<td>Suspect Chemical Injury</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Total for Yellowwood</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
# TREE FRUITS AND NUTS

## APPLE

1. Bitter Rot  
2. Black Rot  
3. Burrknot  
4. Cedar-Apple Rust  
2. Environmental Stress  
3. Fire Blight  
1. Fly Speck  
2. Frogeye Leaf Spot  
1. Insects  
1. Insufficient Sample  
1. Mites  
1. Poor Drainage  
1. Russetting  
2. Scales  
1. Suspect Fire Blight  
1. Suspect Hail Injury

---

\[ \text{Total for Apple} = 24 \]

## APRICOT

1. Insufficient Sample

---

\[ \text{Total for Apricot} = 1 \]

## CHERRY

2. Black Knot  
2. Brown Rot  
2. Cherry Leaf Spot  
3. Environmental Stress  
1. Insects  
3. Insufficient Sample  
1. Phoma Canker  
1. Phyllosticta Leaf Spot  
1. Powdery Mildew

---

\[ \text{Total for Cherry} = 16 \]

## CHESTNUT

1. Gall Insects

---

\[ \text{Total for Chestnut} = 1 \]
CRABAPPLE
1 Burrknot
1 Cedar-Quince Rust Gymnosporangium clavipes
1 Fire Blight Erwinia amylovora
5 Scab Venturia inaequalis
1 Virus
----
9 Total for Crabapple

MULBERRY
1 False Mildew Cercosporella arachnoidea
1 Insufficient Sample
1 Suspect Squirrel Damage
1 Twig Blight
----
4 Total for Mulberry

NECTARINE
1 Curculios
1 Insufficient Sample
1 Peach Leaf Curl Taphrina deformans
----
3 Total for Nectarine

PEACH
1 Borers
5 Brown Rot Monilinia fructicola
1 Environmental Stress
2 Gummosis Botryosphaeria sp.
1 Insufficient Sample
2 Physiological Problem
1 Poor Drainage
1 Scab Cladosporium carpophilum
----
14 Total for Peach

PEAR
1 Alternate Year Bearing
1 Bitter Rot Colletotrichum gloeosporioides
1 Blister Mites
1 Coniothyrium Leaf Spot Coniothyrium sp.
1 Cultural Problem
1 Entomosporium Fruit Spot Entomosporium mespili
1 Entomosporium Leaf Spot Entomosporium mespili
9 Fire Blight Erwinia amylovora
1 Negative for Disease
1 Physiological Problem
1 Scorch
----
19 Total for Pear
<table>
<thead>
<tr>
<th>Tree Type</th>
<th>Condition</th>
<th>Cause</th>
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<tbody>
<tr>
<td>PECAN</td>
<td>Environmental Stress</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scab</td>
<td>Cladosporium caryigenum</td>
</tr>
<tr>
<td></td>
<td><strong>Total for Pecan</strong></td>
<td><strong>2</strong></td>
</tr>
<tr>
<td>PERSIMMON</td>
<td>Phomopsis Dieback</td>
<td>Phomopsis sp.</td>
</tr>
<tr>
<td></td>
<td><strong>Total for Persimmon</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td>PLUM</td>
<td>Brown Rot</td>
<td>Monilinia fructicola</td>
</tr>
<tr>
<td></td>
<td>Girdling Roots</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sooty Mold</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Suspect Frost Injury</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total for Plum</strong></td>
<td><strong>4</strong></td>
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<tr>
<td>WALNUT</td>
<td>Anthracnose</td>
<td>Gnomonia leptostyla</td>
</tr>
<tr>
<td></td>
<td>Bacterial Blight</td>
<td>Xanthomonas juglandis</td>
</tr>
<tr>
<td></td>
<td><strong>Total for Walnut</strong></td>
<td><strong>2</strong></td>
</tr>
</tbody>
</table>
### TURF

#### BENTGRASS
- **1 Algae**
- **2 Anthracnose** *Colletotrichum graminicola*
- **1 Lance Nematodes** *Hoplolaimus sp.*
- **1 Lectophilic Fairy Ring**
- **1 Low pH**
- **6 Total for Bentgrass**

#### BERMUDAGRASS
- **1 Bermudagrass Decline** *Gaeumannomyces graminis*
- **1 Bipolaris Leaf Spot and Crown Rot** *Bipolaris cynodontis*
- **1 Leaf Blotch** *Bipolaris cynodontis*
- **3 Total for Bermudagrass**

#### BLUEGRASS
- **2 Anthracnose** *Colletotrichum graminicola*
- **1 Black Layer**
- **4 Brown Patch** *Rhizoctonia solani*
- **1 Dollar Spot** *Sclerotinia homeocarpa*
- **3 Environmental Stress**
- **1 Excess Thatch**
- **1 Helminthosporium Leaf Spot** *Bipolaris sorokiniana*
- **1 Lance Nematodes** *Hoplolaimus sp.*
- **1 Ring Nematodes** *Criconemella sp.*
- **1 Rust** *Puccinia graminis*
- **16 Total for Bluegrass**

#### FESCUE
- **1 Algae**
- **1 Ascochyta Blight** *Ascochyta hordei*
- **15 Brown Patch** *Rhizoctonia solani*
- **1 Bulbous Oatgrass** *Arrhenatherum elatius var. bulbosa*
- **1 Fairy Ring**
- **5 Helminthosporium Blight** *Drechslera dictyoides*
- **4 Insufficient Sample**
- **2 Negative for Disease**
- **1 Red Thread** *Laetisaria fuciformis*
- **1 Rust** *Puccinia graminis*
- **1 Slime Mold**
- **1 Stripe Smut** *Ustilago striiformis*
- **1 Suspect Dog Damage**
- **1 Suspect Environmental Stress**
- **1 Suspect Nutrient Deficiency**
- **1 White Patch** *Melanotus philipsii*
- **38 Total for Fescue**
<table>
<thead>
<tr>
<th>Grass Type</th>
<th>Problem(s)</th>
<th>Pathogen(s)</th>
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<tbody>
<tr>
<td>Ryegrass</td>
<td>Cultural Problem, Insufficient Sample, Mechanical Injury</td>
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</tr>
<tr>
<td>Smooth Crabgrass</td>
<td>Brown Patch</td>
<td><em>Rhizoctonia solani</em></td>
</tr>
<tr>
<td>St. Augustinegrass</td>
<td>Gray Leaf Spot</td>
<td><em>Pyricularia grisea</em></td>
</tr>
<tr>
<td>Turfgrass</td>
<td>Algae, Brown Patch, Cicadas, Cultural Problem, Excess Thatch, Gray Leaf Spot, Helminthosporium Leaf Spot, Insufficient Sample, Melting Out, Red Thread, Rust, Slime Mold</td>
<td><em>Rhizoctonia solani, Bipolaris sorokiniana, Drenchlera poae, Laetisaria fuciformis, Puccinia graminis</em></td>
</tr>
<tr>
<td>Zoysia</td>
<td>Rust, Suspect Zoysia Patch, Zoysia Patch</td>
<td><em>Puccinia zoysiae, Rhizoctonia solani</em></td>
</tr>
</tbody>
</table>

Total for Ryegrass: 3
Total for Smooth Crabgrass: 1
Total for St. Augustinegrass: 1
Total for Turfgrass: 20
Total for Zoysia: 3
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<thead>
<tr>
<th>VEGETABLES AND HERBS</th>
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<tbody>
<tr>
<td><strong>BASIL</strong></td>
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<tr>
<td>1 Fusarium Wilt</td>
</tr>
<tr>
<td>1 Fusarium oxysporum</td>
</tr>
<tr>
<td><strong>Total for Basil</strong></td>
</tr>
<tr>
<td><strong>BEAN</strong></td>
</tr>
<tr>
<td>1 Chemical Injury</td>
</tr>
<tr>
<td>1 Fusarium Root Rot</td>
</tr>
<tr>
<td>3 Rhizoctonia Root Rot</td>
</tr>
<tr>
<td>1 Rhizoctonia Stem and Root Rot</td>
</tr>
<tr>
<td>1 Root Knot Nematodes</td>
</tr>
<tr>
<td>1 Suspect Bacterial Blight</td>
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<tr>
<td><strong>Total for Bean</strong></td>
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<tr>
<td><strong>BEET</strong></td>
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<tr>
<td>1 Root Knot Nematodes</td>
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<tr>
<td><strong>Total for Beet</strong></td>
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<td><strong>BROCCOLI</strong></td>
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<td><strong>Total for Broccoli</strong></td>
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<tr>
<td><strong>CABBAGE</strong></td>
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<tr>
<td>1 Environmental Stress</td>
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<tr>
<td>1 Pythium Root Rot</td>
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<tr>
<td><strong>Total for Cabbage</strong></td>
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<tr>
<td><strong>CANTALOUPE</strong></td>
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<tr>
<td>1 Anthracnose</td>
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<tr>
<td>1 Chemical Injury</td>
</tr>
<tr>
<td>1 Insufficient Sample</td>
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<tr>
<td><strong>Total for Cantaloupe</strong></td>
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<tr>
<td><strong>COLLARDS</strong></td>
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<tr>
<td>1 Downy Mildew</td>
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<tr>
<td>1 Nutrient Deficiency</td>
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<td><strong>Total for Collards</strong></td>
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36
<table>
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<td>CUCUMBER</td>
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<td>Angular Leaf Spot</td>
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<td>Anthracnose</td>
<td>1</td>
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<tr>
<td>Chemical Injury</td>
<td>1</td>
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<tr>
<td>Downy Mildew</td>
<td>3</td>
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<tr>
<td>Insufficient Sample</td>
<td>1</td>
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<tr>
<td>Pythium Root Rot</td>
<td>1</td>
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<td>8 Total for Cucumber</td>
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<tr>
<td>EGGPLANT</td>
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<tr>
<td>Environmental Stress</td>
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<td></td>
<td>1 Total for Eggplant</td>
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<td>LAVENDER</td>
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<td>Low pH</td>
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<td></td>
<td>1 Total for Lavender</td>
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<tr>
<td>LETTUCE</td>
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<tr>
<td>Suspect Nutrient Deficiency</td>
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<td>1 Total for Lettuce</td>
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<tr>
<td>OKRA</td>
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<tr>
<td>Root Knot Nematodes</td>
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<td>1 Total for Okra</td>
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<tr>
<td>OREGANO</td>
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<td>Low pH</td>
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<td>Plant Bugs</td>
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<td>2 Total for Oregano</td>
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<td>PEPPER</td>
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<td>Excess Soluble Salts</td>
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<tr>
<td>Fusarium Stem Rot</td>
<td>1</td>
</tr>
<tr>
<td>Nutrient Deficiency</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>4 Total for Pepper</td>
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</tbody>
</table>
PLANT DISEASE CLINIC

POTATO
1 Blackleg
1 Chemical Injury
1 Flea Beetles
1 Insects
1 Insufficient Sample
1 Low pH
1 Penicillium Rot
1 Powdery Mildew

-----
8 Total for Potato

PUMPKIN
1 Plectosporium Blight
2 Pythium Root Rot
1 Root Knot Nematodes

-----
4 Total for Pumpkin

ROSEMARY
1 Botrytis Blight
1 Cultural Problem
1 Environmental Stress

-----
3 Total for Rosemary

SAGE
1 Rhizoctonia Blight

-----
1 Total for Sage

SHALLOT
1 Black Mold

-----
1 Total for Shallot

SQUASH
1 Chemical Injury
1 Rhizoctonia Root Rot

-----
2 Total for Squash

SWEET CORN
1 Bacterial Top Rot

-----
1 Total for Sweet Corn

THYME
1 Environmental Stress

-----
1 Total for Thyme
TOMATO

1 Abiotic Problem
3 Air Pollution
1 Anaerobic Soil Conditions
1 Anthracnose Colletotrichum coccodes
1 Bacterial Speck Pseudomonas syringae pv. tomato
1 Bacterial Spot Xanthomonas vesicatoria
1 Bacterial Wilt Ralstonia solanacearum
3 Chemical Injury
1 Cold Injury
1 Cultural Problem
1 Early Blight Alternaria solani
5 Environmental Stress
1 High pH
4 Insufficient Sample
1 Negative for Virus
5 Nutrient Deficiency
1 Pith Necrosis Pseudomonas corrugata
1 Southern Blight Sclerotium rolfsii
3 Suspect Chemical Injury
2 Suspect Environmental Stress
1 Timber Rot Sclerotinia sclerotiorum
4 Tomato Spotted Wilt Virus
----
43 Total for Tomato

WATERMELON

1 Fungus Gnats
2 Insufficient Sample
1 Suspect Chemical Injury
----
4 Total for Watermelon

ZUCCHINI

1 Insects
1 Suspect Air Pollution
----
2 Total for Zucchini
<table>
<thead>
<tr>
<th>Weed Class</th>
<th>Problem Description</th>
<th>Cause</th>
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<tbody>
<tr>
<td>Dead Nettle</td>
<td>1 Bacterial Blight</td>
<td>Pseudomonas cichorii</td>
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<tr>
<td>Kudzu</td>
<td>1 Cause of Problem Unknown</td>
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</tr>
<tr>
<td>Quackgrass</td>
<td>1 Ergot</td>
<td>Claviceps purpurea</td>
</tr>
<tr>
<td>Weed</td>
<td>1 Italian Ryegrass</td>
<td>Lolium multiflorum</td>
</tr>
</tbody>
</table>
# WOODY ORNAMENTALS

## ARBORVITAE
1. Macrophoma Dieback  
   Macrophoma sp.  
   ----  
   1 Total for Arborvitae

## AUCUBA
1. Frost Injury  
2. Phomopsis Dieback  
   Phomopsis sp.  
   ----  
   2 Total for Aucuba

## AZALEA
1. Botrytis Blight  
   Botrytis cinerea  
1. Cultural Problem  
1. Deep Planting  
2. Environmental Stress  
1. High pH  
1. Insufficient Information  
7. Insufficient Sample  
1. Lacebugs  
2. Leaf and Flower Gall  
   Exobasidium vaccinii  
1. Low pH  
1. Nutrient Imbalance  
2. Phomopsis Dieback  
   Phomopsis sp.  
1. Suspect Chemical Injury  
   ----  
22 Total for Azalea

## BARBERRY
1. Insects  
   ----  
1 Total for Barberry

## BLUEBEARD
1. Insufficient Sample  
1. Pythium Root Rot  
   Pythium sp.  
   ----  
2 Total for Bluebeard

## BOSTON IVY
1. Suspect Chemical Injury  
   ----  
1 Total for Boston Ivy

## BOXWOOD
12. Cultural Problem  
15. English Boxwood Decline  
   Paecilomyces buxi  
3. Environmental Stress  
3. Frost Injury  
1. Insufficient Information
Plant Disease Clinic

11 Insufficient Sample
  1 Lesion Nematodes Pratylenchus sp.
  2 Low pH
  2 Mites
  2 Negative for Root Rot Fungi
  1 Physiological Problem
  4 Phytophthora Root Rot Phytophthora sp.
  2 Ring Nematodes Criconemella sp.
  9 Spiral Nematodes Rotylenchus buxophilus
  1 Suspect Nutrient Deficiency
  3 Volutella Blight Volutella buxi

72 Total for Boxwood

BURNING BUSH
  1 Anthracnose Gloeosporium gloeosporiodes

1 Total for Burning Bush

BUTTERFLY BUSH
  1 Insufficient Sample
  2 Mites
  1 Negative for Root Disease
  1 Phytophthora Root Rot Phytophthora sp.

5 Total for Butterfly Bush

CAMELLIA
  2 Cultural Problem
  2 Frost Injury
  1 Oedema

5 Total for Camellia

CANDYTUFT
  1 Nutrient Deficiency

1 Total for Candytuft

CHERRYLAREL
  2 Black Vine Weevils
  2 Borers
  1 Cultural Problem
  1 Girdling Roots
  1 Insufficient Sample
  1 Mycosphaerella Leaf Spot Mycosphaerella sp.
  1 Negative for Root Pathogens

9 Total for Cherrylaurel
COTONEASTER
  1 Lacebugs
  ----
  1 Total for Cotoneaster

CRAPE MYRTLE
  1 Insufficient Sample
  1 Squirrel Twig Pruning
  ----
  2 Total for Crape Myrtle

ENGLISH IVY
  2 Anthracnose
  ----
  2 Total for English Ivy

EUONYMUS
  1 Cultural Problem
  1 Excess Soil Moisture
  1 Insufficient Sample
  1 Negative for Disease
  1 Salt Injury
  ----
  5 Total for Euonymus

FORSYTHIA
  1 Insufficient Sample
  1 Suspect Frost Injury
  ----
  2 Total for Forsythia

HIBISCUS
  1 Bird’s Nest Fungus
  1 Physiological Problem
  1 Suspect Chemical Injury
  ----
  3 Total for Hibiscus

HOLLY
  1 Anthracnose
  10 Black Root Rot
  1 Botryosphaeria Dieback
  1 Cercospora Leaf Spot
  2 Cultural Problem
  3 Environmental Stress
  1 Girdling Roots
  5 Insufficient Sample
  1 Negative for Root Disease
  1 Nutrient Toxicity
  2 Phytophthora Root Rot
  1 Poor Drainage
  1 Rootbound

Colletotrichum trichellum
Gloeosporium sp.
Thielaviopsis basicola
Botryosphaeria sp.
Cercospora sp.
Phytophthora cinnamomi
1 Spine Spot
1 Suspect Black Root Rot  Thielaviopsis basicola
1 Suspect Chemical Injury
2 Suspect Environmental Stress
3 Winter Injury
----
38 Total for Holly

**HYDRANGEA**

1 Cercospora Leaf Spot  Cercospora hydrangeae
1 Insufficient Sample
1 Winter Injury
----
3 Total for Hydrangea

**HYPERICUM**

2 Bacterial Leaf Spot  Burkholderia andropogonis
1 Botrytis Blight  Botrytis cinerea
----
3 Total for Hypericum

**INDIAN HAWTHORN**

2 Entomosporium Leaf Spot  Entomosporium mespili
----
2 Total for Indian Hawthorn

**INKBERRY**

1 Black Root Rot  Thielaviopsis basicola
1 Gray Mold  Botrytis cinerea
2 Phytophthora Root Rot  Phytophthora sp.
1 Salt Injury
----
5 Total for Inkberry

**JUNIPER**

4 Cultural Problem
2 Environmental Stress
1 High pH
1 Insufficient Information
4 Insufficient Sample
1 Low pH
1 Negative for Disease
2 Negative for Root Disease
3 Phomopsis Tip Blight  Phomopsis juniperovora
3 Phytophthora Root Rot  Phytophthora sp.
1 Pythium Root Rot  Pythium sp.
1 Rootbound
1 Salt Injury
1 Suspect Mechanical Injury
1 Vole Injury
1 Winter Injury
1 Wood Decay
Plant Disease Clinic

---

29 Total for Juniper

LAUREL
1 Phytophthora Root Rot Phytophthora cinnamomi
1 Total for Laurel

LEUCOTHOE
1 Powdery Mildew Microsphaera sp.
1 Total for Leucothoe

LILAC
2 Insufficient Sample
1 Powdery Mildew Microsphaera pencilata
1 Suspect Hail Injury
1 Total for Lilac

MAHONIA
1 Spine Spot
1 Winter Injury
1 Total for Mahonia

MOCK ORANGE
1 Negative for Disease
1 Total for Mock Orange

MOUNTAIN LAUREL
2 Cercospora Leaf Spot Cercospora kalmiae
1 Environmental Stress
1 Total for Mountain Laurel

NANDINA
2 Environmental Stress
1 Insufficient Sample
1 Total for Nandina

OSMANTHUS
1 Cultural Problem
1 Total for Osmanthus
PHOTINIA
1 Cultural Problem
6 Entomosporium Leaf Spot
   ----
7 Total for Photinia

PIERIS
1 Lacebugs
1 Phomopsis Dieback
1 Sooty Mold
   ----
3 Total for Pieris

PLANTS, MISCELLANEOUS
1 Artillery Fungus
1 Chemical Injury
1 Environmental Stress
1 Insects
1 Negative for Disease
   ----
5 Total for Plants, Miscellaneous

PRIVET
1 Environmental Stress
1 Winter Injury
   ----
2 Total for Privet

PYRACANTHA
1 Phytophthora Root Rot
1 Salt Injury
   ----
2 Total for Pyracantha

RED CEDAR
1 Mites
1 Pestalotia Blight
   ----
2 Total for Red Cedar
<table>
<thead>
<tr>
<th>Plant Disease Clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHODODENDRON</td>
</tr>
<tr>
<td>1 Borers</td>
</tr>
<tr>
<td>10 Botryosphaeria Dieback</td>
</tr>
<tr>
<td>1 Cultural Problem</td>
</tr>
<tr>
<td>3 Insufficient Sample</td>
</tr>
<tr>
<td>1 Lacebugs</td>
</tr>
<tr>
<td>1 Negative for Root Disease</td>
</tr>
<tr>
<td>1 Nutrient Toxicity</td>
</tr>
<tr>
<td>1 Scorch</td>
</tr>
<tr>
<td>1 Tissue Proliferation</td>
</tr>
<tr>
<td>2 Winter Injury</td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>22 Total for Rhododendron</td>
</tr>
</tbody>
</table>

<p>| ROSE                 |
| 1 Air Pollution      |
| 1 Botrytis Blight    | Botrytis cinerea |
| 1 Common Canker      | Coniothyrium fuckelii |
| 4 Rose Rosette       |
| 1 Suspect Hail Injury |</p>
<table>
<thead>
<tr>
<th>4 Suspect Rose Rosette</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 Total for Rose</td>
</tr>
</tbody>
</table>

<p>| SHRUB, UNKNOWN       |</p>
<table>
<thead>
<tr>
<th>1 Insufficient Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Total for Shrub, Unknown</td>
</tr>
</tbody>
</table>

<p>| SKIMMIA              |</p>
<table>
<thead>
<tr>
<th>1 Insufficient Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Total for Skimmia</td>
</tr>
</tbody>
</table>

| SMOKE TREE           |
| 1 Verticillium Wilt  | Verticillium dahliae |
| ----                 |
| 1 Total for Smoke Tree |

| SPIREA               |
| 1 Mycosphaerella Leaf Spot | Mycosphaerella sp. |
| ----                 |
| 1 Total for Spirea   |

<p>| SWEETSHRUB           |</p>
<table>
<thead>
<tr>
<th>1 Suspect Chemical Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Total for Sweetshrub</td>
</tr>
</tbody>
</table>
SWEETSPIRE
  1 Suspect Chemical Injury
  ----
  1 Total for Sweetspire

VIBURNUM
  1 Borers
  1 Botryosphaeria Dieback Botryosphaeria dothidea
  1 Cultural Problem
  1 Frost Injury
  2 Insufficient Sample
  1 Powdery Mildew Microsphaera sp.
  1 Pythium Root Rot Pythium sp.
  2 Winter Injury
  ----
  10 Total for Viburnum

WAX MYRTLE
  1 Mycosphaerella Leaf Spot Mycosphaerella sp.
  ----
  1 Total for Wax Myrtle

WEIGELA
  1 Insufficient Sample
  ----
  1 Total for Weigela

WINTERGREEN
  1 Cercospora Leaf Spot Cercospora sp.
  ----
  1 Total for Wintergreen

YEW
  2 Environmental Stress
  1 Negative for Root Disease
  1 Suspect Winter Injury
  ----
  4 Total for Yew
### MISCELLANEOUS

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>MULCH</td>
<td>Sour Mulch</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total for Mulch</td>
<td></td>
</tr>
<tr>
<td>MOSS</td>
<td>Environmental Stress</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total for Moss</td>
<td></td>
</tr>
</tbody>
</table>
## Summary of Plant Identifications
### 2003

### Higher Plants (21)

<table>
<thead>
<tr>
<th>Family</th>
<th>Species</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family: Bryophytes</td>
<td></td>
<td>Moss</td>
</tr>
<tr>
<td>Family: Capperaceae</td>
<td></td>
<td>Member of Capperaceae</td>
</tr>
<tr>
<td>Family: Elaeagnaceae</td>
<td>Elaeagnus pungens</td>
<td>Thorny Elaeagnus</td>
</tr>
<tr>
<td>Family: Ericaceae</td>
<td>Rhododendron periclymenoides</td>
<td>Pinxterbloom Azalea</td>
</tr>
<tr>
<td>Family: Fabaceae</td>
<td>Sophora japonica</td>
<td>Japanese Pagodatre</td>
</tr>
<tr>
<td>Family: Lamiaceae</td>
<td>Glechoma hederacea</td>
<td>Ground Ivy</td>
</tr>
<tr>
<td>Family: Pinaceae</td>
<td>Pinus thunbergiana</td>
<td>Japanese Black Pine</td>
</tr>
<tr>
<td>Family: Poaceae</td>
<td>Dactylis glomerata</td>
<td>Orchardgrass</td>
</tr>
<tr>
<td>Family: Potamogetonaceae</td>
<td>Potamogeton foliosus</td>
<td>Pondweed</td>
</tr>
<tr>
<td>Family: Passifloraceae</td>
<td>Passiflora lutea</td>
<td>Yellow Passionflower</td>
</tr>
<tr>
<td>Family: Rosaceae</td>
<td>Agrimonia parsiflora</td>
<td>Small-flowered Agrimony</td>
</tr>
<tr>
<td></td>
<td>Amelanchier arboreta</td>
<td>Serviceberry</td>
</tr>
<tr>
<td></td>
<td>Fragaria virginiana</td>
<td>Wild Strawberry</td>
</tr>
<tr>
<td></td>
<td>Pyrus pyrifolia (2)</td>
<td>Asian Pear</td>
</tr>
<tr>
<td></td>
<td>Pyrus sp.</td>
<td>Ornamental Pear</td>
</tr>
<tr>
<td>Family: Salicaceae</td>
<td>Salix discolor</td>
<td>Pussywillow</td>
</tr>
<tr>
<td>Family: Santalaceae</td>
<td>Pyrularia pubera</td>
<td>Buffalnut</td>
</tr>
<tr>
<td>Family: Scrophulariaceae</td>
<td>Veronica officinalis</td>
<td>Common Speedwell</td>
</tr>
</tbody>
</table>
Family: Violaceae
Viola papilionacea
Wild Violet

**Fungi (15)**
- Amanita pantherina
- Boletus sp.
- Bondarzewia berkeleyi
- Cantharellus laeteritius
- Cyathus sp.
- Fuligo septica
- Ganoderma applanatum
- Mutinus caninus
- Mycenastrum corium
- Scleroderma geaster
- Scleroderma sp.
- Sphaerobolus stellatus
- Trametes versicolor
- Unidentified Fungus (2)

**ALL OTHERS (4)**
- Algae (1)
- Insufficient Sample (2)
- Nonliving Substance (1)