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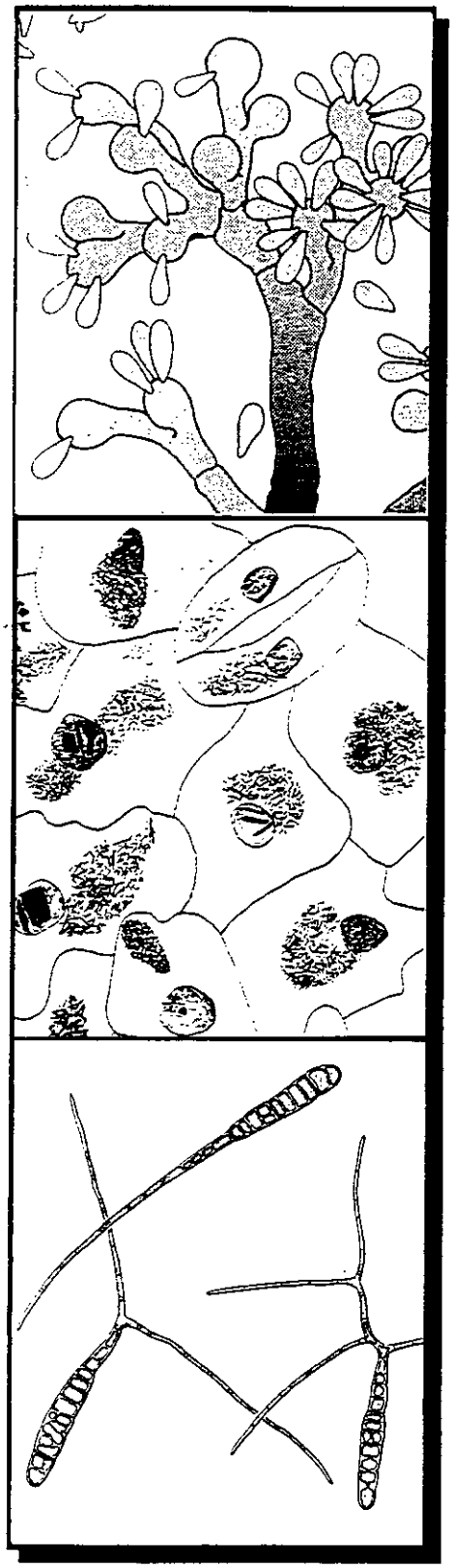

PLANT DIAGNOSTICS QUARTERLY

Features

On the cover (top to bottom):

Botrytis cinerea (courtesy M. Clark)

Tobacco etch virus inclusions (courtesy R. Cullen)

Alternaria solani (courtesy M. Clark)

Plant Diagnostics Quarterly (PDQ) is a nonprofit publication which serves plant pathologists in extension, regulatory and industrial clinical laboratories, private consultants, and other interested persons. PDQ is published four times a year. Yearly subscription fees are:

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PDQ (1994) 15(3):111

FROM THE EDITOR

Fall is here at last! Cool weather, fall color and a deluge of diagnostic samples through the Clinics. Based upon the comments from diagnosticians attending the recent "Ornamentals Working Group" meeting at Crossnore, NC, every is very busy. I was not surprised to see the Feature deadline date come and go without a finished article for this issue. Florida is equally busy this time of year as well so I was unable to generate a feature article to cover this void. Sorry for the thinness of this issue. Perhaps we will have the option of doubling feature articles in the December issue.

I envy the gradual slow down most of you will be experiencing after the first hard freeze. For us in the tropical zone, business will continue to climb (I hope!) until our traditional respite in January. Sample numbers have been low this year in the Gulf States due to various factors that include charge policy initiation for some labs and weather calamities. In Florida we are hoping business stays brisk so we will be able to generate our budget through the end of June!

Gary W. Simone, Editor

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PDQ -- Plant Diagnostics Quarterly

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Guidelines to Contributors

Submission Format

Articles are preferred submitted on diskette (5.25 or 3.5) -- especially the longer Feature Articles. Electronic submission will allow greater consistency among type fonts and sizes and improve the appearance of the publication. We use Word Perfect 5.1 on IBM hardware, but have the capability of converting most word processing software. Please send a copy of the article on the software you use (be sure to identify the software); please also send an ASCII file to use in case we have problems with the conversion. Label disks with your name and address and job file name. All disks will be returned. Please include a hardcopy printout as well.

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The title of the article is printed in bold letters (mixed case), is placed 1 1/2 inches from the top of the page, and is centered. Skip one line then center your name, then center the institution of your affiliation on the following line. Your name and affiliation should be printed in mixed case.

The top margin will be 1 1/2 inches on the first page and 1 inch for each page thereafter. One inch margins should be used on the remaining sides. Page numbers should be lightly pencilled in at the bottom of each page.

Paragraph or section headings should be in bold print or underlined. Skip the next line and then begin the paragraph; paragraphs are separated by blank lines.

Lines are single-spaced. The article should be printed on a letter quality printer or typewriter; dot printing will not reproduce well and should be avoided.

Latin binomials should be italicized rather than underscored if possible.

Length

Feature articles should be a minimum of 5 pages. Aside from this limitation, articles may be of any length as long as they remain focused on the topic selected.

Illustrations

Our ability to reproduce illustrations is limited; line drawings reproduce most faithfully. Original black and white photographs (prints only) may be used if they are of high quality. Illustrations should be mounted on a separate page, with their captions mounted below.

Fact Sheets

Contributed Fact Sheets from states extension/research units or other agencies for inclusion with PDQ are gratefully accepted. Send two (2) originals to Gary W. Simone (Editor) for appropriate listing in the next issue. If sufficient copies of the publication are available, send 225 copies to Gail Ruhl -- Managing Editor so that they can be compiled with the issue.

References

Use at your discretion. If articles are referred to in the text, please cite them at the end of your article using a standard format such as that used in Plant Disease. If references are not cited, related articles may be listed under the heading "Bibliography".

Plant Diagnostics Quarterly (PDQ)

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DIFFUSION

Melodie Putnam

Irrigation frequency and fertilizer type influence necrotic ring spot of Kentucky bluegrass. B.P. Melvin and J.M. Vargas, Jr. (Michigan State Univ., East Lansing) evaluated fertilizers (two organic, three synthetic and one organic/synthetic combination) with three irrigation regimes for necrotic ring spot (NRS) management. Irrigation treatments consisted of daily noon syringing, a twice weekly application at night, and rain only. Both irrigation and fertilizers were applied May - October for three years. Plots were evaluated at peak symptom expression by counting the number of rings in each plot. For two of three years daily irrigation resulted in fewer rings per plot than plots receiving rain only. The first year of the study (a drought year) plots receiving the two organic fertilizers had fewer symptoms than those receiving synthetic fertilizers or no fertilizer. By the third year, there was no difference in disease incidence between types of fertilizers: all fertilized plots had less NRS than non-fertilized plots. HortScience 1994, 29:1028-1030.

Isolation of *Fusarium* species from common broad-leaved weeds and their pathogenicity to winter wheat. Weeds collected from three sites were assayed for presence of *Fusarium* species. The weeds represented 15 species from 10 families; isolations were made from 1,346 plants, none of which had symptoms of disease. Of the 226 isolates obtained, 77 were tested for pathogenicity to winter wheat seedlings. Five species of *Fusarium* were represented: *F. avenaceum, F. culmorum, F. poae, F. sambucinum,* and *F. graminearum*. Wheat seeds soaked in spore suspensions were planted and evaluated after four weeks. Of the 77 isolates tested, 75 were found to be pathogenic to wheat. The authors, P. Jenkinson and D.W. Parry (Harper Adams Agric. College, Newport, Shropshire, UK) speculate that the 14 weed species from which the *Fusarium* species were isolated may serve as both alternate hosts and as sources of *Fusarium* inoculum. Mycological Research 1994, 98:776-780.

Symptoms and treatment of manganese deficiency in *Cycas revoluta* Thunb. Manganese deficiency in king sago palm (*C. revoluta*) begins as pale green areas in developing leaflets in the rachis midsection. Bright chlorotic spots then develop along the leaflet margins; this may be accompanied by an overall light chlorosis, chlorotic tips, or both. The chlorotic/necrotic areas eventually coalesce in the leaflet middle, which often results in death of tissue in the afflicted areas. The symptoms progress basipetally and acropetally along the rachis. In severe cases, the current year's fronds may die during or soon after expansion. The authors, B. Dehgan, J.E. Durando, and T.H. Yeager (Univ. Florida, Gainesville) found that chelated Mn applied to expanding leaves alleviated the disorder, but only for the current growth flush. Cultural practices contributed to Mn deficiency. HortScience 1994, 29:645-648.

Appropriate bacterial identification systems for small plant pathology laboratories overseas incorporating the Biolog method. R. Black and A. Sweetmore (Natural Resources Inst.,

Chatham Maritime, Kent, UK) suggest using conventional methods to eliminate non-pathogens isolated from plant material and to use Biolog only when potential bacterial pathogens have been identified. The database of Gram negative profiles supplied by Biolog needs to be supplemented by the users. The Biolog MicroLog 2/3 software, which allows user modification costs about four times the basic Biolog software version with a fixed database (MicroLog 1). To reduce costs, the authors use a different modifiable database. The program, which costs about the same as MicroLog 1, is called Bacterial Identifier and is available from Blackwell Scientific. The program was originally intended for identifying bacteria from the results of an array of conventional tests. "Following the very clear instructions it is a simple matter to write an ASCII file listing the 96 substrates of the Biolog plate and the metabolic profiles of the species of plant bacteria to be identified." In addition to the flexibility of the database, the information output from Bacterial Identifier is superior when an identification is inclusive (i.e. the isolate is placed in the correct subgroup rather than misidentified altogether). Plant Pathology 1994, 43:438-441.

Inhibitory effects of turf pesticides on *Bacillus popilliae* and the prevalence of milky disease. D.W. Dingman (Connecticut Agric. Exp. Sta., New Haven) tested the effects of 14 fungicides, herbicides, and insecticides to determine if they had any deleterious effects on *B. popilliae*, a bioinsecticide active against white grubs. Vegetative growth of the bacterium was repressed by all pesticides studied. Use of recommended rates of chlorothalonil, triadimefon, 2,4-D+2,4-DP, and pendimethalin can decrease spore titers in turf; therefore use of synthetic pesticides can contribute to a low incidence of milky disease in white grubs. Applied and Environmental Microbiology 1994, 60:2343-2349.

REGIONAL REPORTS

NORTHEAST REGION

Richard J. Buckley and Ann B. Gould

Vegetables....

The major disease problem this quarter at the Plant Disease Clinic at Penn State was late blight of potato, caused by the fungus *Phytophthora infestans*. John Peplinski reports that devastating outbreaks of this disease have occurred in many parts of the state. Cool, wet conditions, and the presence of the A2 metalaxyl-resistant mating type, have led to the complete destruction of some potato fields within two weeks of the first evidence of symptom expression. Late blight outbreaks have also caused significant loss to potato and tomato in West Virginia and Virginia.

Early blight of tomato and potato was especially troublesome in parts of New Jersey, New Hampshire, and West Virginia. Cheryl Smith reports that several fields of Early Red Norland potatoes were a near-total loss. In New Jersey, tomato plants infected with *Alternaria* were also severely affected by Septoria leaf spot.

Bacterial problems enjoyed the humid summer. Bacterial canker of pepper was reported by Tim Brown in West Virginia. *Xanthomonas campestris* pv. *vesicatoria*, the cause of bacterial spot of pepper, was diagnosed for several growers in Connecticut, Virginia, and New Jersey. Bacterial canker of tomato, caused by *Clavibacter michiganense* subsp. *michiganense*, was found on three farms in southern Maryland and was also recently diagnosed in New Jersey. *Pseudomonas syringae*, the cause of angular leaf spot, was found on cucumber in Maryland and on squash in New Hampshire and Connecticut. We have just isolated *P. syringae* from leaf spots on arugula in New Jersey, and Sharon Douglas reports an unusual occurrence of bacterial stem rot (*Erwinia*) of greenhouse tomatoes in Connecticut.

In Connecticut, downy mildews developed quite a punch during August after four days of humidity, rain, and cloud cover. Growers in this state described the fields as having been "burned" over a single weekend. Significant losses were reported in pumpkin and winter squash in Connecticut, New Jersey, and Maryland. Powdery mildew was also quite intense on most cucurbits in the region.

Other vegetable diseases of note include: cucumber mosaic virus in several commercial pepper and tomato fields in southern New Jersey; Verticillium wilt of eggplant in Connecticut; Cercospora leaf spot on cucumber in Maryland and on watermelon in Virginia; and white rot of garlic in Pennsylvania. Also in Pennsylvania, Phytophthora blight was seen on yellow summer squash, watermelon, pumpkin, and pepper.

Field Crops....

In some sorghum fields on the eastern shore of Maryland, losses due to stalk rot were close

to 100%. Although both *Fusarium moniliforme* and *Macrophomina phaseolina* were found, Ethel Dutky suggests that it was unclear which pathogen was the most destructive. Crazy top of corn (downy mildew), caused by the fungus *Sclerophthora macrospora*, was reported in Virginia. Mary Ann also mentions the occurrence of rough leaf spot on sorghum, caused by *Ramulispora sorghi.*

Turf....

In the northeast, brown patch and Pythium blight continued to be the biggest summer problems of fine turf. Warm nights and humid days are especially conducive for the development of these diseases. Summer patch still caused difficulties on golf turf containing a high population of annual bluegrass.

During his presentation to the New Jersey Golf Course Superintendent Association in mid-summer, Noel Jackson convinced everyone that they had nematode problems. After his visit, our laboratory was inundated with soil samples, and apparently he was right on target. Populations of stunt, spiral, and ring nematodes were four to five times higher on golf greens this season than in the past few years. We have also begun to see an increase in the bentgrass cyst nematode, *Punctodera punctata*. Mary Ann Hanson reports the occurrence of the awl nematode in bentgrass, which is unusual for Virginia.

Woodies....

Powdery mildew is the disease of note on woody ornamental plants this summer. Unusually heavy outbreaks on dogwood were reported from most states. Oak, maple, and, of course, lilac have all been mentioned.

Problems associated with heat and drought stress continue to be submitted to plant diagnostic laboratories in the region. Canker-causing fungi have done a fine job this summer by presumably moving into tissue injured by disgusting winter weather. *Botryosphaeria* was mentioned by diagnosticians in New York, New Jersey, and Virginia.

In spite of dry spring conditions, a surprising number of fungal leaf spots and anthracnoses were reported this quarter. Maple, ash, oak, elm, birch, and walnut each were affected by an assortment of fungi. In Virginia, web blight, caused by *Rhizoctonia* spp., was prevalent in nursery grown Helleri holly, Nandina, and azalea. *Cristulariella moricola* is a common leaf spotting fungus of boxelder in Pennsylvania and was seen on the usual number of samples in that laboratory this season. Of note, however, is the client that had the disease on a boxelder, but also found the leaf spots on snap beans, tomato, pepper, and hollyhock in a garden next to the tree.

Samples of bacterial leaf scorch, caused by *Xylella fastidiosa*, continue to increase in several diagnostic laboratories. Ethel Dutky reports that she confirmed several samples with ELISA in the black oak group. In New Jersey, we are seeing a slow northern spread of the disease in pin and scarlet oak. To date, we have had one positive test in Mulberry.

Armillaria root rot was found on oak and beech in a New York landscape and on oak in a field nursry. In Virginia, Cylindrocladium root rot was found on Mahonia and azalea. Phytophthora root and crown rot was diagnosed in most laboratories on the usual samples of ericaceous plants.

Sharon Douglas of Connecticut and Ann Gould in New Jersey have noted significant decline symptoms on white ash in woodland and landscape sites. Sharon detected phytoplasmas in some trees (DAP staining) but not in others.

Herbaceous....

Margery Daughtry has provided us with an action packed report of the summer problems in herbaceous ornamentals. *Phytophthora parasitica* caused extensive losses of poinsettia cuttings under mist propagation. Also in poinsettia, *Fusarium/Nectria* were found sporulating in rotting stems, and Margery is attempting to prove pathogenicity. *Pythium, Rhizoctonia*, and fungus gnats were up to their usual tricks. Sharon Douglas mentioned that *Pythium* was more common in poinsettia cuttings rooted in rock wool.

Phytophthora was a problem in other crops as well. In New York, *Phytophthora parasitica* was identified causing rot on fuchsia and English ivy. Phytophthora root rot was also found on sage in Virginia.

Sclerotium rolfsii was reported to cause a crown rot of perennial ageratum in the landscape. Sclerotium root rot ravaged annuals and perennials belonging to several members of a garden club in New Hampshire. These people routinely exchange plant material. Did anybody tell them about communicable diseases? The Pennsylvania report also mentioned *Sclerotium* on Hosta.

The twisting and gnarling of the terminal leaves of impatiens in the New York landscape was attributed to cyclamen mites. In Connecticut, Verticillium wilt was a problem on impatiens grown in areas with long histories of continuous planting. Impatiens necrotic spot virus was detected on *Sedum* and *Geranium* sp. (not *Pelargonium*) in Virginia.

Bacterial leaf spot/blight, caused by *Pseudomonas cichorii*, was prevalent in Maryland on nursery chrysanthemum following ten days of rainy weather. Fortunately, when the weather cleared, the growers groomed the plants and applied Phyton 27, with apparent success. Bacterial leaf spot on mum was also a problem in New Hampshire. Ethel Dutky reports that downy mildew was present on *Coreopsis*. Suddenly, after the August rains, black/brown patches appeared and the foliage became blighted. Many cultivated species and cultivars were affected in several nurseries.

Other diseases of note include: *Cylindrocladium scoparium* on spathiphyllum and *Glomerella cingulata* on cyclamen in New York; and Drechslera leaf spot of zygocactus and bean yellows mosaic of gladiolus in New Jersey.

Calls for help....

Sharon Douglas in Connecticut needs help! Connecticut growers have responded to an increased demand for more diverse perennials. Subsequently, Sharon has been faced with a dramatic increase in perennial problems. If anyone is out there with significant experience with some of the more "exotic" perennials and their associated diseases, please give her a call.

Cheryl Smith and Sharon Douglas report that the artillery fungus, *Sphaerobolus*, has been called to arms. Ann Gould would like to know if anyone has a tried and true method for removing peridioles once they dry.

Ethel Dutky observed the presence of necrotic foliar ring spots on *Sedum* 'Autumn Joy'. She indicates that tests for virus were negative; any ideas?

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SOUTHEAST REGION

Jackie Mullen

Last summer was sporadically wetter or dryer than normal in some parts of the Southeast. Also, temperatures were cooler than normal in many states. Late blight on tomato was an unusual occurrence in many states. Powdery mildews were more abundant on many plants with powdery mildew on dogwood being an unusual (It was first noted in many states in 1993) and common problem in many areas of the region, including GA, KY, MS, NC, TN, and AL.

In ARKANSAS, Stephen Vann reported a higher incidence of blast (*Pyricularia oryzae*) on several rice varieties when compared to last year. Sheath blight (*Rhizoctonia solani*) was also prevalent during the summer months. In spite of these diseases, overall rice yields in several areas were up over last year. The AR disease clinic has been involved in the testing of a rice blast detection kit which may aid farmers in predicting this disease. In the soybean crop this year, bacterial blight and bacterial pustule were common occurrences. Cercospora leaf blight was especially common as well. Vegetable diseases included frequent occurrences of southern blight and Fusarium wilt on tomatoes and downy mildew on squash and watermelon. The lab had one unconfirmed report of bacterial fruit blotch on watermelon from the northeast area of the state. Common turf diseases from golf courses included brown patch and Pythium blight from bentgrass greens. Heat stress also contributed to decline of the greens. Dollar spot and rust were widespread in many homeowner lawns with bermudagrass. With shade trees, oak leaf

blister was abundant as a result of the rainy periods in the spring. Dry conditions throughout the state have resulted in premature defoliation of many of the hardwood trees responsible for fall colors.

In GEORGIA, Wakkar Uddin reported that the Extension Plant Pathology and Entomology departments at the University of Georgia opened a Homeowner IPM Clinic in January, 1994 to diagnose and recommend controls for insect and disease problems on homeowner plants samples. Julie Balsdon (jbalsdon@uga.cc.uga.edu) runs the Homeowner IPM Clinic which is located with the commercial Plant Disease Clinic. W. Uddin (wuddin@uga.cc.uga.edu) is the diagnostician and manager of the Plant Disease Clinic. Last summer, Phomopsis blight and twig dieback fo several trees and shrubs were widespread throughout Georgia; peach and juniper were affected most. Severe mid-summer infection of peach was unusual as this disease typically causes damage in late summer and early fall. Apparently, the mid-summer infection was a result of the unusual heavy rainfall this past summer. Powdery mildew on dogwood was a problem all summer on both commercial and homeowner dogwoods. Also, dogwood spot anthracnose was prevalent. Dogwood anthracnose (*Discula destructiva*) was present and confined to the areas of the central Piedmont and farther north. During the summer months Cercospora leaf spot was prevalent at a major foliar problem on a variety of hosts. At the end of summer, Septoria leaf spot and blotch became an increasing problem on plants while Cercospora incidence declined. *Prunus* spp. samples with bacterial and Botryosphaeria cankers were received regularly; these samples often were associated with low soil pH. With vegetable crops, late blight and bacterial wilt were present as problems during the summer; also, anthracnose was damaging on black-eyed and white peas. Centipede decline and infections by *Pythium* sp. and *Curvularia* sp. were the primary turf problems. Pythium root rot from southwestern and western areas of Georgia were likely associated with flooding in early July. In late summer, drought stress symptoms were noted in hardwood leaf samples whose root systems drowned earlier this year. Next spring the Georgia clinic will not be surprised to see above normal numbers of diseases and insect problems on these stressed landscape plantings.

FLORIDA (report by Richard Cullen) had a hot steamy wet summer, perfect weather for plant disease. Watermelon blotch, *Acidovorax avenae* subsp. *citrulli*, was found in scattered fields throughout the state earlier in the summer. Due to litigations involving this disease, many seed companies are threatening to stop watermelon seed production. This, of course, would have a devastating effect on many Florida growers and Florida agriculture in general.

Bacterial spot of tomato, *Xanthomonas campestris* pv. *vesicatoria* (X.c.v.) has always been a major production problem in Florida. Prior to 1991, T1 was the only tomato race of X.c.v. found in Florida. In 1991 a new race, the T3 race, was reported. This summer the Plant Disease Clinics in Immokalee, Quincy, and Gainesville all reported bacteria spot as a significant problem and the T3 race was the dominant race found. The two races can be identified by differential amylolytic, pectolytic, and hypersensitive reaction tests. The T3 race utilizes starch, breaks down pectate and has a rapid, <12h, hypersensitive reaction on tobacco and pepper. The T3 race has an antagonistic effect on the T1 race due to antibiotic activity. This probably accounts for the prevalence of the T3 race. The T3 race is readily seed transmitted and

produces numerous leaf spots which tend to become shotholes.

Thielaviopsis basicola, black root rot of pansies is another disease which we haven't seen since the early 1990's. It has caused considerable plant damage and economic loss in various phases of production. We are spending significant time and resources in the search for the source of this problem.

Hank Dankers at the Quincy clinic reported the following diseases of tomato: *Pseudomonas solanaceanum*, bacterial wilt; *Corynespora cassiicola*, target spot; Fusarium root and crown rot; tomato spotted wilt virus and tomato mottle geminivirus. Another interesting report from the Quincy lab was pepper mottle virus on pepper.

Virologists in our department have strong evidence (DNA sequence homology, i.e. if you can believe DNA evidence) to support the position that the geminiviruses in tomato, beans in North Florida and a new geminivirus in pepper have all evolved from the endemic geminivirus population in *Sida* sp.

Bob McMillen of the Homestead clinic had the following report.

Publications.

1. McMillan, R.T., Jr. 1994. An update on the incidence of postbloom fruit drop on 'Tahiti' limes in South Florida. Pro. Fla. State Hort. Soc. 106:108-110.
2. McMillan, R.T., Jr. 1994. Reoccurrence of papaya mosaic virus in Florida. Proc. Fla. State Hort. Soc. 106:146-147.

First report of plant pathogens for 1994, publications in process.

1. Phytophthora leaf blight caused by *Phytophthora nicotianae* var. *parasitica* on *Aechmea fasciata.*
2. Phytophthora bud blight caused by a *Phytophthora* sp. on *Wodyetia bifurcata.*

In KENTUCKY, Brian Eshenaur reported that the most commonly diagnosed burley tobacco diseases during the 1994 growing season included the burley virus complex, black shank, and blue mold. With a wide variety of landscape trees and shrubs, transplant shock was a common problem. It is suspect that the hot and dry conditions of this past summer were directly related to these transplant problems. Rose rosette virus was diagnosed on a few hybrid tea rose samples this past summer. Symptoms of this disease are red leaf coloration, leaf distortion, branch proliferation and excessive thorniness. Infected plants normally decline and eventually die from this disease. Powdery mildew was present on many plants and it was particularly noteworthy on flowering dogwoods (*Cornus florida*). Dogwood powdery mildew, first noticed in KY in 1993, was prevalent on the majority of landscape dogwoods in 1994.

In MISSISSIPPI, M.V. Patel reported unusually cool summer weather occurred in the state and it created ideal conditions for plant disease problems. Powdery mildew fungi caused major problems on flowering dogwood, crape myrtle, euonymus, oak, and roses. Other common diseases which were diagnosed are the following; rusts (*Puccinia polysora* and *P. sorghi*) and crazy top (*Sclerophthora macrospora*) on field corn; bacterial fruit blotch of watermelon (*Acidovorax avenae* subsp. *citrulli*); aerial web blight (*Rhizoctonia solani*), sudden death

syndrome (*Fusarium solani*), stem canker (*Diaporthe phaseolorum* var. *caulivora*), and bacterial blight (*Pseudomonas syringae* pv *glycinea*) on soybean; leaf blister (*Taphrina caerulescens*) on oak; Verticillium wilt (*Verticillium albo-atrum*) on cotton; and nematode damage on golf course greens (root-knot, ring, and sting).

In NORTH CAROLINA, Tom Creswell noted that a wide variety of problems were seen in the clinic this past summer. Phytophthora, Pythium, and Rhizoctonia were routinely isolated from several nursery-grown perennials. These hosts were *Artemisia, Campanula, Caryopteris,* Jacob's ladder (*Polemonium caeruleum*), candytuft, coralbells, lavender, *Scabiosa*, *Phlox subulate, Salvia* spp., *Arabis* sp., *Veronica* sp., and *Verbena* sp. New reports of problems for NC include the following: *Puccinia grindeliae* on *Aster* sp; Nigrospora lint rot on cotton; *Asperisporium sequoiae* (Cercospora needle blight) on Leyland Cypress; Phyllosticta leaf spot on Luffa gourd; *Monostichella hysterioides* leaf spot on sugar maple; tomato spotted wilt virus on summer squash; Cercospora leaf spot (*Pseudocercospora fuligena*) on tomato. Other problems of interest included: powdery mildew and heat stress symptoms on dogwood; web blight on arbor-vitae, bean, fern, gloxinia, and Japanese holly; bacterial scorch (Xylella) was confirmed by ELISA but not by isolation from elm, pin oak, white oak, grape, plum and sycamore. The major problem on pansy was *Phytophthora parasitica* root/stem rot. Prevalent vegetable problems included downy mildew (*Pseudoperonospora cubensis*) on pumpkin and squash and late blight on potato and tomato. Bacterial fruit blotch (*Pseudomonas pseudoalcaligens* or *Acidovorax avenae* subsp. *citrulli*) were identified on watermelon.

In TENNESSEE, Beth Long reported the following field crop and vegetable disease situations; tobacco with light damage from tobacco blue mold in 10 counties in east TN this past summer, starting in mid-July when most tobacco was becoming mature; tobacco with a high incidence of black shank and target spot; corn with severe southern corn leaf rust; cotton, tobacco and vegetables with considerable seedling diseases caused by mostly Fusarium and Rhizoctonia; strawberries with strawberry anthracnose was commonly found, especially the berry rot phase; tomato in Bledsoe County with confirmed (Florida Dept. Ag.) Geminivirus was a new state record (transplants were from Florida). With greenhouse/nursery/commercial turf, Beth reported tomato spotted wilt virus on bedding plants, black root rot on pansy, winter injury on bentgrass golf greens, and a common problem with Pythium blight on bentgrass golf greens. With landscape ornamentals, sudden collapse and death of wood ornamentals was common this summer due to the effects of winter injury. Phytophthora root rot was commonly found, probably due to the extremely wet spring and summer. Powdery mildew was widespread on dogwoods everywhere. Powdery mildew was first noted in TN by Alan Windham in 1993. This past summer there were 11 new county records for rose rosette virus (RRV) on multiflora rose in middle TN. This disease is slowly spreading from west to east; no RRV has been found to date in east TN. With homeowner problems, winter injury-related death of woody ornamentals was very common. Fungal cankers causing dieback were widespread. Phytophthora root rot was isolated from a large number of homeowner samples - especially those in wet, waterlogged soil. The most commonly found garden diseases included southern blight on vegetables and perennial flowers; a high incidence of tomato late blight; high losses caused by damping off of vegetable seedlings, most often caused by *Fusarium* and *Rhizoctonia*;

Fusarium stem rot was commonly found on mature plants. Common landscape disease problems included gray mold on flowers, especially peonies; azalea leaf and flower gall; Entomosporium leaf spot on photinia; powdery mildew, especially common on dogwood; a high incidence of dogwood anthracnose; abundant maple anthracnose, Phyllosticta leaf spot on maple, Tubakia leaf spot and Taphrina leaf blister on oak.

In ALABAMA (Jackie Mullen), diseases were abundant, despite a drop in plant sample number due (we think) to the heavy rains in late June and flooding in the southern most third of the state in early July. On the whole, our summer temperatures were lower than normal and we saw unusual occurrences of some cool-temperature diseases including northern corn leaf blight (*Helminthosporium turcicum*) on field corn, late blight (*P. infestans*) on Irish potato/tomato and powdery mildews on a variety of plants including dogwood. The dogwood powdery mildew was unusual in its occurrence (first noted last year), widespread in its incidence, and severe in its damage. Variety trials (A. Hagan) showed powdery mildew occurrence on all cultivars evaluated except *Cornus coosa*, and Rutgers hybrids. Cucumber mosaic virus (CMV) continued to be a major problem in the second largest fresh market tomato-producing county in the state. Since 1991, this virus has caused an 80% decrease in tomato acreage in this county. This year, four of hte seven plantings escaped virus disease, but the three mid-season planted tomato crops showed significant damage. The largest fresh-market tomato-producing county in the state has seen some mild damage from CMV during the past three years, but severe damage has not been present. This past summer CMV incidence was somewhat higher in this county than in 1993 (E. Sikora). There was an increased incidence of turf disease caused by *Gaeumannomyces graminis* var. *graminis* as bermudagrass decline and take-all root rot on St. Augustine and zoysia. The abundant rainfall in early-mid summer was conducive for disease development. Also, we believe as a consequence to the more than ample rainfall in June and July, we saw Phytophthora root rot on a number of landscape plants including azalea, juniper, pachysandra, holly, petunia, pansy, Calamondin, river birch, blueberry, gardenia, Japanese holly, rose, and tulip tree. Southern blight, *Sclerotium rolfsii*, which is normally a problem during our hot humid summers, was more abundant on a variety of plants; it caused severe damage on some nursery viburnum and forsythia. Periwinkle (annual) was especially hard hit this past summer with Phytophthora aerial blight and Rhizoctonia aerial blight. Unusual diseases seen included *Myrothecium roridum* crown rot on pansy, an anthracnose leaf spot/blight disease on sugar maple caused by *Monostichella hysterioidea*, and a lower foliage blight (needle blight) of Leyland cypress caused by the fungus *Asperisporium sequoiae* (*Cercospora sequoiae*).

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CENTRAL REGION

Karen Rane

Field Crops.

Judy O'Mara reports that corn stalk rots (primarily charcoal rot and Fusarium stalk rot) were the major corn problems in Kansas in late summer, due to the hot dry weather throughout the state. In contrast, the eastern part of the Central Region had rainy periods and/or high humidity during several days in August, and late season leaf spot diseases flourished. Gray leaf spot incidence was high in Indiana (reported by Gail Ruhl) and Iowa (reported by Paula Flynn). Because these leaf spot diseases occurred late in the growing season, little impact on yield is expected. However, there is concern about the amount of inoculum remaining in affected fields next year. Anthracnose stalk rot was widespread in Indiana. In Kansas, two virus diseases were of interest. The High Plains tenuivirus was found in more Kansas counties this year, and American wheat striate mosaic virus was found in corn for the first time in the state. Stewart's wilt was common in Ohio, Indiana and Illinois.

White mold (Sclerotinia) was very destructive in some soybean fields in Ohio, Indiana and Illinois this summer. Dave Roberts reports that Phytophthora stem and root rot was a significant problem in Michigan soybeans this year. Dave also continues to find *Corynespora cassiicola,* the causal agent of target spot, on rotted soybean roots. Soybean cyst nematode has been the object of concern in Ohio, Kansas, Iowa and Illinois. In Illinois, populations of SCN as high as 990 cysts per 100 cc of soil have been found. In Kansas, SCN was found in four new counties, making a jump into the western part of the state (presumably due to movement of contaminated farm equipment). Other soybean diseases of note this summer include brown stem rot (Indiana, Iowa), sudden death syndrome (Illinois, Indiana), and charcoal rot (Kansas).

Minor field crops also had some disease problems. In Kansas, Rhizopus head rot was a significant problem on sunflowers. Stalk rots in sorghum were common in Kansas this year.

Vegetables.

Late blight on tomato and potato continues to be of concern throughout the Central Region. Mary Francis Heimann, OSF reports that the A-2 mating type has been confirmed in Wisconsin.

Metalaxyl failed to control the disease in some Wisconsin potato fields. Cindy Ash in Minnesota lost 80 plants in her tomato research plots to late blight this year. Increased incidence of the disease was also reported in Michigan.

Bacterial spot, speck and canker were once again a problem in commercial tomato fields in the region. Nancy Taylor reports an unusual case of Verticillium wilt in peppers in Ohio. The affected plants were grown in a field that had only been planted to corn and soybeans in the past. Phytophthora blight was common on peppers in Ohio, Illinois and Indiana.

Virus symptoms on cucurbits were frequently observed in Indiana and Ohio this summer. In Indiana, downy mildew on pumpkin was severe in some fields. A bacterial leaf spot on pumpkin was reported from Ohio. A bacterial fruit spot of pumpkin was reported in Indiana.

Black rot was the most prevalent pumpkin problem in Michigan and Illinois.

Woody Ornamentals.

Several states in the region report problems with ash and maple dieback this summer. Occasionally, Verticillium has been confirmed in declining trees (Nancy Pataky says it was a "good year" for Verticillium in Illinois), but in many cases noninfectious stress factors, such as winter injury, were believed responsible for the problem. In Michigan, collar rot caused by a species of Phytophthora has been a serious problem on maples in some nurseries. In Wisconsin, Phytophthora collar rot is frequently found in landscape sugar maples that have been planted too deeply, according to Mary Francis Heimann.

Leaf curl in oaks was a common problem in both Indiana and Ohio this year. Leaves curl both lengthwise and crosswise; in some cases leaves were curled tightly into a ball. While occasionally we could attribute the curling to growth-regulator-type herbicides or leafhopper feeding (cast skins on the undersides of leaves are a sure sign of leafhoppers), most of the time we could find no specific cause for this phenomenon in Indiana. Nancy Taylor in Ohio and Gail Ruhl and I in Indiana would welcome any other suggestions as to the cause of these symptoms. Other oak problems this year include Botryosphaeria canker (Illinois) and leaf scorch attributed to environmental stress (Michigan).

Most diagnosticians report the usual amount of conifer problems this year. Rhizosphaera continues to be a problem in spruce, particularly in Illinois and Iowa. An increased incidence of Sphaeropsis (Diplodia) blight on pines was noted in Minnesota and Ohio; in Illinois, the canker phase of Sphaeropsis blight was common. In Iowa, Sphaeropsis was diagnosed as causing cankers on concolor fir.

Elm leaf scorch, caused by *Xylella fastidiosa* was confirmed in Kansas this summer - a new state record. Other woody ornamental diseases of interest in the region include: Cylindrocladium root rot in nursery azaleas (Ohio, Indiana), downy mildew on viburnum (Minnesota), dogwood anthracnose (Indiana), Armillaria root rot on rhododendron (Ohio). Powdery mildew was common throughout the Central region on virtually every possible host. In Indiana, powdery mildew (at present, an unidentified species) was found associated with severe leaf scorch symptoms on flowering and red-twig dogwoods.

Herbaceous Ornamentals.

Powdery mildew was observed on poinsettia in Kansas. Bacterial blight of geranium has reappeared (so soon!) in greenhouse geraniums in both Kansas and Michigan. In Kansas, the disease showed up in plants kept through the summer to be used as stock plants this fall. The source of the disease in Michigan is not known (plants had not been saved from last spring).

In Minnesota, Cindy Ash is seeing an increased incidence of white mold in home gardens. She wonders whether increased use of "composted" materials in home gardens has contributed to this problem. Cindy would appreciate any comments you may have on this topic.

Sclerotium rolfsii was found in Ohio causing root and stem rot of hosta this summer - a new state report.

Fruit.

It was another good year for apple scab in much of the region. Black rot, sooty blotch and fly speck were found on Illinois apples, and bitter pit was reported from Iowa. Orange rust was diagnosed on blackberry in Kansas (a new state report). Downy mildew was common on grapes in Minnesota and Illinois. In Indiana, downy mildew was reported on commercial raspberries. Sphaerulina leaf spot was reported on raspberry in Iowa.

Turf.

Brown patch was a common problem throughout the region this summer. Nancy Taylor relayed the comments of Joe Rimelspach, Ohio turf pathologist, concerning the frequent occurrence of extensive mycelial growth of Rhizoctonia in the turf canopy this year. Brown patch on golf courses was often misdiagnosed by turf managers as Pythium blight due to the presence of this mycelial growth.

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SOUTHWEST REGION

Steven Koike

Arizona (M. Matheron). This is the time of year when Phymatotrichum root rot affects alfalfa, cotton, and many ornamentals. The pathogen, *Phymatotrichopsis omnivora*, causes root rot in over 2,300 species of plants and is active in warm, alkaline soils. Other diseases encountered in alfalfa include scald and Rhizoctonia root rot. Scald or high temperature flooding injury of alfalfa (an abiotic problem), is usually associated with a combination of high soil temperatures (32-42°C) and soils that remain saturated with water for over 30 hr after a flood irrigation. Plants rapidly turn yellow, wilt, and die in the flooded area. *Rhizoctonia solani* was detected on decayed stems and pegs of peanut plants in western Arizona. *R. solani* infection of peanut plants can significantly reduce yields. Phytophthora root rot and gummosis continues to affect citrus groves in Arizona. Two species of the fungus, *Phytophthora citrophthora* and *P. parasitica*, are responsible for the disease. *P. citrophthora* is most active during autumn, winter, and spring, while *P. parasitica* is most active in late spring, summer, and early autumn. Another disease of citrus, Alternaria fruit rot of navel oranges, is prevalent in some navel orange groves in central Arizona. Losses of up to 20% have been attributed to the disease.

California (S.T. Koike). For the third consecutive season, outbreaks of bacterial leafspot of

lettuce (*Xanthomonas campestris* pv. *vitians*) have occurred on the coastal lettuce crop. Both head and leaf lettuce cultivars are susceptible, and the disease has at times become quite severe. An unidentified problem on celery has been affecting this crop in California. Symptoms consist of brown to tan, sunken, dry lesions which occur on both outer and inner sides of celery petioles. Lesions are found low on the plant, and do not develop higher than 2 to 3 inches above the soil line. To date pathogenic fungi and bacteria have not been associated with this problem. *Pseudomonas cichorii*, causal agent of celery brown stem (Plant Disease 78:917-919), has not been isolated from these lesions. Powdery mildew of pepper (*Oidiopsis taurica*) is again developing in the late summer. But so far powdery mildew severity is not as severe as found in previous summers.

Texas (R.D. Henson). Reports of foliar disease of fall greenhouse ornamentals have increased in the last month. Confirmed diseases of note include *Rhizoctonia* spp. aerial blight of fern species and Verbena; *Pseudomonas cichorii* bacterial leafspot of Chrysanthemum; and *Corynespora cassiicola* leafspot of African Violet. Sycamore and an increased number of red Oak samples tested positive for *Xylella fastidiosa* (bacterial leaf scorch) in late August and early September. Cooler night temperatures and periodic rainfall in September have resulted in an increase in both Rhizoctonia brown patch and Gaeumannomyces take-all patch of St. Augustinegrass lawns through out the state.

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PACIFIC NORTHWEST REGION
Ellen Bentley

Dry weather persisted in western Washington through the summer and into the fall. Drought stress and sunburn symptoms were observed frequently on the plant samples submitted to the WSU-Puyallup Diagnostic Laboratory (Carrie Foss). Dutch elm disease (*Ophiostoma ulmi*) was confirmed in both Tacoma and Bellevue signifying the first report of this disease into the WSU Puyallup Diagnostic Laboratory from western Washington. Other new reports include *Fusarium* on basil and *Thielaviopsis* root rot on petunia.

Curvularia and *Ascochyta* blights, and anthracnose disease were common on turf samples this summer. During September necrotic ringspot disease samples predominated from eastern Washington bluegrass and take-all on bentgrass golf courses in western Washington. Three turf projects have been initiated; antagonistic microorganisms for management of Fusarium patch and take-all diseases will be assayed in the greenhouse, *Typhula* isolates from Wenatchee will be tested for sensitivity to PCNB, and an experimental fungicide will be greenhouse tested for control of Pythium root rot. In May we welcomed Dr. Roy Davidson back to WSU-Puyallup. Roy is funded by the 1994 Clean Water grant. His responsibilities include providing diagnostic expertise during the summer and writing for the grant-funded IPM manual focused on landscape

plants. Roy also assisted with coordinating the 63 Master Gardeners volunteering in the Diagnostic Lab.

If western Washington is dry, eastern Washington (desert that it is) is parched continues Ellen Bentley (WSU-Prosser). Yakima Valley irrigation districts faced early shutdown compromising perennial crops such as apples, hops, mint, grapes and cherries. These will enter the winter on a severe water deficit increasing the risk for winter injury. Drought conditions have also delayed dryland winter wheat seeding. However, this should provide a break in the "green bridge" for wheat streak mosaic, Cephalosporium stripe, foot rots and strawbreaker. Ornamental samples suffered from scorch, sun burn, drought, salt burn (leaching from high alkaline soils) and insect injury. Some responded to the stress with a fall bloom, many others just died. An unidentified ringspot virus was observed in Hosta. Verticillium wilt was common in maple, rose, catalpa and vegetables. Orchards continued to echo the 1993 rise of fireblight. Young apples, particularly suckered M26 rootstocks, are suffering from collar blight and collapsing. Apple fruit quality was impacted by evaporative cooling practices (overhead irrigation) that contributed to Phytophthora sprinkler rot and unremovable salt encrustment.

Melodie Putnam (OSU-Corvallis) reports that most of the samples were abiotic as usual. However, there were a few interesting things. *Pseudomonas syringae* was found to be causing a melt down of alfalfa seeds grown for sprouts. The pathogen appeared to be seedborne, and so the growers were able to greatly reduce the incidence of disease by increasing the time they soaked the seed in bleach. A reduction of the temperature in the houses in which the sprouts were growing seemed also to help reduce the problem. Beautiful Botrytis cane canker was found on greenhouse grown tomatoes. Angular leaf spot was somewhat prevalent on field grown cucurbits, and *Verticillium* was recovered several times on potatoes and peppermint.

Three different fields of perennial ryegrass grown for seed were afflicted with ergot (*Claviceps purpurea*), which is rather unusual. *Phomopsis* was found in association with a number of plants with branch dieback, including katsura tree, madrone, and boxwood. A persistent and undetermined problem occurred on astilbe plants from a nursery operation. The plants developed black girdling lesions at the base of the stems. Several attempts at recovering fungal or bacterial pathogens were unsuccessful. Thinking the problem may be due to TSWV or INSV, the plants were tested for presence of these viruses, but to no avail. The cause of the problem remains a mystery.

One mystery that was satisfactorily revolved was a branch dieback of noble firs. This malady was rendering unmarketable about a quarter of the mature trees in a Christmas tree plantation. Symptoms began as a dieback of the branch tip, progressing down the branch toward the trunk. The leaders were sometimes affected, in which case the dieback proceeded down the stem. The problem was randomly distributed on branches of individual trees (i.e. no relation to cardinal points) and irregularly present in the field. A single tree with the problem had been noticed the year before. After a few attempts at isolation, the procedure was modified until pure cultures of a fungus were obtained. The fungus appears to be *Phytophthora citricola*. A similar problem was described for white and red firs in California in 1986, (Plant Disease

70:1036-1037), but this appears to be a new host. It is certainly the first time an aerial blight due to *Phytophthora* has been found on firs in Oregon. Phil Hamm (OSU-Hermiston) notes the lab samples have dropped to nearly zero. Samples of tubers with people asking about Late Blight are trickling in as harvest winds down. So far, most have been Pythium leak or pink rot.

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MINUTES OF THE DIAGNOSTIC COMMITTEE MEETING
AMERICAN PHYTOPATHOLOGICAL SOCIETY
ALBUQUERQUE, NM
August 6, 1994

1. Introduction

The APS Diagnostics Committee Meeting was held on August 6, 1994. The meeting was conducted by Chair Paul Bachi. There were 31 people in attendance.

2. Nominations & Elections of New Vice Chair 1995 (Chair 1996 meeting).

A call for nominations for next year's vice-chair was made. Colette Beaupre nominated Beth Long. No further nominations were made. A vote was called for the new vice-chair. The vote for Beth Long was unanimous by the committee members present.

3. Committee Membership/Meeting Attendance
   a. Roll call of Committee

Diagnostic Committee Members for year 1993-1994

Barbara Corwin	92-94 present	Beth Long	94-96 (absent)
Sharon Douglas	92-94 present	Karen Flynnt	94-96 present
Brian Eshenaur	92-94 present	David Roberts	94-96 (absent)
Paula Flynn	92-94 (absent)	Lauri Kenyon	94-96 (absent)
T. Mike Likens	93-95 (absent)	Paul Bachi, CH	94-96 present
R. J. McGovern	93-95 present	James Blake, V-CH	93-95 present
		J. Mullen, IPC	93-95 present

   b. Designation of new incoming (95-97) committee members.

Ellen Bentley	95-97 present
Diane Karasevicz	95-97 present
Laura Pottorff	95-97 present
Stephen Vann	95-97 present

   c. Designation of outgoing (92-94) committee members.

Barbara Corwin, Sharon Douglas, Brian Eshenaur, and Paula Flynn are the outgoing members of the committee which were thanked for volunteering their time and energy.

Diagnostic Committee Members for year 1994-1995

T. Mike Likens	93-95	Ellen Bentley	95-97
Bob McGovern	93-95	Diane Karasevicz	95-97
Jackie Mullen	93-95	Laura Pottorff	95-97
Lauri Kenyon	94-96	Stephen Vann	95-97
Karen Flynnt	94-96	James Blake, CH	93-95

David Robert	94-96	Beth Long, V-CH	94-96
		Paul Bachi, IPC	94-96

4. Minutes of meeting in Nashville, TN (1993) [see PDQ (1993) 14(4):16-19]

The minutes were approved, without edition, by the committee.

5. Continuing Business

a. Diagnostic Lab Roster - C. Sutula.

Chet Sutula currently has four hundred names on this listing. He feels this is a good list of diagnosticians in the United States and the PDQ subscribers. However, he feels foreign countries are not well represented. He would like to have a world wide roster of people in the business of diagnosis.

It was suggested that information from the APS member list be added to this roster. Chet will check with APS to see if they can break out those people who have listed diagnostics as an interest on their memberships. He plans to publish the updated list in PDQ and from there request revised information as necessary.

b. Diagnostic Committee sponsored events

1. Rapid Diagnostic Assays for Plant Pathogens Workshop

Sally Miller has coordinated this program for the past several years. She is willing to do it again next year if the committee wished. Comments on the popularity and value of the workshop were made. The committee agreed to ask Sally to coordinate the workshop in 1995.

2. Pythium Species Identification Workshop

Colette Beaupre reported on the workshop. There were thirty participants and two guests from New Mexico State University. Each participant had a microscope to use and two video monitors attached to microscopes were used in this workshop. It was felt that these video monitors were very useful in this setting.

Participants of the workshop who were in attendance at the committee meeting felt it was extremely helpful and well run. Hand-outs from the workshop will be published in PDQ.

3. Diagnostic Committee Poster

Margery Daughtrey put together this year's poster. This was on display in the trade show/poster area. The poster was well received and Margery's work was appreciated.

Diane Karasevicz volunteered to work on the poster for next year's meeting. It was noted that there is a fifty dollar budget for the poster.

4. Plant Disease Diagnostic Contest

Brian Eshenaur thanked those volunteers who provided slides for this years contest. A sign-up sheet was passed around for volunteers to work at the diagnostic contest at this years meeting. He also announced that next year's contest will utilize the APS videodisc, which contains thousands of plant disease images. A representative from the teaching committee will be coordinating this effort.

5. Diagnostician's Reception

Paul Bachi announced this years reception and encouraged everyone to attend (even if they did not have a ticket). James Blake will take care of next year's reception. Paul asked that James check to see if the phrase "by ticket only" can be deleted from the APS program to encourage more people with interest in diagnostics. This point was mentioned by Rob Wick at the 1993 meeting.

6. Discussion Session and Co-Sponsored Symposium

Jackie Mullen mentioned the discussion session "*Xylella fastidiosa* and Associated Diseases" which the Diseases of Ornamentals & Turfgrasses committee co-sponsored. Marty Draper reminded everyone of the committee's co-sponsorship of the Symposium "Plant Pathogens and the Worldwide Movement of Seeds" which was sponsored by the Seed Pathology Committee.

6. New Business

a. Diagnostics Committee Account with APS

A sheet was passed out to committee members logging the income, expenses, and net worth of the account since 1988. There was discussion about subsidizing color photos for the diagnostic manual. It was felt that we could subsidize the project, if necessary, but with the provision that the committee would get back the money if the project is successful (i.e. profitable for APS Press).

b. Diagnostic Manual Subcommittee

Paul Bachi read a report from Chuck Semer (see the amended report after the minutes). Jackie Mullen described the book and noted that this should be a valuable reference when published.

c. PDQ (Plant Diagnostics Quarterly) Report

Gary Simone noted that the budgetary cushion for PDQ is getting low, ~$281. (see PDQ 1994 Financial Report after the minutes). Gail Ruhl, managing editor, was not comfortable with this especially with the potential of the postal service raising rates within the year. She felt that it may be necessary to raise the subscription price. The consensus was that PDQ was a bargain at $10.00/year and that an increase to $15.00/year would not be a problem. A motion was

made by Chet Sutula to raise the subscription fee to $15/year, and that money be used to subsidize the publication should it be needed before the collection of subscriptions commenced in 1995. The motion was seconded by Colette Beaupre. There are currently 167 subscribers to PDQ.

d. "Spotlight on Diagnosis"

Chet noted that this is an infrequent feature in Plant Disease. Six people have agreed to submit manuscripts to Chet which are on the cutting edge of diagnostic technology.

e. The APS Strategic Plan (Goal 2, Objective 4 - Ad Hoc Committee on Publications for Communications with External Audiences)

Bob McGovern noted that Dick Smiley asked him to be on this committee. The objective is to transfer plant pathology information to general audiences. It was noted that we as scientists communicate well with each other but not with the general public. Bob discovered that in Florida, for example, there were no APS publications in the public libraries.

Some in attendance mentioned that the disease compendia are being used by growers in certain commodity areas. It was also mentioned that APS Press will supply pamphlets describing the compendia for your use in commodity meetings, however they will not supply sample compendia for this purpose.

f. Possible Future Events for Committee Sponsorship.

1. Plant Parasitic Coelomycetes Workshop

The committee agreed to co-sponsor this workshop with the Mycology Committee. Rich Baird and Scott Redlin are arranging the workshop with the technical assistance of Colette Beaupre and Paul Bachi. It is scheduled to be held just prior to the meeting in Pittsburgh (1995).

2. Teach-in on Diagnosis of Abiotic Plant Diseases

The committee agreed to co-sponsor this workshop with the Environmental Quality & Plant Health Committee. Mike Simini, Chair for 1995 of that committee, is organizing the session. A note was read from Mike and suggestions were made from those in attendance which will be relayed to Mike by Paul Bachi. Diane Karasevicz volunteered to be the liaison from our committee.

3. Fusarium sp. Workshop

A Fusarium workshop was discussed since next year's meeting was in Pennsylvania and the proximity of the expertise at Penn State. This idea was rested for lack of general enthusiasm.

4. Molecular Technique Workshop or Discussion.

Chet Sutula mentioned he had tried to coordinate a PCR workshop with help from

Hewlett-Packard. He said that the logistics of such a session would be too complex for a workshop of limited time and resources.

5. Extension Committee suggestion

Walker Miller from the Extension Committee asked if our committee would like to sponsor a discussion session loosely titled 'Working with the reality of urban vs. rural legislators, production ag. vs. the backyard gardener, and dealing with non-traditional audiences'. There was general consensus that this was a topic for the Extension committee and that we did not need to be a sponsor but would consider co-sponsorship in the future.

6. Turfgrass Diseases Workshop

There was a general interest, as always, in sponsoring a turfgrass diseases workshop. Of those present at the meeting, there were no persons from an institution with a high level of turfgrass disease knowledge such as had been discussed in previous years (e.g. Rutgers, Maryland). Paul Bachi said he would talk with the diagnosticians from those institutions and ask about the possibility of a workshop.

Just before the Program Committee meeting on Tuesday after our committee meeting, James Blake was contacted by members of the Diseases of Ornamentals & Turfgrasses Committee asking our committee's support in co-sponsoring a workshop on the diagnosis of root diseases of cool-season turfgrasses. James agreed to the co-sponsorship. The workshop will be held immediately before the APS meeting and will likely be scheduled in conflict with the workshop on Plant Pathogenic Coelomycetes (see above).

Minutes recorded by Brian Eshenaur
Edited by Paul Bachi and James Blake

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Diagnostic Manual Subcommittee Report

At present we have received about 285 completed diagnostic sheets. Of these sheets about 200 have been through the editorial process and the remaining sheets should be completed shortly.

An introductory chapter covering diagnostic methodology has been written, reviewed and is in the process of revision. The indices are in the process of development and should be completed later this year.

A vote of thanks goes to Jackie Mullen, Mary Ann Hansen, Rob Wick and Jack McRitchie who have worked tirelessly editing the incoming diagnostic sheets. Our efforts to raise funds to help defray publication costs have netted about $5000.00. The funds were raised by soliciting, via letter all sustaining members of APS. Several companies replied but were unable to contribute at the present time. The funds received will be placed into an account by APS press that will be used exclusively for the accounting costs associated with the book. After some discussions with Steve Slack we will ask APS press to use these funds to print color photos of disease symptoms associated with the diagnostic sheets. Additional discussion about the ability to use digital technology to scan into each diagnostic sheet the color images of symptoms. At this time costs are unknown as well as the ability of APS press to carry out this type of image reproduction. Discussions with Kurt Leonard, Senior APS Press editor, and Miles Weimer of APS Press are on going about this and other aspects of putting the final publication together.

I was contacted by Don White and asked if some of the material from the diagnostic sheets could be used to develop questions for the Debarry bowl. We have provided the following material, the name of the host, the name of the pathogen, the disease name and the signs and symptoms associated with the disease. Don, of course provide the appropriate credit when using this information.

The present schedule of events is the edited diagnostic sheets will be returned to the contributing author for final approval starting sometime in September, a prototype completed book will be prepared and sent out to the editors for review around the first of the year. The completed reviews will be returned and the final editorial changes will be carried out after April 1995. The completed manuscript will be submitted to APS press on June 1, 1995.

Respectively Submitted,

Charles R. Semer IV

PLANT DIAGNNOSTICS QUARTERLY (P.D.Q.)

1994 Financial Report - 7/1/93 thru 6/30/94
Submitted by Gail E. Ruhl
Managing Editor
August 6, 1994

TOTAL SUBSCRIBERS - 167

United States	146
Canada	17
England	1
Peru	1
France	1
Switzerland	1

BEGINNING BALANCE	$2,018.78
INCOME FROM SUBSCRIPTION FEES	2,101.50
EXPENSES INCURRED	2,252.69
Postage	1,175.09
Printing and duplication	1,077.60
ENDING BALANCE	1,868.59

PROJECTED 1994 EXPENSES	
June, Sept. & Dec. Issues	1,586.59
Avg. cost of printing & postage=$528.92/issue	
PROJECTED 1994 ENDING BALANCE	281.83

1994 Charge Policies:

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+ postage charge $ 528.92
X 4
$2115.68/yr.

$2,115.68/yr + 167 = $13/yr
I would propose a subscription fee increase to $15.00/year.

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PDQ (1994) 15(3):138

USING MASTER GARDENER VOLUNTEERS IN AN EXTENSION PLANT CLINIC

Laura Pickett Pottorff
Colorado State University Cooperative Extension
Jefferson County, Colorado

BACKGROUND

One thrust of the Colorado Urban IPM program is correct plant problem diagnosis. Correct identification of a plant disease or insect pest leads to improved management of the problem and hence, less pesticide misuse.

Colorado has two Cooperative Extension plant clinics that provide diagnostic services to citizens. The Colorado State University campus-based clinic, located in Fort Collins, specializes in plant pest diagnosis of agricultural crops. A second clinic, located in Jefferson County (Denver Metro area) receives horticultural plant samples. Promotion of the Jefferson County clinic lead to an increase in the demand for non-biased plant problem diagnosis from the urban public. In the face of budget cuts, a method to deal with an increasing diagnostic sample load needed to be developed.

WHY USE MASTER GARDENERS?

The Denver-area clinic is supervised by a plant pathologist with part time help from 2 horticulturists. Located in a County Extension Office, there is a large number of walk-in clientele, most of whom are home owners or horticulture consumers. One of the benefits of the clinic's location is the presence of a large and extremely active Master Gardener program. In Colorado Master Gardeners receive 40 - 60 hours of horticulturally related instruction and in return for their training, volunteer. These volunteers previously had shown interest in plant pest diagnosis, however, their training in plant disease, insect and abiotic problem diagnosis was limited.

A large percent of samples received in the Jefferson County Clinic are affected by abiotic (or environmentally related) problems. Most plant problems would not occur if horticulture consumers had a better understanding of how to grow landscape plants and turfgrass in a semi-arid climate. If this existing, volunteer force could be trained to handle the majority of abiotic samples brought in by walk-in clientele (approx. 35% of total samples), staff members would be free to expand educational and diagnostic services to commercial horticulture operations.

The goal of using Master Gardeners in a plant clinic is to allow Cooperative Extension to increase the amount of IPM information made available to Colorado citizens. This could be accomplished by: 1. Use of trained volunteers to offer diagnostic services and IPM information to the consumer horticulture audience. 2. Expansion of diagnostic and IPM educational services to commercial horticulture audiences.

TRAINING AND USE OF MASTER GARDENERS

Use of Master Gardeners in the Jefferson County Diagnostic Clinic began in 1989. An average of 30 Advanced Master Gardeners (volunteers who have been in the general program for one or more years) are eligible for the Clinic Master Gardener Program. Priority is given to those Master Gardeners who have worked in the Clinic previously as well as those who score highest during the application process. Once excepted into the clinic program, Master Gardeners from the seven County Denver Metro area receive approximately 20 hours of indepth training in plant disease, insect and abiotic problem diagnosis. This training is either taught or facilitated by the Clinic supervisor. The majority of training time is spent on the diagnostic process, how to recognize disease symptoms versus abiotic and insect damage symptoms. Emphasis is also placed on integrated pest management.

During the diagnostic season another 12 hours of "laboratory" classes are offered once a month. 6 hours of "lab", or clinic update, is mandatory. Lab specimens consist of samples commonly received in the Clinic. Master Gardeners are put into teams and expected to diagnose the samples by using each others expertise, microscopes, and references. They receive no help from staff members until the end of class when all sample diagnoses/control recommendations are discussed.

In return for this training Master Gardeners volunteer a minimum of 20 hours in the clinic. Volunteer duties include diagnosis of abiotic and other common plant problems brought in by horticulture consumers and/or computer data entry. All pest or disease control recommendations given follow integrated pest management strategies. Any plant samples requiring a second opinion, fungal, bacterial or viral analysis are given to the plant pathologist. All insects or plants that can not be identified at the Jefferson County Clinic are mailed to the campus clinic.

At the end of the diagnostic season Clinic volunteers are required to take a test. The test consists of 10 samples and appropriate background information. Volunteers are expected to write up a diagnostic reply including control recommendations, just as they would when working in the clinic. Any volunteer who passes this test with a score of 70% or higher is eligible for the Clinic program the following year.

IS IT WORKING?

A random survey of clinic users was conducted in 1992 to establish the effectiveness of the Jefferson County Plant Diagnostic Clinic and it's volunteers. 25% of 1992's clients were asked several questions following a Plant Clinic visit. Questions included: courtesy and knowledge of Clinic staff and volunteers, satisfaction with service, and use of recommendations given to them.

Results from 435 Clinic users surveyed follow: 62% of the people surveyed felt that the staff person or volunteer helping them had excellent knowledge of the plant or insect problem they brought in. Customer satisfaction was rated excellent by 69% of clientele and good by

25%. **Most importantly, however, 82% of the clients surveyed said that they planned to or had already followed the IPM control recommendations given to them by Clinic personnel.**

Use of Master Gardeners in the Jefferson County Plant Diagnostic Clinic allows the program to efficiently handle an increasing client base. In 1993, 38 volunteers diagnosed 50% of the total sample load. Training of these volunteers allows Extension staff to promote the clinic and other educational services to commercial horticulture clientele. As a result, commercial use of the clinic by golf course superintendents, greenhouse growers and landscape contractors/maintenance operations has risen from 12% in 1989 to 22% in 1993. Extension staff now devote more time to small research projects and educational programs targeting the commercial horticulture sector.

OFF THE SHELF

Maloy, Otis.
Plant Disease Control:Principles and Practice
1993. New York: John Wiley & Sons, Inc. 346 pp.
ISBN:0-474-57317-5

Even if I hadn't known that Dr. Maloy was an Extension Plant Pathologist, the organization of this text and use of diverse examples would have labelled the author as a veteran Extension Specialist. The text flows easily down a typical extension presentation outline - striving to reach the broadest (not lowest) common denominator for education. A terse coverage of control principles, disease loss, disease development and disease forecasting review the fundamental importance of and tools used in disease control at the start of this text.

The majority of the text deals with the classical component of disease control; exclusion, eradication, protection, environmental manipulation, biological control and resistance breeding. Each classical control component is well explained and broadly illustrated through diverse disease control systems spanning the tropics to the temperate zones. Examples presented allow this book to be useful whether your clinic is in Washington state or Florida! Tabular information and line drawings are well designed and pertinent to the text. Excellent tables dealing with seed treatment and protectant fumigants are presented along with references to key literature at the end of each chapter. My only criticism deals with biological control sections which seems their considering the products in or coming into the market place now. A lot has changed with this area since the 1993 publication date; this is a must for the diagnostic lab and for anyone involved with teaching a formal curriculum on disease control or with generic extension programming.

Sauerborn, Joachim
Parasitic Flowering Plants: Ecology and Management
1991. Germany: Verlag, Joseph M. 127 pp.
ISBN: 3-8236-1217-4

Expectations for a current overview on parasitic flowering plants as regards their ecology and management fell somewhat short of reality for this test. Although titled to imply coverage of these pathogens as a whole group, the majority of this softbound book was focused on *Orabanche* and *Striga* spp. Both of these genera were well covered in terms of economic importance, distribution, host specificity and general biology. Considerable information was presented relating environmental parameters (e.g. temperature, humidity, pH, soil nutrients, etc.) to disease biology of these plants pathogenic genera. Management of these genera through such traditional approaches as pesticides, resistance breeding, biological control agents, eradication etc. was well covered with excellent examples and summary data. Unfortunately, *Orabanche*

and *Striga* spp. are of minor importance in this hemisphere compared to such flowering species as dodder and the mistletoes. If your clinic collects books strictly to support regional diagnosis, skip this title.

Strange, Richard N.
Plant Disease Control:Towards Environmentally Acceptable Methods. 1993. London:Chapman & Hall. 354 pp.
ISBN:0-412-33610-3

With a title like "Plant Disease Control", I expected a comprehensive treatment of this subject as in the text by Dr. Maloy. What I received was a highly focused coverage of physiological plant pathology as it relates to host plant resistance. Hence the subtitle "Towards Environmentally Acceptable Methods!"

The introductory text for pathogen identification, epidemiology, disease assessment and control was quite good. The majority of this text was an extensive, in-depth treatment of the genetics and biochemistry of various host-pathogen systems and their implications for control. The various physiological mechanisms for disease resistance are well presented, illustrated and documented by literature citations. This would be an excellent text to supplement a "host-pathogen interactions" curriculum but not a plant disease control course. This is an excellent coverage of the topic that would be a prime addition to a departmental library but has much less utility for the diagnostic laboratory.

CLASSIFIED

BOOKS FOR SALE!

1. Brodie, Harold J. The Birds Nest Fungi. 1975. Toronto: Univ. of Toronto Press. 199pp. $22.50
2. Difco Laboratories. 1953. Difco Manual of Dehydrated Culture Media and Reagents for Microbiological and Clinical Laboratory Procedures. 9th ed. Detroit, MI:Difco Laboratories, Inc. 350 pp. $15.00
3. Eckstein, Oscar, A. Bruno, and J.W. Turrentine. Potassium Deficiency Symptoms. 1937. Berlin: Verlagsgesllschaft für Ackerbau. 235pp. $24.50
4. Grogan, R.G., G.A. Zentmeyer and E. Cowling. (eds.).
   1977 Annual Review of Phytopathology Vol. 15. $20.00
   1978 Annual Review of Phytopathology Vol. 16. $20.00
   1979 Annual Review of Phytopathology Vol. 17. $20.00
   1980 Annual Review of Phytopathology Vol. 18. $20.00
   1982 Annual Review of Phytopathology Vol. 20. $20.00
   1983 Annual Review of Phytopathology Vol. 21. $20.00
5. Horsfall, J.G. and K.F. Baker (eds.).
   1964. Annual Review of Phytopathology. Vol. 2. $20.00
6. Index of Plant Diseases in the United States. 1960. Agriculture Handbook No. 165. Superintendent of Documents. Washington, DC. 531 pp. $12.50.
7. Jayne, Richard A. (ed). Handbook of North American Nut Trees. 1969. Knoxville, TN: Northern Nut Growers Association. 421pp. $20.00
8. Johansen, D.A. Plant Microtechnique. 1940. McGraw-Hill Book Co. 523pp. $7.50 (some pen underlining).
9. Peattie, D.C. A Natural History of Western Trees. 1953. Bostoni Houghton Mittlin Co. 751pp. $20.00
10. Pirone, P.P. Tree Maintenance. 1959. New York:Oxford University Press. 483pp. $15.00
11. Smith, Wm. H. Tree Pathology:A Short Introduction. 1970. New York:Academic Press. 309pp. $32.50
12. Waksman, Selman A. Principles of Soil Microbiology. 1927. Baltimore:Williams & Wilkins Co. 897pp. $12.50
13. Walker, J.C. Plant Pathology 1st ed. 1950. New York:McGraw-Hill Book Co. 699pp. $25.00

These are used books representing out-of-print titles or editions of titles. All are in good condition without page underlining, torn pages, or damaged bindings. Some have dust covers. If interested, call G.W. Simone at (904) 392-1795 or FAX to (904) 392-3438. All prices include shipping.

FREE JOURNALS

The following journal titles are available for the cost of mailing. If interested contact the Florida Extension Plant Disease Clinic at (904) 392-1795 or FAX (904) 392-3438.

PHYTOPATHOLOGY

1933 January, February, March
1934 February, April, October
1941 January (2), February, March, April, May, June
1942 March
1945 Complete
1946 Complete
1947 Complete
1948 Complete; January (2)
1949 Complete
1950 Complete
1951 Complete
1952 Complete
1953 May
1954 All except August, November
1955 All except October
1956 Complete
All except November
1957 Complete except July
1957 June (2), Aug. (1), Sept. (1), Oct. (1), Nov. (1)
1958 Complete except December
1958 Jan., July, Aug., May, June
1959 All except January
1959 Aug., Oct., Nov., Dec.
1960 Complete
All except October, November
1961 All except March and June
1962 Feb. (2), April, June, July (2), Nov.
1964 Complete
1964 Jan, Apr., June, July, Aug., Sept., Oct., Dec.
1965 Complete
1965 All except April, Extra Feb., March, May, June, Nov., Dec.
1966 Complete
1967 Sept., Oct., Dec.
1968 Complete except November
Jan., Feb., March, Apr., May, June, July, Aug., Sept.
1969 All except September
1973 Jan. (3), Feb. (2), March (2), Apr. (2) May (2), July (2), Aug. (2), Sept.(2), Oct.(2), Nov.(2), Dec. (2)
1974 Complete
1974 All except Jan., July, Dec.
1975 Complete
1975 All except March
1976 April, July, Sept.
1977 Jan, May, June, Aug. - Dec.
1978 Jan. (2), Feb., March, June, Sept. Oct., Nov., Dec.
1979 Complete
1979 Feb (2), March, Apr., June, July, Sept., Oct., Dec.
1980 Complete
1981 Complete
1981 Jan. (2), March, Apr., May, June, Sept., Nov., Dec.
1982 3 Complete sets
1982 Jan., Mar., May, June, Aug. (2), Sept., Oct., Dec.
1983 Jan. (2), Feb., Mar., Apr. (2), May, June, July (2), Aug., Oct. (2), Nov., Dec.
1983 1 complete
1984 3 Complete
1984 Feb., March, May(2), June (2), July, Aug.(2), Sept. (2), Oct. (2), Nov. (2), Dec. (2)
1985 Jan. (3), Feb., March, Apr., May, June
1985 1 complete
1986 1 complete

1986 Jan., Feb., March, Apr. (2), May (2), June (3), Aug., Sept., Oct. (2), Nov. (2), Dec.
1987 1 complete
1987 Complete except Nov. 1 extra December
1988 Jan. - June
1989 Jan., May, June, Sept., Oct.,Nov.

PLANT DISEASE REPORTER

1957 March, May
1958 Jan. (2), Feb., March, April, May, June, Aug., Oct. (2), Nov., Dec. (2)
1959 Jan, Feb.(2), March, Apr., June, July, Aug., Sept., Dec.
1960 Complete except August
1961 Feb., March, Apr., June, July, Aug., Oct., Nov.
1962 June (2), July
1963 Jan. (3), Feb., March, April, June, Sept., Nov., Dec.
1964 Jan, Feb., March, July (2), Oct., Nov.
1965 Jan., Feb., March, Apr., May, June, July
1966 Feb.(2), March (2), Apr. (2), May (2), June (2), July (2), Aug. (2) Sept. (2), Oct. (2), Nov. (2), Dec. (2), index (2)
1967 Complete except August/with index 1 extra Dec.
1968 March, May, June, July, August, Sept., Oct.
1970 Complete except May/with index April, June, July, Aug., Oct. Nov.
1971 August (2)
1973 February, index
1974 December
1975 Jan. through Aug., Nov., Index
1976 Feb., Nov., index
1977 January through November, index
1978 2 complete
1978 March through December, index
1979 2 Complete
1979 Jan., Feb, March, May, June, July, Nov., Dec., Index

PLANT DISEASE REPORTER SUPPLEMENTS

1954 June, Aug., Oct. (2), Dec
1955 April, May, Oct., Nov., Dec.
1956 June, July (2), Dec. (2)
1957 June (4), Aug., Sept., Nov.
1958 June (2), Nov. (2), Dec.
1959 Feb., May (2), Nov., Dec (7)

PLANT DISEASE

1980 3 complete May
1981 4 complete Jan., Feb., March (2), Apr., May, Aug., Sept., Oct., Nov., Dec.
1982 4 complete Jan, through July, Oct. Dec.
1983 2 complete
1983 Complete except August Jan., Apr., May, June, July Nov., Dec.
1984 4 complete Jan.
1985 2 complete Jan., Feb., March, Apr.
1986 Complete Jan., April through Dec.
1987 1 complete January
1988 Complete
1989 Complete
1990 Complete
1991 Complete
1992 March, Apr., May, July, Aug., Sept., Oct., Nov., Dec.
1993 January, February

Proceedings of American Phytopathological Society - 1974, 75, 76
Florida State Horticultural Proceedings - 1954, 55, 56, 57, 59, 60, 61, 62, 67, 68, 72

NEEDED - PLANT DISEASE SAMPLES

The fall season always makes me homesick for the temperatate zone! I miss the fall color, the enjoyment of a fireplace, the peacefulness of a snow fall and the development of Ascomycete stages! Down here in Florida, the teleomorphic stages are far from commonplace - especially for the powdery mildews. Anyone have some cleistothecia-rich plant tissue? Any and all of the genera needed. Please contact G.W. Simone at (904) 392-1795 or FAX (904) 392-3438. I will procure necessary import permits to send to you for movement of this material into Florida for teaching purposes. Thanks for the help. I will be glad to reciprocate from the tropical zone!

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Purdue University

Position Announcement

Director, Plant and Pest Diagnostic Laboratory

Appointment: Professional, 12 month, full time, non-tenure track position. Salary commensurate with training and experience.

Qualifications: M.S. or Ph.D. in plant pathology, entomology, agronomy, weed science, horticulture, forestry, or closely aligned plant science, with training and/or experience in plant problem diagnosis. Training and development, public relations, and media communication skills required. Familiarity with database and computer applications necessary. Managerial and supervisory experience desired.

Duties: The Director is responsible for the daily operations and long-term planning of the interdepartmental Purdue Plant and Pest Diagnostic Laboratory (P&PDL) and responsible for long term planning for the lab diagnostic program. The incumbent will be responsible for receiving, cataloging, and distributing specimens to the appropriate diagnosticians with timely follow-up, recording and reporting of diagnoses and recommendations.

The Director will coordinate billing, maintenance of appropriate records, and collection of diagnostic fees; supervise a secretary and seasonal technicians; and coordinate and participate in diagnostic activities.

The successful candidate will coordinate and edit the P&PDL newsletter and generate an annual report of laboratory activities. The Director will respond to phone inquiries and serve as the P&PDL's primary contact person for mass media purposes, as well as participate in other public relations activities such as fairs, field days, and various extension functions. The incumbent will assist appropriate Cooperative Extension Service specialists with the development of programs, newsletters, fact sheets, 4-H science programs, etc. The Director will coordinate the development and maintenance of photographic, audiovisual, and herbarium and invertebrate reference collection for diagnostic and teaching purposes; and have the opportunity to assist faculty in teaching diagnostic and related courses.

The Director will chair the regularly scheduled meetings of diagnosticians and support staff (Steering Committee) and the P&PDL Operations Committee, and report regularly to the P&PDL Policy Committee. The administrative supervisor for the Director will be the Head of the Department of Botany & Plant Pathology.

Application: Closing date is November 30, 1994 or until a suitable candidate is found. Applicants should send a resume, transcripts, and the names and addresses of four references to:

Plant & Pest Diagnostic Laboratory

Dr. Ronald C. Coolbaugh, Department Head
Purdue University
Department of Botany and Plant Pathology
1155 Lilly Hall of Life Sciences
West Lafayette, Indiana 47907-1155
(317) 494-4615
FAX 317-494-0363

Purdue University is an Equal Opportunity/Affirmative Action Employer

PDQ (1994) 15(3):148

PClinic

Plant Diagnostic Laboratory Software

Software designed to: organize
store
maintain
inquire
report on
your samples for diagnosis and identification

PClinic Data Includes:

- Sample Number
- Common Name
- County Code
- Crop Category/Location
- Collect, Receive, Reply Dates
- Billing: Not Paid
  - Paid
  - Do Not Bill
- Laboratory Tests Performed
- Grower and Submitter Detail
- Referrals
- Sample Quality
- Assigned Diagnostician
- Comments

DOS, Windows, Macintosh versions

Easy to use

Pop-ups for all coded fields

On-line help

Additional Diagnosis Data:

- Host Genus and Species
- Cultivar
- Symptoms

NEW! Up to three diagnoses/sample including
- Diagnostic Category
- Pathogen
- EPA Code
- Recommendation

E-Mail any PClinic output without leaving PClinic

Mailing labels

Additional Identification Data:

- Identification Category
- Recommendations
- Taxonomic Information
  - Class, Order,
  - Family, Genus,
  - Species, Cultivar

NEW!

Host and Disease dictionaries with recommendation templates and EPA codes

PDQ (1994) 15(3):149

PClinic Plant Diagnostic Laboratory Software

Search your samples by:

- County Code
- Crop Category; Location
- Diagnosis Common Name
- Diagnostic Category
- Diagnostician
- Disease Common Name
- Grower Code; Name
- Host Common Name; Genus
- Identification Category
- Identification Common Name; Genus
- Incomplete Sample Status *
- Incorrect Year Entered *
- Insufficient Name Information *
- Laboratory Test
- Month Received; Replied
- Negative Response Time *
- Referral
- Sample Number
- Submitter Code
- Symptom(s)
- 22+ Days for Reply *

Ability to display only samples containing the specified search criteria with total number of samples found

Quick retrieval of information

Narrows entire database to a manageable subset for easier analysis

* Can be used to find and eliminate data errors

Extensive Reporting Capabilities

Diagnostic Category Report

07/12/1994 Plant Diagnostic Laboratory Page 1
Diagnostic Category Report
(Table 6. Distribution of samples by major diagnostic categories)

	Number of Samples	Percent of Total
Fungal	12	
Bacterial, Mycoplasma	6	
Nematode	7	
Viral, Viroid	6	
Animals	1	
Plant Diseases - Biotic Agents	32	46.4
Herbicide	0	
Other Chemical	5	
Drought	2	
Other Cultural	1	
Plant Diseases - Abiotic Agents	16	23.2
Insect, Mite Damage	1	
Insect And Mite Damage	1	1.4
Plant	3	
Fungi	3	
Algae	4	
Lichen	1	
Other Substance	4	
Insect	4	
Other Invertebrate, Mite, Tick	1	
Identifications	20	29.0
TOTAL	69	

Error and Exception Report:
Samples without a Diagnostic Category entered 2
Samples without an Identification Category entered 0

Print any report to a printer

Print any report to the screen

Print any report to a file to use in word processing, spreadsheets, or E-Mail

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PClinic Plant Diagnostic Laboratory Software

07/12/1994 Plant Diagnostic Laboratory CLINIC USE ONLY
Plant Clinic Diagnosis/Identification Form

Sample #: 6
Date Received: 01/24/1994

Submitter: 56 - Steve Smith
Phone: (301) 578-8688 ext.
County: Montgomery
Grower: 2 - Raymond Johnson
Phone: (301) 746-3533

SAMPLE INFORMATION WORK AREA
Host Name: Stephanotis floribunda
Location: greenhouse st.2
Symptoms 1. Is this Tomato Spotted Wilt Virus?
2. yellow spots, rings, lines
3.

Diagnosis and/or Recommendations

SAMPLE QUALITY (SELECT ONE)

1[X] Excellent, Sample and Information	5[ ] Poor Sample (Improper Plant Part)
2[ ] Adequate, Sample and Information	6[ ] Rotted in Transit
3[ ] Good Sample, Poor Information	7[ ] Inadequate Sample and Information
4[ ] Dried (Proper Plant Part)	

DIAGNOSTIC PROCEDURES
1. 42 - Serology - ELISA
2.
3.
4.

AGENT TENTATIVE DIAGNOSIS (SELECT ONE)

1[X] Correct Tentative Diagnosis	4[ ] No Attempt at Tentative Diagnosis
2[ ] Correct Diagnostic Category, Incorrect Causal Agent	5[ ] Unable to Confirm, Poor Sample
	6[ ] Unable to Confirm and Diagnose
3[ ] Incorrect Diagnosis	

REFERRALS: Agdia testing lab

DIAGNOSTICIAN: EMD

Print a working copy of a Diagnosis or Identification for use in the lab

THE UNIVERSITY OF MARYLAND SYSTEM
DEPARTMENT OF BOTANY
COOPERATIVE EXTENSION SERVICE
PLANT DIAGNOSTIC LABORATORY - DISEASE DIAGNOSIS REPLY FORM

Host Plant: Stephanotis floribunda
Cultivar:

Date Received: 01/24/1994
Date Replied: 02/02/1994

Grower	Submitter
Raymond Johnson 5678 Bell Rd PO Box 55 Burtonsville, MD 20866- County: Montgomery	Steve Smith 34211 Muncaster Rd. Derwood, MD 20855- Phone: (301) 578-8688 ext.

Symptoms
1. Is this Tomato Spotted Wilt Virus?
2. yellow spots, rings, lines
3.

Diagnosis and/or Recommendations
This sample was sent to the Agdia testing lab and tested for two viruses, Tomato Spotted Wilt Virus-Lettuce isolate (TSWV) and Impatiens Necrotic Spot Virus (INSV) using a serology-based ELISA test for each virus. This sample tested POSITIVE for INSV and negative for TSWV.

Crop Location: greenhouse st.2

Clinic Sample #: 6 Sample Quality: Excellent, Sample and Information

Referrals: Agdia testing lab DIAGNOSTICIAN: EMD

Print a reply to send to the submitter

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PClinic Plant Diagnostic Laboratory Software

Crop Category Report

07/13/1994 Plant Diagnostic Laboratory Page 1
Crop Category Report
(Table 5. Sample totals by major crop categories)

	Number of Samples	Percent of Total
FIELD CROP	5	2.3
VEGETABLE	39	18.1
TREE FRUIT	3	1.4
SMALL FRUIT	1	0.5
LANDSCAPE WOODY ORNAMENTAL	59	27.3
TURF	3	1.4
HERBACEOUS ORNAMENTAL, GREENHOUSE	88	40.7
NURSERY WOODY ORNAMENTAL	3	1.4
OTHER PLANT ID, NOT WEED	15	6.9
TOTAL	216	

Error and Exception Report:
No crop category entered: 2

Additional Reports:

Submitter Affiliation Report
Number of samples and affiliation for each submitter

Monthly Submission Report
Number of samples submitted by month

Diagnostic Procedures Report
Number of samples per diagnostic procedure

Submitter Invoicing
List of unpaid samples by submitter

Response Time Report

07/13/1994 Plant Diagnostic Laboratory Page 1
Response Time Report
(Table 4. Response Time [Date Replied - Date Received])

Days to Reply	Number of Samples	Percent of Total
0 - 3 days	105	52.5
4 - 6 days	29	14.5
7 - 10 days	37	18.5
11 - 21 days	29	14.5

TOTAL SAMPLES: 200
MEAN RESPONSE TIME: 4.78 days/sample

Error and Exception Report:
Negative Response Times: 0 (Reply dates BEFORE received dates)
22+ day Response Times: 2
No received date entered: 0
No reply date entered: 14 (considered Incomplete by the system)

Geographic Distribution Report

07/13/1994 Plant Diagnostic Laboratory Page 1
Geographic Distribution Report
(Table 7. Regional distribution of samples from Maryland counties)

	Extension Samples	Public Samples	Unknown Samples
Allegany	3	0	0
Frederick	1	0	0
Garrett	1	0	0
Washington	5	0	0
Western Maryland	10	0	0
Carroll	8	1	0
Cecil	1	0	0
Harford	6	0	0
Kent	1	0	0
Queen Annes	2	0	0
Central Maryland	16	1	0
Baltimore	68	0	0
Howard	5	1	0
Montgomery	17	4	0
Prince Georges	23	6	1
Washington DC - Baltimore Area	113	11	1
Anne Arundel	12	3	0
Calvert	2	0	0
St. Mary's	1	0	0
Southern Maryland	15	3	0
Caroline	2	0	0
Dorchester	6	0	0
Wicomico	4	0	0
Eastern Shore	12	0	0
TOTAL	166	15	1

Error and Exception Report:
No County Code entered: 4

Diagnosis Appendix
List of diagnoses by:
Crop category,
Host genus and species, and
Host common name

Identification Appendix
List of identifications by:
Identification category and
Taxonomic information

PClinic

Plant Diagnostic Laboratory Software

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PClinic is currently being used at:

University of Maryland, College Park, Maryland
Virginia Polytechnic Institute & State University, Blacksburg, Virginia

- Available in DOS, Windows, and Macintosh versions
- Pop-ups for all coded fields
- Allows users to E-Mail any PClinic output without leaving PClinic
- On-line help
- Mailing labels
- Easy to use
- **NEW!** Host and Disease dictionaries with recommendation templates and EPA codes

Call
TSP Software, Inc.
for additional information

(301) 299-3827

PDQ (1994) 15(3):153

VIRUS INCLUSION WORKSHOP

Dates January 23 - 25, 1995

Place University of Florida
Florida Extension Plant Disease Clinic

Registration Fee $350.00 - Limit 9

Hosts Gary W. Simone, Ph.D., Associate Professor, Richard E. Cullen, Senior Biologist, Plant Pathology Department, Richard G. Christie, Senior Biologist, Department of Agronomy, Mark D. Gooch, Biologist, Plant Pathology Department, University of Florida, I.F.A.S.

Plant virus inclusions are valuable for diagnosing viruses at the group level, and in some instances can be used to identify a specific virus. They can be detected with a light microscope when properly stained. Inclusions induced by a specific virus have the same characteristic appearance across a host range. The procedures are simple, rapid and inexpensive and can save valuable antisera as well as direct in the selection of proper techniques for identifying plant virus diseases.

Course Description:
A 3 day introductory course for scientists, diagnosticians, and/or technicians who have no previous experience or limited experience with virus inclusion identification. "Hands-on" labwork will include virus inclusion identification of potyviruses, tobamoviruses, potexviruses, cucumoviruses, comoviruses, tomato spotted wilt virus, and geminiviruses. Other groups will be demonstrated through the use of prepared slides and kodachrome slide presentations. Staining techniques, tissue selection, and tissue preparation will be covered. All materials will be provided including use of a compound microscope for each participant. A start-up kit including stains and a monograph of virus inclusions will be supplied to participants.

Due to limited space and facilities, interested individuals must pre-register for this limited enrollment workshop.

For additional details, course agenda, or registration, please contact:

Dr. Gary W. Simone
Florida Extension Plant Disease Clinic
University of Florida
P.O. Box 110830
Gainesville, FL 32611-0830

Phone 904-392-1795
FAX 904-392-3438

Registration:

The registration fee for this 3 day workshop is $350.00 per person. Registration includes the costs of preparation of infected plant material for at least 12 viruses representing eight major virus families. In addition, each participant will receive a revised Plant Virus Inclusion Monograph, starter kit of plant virus inclusion stains and reagents, and a pair of watchmaker's fine forceps for tissue stripping. Shuttle service from airport and hotel to the workshop each day and lunch trips is provided. Refreshments during the day are complimentary. Registration does not include meals, lodging, or travel-related costs.

Attendance is limited to the first 9 individuals that confirm interest to FEPDC staff by phone or FAX. Registration form and fee must be received no later than January 9, 1995 to confirm a place in this workshop. Please complete the lower portion of this registration form and return this with remittance to:

Florida Extension Plant Disease Clinic
University of Florida
Bldg. 78 Mowry Rd.
Gainesville, FL 32611

Make registration check payable to: University of Florida -- SHARE - Foundation

Please sign the attached SHARE contribution letter and submit with the registration fee.

A registration receipt can be procured at the start of the workshop.

Registration fees will not be deposited until the day of the workshop.

PLANT VIRUS INCLUSION WORKSHOP REGISTRATION
(Detach, complete, and return)

Name: _____

Date: January 23 - 25, 1995

Institution: _____

Address: _____

_____

Phone: _____ FAX: _____

Arrival by: Air____ Car____
If air, Airlines_____ Flight#_____
Date/Time of Arrival_____
Will you need shuttle from airport? (circle) Yes No

Lodging Selection (circle)

Budget Inn Cabot Lodge Knights Inn Super 8 Motel

Will you need daily shuttle service? (circle) Yes No

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THE OHIO STATE UNIVERSITY EXTENSION

Extension FactSheet

Plant Pathology, 2021 Coffey Road, Columbus, OH 43210-1087

Cane Blight of Raspberries

Michael A. Ellis
Department of Plant Pathology

Cane blight is one of the more damaging diseases of raspberries. The disease is most common on black raspberries but also occurs on red and purple varieties. The disease occasionally occurs on blackberries and dewberries. Cane blight can result in wilt and death of lateral shoots, a general weakening of the cane, and reduced yield. It is usually most severe during wet growing seasons.

Symptoms

On first year canes (primocanes) dark brown-to-purplish cankers form on new canes near the end of the season where pruning, insect, and other wounds are present. The cankers enlarge and extend down the cane or encircle it, causing lateral shoots above the diseased area to wilt and eventually die. Black specks, which are reproductive bodies of the cane blight fungus, develop in the brown cankered bark. In wet weather, large numbers of microscopic spores ooze out of the pycnidia. This ooze gives the bark a dark-gray, smudgy appearance. During winter, infected canes commonly become cracked, brittle, and snap off easily. On infected second-year canes (floricanes), the side branches may suddenly wilt and die, usually between blossoming and fruit ripening. Upon close examination, the presence of dark brown or purplish cankers can be observed on the main cane or branches below the wilted area.

Causal Organism

Cane blight is caused by the fungus, *Leptospaeria coniothyrium*. The pathogen survives over winter on infected or dead canes. The following spring, spores are released and carried by splashing rain and wind to nearby primocanes. Under moist conditions, the spores germinate and penetrate pruning wounds, insect punctures, fruit stem breaks and other wounds. After entry the fungus rapidly invades and kills bark and other cane tissues. Fungal fruiting bodies are formed in older cankers and complete the disease cycle. Dead canes continue to produce conidia and remain a source of infection for several years.

Control

1. All steps possible should be taken to improve air circulation within a planting, to allow faster drying of foliage and canes. Reducing the number and duration of wet periods should reduce the potential for infection. Excessive applications of fertilizer (especially nitrogen) should be avoided, since it promotes excessive growth of very susceptible succulent plant tissue. Plants should be maintained in narrow rows and thinned to improve air circulation and allow better light penetration. Weeds are very effective in reducing air move-

Figure 1. Cane blight lesion on thornless blackberry.

ment; therefore, good weed control within and between rows is important for improving air circulation within the planting. Raspberries should be planted in sunny, open areas where water and air drainage are good. This allows plants to dry quicker after wet periods, and reduces the chance of infection.

2. Wild brambles, especially wild raspberries, growing in the area should be removed. They can provide a continuous source of spores to spread this and other diseases and pests to cultivated raspberries and blackberries.
3. Healthy, rapidly growing plants that have been properly fertilized and watered, are more resistant to cane blight.
4. After harvest, remove and destroy all old fruited floricanes and any new primocanes canes that are infected. Old canes should be removed before growth starts in the spring.
5. Keep plantings free of insects, since they may cause wounds that serve as entry points for the fungus. Avoid any other pests or cultural practices that result in wounding of the canes.
6. If cane blight is a serious problem, the use of fungicides should be considered.

For the most current spray recommendations, commercial growers are referred to Bulletin 506-B2 "Ohio Commercial Small Fruit Spray Guide," and backyard growers are referred to Bulletin 780 "Controlling Diseases and Insects in Home Fruit Plantings." These publications can be obtained from your county extension agent or the Extension Publications Office, The Ohio State University, 385 Kottman Hall, 2021 Coffey Road, Columbus, Ohio 43210-1044.

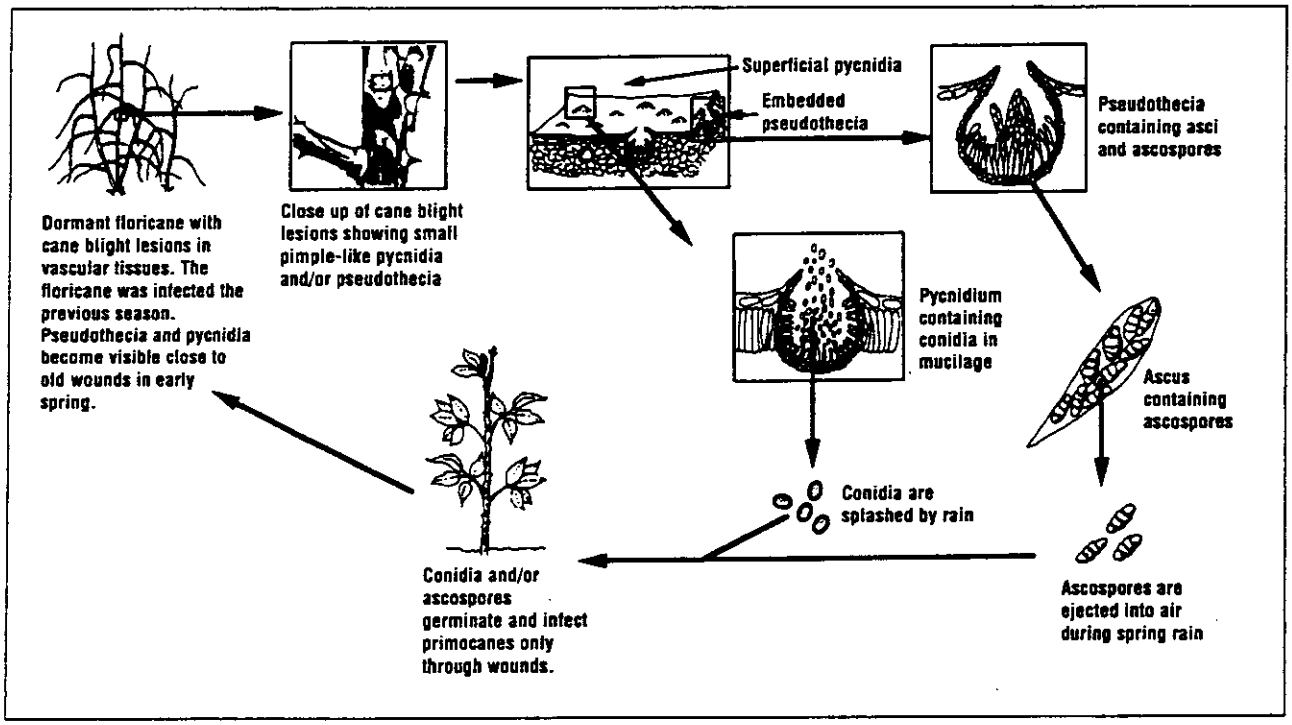

Figure 2. Disease cycle of cane blight.

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THE OHIO STATE UNIVERSITY EXTENSION

Extension FactSheet

Plant Pathology, 2021 Coffey Road, Columbus, OH 43210-1087

Peach Leaf Curl

Michael A. Ellis
Department of Plant Pathology

Leaf curl is a springtime disease that occurs on peach, nectarine and related ornamental plants. The disease, though not a problem every spring, can be severe during cool, wet springs that follow mild winters. The leaf curl fungus damages peach trees by causing an early leaf drop. This weakens the trees, making them more susceptible to other diseases and to winter injury. Weakened trees also will produce fewer fruit the following season. Yield may be further reduced when blossoms and young fruit become diseased and drop.

Symptoms

Symptoms of leaf curl appear in the spring. Developing leaves become severely distorted (thickened and puckered), and have a reddish or purple cast. Later, as spores form on the leaf surface, the leaves become powdery gray in color. Shortly after this, the leaves turn yellow or brown and drop. There is no secondary spread of this disease from leaves infected in the spring to new leaves produced later in the growing season. Once infected leaves drop, no further symptoms will appear during that growing season. Diseased twigs become swollen and stunted, and may have a slight golden cast. They usually produce curled leaves at their tips. Though rarely seen, flowers and fruit may also become diseased. They drop shortly after they are infected. Diseased fruit has shiny, reddish, raised, warty spots.

Figure 1. Typical symptoms of peach leaf curl. Note the malformation of infected tissues.

Causal Organism

Peach leaf curl is caused by the fungus, *Taphrina deformans*. The fungus survives the winter as spores (conidia) on bark and buds. Infection occurs very early in the growing season. During cool, wet spring weather the conidia infect new leaves as they emerge from the buds. Host plant tissues are susceptible for only a short period. As the tissues mature they become resistant. The fungus produces another type of spore (ascospore) on the upper surface of the diseased leaves. During wet weather, ascospores produce additional conidia by budding. These conidia are carried to other parts of the tree by rain and wind, where they will overwinter until the next spring.

Environment can limit leaf curl infection. This partially explains why the disease does not occur every year. Leaf curl is worse when the weather is cool and wet. Low temperatures are thought to retard maturation of leaf tissue, thus prolonging the time infection may occur. The fungus can penetrate young peach leaves readily at temperatures between 50° and 70° F, but only weakly below 45° F. Rain is necessary for infection.

Control

Leaf curl is not difficult to control. Since the fungus survives the winter on the surface of twigs and buds, a single fungicide spray, thoroughly covering the entire tree, will provide control. If leaf curl does result in significant defoliation in the spring, the fruit on affected trees should be thinned to compensate for the loss of leaves. Over-cropping the tree will weaken it and make it more susceptible to winter injury.

For the most current spray recommendations, commercial growers are referred to Bulletin 506-A2 "Ohio Commercial Tree Fruit Spray Guide," and backyard growers are referred to Bulletin 780 "Controlling Diseases and Insects in Home Fruit Plantings." These publications can be obtained from your county Extension agent or the Extension Publications Office, The Ohio State University, 385 Kottman Hall, 2021 Coffey Road, Columbus, Ohio 43210-1044.

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