A Compilation of Plant Diseases and Disorders in Indiana—1975

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Abstract

A compilation of plant diseases and disorders which were diagnosed at the Plant Disease Diagnostic Clinic from October 1, 1974 through August 31, 1975, is presented. An early outbreak of ash anthracnose was the dominant shade tree disease; various root stress factors caused many disorder problems of shade trees, particularly sugar maple. Scab, fireblight, sooty blotch and flyspeck of apple and leaf curl, scab, and bacterial spot of peach were prevalent. Isolated outbreaks of peach stem pitting occurred in central and southern peach orchards.

Bacterial spot, bacterial wilt, bacterial canker, and Alternaria stem canker were identified on southern grown tomato transplants. Early blight and fruit anthracnose were serious problems on tomatoes. Fusarium wilt, bacterial wilt, and Alternaria leaf blight of cucurbits were repeatedly identified. Black dot root rot was widely distributed on potato.

Stewart's disease of corn was prevalent early in the season with less than expected late season development. Corn stalk and ear rots leveloped late in the season, especially in scattred areas of southern Indiana where drought stress occurred. Brown spot, bacterial blight, Rhizoctonia root rot, Phytophthora root rot, and pod and stem blight of soybeans were widespread. Scab, Septoria leaf blotch, and take-all of wheat were commonly reported. An alfalfa crown-root-rot complex was observed in several fields. Adverse environmental conditions affected corn and soybean yields in extreme northern and scattered areas of southern Indiana. Widespread herbicide damage occurred on soybeans in early June.

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Introduction

Plant diseases and disorders are diagnosed at the Purdue Plant Disease Diagnostic Clinic primarily as a service to county extension agents, but also to growers, homeowners, and others. Prompt, accurate, disease diagnosis along with current, safe, and effective control suggestions play a vital role in Indiana agriculture. This compilation will serve as a record of the diseases and disorders diagnosed in Indiana from October 1, 1974 to August 31, 1975. When compared with similar compilations published previously (2, 4), and anticipated future compilations, it is possible to determine trends in the increase, decrease, or stability of Indiana plant diseases and disorders. This information can be used by agricultural research, extension, grower, and consultant personnel to direct problem oriented research activities, plan effective control programs, and choose plant varieties best able to resist prevalent diseases.

Methods and Materials

Plant specimens with symptoms of plant diseases or disorders were collected by county extension agents, growers, agribusiness personnel, and homeowners, and forwarded to the Purdue Plant Disease Diagnostic Clinic for diagnosis. Symptoms and signs on submitted specimens were categorized and recorded upon receipt. If

necessary, infected plant tissue was plated on selected media to facilitate isolation and identification of the causal agent. After the disease or disorder was identified, appropriate control measures were prescribed.

Results and Discussion

A list of specimens examined in the clinic during the past year is given in Table 1. Disease name, causal agent, and the frequency of diagnosis are given for each of the plant groups in tables 2-9.

The frequency of diagnoses for diseases and disorders should not always be construed as an indication of severity within Indiana, as many diseases and disorders are easily identified in the field and are not submitted to the Plant Disease Diagnostic Clinic.

TABLE 1. *Plant specimens examined in the Purdue Plant Disease Diagnostic Clinic from October 1, 1974 through August 31, 1975.*

Plant Group	Number of Specimens
Corn	86
Flowers	22
Forage Grasses and Legume	30
House Plants	41
Ornamentals	140
Plant Identification	7
Small Fruit	53
Small Grain	54
Soybeans	94
Tree Fruit	100
Trees—Shade and Ornamental	352
Turf	26
Vegetables	320
Miscellaneous	3
Total	1328

Shade and Ornamental Trees

Diseases: Anthracnose was the major disease of shade trees (Table 2). Although the occurrence of anthracnose on maple, oak, and sycamore was less than in 1974 (2), an outbreak of anthracnose on ash in southern Indiana resulted in severe defoliation of some areas. Verticillium wilt, second in frequency of diagnosis, was most prevalent on maples. Regarding major diseases of ornamental trees, Diplodia tip blight was prevalent on established plantings of Austrian and red pine, Cytospora canker was commonly identified on spruce trees subjected to stress conditions, and Lophodermium needle cast was largely confined to Christmas tree plantations.

Disorders: Shade tree disorders continue to outnumber diseases. Leaf scorch, primarily due to a combination of heat, wind and drought, was a predominant disorder, as in previous years (2, 4). Decline of maples and other trees was prevalent throughout Indiana. Decline, a gradual die-back of shade trees which eventually results in death, in some instances has been associated with stress factors such as grade

changes, girdling roots, and soil compaction. For the most part, however, the cause(s) of stress are not well understood.

Ornamentals

Diseases: Phomopsis tip blight of juniper, which causes a die-back of new terminal growth and in some cases death of young plants, was the most frequently observed ornamental disease (Table 3). Phytophthora root rot was frequently associated with a die-back of Taxus (Yew). Poorly drained planting sites and heavy waterlogged soil apparently contributed to the incidence of Taxus die-back. Among the many ornamentals infected with powdery mildew, Euonymus and lilac were particularly hard hit.

Disorders: Winter desiccation of evergreens, scorch, and injury from herbicide drift were the most frequently identified disorders of ornamentals.

TABLE 2. *Diseases and disorders of shade and ornamental trees in Indiana—1975*[1]

Acer (Maple)
Diseases: anthracnose (*Gloeosporium apocryptum*)—7; wilt (*Verticillium albo-atrum*)—7; purple eye leaf spot (*Phyllosticta minima*)—3; leaf spot (unidentified fungi)—2.
Disorders: scorch (heat, wind and drought)—32; decline (various stress factors)—26; frost injury (late spring frost)—2; herbicide injury (spray drift)—1; air pollution injury—1.

Betula (Birch)
Disease: canker (*Melanconium betulinum*)—2.
Disorders: decline (various stress factors)—3.

Cercis (Redbud)
Diseases: canker (*Botryosphaeria dothidea*)—1; leaf spot (unidentified fungus)—1.
Disorders: scorch (inadequate root development)—3; herbicide injury (spray drift)—3; decline (various stress factors)—3; bark splitting (temperature extremes)—1.

Cornus (Dogwood)
Disease: spot anthracnose (*Elsinoe corni*)—1.
Disorders: scorch (heat, wind and drought)—3; chlorosis (iron deficiency)—1.

Cotinus (Smoke-Tree)
Disease: wilt (*Verticillium albo-atrum*)—1.

Crataegus (Hawthorn)
Diseases: cedar-quince rust (*Gymnosporangium clavipes*)—2; canker (cause unidentified)—2; fire blight (*Erwinia amylovora*)—1; leaf blight (*Fabraca maculata*)—1.

Cydonia (Quince)
Disease: leaf spot (*Fabraca maculata*)—1.

Elaeagnus (Russian-Olive)
Disease: canker (*Fusicoccum elacagni*)—2.
Disorder: leaf yellowing (nutritional disorder)—1.

Fraxinus (Ash)
Disease: anthracnose (*Glocosporium aridum*)—9.
Disorders: decline (various stress factors plus drought)—3; scorch (heat, wind and drought)—1.

Gleditsia (Honey Locust)
Disorders: decline (various stress factors)—2; herbicide injury (spray drift)—1.

Juglans (Walnut)
Disease: anthracnose (*Gnomonia leptostyla*)—1.
Disorders: scorch (heat, wind and drought)—1; die-back (root injury)—1.

TABLE 2. *(cont.)*

Koelreuteria (Golden Rain Tree)
Disorder: decline (various stress factors)—2.
Liquidambar (Sweetgum)
Disorders: scorch (heat, wind and drought)—2; chemical injury (spray drift)—1.
Liriodendron (Tulip Tree)
Disorders: decline (various stress factors)—7; leaf yellowing (natural)—6; leaf scorch (heat, wind and drought)—3; sooty mold (insect honeydew secretions)—1.
Magnolia (Magnolia)
Disease: leaf spot (*Phyllosticta cookei*)—1.
Disorders: winter desiccation—3; air pollution—1.
Malus (Crabapple)
Diseases: scab (*Venturia inacqualis*)—4; powdery mildew (*Podosphaera leucotricha*)—2; fire blight (*Erwinia amylovora*)—2; cedar-apple rust (*Gymnosporangium juniperi-virginianae*)—1.
Disorders: die-back (rot injury)—2; leaf yellowing (nitrogen deficiency)—1.
Picea (Spruce)
Disease: canker (*Cytospora kunzei*)—4.
Disorders: decline (various stress factors)—3; winter desiccation—1; herbicide injury (spray drift)—1.
Pinus (Pine)
Diseases: tip blight (*Diplodia pinea*)—4; needle cast (*Lophodermium pinastri*)—3; needle blight (*Dothistroma pini*)—2; needle rust (*Coleosporium asterum*)—1.
Disorders: decline (poor site location plus stress factors)—13; winter desiccation—4; air pollution injury—2; needle tip burn (heat, wind and drought)—2; sooty mold (insect honeydew secretions)—1.
Populus (Poplar, Aspen, Cottonwood)
Disease: aspen leaf spot (*Marssonina populi*)—1.
Disorder: scorch (heat, wind and drought)—1.
Quercus (Oak)
Diseases: oak wilt (*Certocystis fagaccarum*)—5; leaf spot (*Actinopelte dryina*)—3; slime flux (bacterial infection)—3; canker (*Dothiorella quercina*)—2.
Disorders: chlorosis of pin oak (iron deficiency)—10; scorch (heat, wind and drought)—8; decline (various stress factors)—3; herbicide injury (spray drift)—3.
Salix (Willow)
Disorder: scorch (heat, wind and drought)—2.
Sorbus (Mountain Ash)
Disorders: scorch (heat, wind and drought)—2; decline (various stress factors)—2.
Tilia (Linden)
Disorders: die-back (root injury)—1; trunk sunscald (winter temperature extremes)—1; herbicide injury (spray drift)—1.
Tsuga (Hemlock)
Disease: canker (*Cytospora kunzei*)—1.
Disorder: winter desiccation—2.
Ulmus (Elm)
Diseases: dutch elm disease (*Ceratocystis ulmi*)—2; leaf spot (unidentified fungus)—1.

[1] Diseases listed for each plant species in order of frequency. Listing does not include plant species which had only a single occurrence of a disorder.

Tree Fruits

Diseases: Fireblight, apple scab, sooty blotch, and flyspeck were the most commonly identified apple diseases (Table 4). Weather conditions at bloom and throughout the early part of the growing season were favorable for fireblight development. Susceptible apple cultivars

were heavily infected in many orchards throughout the state. Apple scab, an important disease every year, again was present throughout Indiana. An apparent increase in sooty blotch and flyspeck of apple fruit over last year was attributed to weather conditions favorable for disease development which occurred late in the growing season when growers had relaxed their fungicide spray programs. Frequently observed peach diseases included peach leaf curl (confined mainly to backyard growers), bacterial spot, and scab. Of particular interest was the first confirmed identification of peach stem pitting in commercial peach orchards in middle and southern Indiana. Studies on the etiology and control of this disease are in progress.

TABLE 3. *Diseases and disorders of ornamentals in Indiana—1975*[1]

Ajuga (Bugle-Weed)
Disease: crown rot (*Selerotium delphinii*)—1.
Althaea (Hollyhock)
Disease: rust (*Puccinia malvacearum*)—3.
Aster (Aster)
Disease: leaf spot (*Alternaria* sp.)—2.
Dahlia (Dahlia)
Disease: botrytis blight (*Botrytis cinerea*)—1.
Euonymus (Euonymus)
Diseases: powdery mildew (*Microspaera alni*)—3; crown gall (*Agrobacterium tumefaciens*)—3; leaf spot (*Alternaria* sp.)—1.
Disorders: die-back (root stress)—3; scorch (heat, wind and drought)—1; late frost injury—1.
Forsythia (Golden Bells)
Disorder: scorch (heat, wind and drought)—1.
Gladiolus (Gladiolus)
Diseases: bacterial leaf blight (*Xanthomonas gummisudans*)—1; Fusarium basal dry-rot (*Fusarium oxysporum* f. *gladioli*)—1.
Ilex (Holly)
Disease: leaf spot (*Phyllosticta* sp.)—1.
Disorders: spine spot (spine punctures)—5; winter desiccation—2; die-back (improper site location)—1.
Juniperus (Juniper)
Diseases: twig blight (*Phomopsis juniperovora*)—10; cedar-apple rust (*Gymnosporangium juniperi-virginianae*)—3.
Disorders: die-back (root problem)—1; winter desiccation—1.
Ligustrum (Privet)
Disorders: premature fall coloration (weather related)—2; die-back (root injury)—2.
Lonieera (Honeysuckle)
Disorders: die-back (root injury)—1; scorch (heat, wind and drought)—1.
Pachysandra (Pachysandra)
Disease: leaf blight (*Volutella pachysandrae*)— 2.
Paconia (Peony)
Diseases: botrytis blight (*Botrytis cinerea*)—2; red spot (*Cladosporium paconiac*)—1; phytophthora blight (*Phytophthora cactorum*)—1.
Petunia (Petunia)
Disease: dodder (*Cuscuta* sp.)—1.
Pelargonium (Geranium)
Diseases: bacterial blight (*Xanthomonas pelargonii*)—4; blackleg (*Pythium* sp.)—1; botrytis blight (*Botrytis cinerea*)—1; rust (*Puccinia pelargonii-zonalis*)—1.
Disorder: leaf yellowing (nutritional disorder)—1.

TABLE 3. *(cont.)*

Philadelphus (Mock-Orange)
Disease: canker (*Nectria cinnabarina*)—1.
Disorder: die-back (root injury)—1.
Pyracantha (Firethorn)
Disease: scab (*Fusicladium pyracanthae*)—4.
Disorder: root rot (waterlogged soil)—1.
Rhododendron (Azalea and Rhododendron)
Diseases: die-back (*Phytophthora cactorum*)—2; crown rot (*Phytophthora* sp.)—1; leaf spot (unidentified fungus)—1; leaf gall (*Exobasidium vaccinni*)—1.
Disorder: leaf chlorosis (high soil pH)—2.
Rosa (Rose)
Diseases: black spot (*Diplocarpon rosae*)—2; botrytis blight (*Botrytis cinerea*)—2; canker (*Phoma* sp.)—1; common stem canker (*Leptosphaeria conithyrium*)—1; dodder (*Cuscuta* sp.)—1.
Disorders: herbicide injury (spray drift)—2; root rot (unidentified causes)—2; leaf chlorosis (nutritional disorder)—1.
Syringa (Lilac)
Diseases: powdery mildew (*Microsphaera alni*)—3.
Disorders: die-back (unidentified causes)—2; scorch (heat, wind and drought)—1.
Taxus (Yew)
Disease: crown rot-root rot (*Phytophthora* sp.)—6.
Disorders: root rot (waterlogged soil)—3; herbicide injury—3; frost injury—2.
Thuja (Arbor-Vitae)
Disease: die-back (lesion nematode—*Pratylenchus* sp.)—1.
Disorders: fall needle browning (natural)—3; winter desiccation—2; brown foliage (dog damage)—1.
Tulipa (Tulip)
Disease: botrytis blight (*Botrytis tulipae*)—2.
Viburnum (Viburnum)
Disease: leaf spot (unidentified fungus)—1.
Disorder: decline (various stress factors)—2.

[1] Disease listed for each plant species in order of frequency. Listing does not include plant species which had only a single occurrence of a disorder.

Small Fruit

Diseases and Disorders: Raspberry anthracnose, black rot of grape, and black root rot of strawberry were the most prevalent diseases of small fruit (Table 5). No major diseases or disorders were present in Indiana during the past year.

TABLE 4. *Disease and disorders of fruit trees in Indiana—1975*[1]

Malus sylvestris (Apple)
Diseases: fire blight (*Erwinia amylovora*)—5; scab (*Venturia inaequalis*)—4; sooty blotch (*Gloeodes pomigena*)—4; fly speck (*Microthyriella rubi*)—4; canker (unidentified causes)—3; powdery mildew (*Podosphaera leucotricha*)—2; crown rot (*Phytophthora cactorum*)—2; black rot (*Physalospora obtusa*)—2.
Disorders: chemical injury (improper use)—3; herbicide injury (spray drift)—2; measles (manganese toxicity)—1.
Prunus americana (Plum)
Diseases: black knot (*Dibotryon morbosum*)—5; brown rot (*Sclerotinia fructicola*)—3; crown gall (*Agrobacterium tumifaciens*)—1.
Disorder: chemical injury (improper use)—1.

TABLE 4. *(cont.)*

Prunus avium (Cherry)
Diseases: brown rot (*Sclerotinia fructicola*)—4; leaf spot (*Coccomyces hiemalis*)—1; powdery mildew (*Podosphaera oxyacanthae*)—1; black knot (*Dibotryon morbosum*)—1; bacterial canker (*Xanthomonas pruni*)—1.
Disorders: die-back (various stress factors)—4; scorch (heat, wind and drought)—3; herbicide injury (spray drift)—2; leaf chlorosis (nutritional disorder)—1.

Prunus persica (Peach)
Diseases: leaf curl (*Taphrina deformans*)—7; bacterial spot (*Xanthomonas pruni*)—5; scab (*Cladosporium carpophilum*)—3; stem pitting (soil-borne virus)—3; crown gall (*Agrobacterium tumefaciens*)—1; brown rot (*Sclerotinia fructicola*)—1; perennial canker (*Leucostoma cincta*)—1.
Disorders: root rot (waterlogged soil)—3; herbicide injury (spray drift)—3; winter injury—1; internal fruit browning (unknown cause)—1.

Pyrus communis (Pear)
Diseases: bitter rot (*Glomerella cingulata*)—2; leaf blight (*Fabraea maculatum*)—1.
Disorders: decline (various stress factors)—2; scorch |heat, wind and drought)—1.

[1] Disease listed for each plant species. Common name, scientific name, and frequency of occurrence are given for each disease listed.

Houseplants

Diseases and Disorders: A three-fold increase in specimens of houseplants received as compared with those of 1974, reflected the increased popularity of houseplants (Table 6). Schefflera was the most commonly submitted foliage plant. Most specimens of houseplants were characterized by a general root decay which was primarily due to overwatering or poor drainage.

TABLE 5. *Diseases and disorders of small fruits in Indiana—1975*[1]

Fragaria grandiflora (Strawberry)
Diseases: black root rot (specific pathogen(s) not known)—5; june yellows (cause unknown)—2; gray mold (*Botrytis cinerea*)—2; stem end rot (*Gnomonia fructicola*)—2; leaf blight (*Dendrophoma obscurans*)—1; wilt (*Verticillium albo-atrum*—1; leaf scorch (*Diplocarpon earliana*)—1; red stele (*Phytophthora fragariae*)—1.

Rubus (Blackberry)
Diseases: sterility (virus)—2; orange rust (*Gymnoconia peckiana*)—1.

Rubus (Raspberry)
Diseases: anthracnose (*Elsinoe veneta*)—4; cane blight (*Physalospora obtusa*)—1; wilt (*Verticillium albo-atrum*)—1; crumbly berry (tomato ringsport virus)—1.
Disorders: herbicide injury (spray drift)—1; cold injury—1.

Ribes (Gooseberry)
Disease: 'American' powdery mildew (*Sphaerotheca mors-uvae*)—2.

Vaccinium (Blueberry)
Diseases: blight (*Botrytis cinerea*)—1; twig canker (*Phomopsis vaccinii*)—1.

Vitis (Grape)
Diseases: black rot (*Guignardia bidwellii*)—4; powdery mildew (*Uncinula necator*)—2; crown gall (*Agrobacterium tumefaciens*)—1.
Disorders: herbicide injury (spray drift)—3; chemical injury (improper use)—2; die-back (root injury)—1.

[1] Diseases listed for each plant species in order of frequency.

TABLE 6. *Diseases and disorders of houseplants in Indiana—1975*[1]

Asparagus (Asparagus-Fern)
Disorder: leaf yellowing (high temperature plus low humidity)—2.
Begonia (Begonia)
Diseases: bacterial blight (*Xanthomonas begoniae*)—2; root knot nematode (*Meloidogyne* sp.)—1.
Brassaia (Shefflera)
Disorders: root rot (poor drainage plus overwatering)—8; chemical injury (spray drift)—1.
Chlorophytum (Spider Plant)
Disorder: tip burn (fluoride toxicity)—3.
Citrus (Panama Orange)
Disorder: scorch (high temperature plus low humidity)—1.
Crassula (Jade Plant)
Disorder: root rot (overwatering)—1.
Dieffenbachia (Dumb Cane)
Disorder: lower leaf yellowing (natural)—2.
Dracaena (Corn Plant)
Disorder: tip burn (salt accumulation)—2.
Ficus (India Rubber Plant)
Disorders: root rot (poor drainage plus overwatering)—2; stem canker (cause unknown)—1.
Gardenia (Gardenia)
Disease: powery mildew (not identified)—1.
Gynura (Velvet Plant)
Disorder: poor root growth (poor growing conditions)—2.
Lillum (Lily)
Disease: root and bulb rot (unknown complex of fungi, bacteria and nematodes)—3.
Monstera (Split-leaf Philodendron)
Disease: leaf mosaic (unidentified virus)—1.
Nephrolepis (Fern)
Disorder: die-back (low humidity)—3.
Orchidaceae (Orchid)
Disease: bacterial soft rot (*Erwinia carotovora*)—1.
Peperomia (Variegated Peperomia)
Disease: root rot (*Phytophthora palmivora*)—1.
Disorder: leaf tip necrosis (chemical toxicity)—1.
Persea (Avocado)
Disorder: root rot (poor drainage plus overwatering)—1.
Saintpaulia (African Violet)
Disorder: leaf ringspot (cold water on leaves)—2.

[1] Diseases listed for each plant species in order of frequency.

Turfgrass

Diseases: Turfgrass diseases were more prevalent in 1975 than in 1974 (2) (Table 7). Helminthosporium leaf spot was, by far, the predominant foliar disease of bluegrass.

Vegetables

Diseases: Several infectious diseases appeared to be carried into Indiana from southern states on infected tomato transplants (Table 8). These diseases included bacterial spot, bacterial canker, bacterial wilt, Alternaria stem canker, and nailhead spot. Prevalent mid and late season tomato diseases included Fusarium wilt, early blight, Septoria leaf blight, and fruit anthracnose. Early blight was responsible for severe defoliation of extensive commercial tomato acreage in late

August and early September. Important diseases of cucurbits included bacterial wilt, Alternaria leaf spot, and Fusarium wilt. A mild winter which favored the survival of cucumber beetles, a vector of the bacterial wilt pathogen, appeared to be a major factor in an early season outbreak of bacterial wilt on muskmelon. Although Alternaria leaf spot of muskmelon was frequently identified, crop injury was minimized with periodic fungicide applications. Black dot root rot of potato caused by *Colletotrichum coccodes* was in the majority of potato fields visited during 1975 and on several submitted samples of potato.

Disorders: Chemical injury was identified on specimens of most vegetable crops. Causes of chemical injury included herbicide drift, application of incompatible tank mixes, and application of certain pesticides during hot humid periods when phytotoxicity was most likely to occur.

TABLE 7. *Diseases and disorders of turf grasses in Indiana—1975*[1]

Poa pratensis (Kentucky Blue Grass)
Diseases: leaf spot and melting out (*Helminthosporium* spp.)—14; Fusarium blight (*Fusarium* spp.)—2; stripe smut (*Ustilago striiformis*)—1.
Disorders: slime mold (*Physarum cinereum*)—1; environmental—2; chemical—1.

Agrostis spp. (Bent Grass)
Disease: red leaf (*Helminthosporium erythrosphylum*)—3.

Festuca spp.) Fescue)
Diseases: red thread (*Corticium fuciforme*)—1; Pythium blight (*Pythium ultimum*)—1.

[1] Diseases listed for each crop species in order of frequency.

TABLE 8. *Diseases and disorders of vegetable crops in Indiana—1975*[1]

Allium cepa (Onion)
Diseases: basal bulb rot (*Fusarium* spp.)—4; black mold (*Aspergillus niger*)—2; leaf blight (*Botrytis cinerea*)—2; purple blotch (*Alternaria porri*)—1; soft rot (unidentified bacterial pathogen)—1.

Beta vulgaris (Beet)
Disorder: chemical injury (spray drift)—1.

Brassica juncea var. *crispifolia* (Mustard)
Disease: leaf spot (Cercospora brassiciola)—1.

Brassica oleracea var. *botrytis* (Broccoli and Cauliflower)
Disorders: cold weather injury—1; seedling die-back (soiuble salt toxicity)—1.

Brassica oleracea var. *capitata* (Cabbage)
Diseases: wire-stem (*Rhizoctonia solani*)—3; back rot (*Xanthomonas compestris*)—2; clubroot (*Plasmodiophora brassicae*)—1; yellows (*Fusarium oxysporum* f. *conglutinans*)—1.
Disorder: chemical injury (spray drift)—4.

Brassica rapa (Turnip)
Disorder: leaf spot (chemical injury)—1.

Capsicum frutescens (Pepper)
Disorders: air pollution injury—1; chemical injury—1; hail injury—1; wind injury—1.

Citrullus vulgaris (Watermelon)
Diseases: Fusarium wilt (*Fusarium oxysporum* f. *niveum*)—4; gummy stem blight (*Mycosphaerella melonis*)—1; root knot nematode (*Meloidogyne* sp.)—1.
Disorders: chemical injury—1; environmental stress—2; insect feeding injury—1; soluble salt toxicity—1; wind injury—1.

TABLE 8. *(cont.)*

Cucumis melo var. *reticulatus* (Muskmelon)
Diseases: leaf blight (*Alternaria cucumerina*)—8; bacterial wilt (*Erwinia tracheiphila*)—6; Fusarium wilt (*Fusarium oxysporum* f. *melonis*)—2; downy mildew (*Pseudoperonospora cubensis*)—2; powdery mildew (*Erysiphe cichoracearum*)—2; gummy stem blight (*Mycosphaerella melonis*)—1.
Disorders: leaf spot (chemical injury)—10; seedling die-back (soluble salt toxicity)—1.
Cucumis sativus (Cucumber)
Disease: bacterial wilt (*Erwinia tracheiphila*)—2.
Disorders: leaf spot (chemical injury)—4; insect feeding injury—1.
Cucurbita spp. (Pumpkin, Squash)
Disease: black rot (*Mycosphaerella melonis*)—1.
Disorders: chemical injury—5; insect feeding injury—2; environmental stress—1.
Ipomea batatus (Sweet Potato)
Diseases: scurf (*Monilochaetes infuscans*)—2; charcoal rot (*Macrophomina phaseoli*)—1; storage root rot (*Fusarium oxysporum*)—1.
Lycopersicon esculentum (Tomato)
Disease: early blight—stem and foliage lesions (*Alternaria solani*)—15; bacterial spot (*Xanthomonas vesicatoria*)—12; Septoria leaf spot (*Septoria lycopersici*)—6; Fusarium wilt (*Fusarium oxysporum* f. *lycopersici*)—6; bacterial wilt (*Pseudomonas solanacearum*)—3; bacterial canker (*Corynebacterium michiganense*)—2; Verticillium wilt (*Verticillium dahliae*)—2; damping-off (*Pythium* sp.)—1; ghost spot (*Botrytis cinerea*)—1; nailhead spot (*Alternaria tomato*)—1; soft rot of transplants (unidentified bacterial pathogen)—1.
Disorders: chemical injury (hergicide (drift)—15; insect feeding injury—7; nutrient deficiency—5; high temperature injury—4; physiological leaf roll—4; soluble salt toxicity—4; blossom end rot (insufficient water)—2; walnut wilt (toxic walnut tree excretions)—2; blotchy fruit ripening—1; drought stress—1; fruit rot (over-ripe fruit)—1.
Pastinaca sativa (Parsnip)
Disease: soft rot (unidentified bacterial pathogen)—1.
Phaseolus vulgaris (Snap Bean)
Diseases: Fusarium root rot (*Fusarium* sp.)—4; stem canker (*Rhizoctonia solani*)—2; common bacterial blight (*Xanthomonas phaseoli*)—1.
Disorders: chemical injury (herbicide drift)—12; insect feeding injury—10; leaf necrosis (sunscald)—7; soluble salt toxicity—1.
Pisum sativum (Pea)
Disease: Fusarium wilt (*Fusarium oxysporum* f. *pisi*)—3.
Rheum officinale (Rhubarb)
Diseases: anthracnose (*Colletotrichum erumpens*)—3; Alternaria leaf, stalk spot (*Alternaria* sp.)—1; Ascochyta leaf spot (*Ascochyta rhei*)—1.
Disorders: hail injury—1; sunscald—1.
Solanum tuberosum (Potato)
Diseases: black dot root rot (*Colletotrichum coccodes*)—6; early blight (*Alternaria solani*)—3; common scab (*Streptomyces scabies*)—2; late blight (*Phytophthora infestans*)—1; silver scurf (*Spondylocladium atrovirens*)—1; stem rot (*Botrytis cinerea*)—1; tuber dry rot (*Fusarium* sp.)—1; Verticillium wilt (*Verticillium dahliae*)—1.
Disorders: chemical injury (herbicide drift)—2; black heart (physiological)—1; hollow heart (physiological)—1; secondary tuber formation (physiological)—1.
Spinacia oleracea (Spinach)
Disease: downy mildew (*Peronospora* sp.)—1.
Disorder: chemical injury (herbicide drift)—1.
Zea mays var. *saccharata* (Sweet Corn)
Diseases: anthracnose (*Colletotrichum graminicola*)—1; bacterial leaf blight (*Xanthomonas stewartii*)—1; northern leaf blight (*Helminthosporium turcicum*)—1; smut (*Ustilago maydis*); Stewart's wilt (*Xanthomonas stewartii*)—1.
Disorders: chemical injury—4; insect feeding injury—2.

[1] Diseases listed for each crop species in order of frequency.

Soybeans

Diseases: Brown spot and bacterial leaf blight were common early season diseases. Phytophthora and Rhizoctonia root rots were also widespread (Table 9). Races 1, 3, 4, 5, and 6 of *Phytophthora megasperma* var *sojae* have now been identified in the state (1). The new races 3, 4, 5, and 6 are currently confined to six northwestern Indiana counties. Pod and stem blight was extremely severe on early planted Group II maturity soybeans. Later maturing varieties were relatively free of the disease. Purple seed stain was widespread but not damaging. Charcoal rot caused yield losses for the first time in several years in a few northwestern Indiana fields.

Disorders: Chemical injury was widespread throughout the state early in the season. Damage was severe in individual fields and growers were forced to replant some acreage.

TABLE 9. *Diseases and disorders of agronomic crops in Indiana—1975*[1]

Zea mays (Field Corn)

Diseases: Stewart's disease (*Erwinia stewartii*)—18; stalk rots (*Gibberella zeae*—8; *Diplodia zeae*—5; *Colletotrichum graminicola*—4; *Nigrospora oryzae*—2)—19; era rots (*Gibberella zeae*—6; *Fusarium moniliforme*—4; *Diplodia zeae*—3; *Cladosporium herbarum*—1; *Aspergillus fumigatus*—1)—15; viruses (Maize dwarf mosaic virus—3; Maize chlorotic dwarf virus—1)—4; anthracnose (*Colletotrichum graminicola*)—2; seedling blight (*Diplodia zeae*)—2; root rot (*Rhizoctonia solani*)—1; rust (*Puccinia sorghi*)—1.

Disorders: eratic emergence and poor root development (environmental)—20; chemical damage—8.

Glycine max (Soybeans)

Diseases: root rots (*Phytophthora megasperma* var. *sojae*—10; *Rhizoctonia solani*—5)—15; brown spot (*Septoria glycines*)—14; downy mildew (*Peronospora manschurica*)—4; seedling blights (*Diaporthe phaseolorum*—2; *Pythium* spp.—2)—4; bacterial bilght (*Pseudomonas glycines*)—3; charcoal rot (*Macrophomina phaseoli*)—3; pod and stem blight (*Diaporthe phaseolorum*)—3; brown stem rot (*Cephalosporium gregatum*)—2; frogeye leaf spot (*Cercospora sojina*)—2; powdery mildew (*Erysiphe polygoni*)—1.

Disorder: chemical damage—43.

Triticum aestivum (Wheat)

Diseases: Take-all (*Ophiobolus graminis*)—11; septoria leaf blotch (*Septoria tritici*)—7; fusarium root rot (*Fusarium* spp.)—3; scab (*Gibberella zeae*)—3; septoria glume blotch (*Septoria nodorum*)—3; virus (barley yellow dwarf virus—1; wheat spindle streak virus—1)—2.

Disorder: heaving (environmental conditions)—14.

Avena sativa (Oats)

Diseases: virus (barley dwarf virus)—3; halo blight (*Pseudomonas coronafaciens*)—2; loose smut (*Ustilago avenae*)—1.

Disorder: chemical damage—3.

Hordeum vulgare (Barley)

Diseases: scald (*Rynchosporium secalis*)—2; virus (barley yellow dwarf virus)—1.

Medicago sativa (Alfalfa)

Diseases: root rot (*Phytophthora cactorum*)—9; bacterial wilt (*Corynebacterium insidiosum*)—6; common leaf spot (*Pseudopoziza medicaginis*)—4; sclerotinia crown and stem rot (*Sclerotinia trifoliorum*)—3; black stem (*Ascochyta imperfecta*)—1; fusarium root rot (*Fusarium* sp.)—1; leaf spot (*Stemphylium* sp.)—1.

Disorder: nutritional—5.

[1] Diseases listed for each crop species in order of frequency.

Corn

Diseases: Infectious diseases of corn caused minimal concern during the early part of the growing season (Table 9). Stewart's disease and various other bacterial leaf blights were prevalent in many fields, but these diseases failed to develop to damaging proportions. In early August, Gibberella and Nigrospora stalk rots began to appear in southern Indiana. The damage was most severe in southern Indiana areas affected by drought. Severe lodging occurred in some individual fields. While stalk rots were most severe in the southern half of the state, these diseases appeared in many fields throughout the state. Ear rots were prevalent throughout the state, with Gib ear rot being most prevalent in the northern half of the state. Gib ear rot was responsible for hog refusal in localized areas with Howard and Cass counties being most severe. Maize Dwarf Mosaic and Maize Chlorotic Dwarf virus diseases were damaging in southern Indiana fields infested with Johnsongrass and planted to susceptible corn hybrids. Virus symptoms were visible on most Johnsongrass plants observed throughout southern Indiana.

Severe stalk rot caused by *Colletotrichum graminicola* (anthracnose) was observed for the first time in Indiana in 1975. This organism was first identified in Indiana on sweet corn in 1972 (3). At that time the organism was identified on dent corn, but only as a minor foliar problem. During 1974 and again in 1975, the organism was identified late in the season as the incitant of a stalk rot on the upper part of the stalk. No losses were encountered as a result of the upper stalk rots. However, in late August 1975, a single field in northcentral Indiana was 60% lodged from lower stalk infections. *C. graminicola* has since been identified from below the ear parts of corn stalks in numerous Indiana fields. While losses from this disease will be minimal in 1975, it is a disease that must be closely watched for development in future years.

Small Grains

Diseases: Take-all was widespread in Indiana wheat fields again in 1975 (Table 9), but losses were not as great as in 1974. Scab was widespread throughout the state and caused some yield reductions in individual fields. Septoria leaf blotch appeared in many fields, but disease development was relatively late and disease losses were minimal. Barley Yellow Dwarf virus was prevalent in southern Indiana oat and barley fields, but yield losses were not as great as in 1974. Scald was again severe in many southern Indiana barley fields.

Alfalfa

Diseases: Bacterial wilt and root rots caused by *Phytophthora* sp. or *Fusarium* sp., resulted in severe stand losses in numerous fields throughout the state (Table 9).

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