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SOME RECENT RECORDS OF PLANT PATHOGENS IN MISSOURI

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The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

SOME RECENT RECORDS OF PLANT PATHOGENS IN MISSOURI

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Plant Disease Reporter
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November 15, 1940.

In 1937 the writer published a rather extensive list (23) of Missouri fungi. Since then **numerous** new records of plant pathogens on wild and cultivated hosts have accumulated, most of them based on collections made during the last three years. Nearly half of these fungi apparently have never been reported for Missouri, and most of the others are new host records, so it seems desirable to publish the following list.

In this list an asterisk before the name of a species indicates, so far as the writer knows, a new record for the State, while nearly all other entries are for new hosts. Most of the names of hosts are those used in Gray's New Manual of Botany, 1908. After the names of hosts the place of collection, names of collectors and dates are given. The numbers in parentheses after the names of the fungi refer to the bibliography at the end of the list, showing where descriptions of the various species may be found. Brief notes have been added in some places. Several of the fungi were found on specimens in the phanerogamic herbarium of the University of Missouri. This is shown by giving the numbers of the sheets from which the fungi were taken. Identification of hosts was done almost entirely by the writer, and of the fungi mainly by him; however, much valuable aid in determining the fungi was received from C. M. Tucker, George B. Cummins, Charles Chupp, George L. Zundel, Anna E. Jenkins, H. H. Whetzel, John T. Middleton and others.

Alternaria brassicae (Berk.) Sacc. var. nigrescens Pogl. (31)

On Citrullus vulgaris Schrad. Southeastern Missouri: J. W. C. Anderson, 1939.

Alternaria solani (Ell. & Mart.) Jones & Grout (17, 28)

On Lycopersicon pimpinellifolium Mill. Columbia: Tucker, 1939.

*Bacterium papavericola Bryan and McWhorter (5)

On Papaver orientale L. Jefferson City: Tucker, 1937.

Bacterium tumefaciens Smith & Townsend (11)

On Cucumis sativus L. Columbia: Tucker, 1939. In a greenhouse at the University of Missouri.

*Badhamia utricularis (Bull.) Berk. (22)

On Juncus tenuis Willd. Columbia: T. E. Birkett, 1939.

On Trifolium repens L. Neosho: Frank Darnell, 1938. Determined by J. B. Routien.

Botrytis cinerea Pers. (31)

On Paeonia (cult.) Sarcoxic: Wild Brothers Nursery, 1937.

*Cercospora acetosellae Ell. (12)

On Rumex acetosella L. Columbia: Maneval, 1939.

*Cercospora alismatis Ell. & Holw. (12)

On Alisma plantago-aquatica L. Joplin: Charles Thom; 1900.
From herbarium specimen 216.

Cercospora althaeina Sacc. (12)

On Malva rotundifolia L. Columbia: Maneval, 1937.

*Cercospora (Cercosporina) cannabis Hara (17a)

On Cannabis sativa L. Weston: Barton L. Poss, 1938. Determination by Charles Chupp who says that, according to his data, this is the first record of this species in the United States.

Cercospora cruciferarum Ell. & Ev. (14)

On Radicula palustris (L.) Moench. Columbia: Maneval, 1938.

This fungus was collected by Galloway on Raphanus sativus in Missouri in 1887 (14).

*Cercospora dolichi Ell. & Ev. (14a, 31, 35)

On Vigna sinensis (L.) Endl. Columbia: Maneval, 1931. Determined by Charles Chupp. Previously reported (23) as Cercospora cruenta.

Cercospora dubia (H. Riess) Wint. (31)

On Chenopodium hybridum L. Columbia: Maneval, 1935.

*Cercospora hansenii Ell. & Ev. (29, vol. 11: 629)

On Asclepias syriaca L. Cedar Creek east of Columbia: Maneval, 1917. Determination by Charles Chupp. Previously reported (23) as Cercospora clavata.

Cercospora helianthi Ell. & Ev. (14)

On Helianthus sp. Columbia: J. E. McClary, 1938. Previously reported (14) for Missouri but this is our first collection.

Cercospora plantaginis Sacc. (12, 35)

On Plantago rugellii Dene. Columbia: Maneval, 1939.

*Cercospora platanicola Ell. & Ev. (14, 47)

On Platanus occidentalis L. Columbia: Maneval, 1924.

*Cercospora polygonacea Ell. & Ev. (12)

On Polygonum ramosissimum Michx. Columbia: Chris G. Schmitt, 1937.

*Cercospora populina Ell. & Ev. (14)

On Populus deltoides Marsh. Elsberry: Chris G. Schmitt, 1935.
Determination by Charles Chupp.

Cercospora resedae Fekl. (12, 31)

On Reseda odorata L. Columbia: Maneval, 1923. This species
was omitted in the list (23) published in 1937.

*Cercospora ribis Earle (29, vol. 11: 625)

On Ribes (cult. currant). Columbia: Maneval, 1931. Determination
by Charles Chupp. Previously reported (23) as Cercospora angulata.

*Cercospora sagittariae Ell. & Kell. (13)

On Sagittaria latifolia Willd. Columbia: Maneval, 1939.

Cercospora viridula Ell. & Ev. (14a)

On Ipomoea coccinea L. McBaine: Maneval, 1917. Previously
reported (14a) on Ipomoea purpurea for Missouri, but this is
our first collection.

Claviceps purpurea (Fr.) Tul. (32)

On Agropyron repens (L.) Beauv. Milan, 1939. This specimen was
received at the seed testing laboratory in the Missouri College
of Agriculture and the host was identified by Miss Clara Fuhr.

On Agrostis alba L. Laddonia; Mrs. Milton Pohlman, 1937.

On Dactylis glomerata L. Columbia: Maneval, 1939.

On Diarrhena diandra (Lichz.) Wood. Columbia: Maneval, 1938.

On Festuca glauca Lam. (F. ovina var. glauca (Lam.) Koch).
Centralia: C. L. Lefebvre, 1938. This host is not a native
grass, but was planted along borders in the cork garden of
A. B. Chance. It was identified by Mrs. Agnes Chaso.

On Triticum vulgare Vill. Columbia: Maneval, 1939.

Coleosporium solidaginis (Schw.) Thüm. (1)

On Pinus echinata Mill. Montauk Park: L. Jeffrey, 1933. Determina-
tion by George B. Cummins.

Colletotrichum cereale Manns (31, 45)

On Echinochloa muricata (Michx.) Fernald. Foil: F. E. Rippe, 1920. From herbarium specimen, 9194.

*Cylindrosporium clematidis Ell. & Ev. (14)

On Clematis virginiana L. Shut-ins on the east fork of Black River: Chris G. Schmitt, 1938.

Darluca filum (Biv.) Cast. (31)

On Melampsora abietis-capraearum Tub. on Salix sp. Columbia: Hudson Hartman, 1939.

Didymellina iridis (Desm.) Höhn. (31, 38)

On Belamcanda chinensis (L.) DC. Columbia: Maneval, 1938.

Empusa grylli (Fres.) Nowak (25, vol. 7: 282)

On Melanoplus bivittatus Say. Near Camdenton: George D. Jones, 1938.

On Melanoplus mexicanus. Near Camdenton: George D. Jones, 1938. Many grasshoppers, mostly M. bivittatus, were killed by the fungus. In one place the dead insects were found over an area of 60 acres. The first dead ones were found about the middle of June.

On Melanoplus differentialis Thomas. Reported by George D. Jones from several localities in Camden, Davies, Harrison, Mercer, Ray, and Ste. Genevieve Counties, 1938.

*Entyloma australe Speg. (7)

On Physalis missouriensis Mack. & Bush. Columbia: Maneval, 1937. This smut has recently been reported also on Physalis pubescens L. in Missouri (50).

Entyloma linariae var. veronicae Wint. (7)

On Veronica peregrina L. Columbia and Rocheport: K. W. Simons, 1937. This is our only collection of this smut. It was first recorded by Winter and Demetrio (46) for Perryville, Missouri, the type locality.

Erysiphe graminis DC. (30)

On Triticum vulgare Vill. Buchanan County: Roscoe V. Hill, 1938. Previously reported for the State on this host but this is our first collection. Specimens from farm of Arthur Fragge and many fields reported infected.

Erysiphe polygoni DC. (30)

On Lathyrus latifolius L. (Perennial Pea) Columbia: Maneval, 1938. Perithecia and ascospores abundant. No mildew is listed for this host by Salmon (30) nor Seymour (34).

Erysiphe polygoni DC. (30) (continued)

- On Lycium halimifolium Mill. Columbia: Maneval, 1938. No perithecia were found so the identity of the mildew is uncertain as Sphaerotheca pannosa also occurs on this host.
- On Polygonum ramosissimum Michx. Columbia: Chris G. Schmitt, 1937.
- On Trifolium repens L. Columbia: Maneval, 1937.

*Fusarium heterosporium Nees (48)

- On Claviceps purpurea on Poa compressa L. Columbia: Edgar Sundermeyer, 1939. Determination by C. L. Lefebvre.

Fusarium oxysporum (Schl.) var. gladioli Massey (48)

- On Gladiolus corms causing a storage rot. St. Louis: L. Jeffrey, 1938.

Gymnosporangium clavipes Cke. & Pk. (1)

- On Crataegus crus-galli L. Columbia: L. Haseman, 1937. This rust occurs on several species of Crataegus in and around Columbia.
- On Cydonia oblonga Mill. Columbia: L. Haseman, 1937; Turner's Station, 1937; Mountain Grove: M. A. Smith, 1939.
- On Pyrus communis L. Columbia: Maneval, 1937. Not given on this host in Arthur's Manual (1), but identification verified by George B. Cummins.
- On Pyrus malus L. Columbia: H. G. Swartwout, 1937.

Gymnosporangium globosum Earl. (1)

- On Crataegus oxyacantha L. Columbia: Maneval, 1939. This host is not listed by Arthur (1) nor Seymour (34) but the identification seems positively correct. During 1939 the infections of Crataegus spp. by this rust in central Missouri were the heaviest that I have ever seen. On many trees practically all of the leaves were infected, and on some of them all were killed by midsummer.
- On Pyrus communis L. Springfield: M. A. Smith, 1936; Columbia: Maneval, 1937.

Gymnosporangium juniperi-virginianae Schw. (1)

- On Pyrus lancifolia (Rehd.) Bailey. Columbia: Maneval, 1939.

*Hysterium pulicariae Pers. ex. Fr. (3, 15)

- On Betula nigra L. Meramec State Park: John M. Mason, 1938.

Melampsora abietis-capraearum Tub. (1)

- On Salix wardii Bebb. Shut-ins: Chris G. Schmitt, 1938.

*Melampsora euphorbiae-gerardianae W. Müll. (1)

- On Euphorbia commutata Engelm. Meramec State Park: John M. Mason, 1938. Arthur (1) lists this rust as occurring in northern Indiana and eastern West Virginia in this country.

Microsphaera diffusa Cke. & Pk. (30)

On Lespedeza striata (Thunb.) Hook. & Arn. Columbia: Edward Weaver, 1938. In an earlier list (23) the identity of this mildew was indicated as doubtful; but in this collection perithecia and ascospores were present so the identification is certain.

Percnospora lepidii (McAlp.) Wils. (31,44)

On Capsella bursa-pastoris (L.) Medic. Columbia: Maneval, 1937.

Cardamine parviflora L. var. arenicola (Britt.) O. E. Schulz.

Osage Beach, Lake of the Ozarks: John T. Middleton, 1937.

On Sisymbrium canescens var. brachycarpon (Richards) Watson

Columbia: Maneval, 1937. This mildew and also P. parasitica were unusually abundant at Columbia in May, 1937, on the hosts named and also on Lepidium spp.

Phyllachora graminis (Pers.) Fckl. (6)

On Muhlenbergia mexicana (L.) Trin. Webb City: E. J. Palmer, 1927. On herbarium specimen 32734.

On Panicum virgatum L. Columbia: H. W. Rickett, 1935; Shut-ins: Chris G. Schmitt, 1938.

Phyllactinia corylea (Pers.) Karst. (30)

On Quercus palustris Muench. St. Louis: J. A. Henning, 1939.

Phyllosticta melaleuca Ell. & Ev. (33)

On Ulmus americana L. Columbia: Maneval, 1937.

Phyllosticta phomiformis Sacc. (24, 33)

On Quercus muhlenbergii Engel. Columbia: Jasper A. Clark, 1937. Previously reported (33) for Missouri, but this is our first collection at Columbia.

*Phyllosticta verbenicola Martin (24)

On Verbena hastata L. Columbia: Maneval

Phytophthora cactorum (Leb. & Cohn) Schroet. (40, 41)

On Paeonia (cult.) Columbia: Tucker, 1937, 1939. This fungus was reported by Crandall & Hartley (8) as associated with seedling diseases of Caragana, Nyssa, and Colutea in a forest nursery at Elsberry, and presumably also on Acer, Cornus, Ostrya, Prunus, and Robinia in the surrounding area.

Phytophthora sp.

On Antirrhinum majus L. Jefferson City: Tucker, 1938

On Iris (cult.) Columbia: Tucker, 1937.

On Lilium regale Wils. Columbia: Tucker, 1936.

On Tulipa (cult.) Columbia: Tucker, 1936.

These are the first reports for Missouri of Phytophthora parasitizing the last three hosts named.

- Puccinia extensicola oenotherae (Mont.) Arth. (1)
 On Oenothera laciniata Hill. Roscoe: Francis Drouet, 1932;
Columbia: Maneval, 1938.
- Puccinia graminis Pers. (1)
 On Elymus canadensis var. glaucifolius (Muhl.) Gray. Columbia:
 Maneval.
 On Hordeum jubatum L. Kirksville: Chris G. Schmitt, 1937.
 Determination by George B. Cummins.
- Puccinia impatientis (Schw.) Arth. (1)
Elymus virginicus L. Columbia: Maneval. Our first collection
 but previously reported (1) for Missouri.
- *Puccinia phragmitis (Schum.) Körn. (1)
 On Phragmites communis Trin. Fulton: Cecil Davis, 1937.
- *Puccinia physostegiae Pk. & Cke. (1)
 On Physostegia virginiana (L.) Benth. Fulton: L. Jeffrey, 1937.
 This rust is recorded in Arthur's Manual (1) for Indiana and New York.
- Puccinia polygoni-amphibii Pers. (1)
 On Geranium carolinianum L. McBaine: Maneval, 1917. This is
 This is the only record that I have found for this rust on
G. carolinianum. Arthur (1) does not list it for this host.
- *Puccinia proserpinacea (Berk. & Curt.) Earl. (1)
 On Proserpinaca palustris L. Dunklin County: B.F. Bush, 1892.
 From herbarium specimen 8430.
- *Puccinia tumidipes Pk. (1)
 On Lycium halimifolium Mill. Ridgeway: Tucker, 1939; Columbia:
 Clara Fuhr, 1939.
- Pythium arrhenomanes Drechsler (21, 26)
 On Tritium vulgare Will. Augusta Tucker, 1939; Determination
 by Chris G. Schmitt.
- Pythium debaryanum Hesse (4, 26)
 *Pythium splendens Braun (4, 26)
 *Pythium ultimum Trow (39)
 On Begonia sp. (fibrous rooted). Columbia: Tucker & Middleton,
 1938. These three species of Pythium were all isolated and
 identified by John T. Middleton. They occurred on roots, crowns,
 stems and basal leaves of the host.
- Rhizoctonia bataticola (Taub.) Butler (2, 37)
 (Macrophomina phaseoli (Maubl.) Ashby)
 On Gossypium hirsutum L. (seedlings). Missouri: Tucker, 1940.
 On Lespedeza stipulacea Maxim. Columbia: Tucker, 1937.
 On Phaseolus vulgaris L. Neosho: Tucker, 1933.
 On Rheum rhaponticum L. (seedlings). Hermann: Tucker, 1937.

*Rhynchosporium secalis (Owd.) J.J.Davis (29)

On Hordeum vulgare L. Reported on barley at Columbia by A.G. Johnson, 1937 (P. D. Reporter 21: 242, 1937) and by Jesse E. Livingston as common at Elsberry in 1938. Johnson says his report seems to be the first for Missouri.

*Rhytisma (ilicis-canadensis Schw.?)

On Ilex verticillata (L.) Gray. Shut-ins: Chris G. Schmitt, 1938.

*Sclerotinia convoluta Drayton (10)

On Iris (cult.) Clayton: Tucker, 1939.

Sclerotinia libertiana Fekl. (49)

On Antirrhinum majus L. Kirkwood: Tucker, 1939.

On Daucus carota L. Columbia: Maneval, 1937.

On Paeonia (cult.) Sarcoxis: Tucker, 1937. Determination by H.H. Whetzel.

Sclerotium delphinii Welch (36)

On Calendula officinalis L. Columbia: Tucker, 1937.

On Dianthus hybridus. Columbia: Tucker, 1937.

On Hosta (caerulea ?) Kirkville: Tucker, 1937.

On Lilium candidum L. Kansas City: Tucker, 1939.

On Trifolium pratense L. Columbia: Tucker, 1938.

On Viola tricolor L. var. hortensis DC. University City: Tucker, 1937.

On Viola sp. Kansas City: Tucker, 1939.

Scolecotrichum graminis Fekl. (19)

On Hordeum jubatum L. Sumner: Kenneth Krumm, 1938.

On Phleum pratense L. Columbia: Maneval, 1939.

Septoria aceris (Lib.) Berk. & Br. (25)

On Acer saccharinum L. Columbia: N.B. Powell, 1938.

This host was omitted in the list (23) of fungi published in 1937.

Septoria acicola (Thüm.) Sacc. (18)

On Pinus nigra austriaca Schneid. Cedar City: J. Carl Dawson, 1939. This is our first collection of this fungus, but it had previously been reported for Missouri by George G. Hedgcock (18).

*Septoria chrysanthemi Halsted

On Chrysanthemum leucanthemum L. Columbia: Maneval, 1939. This material agrees with Seymour & Earle, Economic Gungi 301, on the label of which the species is described.

*Septoria conspicua Ell. & Mart. (25)

On Steironema ciliatum (L.) Raf. Cowgill: Ura M. Means, 1938.

*Septoria convolvuli Desm. (29, vol. 3: 536; 31)

On Convolvulus arvensis L. Oak Grove, 1938.

*Septoria (gaurina ?)

On Gaura biennis L. Burlington Junction; J. R. Singleton, 1939.

*Septoria littorea Sacc. (25)

On Apocynum cannabinum L. McBaine: Chris G. Schmitt, 1937.

Septoria nabali Berk. & Curt. (25, 31)

On Prenanthes altissima L. var. cinnamomae Fernald. Morano
State Park: John M. Mason, 1938.

Septoria oenotherae Westd. (25)

On Oenothera laciniata Hill. Grundy County: D. R. Crookshanks, 1937.

*Septoria passerinii Sacc. (43)

On Hordeum jubatum L. Sumner; Kenneth Krumm, 1938; Columbia:
Maneval, 1938. This fungus agrees well with Weber's description (43).

*Septoria pentstemonis Ell. & Ev. (25)

On Pentstemon sp. Columbia: K. W. Simons, 1937.

*Septoria tecomae Ell. & Ev. (16)

On Tecoma radicans (L.) Juss. Columbia: Maneval, 1939.

*Stagonospora curtisii (Berk.) Sacc. (9)

On Narcissus (cult.) Cartersville: B. C. Auten, 1937.

*Taphrina carveri A.E.Jenkins (20)

On Acer saccharinum L. Lutesville: Linder Englehart, 1939.
Determination by Anna E. Jenkins. Previously reported from
Ontario, Alabama, and Michigan (20).

Taphrina ulmi (Fekl.) Joh. (27)

On Ulmus americana L. Columbia: Maneval, 1939.
On Ulmus fulva Michx. Columbia: L. Haseman, 1939.

*Urocystis kmetiana Mgn. (50)

On Viola rafinesquii Greene. Five miles east of Columbia
(Lake of the Woods): Ilda McVeigh & K. W. Simons, 1937.
Identification verified by George L. Zundel. This smut had
previously been reported (7) for Arkansas and Tennessee.

Uromyces lespedezae-procumbentis (Schw.) Curt. (1)

On Lespedeza intermedia (Wats.) Britt. Reynolds County: J. A.
Steyermark, 1935. On herbarium specimen 19764.

Uromyces peckianus Parl. (1)

On Plantago elongata Pursh. Sandstone Bluff, northeast of
Columbia: Maneval, 1933. Apparently a new host for this rust,
as it is not included in Arthur's Manual (1).

Uromyces plumbarius Pk. (1)

On Gaura biennis L. Zebra: Francis Brouet & R. E. Zirkle, 1928;
Burlington Junction: J. R. Singleton, 1939.

*Ustilago spermophora Berk. & Curt. (7)

On Eragrostis megastachya (Koeler) Link. Columbia: Maneval, 1938.

Ustilago striaeformis (West.) Nicssl. (7)

On Agropyron subsecundum (Link) Hitchc. Columbia (greenhouse):
Chris G. Schmitt, 1937.

On Poa pratensis L. Columbia (greenhouse): J.D. Baldrige, 1939.

Venturia inaequalis (Cke.) Wint. (17, 42)

On Pyrus ioensis (Wood) Bailey. Eastville: G. W. Bohn and
Francis Drouet, 1935, herbarium specimen 23769; Springfield:
M. A. Smith, 1937; Bevier: Tucker, 1938.

Virus diseases

Aster yellows on Erigeron canadensis L. Versailles: Tucker, 1938.

*Streak on Nicotiana tabacum L. Camden Point, Glasgow, Keytesville,
Weston, 1939. Determination by W. D. Valleau.

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