

GLOSSARY

ACERVULUS (LI)—a small subcuticular or subepidermal cushionlike asexual fruiting body, without a covering of fungus tissue, producing conidia in a moist mass which escapes through a break in the host tissue.

AECIOSPORE—one of several kinds of spores produced by a rust fungus. Formed in and released from a fruiting structure called an aecium.

AECIUM (IA)—a cuplike fruiting structure produced by certain rusts, in which chains of spores (aeciospores) are developed.

AGAR—a substance from certain red algae used to make culture media into gels upon which microorganisms are grown.

ALLANTOID—slightly curved with rounded ends; sausage-like in form.

ALPHA-SPORE—a fertile spore of the asexual stage of the Diaporthaceae (*Phomopsis*) that is fusoid to oblong and biguttulate; **BETA-SPORE**, usually hooked shaped, is produced in addition.

ALTERNATE HOST—one or the other of the two unlike host plants parasitized by a heteroecious fungus such as a typical rust fungus, i.e., either the juniper or apple host of the cedar-apple rust fungus.

ANAEROBE—A microorganism that can live and grow where there is no free oxygen.

ANAMORPH—The asexual form of a fungus (e.g. that characterized by conidiomata).

ANNULUS—a ring-like partial veil around the stem of a fruiting body after expansion of the pileus (cap).

ANTHRACNOSIS—a type of plant disease which typically is a leaf and twig blight. Common on many hardwoods.

APOTHECIUM(IA)—a cup or saucerlike sexual fruiting body which produces ascospores.

ASCOSPORES—a spore produced in an ascus (see ascus).

ASCUS(I)—a sac-like cell of the perfect stage of the Ascomycetes in which ascospores—usually eight—are produced.

ASEXUAL STAGE—a stage in the life cycle of a fungus in which spores are produced without a previous sexual fusion; also called imperfect stage.

BASIDIOSPORE—the spore produced by the sexual stage of the Basidiomycetes.

BASIDIUM(IA)—a cell, usually terminal, in which nuclear fusion and meiosis occur and each of the four haploid nuclei pass into one of four forming spores.

BETA-SPORE—see alpha-spore.

BLIGHT—a general term for a plant disease causing rapid death or dieback.

BORDEAUX MIXTURE—a fungicidal spray used for controlling plant diseases. A common mixture is 4-4-50, which means 4 lbs. copper sulfate, 4 lbs. lime, and 50 gal. water. **BROOM**—an abnormally dense mass of host branches and foliage in which the typical host growth pattern is lost.

BROWN ROT—decay caused by fungi that degrade cellulose, do not produce extracellular phenoloxidases, common and generally give negative oxidase tests.

CANKER—a definite relatively localized necrotic lesion primarily of the bark and cambium.

CARPOGIUM(IA)—the female sex organ.

CHLOROSIS—an abnormal yellowing of the foliage.

CHLOROTHALONIL—a relatively broad spectrum organic fungicide. A foliar fungicide.

CHLOROTIC—abnormally yellow.

CLEISTOTHECIUM(IA)—a closed fruiting body, without an ostiole, containing ascii.

CONIDIOMA(MATA)—A specialized multi-hyphal, conidia-bearing structure.

CONIDIOPHORE—a specialized hypha bearing conidia.

CONIDIUM(IA)—a spore formed asexually, usually at the tip or side of a hypha.

CONK—a type of fruiting (spore-forming) structure formed by certain fungi, usually wood rotters (Basidiomycetes). It is often bracket-like, and is referred to as "sporocarp," "sporophore," "fruiting body," "carpophore," "fructification," "basidiocarp," "punk," "bracket," and "shelf."

CONTEXT (OF SPOROCARP)—the inner tissue of the pileus (cap), i.e., the tissue lying between the upper surface and the tube or pore layer. The context often is designated as the "trama" of the pileus.

COREMIUM(IA)—a specialized multi-hyphal structure composed of a compact group of erect and sometimes fused conidiophores bearing conidia at the apex or on both apex and sides.

COVER CROP—a crop, natural or introduced, that is grown alternately with the main crop. Used to prevent erosion and improve soil characteristics.

CULTIVAR—an assemblage of cultivated individuals distinguished by any useful, reproducible character.

CUTTING—detached portion of stem or other plant part which, when rooted, produces a whole plant.

DAEDALOID-PORES—with elongated and sinuous mouths.

DECAY—the decomposition of plant tissue by fungi and other microorganisms.

DEFOLIATION—loss of current year's or past years' foliage.

DIEBACK—the death of parts of a tree or plant usually from the top downward.

DISEASE—unfavorable change of the function or form of a plant from normal, caused by a pathogenic agent or unfavorable environment.

DISEASE CYCLE—the chain of events in the development of a disease.

EFFUSED-REFLEXED—spread out over a substratum and turned back at the margin to form a pileus (cap).

EPIDEMIC—pertaining to a disease which has built up rapidly and reached injurious levels.

EPIDERMIS—the outermost layer of cells on the primary plant body.

EPIPHYTE—a plant that grows on another plant but is not a parasite and produces its own food by photosynthesis.

EXUDATE—matter which oozes out or is secreted.

FACULTATIVE PARASITE—an organism which is normally saprophytic but which is capable of living as a parasite only when unfavorable conditions predispose the host so that it is unusually susceptible.

FACULTATIVE SAPROPHYTE—an organism which is normally parasitic but which is capable of living as a saprophyte.

FALLOW—cultivated land allowed to lie idle or unplanted during the growing season.

FASCICLE SHEATH—a sheath around the base of a cluster or bundle of needles.

FEEDER ROOT—succulent actively growing rootlets of plants.

FLAGELLUM(LA)—a whiplike part of some cells, especially of certain bacteria that is an organ of locomotion.

FOLIAGE—leaves of a plant or tree.

WHIP LEAVES—juniper foliage characteristic of long shoot growth on the ends of secondary and tertiary branches.

SPUR LEAVES—juniper foliage characteristic of short (spur) branches.

JUVENILE LEAVES—juniper foliage characteristic of seedlings.

FRUITING BODY—any of a number of kinds of reproductive structures which produces spores. See conk.

FUNGICIDE—chemical which is toxic to fungi.

PROTECTANT—fungicides applied to foliage of plant in advance of a pathogen in order to prevent infection.

ERADICANT—fungicides, applied to foliage of a plant, that have a direct effect upon organisms which have already invaded the host.

SYSTEMIC—fungicides that are absorbed into the tissues of plants and are toxic to fungi.

FUNGUS—any of a number of organisms considered by some authorities to be lower plants which lack chlorophyll.

GALL(BURLS)—pronounced swellings on woody plants caused by certain insects and disease organisms.

GIRDLED—to destroy or remove the tissue, particularly living tissue in a rough ring around a stem, branch, or root.

GUMMOSIS—the giving off of gummy substances as a result of cell degeneration.

HAUSTORIUM(IA)—absorbing organ originating on a hypha of a parasite and penetrating into a cell of the host.

HOST—the plant on or in which a pathogen exists.

HOST RANGE—all hosts which a particular pathogen attacks.

HOST SPECIFIC—a term used to describe those pathogens which attack only certain species of hosts.

HYALINE—transparent, having no color.

HYMENIUM—the general region of the sporocarp bearing the basidia, that is, the layer of tubes. The actual spore-producing layer, made up of basidia and whatever type of sterile organ that may be present with them and forming a layer lining the inside of the tubes.

IMPERFECT STAGE—that part of the life cycle of a fungus in which only conidia and no sexual spores are produced. Syn. asexual.

INFECT—to invade and cause a disease.

INFECTION COURT—the area in which the pathogen first established itself on or in the host.

INFEST—to be present within an area in such numbers as to be a disease hazard.

INOCULATE—to place a pathogen on or in a host in a position in which it is capable of causing a disease.

INOCULUM—the spores, mycelium, sclerotia, or other propagules of a pathogen which initially infect a host or crop.

INTERNODE—the portion of the stem between two nodes.

LATENT INFECTION—an established infection which does not show its presence.

LEAF ABSCISSION—the normal separation of leaves from plants by the development of a thin layer of pithy cells at the base of their petioles.

LEAF PETIOLE—the slender, usually cylindrical portion of a leaf, which supports the blade and is attached to the stem.

LEAF SPOT—a leaf disease characterized by numerous distinct lesions.

LESION—a defined necrotic area.

LIFE CYCLE—the stage or series of stages in fungi between one spore form and the development of the same spore again.

MACROCONIDIA—the larger of two types of conidia by certain fungi, such as *Fusarium* spp.

MICROCONIDIA—the smaller of two types of conidia produced by certain fungi.

MUSHROOM—any of various rapid-growing, fleshy fungi that typically have a stalk capped with an umbrella-like top.

MYCELIUM(IA)—a mass of hyphae which forms the vegetative filamentous body of a fungus.

MYCOPLASMA—a type of disease-causing organism similar to a bacterium, but lacking a true cell wall.

MYCOPLASMA LIKE ORGANISM (MLO)—an organism with apparent features of mycoplasma, but not proven to be mycoplasma.

NECROSIS—death of plant cells usually resulting in darkening of the tissue.

NEMATODE—a roundworm with a long, cylindrical, unsegmented body.

PARASITE—an organism living on and nourished by another living organism.

PATHOGEN—an organism which causes a disease.

PATHOGENIC—capable of causing a disease.

PEDUNCLE—the supporting axis of a single flower or a flower cluster.

PERFECT STAGE—the stage in which the sexual spore stage is produced.

PERENNIAL—continuing growth from year to year.

PERIDERM—the outer protective layer in older stems, consisting of the phellogen and its derivative tissues, phellem and phelloderm.

PERITHECIUM(IA)—a closed flasklike sexual fruiting body formed by certain Ascomycetes in which ascospores are produced.

PERITRICHIOUS—having flagella evenly distributed over the entire surface of the cell of a bacterium.

PHELLODERM—cells cut off centripetally by the phellogen.

PHELLOGEN—a lateral meristem that cuts off phello-derm and phellem; the cork cambium.

PHELLUM—the suberized tissue produced by the cork cambium in the bark.

PHLOEM—the tissue of the inner bark responsible for the transport of elaborate food stuffs.

PILEUS(EI)—the upper surface of a sporocarp.

PLEOMORPHIC—the condition in which a fungus has two or more very different morphological forms.

PORE SURFACE—the lower surface of the sporocarp in specimens mature enough to have a tube layer. It is the surface at which the pores open.

PRIMARY INFECTION—infection of a host by primary inoculum, for example, from overwintering spores.

PROLIFERATE—to grow by budding in quick succession.

PRUNE—to remove dead or living parts from a plant to improve its form.

PUSTULE—a small, sometimes colored, blister-like swelling.

PYCNIDIOSPORE—an asexual spore or conidium produced within a pycnidium.

PYCNIDIUM(IA)—an asexual type of fruiting body, typically flask shaped, in which asexual spores or conidia are produced.

PYCNIOSPORE—a specialized spore produced in a pycnium by the rust fungi.

PYCNIUM(IA)—a designation for the spermogonium of the rust fungi.

PYRIFORM—pear-shaped.

RELATIVE HUMIDITY—the amount of moisture in the air as compared with the maximum amount that the air contains at the same temperature, expressed as a percentage.

RESISTANT—able to withstand without serious injury, attack by an organism, or damage by a nonliving agency but not immune from such attacks.

RESUPINATE SPOROCARP—a sporocarp in which the entire structure lies flat on the substratum, i.e. without forming a bracket-like or shelflike body.

RHIZOMORPH—a thick strand of vegetative hyphae in which the hyphae have lost their individuality.

RHIZOSPHERE—the soil near a living root.

ROT—see decay.

SAPROPHYTE—an organism using dead organic material as food.

SAPWOOD—the soft wood just beneath the bark of a tree.

SCLEROTIUM(IA)—a firm, frequently rounded multicellular resting structure produced by fungi.

SECONDARY INFECTION—when a host becomes diseased, the organism commonly produces another crop of spores or infective bodies which serve to cause secondary infection.

SEPTATE—having cross walls which divide hyphae or spores into a number of separate cells.

SEPTUM—the cross wall which divides a hypha or spore into two or more distinct cells.

SETA(AE)—conspicuous, conical or lance-shaped, brown, sterile organs found in the hymenium of some fungal species.

SESSILE SPOROCARP—a sporocarp which takes the form of a knob or bracket or shelf. The sporocarp has no stem or stalk, and the point of attachment to the substratum is typically lateral.

SEXUAL STAGE—the stage in the life cycle of a fungus in which spores are produced after sexual fusion. Syn; perfect stage.

SHARING—cutting foliage and stem from trees with shears.

SHELTERBELT—see windbreak.

SIGNS OF A PATHOGEN—any observable part of a pathogen.

SILVICULTURE—the art of establishing, growing, and regenerating a forest.

SPERMATIUM(IA)—a non-motile, uninucleate, spore-like male structure which empties its contents into a receptive female structure during plasmogamy.

SPERMOGONIUM(IA)—a structure which contains minute, rod-shaped, or oval spore-like bodies which in some cases have proved to be functional spermatia.

SPIROPLASM—a spiral shaped bacterium without a cell wall. Spiroplasmas are related to mycoplasmas.

SPORE—the reproductive structure of the fungi and other lower plants.

SPORE HORNS—a tendril-like mass of forced-out spores.

SPORODOCHIUM(IA)—a cushion-shaped stroma covered with conidiophores. Also called a cirrus.

SPORULATE—to produce and release spores.

STOOL BEDS—nursery beds containing plants from which cuttings are obtained during the dormant season for vegetative propagation.

STOMA(MATA)—a pore in the leaf epidermis, surrounded by two guard cells, leading into an intercellular space within the plant.

STROMA(MATA)—a mass of fungal hyphae packed together to form a hard crust in or on which fruiting bodies are formed.

SUSCEPTIBLE—unable to withstand attack by an organism or damage by a nonliving agency without serious injury.

SYMPTOM—the evidence of disturbance in the normal development and function of a host plant, i.e., chlorosis, necrosis, galls, brooms, stunting, etc.

SYSTEMIC—affecting or distributed throughout the whole plant body.

TELIOSPORE—the spore of the rust fungi from which the perfect stage of the basidium and basidiospore arise.

TELIUM(IA)—an aggregation of teliospores of the rust fungi.

TENDRIL—a threadlike part of a spore-horn.

TUBE LAYER OF SPOROCARP—a layer of vertically placed tubes attached to the lower surface of the context of a sporocarp. See hymenium.

UREDIOСПORES—one of the many spore stages produced by the rust fungi in their life cycle. These spores are produced in a fruiting body called an uredium.

UREDIOUM(IA)—one of the many types of fruiting bodies formed by the rust fungi in their life cycle. Urediospores are formed in this fruiting body.

VECTOR—an organism, usually an insect, that transmits a pathogen from one host to another.

VEGETATIVE MYCELIUM—a mass of hyphae constituting the body of the fungus and without spores.

VIRULENT—vigorously pathogenic.

WETWOOD—a discolored, water-soaked condition of the heartwood of some trees presumably caused by bacterial fermentation. Often associated with distinctive odor, gas production, and an exudation called slime flux.

WHITEROT—decay caused by fungi that attack all chief constituents of wood and leave a whitish or light colored residue. Affected wood is often fibrous or spongy in texture.

WINDBREAK—a row or rows of trees that serve as a protection from wind.

WITCHES'-BROOM—an abnormal cluster of twigs and branches caused by certain pathogens.

XYLEM—the woody conducting tissues of the stem and root.

Index To Host Plants With Scientific Equivalents

Host	Article Number	
Ailanthus, <i>Ailanthus altissima</i> (Mill.) Swingle	14, 20, 47	Chinkapin, <i>Castanopsis</i> sp.
Albizia, <i>Albizia</i> spp.	46	Allegheny, <i>Castanea pumila</i> Miller
Mimosa, <i>A. julibrissin</i> Durazz.	46	Bush, <i>C. sempervirens</i> (Kell.) Dudley
<i>A. kalkora</i> (Roxb.) Prain	46	Golden, <i>C. chrysophylla</i> (Dougl.) A. DC.
<i>A. lophantha</i> (Venten.) Machbr.	46	
<i>A. procera</i> (Roxb.) Benth.	46	Chokeberry, <i>Aronia</i> sp.
<i>A. pudica</i> L.	46	Christmasberry, <i>Photinia</i> sp.
<i>A. thorelii</i> Pierre	46	Cotoneaster, <i>Cotoneaster</i> sp.
Alder, <i>Alnus</i> sp.	8, 12	Peking, <i>C. acutifolia</i> L.
Almond, flowering, <i>Prunus triloba</i> Lindl.	34	Corktree, Amur, <i>Phellodendron amurense</i> Rupr.
Amelosorus sp.	39	Crabapple, <i>Malus</i> sp.
Apple, <i>Malus</i> sp.	14, 15, 34, 35, 39, 48, 49, 62	Crotogemesphilus sp.
Apricot, <i>Prunus armeniaca</i> L.	34, 47	Cypress, <i>Cupressus</i> sp.
Arborvitae, <i>Thuja</i> sp.	50, 52	Desertwillow, <i>Chilopsis linearis</i> (Gav.) Sweet
Ash, <i>Fraxinus</i> sp.	7, 14, 37, 38, 44	Dogwood, flowering, <i>Cornus florida</i> L.
Black, <i>F. nigra</i> Marsh.	6	Douglas-fir, <i>Pseudotsuga menziesii</i> (Mirb.) Franco ...
Green, <i>F. pennsylvanica</i> Marsh.	6, 7, 14, 37, 38, 47, 49	Elm, <i>Ulmus</i> sp.
White, <i>F. americana</i> L.	6, 27, 37	7, 8, 12, 14, 15, 16, 29, 41, 42, 43, 44
Aspen, <i>Populus</i> sp.	1, 25, 26, 38	American, <i>U. americana</i> L.
Bigtooth, <i>P. grandidentata</i> Michx.	26	16, 27, 29, 41, 42, 43, 49
Quaking, <i>P. tremuloides</i> Michx.	2, 26	cedar, <i>U. crassifolia</i> Nutt.
Autumn-olive, <i>Elaeagnus umbellata</i> Thunb.	18	Chinese, <i>U. parvifolia</i> Jacq.
Basswood, <i>Tilia americana</i> L.	7, 12, 14, 31	English, <i>U. procera</i> Salisb.
Beech, <i>Fagus</i> sp.	12, 31	Evergreen, <i>U. parvifolia</i> Jacq.
Birch, <i>Betula</i> sp.	12, 14, 15, 37, 38	Japanese, <i>U. japonica</i> (Rehd.) Sarg.
Paper, <i>B. papyrifera</i> Marsh.	48	Red, <i>U. rubra</i> Muhl.
Buckthorn, European, <i>Rhamnus cathartica</i> L.	38	Rock, <i>U. thomasii</i> Sarg.
Buffaloberry, <i>Shepherdia</i> sp.	13, 37	<i>U. rubra</i> x <i>U. pumila</i> hybrid
Russet, <i>S. canadensis</i> (L.) Nutt.	13	September, <i>U. serotina</i> Sarg.
Silver, <i>S. urgentea</i> (Pursh.) Nutt.	13, 37	Siberian, <i>U. pumila</i> L.
Caragana, <i>Caragana arborescens</i> Lam.	3, 4	
Catalpa, Northern, <i>Catalpa speciosa</i> Warden	14, 44, 47, 49	Slippery, <i>U. rubra</i> Muhl.
Cherry, <i>Prunus</i> sp.	8, 9, 10, 14, 30, 32	Smooth leaved, <i>U. carpinifolia</i> Ruppins ex. Suckow
Carolina cherry-laurel, <i>P. caroliniana</i> Ait.	30	<i>U. villosa</i> Brandis
Cherry-laurel, <i>P. laurocerasus</i> L.	34	Winged, <i>U. alata</i> Michx.
Chokecherry, <i>P. virginiana</i> L.	9, 10, 32, 34	White, <i>U. americana</i> L.
Hollyleaf cherry, <i>P. ilicifolia</i> (Nutt.) D. Dietr.	30	
Nanking cherry, <i>P. tomentosa</i> Thunb.	9	Elm zelkova, <i>Zelkova carpinifolia</i> (Pall.) C. Koch.
Sour cherry, <i>P. cerasus</i> L.	10	Fir, <i>Abies</i> sp.
Western sandcherry, <i>P. besseyi</i> Bailey	34	Flowering-quince, <i>Chaenomeles</i> spp.
Chestnut, <i>Castanea</i> sp.	12, 45	Gooseberry, <i>Ribes</i> sp.
American, <i>C. dentata</i> (Marsh.) Borkh.	45	Hackberry, <i>Celtis occidentalis</i> L.
Chinese, <i>C. mollissima</i> Bl.	45	Hawthorn, <i>Crataegus</i> sp.
Spanish, <i>C. sativa</i> Mill.	45	Hemlock, <i>Tsuga</i> (Endl.) Carr.
		Hickory, <i>Carya</i> sp.
		Mockernut, <i>C. tomentosa</i> Nutt.
		Pecan, <i>C. illinoensis</i> (Wangenh.) K. Koch.
		Shagbark, <i>C. ovata</i> (Mill.) K. Koch.

Holly, <i>Ilex</i> sp.	12	Persimmon, Common, <i>Diospyros virginiana</i> L.	20
American, <i>I. opaca</i> Ait.	20	Pine, <i>Pinus</i> sp.	14, 15, 49,
Honeylocust, <i>Gleditsia triacanthos</i> L.	12, 14, 27,	Austrian, <i>P. nigra</i> Arnold	58, 59
Native thorny, <i>G. triacanthos</i> var. <i>triancanthos</i>	37, 46, 49	Bristlecone, <i>P. aristata</i> Engelm.	47, 54, 55,
Oriental, <i>G. japonica</i> Miq.	27	Eastern white, <i>P. strobus</i> L.	58, 63, 64
Thorny and podless, <i>G. triacanthos</i> var. <i>inermis</i> Willd.	27	Jack, <i>P. banksiana</i> Lamb.	57, 63, 64
Honeysuckle, <i>Lonicera</i> sp.	11	Japanese black, <i>P. thunbergiana</i> Franco	63
Amur, <i>L. maackii</i> Maxim.	11	Loblolly, <i>P. taeda</i> L.	63
Tatarian, <i>L. tatarica</i> L.	11, 48	Longleaf, <i>P. palustris</i> Mill.	53, 63
Hophornbeam, <i>Ostrya</i> sp.	12	Lodgepole, <i>P. contorta</i> Dougl.	54, 57
Hornbeam, <i>Carpinus</i> sp.	12	Monterey, <i>P. radiata</i> D. Don	54, 63
Horsechestnut, <i>Aesculus hippocastanum</i> L.	14	Mugo, <i>P. mugo</i> Turra	57, 58
Incense cedar, <i>Libocedrus decurrens</i> Torr.	30	Ponderosa, <i>P. ponderosa</i> Dougl. ex Laws.	48, 53, 54,
Juneberry, <i>Amelanchier</i> sp.	62		55, 57, 58,
Juniper, <i>Juniperus</i> sp.	15, 30, 39,		64
African, <i>J. procera</i> Hochst. ex Endl.	49, 51, 62	Red, <i>P. resinosa</i> Ait.	58
Alligator, <i>J. deppeana</i> Steud.	62	Scots, <i>P. sylvestris</i> L.	6, 48, 53, 55,
Ashe, <i>J. ashei</i> Buchholz	52, 61		58
California, <i>J. californica</i> Carr.	62	Shortleaf, <i>P. echinata</i> Mill.	63
Canary Islands, <i>J. cedrus</i> Webb. & Birth.	62	Sugar, <i>P. lambertiana</i> Dougl.	63
Chinese, <i>J. chinensis</i> L.	52, 62	Plum, <i>Prunus</i> sp.	10, 30, 32,
Common, <i>J. communis</i> L.	52		33, 38
Creeping, <i>J. horizontalis</i> Moench	52, 62	American, <i>P. americana</i> Marsh.	10, 32, 33,
Eastern redcedar, <i>J. virginiana</i> L.	30, 47, 50,		38
One-seeded, <i>J. monosperma</i> (Engelm.) Sarg.	51, 52, 61,	Cherry, <i>P. divaricata</i> Ledeb.	30
Rocky mountain, <i>J. scopulorum</i> Sarg.	62	Chickasaw, <i>P. angustifolia</i> Marsh.	33, 38
Savin, <i>J. sabina</i> L.	51, 61	Damson, <i>P. insititia</i> L.	32
Singleseed, <i>J. squamata</i> D. Don	52	Hortulan, <i>P. hortulana</i> Bailey var. <i>minerii</i> Bailey	33
Utah, <i>J. osteosperma</i> (Torr.) Little	61	<i>Prunus salicina</i> Lindl. (includes cultivars Formosa,	
Larch, <i>Larix</i> sp.	1	President, Early Italian, Shiro, Santa Rosa)	32
Lilac, <i>Syringa</i> spp.	12, 38	<i>P. domestica</i> L. (includes cultivars Stanley and	
Linden, <i>Tilia</i> sp.	14	Bradshaw)	32
Locust, <i>Robinia</i> sp.	38, 46, 49	Wildgoose, <i>P. munsonii</i> Wright & Hedr.	33
(Black, <i>R. pseudoacacia</i> L.)	7	Poison ivy, <i>Rhus toxicodendron</i> L.	13
London plane-tree (an interspecific hybrid)	3, 4, 7, 8,	Poison oak, <i>Rhus diversiloba</i> Torr. & Gray	13
Maple, <i>Acer</i> sp.	12, 14, 15,	Poplar, <i>Populus</i> sp.	1, 3, 14, 15,
Amur, <i>A. ginnala</i> Maxim.	31, 37, 38,		21, 22, 23,
Bigleaf, <i>A. macrophyllum</i> Pursh.	44		25, 29, 30,
Boxelder, <i>A. negundo</i> L.	14, 37, 48		37, 38, 49
Mountain, <i>A. spicatum</i> Lam.	4	Balsam, <i>P. balsamifera</i> L.	22, 24, 25,
Norway, <i>A. platanoides</i> L.	5		26
Red, <i>A. rubrum</i> L.	4, 5	Black, <i>P. trichocarpa</i> Torr. & Gray	22, 25
Silver, <i>A. saccharinum</i> L.	4, 5, 14, 15	Black poplar, <i>P. nigra</i> L.	22
Soft, <i>A. saccharinum</i> L.	4, 5, 14, 15	Cottonwood, <i>P. deltoides</i> Bartr.	1, 15, 47
Sugar, <i>A. saccharum</i> Marsh.	4, 5, 14, 44	Eastern, <i>P. deltoides</i> Bartr.	2, 14, 21, 22,
Sycamore, <i>A. pseudoplatanus</i> L.	5		23
Mountain-ash, <i>Sorbus</i> sp.	35, 39	Gray, <i>P. cuneans</i> (Ait.) Sm.	31
Mulberry, <i>Morus</i> sp.	14, 29	Japanese poplar, <i>P. maximowiczii</i> Henry	22
Russian, <i>M. alba</i> f. <i>tartarica</i> Seringe	47	Largetooth, <i>P. grandidentata</i> Michx.	24, 26
Oak, <i>Quercus</i> sp.	7, 8, 12, 14,	Laurel poplar, <i>P. laurifolia</i> Ledeb.	22
Black, <i>Q. velutina</i> Lam.	15, 18, 20,	Lombardy, <i>P. nigra</i> cv. <i>italicus</i> Muenchh.	21, 24, 25
Bur, <i>Q. macrocarpa</i> Michx.	31, 37, 38,	Mighty-Mo, <i>P. deltoides</i> (central Missouri selection)	21
Live, <i>Q. virginiana</i> Mill.	45, 48	Narrowleaf, <i>P. angustifolia</i> James	2, 25
Northern red, <i>Q. rubra</i> L.	31, 45	Nor'easter, <i>P. deltoides</i> x <i>P. nigra</i> cv. <i>Volga</i>	21
Pin, <i>Q. palustris</i> Muenchh.	8, 27, 45	Norway, <i>P. canadensis</i> eugeni Hort. Simon-Louis	
Post, <i>Q. stellata</i> Wagnh.	18	ex. C. Koch	21
Scarlet, <i>Q. coccinea</i> Muenchh.	31, 45	Plains, <i>P. deltoides</i> var. <i>occidentalis</i> Rydb.	25
Southern red, <i>Q. falcata</i> Michx.	45, 49	Platte, <i>P. deltoides</i> (Nebraska selection)	21
White, <i>Q. alba</i> L.	31	<i>Populus</i> x <i>canadensis</i> Muench. cv. <i>serotina erecta</i>	30
Osage-orange, <i>Maclura pomifera</i> (R.F.) Schneid.	7, 31, 40, 45	Quaking, <i>P. tremuloides</i> Michx.	1, 2, 24, 25,
Peach, <i>Prunus persica</i> Batsch.	47		26
Pear, <i>Pyrus</i> sp.	8, 10, 15, 62	Robusta, <i>P. nigra</i> x <i>P. deltoides</i>	30
Callery, <i>P. calleryana</i> Decne.	34, 35, 39	Siouxland, <i>P. deltoides</i>	21
Common, <i>P. communis</i> L.	35	Valley, <i>P. fremontii</i> var. <i>wislizenii</i> S. Wats.	21
	35	White, <i>P. alba</i> L.	21

Serviceberry, <i>Amelanchier</i> spp.	39, 62	Tanbark-oak, <i>Lithocarpus densiflorus</i> (Hook. & Arn.)	45
Siberian peashrub, <i>Caragana arborescens</i> Lam.	3, 4, 38, 49	Rehd.	45
Skunkbush sumac, <i>Rhus trilobata</i> Nutt.	13	Walnut, <i>Juglans</i> sp.	7, 12, 14, 15, 20
Soapberry, western, <i>Sapindus drummondii</i> Hook. & Arn.	47	Eastern black, <i>J. nigra</i> L.	7, 19, 38, 47, 49
Spruce, <i>Picea</i> sp.	14, 49, 59	White-cedar, <i>Chamaecyparis</i> sp.	50, 52
Blackhills, <i>P. glauca</i> var. <i>densata</i> Bailey	56, 60	Willow, <i>Salix</i> sp.	1, 14, 21, 27, 28, 30, 38
Colorado blue, <i>P. pungens</i> Engelm.	14, 56, 59, 60, 64	Bebb, <i>S. bebbiana</i> Sarg.	38
Engelmann, <i>P. engelmannii</i> (Parry) Engelm.	56, 63	Black, <i>S. nigra</i> Marsh.	21
Norway, <i>P. abies</i> (L.) Karst.	59, 60	Diamond, <i>S. rigida</i> Muhl.	38
White, <i>P. glauca</i> (Moench) Voss	56, 60, 64	Golden, <i>S. alba</i> var. <i>vitellina</i> (L.) J. Stokes	38, 49
Sumac, <i>Rhus</i> sp.	13	Missouri River, <i>S. eriocephala</i> Michx.	38
Skunkbush, <i>R. trilobata</i> Nutt.	13	Peach leaf, <i>S. amygdaloidea</i> Anderss.	21
Sycamore, <i>Platanus</i> sp.	7, 12, 14, 18, 31	Weeping, <i>S. babylonica</i> L.	21
American, <i>P. occidentalis</i> L.	7, 14, 18, 20, 31, 47	White, <i>S. alba</i> L.	38
Tamarisk, French, <i>Tamarix pentandra</i> Pall.	47	Yew, <i>Taxus</i> sp.	15

Index To Plant Diseases And Pathogens

Disease Or Pathogen	Article Number		
Acinetobacter sp. (Brison & Prévot)	29	Cylindrosporium shepherdiae Sacc.	13
Agrobacterium radiobacter (Beijerinck & Van Delden) Conn	30	Cylindrosporium sp. Unger	9
Agrobacterium sp. Conn	29	Cylindrosporium toxicodendri Curt. ex Ell. & Ev.	13
Agrobacterium tumefaciens (Smith & Townsend) Conn	30, 62	Cytospora canker	21, 60
Air pollutant damage	14	Cytospora chrysosperma Pers. ex Fr.	21, 25
Anthracnose diseases	7	Cytospora kunzei Sacc.	60
Antrodia juniperina (Murr.) Niem. & Ryv.	61	Cytospora sp. Ehrenberg	3, 21, 23, 42
Apiosporina morbosa (Schw.) Arx (Syn. <i>Dibotryon morbosum</i> (Schw.) Th. & Syd.)	32	Daedalia ambigua Berk. (<i>Daedalea elegans</i> Spreng.:Fr.)	28
Armillaria root rot	45, 48	Daedalia confragosa Bolt. (<i>Daedaleopsis confragosa</i> (Bolt.:Fr.) Schroet.)	28
Bacillus sp.	29	Daedalia stem decay	28, 61
Black knot	32	Daedalio unicolor Bull. (<i>Cerrena unicolor</i> (Bull.:Fr.) Murr.)	28
Black leaf spot	7	Datronia scutellata (Syn. <i>Fomes scutellatus</i> (Schw.) Cooke)	37
Blossom blight	34	Diaporthe eres Nits.	23
Botryodiplodia canker	16, 19, 20	Diaporthe medusaea N.T.	23
Botryodiplodia disease	18	Diaporthe santonensis Sacc.	23
Botryodiplodia hypodermia (Sacc.) Petr. & Syd.	16, 17	Dibotryon morbosum (Schw.) Th. & Syd.	32
Botryodiplodia theobromae Pat.	17, 18, 19,	Diplodia blight	58
Botryosphaeria rhodina (Berk. and Curt.) v. Arx	20	Diplodia notatalensis P. Evans	20
Brown rot canker	20	Diplodia pinea (Desm.) Kickx (<i>Sphaeropsis sapinea</i> (Fr.) Dyke & Sutton)	58, 63
Brown rot fungi	34, 61	Diplodia theobromae (Pat.) Now.	20
Brown spot needle blight	37	Dothichiza canker	24
Bursaphelenchus xylophilus (Steiner & Buhrer) Nickle	53	Dothichiza populea Sacc. & Br.	24
Cedar apple rust	63	Dothiorella wilt	42
Cephalosporium wilt	39, 62	Dothiorella ulmi Verrall & May	42
Cerambycids	42	Dothistroma blight	54
Ceratocystis fogacearum (Bretz) Hunt	63	Dothistroma pini Hulbary	54
Ceratocystis ulmi (Buism.) C. Moreau (Syn. <i>Ophiostoma ulmi</i> (Buism.)	45	Dutch elm disease	7, 41
Cercospora blight	41	Elm dieback	42
Cercospora sp. Fr.	51	Elm yellows	41, 43
<i>C. sequoiae</i> Ell. & Ev.	51	Endocronartium harknessii (J.P. Moore) Y. Hirats.	57
<i>C. sequoiae</i> var. <i>juniperi</i> Ell. & Ev.	51	Enterobacter cloacae (Jordan) Hormaeche & Edwards (= <i>Erwinia nimipressuralis</i> Carter)	29
Cherry leaf spot	51	Environmental stress	40
Chlorosis	51	Erwinia amylovora (Burrill) Winslow et al.	35
Cocomyces hiemalis Higgins	51	Erwinia nimipressuralis Carter (See <i>E. cloacae</i>)	29
Cocomyces lutescens Higgins	9	Fire blight (See <i>E. amylovora</i>)	35
Collar blight	15	<i>Fomes fomentarius</i> (L. ex Fr.) Kickx	37
Contact herbicides	9	<i>Fomitopsis cajanderi</i> (Karst.) Kolt. & Pouz.	
Crown gall	35	(Syn. <i>Fomes subroseus</i> (Weir) Overh.)	37
Cryptodiaporthe populea (Sacc.) Butin	14	<i>Fomitopsis melliae</i> (Underw.) Gilb.	35
Cryptosphaeria canker	30	(Syn. <i>Fomes melliae</i> (Underw.) Murr.)	35
Cryptosphaeria populina (Pers.) Sacc.	24	Fruit blight	3, 23
Cyclaneusma minus (Butin) DiCosmo, Peredot & Minter	25	Fusarium sp. Link	23
Cylindrosporium leaf spot	25	<i>Fusarium oxysporum</i> f. sp. <i>perniciosum</i> (Hept.) Toole	46
	55	<i>Ganoderma applanatum</i> (Pers.:Wallr.) Pat.	
	13	(Syn. <i>Fomes applanatus</i> (Per. ex Wallr.)	37

Gnoderma lobatum (Schw.) Atk.			
(Syn. <i>Fomes lobatus</i> (Schw.) Cooke)			
Gloeosporium apocryptum Ell. & Ev.	37	Nectria cinnabarinia Tode ex Fr.	17, 27, 40
Gloeosporium aridum Ell. & Ev.	7	Nematodes	49, 63
Gloeosporium leaf spot and anthracnose	7	Dagger, <i>Xiphinema americanum</i> Cobb	49
Gnomonia leaf spot	7	Lance, <i>Hoplolaimus</i> sp. Cobb	49
Gnomonia leptostyla (Fr.) Ces. & deNot.	7	Root-knot, <i>Meloidogyne</i> spp. Goeldi	49
Gnomonia platani Kleb.	7	Root-lesion, <i>Pratylenchus</i> spp. Filipjev	49
Gnomonia quercina Kleb.	7	Spiral, <i>Helicotylenchus</i> spp. Steiner (Golden)	49
Gnomonia tilice Kleb.	7	Non-hormonal type herbicides	14
Gnomonia ulmea (Schw.) Thum.	7	Oakleaf blister	8
Guignardia sp. Viala & Ravaz	7	Oak wilt	45
Gymnosporangium rusts	4	Oxyporus populinus (Schum. Fr.) Donk	
Gymnosporangium sp. Hedwig	62, 63	(Syn. <i>Fomes connatus</i> (Weinm.) Gill.)	37
G. bethelii Kern.	62	Paraquat	14
G. claviforme (Jacq.) D.C.	62	Peach leaf curl	8
G. clavipes C. & P.	62	Perenniporia fraxinophila	
G. connersii	62	(Syn. <i>Fomes fraxinophilus</i> (Peck) Sacc.)	37
G. corniculans Kern.	62	Perenniporia ellisiana (Syn. <i>Fomes ellisianus</i> Anderson)	37
G. exiguum Kern.	62	Perenniporia ohienense (Syn. <i>Fomes ohiensis</i> (Berk.) Murr.)	37
G. globosum Farl.	62	Peridermium harknessii J.P. Moore	57
G. gracile Pat.	62	Phellinus conchatus (Pers. ex Fr.) Quél.	38
G. juniperi-virginianae Schw.	62	Phellinus everhartii (Ell. & Gall.) Ames	38
G. nelsonii Arth.	62	Phellinus gilvus (Schw.) Pat.	38
G. nidus-avis Thaxt.	62	Phellinus igniarius (L ex Fr.) Quél.	38
G. trachysorum Kern.	62	Phellinus punctatus (Fr.) Pilát.	38
Gyrostroma austro-americanum Seeler	27	Phellinus ribis (Schum. ex Fr.) Quél.	38
Heart rot - Daedalea and Trametes	28	Phellinus robineae (Murr.) A. Ames	
Helicotylenchus spp. Steiner (Golden)	49	(Syn. <i>Fomes rimosus</i> (Berk.) Cooke)	38
Herbicide damage	14	Phellinus stem decays	38
Herpobasidium deformans Gould	14	Phellinus tremulae (Bond.) Bond. & Boriss.	38
Honeysuckle leaf blight	11	Phellinus tuberculosus (Bawmg) Niemala	
Hoplolaimus sp. Cobb	11	(Syn. <i>Phellinus pomaceus</i> (Pers. ex S.F. Gray) Maire)	38
Hormonal herbicides	49	Phellinus weiriensis (Bres.) Gilbn.	38
Hypoxyylon atropunctatum (Schw. ex Fr.) Cke.	14	Phenoxy herbicides	14
Hypoxyylon canker	31	Phloem necrosis	43
Hypoxyylon mammatum (Wahl.) Miller	26, 31	Phoma sp. (Fr.) Desmaziere	42
Insolibasidium deformans	26	Phomopsis blight	50, 51
Kabatina juniperi Schneider & v. Arx	11	Phomopsis canker	19, 23
Kabatina thujae Schneider & v. Arx	52	Phomopsis arnoldiae Sutton (Syn. <i>Phomopsis eloeogni</i>)	17, 19
Kabatina thujae var. juniperi (Schneider & v. Arx) Morelet	52	Phomopsis eloeogni (Carter & Sacamano) Arnold & Carter	17, 19
Kabatina tip blight	52	Phomopsis juniperovora Hahn	50
Lasiodiplodia theobromae (Pat.) Griffon & Maubl.	51, 52	Phomopsis macrospora Kobayashi & Chiba	23
Leaf blisters	20	Phomopsis sp. Sacc.	3
Leaf rust	8	Phyllosticta fraxini Ell. & Mort.	6
Leaf scorch	1	Phyllosticta gallarum Theum.	4
Leaf spots	14, 15	Phyllosticta leaf spot	4
Leucocytospora kunzei Hohnel	9	Phyllosticta minima (Berk. & Curt.) Ell. & Ev.	4
Leucostoma kunzei [Nitschke] Hohnel	60	Phyllosticta viridis Ell. & Kell.	6
Liberella sp. Desm.	60	Phymatotrichum root rot	47
Maple tar spot	25	Phymatotrichum omnivorum (Shear) Duggar	47
Marssonina leaf blotch	5	Piggotia fraxini B. & C.	6
Marssonina leaf spot	24	Plum pockets	8, 33
Marssonina sp.	2	Pine wilt disease	63
<i>M. brunnea</i> (Ell. & Ev.) Sacc.	2	Pinewood nematode	63
<i>M. fraxini</i> Ell. & Davis	6	Poria stem decays	11, 12
<i>M. populi</i> (Lib.) Magn.	2	Powdery mildew	12
MCPA herbicide damage	14	Powdery mildew fungus	11, 12
Melampsora medusae Thuem.	1	Pratylenchus sp. Filipjev	49
Melampsora rust	24	<i>P. penetrans</i> (Cobb) Filipjev & Stekhoven	64
Melampsora sp. Castaigne	24	<i>Pseudomonas</i> sp. Migula	29
Melasmia acerina Lev.	24	<i>Pseudomonas syringae</i> pv. <i>syringae</i> (Van Hall) Dye	9
Meloidogyne spp. Goeldi	5	Quince rust	39
Microsphaera alni D.C. ex Wint.	49	Red band disease	54
Mimosa wilt	12	Rhizosphaera kalkhoffii Bub.	56
Monilinia fructicola (Wint.) Honey	46	Rhizosphaera needle cast	56
Mycoplasma	34	Rhytisma acerinum Pers. ex Fr.	5
Mycoplasma-like organisms (MLO)	10	Root-lesion nematodes	64
Mycosphaerella effigurata (Schw.) House	36, 43	Rust fungi	62
Mycosphaerella fraxinicola (Schw.) House	6	Scirrhia acicola (Dearn.) Siggers	53
Mycosphaerella leaf spot	6	Scirrhia pini Funk & Parker	54
Mycosphaerella populorum Thompson	6	Sclerotina fructicola (Wint.) Rehm.	34
Naemacyclus minor Butin	3, 22	Septoria aceris (Lib.) Berk. & Br.	3
Naemacyclus needle cast	55	Septoria canker	22
Native elm wilt	55	Septoria caraganae (Jacz.) Diel.	3
	42	Septoria leaf disease	23
		Septoria leaf spots	3

Septoria musiva Peck	3, 22	Trametes stem decay	28
Sirococcus shoot blight	52	Trametes suaveolens (L.:Fr.) Fr.	28
Sirococcus strobilinus Preuss	59	Trametes trogii Berk. (<i>Funalia trogii</i> (Berk.) Bond. & Sing.)	28
Slime flux	29	Tubercularia canker	17, 19
Sphaeropsis sp. Léveillé	42	Tubercularia ulmea Carter	17, 19
Sphaerotheca phytophila Kell. & Swing.	36	Tubercularia vulgaris Tode: Fr.	17, 27, 40
Stegophora ulmea (Schw.: Fr.) Syd. & Syd.	7	Twig blight	34
Sycamore anthracnose	7	Valsa kunzei Fr.	60
Taphrina caerulescens (Mont. & Desm.) Tul.	8	Valsa sorida Nits.	21
Taphrina communis (Sadeb.) Grs.	33	Valsa spp.	21
Taphrina pruni (Fckl.) Tul.	33	Verticillium sp. Nees	44
Tar spot	5	<i>V. albo-atrum</i> Reinke & Berth.	44
Thyronectria austro-americana (Speg.) Seeler	27	<i>V. dalhiae</i> Kleb.	44
Thyronectria canker	27	Verticillium wilt	42, 44
Trametes brown rot	30	Viruses	36
Trametes hispida Bagl. (<i>Funalia gallica</i> (Fr.) Bond. & Sing)	28	Western gall rust	4, 57
Trametes malicola Berk. & Curt. (<i>Antrodia malicola</i> (Berk. & Curt.) Donk)	28	Western X-disease	10
Trametes mollis (Sommert.) Fr. (<i>Datronia mollis</i> (Sommert.:Fr.) Donk)	28	Wetwood	29
Trametes rigida Berk. & Mont. (<i>Coriolus floccosa</i> (Jungh.) Ryv.)	28	White-mottled heart rot	30
Trametes septim Berk. (<i>Antrodia albido</i> (Fr.:Fr.) Donk)	28	White rot fungi	37
		Witches'-broom	36
		Xanthomonas sp. Dowson	29
		Xiphinema americanum Cobb	49
		2,4-D Herbicide damage	14

Index To Insect Vectors

Insect	Article Number
Beetles	
Lesser European elm bark, <i>Scolytus multistriatus</i> (Marsham)	41
Native elm bark, <i>Hylurgopinus rufipes</i> Eichh.	41
Oak bark, <i>Pseudopityophthorus minutissimum</i> (Zimm.)	45
Sap-feeding, <i>Nitidulidae</i>	45
<i>Colladonus geminatus</i> (Van Duzee)	10
<i>Colladonus montanus</i> (Van Duzee)	10
<i>Contarinia</i> sp.	52
<i>Dichomerus</i> sp.	52
Eriophyid mite, <i>Aceria</i> sp.	36
Leafhoppers, <i>Cicadellidae</i>	10, 43
<i>Monochamus</i> sp.	63
Pine sawyer, <i>M. alternatus</i> (Hope)	63
<i>M. carolinensis</i> (Oliv.)	63
<i>M. mutator</i> (Say)	63
Obtuse sawyer, <i>M. obtusus</i> (Casey)	63
Whitespotted pine sawyer, <i>M. scutellatus</i> (Say)	63
Southern pine sawyer, <i>M. titillator</i> (F.)	63
Plum curculio, <i>Conotrachelus nenuphar</i> (Herbst.)	34
Spittlebugs, <i>Cercopidae</i>	43
Stink bug, <i>Dixippus</i> sp.	34

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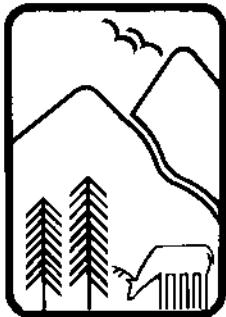
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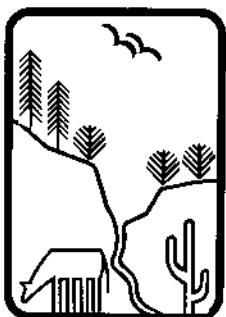
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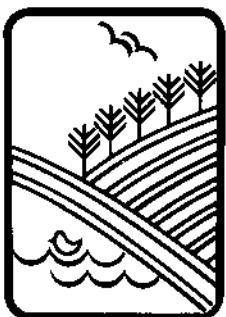
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Rocky
Mountains



Southwest



Great
Plains

U.S. Department of Agriculture
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Rocky Mountain Forest and Range Experiment Station

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