Glossary

Abiotic. Of or pertaining to the nonliving; inanimate.

Abiotic disease. Disease resulting from nonliving agents.

Acervulus (pl., acervuli). A small cushionlike asexual fruiting body, without a covering of fungus tissue, which produces conidia in a moist mass that escape through a break in the host tissue.

Active ingredient. The active component in a formulated product.

Aeciospore. A nonrepeating, asexual spore, usually orange or yellow, produced by some rust fungi. It is incapable of infecting the host on which it is produced.

Alpha-spore. A fertile spore produced by the asexual state of fungi in the Diaporthaceae, especially the genus Phomopsis. Spores are fusoid to oblong and are usually produced together with beta spores.

Alternate host. Either of the two different types of host plants required by a heteroecious fungus to complete its life cycle. The heteroecious white pine blister rust fungus, for example, requires white pine and gooseberry.

Anthracnose. A leaf, twig, or fruit disease characterized by necrotic spots or lesions and generally caused by fungi that produce spores in an acervulus.

Apiculus. Short projection at one end of a fungal spore.

Apothecium (pl., apothecia). A cuplike or saucerlike sexual fruiting body that produces ascospores.

Ascogenous state. The ascospore-producing state of an Ascomycete.

Ascomycete. A large group of fungi characterized by the formation of spores, usually eight in number, in a saclike structure called an ascus.

Ascus (pl., asci). In an Ascomycete, the saclike cell of the sexual state, in which the spores are produced.

Ascospore. A spore produced in the sexual fruiting body of an Ascomycete.

Asexual state. Either a vegetative state or a reproductive state in the life cycle of a fungus in which nuclear fusion is absent and in which reproductive spores are produced by mitosis or simple nuclear division. Synonym: imperfect state.

Autoecious. Pertaining to a fungus that completes its life cycle on one host.

Basidiomycete. Member of a large group of fungi characterized by the production of external spores, usually four, on a basidium.

Basidiospore. The spore produced by the sexual state of the Basidiomycetes.

Basidium (pl., basidia). A cell, usually terminal, in which nuclear fusion and meiosis occur and on which haploid spores (usually four) are produced.

Beta-spore. An infertile spore form produced by certain fungi in the family Diaporthaceae, especially in the genus Phomopsis. Spores are slender and usually curved or bent and are produced together with alpha-spores.

Binucleate. Having two nuclei.

Biocide. A wide-spectrum poison that kills a great number and variety of organisms.

Biotic. Of or pertaining to a living organism.

Blight. A plant disease that causes rapid death or dieback of a plant or part of a plant.

Blotch. A large, irregular necrotic area on a leaf or fruit.

Bordeaux mixture. A broad-spectrum fungicide containing copper sulfate, lime, and water.

Borer. Insect or insect larva that tunnels within the wood of trees.

Brood. All the individuals that hatch at about the same time from eggs laid by one series of parents and that normally mature at about the same time.

Broom. An abnormally dense mass of host branches and foliage in which the typical growth pattern is replaced by a disordered cluster of foliage at the branch tips.

Bug. Any insect of the order Hemiptera characterized by sucking mouthparts and two pairs of wings.

Callus. A protective tissue of thin-walled cells developed around the edges of wounds or necrotic lesions.

Cambium. The layer of cells that lies between and gives rise by cell division to the secondary xylem (wood) and the secondary phloem (inner bark).

Canker. A well-defined, relatively localized necrotic lesion primarily of the bark and cambium.

Casting. Premature loss of leaves or needles.

Caterpillar. The wormlike stage of a moth or butterfly.

Causal agent. An organism, such as a fungus, bacterium, or virus, that produces a disease.

Chlamydospore. A thick-walled asexual resting spore formed directly from hyphal cells. Typically formed by many soilborne fungi.

Chlorosis. An abnormal yellowing of the foliage.

Chlorotic. Abnormally yellow.

Cirrhus (pl., cirrhi). A moist curllike mass of spores that issues from a fungal fruiting body. Sometimes referred to as spore horns or tendrils.

Clavate. Clublike in shape, narrowing toward its base.

Clone. All descendents derived from a single individual by asexual reproduction, or parthenogenesis.

Cocoon. An envelope, often largely of silk, which an insect larva forms around itself as protection for the pupal stage.

Coenocytic. Referring to the multinucleate vegetative structures (for example, mycelium) in which the cytoplasm is not separated by cross walls. Synonym: nonseptate.

Collar rot. Rotting of the stem at or near ground or soil level.

Colonize. To establish an infection within a host or part of a host.

Complex disease. A disease caused by the interaction of two or more pathogens.

Conidiophore. A specialized hypha that produces asexual spores called conidia.

Conidium (pl., conidia). An asexual spore of a fungus, typically produced at the end of a specialized hypha called a conidiophore.

Cortex. The primary tissue found between the epidermis and the stele of a stem or root.

Cotyledon. The food-storing portion of an embryo; also known as the seed leaf.

Cover crop. A crop, natural or introduced, that is grown alternately with the main crop. Used to prevent erosion and to improve soil characteristics.

Cull. A seedling that is rejected because it does not meet certain specifications.

Cultural practices. A general term for those routine nursery operations required to help seedling growth, for example, plowing, watering, weeding, and so forth.

Cuneate. Wedge-shaped, thinner at one end than the other.

Damping-off. The killing of the seedling by microorganisms before emergence (preemergence) or the collapse of the seedling stem at ground level immediately after emergence (postemergence).

Decay. The decomposition of plant tissue by fungi and other microorganisms.

Decline. The gradual reduction in health and vigor of a plant.

Desiccation. Drying.

Dieback. The progressive dying of the stem and branches from the tip downward.

Disease. Unfavorable change in the normal function or form of a plant, caused by a pathogenic agent or environmental factors.

Disease cycle. The chain of events involved in disease development, including the stage of development of the pathogen and effect of the disease on the host.

Distal. Near or toward the free end of any appendage; that part of a segment farthest from the body.

Echinulate. Having many small spines.

Ectomycorrhizae. A type of mycorrhizal association in which the fungal component grows between and/or external to the cortical cells of the plant root.

Ectoparasite. A parasite that lives outside its host.

Emergence. The escape of a winged adult from its cocoon, pupal case, or nymph.

Endemic. Native to the country or region; existing at low, stable population levels.

Endomycorrhizae. A type of mycorrhizal association in which the fungal component invades the cortical cells of the root. Also called vesicular- arbuscular (VA) mycorrhizae.

Endoparasite. A parasite that lives within its host.

Epidemic. Pertaining to a disease that has built up rapidly and reached injurious levels.

Epidermis. The outermost layer of cells on the primary plant body.

Exotic. Introduced from another country or area.

Exudate. Matter that oozes out or is secreted.

Facultative parasite. An organism that is normally saprophytic but that is capable of living as a parasite.

Fallow. Cultivated land allowed to lie idle or unplanted during the growing season.

Field capacity. The maximum amount of water a soil can hold against the force of gravity.

Filiform. Long and slender; threadlike.

Flaccid. Limp or flabby; non-turgid.

Flag. On a living plant, a conspicuous dead branch with the foliage attached.

Frass. With defoliators, solid larval excrement; with wood-boring insects, wood fragments usually mixed with excrement.

Fruiting body. Any of a number of kinds of fungal reproductive structures that produce spores.

Fumigation. Application of vapor or gas, especially for the purpose of disinfecting or destroying pests.

Fungus (pl., fungi). An undifferentiated plant lacking chlorophyll and conductive tissues.

Fungi Imperfecti. A group of miscellaneous fungi that lack a known sexual state and therefore are classified according to the characteristics of their asexual states.

Fusoid. Spindle-shaped; tapering toward each end.

Gall. An abnormal swelling on a plant caused by certain fungi, bacteria, insects, or nematodes.

Gallery. Passage made in wood by an insect.

Geniculate. Bent abruptly at an angle, like a knee.

Germ tube. The hypha produced by a germinated fungus spore, which with continued growth develops into the mycelium.

Girdle. To destroy or remove the tissue, particularly living tissue, in a rough ring around a stem, branch, or root, causing a disruption of the xylem and the phloem.

Globose. In the shape of a globe or ball.

Hartig net. The intercellular hyphal network formed by a mycorrhizal fungus on the surface of a root.

Heteroecious. Pertaining to fungi, especially the rusts, that must pass part of their life cycle on each of two different, unrelated hosts.

Host. The plant or animal that affords nourishment to a parasite.

Host range. All hosts that a particular pathogen or insect attacks.

Host-specific. A term used to describe pathogens or insects that attack only certain species of hosts.

Hyaline. Transparent; having no color.

Hypha (pl., hyphae). One of the filamentous threads that make up the fungus body.

Hypocotyl. That part of the axis of a developing embryo just below the attachment of the cotyledons.

Hysterothecium. A specialized fruiting body of the Ascomycetes that is usually shield shaped, covered, and opens at maturity by a narrow, lengthwise slit.

Incite. To cause a disease.

Infect. To invade and cause a disease.

Infest. To attack, by animals (especially nematodes or insects). Also to become present within an area in such numbers as to constitute a disease or insect 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 that initially infect a host.

Instar. The period or stage between molts in larvae, numbered to designate the various periods. The first instar, for example, is the period between the egg and the first molt.

Intercellular. Lying or growing between the cells.

Intracellular. Lying or growing within the cells.

Lancet. Any piercing mouth structure.

Larva (pl., larvae). The immature stage, between the egg and pupa, of an insect which undergoes complete metamorphosis (egg, larva, pupa, adult).

Latent infection. An established infection without visual symptoms.

Leaf spot. A leaf disease characterized by numerous distinct lesions.

Lesion. A well-defined, localized area of diseased tissue.

Longicorn. An insect having antennae as long as or longer than the body; specifically belonging to the family Cerambycidae.

Macroconidia. The larger of two types of conidia produced by certain fungi, such as Fusarium spp.

Macrocyclic. Pertaining to the life cycle of a rust fungus containing all possible reproductive states, that is, pycnia, aecia, uredinia, and telia.

Mandible. The first pair of jaws of insects.

Microconidia. The smaller of the two types of conidia produced by certain fungi.

Microcyclic. Pertaining to the life cycle of a rust fungus containing pycnia and telia or telia only.

Micron. A unit of measurement; 1/1,000 millimeter, 1/25,400 inch.

Microsclerotium. Small, dense aggregate of darkly pigmented, thick-walled hyphal cells, which serve as resting structures.

Mildew. A plant disease characterized by a coating of mycelium or spores or both on the surface of the affected parts.

Mycelium (pl., mycelia). A mass of hyphae that forms the vegetative, filamentous body of a fungus.

Mycoplasma. A wall-less prokaryotic microorganism of the order Mollicutes.

Mycorrhiza (pl., mycorrhizae). A symbiotic association between a fungus and the roots of higher plants that aids in the uptake of nutrients by the plant.

Necrosis. Death of plant cells, usually resulting in darkening of the tissue.

Needle cast. A disease of conifer needles that usually results in premature needle drop.

Nymph. Immature stage of certain insects having incomplete metamorphosis, (egg, nymph, adult).

Obclavate. Inversely clavate; widest near the base.

Obligate parasite. An organism that can survive only in living tissue.

Oospore. The sexual resting spore produced by certain fungi in the class Phycomycetes.

Oviposition. The act of depositing eggs.

Parthenogenesis. Reproduction by growth of egg cells without male fertilization.

Pathogen. An organism that causes a disease.

Pathogenic. Capable of causing a disease.

Parasite. An organism living on or nourished by another living organism.

Periderm. The outer, protective layer of stems, consisting of the phellogen, phellum, and phelloderm.

Perithecium (pl., perithecia). A closed, flasklike sexual fruiting body in which ascospores are produced. Formed by certain Ascomycetes.

Phellum. The suberized tissue produced by the cork cambium in the bark.

Phelloderm. Secondary tissue produced by and to the inside of the cork cambium.

Phialide. A cell that develops one or more open ends from which a succession of conidia emerge without increasing the length of the cell itself.

Phloem. The tissues of the inner bark responsible for the transport of photosynthates.

Photolytic. Pertaining to the chemical decomposition attributed to radiant energy (sunlight).

Phycomycete. A class of lower fungi that includes the water molds.

Phytotoxic. A chemical that is toxic to plants.

Polyphialides. A phialide with more than one open end.

Pupa (pl., pupae). The resting, inactive stage of an insect between larva and adult.

Pycnidium (pl., pycnidia). A fungal fruiting body, typically flask shaped, in which asexual spores are produced.

Pycnidiospore. An asexual spore produced in a pycnidium.

Pycniospore. A specialized spore, produced in a pycnium by rust fungi, that functions as male gamete. Synonym: spermatium.

Pycnium (pl., pycnia). A structure developed by rust fungi that produces tiny, one-celled spores which function as male gametes.

Resistant. Able to withstand, without serous injury, attack by an organism or damage by a nonliving agency, but not immune from such attack.

Root crown. The uppermost portion of the root system where the major roots join together at the base of the stem.

Rot. See Decay.

Rust. A disease caused by certain fungi in the Basidiomycetes and usually characterized by the production of large numbers of reddish (rusty) spores on foliage, branches, or stems.

Saprophyte. An organism that uses dead organic material as food.

Sclerotium (pl., sclerotia). A firm, frequently rounded, multicellular resting structure produced by fungi.

Scorch. The sudden browning of large, indefinite areas on a leaf; caused by infection, chemical injury, or unfavorable weather conditions.

Septate. Having cross walls, or septa, that divide hyphae or spores into a number of separate cells.

Septum (pl., septa). The cross walls that divide a hypha or spore into two or more distinct cells.

Sexual state. The state in the life cycle of a fungus in which spores are produced after sexual fusion. Synonym: perfect state.

Sign. Vegetative or fruiting structures of the casual organism on a diseased plant. Along with symptoms, signs are used to diagnose cause(s) of disease.

Sporangium (pl., sporangia). A cell that contains one or more asexual spores.

Spore. The reproductive structure of the fungi and other lower plants.

Sporodochium (pl., sporodochia). A conidial fruiting body in which the spore mass is supported by a cushionlike mass of short conidiophores.

Sporulate. To produce spores.

Spreader. A chemical additive used in sprays to improve their distribution on foliage.

Stage. Any definite period in the development of an insect, e.g., egg, larva, etc.

State. One spore type produced by a fungus which produces two or more spore types during its life cycle. Sometimes referred to as "stage."

Sticker. A chemical additive used in sprays to improve their retention on plant surfaces.

Stoma (pl., stomata). A pore in the leaf epidermis, surrounded by two guard cells, leading into an intercellular space within the plant.

Stool. A plant from which offsets may be taken or with several stems arising together; a clump of roots or root stocks that may be used in propagation.

Stroma (pl., stromata). A cushionlike body on or in which fungus fruiting bodies are formed.

Sublethal infection. An infection that does not result in death of the host.

Susceptible. Unable to withstand, without serious injury, attack by an organism or damage by a nonliving agency.

Symptom. The visual evidence of disturbance in the normal development and function of a host plant, e.g., chlorosis, necrosis, galls, and stunting.

Systemic. Affecting or distributed throughout the whole plant.

Taproot. The primary descending root of a plant from which the secondary, or lateral, roots branch.

Teliospore. The sexual spore state of a rust fungus from which the basidium and basidiospores arise upon germination.

Telium (pl., telia). The structure in rust fungi that gives rise to teliospores.

Thorax. The second or intermediate region of the insect body bearing the true legs and wings.

Translocation. The transfer of food materials or metabolites within a plant.

Urediniospore. A binucleate, asexual spore produced by some rust fungi, which is capable of reinfecting the host on which it is formed. Sometimes called urediospore.

Uredinium (pl., uredinia). The structure in rust fungi that gives rise to urediniospores. Sometimes called uredium.

Vegetative. Concerned with growth and development, as distinguished from reproductive functions.

Vesicle. A bladderlike sac, the swollen apex of a conidiophore or hypha.

Viable. Capable of becoming normally active.

Wilt. A type of plant disease characterized by the sudden wilting and collapse of the succulent parts of affected plants.

Xylem. The woody water-conducting tissues of stems and roots.

Zoospore. A motile free-swimming spore produced by the water molds.