

Absorption : Process where substances, such as water and minerals, are moved into the plant.

Accumulative pesticides: persistent pesticides that can build up in the bodies of animals, including humans.

Acid (reaction of soil): soil with a pH of less than 7. Most vegetables grow well at 6.5 to 6.8 which is slightly acidic; some, however, prefer more or less acid in the soil. The pH is lowered by adding sulfur or raised by adding calcium carbonate (lime) (see also pH and alkaline).

Active ingredient: chemical in a pesticide which actually kills the pest.

Adjuvant: a chemical added to a pesticide formulation or mix to enhance its effectiveness or safety.

Adventitious: arising at a site other than the terminal or axillary position.

Aeration: providing gaseous exchange around plant roots: techniques of loosening soil for turf-grass.

Aggregate fruit: fruit from a single flower with many ovaries, e.g. strawberry.

Alkaline (reaction of soil): soil with pH of above 7. Soil is made more alkaline by adding limestone (calcium carbonate) in significant quantities (see also pH, acid and lime).

Alternate leaf: arranged in alternate steps along the stem, with only one leaf at each node.

Annual plant: a plant which completes its life cycle in one year. It grows flowers, produces seed, and dies within one growing season, e.g. beans, corn, cucumber, squash, etc.

Anther: upper portion of a stamen containing the pollen grains (see stamen).

Anthracnose: diseases caused by a certain group of fungi that produce acervuli (a type of fruiting body – a small blister on the lesion surface which in moist air may become pink from spore masses); characterized by dead spots on leaves, twigs or fruit.

Asexual propagation: propagation by using part of the body tissue of the parent plant, without sexual union.

Axil: the angle between the main stalk and a leaf twig or branch arising from the stalk.

Axillary bud: lateral bud arising in the leaf axil.

-B-

Bacteria: a minute, single-celled organism, much smaller and simpler than fungi usually visible as bacterial slime or ooze, but more commonly not seen without a microscope.

Bedding plants: plants sold in flats or packs to be used in flower beds or vegetable gardens; usually annual plants.

Biennial plant: a plant which completes its life cycle in two growing seasons; vegetative structures and food storage organs are produced the first season; flowers, fruit and seed are usually produced the second season; e.g. cabbage, onion, parsley, etc.

Binomial nomenclature: system of naming plants scientifically by the Latin genus and species.

Biodegradable: refers to a material which decomposes (breaks down) readily by normal decay processes (insects, microorganisms).

Biological pest control: elimination or control of pests by use of natural enemies or diseases of the pest.

Blade (of leaf): the expanded, thin structure on either side of the midrib (central vein of a leaf).

Blanching: (a) using soil, paper or other material to keep light from certain parts of a vegetable to reduce formation of chlorophyll so that it will maintain its white coloring; cauliflower, celery, and sometimes asparagus are blanched; (b) heating vegetables to inactivate enzymes before processing.

Blight: general killing of plant parts.

Blood meal: dried, powdered blood collected from beef processors and used as a fertilizer. It is very rich in nitrogen.

Blotch: large, superficially discolored areas of irregular shape on leaves, shoots, fruits and stem.

Bolting: is the production of flower and seed stalk by vegetable plants (generally triggered by long days at temperatures above crop optimum). Seed stalks produced by spinach, lettuce, radishes, celery or other such plants are undesirable since the plants are grown for parts other than seed; development of leaves and roots slows down in favor of the production of seed.

Bonsai: is an art form that stems from ancient oriental culture; the process of severely dwarfing trees through careful pruning of both root and shoots over many years, creating a miniature tree that is shaped to create the illusion of age.

Bracts: are specialized leaves, often brightly colored e.g. the showy structures on dogwoods and poinsettias are bracts, not petals.

Branch: a stem that is more than one year old and, typically, has lateral stems.

Branch collar: the swollen area of trunk tissue that forms around the base of a branch.

Broadcasting: is scattering seed, fertilizer or other material evenly over the soil surface.

Bud: an undeveloped shoot from which embryonic leaves or flower parts arise.

Budding: is the union of one bud and a small piece of bark from the scion with a rootstock.

Bulb: plant storage structure which usually develops underground and is made of a compressed stem surrounded by fleshy scales e.g. onion, tulip.

Buttoning: is the failure of cauliflower heads to gain in size after reaching about an inch in diameter and is usually due to transplant stress or heat stress during the head formation period.

-C-

Callus: protective covering that forms over a wounded plant surface.

Cambium: a meristem, which is a site of cell division and active growth, located between the xylem and phloem.

Cane: a stem that has a relatively large pith, and usually lives only one or two years.

Canker: necrotic (dead) areas in the bark of woody or herbaceous stems or twigs.

Capillary action: adhesion of water to other particles e.g. the attraction of soil particles to water, which allows water to move up or down in the soil.

Chelate: chemical "claws" that help to hold metal ions in solution so the plant can absorb them.

Chitting: controlled sprouting of a seed potato.

Chlorophyll: green pigment which traps light energy and has a vital role in photosynthesis and gives plants their green color.

Chlorosis (chlorotic): yellowing of leaves due to lack of chlorophyll and is usually caused by a nutrient deficiency or disease.

Clay: finest soil particle.

Cloche: traditionally, a bell-shaped glass jar set over delicate plants to protect them from the elements; portable structures that shelter plants from drying winds and cold air.

Clones: plants that are genetically identical to their parent and can only be propagated asexually.

Cold frame: bottomless box (usually of wood) built on the ground with a removable top made of glass or plastic, used to protect, harden-off, or propagate plants.

Cole crops: plants of the cabbage family, including broccoli, cauliflower, Brussels sprouts, kale, kohlrabi, turnips, and others.

Companion crops: plants which are grown in the same area at the same time for the purpose of mutual benefits; for example, beans may be grown with corn – the corn uses nitrogen fixed by the bean plants, and the bean use the corn stalks to climb on.

Complete flower: contains stamen, pistils, petals, and sepals.

Compost: a decomposed mixture of organic wastes and other materials which, when added to soil, acts as a soil-builder.

Compound leaf: a leaf composed of several separate leaflets arising from the same petiole.

Conk: large, woody, shelf-like fruiting body of many of the wood decay (bracket) fungi.

Contour planting: the practice of planting in rows that follow the contours of a slope or grade in order to control erosion and hold water.

Controlled-release: also called timed-release; chemical fertilizers which break down slowly so that all nutrients are not released at once.

Cool-weather crops: vegetables which grow best in cool weather, usually having low heat tolerance; e.g. spinach, lettuce, cabbage, etc.

Cooperative Extension: a government organization that provides agricultural and home economics information to residents.

Corm: a solid, swollen, underground stem whose scales have been reduced to a dry, leaf-like covering.

Cottonseed meal: a by-product of cotton manufacturing used as a fertilizer; acid in reaction.

Cotyledon: leaf of a plant embryo (also known as a seed leaf); it is the first leaf appearing after radical emergence and contains stored food for the seedling's early life (see also dicot and monocot).

Cover crop: crop grown to add organic matter to the soil and help prevent soil erosion; also known as "green manure." Cover crops are usually sown in fall and turned under in early spring; commonly used are clover and winter rye.

Crop rotation: practice of planting vegetables in different places within the garden each year or within the same growing season to help prevent buildup of insect and disease problems in the soil, as well as help prevent soil from losing the same nutrients year after year (see rotation).

Cross pollination: transfer of pollen from the male parts of a flower of one plant to the female flower parts of another.

Crown: a type of compressed stem having leaves and flowers on short internodes; located at soil level so that roots support them up right and the central growing point is never covered with soil.

Cultivar: a cultivated variety; specific type of horticultural plant not found outside of cultivation.

Cultivation: (a.) a broad term referring to the planting, tending, and harvesting of crops; (b.) tilling or otherwise loosening the soil after plants have appeared above ground, usually to reduce weed growth and prevent formation of a hard crust on the soil surface.

Cultural control: control of pests through cultural practices such as crop rotation, removal of weeds and old crop residues in which pests breed, etc.

Cuticle: composed of a waxy substance called cutin; serves to protect the leaf from dehydration and prevent penetration of

some diseases.

Cutting: is a vegetative plant part which is severed from the parent plant in order to regenerate itself, thereby forming a whole new plant.

-D-

Damping-off: is a disease of seedlings caused by fungi; seedlings either rot before breaking through the soil surface or fall over and die shortly after emerging.

Day-neutral: applies to a plant in which flowering or other processes are not affected by length of light and dark periods.

Deadheading: is removing spent flowers.

Deciduous: plants that lose their leaves during part of the year.

Decompose: to break down into smaller pieces.

Desiccation: drying out that occurs when water leaves the plant faster than it is taken up.

Determinate: refers to a plant, such as a bush-type tomato plant, in which the terminal, or end bud sets fruit and the stem stops growing (no further height increase).

Dicot (dicotyledon): having two cotyledon or seed leaves; for example, cabbage, tomato. (See also cotyledon and monocot).

Dilute: watered-down; less than original strength.

Dioecious: species in which the sexes are separated into staminate and pistillate plants.

Disbudding: is the process of removing small side buds to allow the plant to form one or a few larger blooms.

Dolomitic limestone: limestone which contains magnesium.

Dormancy: period when a plant "rests" and slows down its growth, usually during winter; onion sets, e.g. are dormant until planted (or until warm temperatures and high humidity cause them to sprout).

Drainage: term used to describe how water passes through the soil; drainage material is coarse material such as sharp sand or perlite added to the soil to help water move downward through the soil.

Dust: a pesticide in the form of a fine mixture of toxic chemical material and a inert filler (usually talc). Dusts are generally applied with a shaker canister or a pump-type duster which spreads the mixture evenly.

Dwarf: plant which is bred or grafted to be of smaller size than others of the same species when mature.

-E-

Early: vegetables which are bred to mature faster than others of their own species.

Ecology: study of living organisms and the way they interact with other organisms and the environment.

Embryo: miniature plant in an arrested state of development.

Endosperm: a built-in food supply which can be made up of proteins, carbohydrates or fats; found in seeds.

Environment: all that surrounds an organism.

Epidermis: outermost layer of cells.

Epinasty: bending down of leaves due to abnormal growth in part of the petiole.

Erosion: when soil particles are carried off by water or wind and deposited somewhere else such as into a stream or at the bottom of a bay.

Espalier: a form of plant training (requiring considerable pruning) in which the plant grows flat against a surface such as a trellis or wall.

Everbearing: producing fruit throughout most of the growing season.

Evergreen: plants with leaves that persist during the entire year.

Exoskeleton: a tough body wall that supports an insect's body, which lacks an internal skeleton.

F1 hybrid: first generation of plants following cross-pollination; many bedding plants are F1 hybrids which have characteristics more desirable than those of either of the parent plants individually.

-E-

Fertilizer: material which provides nutrients to plants.

Fibrous roots: root system in which the roots branch and become finely divided (compare with taproot).

Filament: long, supportive structure of stamen that supports the anther.

Filler (in fertilizer): an inert material added to bulk up a fertilizer, lower the analysis, and all a more even spreading pattern.

Fish emulsion: a complete fertilizer made from a partially decomposed blend of finely pulverized fish.

Flat: a shallow box, usually made of plastic or wood, used for starting seeds.

Flower: the reproductive organ of a seed-bearing plant, generally the showiest part.

Foliage: the leaves of a plant.

Foliar feeding: providing nutrients to a plant by spraying foliage with special dilute fertilizers.

Frost: the formation of ice particles on plants and other objects due to the freezing of water vapor when air temperature drops below freezing.

Fruit: the ripened ovary.

Fungi: lower order of plants which contain no chlorophyll and do not form roots, stems and leaves. Some fungi are grown for food (mushrooms) and others may cause plant disease. Fungi also have an important part in the decomposition of dead plant and animal material.

Furrow: depression in the soil surface dug for planting seed or other purposes.

-G-

Gall: structure of deformed plant tissue.

Germination: sprouting of seed and the beginning of plant growth.

Girdling: when roots or other materials circle around the trunk and begin a process of strangulation.

Grafting: is a asexual method of propagation that joins a scion and rootstock from different plants

so they will grow as one plant.

Granule or granular: particle-like, as in grains of sand.

Green manure: see cover crop

Ground cover: a plant that covers the ground surface so that the ground cannot be seen from above, and so that rain does not strike it directly.

Growing medium: soil or soil substitute (i.e. peat moss mixes) for growing plants.\

Growing season: the period during which plants grow; usually between the last plant-killing frost in the spring to the first killing frost in the fall.

Guard cells: cells on the leaf epidermis which are capable of opening and closing, guarding the interior of the leaf and regulating the passage of water, oxygen and carbon dioxide through the leaf.

Gummosis: production and exudation of a thick, gummy liquid in response to injury or disease.

-H-

Hardening or hardening-off: preparing plants for outdoor planting by gradually shifting them from a sheltered to a less sheltered environment, usually by placing them outdoors for a few hours every day and increasing the outdoor time each day until they are ready to be transplanted or by reducing the amount of water they receive (i.e. cuttings in a mist bed).

Hardy plant: plant with the ability to resist frost or freezing conditions; plants that perform well in difficult environments.

Heading: reducing the height of a plant by cutting back lateral branches and removing terminal buds; cuts are made at nodal areas.

Heaving: is the shifting of soil due to alternating freezing and thawing. It often forces plants or bulbs out of the soil.

Heavy soil: usually a soil that contains a lot of clay and is difficult to work.

Heeling in: is covering plant roots with moist soil, sawdust or other material to store the plants temporarily until they can be properly planted; it is often done with bare-root trees and shrubs and with strawberries.

Herbaceous - A herbaceous plant (in botanical use simply herb) is a plant that has leaves and stems that die down at the end of the growing season to the soil level.

Herbaceous stem: a stem that contains only small amounts of xylem tissue, usually lives for only one growing season.

Herbarium - is a collection of preserved plant specimens. These specimens may be whole plants or plant parts: these will usually be in a dried form, mounted on a sheet, but depending upon the material may also be kept in alcohol or other preservative. The same term is often used in mycology to describe an equivalent collection of preserved fungi.

Herbicide: a chemical which kills plants.

Hills: planting in hills refers to a method of sowing seed in a group and thinning to the best 3 or 4 plants when they have germinated. Melons, potatoes, cucumbers and squash are often planted in hills.

Host: plant or animal upon which another organism (usually a parasite) lives.

Hotbed: a cold frame heated by soil-heating cables, steam-carrying pipes, or fresh manure buried beneath the rooting zones.

Hotcap (or hotkap): a "miniature greenhouse" of plastic or glass used to protect seeds or small plants from cold temperatures while allowing sunlight in to warm the soil.

Humus: organic matter which is completely decompose and which produces the dark color in soil; improves water retention properties.

Hybrid: plant which results from the crossing of two parent plants with different characteristics (also see F1 hybrid an cross-pollination).

Hydrated lime: also called “burnt” lime; specially treated limestone which is faster-acting than regular limestone.

Hydroponics: growing of plants in water or a soilless medium to which nutrients are added on a regular basis (see also soilless culture).

Hydro zone: an area of plants grouped according to similar irrigation needs.

-I-

Imperfect flower: lacks either stamen or pistils.

Incomplete flower: missing one or more of pistil, stamen, petals or sepals.

Indeterminate: growth habit that can continue indefinitely; usually refers to a plant such as certain tomato varieties that require staking (compare with determinate).

Inert ingredients: added chemicals which dilute or extend a pesticide and may make it easier and safer to handle; also called inactive ingredient.

Infect: become established on/in the plant and initiate disease development.

Inflorescence: a cluster of flowers, and how they are arranged on the stem.

Inhibit: to slow down or prevent.

Inoculum: part of a pathogen that can cause infection.

Inorganic: not made up of or derived from plant or animal materials; specifically, not containing carbon.

Insecticide: chemical that kills insects.

Instar: insect life stage between each molt.

Integrated Pest Management (IPM): Is a method of pest control using all types of control measures available, with chemical control as a last resort; emphasizes timing and awareness of pest’s life cycles.

Intercropping or Interplanting: growing two or more crops near each other at the same time, usually for the purpose of getting maximum production; one intercropping practice, e.g., is planting radish seeds along with carrot seeds in the same row. The radishes are harvested by the time the carrots begin to need the space.

Internode: stem section between nodes.

Irrigation: applying water to the soil, especially when there is not enough rainfall.

Knot garden: planting design that looks from above like a know; usually done with herbs or bedding plants.

-J-

-K-

-L-

Lateral: located at the side.

Layering: a method of vegetative propagation where stems attached to a parent plant form roots where they touch a rooting medium, then are severed to become a separate, new plant.

Leaching: This is the loss of soluble salts (nutrients) from soil by water percolating downward and carrying the salts with it.

Leggy: plant that is spindly, with a long stem and a few lower leaves, usually due to low light levels, overcrowding, or too much nitrogen.

Legume: a plant of the Leguminosa family, with a pea-like fruit pod, and with a root system that is invaded by nitrogen-fixing bacteria which can convert nitrogen gas from the air into forms that can be used by the plant.

Lesion: well-defined area of diseased or injured tissue, often with dead spots or areas.

Light soil: coarse-textured soil, such as sand soil, which is easy to work.

Lime: usually ground limestone added to the soil to increase pH. It adds calcium and in the case of dolomitic limestone, it also adds magnesium (see also dolomitic limestone and hydrated lime).

Long-season crop: a crop which must have a long period of frost-free days in order to produce well; e.g., sweet potatoes, watermelon.

-M-

Macro: large; a macronutrient is needed in large quantities by plants.

Manure: animal excretions added to gardens as a fertilizer and soil builder (see also green manure).

Meristem: an area where new cells are manufactured, such as the tip of a stem or root.

Metamorphosis: a marked or abrupt change in form or structure.

Micro: small; a micronutrient is needed in small quantities by plants.

Micro Irrigation: drip systems, micro-sprinklers, soaker hoses and other methods that conserve water during irrigation by applying it directly to the root zone to minimize evaporation and runoff.

Molt: shedding of the outer skeleton.

Monocot (monocotyledon): plant whose embryo has only one cotyledon (seed leaf); e.g., corn, other grasses (compare with dicot).

Monoecious: species in which separate male and female flowers are on the same plant.

Mosaic/mottle: irregular light and dark areas on the leaves, with distinct (mosaic) or less distinct (mottle) margins.

Mulch: is the variety of materials applied to the soil surface around plants to hold moisture, keep soil temperatures even, and inhibit weed growth; may be inorganic or organic.

Multiple fruit: fruit from a tight cluster of separate, independent flowers borne on a single structure; e.g., pineapple, fig.

Mycelia: the main body of fungi, consisting of threadlike masses which grow on plant or animal material or in the soil.

-N-

Necrosis: tissue, death.

Nematode: non segmented roundworm. Plant parasitic nematodes are always small, usually very thin, and many live in the soil, feeding on roots. A few kinds live in leaves or shoots.

Nitrogen (chemical symbol N): one of the 3 major essential plant nutrients; responsible in part for the green color in plants and vigorous vegetative growth (see also NPK).

Nitrogen-fixing: referring to the bacteria which live on the roots of legume plants and which are able to extract of "fix" nitrogen from the air for use by the plant (see legume).

Node: point where leaves are attached to a stem.

NPK: the chemical symbols for the 3 major-nutrients used by plants: nitrogen (N), phosphorous (P), and potassium (K). The percentage of each nutrient is listed on fertilizer packages in NPK order: 16-10-12 means 16% nitrogen, 10% Phosphorus (P₂O₅) and 12% potassium (K₂O).

Nutrient: element a plant or other organism needs to grow.

-O-

Oedema: a physiological problem associated with overwatering.

Offset: a new shoot arising at the base or in leaf axils of a plant with a rosette stem; can be separated and used for propagation.

Opposite Leaf: positioned across the stem from each other, two leaves at each node.

Organic: of plant or animal origin; specifically, containing carbon.

Organic gardening: gardening without the use of synthetic chemicals, such as man-made fertilizers or pesticides; organic gardeners use compost and other organic wastes as fertilizer, and cultural, biological, and mechanical pest control methods; soil building is a major factor in organic gardening success.

Ovary: part of the pistil that contains the eggs.

Ovules: part of the ovary that develops into seeds.

-P-

Palmate: extending outward, like the ribs of a fan, from one central point. Can apply to both leaf venation and compound leaf arrangement.

Parasite: organism that lives on or within another species of plant or animal feeding off that host during at least one part of their life cycle.

Parthenogenesis: reproduction without fertilization of egg by sperm.

Peat or peat moss: partially decayed organic plant matter which comes from boggy areas (see also sphagnum moss).

Peat pellet or Jiffy-7: container for seedlings made of compressed peat moss covered with netting; expands when soaked in water.

Peat pot: a pot made of compressed peat moss used to raise seedlings.

Perennial: plant which lives from year to year, not dying after flowering once.

Perfect flower: contains functional stamens and pistils.

Perlite: white, porous, volcanic mineral used to aerate soil and for rooting cuttings; has no nutritional value.

Persistent pesticide: pesticides that break down slowly and stay in the environment a long time.

Pesticide: substance used to control pests such as insects, fungi, weeds, rodents, etc.

Petiole: the stalk that supports the leaf blade.

pH: chemical expression of acidity and alkalinity; reading taken from a scale that measures the hydrogen (acid-forming) ion activity of soil or growth media; pH7 is neutral, below 7 is acid, above pH7 is alkaline (see also acid and alkaline).

Phloem: tubes that conduct food in plants; found in the vascular system.

Phosphorus (chemical symbol P): one of the three major macro-nutrients required for plant growth (see also NPK).

Photosynthesis: process where plants internally manufacture their own food; literally means "to put together with light."

Pinnate venation: veins extending laterally at an angle from the midrib to the edge, as in apple, cherry, and peach leaves.

Pistil: female part of the plant. Generally shaped like a bowling pin and located in the center of the flower; consists of stigma, style and ovaries.

Pistillate flower: female flowers; possess pistils but lack stamens.

Pith: the central, strength-giving tissue of a stem.

Pot-bound: condition in which the roots of a potted plant become matted together, circle in the shape of the pot, and/or emerge from the drainage holes when they have nowhere to grow; requires repotting in a larger container.

Potting: planting in a container.

Potting mixture (or potting medium): combination of ingredients (soil and other materials) for growing and cutting or breaking apart plants in containers to stop circling.

Pregermination: sprouting seeds before they are planted in pots or in the garden. This reduces the time to germination as the temperature are easy to control.

Preharvest interval: period between the time of pesticide application and the time it is safe to pick and use the crop.

Primary symptom: symptoms at the point where the pathogen is active.

Propagation: reproduction of plant from seed (sexual) or by cuttings, grafting, division or layering (asexual).

Prune: to cut off or cut back plant parts for better shape or more fruitful growth.

-Q-

-R-

Radicle: root originating at the lower end of the embryo of a seedling plant.

Relative humidity: ratio of water vapor in the air to the amount of water air could hold at a given temperature and pressure, expressed as a percent.

Relaying: this is the overlapping successive plantings of one crop.

Resistant varieties: ones that have been bred for resistance to certain diseases; not resistant to all diseases, but only those for which it has been developed.

Respiration: in plants, the process by which a plant takes in oxygen and releases energy by breaking down sugars.

Rest period: natural period in a plant's life when it does not grow (see dormancy).

Rhizome: horizontal underground stem.

Ripe: in harvesting fruits and vegetables, describes the stage at which the product is mature for its intended use.

Root: lower portion of a plant that usually develops underground and anchors the plant in the soil, absorbing moisture and nutrients; aerial roots are those that develop above-ground, in the air.

Root-bound: see pot-bound.

Root cap: outermost tip of the root, consists of cells that are sloughed off as the root grows through the soil. It covers and protects the meristem.

Root crops: those crops grown for their edible roots; e.g. beets, turnips and carrots.

Root hairs: extremely fine roots found along the main root; perform much of the actual work of water/nutrient absorption.

Rootstock: provides the new plant's root system and sometimes the lower part of the stem in grafting or budding.

Rosulate: arrangement where leaves form a rosette with extremely short nodes around the stem.

Rotation: changing crops grown on a piece of land from one year to the next or within a growing season in order to help prevent disease or insect problems, or to build soil (see crop rotation).

Runner: long, trailing shoot off the main plant that forms a new plant, e.g. a strawberry runner.

Runoff: water that does not soak into the ground but flows over the surface and runs into another area such as into storm drains, streams or lakes.

-S-

Scion: portion of a cultivar that is to be propagated by grafting; piece of shoot with dormant buds that will produce stems and branches.

Secondary symptoms: result of pathogen activity somewhere else in the plant.

Seed: reproductive structure produced by flowering plants after fertilization, containing the embryo of a new plant. Mature ovule.

Seed coat: hard outer covering that protects seed from disease and insects and prevents water from entering the seed before the seed is read for germination.

Seed leaves: the cotyledons; first leaves to grow on a seedling, containing nutrients needed for early life (see cotyledon, dicot, monocot).

Seed tape: a plastic-like ribbon which holds seeds at the proper spacing for planting. The tape is laid out and then covered with soil. With adequate moisture, it breaks down, allowing the seeds to germinate and come up in straight rows, eliminating the need for thinning as well.

Seedbed: garden soil which has been prepared for sowing seed; that is, weeds and other debris have been cleared and the soil has been turned and raked to a fine surface.

Seedling: the young plant which emerges from germinating seed.

Semi-evergreen: plants that hold their leaves late into the winter when others are leafless, but eventually lose their leaves and turn brown.

Sepals: small, green leaf-like structures on the base of the flower that protect the flower bud. They are collectively called the calyx.

Set: This is a small, propagative plant part such as a bulb, suitable for planting; e.g. onion set.

Sewer sludge: a recycled product of municipal sewage treatment plants, used as a fertilizer, commonly available as activated and composted forms.

Sexual propagation: propagation by fusing of male and female genetic material to form a new individual.

Shoot: the young, upper portion of a plant, usually arising from a root, underground stem or bulb.

Short-season crop: crop that is ready to harvest in a short period of time after planting; e.g. radishes.

Shrub: They are woody plants that remain quite low and usually produce multiple shoots or stems from the base (height 15 feet or less).

Side-dressing: additional fertilizer applied close to plants usually 4-6 weeks after flowers or vegetables are growing.

Sign: structures or products of the pathogen as seen on a host plant; i.e. mold, fungi, bacterial slime/ooze.

Silt: type of soil particles between sand and clay in size.

Simple fruit: fruit that develops from a single ovary.

Simple leaf: a leaf blade that is a single, continuous unit.

Slip: a cutting of a plant used to start new plants.

Slow-release fertilizer: releases nutrients at a rate that makes them available to plants over a long period of time.

Small fruits: fruits produced on vines or low-growing plants (as compared with tree fruits), e.g. strawberry, grape, raspberry.

Soil: the thin upper layer of the earth's surface which is made up on minerals, organic matter and living organisms (see also subsoil, topsoil).

Soil-borne: living in the soil.

Soil sterilization: a process by which organisms in soil are destroyed usually by heat, steam or chemical fumigation.

Soil testing: scientific analysis to determine the available nutrients and pH of soil.

Soil texture: refers to the size of soil particles and proportion of sand, clay and silt in a soil sample (see also loam).

Soilless culture: growing plants in a nutrient solution not with soil but with non-soil media for root support (e.g. rockwool, perlite etc.; see also hydroponics).

Soilless mix: mixture of materials substituting for soil, usually containing a combination of peat moss, sand, vermiculite, perlite and/or other non-soil materials.

Species: a group of plants which have certain common characteristics and which usually interbreed freely with each other.

Sphagnum or sphagnum moss: mosses which grow in boggy areas; peat moss is usually decomposed sphagnum moss. Milled sphagnum moss has been ground into finer particles.

Spines: specialized modified leaves that protect the plants.

Sprout: the development of new growth from a seed or of new shoots from an established plant (see also germination,

seeding, shoot).

Spurs: are short, stubby, side stems that arise from the main stem.

Staking: Occurs when the vertical support of a plant using 1 to 3 poles driven into the ground nearby.

Stamen: male organ of the flower, produces pollen; usually composed of anther and filament.

Staminate flower: male flowers; contain stamens but no pistils.

Starch: compound formed from sugars; carbohydrates in plants are most often stored as starch.

Starter solution: fertilizer dissolved in water and applied when planting or transplanting to give seedlings a better chance of development; usually a very dilute solution since regular strength would be harmful.

Stem: structure that supports buds and leaves and serves as a conduit for water, minerals and sugars.

Sterile: refers to (a) plants that are unable to reproduce; or (b) soil or other material that contains no living organisms.

Sterilization: to get rid of living organisms (see soil sterilization).

Stigma: upper portion of the pistil, connected by the style; the receiving surface for pollen grains.

Stolon: horizontal stem that is fleshy or semi-woody and lies along the top of the ground; may take root at the nodes or apex to form new plants.

Stoma/stomata: openings in the leaf surface that allow for the exchange of water and air.

Stratification: chilling of seeds to satisfy cold dormancy requirements before germination.

Suberization (suberizing): healing the wounded plant tissue by formation of a corky or waxy layer as in potatoes cut and left to dry.

Subsoil: layers of soil beneath the topsoil (see also topsoil).

Succession planting: growing two or more crops on the same land, one after the other, in one growing season.

Succulent: containing a high percentage of water; particularly referring to plants with thickened juicy leaves or stems.

Sucker: an unwanted shoot that arises from roots, stems or crown of a plant.

Symptom: physical expression of disease in the host tissue; i.e. change in color, appearance, integrity, etc.

Syndrome: symptoms and signs that indicate or characterize the presence of disease or other abnormal condition.

Synthetic: man-made.

Systemic: within the plant's system; i.e. a systemic pesticide is taken up by the plant roots, making plant juices toxic to pests. Systemic pesticides should not be used on edible plants.

-I-

Tamping: This means firming the soil around seeds or transplants to give them better contact with the soil.

Tap root: a main root which extends down into the soil with small lateral branch roots arising from it; i.e. carrot, dandelion, parsnip (compare with fibrous roots).

Taxonomy: the science of biological classification of plants and animals. It is the methodology of systematic botany (and zoology), putting plants (and animals) in the form of superior and subordinate groups.

Tender plant: a plant which is injured or killed by frost or freezing conditions (compare with hardy plant).

Tendrils: a twining, string-like structure on a vine which helps the plant to climb and cling to its support.

Terminal: located at the apex of a stem.

Terrarium: a miniature garden in which plants are contained within a tightly closed glass or clear plastic vessel, usually with a moveable top and requiring very little attention.

Texture (of soil): relative amounts of sand, silt or clay; or, the fineness/coarseness of the mineral particles in the soil.

Thatch: tightly woven layer of living and dead stems, leaves and roots that exists between the green blades of grass and the soil surface.

Thermoperiod: difference in temperature between day and night.

Thigmotropism: plant's response to touch; i.e. the leaves of *Mimosa pudica*, the "sensitive plant," which closes when touched.

Thinning: (a) removing some plants from a crowded row or pot so that the remaining plants have more space to grow; (b) in pruning, removing branches at their point of origin, stimulating growth throughout the plant.

Thinning: (a) removing some plants from a crowded row or pot so that the remaining plants have more space to grow; (b) in pruning, removing branches at their point of origin, stimulating growth throughout the plant.

Tilling: cultivating land.

Tissue: group of organized plant cells that perform a specific function.

Tolerant varieties: ones that yield or grow relatively well in spite of infection.

Top-dressing: This is an application of a material (fertilizer, mulch, compost, etc) to the top of the soil without mixing it in.

Topiary: special pruning and training techniques to create unusually shaped shrubs, vines and trees. Typical topiary forms include spiral, turret and tiered globe shapes. Animals are also popular topiary forms.

Topping: pruning cuts made indiscriminately at inter-node areas. Usually refers to the practice of pruning the leader and/or upward reaching branches of trees.

Topsoil: upper portion of the soil surface, usually less compacted and containing more organic matter and living organisms than the layers beneath (see subsoil).

Toxic: poisonous.

Trace elements: nutrients needed by plants in very small quantities; also called micronutrients; i.e. copper and zinc.

Translocation: movement of water, minerals and nutrients through the plant's vascular system.

Transpiration: loss of water from plant tissues in the form of water vapor, usually through leaves and stems.

Transpiration stream: the upward flow of water in a plant due to transpiration.

Trees: woody plants that produce one main trunk and a more or less distinct and elevated head (height 15 feet or more).

Trellis: a lattice (criss-cross) structure used to support and train plants.

Trunk: main stem of a woody plant.

Tuber: enlarged portion of an underground stem that serves as a food storage organ; has "eyes" or "buds"; i.e. potato.

Tuberous root: enlarged root, without “eyes” or buds, which stores food for the plant; i.e. sweet potato.

Tuberous stem: a stem that is shortened, flattened, enlarged and underground; i.e., begonia, cyclamen.

Turgor: firmness or fullness of plant tissue, maintained by adequate water supply.

Twig: a stem that is less than one year old and has no leaves since it is still in the winter-dormant stage.

[-U-](#)

[-V-](#)

Vaporization/volatilization: evaporation of an active ingredient during or after application.

Variety: subgroup.

Vascular system: the system that transports food, water and minerals and offers support for the plant.

Vegetative: tissues or processes concerned with maintenance of the plant body; not reproductive.

Vermiculite: heat-treated, expanded mica product used to condition soil, start seeds, or root cuttings; holds moisture and nutrients well, acting as a soil substitute.

Viable seed: one which is capable of germination.

Vines: climbing or crawling plants without self-supporting upright stems.

Virus: infectious molecules that take over plant metabolism and use it to produce more viruses.

[-W-](#)

Water sprout: an unwanted shoot that arises along branches, usually at pruning sites.

Weed: plant-growing where it is not wanted.

Whorled: leaves arranged in circles along the stem.

Witches'-broom: a dense, broom-like-clustering of branches resulting from development of numerous adventitious buds at one region.

Woody stem: a stem that contains relatively large amounts of hardened xylem tissue in the central core, typical of most tree fruits, ornamental trees and shrubs.

[-XYZ-](#)

Xeriscape - refers to landscape and gardening in ways that reduce or eliminate the need for supplemental water from irrigation. It is promoted in regions that do not have easily accessible, plentiful or reliable supplies of fresh water, and is gaining acceptance in other areas as climate patterns shift.

In some areas, terms such as water-conserving landscapes, *drought-tolerant* landscaping, *zeroscaping*, and *smart scaping* are used instead. Plants whose natural requirements are appropriate to the local climate are emphasized, and care is taken to avoid losing water to evaporation and run-off. The specific plants used in xeriscaping depend upon the climate.

The Denver program Seven principles

The Xeriscape concept is based on The Seven Principles:

1. Plan and design

Create a diagram, drawn to scale, that shows the major elements of your landscape, including house, driveway, sidewalk, deck or patio, existing trees and other elements.

Once you've completed a base plan of a existing site, think about how one wants to use your new Xeriscape. Do you want it to be a place for dogs to run? Curb appeal? Frame or screen views? Create a conceptual plan (bubble diagram) that shows the areas for turf, perennial beds, views, screens, slopes, etc. Once finished, develop a planting plan that reinforces the areas in the appropriate scale

2. Soil amendment

All plants will benefit from the use of compost, which will help the soil retain water.

3. Efficient irrigation

Xeriscape can be irrigated efficiently by hand or with an automatic sprinkler system. Zone turf areas separately from other plants and use the irrigation method that waters the plants in each area most efficiently. For grass, use gear-driven rotors or rotary spray nozzles that have larger droplets and low angles to avoid wind drift. Spray, drip line or bubbler emitters are most efficient for watering trees, shrubs, flowers and groundcovers.

If you water by hand, avoid oscillating sprinklers and other sprinklers that throw water high in the air or release a fine mist. The most efficient sprinklers release big drops close to the ground.

Water deeply and infrequently to develop deep roots. Never water during the day to reduce water lost to evaporation. If you have an automatic sprinkling system, adjust your controller monthly to accommodate weather conditions. Also, install a rain sensor to shut off the device when it rains.

4. Appropriate plant and zone selection

Different areas in your yard receive different amounts of light, wind and moisture. To minimize water waste, group together plants with similar light and water requirements, and place them in an area that matches these requirements. Put moderate-water-use plants in low-lying drainage areas, near downspouts, or in the shade of other plants. Your turf will require the most water and shrub/perennial beds will require approximately half the amount of water. Dry, sunny areas support low-water-use plants that grow well in our climate. Planting a variety of plants with different heights, color and textures creates interest and beauty.

5. Mulch

Mulch keeps plant roots cool, prevents soil from crusting, minimizes evaporation and reduces weed growth. Organic mulches, such as bark chips, pole peelings or wood grindings, should be applied 2 to 4 inches deep. Fiber mulches create a web that is more resistant to wind and rain washout. Inorganic mulches, such as rocks and gravel, and should be applied 2 to 3 inches deep. Limit surrounding plants with rock because it will make the area hotter.

6. Alternative turf

Native grasses (warm-season) that have been cultivated for turf lawns, such as buffalo grass and blue grama, can survive with a quarter of the water that bluegrass varieties need. Warm-season grasses are greenest in June through September and straw brown the rest of the year.

Native grasses (cool season) such as bluegrass and tall fescue, are greenest in the spring and fall and go dormant in the high heat of the summer. New cultivars of bluegrass, such as Reveille, and tall fescue, can reduce typical bluegrass water requirements by at least 30 percent. Fine fescues can provide substantial water savings and is best used in areas that receive low traffic or are in shady locations.

Use the appropriate grass and limit the amount of grass to reduce the watering and maintenance requirements.

7. Maintenance

All landscapes require some degree of care during the year. Turf requires spring and fall aeration along with regular fertilization every 6 to 8 weeks. Keep your grass height at 3 inches and allow the clippings to fall. Trees, shrubs and perennials will need occasional pruning to remove dead stems, promote blooming or control height and spread. Much of the removed plant material can be shredded and used in composting piles.

Xylem: tubes that conduct water and minerals in plants; found in the vascular system.