that completes its life cycle from seed in a single year or growing season.

**Apomixis** - Reproduction in which sexual organs or related structures take part but fertilization does not occur, so that the resulting seed is vegetatively reproduced. Only a single parent contributes genes to the offspring.

**Apparent Trend** - An interpretation of trend based on a single observation. Apparent trend is described in the same terms as measured trend except that when no trend is apparent it shall be described as "not apparent". See “Trend”.

**Assembly** - A systematic collection of plants (seed or vegetative material) of one or more species to be evaluated for a planned purpose.

**Autopolyploid** - A polyploid arising through multiplication of the complete haploid set of one species.

**Backcross** - The crossing of a hybrid with either of its parents. In genetics, the crossing of a heterozygote with a homozygous recessive.

**Band Applications** - An application to a continuous restricted area such as in or along a crop row, rather than over the entire field area.

**Bare-root** - A plant harvested from a field without any soil on its roots.

**Basal Treatment** - Herbicide applied to the stems of woody plants at or just above the ground.

**Biennial** - A plant that completes its life cycle in 2 years. The first year it produces leaves and stores food. The second year it produces fruits and seed.

**Biodiversity** - The total variability within and among species of living organisms and the ecological complexes that they inhabit. Biodiversity has three levels - ecosystem, species, and genetic diversity - reflected in the number of different species, the different combination of species, and the different combinations of genes within each species.

**Biotype** - A group of individuals within a population occurring in nature, all with essentially the same genetic constitution. A species usually consists of many biotypes. See also “ecotype”.

**Blend** - A mixture of seed of known proportions of two or more lots or variation of the same species.

**Blind Cultivation** - Cultivating before a seeded or planted crop emerges.

**Botanical Variety** - The botanical nomenclature division consisting of more or less recognizable entities within species that are not genetically isolated from each other, below the level of subspecies, and is indicated by the abbreviation “var.” in the scientific name; Usage: the abbreviation in roman type; the name in italics; no capitals. See also “variety”.

**Breeder Seed** - Seed or vegetative propagating material which is directly controlled by the originating or, in some cases, the sponsoring plant breeder, institution, or firm, and which supplies the source for initial and recurring increase of foundation seed. See also ”seed certification classes”.

**Breeder's Rights** - The assurance that the owner of a crop variety has exclusive control over the increase, distribution, and merchandising of a variety. The protection may be afforded by legislation and regulatory control by agreement among individuals concerned, or by biological factors inherent in the variety. The breeder is assured that his/her authorization must be obtained before the variety can be reproduced or sold by anyone else. See “Plant Variety Protection Act."

**Breeding System** - A system of use to select or modify a plant to yield new progeny with desired characteristics.

**Business Plan -** A document to indicate how the PMC resources are to be used and action items to be completed. It should be brief, flexible, realistic, and open-ended. It should be consistent with NRCS guidelines.

**C-3 Plants** - Species having a photosynthetic pathway which results in 3-carbon compounds as initial products of photosynthesis. Includes most legumes, forbs and cool season grasses, as well as most trees and shrubs. Usually significantly less efficient users of soil and water nitrogen than are C-4 plants. Optimum temperature for photosynthesis and growth is 18 to 25 Celsius (64 to 77 Fahrenheit). See also “photosynthesis”.

**C-4 Plants** - Species having a photosynthetic pathway which results in 4-carbon compounds as initial products of photosynthesis. Includes most warm season grasses, tropical grasses, a few forbs, and at least one shrub. Usually significantly more efficient users of soil nitrogen and water than are C-3 plants. Total biomass production is generally substantially greater than plants with other photosynthetic pathways. Optimum temperature for photosynthesis and growth is in the range of 27 to 35 Celsius (84 to 100 Fahrenheit). See also “photosynthesis”.

**CAM Plants** - Abbr. for “Crassulacean Acid Metabolism”. Species whose photosynthetic pathway primarily involves fixation of carbon dioxide during the dark period. Includes desert succulent plants such as cactus. Under good moisture and temperature conditions, carbon fixation may occur in the light via either C-3 or C-4 pathways. Generally the least productive of the three photosynthetic pathways. See also “photosynthesis”.

**Carrier** - A liquid or solid material added to a chemical compound or seed to facilitate its application in the field.

**Center of Diversity** - The geographic region in which the greatest variability of a species occurs. A primary center of diversity is the region of true origin and secondary centers of diversity are regions of subsequent spread of a species.

**Center of Origin** - The geographic region containing a concentration of genetic diversity of one or more species; also called a gene center.

**Certified Seed** - The progeny of breeder, foundation, or registered seed that is so handled as to maintain satisfactory genetic identity and purity and that has been approved and certified by the certifying agency. Certified tree seed is defined as seed from trees of proven genetic superiority, as defined by the certifying agency, produced so as to assure genetic identity. See also “seed certification classes”.

**Chasmogamous** – Plant type in which the perianth of flowers opens for pollination to occur. See also “cleistogamous”.

**Cleistogamous** – plant type in which flowers self-pollinate inside the closed buds.

**Climax** – (1) The final or stable biotic community in a successional series that is selfperpetuating and in dynamic equilibrium with the physical habitat; (2) the assumed end in succession. See also “historic climax plant community”.

**Cline** – a gradual morphological or physiological change in a group of related organisms across their range, usually associated with environmental or geographic transition.

**Clone** - A group of genetically identical plants produced by vegetatively propagating a single plant over one or more vegetative generations.

**Combining Ability** – In general, the average performance of a strain in a series of crosses. More specifically, deviation from performance predicted on the basis of general combining ability.

**Commercial Seed** - Seed produced by commercial industry; may or mat not be recognized improved varieties of seed.

**Common Seed** - Non-certified seed. Such seed may be a named variety but are not grown under the certification program. Also a term applied to seed that cannot be identified as to variety; sometimes used to denote local strains resulting from natural selection.

**Community** - An assemblage of one or more populations of plants and/or animals in a common spatial arrangement.

**Community (Plant Community)** - An assemblage of plants occurring together at any point in time, while denoting no particular ecological status. A unit of vegetation.

**Community Type** - An aggregation of all plant communities distinguished by floristic and structural similarities in both overstory and undergrowth layers. A unit of vegetation within a classification.

**Companion Crop** - A crop sown along with another crop; used particularly for small grain with which a forage crop is sown. Companion crop is preferred to the term “nurse crop.”

**Compatible** - Compounds or formulations that can be mixed and applied together without undesirably altering their separate effects. This term can be applied also to species mixtures.

**Composite** - The combining of genetic material from several sources. This is one of the alternatives of the mass selection technique and should not be confused with a polycross. See also “mass selection” and “polycross”.

**Concentration** - The amount of active ingredient or acid equivalent in a given volume of liquid or in a given weight of dry material.

**Conservation Field Trial** - Is identified in the NRCS General Manual 450-403 as a tool for evaluating new technology, species, or plant releases that address local soil and water resource problems; type of study used by many disciplines; in the PM program may be used to develop new technology, evaluate releases, and promote PM products; typically coordinated by the PMS; qualitative or quantitative data may be collected.

**Contact Herbicide** - A herbicide that kills a plant primarily by contact with plant tissue rather than by translocation.

**Containerized Stock** - Plant materials grown in containers.

**Cool-season Plant** - A plant that makes its major growth during the cool part of the year, mainly in spring but in some localities in the fall or winter.

**Cooperative Agreement** - A written document evidencing the intent of two or more parties to cooperate in an undertaking that will result in mutual benefit to the parties concerned. The parties work jointly in the undertaking -- not each working within its own sphere of work and authority as under a memorandum of understanding relationship. The cooperative agreement is a fiscal document, and the period of time covered must not exceed the period for which funds are available for obligation.

**Cover Crop –** Close-growing crop grown primarily for the purpose of protecting and improving soil between periods of regular crop production.

**Cover Type** - The existing vegetation of an area.

**Cross Pollination** - The transfer of pollen from one flower (artificially or naturally) to the stigma of another; may occur on the same plants or on different plants, depending on the species and other conditions.

**Crossing-Over** - The exchange of corresponding segments between chromatids of homologous chromosomes during meiotic prophase. The genetic consequence is the recombination of linked genes.

**Cultivar** - The international term cultivar denotes an assemblage of cultivated plants that is clearly distinguished by any characters (morphological, physiological, cytological, chemical, or others) and when reproduced (sexually or asexually), retains its distinguishing characters. The term is derived from “cultivated variety”, or their etymological equivalents in other languages. For cultivated plants**,** the term cultivar is the equivalent of a botanical variety, in accordance with the International Code of Nomenclature of Cultivated Plants 1980. Usage: cultivar names are not italicized, and are indicated by single quotes at first use, or the word cultivar (but not both). The abbreviation cv. is properly used only with a binomial name: Genus species cv. cultivar name. Omit the abbreviation if single quotes are used: Genus species ‘cultivar name’.

**Cultural Evaluation** - Studies designed to obtain information regarding establishment, management and production of plant materials. They may be conducted on or off the center at any stage of the evaluation process.

**Defoliant** - A compound that causes the leaves or foliage to drop from a plant.

**Demonstration Plantings** - A planting used primarily to promote use and acceptance of new technology or releases; no evaluations are done and no data is collected.

**Desiccant** - A compound that promotes dehydration or removal of moisture from plant tissue.

**Desired Plant Community** - A plant community which produces the kind, proportion, and amount of vegetation necessary for meeting or exceeding the minimum quality criteria for the soil, water, air, plant and animal resources, and the land use plan/activity plan objectives established for an ecological site(s). The desired plant community must be consistent with the site's capability to produce the desired vegetation through management, land treatment, or a combination of the two.

**Diluent** - Any liquid or solid material serving to dilute an active ingredient in the preparation of a formulation.

**Dioecious** - Having staminate and pistillate flowers occurring on different plants, that is, having distinct male and female plants (e.g. buffalograss).

**Diploid** - Having two chromosomes of each kind. Having the basic chromosome number doubled.

**Direct Application** - Method of applying chemicals or fertilizers directly to a restricted area, such as a row or a bed at base of plants.

**Diversity** - The distribution and abundance of different plants and animal communities within an area. Also a measure of the number of species and their relative abundance within a given association of organisms. Areas of high diversity are characterized by a great variety of species; usually relatively few individuals represent any one species. Areas with low diversity are characterized by a few species; often relatively large numbers of individuals represent each species.

**Dormancy** - An internal condition of the chemistry or stage of development of a viable seed that prevents its germination, although temperature and moisture are adequate for growth.

**Dormant Seeding** - Planting seed during late fall or early winter after temperatures become too low so that seed germination occurs the following spring.

**Ecesis** - Establishment and development of a plant in the plant community.

**Ecocline** - Series of biotypes within a species that shows a genetic gradient correlated with a gradual environmental gradient.

**Ecological Niche** - Role of an organism in an ecological system. Includes the physical space in a habitat occupied by an organism; its functional role in the community (e.g., its trophic position); and its position in environmental gradients of temperature, moisture, pH, soil, and other conditions of existence.

**Ecological Optimum** - The most favorable conditions in the environment for the growth and reproduction of an organism.

**Ecological Race** - Group of local populations within a species in which individuals have similar environmental tolerances. Wide-ranging species may consist of many ecological races.

**Ecological Response Unit** - A unit of land that is homogeneous in character such that similar units will respond in the same way to disturbance or manipulation. Syn. ecological site, ecological type.

**Ecological Site** - A kind of land with a specific potential natural community and specific physical site characteristics, differing from other kinds of land in ability to produce vegetation and to respond to management. Syn. Ecological type, ecological response unit.

**Ecological Status** - (1) The present state of vegetation and soil protection of an ecological site in relation to the potential natural community for the site. Vegetation status is the expression of the relative degree of which the kinds, proportions, and amounts of plants ina community resemble that of the potential natural community. If classes or ratings are used, they should be described in ecological rather than utilization terms. For example, some agencies are utilizing four classes of ecological status ratings (early seral, midseral, late-seral, potential natural community) of vegetation corresponding to 025%, 2650%, 5175%, and 76-100% of the potential natural community standard. Soil status is a measure of present vegetation and litter cover relative to the amount of cover needed on the site to prevent accelerated erosion. This term is not used by all agencies. (2) The present state of vegetation and soil protection of an ecological site in relation to the historic climax plant community for the site. Vegetation status is the expression of the relative degree of which the kinds, proportions, and amounts of plants in a community resemble that of the historic climax plant community. If classes or ratings are used, they should be described in ecological rather than utilization terms.

**Ecological System** - See “ecosystem”.

**Ecological Type** - A land classification category which is more specific than a phase of a habitat type. Ecological types are commonly used to differentiate habitat phases into categories of land which differ in their ability to produce vegetation or their response to management. Syn. ecological response unit, ecological site.

**Ecophene** - Plants differing in appearance, especially in the size of vegetative parts, numbers of stems, erectness, and reproductive vigor but belonging to essentially homogeneous genetic stock. Their distinctness is due entirely to environmental influences, for when different ecophenes are transplanted into the same habitat these differences disappear.

**Ecosystem** - Energy-driven complex of one or more organisms and their environment. Organisms together with their abiotic environment, forming an interacting system, inhabiting an identifiable space. The whole system, in the sense of physics, including not only the organism complex, but also the whole complex of physical factors forming what we call the environment. The complex of living and nonliving components in a specified location that comprise a stable system in which the exchange of material follows a circular path such as a biome. A community of organisms and the environment in which they live. A system of ecological relationships in a local environment, including relationships between organisms, and between the organisms and the environment itself. Syn.: ecological system.

**Ecotone** - Transitional zone between two vegetational types or vegetational regions. A transition area of vegetation between two communities, having characteristics of both kinds of neighboring vegetation as well as characteristics of its own. Varies width depending on site and climatic factors. A transition line or strip of vegetation between two communities, having characteristics of both kinds of neighboring vegetation as well as characteristics of own.

**Ecotype** - (1) A population of plants that has become genetically differentiated in response to the conditions of a particular habitat. The plants may vary in growth habit, maturity, and other characteristics such as pubescence and flower color. Sometimes referred to as a geographical race. (2) A transition area of vegetation between two communities, having characteristics of both kinds of neighboring vegetation as well as characteristics of its own. Width varies depending on site and climatic factors. Transition zone between two vegetation types or vegetation-type regions. (3) A transition line or strip of vegetation between two communities, having characteristics of both kinds of neighboring vegetation as well as characteristics of own. (4) A locally adapted population within a species which has certain genetically determined characteristics; interbreeding between ecotypes in not restricted. (5) A variety or strain within a given species that maintains its distinct identity by adaptation to a specific environment. (6) A locally adapted population of a species which has a distinctive limit of tolerance to environmental factors. (7) A variant type within an ecospecies.

**Ecovar** - The offspring of native species that have been developed from original plant material collected form a specific ecological region. Selection is done with minor emphasis on improving agronomic characteristics, and major emphasis on maintaining genetic diversity. See also “ecotype”.

**Educational Plantings** –Plantings designed to introduce the establishment and uses of new or potential releases to the public. Educational plantings show one or more conservation practice uses for the plant material, possibly in comparison to a standard cultivar or species; plantings may be established on or off-center. See also “demonstration plantings”.

**Emulsifying Agent** - A surface active material that facilitates the suspension of one liquid in another.

**Emulsion** - The suspension of one liquid as minute globules in another liquid; for example, oil dispersed in water.

**Environment** - The sum of all external conditions that affect an organism or community to influence its development or existence.

**Environmental Range** - Range of environmental conditions in which, at a given time, the members of a species live.

**Epinasty** - Increased growth on the upper surface of a plant organ or part (especially leaves) that causes it to head downward.

**Epithet** - The final word or combination of words in a name that denotes an individual taxon.

**Exotic** - A term describing an organism introduced from another country or continent.

**Facultative Weed** - Weed found growing both wild and in association with human activity.

**Field Evaluation Planting (FEP)** - Old name for off-center evaluations; term not currently used by the PM program. See “off-center evaluations”.

**Field Plantings** - Final stage of technology development or plant selection; plantings used primarily by PMSs to develop new methods or technology or evaluate the adaptability of new releases; data is collected and analyzed statistically.

**Field-Scale Increase** - The reproduction of plant materials for use in field plantings and by cooperating agencies to obtain the final data needed to determine the feasibility of a variety release.

**Firm Seed** - Seed, other than hard seed, that neither germinates nor decays during a prescribed test period under prescribed test conditions. Firm ungerminated seed may be alive or dead.

**Forb** - Any non-woody plant that is not a grass, sedge, or rush.

**Foundation Seed** – The progeny of breeder or foundation seed that is so handled as to most nearly maintain specific genetic identity and purity. Production may be carefully supervised by the originating agency and approved by the certifying agency, the agricultural experiment station, or both. See also “seed certification classes”.

**Frost-Free Period** - The period, number of days or both between the last frost in spring and the first frost in fall.

**Gene Bank** - A storage facility where germplasm is stored in the form of seeds, pollen, or in vitro culture, or in the case of a field gene bank, as plants growing in the field.

**Gene Flow** - The transfer of genes from one population to another. See also “genetic flow”.

**Gene Frequency** - The relative frequency with which a particular gene is present in a particular population of a species or other group.

**Gene Pool** - The total stock of genes in a breeding population, with each gene representing a number of alleles. See also “genetic pool”.

**Genetic Diversity** - The total amount of genetic variation present in a population or species. Having a heterogeneous constitution, reacting differently to diverse external condition. (Applied to a breeding population, variety, or species.). The genetic constitution of an individual or group.

**Genetic Drift** - Chance occurrences in small populations which lead to changes in gene frequencies from generation to generation. The tendency, within small interbreeding populations, for heterozygous gene pairs to become homozygous for one allele or the other by chance rather than by selection. A change in gene frequency that occurs in small populations as a result of random sampling error during reproduction. The fluctuation in gene frequency occurring in an isolated population, presumably due to random variations from generation to generation.

**Genetic Engineering** - The use of in vitro techniques to produce DNA molecules containing novel combinations of genes or other sequences in living cells that make them capable of producing new substances or performing new functions. Usage: A popular term for such technologies as a whole.

**Genetic Erosion** - The loss of genetic diversity between and within populations of the same species over time; or a reduction of the genetic base of a species due to human intervention, environmental changes, etc.

**Genetic Flow** - The exchange of genes between different populations. Also termed migration, it is considered to be a source of genetic variation. A single introduction of genes into a new population is known as gene exchange. If gene migration is constant and recurrent it is known as gene flow. The closer populations are related spatially and genetically, the more likely the chances of gene flow.

**Genetic Pool** - The totality of genes and gene complexes of a given population at a given time. The sum of all genetic information carried by all individuals of an interbreeding population. All of the alleles of all the genes in a population.

**Genetic Shift** - A change in the germplasm balance of a crosspollinated variety, usually caused by environmental selection pressures.

**Genetic Vulnerability** - Having a narrow range of genetic diversity and reacting uniformly to diverse external conditions. (Applied to breeding populations of varieties or species).

**Genotype** - The genetic constitution of an individual or group of plants. Individual plants may vary in appearance (phenotypically), but they must have the genetic characteristics of the genotype.. The genetic constitution, latent or expressed, of an organism, as contrasted with the phenotype. The sum total of all genes present in an individual..

**Geographic Range** - Geographic limits of the ecological range; geographic extent of actual occurrences of a species.

**Germination** - The initiation of growth by the embryo and development of a young plant from seed.

**Germplasm** – Genetic material that determines the morphological and physiological characteristics of a species.

**Grex** - A collective term applies to the progeny of an artificial cross from known parents; each and every crossing of any two parents belonging to different taxa that bear the same pair of specific, intraspecific, interspecific, grex, or cultivar epithets.

**Green Manure Crop** – A crop that is plowed under while still living to increase organic matter in soil.

**Growing Season** - (1) The period, number of days, or both between the last frost in spring and the first freeze threshold temperature of the crop or other designated temperature threshold. (2) The amount of time a plant is able to actively grow.

**Habitat Type**