



# Soils *and* Crops Dictionary

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The following words and terms are commonly used in the agriculture sector in the southern Great Plains.

Understanding these terms will help facilitate communication for those unfamiliar with agriculture in this region.



- 0-0-60** — *Muriate of potash or potassium chloride* (KCl). Common source of granular potassium fertilizer.
- 10-34-0** — *Ammonium Polyphosphate*. Liquid phosphorus fertilizer. Can be used as a liquid starter fertilizer. One gallon weighs 11.6 to 12.0 lbs./gallon.
- 18-46-0** — *Diammonium Phosphate*. Primarily a phosphorus fertilizer. Can be used as a granular starter fertilizer. Also known as DAP.
- 32-0-0** — *Urea Ammonium Nitrate*. Liquid nitrogen fertilizer composed of one-half urea and one-half ammonium nitrate. Also known as UAN. One gallon weighs 11.06 lbs./gal. Freezes at 32° F. Urea component is subject to volatilization loss.
- 34-0-0** — *Ammonium Nitrate*. Granular nitrogen fertilizer. Not subject to volatilization loss.
- 46-0-0** — *Urea*. Granular nitrogen fertilizer. Subject to volatilization loss under certain conditions.
- 82-0-0** — *Anhydrous Ammonia*. Nitrogen fertilizer in a pressurized gas form. Subject to denitrification and theft loss. Cheapest source per

pound of actual nitrogen. Requires special equipment to apply.

**Acidic** — Having a pH less than 7.0.

**Acre** — Basic unit of measurement when describing an area of land. 43,560 square feet.

**Active Ingredient** — The ingredient in a pesticide that controls the target pest.

**Adjuvant** — Chemicals added to pesticides to enhance performance. Can include spreaders, stickers, surfactants, drift reduction agents, water conditioners and spray grade fertilizer.

**Airflow Spreader** — Uses air to move and meter fertilizer and/or seed through the spreader and more accurately measure and spread the material.

**Alkali Soil** — Soils that contain enough sodium (Na) to cause 15 percent of the cation exchange sites to be occupied by sodium. These soils commonly have pH values of 8.5 or above. *Sometimes known as sodic soils or slick spots.*

**Ammonium Nitrate** — See 34-0-0.

**Ammonium Polyphosphate** — See 10-34-0.

**Anhydrous Ammonia** — See 82-0-0.

**Animal Unit** — A unit of measurement of the forage one cow eats in one year. One 1,000-pound cow is one animal unit. This theoretical animal will consume roughly 10,000 lbs. of forage dry matter per year. Converts roughly to two stockers, one horse, five sheep or five goats.

**Animal Unit Month** — A unit of measure of forage. The amount of forage that will feed one animal unit for one month. Roughly 800 lbs. of forage dry matter.

**AU** — See Animal Unit.

**AUM** — See Animal Unit Month.

**Auricle** — Growths found at the collar (junction of the blade and the sheath) of a grass leaf. Auricles are classified as absent, large,

clasping, etc. Useful as a descriptive characteristic when identifying grasses.

**Available**

**Forage** — Forage considered usable above the minimum residue height for a given forage at a given time. Not all forage above the soil line is available. See also harvest efficiency.

**Awnless** — Small grains without sharp protruding spines from the seed head. Also known as beardless.

**Awns** — Sharp elongations protruding from the seed head of small grains. Livestock can have eye and mouth problems due to grazing headed-out small grains with awns.

**Balage** — Forage is cut and baled tightly at high moisture content with a baler. The bales are immediately wrapped with plastic. This creates an anaerobic (without air) condition and the forage ensiles or ferments. The forage is preserved through this process. A way to put up hay without the need for several days drying time.

**Band** — Placement of fertilizer or pesticide in a concentrated zone. This zone can be with or near the seed at planting, depending on

the product. Good way to apply starter fertilizer. Reduces the total quantity of product per acre needed.

**Basic** — Having a pH greater than 7.0.

**Bearded** — See awns.

**Beardless** — See awnless.

**Best  
Management  
Practices** —

Accepted methods for proven production of crops or forages that incorporate agronomic and environmental considerations.

**Biennial** — Plant that requires two years to complete a life cycle. Grows vegetative the first year and reproductive the second year.

**Blade** — The flat part of a grass leaf that extends from the stem.

**BMPs** — See Best Management Practices.

**Boot** — The stage in grass plant growth immediately before the head emerges. This growth stage is loosely defined as that period characterized by a swelling of the flag leaf sheath which is caused by an

increase in the size of the panicle (head) as it grows up the flag leaf sheath.

**Broadcast** — The uniform application of fertilizer, pesticide or seed to the surface of a field.

**Broadleaf** — Plants that are dicots, having two seed leaves. Not a grass.

**Buffer Index** — The measure used to determine the amount of lime needed for a field/pasture.

**Burndown** — Using herbicide to kill or suppress the growth of existing plants in a field to prepare the field for planting.

**Carrying Capacity** — The maximum number of animals a place can provide forage for in a year without damaging the resource. It is not static. It depends on weather and other conditions and varies from season to season and year to year.

**Carryover Nitrogen** — Nitrogen that was not used by the preceding crop and is available in the soil for subsequent crops.

**Calcium  
Carbonate  
Equivalent** —

The liming value of a material when compared to pure calcium carbonate. Pure calcium carbonate has a calcium carbonate equivalent (CCE) of 100 and is used as the benchmark to which all other materials are compared. A higher number indicates more acid neutralizing value.

**CCE** — See Calcium Carbonate Equivalent.

**Cell** — Fenced grazing unit. See also paddock.

**Coated Seed** — Seed with a clay or polymer coating added to improve handling or as a carrier for nutrients or inoculum.

**Coleoptile** — A structure that develops in a grass seed, then breaks away and pushes upwards to the surface. The coleoptile may be leaf-like in appearance. The first visible above-ground plant part of a grass or small grain.

**Complete  
Metamorphosis** —

Insect life cycle with four distinct phases (egg, larvae, pupa, adult). Ex. Caterpillars and moths.

## Cool-Season

- Annual** — Plant that completes its entire life cycle in one year. Typically germinates in the fall and matures in the spring. Small grains are cool-season annuals.
- Core** — One slice of soil or hay taken with a sampling probe. It takes 15 cores of soil or six cores of hay to make a representative sample.
- Coulter** — Round cutting blade. Found on no-till planters and drills. Used to slice through soil and residue to facilitate planting.
- CP** — See Crude Protein.
- Crown** — Region at the base of a plant containing growing points.
- Crude Protein** — Includes both true protein and non-protein nitrogen. Animals, especially ruminants, can utilize both types to some degree. Because forages that are higher in protein are correspondingly lower in crude fiber, higher protein content usually indicates a higher TDN (Total Digestible Nutrients).  
 $\% \text{ Crude Protein} = \% \text{ Nitrogen} \times 6.25$
- DAP** — See 18-46-0.

- Diammonium Phosphate** — See 18-46-0.
- Dormancy** — Resting stage of a live seed or plant not currently growing. Used to escape environmental stress such as cold, heat or drought.
- Drag** — *1.* A piece of equipment such as a harrow or chain or heavy piece of steel used to firm a seedbed. *2.* The act of using a drag to firm a seedbed.
- Drift** — Unintentional movements of pesticide by wind to an area other than the target.
- Drill** — *1.* Planter used for seeding at narrow row spacing (Ex. 4, 6, 7.5, 8, 10 inches). Meters seed in pounds per acre rather than seed per foot of row. Used for pasture and hay crops. *2.* The act of planting with a drill.
- ECCE** — See Effective Calcium Carbonate Equivalent.
- Economic Threshold** — The point at which potential damage from a pest is greater than the cost of pesticide application.

**Effective  
Calcium  
Carbonate  
Equivalent** —

A measurement of purity (CCE) and fineness of a lime product. Lime with higher ECCE will react more quickly and completely than lime with lower ECCE.

**Emergence** —

The point in time when the first plant part is visible above the soil surface.  
Appearance of any part of the coleoptile above the soil surface.

**Ensilé** —

The process of anaerobically (without air) fermenting forage to preserve it.

**Exclosure** —

A fenced out area to exclude grazing.

**Fibrous** —

A type of root system having many fine, branched roots and no distinct taproot. Typical in grasses.

**Flash  
Grazing** —

Graze for a short duration with a high concentration of animals. Utilization is minimal, less than 50 percent.

**Forage** —

Any herbaceous vegetation that is animal food, acceptably nutritious and acceptably non-toxic.

## General Use

**Pesticide** — Pesticide that can be purchased and applied by anyone.

**Germ** — Refers to the percent germination of the seed. Also refers to the point in time when a seed begins to grow.

**Germinate** — The point in time when a seed imbibes water and begins to grow.

**Glabrous** — Not hairy, smooth. Useful as a descriptive characteristic of plant parts.

**Gradual Metamorphosis** — Insect life cycle where the young resemble the adult, only smaller. Ex. Grasshoppers.

**Grass** — A monocot, meaning having one seed leaf. Grasses have parallel veins in the leaves.

**Graze** — To harvest forage with standing livestock.

**Grazeout** — Grazing small grains all the way through the reproductive stage rather than harvesting them for grain.

**Green Pasture** — See Winter Pasture.

- Hard Seed** — Seed that will not germinate the year it is planted but remains viable to germinate in following years. Caused by the seed coat not allowing water to penetrate. Common in legumes.
- Head** — See Inflorescence.
- Heading** — Stage of plant development when the inflorescence is visible.
- Hollow Stem** — Jointing. The point in time when there is hollow area between the nodes of a small grain plant cut along the stem. First hollow stem signifies the time to remove stockers if wheat will be harvested for grain. Should be determined in an area that has not been grazed.
- Hulled Seed** — Bermudagrass seed with the hull removed.
- Immobile** — Term for nutrients that do not move in the soil. Phosphorus is typically immobile.
- Inflorescence** — Grain/seed producing part of a grass plant.
- In-furrow** — Placement of pesticides and/or fertilizers in the planter furrow before the furrow is closed or covered by the press wheel.

**Inoculate** — The act of applying *Rhizobium* inoculum to legume seeds immediately before planting to enable nitrogen fixation by the plants. Legumes have the unique ability to form a symbiotic relationship with *Rhizobium* bacteria, which convert atmospheric nitrogen gas to ammonium nitrogen, a form usable by the plant. This relationship occurs in specialized root tissue called nodules.

**Instar** — Stage of larval insect growth between molts.

**Integrated Pest Management** — Using scouting and economic thresholds to determine when it is cost effective to treat for a pest and then using the best management practice to treat.

**Internode** — Region between 2 nodes in a plant stem.

**IPM** — See Integrated Pest Management.

**Jointing** — See hollow stem.

**K** — Potassium.

**K<sub>2</sub>O** — The oxide equivalent of potassium and the

way potassium equivalence is stated on a fertilizer tag.

**Larvae** — Stage in insect life between egg and pupa for insects undergoing complete metamorphosis. Often insect larvae do not resemble their adult form.

**Legume** — A broadleaf plant capable of fixing nitrogen. Seeds are produced in pods.

**Ligule** — A structure at the base of a grass blade where it meets the sheath. Can be absent, hairy or membranous. Useful as a descriptive characteristic when identifying grasses.

**Liquid  
Nitrogen  
Fertilizer** —

Commonly 32-0-0. May also be used to refer to any liquid fertilizer with nitrogen in it.

**Loam** — A soil with a roughly equal mixture of sand, silt and clay. Loams are usually well suited for crop production.

**Metamorphosis** — Referring to insects growing and changing from young to adults.

**Mobile** — Term for nutrients that move in the soil. Nitrate nitrogen is mobile.

**N** — Nitrogen.

## **Nitrogen**

**Fixation** — Legumes have the unique ability to form a symbiotic relationship with *Rhizobium* bacteria to convert atmospheric nitrogen gas to ammonium nitrogen, a form usable by the plant. This relationship occurs in specialized root tissue called nodules.

**Node** — A hard enlarged region on a plant stem.

**Nodule** — A growth on the root of legume plants that houses the *Rhizobium* bacteria that can fix nitrogen.

**No-Till** — The act of planting seed into the ground and growing it without tillage.

**Nymph** — The young of an insect undergoing gradual metamorphosis.

## **Old World**

**Bluestem** — Refers to introduced bluestems such as Plains, King Ranch, yellow, WW Spar, etc.

**Overseed** — Planting seed over and/or into existing forage. Commonly rye or other small

grains are overseeded into bermudagrass sod in the fall.

**OWB** — See Old World Bluestem.

**P** — Phosphorus.

**pH** — A measure of how acidic or basic something is. The negative logarithm of the hydrogen ion concentration in a solution. Uses a scale of one (most acidic) to 14 (most basic) with seven being neutral.

**P<sub>2</sub>O<sub>5</sub>** — The oxide equivalent of phosphorus and the way phosphorus equivalence is stated on a fertilizer tag.

**Paddock** — Fenced grazing unit.

**Palatable** — Desirable by livestock. Tastes good to livestock.

**Palmate** — Having parts resembling a hand with the fingers spread. Useful as a descriptive characteristic when describing broadleaf plant leaves.

**Perennial** — Plant living for more than two years. Perennial plants typically have heavy taproots or rhizomes.

<b>Personal Protective Equipment</b>	—	Clothing and equipment worn when handling hazardous materials such as pesticides. May include rubber boots, rubber gloves, tyvek coveralls and respirators.
<b>Pest</b>	—	An organism that hinders the growth of a crop. Can be a weed, insect or disease.
<b>Pesticide</b>	—	A product used to control pests. Can be herbicide for weeds, insecticide for insects or fungicide for diseases.
<b>Petiole</b>	—	The stem of a leaf.
<b>Pinnate</b>	—	Descriptive of arrangement of plant parts placed side by side along the main axis. Useful as a descriptive characteristic when describing broadleaves.
<b>Planter</b>	—	Equipment used to place seed into the soil.
<b>PLS</b>	—	See Pure Live Seed.
<b>Potash</b>	—	See 0-0-60.
<b>PPE</b>	—	See Personal Protective Equipment.
<b>Press Wheel</b>	—	Wheels at the back of a planter or drill

used to firm the soil over and around the seed.

- Prussic Acid** — Prussic acid can form in the leaves of stressed (cold or drought) sorghum type plants. Prussic acid causes asphyxiation by inhibiting the action of the enzyme that links oxygen with red blood cells. Eliminated by the curing processes of making hay.
- Pubescent** — Covered with hairs, especially if short, soft and down-like. Useful as a descriptive characteristic of plant parts.
- Pupa** — The resting stage of an insect undergoing complete metamorphosis, between larvae and adult.
- Pure Live Seed** — The percent viable (live) seed X the percent pure (seed – foreign material) seed.
- Reseeding Annual** — Plants that live for only one year but drop seeds that germinate to produce plants the following year. Examples are crabgrass and ryegrass.
- Residue** — The accumulated ungrazed forage and dead plant material on the soil surface.

- Restricted Use Pesticide** — Pesticide that can only be applied by a licensed pesticide applicator.
- Rhizobium*** — Microorganisms that can infect the roots of legumes and form a symbiotic relationship to fix nitrogen. See also Inoculate and Nitrogen Fixation.
- Rhizome** — Underground stem that is capable of producing new plants. Johnsongrass produces rhizomes.
- Saline** — Salty. Saline soils have at least 2,600 ppm (parts per million) soluble salts in a saturated soil —water paste.
- Scarify** — Removing some of the seed coat on hard seed so water can penetrate and promote germination.
- Scout** — Observing and sampling fields for pests.
- Section** — A measure of land area. 640 acres in a one-square-mile block.
- Sheath** — The part of a grass leaf that wraps around the stem.
- Sidedress** — Application of fertilizer or sometimes

pesticide in a band near the rows of established crops.

**Small Grain** — All cereal crops except corn and sorghum. Typically wheat, rye, oats, triticale and barley.

**Sodic** — See Alkali.

**Sodseed** — Interseeding plants such as small grains or legumes into an existing perennial sod with a minimum of tillage.

**Soil Testing** — The process of taking a representative, composite sample of soil from a field and analyzing the amounts of nutrients in that soil under laboratory conditions.

**Sprig** — *1.* A vegetative root and stem structure used to propagate perennial plants such as bermudagrass. *2.* The process of planting sprigs.

**Sprigger** — A machine used for planting sprigs.

**Standing Hay** — Forage left uncut in the pasture and cured by frost.

**Starter Fertilizer** — Small quantity of nutrients placed with or near the seed at planting to provide a concentrated zone of nutrients for

immediate uptake by seedlings thus increasing their vigor and growth.

**Stocker** — Usually a weaned calf grazing high-quality forages to gain weight.

**Stock Density** — Number of head or pounds on an individual pasture at a given time. It generally is not the same as stocking rate except under continuous grazing. Ten head in a 10-acre pasture is a stock density of one acre per head.

**Stocking Rate** — Number of head or pounds on a place. Ten head on a 100-acre ranch is a stocking rate of 10 acres per head.

**Stockpile** — Excess forage grown ahead of time and left standing in the field for stock to graze later.

**Stolon** — Above ground stem capable of producing a new plant. Also called runners. Bermudagrass produces stolons.

**Strip Grazing** — Allowing stock access to one to three days' worth of forage at a time by using and moving electric cross fence. Utilization is high, greater than 75 percent.

- Summer Annual** — See Warm-Season Annual.
- Suppress** — To slow down or hold back. Refers to herbicides that may not kill a target weed, but instead reduce its growth and competitiveness with the crop.
- Taproot** — A type of root system with a single enlarged, elongated root. Typical in broadleaves.
- TDN** — See Total Digestible Nutrients.
- Texture** — Refers to the amount of sand, silt, and clay in a soil.
- Tiller** — New stem added at the crown of the plant, capable of producing an inflorescence.
- Top** — To remove the top of the plant, as with a brush mower or flash grazing.
- Topdress** — To broadcast apply fertilizer over the top of an established crop.
- Total Digestible Nutrients** — The sum of the digestible portions of protein, fat, fiber and nitrogen free extract. It represents the approximate energy value of the feed.

**Treated**

**Seed** — Seed with a fungicide coating.

**UAN** — Urea Ammonium Nitrate. See 32-0-0.

**Unhulled**

**Seed** — Bermudagrass seed with the hull still on it.

**Urea** — See 46-0-0.

**Variety**

**Not Stated** — Refers to seed which has not been certified and cannot be sold as a known variety.

**Vegetative** — The growth stage of plants prior to reproductive growth.

**VNS** — See Variety Not Stated.

**Volatilization** — Loss of surface applied urea or UAN fertilizer as ammonia gas that usually occurs when temperatures are greater than 65 F and the application is not followed by a significant rain within 72 hours.

**Warm-****Season**

**Annual** — Plant that completes its entire life cycle in one year. Typically germinates in the spring and matures in the summer or fall.

**Winter Annual** — See Cool-Season Annual.

**Winter Pasture** — Typically small grain and/or ryegrass mixtures that are grazed November through June.



