

# Glossary

**ABSORPTION**—The process by which a substance is taken into and included within another substance, i.e. intake of gases, water, nutrients, or other substances by plants.

**ACID**—A substance that releases hydrogen ions; a condition in which the activity of the hydrogen ion exceeds that of hydroxyl.

**ACID SOIL**—Soil containing a prevalence of hydrogen ions in the soil solution (active acidity) and on the surface of soil colloids (reserve or potential acidity). Specifically, a soil with a  $pH_w$  value of less than 7.0.

**ACIDITY, ACTIVE**—The activity of the hydrogen ion in the water that surrounds soil particles. It is measured and expressed as a pH value.

**ACIDITY, POTENTIAL OR RESERVE**—The amount of exchangeable hydrogen ion in a soil that can be released into the soil solution by cation exchange.

**ADHESION**—The molecular attraction between surfaces that holds substances together. Water adheres to soil particles.

**ADSORPTION**—The attachment of a substance or ion to the surface of a solid or a liquid.

**ADSORPTION, ELECTROSTATIC**—Adsorption caused by the electrical attraction of ions to a charged surface.

**AERATION**—The process by which air in the soil is replaced by air from the atmosphere. The rate of aeration depends largely on the volume and continuity of pores within the soil.

**AGGREGATE**—Individual sand, silt and clay particles bound together into a larger particle. Aggregates may be spheres, blocks, plates, prisms or columns.

**AGRONOMY**—Soil and plant sciences applied to farming, especially crop and pasture production.

**ALKALINE**—Containing or releasing an excess of hydroxyl over hydrogen ions.

**ALKALINE SOIL**—Any soil with a  $pH_w$  greater than 7.0.

**ALLOPHANE**—An alumino-silicate mineral that has an amorphous or poorly crystalline structure; commonly found in soils developed from volcanic ash.

**AMENDMENT, SOIL**—A substance added to soil to improve its pH or physical properties, for example, lime, gypsum, peat.

**AMMONIFICATION**—The biochemical process whereby ammonium-nitrogen is released from soil organic compounds.

**ANION EXCHANGE CAPACITY (AEC)**—The sum total of exchangeable anions that a soil can adsorb.

**AVAILABILITY (of nutrients)**—Adequacy of supply, freedom, ease of release, mobility. A general term, frequently used in describing forms of nutrients taken up by plants.

**AVAILABLE WATER**—The portion of water in a soil that can be readily absorbed by plant roots. Considered by some to be that water held in the soil against a pressure of up to approximately 15 bars.

**BANDED FERTILIZER**—Placement of fertilizer in a concentrated zone either on or below the soil surface.

**BANDING**—A method of fertilizer application. Banding is a general term that implies applications that concentrate fertilizer into narrow zones that are kept intact to provide a concentrated source of nutrients. Applications may be made prior to, during, or after planting. Can also apply to pesticides.

**BEDROCK**—The solid rock underlying soils and weathered rock in depths ranging from zero (where exposed by erosion) to several hundred feet.

**BENEFICIATION**—Crushing and separating ore into valuable substances by various processes.

**BIOLOGICAL NITROGEN FIXATION**—Reduction and assimilation of atmospheric-nitrogen, a capability of certain free-living and symbiotic bacteria.

**BIURET**—An impurity caused by high temperatures during the manufacture of urea. It is of concern because of its phytotoxicity when urea is applied as a foliar spray. The concentration of biuret in urea varies, depending on the particular manufacturing conditions. While biuret can be tolerated in soil applications of fertilizer, some crops are sensitive to biuret when urea is applied as, or included in a foliar spray. Sensitive crops include citrus and pineapples. Grades of urea containing more than 0.25% biuret should be avoided for foliar application, especially on citrus and pineapples and other evergreen tree fruit crops.

**BORON (B)**—An essential element that may be involved in carbohydrate transport. Essential for growth of pollen tubes, germination of pollen grains. A trace element that can be deficient in many crops. It can be toxic to some plants.