

GLOSSARY

- ADSORPTION.** The bonding of one or more layers of molecules onto a second surface.
- AFLATOXIN.** Toxin produced by the fungus *Apergillus flavus*.
- ANTHESIS.** The opening of the anthers to release pollen.
- AUTOTROPHIC GROWTH.** For maize — growth based on **photosynthesis**.
- BACKCROSS.** A cross of a **hybrid** to either of its parents.
- BACKCROSS BREEDING.** A system of breeding whereby recurrent backcrosses are made to one of the parents of a hybrid, accompanied by selection for a specific character or characters.
- BASIDIOSPORE.** A spore borne on the out-side of a basidium, the characteristic spore-producing structure of the basidiomycete fungi (e.g. mushroom).
- BROADLEAF WEED.** A weed belonging to the subclass Dicotyledonae, which have two seed leaves (c/f grasses which have only one seed leaf).
- COLEOPTILE.** The sheath enclosing the immature leaves and growing tip of the shoot in the maize kernel. After germination, the coleoptile is the first part of the maize seedling to appear at the soil surface.
- COTYLEDON.** A seed leaf, forming part of the embryo of a seed. The first leaf to develop when a seed germinates.
- CONSERVATION TILLAGE.** Any cultivation and sowing system which retains at least 30% residue cover on the soil surface after sowing.
- DENT MAIZE.** A type of maize which has kernels with a central core of soft starch which shrinks more in drying than the surrounding hard **endosperm** to leave a shallow depression at the top of the kernel.
- ENDOSPERM.** The nutritive tissue surrounding and nourishing the embryo in seed plants.
- ENZYME.** A protein that is synthesized in a living cell and catalyzes or speeds up a chemical reaction.
- EPICOTYL.** The young stem above the **cotyledons**.
- ESTER.** An organic compound formed by the elimination of water from an organic acid and an alcohol.
- FLINT MAIZE.** A type of maize which has kernels with mostly hard **endosperm** but with a small amount of soft starch near the centre.
- FLOURY MAIZE.** A type of maize which has kernels of mostly soft **endosperm** with a thin layer or hard **endosperm** around the surface.
- GENE.** The unit of inheritance.
- GENOTYPE.** The genetical constitution of an individual.
- GERM.** The embryo fraction of the grain.
- GLUTEN.** A type of protein found in cereals.
- GRAMINACEOUS.** A plant belonging to the Gramineae, or grass family.
- HORMONE HERBICIDE.** A herbicide which is capable of producing plant growth responses which are similar to those produced by naturally occurring plant hormones.
- HYBRID.** The product of a cross between genetically different parents; also used commercially to describe a variety which is the first generation progeny of a controlled cross of two **inbred** lines.
- HYDROLYSIS.** The chemical reaction of a substance with water. In the maize processing industry, the breakdown of polymers such as starch into low molecular weight sugars occurs by the chemical addition of water and is therefore a form of hydrolysis.
- HYMENOPTEROUS.** An insect species in the order Hymenoptera. This order includes bees, wasps and ants.
- INBRED LINE.** A line produced by continued inbreeding. In maize breeding, an inbred line is usually produced by a minimum of five generations of self-fertilization.
- INFLORESCENCE.** A flower cluster.
- INSTAR.** A growth stage in insect larvae — each instar is separated by a moult.
- MACRONUTRIENT.** An element required in relatively large quantities by plants. Includes carbon (C), hydrogen (H), oxygen (O), nitrogen (N), phosphorus (P), calcium (Ca), sulphur (S), potassium (K) and magnesium (Mg).
- MICRONUTRIENT.** An element required in relatively small quantities by plants. Sometimes called a trace nutrient. Includes chlorine (Cl), iron (Fe), manganese (Mn), boron (B), zinc (Zn), copper (Cu) and molybdenum (Mo).
- MINIMUM TILLAGE.** A cultivation method which prepares an adequate seedbed with the least possible number of trips over the field.
- MYCOPLASMA.** A microorganism which is similar to a bacterium but without a cell wall.
- MYCOTOXIN.** A toxin produced by a fungus.
- NOCTUID.** A moth species in the family Noctuidae. This family includes several species of cutworms.
- OLSEN TEST.** A chemical method of extracting soil phosphate for the purpose of estimating crop phosphate requirements.
- OPEN POLLINATED VARIETY.** A variety which is maintained by random mating.
- PANICOID GRASS SPECIES.** Strictly, a species of the subfamily Panicoideae. Often loosely used to denote a warm season grass species with a different photosynthetic pathway to most plants — the C₄ photosynthetic pathway.
- PARTHENOGENESIS.** Development of a new individual from an unfertilised egg.
- PATHOGEN.** An organism which causes disease.
- PERFECT STAGE OF FUNGI.** The stage of the life cycle in which spores are produced from sexual

- reproduction.
- PERICARP.** For maize, the outermost layer of the kernel. The pericarp is developed from the ovary wall and carries the same genetic complement as the maternal parent.
- pH.** A logarithmic scale for measuring acidity and alkalinity. A pH of greater than 7 is alkaline and lower than 7 acid.
- PHEREMONE.** A chemical substance produced by insects for the purpose of communication among individuals of the same species.
- PHOTOSYNTHESIS.** The process by which green plants synthesise carbohydrates from water and carbohydrates using energy from sunlight.
- PHYSIOLOGICAL MATURITY.** For maize, the stage at which grain filling has been completed.
- PHYSIOLOGICAL RESISTANCE.** Resistance due to functional or biochemical mechanisms.
- PHYTOTOXIC.** Poisonous to plants.
- POLYGENES.** Genes whose differences are too small to identify individually but which, through cumulative action, can have important effects.
- POLYPHAGOUS.** A polyphagous insect species is one which feeds on a wide range of host plants.
- POPCORN.** A type of maize which has kernels of mostly hard **endosperm**. The kernels of popcorn pop or explode when heated.
- PRE-PLANT FERTILISER.** Fertiliser applied before sowing, usually broadcast.
- SAPROPHYTIC FUNGI.** Fungi which utilise dead or decaying tissues for food.
- SEGREGATING GENERATION.** A generation in which new combinations of inherited characters appear.
- SIDE-DRESSED FERTILISER.** Fertiliser applied to the growing plants, usually in a band between the rows.
- SILK.** In maize, the part of the female **inflorescence** which receives the pollen. Botanically, each silk is a stigma.
- STARTER FERTILISER.** Fertiliser applied at the time of sowing, usually in a band below and to the side of the seed.
- SURFACTANT.** A detergent which allows compounds which are not normally wettable, such as fats, to dissolve in water.
- SWEETCORN.** A type of maize which has kernels with a relatively high sugar content.
- SYNTHETIC VARIETY.** A variety produced by crossing a number of selected plants with subsequent maintenance by open-pollination.
- SYSTEMIC FUNGICIDE.** A fungicide which penetrates into and becomes distributed throughout a plant.
- TASSEL.** The male **inflorescence** found at the top of a maize plant.
- TOP-CROSS.** A cross between a set of inbred or partially inbred lines and a common pollen parent. The common parent is called the top-cross or tester parent.
- VIVIPAROUS.** Producing living young from within the body rather than from eggs.
- ZERO TILLAGE.** A method of sowing without prior cultivation.