

## 12. Glossary



Available water capacity (AWC)	The portion of soil water that can be readily absorbed by plant roots of most crops from a soil initially at field capacity. It is the amount of water stored in the soil between field capacity and permanent wilting point.
Bulk density	The mass of dry soil per unit bulk volume in undisturbed condition. The bulk volume is determined before drying to constant weight at 105°C.
Clay	A soil separate consisting of particles less than 2 $\mu\text{m}$ in equivalent diameter.
Electrical conductivity (EC)	The reciprocal of the electrical resistance measured in 1:5 soil water solution at a temperature of 25°C. Used as an indicator for the estimation of salt concentration, measured in dS/m, at 25°C.
Exchangeable cation	A positively charged ion (e.g. $\text{Ca}^{+2}$ , $\text{Mg}^{+2}$ , $\text{Na}^{+}$ , $\text{K}^{+}$ ) held on or near the surface of a solid particle by a negative surface charge of a colloid and which may be replaced by other positively charged ions in the soil solution.
Exchangeable sodium percentage (ESP)	It is the proportion of the cation exchange capacity occupied by the sodium ions and expressed as a percentage. A high ESP indicates a potential for the soil to be dispersive (sodic).
Field capacity	The amount of water held in soil after excess water has drained away and the rate of downward movement has materially decreased, which usually takes place within 2 – 3 days after a rain or irrigation in pervious soils of uniform structure and texture. Water content at a soil water suction of 10 kPa is taken as approximation for field capacity.
Final infiltration rate (FIR)	Rate at which water percolates into soil after infiltration has decreased to a low and nearly constant value.
Infiltration	The downward entry of water through the soil surface into the soil.

Organic matter content	Organic fraction of the soil, including plant and animal residues in various stages of decomposition, cells and tissues of soil organisms, and substances synthesized by the soil population.
pH	A measure of hydrogen ion concentration in a solution, expressed as the common logarithm of the reciprocal of the hydrogen ion concentration in mol per litre.
Particle size distribution	The relative proportion of clay, silt and sand smaller than 2 mm in diameter in a mass of soil. The USDA texture classification system was used to calculate particle size distribution.
Permanent wilting point	Soil water content below which the leaves of a growing plant reach a stage of wilting from which they do not recover. Water content a soil water suction of 1500 kPa is taken as an approximation of permanent wilting point.
Refill point	The soil water tension at which water should be supplied to the root zone to prevent stressing of plants. Water content at a soil water suction of 60 kPa is taken as an approximation of refill point.
Sand	A soil separate consisting of particles between 50 and 200 $\mu\text{m}$ in diameter (USDA soil texture classification system).
Saturated hydraulic conductivity	The ability of soil to transmit water under a unit hydraulic gradient when it is saturated.
Saturation	Water content of a soil when all the pores are filled with water.
Silt	A soil separate consisting of particles between 2 and 50 $\mu\text{m}$ in diameter (USDA soil texture classification system).
Soil horizon	A layer of soil or soil material within the soil profile approximately parallel to the land surface and differing from adjacent layers in colour, structure and texture.

Soil hydraulic properties	Properties of soil profile that describe the storage and flow of water (e.g. hydraulic conductivity, soil water retention characteristics).
Soil water content	The volume of water in a soil as fraction of the total soil volume. It is determined by the drying of a soil sample to a constant weight at a temperature of 105°C. It is usually expressed as a percentage of the soil volume.
Soil water retention characteristic	The relationship between soil water content and soil water potential. It can indicate ability of the soil to store water that will be available to growing plants, indicate the aeration status of a drained soil, and be interpreted in non-swelling soils as a measure of pore-size distribution.
Soil water suction/tension	A measure of the tenacity with which water is retained in the soil. It is the force per unit area that must be exerted to remove water from the soil and is usually measured in kPa, or bars. It is a measure of the effort required by plant roots to extract water from the soil. The drier the soil, the greater the soil water suction.