

T

tableland (tafelland)

A tract of land, with no great irregularities of surface, considerably elevated above the general surface of the area. Cf. mesa.

tactoid (taktoïed)

A spindle-shaped body, e.g. as in vanadium pentoxide sol.

takyr (takyr)

The unconsolidated sediment (usually fine-grained) and evaporite in a depression.

talc (talk)

An extremely soft, whitish, greenish or greyish monoclinic mineral: $Mg_3Si_4O_{10}(OH)_2$. It has a characteristic soapy or greasy feel and a hardness of 1 on Mohs' scale. It is easily cut with a knife. Talc is a common secondary mineral derived by alteration (hydration) of nonaluminous magnesium silicates (such as olivine, enstatite and tremolite) in basic igneous rocks or by metamorphism of dolomite rocks, and it usually occurs in foliated, granular, or fibrous masses.

talus (talus)

Fragments of rock and soil material accumulated by gravity at the foot of cliffs or steep slopes.

taxon (takson)

A taxonomic group in a formal system of nomenclature. Any class in any category; e.g. the Hutton soil form is a taxon in the form category.

taxonomy (taksonomie)

Classification, especially according to natural relationships. The systematic distinguishing, ordering and naming of type groups within a subject field.

technical classification (tegniese klassifikasie)

A technical classification of inferred rather than observed properties. Cf. soil classification; natural classification; numerical classification.

tectosilicate (tektosilikaat)

A class or structural type of silicate characterized by the sharing of all four oxygens of the SiO_4 tetrahedra with neighbouring tetrahedra, and a Si:O ratio of 1:2. Quartz, SiO_2 , is an example. Cf. nesosilicate; sorosilicate; cyclosilicate; inosilicate; phyllosilicate. Syn. framework silicate.

tensiometer (tensiometer)

A device for measuring the matric potential of soil water *in situ*; a porous, permeable ceramic cup connected through a tube to a manometer or vacuum gauge. Its measuring range is approximately 0 kPa to -85 kPa.

Termosol (Termosol)

See soil classification.

ternary exchange (ternêre uitruiling)

Refers to an exchange reaction in which three ions are involved. Cf. binary exchange; quaternary exchange.

terrace (terras)

- (1) A level, usually narrow, plain bordering a river, lake, or the sea. Rivers sometimes are bordered by terraces at different levels.
- (2) A raised, more or less level or horizontal strip of earth usually constructed on, or nearly on, a contour and supported on the downslope side by rocks or other similar barriers and designed to make the land suitable for tillage and to prevent accelerated erosion. For example, the ancient terraces built by the Incas in the Andes.

terraced (terraset)

A small step on hillslopes, varying in height from a few centimetres to about one metre and running horizontally.

terrain (terrein)

The physical character of an area and its configuration (as in terrain studies and terrain intelligence).

terrain classification (terreinklassifikasie)

See land classification.

terrain morphological units (terreinmorfologiese eenhede)

The common terrain morphological units are:

CREST

SCARP

MIDSLOPE

FOOTSLOPE

VALLEY BOTTOM

Tertiary (Tersiêr)

See geological time scale.

tetrahedral unit (tetraëdriese eenheid)

This unit consists of four O^- ligands co-ordinated around a Si^{4+} atom, giving the ionic unit $(SiO_4)^{4-}$. It forms the basic structure of atomic lattices of most layer silicate minerals.

texture, soil (tekstuur, grond-)

See soil texture.

textural class (tekstuurklas)

A grouping of specified textural compositions, e.g. sandy loam, loam, etc. Cf. soil texture.

textural classification (tekstuurklassifikasie)

See soil texture.

thermal analysis (termiese ontleding)

The measurement of changes in physical or chemical properties of materials as a function of temperature, usually by heating or cooling at a uniform rate, e.g. in clay mineral analysis.

- (i) DTA (differential thermal analysis), measures the temperature difference (ΔT) between a sample and reference material.
- (ii) DSC (differential scanning calorimetry), measures the differential heat flow between a sample and reference material.
- (iii) TGA (thermo-gravimetric analysis), measures the mass loss or gain of a sample.

thermal conductivity (termiese geleivermoë; hittegeleivermoë)

The property of a substance determining the rate at which it conducts heat energy, as defined by the equation of heat conduction:

$$H = K_q (dT/dx),$$

where H = rate of heat energy flow

K_q = thermal conductivity

A = cross-sectional area of conductor

dT/dx = temperature gradient.

The units of thermal conductivity are $J m^{-2} s^{-1} ^\circ C^{-1}$. Cf. thermal flux; thermal diffusivity.

thermal diffusivity (termiese diffusiwiteit)

The ratio of the thermal conductivity to the volumetric heat capacity. In the special case where thermal diffusivity (D_q) is independent of distance, the transient heat flow equation in one dimension is

$$\frac{\partial T}{\partial t} = D_q \frac{\partial^2 T}{\partial z^2}$$

where T = temperature

t = time

z = distance

D_q has units of $m^2 s^{-1}$.

thermal flux (termiese vloed)

The amount of heat conducted across a unit cross-sectional area of soil in unit time. For vertical heat flow the thermal flux (J_q) is given by

$$J_q = -K_q \frac{\partial T}{\partial z}$$

where K_q = thermal conductivity

$\frac{\partial T}{\partial z}$ = temperature gradient

Cf. thermal conductivity.

thermic (termies)

See soil temperature.

thermodynamic potential (termodinamiese potensiaal)

See soil water: water potential.

thermogenic soil (termogene grond)

A soil with properties that have been influenced primarily by high temperature as a component of climate as a soil-forming factor; developed in subtropical and equatorial regions. Cf. thermosequence.

thermophilic organism (termofiele organisme)

An organism that grows readily at temperatures above 45°C.

thermosequence (termoreeks)

A sequence of related soils that differ, one from the other, primarily as a result of the temperature component of climate as a soil-forming factor. Cf. thermogenic soil.

thixotropy (tikstotropie)

A property of a material that permits it to become firm on standing for a short time, but on agitation its consistence becomes soft or it changes to a highly viscous fluid. It is a reversible process.

threshold velocity (drumpelsnelheid)

The minimum wind velocity at which particles of sand or other soil material will begin moving.

tie-ridging (kommetjiewerking; bakkiewerking)

A method of soil cultivation in which small basins are established on the soil surface with a suitable implement. The purpose is to allow water to pond in the basins thus preventing runoff. Cf. tillage systems.

tile drain (dreineerpyp)

An underground drain consisting of clay, perforated plastic, pitch fiber, asbestos-cement or cement pipe. Water enters the drain through the unsealed joints or through the perforations in the pipe.

till (keileem; bewerk)

- (1) Unstratified glacial drift deposited directly by ice flow and consisting of clay, sand, gravel, and boulders intermingled in any proportion.
- (2) To plough and to prepare a seedbed for planting or sowing.

tillage (grondbewerking)

The mechanical manipulation of soil for any purpose; but in agriculture it is usually restricted to the modification of soil conditions for crop production. Cf. tillage systems.

tillage systems (bewerkingstelsels)*clean tillage (clean culture, clean cultivation) (skoonbewerking)*

A process of ploughing and cultivation which incorporates all residues and prevents growth of all vegetation except the particular crop desired during the growing season.

complete tillage (volledige bewerking)

A tillage sequence made up of one broadcast, primary tillage operation and one or more broadcast, secondary tillage operations, plus one or more cultivations, either broadcast or strip.

conservation tillage (bewaringsbewerking)

Any tillage sequence, the object of which is to minimize or reduce loss of soil and water; operationally, a tillage or tillage and planting combination which leaves a 30% or greater cover of crop residue on the surface.

controlled traffic (beheerde verkeer)

Tillage in which all operations are performed in fixed paths so that recompaction of soil by traffic (traction or transport) does not occur outside the selected paths.

conventional tillage (konvensionele bewerking)

Tillage operations normally performed in preparing a seedbed for a given crop grown in a given geographical area.

incomplete tillage (onvolledige bewerking)

The result of omitting one or more of the elements of a complete tillage system.

minimum tillage (minimumbewerking)

The minimum soil manipulation necessary for crop production or meeting tillage requirements under the existing soil and climatic conditions.

mulch tillage (deklaagbewerking)

Tillage or preparation of the soil in such a way that plant residues or other materials are left to cover the surface; also, mulch farming, trash farming, stubble mulch tillage, plowless farming; operationally, a full-width tillage or tillage and planting combination that leaves > 30% of the surface covered with crop residue.

no-tillage (geenbewerking)

A procedure whereby a crop is planted directly into the soil with no preparatory tillage since harvest of the previous crop; usually a special planter is necessary to prepare a narrow, shallow seedbed immediately surrounding the seed being planted.

once-over tillage (eenmalige bewerking)

A system whereby all tillage preparatory for planting is done in one operation or trip over the field.

oriented tillage (georiënteerde bewerking)

Tillage operations which bear specific relations in direction with respect to the sun, prevailing winds, previous tillage operations, or field base lines.

ploughless farming (ploeglose bewerking)

Tilling soil without moldboard ploughing so that the crop residue will be left on the surface; also, trash farming, stubble mulch, and subsurface tillage. Cf. mulch tillage.

reduced tillage (verminderde bewerking)

A tillage system in which the total number of tillage operations preparatory for seed planting is reduced from that normally used on that particular field or soil.

ridge tillage (rifbewerking)

A tillage system in which ridges are formed atop the planted row by cultivation, and the ensuing row crop is planted into ridges formed during the previous growing season.

stubble mulch tillage (stoppeldeklaagbewerking)

See mulch tillage and ploughless farming.

subsurface tillage (suboppervlaktbewerking)

Tillage with a sweep-like plough or blade which is drawn beneath the soil surface cutting plant roots and loosening the soil without inverting it, resulting in minimum incorporation of residues into the soil.

surface tillage (oppervlaktbewerking)

Cultivating or mixing the soil to a shallow depth.

tillite (tilliet)

A consolidated or indurated sedimentary rock formed by lithification of glacial till, esp. pre-Pleistocene till (such as the Late Carboniferous tillites in South Africa and India).

tilth (gesteldheid, grond-)

See soil tilth.

time domain reflectometry (pulsvertragingmeting)

A method used for the determination of the water content of e.g. porous materials. It involves measurement of the dwell time of an electromagnetic pulse between two conductors inserted in the material. The pulse time-delay is related to the dielectric constant of the medium, and hence to its water content.

tinging (tandbewerking)

A method of turf or lawn cultivation in which the soil is spiked by an implement such as a garden fork. Syn. coring. Cf. hollow-tining.

tissue analysis (weefselontleding)

The analysis of some specified portion of a plant, such as the leaf or stem, for its content of plant nutrients and other elements. Cf. foliar analysis.

tonalite (tonaliet)

See quartz-diorite.

tongues, soil (tonge, grond-)

See soil tongues.

topaz (topaas)

$\text{Al}_2\text{SiO}_4(\text{OH},\text{F})_2$, orthorombic.

topdressing (bobemesting; kopbemesting)

- (1) A surface application of fertilizer to a growing crop.
- (2) A surface application of soil material to gardens, lawns, etc.

topocadastral (topokadastraal)

Information on the physical and cultural characteristics as well as the administrative and property boundaries of a place, as officially registered for taxation purposes.

topography (topografie)

- (1) The general configuration of a land surface or any part of the Earth's surface, including its relief and the position of its natural and manmade features. Not synonymous with relief. Cf. relief. Syn. lay of the land.
- (2) The natural or physical surface features of a region, considered collectively as to form; the features revealed by the contour lines of a map. In non-geologic usage, the term includes man-made features (such as are shown on a topographic map).
- (3) The art or practice of accurately and graphically delineating in detail, as on a map or chart or by a model, selected natural and man-made surface features of a region. Also, the descriptive study or representation of such features.

toposequence (toporeeks)

A number of different soils, occurring down the length of a slope, each with properties attributable to its relative position in the landscape.

topsoil (boggrond)

- (1) The uppermost part of the soil ordinarily moved in tillage, or its equivalent in uncultivated soils, ranging in depth from about 100 to 300 mm. Frequently designated as the "plough layer", the "Ap layer", or the "Ap horizon".
- (2) Soil material used to topdress roadbanks, gardens and lawns.

tortuosity (gekronkeldheid)

- (1) The non-straight nature of soil pores.
- (2) The tortuosity factor is the reciprocal of the increase in diffusion path that an ion must take in diffusing through the water present in the soil when it moves along a concentration gradient, as compared to the path in water.

total dissolved solids (TDS) (totale opgeloste vastestowwe (TOV))

The total concentration of salts in water. Usually expressed in units of mg kg^{-1} or g m^{-3} .

total head (totale hoogte)

See soil water : total head.

total soil water potential (totale grondwaterpotensiaal)

See soil water : total potential.

total soil water stress tension/suction (totale grondwaterspanning /-suiging)

See soil water : total soil water stress.

total stress (totale spanning)

See soil water : total soil water stress.

tourmaline (toermalyn)

Any one of a group of hard glassy minerals of variable colour consisting of complex borosilicates of aluminium with quantities of lithium, sodium, potassium, iron and magnesium in hexagonal crystalline form; used in optical and electrical equipment and in jewellery.

toxic concentration (toksiese konsentrasie)

The critical concentration at which a substance which is not usually toxic becomes toxic. Cf. toxicity.

toxic element (toksiese element)

See toxicity.

toxicity (toksisiteit)

The injurious or lethal effect of a substance (element, compound) on plants or other organisms.

trace element (spoorelement)

See micronutrient.

trachyte (tragiet)

An extrusive rock composed essentially of alkali feldspar and minor biotite, hornblende or pyroxene. The extrusive equivalent of syenite.

traffic pan (ploegblad)

See ploughsole.

transgression (transgressie)

An expansion of the sea resulting in the progressive submergence of land as when the sea level rises or land subsides. Cf. recession.

transient flow (onbestendige vloei; oorgangsvloei)

See soil water : transient flow.

transient state (onbestendige toestand; oorgangstoestand)

See soil water : transient state.

transitional soil (oorgangsgrond)

A soil with properties intermediate between those of two different soils and genetically related to them.

transition zone (soil) (oorgangsone (grond))

The zone between two distinct soils occupied by a transitional soil.

transmission efficiency (transmissiedoeltreffendheid)

The transmission efficiency of irrigation water is the percentage of the water leaving the source of supply which is delivered to the field. Cf. application efficiency; irrigation efficiency; distribution efficiency; replenishment efficiency.

transmittance (transmittansie)

A measure of the ability of a body to transmit radiation, equal to the ratio of the transmitted flux to the incident flux; the reciprocal of the opacity. For a plate of material the ratio of the flux reaching the exit surface to that leaving the entry surface is the internal transmittance. Cf. absorbance.

transpiration (transpirasie)

The process by which water in plants is transferred as water vapour to the atmosphere.

transpiration ratio (transpirasieverhouding)

The ratio of the mass of water transpired by a crop to the mass of above-ground dry plant matter produced.

transported material (vervoerde materiaal)

See drift.

Triassic (Trias)

See geological time scale.

triaxial test (drie-assige toets)

A shearing test conducted in an apparatus which permits application of known lateral and vertical stresses, and measurement of the resulting deformation of the sample.

trickle irrigation (drupbesproeiing)

See irrigation methods.

trough valley (trogvallei)

A valley with spurless, parallel walls.

truncated soil (afgeknotte grond)

A soil that has been cut down by accelerated erosion or by mechanical means. The profile may have lost part or all of the A horizon and sometimes the B horizon, leaving only the C horizon. Comparison of an eroded soil profile with a virgin profile of the same area, soil type and slope conditions, indicates the degree of truncation.

tufa (toefa)

A soft, porous rock consisting of calcium carbonate deposited from springs rich in lime. Also called: calc-tufa.

tuff (tuf)

A rock formed of compacted volcanic fragments usually smaller than 5 mm in diameter.

tundra (toendra)

A treeless, level or gently undulating plain characteristic of arctic and subarctic regions. It usually has a marshy surface which supports a growth of mosses, lichens and numerous low shrubs and is underlain by a dark, mucky soil and permafrost.

Tundra Soil (Toendragrond)

- (1) A soil characteristic of tundra regions.
- (2) A great soil group consisting of soils with dark-brown peaty layers over greyish horizons mottled with iron oxides and having continually frozen substrata.

tunnelling (tonnelerosie)

See erosion: tunnel erosion.

turbulent flow (turbulente vloe)

That type of flow in which any particle of a liquid may move in any direction with respect to any other particle. In this type of flow the friction head varies approximately with the second power of the velocity. It occurs at velocities higher than Reynold's velocity. Also termed sinuous or tortuous flow.

turf (turf)

- (1) Turf soil (e.g. "black turf") is a specific South African term for a dark, sticky clay soil. See soil classification: Vertisol.
- (2) A covering of mowed vegetation, usually a turfgrass, growing intimately with an upper soil stratum of intermingled roots and stems. Cf. turfgrass.

turfgrass (turfgras; sooigras)

A grass used for establishing turf, as on various kinds of sports fields. Cf. turf.

T-value (T-waarde)

Total exchangeable cations. (Usage not recommended). See cation exchange capacity.

type, soil (grondtipe)

See soil type.

U

Ultisol (Ultisol)

See soil classification.

ultrabasic (ultrabasies)

Containing less than 45% silica, virtually no quartz or feldspar and composed essentially of ferromagnesian silicates, metallic oxides and sulphides, and native metals, or of all three. Said of some igneous rocks and of most varieties of meteorites.

ultramafic (ultramafies)

See ultrabasic.

umbric A horizon (obsolete) (umbriese A-horison (verouderd))

See diagnostic horizon.

umbric epipedon (umbriese epipedon)

See diagnostic horizon.

umbric horizon (umbriese horison)

See diagnostic horizon.

Umbrisol (Umbrisol)

See soil classification.

unavailable water (onbeskikbare water)

See soil water : available water.

unconformable (diskordant)

See conformable.

unconsolidated material with signs of wetness (ongekonsolideerde materiaal met tekens van natheid)

See diagnostic horizon.

unconsolidated material without signs of wetness (ongekonsolideerde materiaal sonder tekens van natheid)

See diagnostic horizon.

undifferentiated soil group (ongedifferensieerde grondgroep)

A soil mapping unit in which two or more similar taxonomic soil units occur, but not in a regular geographic association. For example, the steep phases of two or more similar soils might be shown as a unit on a map because topography dominates the properties. See soil association; soil complex.

undisturbed sample (onversteurde monster)

A soil sample removed from a soil profile or any soil body so as not to disturb its structure. Undisturbed samples are used to determine bulk density, permeability, etc.

unit cell (eenheidsel)

The fundamental three-dimensional array of atoms that forms a crystal lattice by regular repetition in space. Cf. lattice; layer.

unsaturated conductivity (onversadigde geleivermoë)

See soil water : unsaturated conductivity.

unsaturated flow (onversadigde vloeï)

See soil water : unsaturated flow.

unspecified material with signs of wetness (ongespesifieerde materiaal met tekens van natheid)

See diagnostic horizon.

upper plastic limit (boonste plastiese grens)

See Atterberg limits : liquid limit.

upslope (helling-op)

Indicates a movement or direction from a lower to a higher hillslope position. Cf. downslope.

uptake (opname (absorpsie))

See absorption.

urban land (stedelike land)

Areas so altered or obstructed by urban works or structures that identification of soils is not feasible. A miscellaneous land type.

urea fertilizer (ureumkunsmis)

Urea fertilizer consists of $(\text{NH}_2)_2\text{CO}$; it may contain a small percentage of biuret which is toxic to seedlings in excessive concentrations ($>1\%$). Urea contains at least 46% N. The fertilizer is manufactured in the form of small opalescent pellets and is somewhat hygroscopic.

V

value (colour) (waarde (kleur))

The relative lightness or intensity of colour, approximately a function of the square root of the total amount of light. One of the three variables of colour. Cf. soil colour; chroma.

vane shear test (skroefbladtoets)

An *in situ* shear test in which a rod with thin radial vanes at the end is forced into the soil and the resistance to rotation of the rod is determined.

Van der Waals' force (Van der Waals-krag)

An extremely weak attractive force between two atoms or non-polar molecules. They are weaker than hydrogen bonds and are not involved in chemical bonding.

variant, soil (variant, grond-)

See soil variant.

variscite (variskiet)

A green orthorhombic mineral: $\text{AlPO}_4 \cdot 2\text{H}_2\text{O}$. It is isomorphous with strengite, $\text{FePO}_4 \cdot 2\text{H}_2\text{O}$. Cf. strengite.

varve (warf)

A distinct band representing the annual deposit in sedimentary materials regardless of origin and usually consisting of two layers, one a thick, light coloured layer of silt and fine sand and the other a thin, dark-coloured layer of clay.

veld (veld)

In Africa, natural vegetation usually used as grazing. It may be composed of any number of plant growth forms and need not necessarily be climax vegetation in that the species composition may be influenced by grazing management practices. Highveld refers to regions > 1500 m, Middelveld to regions 900-1500 m, and Lowveld to regions < 900 m above sea level. Well-known veld types include Fynbos, Karoo, Grassveld and Bushveld.

vermiculite (vermikuliet)

A group of platy or micaceous clay minerals closely related to chlorite and smectite having the general formula:

$(\text{Mg,Fe,Al})_3(\text{Al,Si})_4\text{O}_{10}(\text{OH})_2$. The minerals are derived generally from the alteration of micas (chiefly biotite and phlogopite). They vary widely in chemical composition. Vermiculites differ from the smectites in that the characteristic exchangeable cation is Mg^{2+} , the lattice expands only to a limited degree (hydration and dehydration is limited to two layers of water), and they have higher layer charges per formula unit (0,6-0,9) and higher cation exchange capacity (140 to 160 cmol_c/kg).

vertic A horizon (vertiese A-horison)

See diagnostic horizon.

vertical air photo (vertikale lugfoto)

An aerial photograph made with the camera axis vertical (camera pointing straight down) or as nearly vertical as possible in an aircraft. Cf. oblique air photo.

vertic horizon (vertiese horison)

See diagnostic horizon.

Vertisol (Vertisol)

See soil classification.

very coarse sand (baie-grofsand)

See soil separates; soil texture.

very fine sand (baie-fynsand)

See soil separates; soil texture.

vesicle (gasholte; selblasie)

- (1) An unconnected void with smooth walls in a rock formed by bubbles of steam or gas in molten lava as it cooled. Cf. amygdale.
- (2) Spherical structures formed intracellularly, by vesicular-arbuscular endomycorrhizal fungi. Cf. vesicular-arbuscular.

vesicular-arbuscular (vesikulêr-arbuskulêr)

A common endomycorrhizal association produced by phycomycetous fungi of the family Endogonaceae. Host range includes most agricultural and horticultural crops. Often abbreviated to VA.

vitreous (glasagtig)

- (1) Having the lustre of broken glass, quartz, calcite.
- (2) Having no crystalline structure.

virgin soil (onversteurde grond)

A soil in its natural state, undisturbed by man.

vivianite (vivianiet)

A mineral : $\text{Fe}_3(\text{PO}_4)_2 \cdot 8\text{H}_2\text{O}$. It is colourless, blue, or green when unaltered, but grows darker on exposure to the atmosphere. It occurs as monoclinic crystals, fibrous masses or in an earthy form in copper, tin and iron ores, and in clays, peat, and bog iron ore. Syn. blue iron earth; blue ochre.

vlei (vlei)

A low-lying area subject to periodic or continuous wetness. Cf. marsh; swamp.

void (ruimte)

A general term for pore spaces or other openings in soil (or rock). In addition to pore space, the term includes vesicles, solution cavities or any openings, either primary or secondary; also called interstices. Cf. porosity.

void ratio (ruimteverhouding; porieverhouding)

The ratio of the volume of void or pore space to the volume of solid particles.

volume fraction of water (volumetriese waterinhoud)

See soil water : volumetric water content.

volumetric water content (volumetriese waterinhoud)

See soil water : volumetric water content.

volumetric water percentage (volumetriese waterinhoud)

See soil water : volumetric water content.

volumetric water potential (volumetriese waterpotensiaal)

See soil water : Table B.

vugh (kristalholte; grondholte)

- (1) A small cavity in a rock or vein, usually lined with crystals.
- (2) A micromorphology term. See micromorphology.

W

waning slope (afnemende hang)

A slope which is concave upward, decreasing downslope.

waste (afval)

All matter foreign to soil, whether of industrial, municipal, household or agricultural origin, that may be disposed of in dumping sites or on soil.

waste land (uitskotland)

Land not suitable for, or capable of, producing materials or services of value. A miscellaneous land type.

water content (wetness) (waterinhoud)

See soil water : water content.

water culture (waterkultuur)

See hydroponics.

waterlogged (versuip)

Soil or land saturated with water. It may result from excessive rain, irrigation or seepage, coupled with inadequate drainage, and is detrimental to the growth of most crop plants.

water mass fraction (watermassafraksie)

See soil water : water mass fraction.

water percentage (waterpersentasie)

See soil water : water content.

water potential (waterpotensiaal)

See soil water : water potential.

water ratio (obsolete) (waterverhouding (verouderd))

See soil water : liquid ratio.

water requirement (waterbehoefte)

The total quantity of water, regardless of its source, required by crops for their normal growth under field conditions. It may include water applied in irrigation, precipitation and soil water available to the crops. Cf. irrigation requirement.

watershed (waterskeiding; opvanggebied)

- (1) The line, ridge or summit of high ground separating waters flowing to different rivers or basins. Syn. divide.
- (2) A catchment area. Cf. catchment.

water-stable aggregate (waterstabile aggregaat)

A soil aggregate which is stable to the action of water such as falling drops, or agitation as in wet-sieving analysis.

water table (watervlak)

See soil water : water table.

water tension (waterspanning)

See soil water : matric potential.

water use efficiency (watergebruiksdoeltreffendheid)

Yield of crop produced per unit of water consumed.

water yield (waterleivering)

The total outflow from a drainage basin through either surface channels or subsurface aquifers.

waxing slope (aanwassende helling)

A slope that is convex upwards, increasing down-slope.

weathering (verwering)

- (1) The disintegration and decay of rock, so producing *in situ* a mantle of waste, depending on : the nature of the rock, the relief and the potency of the climatic agents.
- (2) Weathering may be mechanical or physical (frost action, temperature change), chemical (solution, carbonation, hydrolysis, oxidation, hydration) or biological (the presence of moss and lichen, tree roots, worms, moles, rabbits; this is not strictly weathering, but it assists, both mechanically and physically). The work of wind and rain (except for the latter providing lubrication of material and water which may freeze in cracks) are not included in weathering, since they involve transport of material, and are part of erosion.

weathering sequence (verweringsreeks)

A list of minerals according to their relative stability to weathering. The fundamental basis of establishment of weathering sequence lies with one or more of the following criteria: relative persistence with age of formation, geographic correlation with weathering intensity factors, particle-size (specific surface) function, and persistence as a function of depth in the formation.

wetland (natland)

A flat area covered permanently, occasionally, or periodically by fresh or salt water up to a depth of 6 m (e.g. flooded pasture land, marshland, shallow inland lakes, rivers and their estuaries, intertidal mud flats).

wetness (waterinhoud)

See soil water : water content.

wetting zone (benattingszone)

When a homogeneous profile is examined at any moment during infiltration under ponding, it is found that the surface of the soil is saturated, perhaps to a depth of

several millimetres or centimetres, and that beneath this zone of complete saturation is a lengthening zone of apparently uniform, nearly saturated soil, which is known as the transmission zone. Beyond this zone there is a wetting zone, in which soil wetness decreases with depth at a steepening gradient down to a wetting front, where the water gradient is so steep that there appears to be a sharp boundary between the wet soil above and the dry soil beneath. Cf. soil water: infiltration.

wilderness land (wildernisland)

A land area left untouched and in a natural state, with no human control or interference.

wild-flooding irrigation (onbeheerde vloedbesproeiing)

See irrigation methods.

wilting point (verwelkpunt)

It is the water content of a soil below which a majority of plants wilt permanently. The latter occurs when the hydraulic conductivity of the soil has decreased to such an extent that water will not move rapidly enough towards the roots of plants to satisfy their requirement, even during periods of low water demand, such as at night. Temporary wilting occurs when the water flow to the roots is insufficient to meet their requirement during short periods of high demand. Wilting point is estimated in the laboratory as the amount of water contained in an undisturbed soil sample that has been saturated, then drained to equilibrium at a pressure differential of 1 500 kPa. It is commonly expressed as a percentage of the dry mass of soil or as mm water per m depth of soil. Cf. permanent wilting percentage; soil water: total available water capacity.

windbreak (windbreker)

Trees, shrubs, or other vegetation planted perpendicular, or nearly so, to the principal wind direction to protect soils, crops, homesteads, etc. from wind and snows.

wind erosion (winderosie)

The detachment, transportation, and deposition of loose topsoil by wind action, especially in duststorms in arid or semiarid regions or where a protective mat of vegetation is inadequate or has been removed. Cf. deflation.

X

xenolith (xenoliet)

A term applied to rock fragments that are foreign to the body of igneous rock in which they occur.

xerophyte (xerofiet)

A plant which grows in an area of limited water supply, such as in a desert.

Xerosol (obsolete) (Xerosol (verouderd))

See soil classification.

Y

yellow-brown apedal B horizon (geelbruin apedale B-horison)

See diagnostic horizon.

Yermosol (obsolete) (Yermosol (verouderd))

See soil classification.

yield value (meegeewaarde)

The force required to overcome the cohesive forces in a plastic material and initiate flow.

young soil (jong grond)

A soil beginning to form. Cf. immature soil; mature soil.

Z

zeolite (seoliet)

A hydrated alumino-silicate of the alkali and alkali earth metals with an infinitely extended three-dimensional anion network and an atomic ratio $O:(Al\ Si)=2$. When heated, zeolites give off water continuously rather than in stages and on re-exposure to water vapour will re-absorb the lost water. They occur typically in amygdales and cavities in basic volcanic rocks and in other late-stage hydrothermal environments. Many have a significant capacity for ion exchange.

zero point of charge (ZPC) (zero-ladingspunt (ZLP))

The ZPC is the pH at which there is an equal number of positive and negative charges on a colloid. It is determined primarily by the permanent negative charges (in the case of soil) and the pH-dependent charges.

zeta potential (zetapotensiaal)

See electrokinetic potential.

zircon (sirkoon)

$ZrSiO_4$, tetragonal. Cf. accessory mineral; heavy mineral.

zonality (sonaliteit)

In soil science, the concept of zonality was a recognition of the influence which the climates of the world have had in determining the properties of soils. Its usefulness is reduced by the important effects which non-climatic soil-forming factors (especially parent material, time and drainage) have on soil properties. Cf. azonal soil; intrazonal soil; zonal soil.

zonal soil (obsolete) (sonale grond (verouderd))

One of the three primary subdivisions (orders) in soil classification formerly used in the United States. Subdivisions of zonal soils were based on properties reflecting differing influences of climate and vegetation on soil development.

zymogenous flora (simogene flora)

Organisms found in soils in large numbers immediately following the addition of readily decomposable organic materials. Cf. autochthonous.

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