

Glossary

assimilation	The process in which plants convert the sun's energy, water and carbon dioxide into sugars and more complex molecules, such as amino acids or other substances important for plant metabolism. Assimilation and photosynthesis are often used synonymously.
bare-root seedling production	Also called 'open ground seedling production'. A system in which seedlings are grown directly in the soil and lifted for transplanting without any of the growth substrate attached to the roots (in contrast to container production). More common in humid and temperate than in arid environments.
bulk density	The weight of something per unit volume. In a nursery, bulk density is usually expressed as kg/m ³ or g/L. The higher the bulk density, the heavier the material.
container plant	A nursery plant that is grown in a container. It refers to seedlings after pricking out and rooted cuttings after potting.
container production	Plant production which uses any sort of suitable container, from polythene bags to rigid clay or plastic containers (root trainers).
cotyledons	The primary leaves of germinating plants ('seed leaves').
culling	The process of selecting and eliminating plants that do not meet requirements, such as the weak, diseased, or retarded plants. Culling includes discarding plants that grow faster than the norm.
direct sowing	The planting of seeds directly into the container. This practice avoids pricking out and often results in faster plant development without the likelihood of root deformities.

etiolation	The response of a plant to insufficient light. Plants react to dark conditions by growing long internodes and reducing chlorophyll from the tissues. Plants that are etiolated have soft stems and are prone to physical damage or insect attack. When planting density is too high etiolation results from this too. Etiolation is sometimes used as a pre-treatment in rooting cuttings.
flat	A shallow tray, usually rectangular, with or without holes and/or compartments. Flats are normally used as germination trays or for plug production.
germplasm	Any plant part used for regeneration: seed, cuttings, scions, pollen. Symbionts necessary for a tree's survival are often included in 'germplasm'.
hardening-off	The process of adapting seedlings to field conditions by <i>gradually</i> withholding water and shading.
medium (pl. media)	see substrate
orthodox seed	Seed that can remain viable for long periods if processed and stored in the appropriate manner (normally seed should have a low moisture content and be kept at low temperatures).
PAR	<i>Photosynthetically active radiation</i> , the wave lengths between 380 and 720 nm that can be used by plants for photosynthesis.
planting stock	Or simply 'stock'. The plants being produced in the nursery.
plug	A seedling or cutting that has been grown in a root trainer and whose root mass has filled the container completely.
ppm	<i>Parts per million</i> , e.g. 1 g in 1 000 000 g or 1000 kg, or 1 ml in 1000 L. Used to express concentrations of fertilizer or pesticide formulations.

pricking out	Planting seedlings from the germination bed into pots. This should be done as early as possible after germination, before roots grow so long that they could be damaged in the process. Pricking out is usually done with species which have very small seeds and seedlings which need special attention. Pricking out can lead to root deformities when not done very carefully.
provenance	Germplasm from a single place of origin. Germplasm from different provenances of the same species can differ in ways such as growth habit, biomass production, or drought hardiness.
recalcitrant seed	Seed that cannot be dried to a low moisture content without losing viability (as compared to orthodox seed).
root deformity	Any abnormal form of a root system, such as bent (J, L-form), double bent (N-form) or coiled roots. These are caused by the container, bad pricking out or overgrowing, and can be limited by the use of root trainers .
root trainer	Any rigid container that has vertical ribs to direct root growth, and one or more large holes at the bottom for air root pruning. Root trainers are made in different shapes (round, square, octagonal) and depth. The original Roottrainers® can be opened like a book for easy extraction of the seedlings.
shade cloth	A netting woven from nylon or saran thread. A particular grade of shade cloth transmits a certain amount of the sun's light. Coloured netting can be used to change the wavelengths of sunlight in the red:far-red ratio.
shade house	An open construction with shade cloth spread over wires stretched between poles. Shade houses are usually 3–5 m high.
substrate	The material in which a plant grows. Used synonymous with 'medium'.

- Symbiont** Any member of a group of micro-organisms or fungi that grows in close association with its host plant. Symbiotic associations benefit both host and symbiont: the host plant provides the symbiont with energy through assimilates; the symbiont provides the host plant with nutrients. The most common symbionts on agroforestry trees are *Rhizobium*, *Frankia* and mycorrhizae.
- UV** Ultraviolet radiation (5–400 nm). The main source for UV radiation is the sun. It is invisible to the human eye but can cause skin cancer, and plastic exposed to UV deteriorates rapidly unless the material has been UV-stabilized through a special chemical process.
- wind-throw** The falling of trees in strong winds, often due to a weak, distorted or shallow root system. It is worth excavating and examining fallen trees to see whether the cause was a badly developed root system.