

Dictionary of Horticulture

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Abscisic acid (ABA, Abscisin, Dormin)

Naturally occurring plant growth inhibitor, promoting senescence, abscission and / or dormancy.

Abscission

Detachment of leaves, flowers, fruits or other plant parts.

Abscission zone (Abscission layer)

Zone where transverse division and separation of cells occur, leading to abscission of organ.

Absolute

Purified floral concrete. Impurities like plant waxes, albumin, colouring matter etc., are removed by separation techniques using absolute alcohol (See Concrete).

Accessory

In Floriculture, an item used in support of landscape or floral design such as figurine, bird bath, pool or accent rocks.

Accessory bud

A bud located above or beside the main axillary bud.

Accessory fruit

A fruit developing from accessory floral parts like floral tube, receptacle etc., in addition to the ovary.

Acclimatization

The process of adapting to a new environment.

Achene

A dry indehiscent, one seeded fruit in which the ovary wall remains free from the seed coat.

Acropetal

From a physiological base to a physiological apex.

Acuminate

Tapering to a point, as a leaf.

Adaptability

The capacity of an organism or species to become suited to its environment.

Adaptation

The fitness of a population in a given environment.

Adaptive trial

A trial conducted to assess the adaptability of a technology or a variety to a particular region.

Adventitious

Produced in an unusual or abnormal position, or at an unusual time of development or away from the natural habitat.

Adventitious embryony (Nucellar embryony)

Type of apomixis where embryos arise from a cell or group of cells either in the nucellus (usually) or in the integuments in addition to the regular embryo.

Aeration

Supply of oxygen to the roots of plants and micro-organisms in the soil.

Aerenchyma

Tissue of thin walled cells with large, air filled intercellular spaces, found in roots and stems of some aquatic and marsh plants.

Aerial roots

Roots absorbing moisture from the air e.g. orchids.

Aeroponics

A system of growing plants where the roots are suspended and bathed in a nutrient mist rather than a nutrient solution as in hydroponics.

Aerosol

Type of formulation of insecticide, antibiotic or plant growth substances dispersed as very fine droplets on application, forming smoke or fog.

Aestivation (Estivation)

The arrangement of sepals and petals in the flower bud before expansion.

Aetiology (Etiology)

The science of the cause or origin of diseases.

Afforestation

Artificial establishment of a forest where tree crops are not previously grown or on deforested land.

After-cultivation

Harrowing, tilling and other cultural operations in a field after the emergence of the crop.

After-ripening

The physiological changes that occur in a dormant seed to enable germination.

Agar (Agar agar)

A gelatinous substance obtained from certain species of red algae, widely used as a solidifying agent in aseptic culture.

Aggregate fruit

A fruit developing from a flower having several pistils that ripen together in a single mass.

Agriculture

(1) An activity of man aimed at the production of food, fibre, fuel etc., by the use of terrestrial resources.

(2) The art, science and industry of managing the growth of plants and animals for human use.

Agri-silviculture

Use of land for the concurrent production of agricultural and forest crops.

Agro-climatic regions

Broadly homogenous zones with respect to climate and edaphic factors.

Agro-ecology

The study of the relation of agricultural crops and environment.

Agro-forestry

Self-sustaining land management system combining production of agricultural crops with that of tree crops with or without livestock.

Agrostology

The science which deals with the study of grasses, their classification, management and utilization.

Air drainage

Air outlets and convection currents which prevent dead air and frost pockets.

Air-inarching

Technique of grafting a branch to the trunk of a tree.

Air layering

Layering in above ground branches by removing a ring of bark and placing the rooting medium around.

Air plants

Plants not attached to the ground.

Air root-grafting

The grafting of roots on to a branch while it is still attached to the tree.

Aitonomic

Able to develop parthenocarpic fruits only in response to some stimulus external to the ovary.

Akene

Dry, one seeded, small, indehiscent fruit of one carpel, seed like in appearance.

Albido

The white tissue beneath the peel of citrus fruit.

Albino

An organism lacking normal pigmentation due to genetic factors. The condition is albinism.

Alkaloids

Group of nitrogen containing basic organic compounds which possess poisonous and medicinal properties e.g. atropine, morphine, quinine and strychnine.

Allelopathy

Any direct/indirect harmful effect that one plant has on another or mutually on each other through the production of chemical compounds that escape into the environment.

Alley

A narrow passage left across rows to facilitate harvesting and cultural operations.

Allogamy

Cross fertilization in plants.

Allograft (Homograft)

A graft between like species.

Allopolyploidy

Polyploidy involving the combination of chromosomes from two or more species.

Alpine garden

A garden comprised of plant species normally found growing at high elevations.

Alpine plant

A plant suitable for rock gardens or one that normally grows in exposed mountain regions.

Alternate

An arrangement of leaves, buds, and other organs borne singly at different heights on either side of the stem or axis.

Alternate bearing (Biennial bearing)

The phenomenon of producing heavy bearing during 'on year' which is alternated by shy bearing during 'off year.'

Altitude (Elevation)

Vertical distance of a level, a point or an object from mean sea level (MSL).

Ambient

- (1) The environment of a particular time.
- (2) Set of climatic conditions existing during an experiment.

Amphimixis

Normal sexual reproduction in which the morphologically dissimilar male and female gametes unite together for the formation of zygote.

Analogues

Organs of different plants with like function but of unlike origin.

Androecium

The collective term for stamens of a flower.

Androdioecious

Condition in which male and hermaphrodite flowers are borne on separate plants.

Androgenesis

Plant development from male gametophytes.

Andromonoecious

Condition in which both male and hermaphrodite flowers are borne on the same plant.

Anemophily (Anemophilous)

Pollination by wind.

Angel crops

Crops raised without chemical fertilisers, plant protection chemicals and growth stimulants.

Angiosperm

A member of the group of flowering vascular plants whose seeds are enclosed within a mature

ovary (fruit) in contrast to the seeds of gymnosperms which are not enclosed in an ovary.

Annual

Plant that completes its life cycle from seed to seed within one year or one growing season.

Annual ring

A distinct layer of growth as seen in the cross section of a woody stem (See Growth ring).

Annual up timing (Crop timing)

Adjusting planting and / or adopting cultural operations to facilitate harvesting of the crop at a specified time.

Anther

The portion of the male flower that bears the pollen.

Anthocyanin

Chemical plant pigment; usually red or blue.

Anti-auxin

Substance which can inhibit growth by antagonising the activity of auxins.

Anticoagulant

Material added to rubber latex to prevent coagulation by natural means before it reaches the factory.

Antioxidants

Substances which are antagonistic to oxidation process.

Antitranspirants

Substances that retard or inhibit transpiration.

Apetalous

Without petals.

Apogamy

A type of apomixis in which the embryo develops from the cells other than egg cell.

Apomixis

Occurrence of an asexual reproductive process in place of normal sexual reproduction involving reduction division and fertilization.

Approach grafting

A grafting method where rootstock is taken to the scion donor plant for grafting. Stock and scion are independent for their nourishment till the completion of the graft union (Synonym : Inarching).

Aquaculture

- (1) The cultivation or rearing of aquatic plants or animals.
- (2) The technique of growing plants without using soil (hydroponics) either in circulated, aerated nutrient solutions or in inert media such as gravel, sand, peat, vermiculite or saw dust, to which a nutrient solution is added.

Aquatic plant

Any plant that grows in or near water.

Arborescent

Becoming tree like, nearly the size of a tree.

Arboretum

Area set aside for growing and displaying different kinds of woody ornamental trees, shrubs and vines with proper labelling.

Arboriculture

Cultivation of trees and shrubs.

Areole

The area occupied by a group of spines or hairs on a cactus.

Arid fruit culture

The cultivation of edible fruits in arid region that are consumed either fresh or processed.

Aril

- (1) Modified mesocarp covering the seed of nutmeg Also called mace.
- (2) An appendage or outer covering of a seed, growing from the hilum or funiculus.

Aromatic

Chemical compound derived from the hydrocarbon, benzene (C₆ H₆), having a pungent odour.

Aromatic plants

Plants which yield aromatic essential oils on steam distillation or solvent extraction e.g. lemongrass; patchouli.

Artificial long days

Interruption of dark period or extension of natural daylength to prevent flower bud initiation of short day plants.

Artificial seed

Encapsulated or coated somatic embryos used for planting like seeds.

Aseptic

Free of all microorganisms.

Aseptic canning

A technique in which food is sterilised outside the can and then aseptically placed in previously sterilised cans which are subsequently sealed in an aseptic environment.

Asexual

Lacking or not involving sex; sexless; not involving union of gametes.

Asexual propagation

(1) The multiplication of plants using a vegetative plant part.

(2) Plant propagation not involving union of gametes. The propagation using parthenogenetic seed (as in mangosteen) is asexual.

Astringency

A puckering taste to the mouth caused by tannins.

Astroturf

A synthetic lawn, popularly used in developed countries in roof gardens , as well as in stadium (mainly in football and hockey).

Atrophy

Dwarfing or reduction in size, often extreme, through disease affecting the whole plant or part.

Attenuation

The decrease in the intensity of radiation caused by the absorption and scattering of the radiation as it passes through the matter.

Autecology

The study of the interaction of a plant species with its environment.

Autogamy

Self fertilisation or the fertilisation of a flower by its own pollen.

Autograft

A type of graft which involves transplantation of tissue or an organ from one part of an individual to another part of the same individual.

Autopolyploidy

Polyploidy with similar sets of chromosomes.

Autotroph

A self sufficient organism that synthesizes its own food from inorganic molecules.

Auxanometer

An instrument used to measure growth of plants.

Auxin

Plant growth regulator that functions more by stimulation of cell elongation than through an effect on cell division.

Axenic culture

A culture without foreign or undesired life forms.

Axillary bud

A bud origination in an axil or point where a leaf stalk or branch forms an angle with the main stem.

Baccate

Berry like ; pulpy or fleshy.

Back cross

A cross of a hybrid with one of its parents with the purpose of transferring a specific gene.

Bactericidal

Capable of killing bacteria.

Balata

A product analogous to "gutta percha" obtained from the bark of *Mimusops globosa*.

Balled and burlapped

Any plant dug with a soil ball and tied up in burlap.

Balling

The aggregation of macerated tea leaves into lumps or balls during rolling or fermentation.

Bare root (Bare root plant)

Rooted plant without soil, opposite to balled and burlapped.

Bari

Tea plantation in which trees are allowed to grow without pruning to produce seed.

Bark

The tough exterior covering of a woody stem or root outside the cambium.

Bark grafting

A method of grafting in which dormant scion is inserted between the bark and wood of a rootstock.

Bark inversion

A method of grafting for dwarfing a plant in which a complete ring of a bark is removed from the trunk, inverted and regrafted into place.

Bark ringing

The removal of a ring of bark from the trunk of a plant to regulate shoot growth and flowering.

Barley water

Fruit beverage containing at least twenty five per cent fruit juice or pulp, thirty per cent total soluble solids and 0.25 per cent barley starch.

Basipetal

- (1) Development in succession towards the base, oldest at the apex and younger at the base.
- (2) Transport of substances away from the apex, within a plant.

Bearing habit

The relative position of flowering and fruiting on the shoots of a plant (See Fruiting habit).

Bed

- (1) Narrow flat-topped ridge on which crops are grown with a narrow furrow on each side to facilitate irrigation and drainage.
- (2) An area in which seedlings or sprouts are grown before transplanting.

Bed planting

Planting on elevated level beds, which are separated by narrow furrows.

Bedding plants

Plants that are raised by commercial growers and sold in the early stages of growth for use in outdoor gardens.

Bench grafting (Root Grafting)

Grafting where roots are used as the rootstock.

Berry

A simple fruit with one or more carpels and having the entire pericarp fleshy.

Berry fruits

A synonym of small fruits or soft fruits.

Biennial

A plant with a two year life cycle, growing vegetatively and storing food in the first year and producing flowers and seeds in the second year.

Biennial bearing

See Alternate bearing.

Bifarious

Arranged in two opposite rows.

Bilateral cordon

Training system as in grapes, where the trunk is divided into two branches extending horizontally on a supporting wire.

Binomial system of nomenclature

The assignment of names to organisms using two Latin words, the first denoting the genus and the second denoting the species e.g. *Mangifera indica*.

Bio-aesthetic planning

Planting of trees and plants for beautifying roads, parks, public and private places.

Bioassay

Determination of the biological activity as well as relative strength of a substance (hormone, drug etc.) by comparing its effect on a test organism with that of a standard preparation.

Biomass

The combined dry or wet weight of all the organisms in a habitat.

Biometrics

The science dealing with the application of statistical procedures for the study of biological problems.

Biosynthesis

Biological synthesis, building or forming of biochemical compounds in a living organism.

Biotechnology

The application of biological organisms, systems or processes in industrial scale for the benefit of man.

Biotic

Pertaining to life.

Biotype

Physiological race or form within a species which is morphologically identical, but is different in genetic, physiological, biochemical or pathogenic characteristics.

Bird baths

A garden adornment consisting of a bowl shaped container fixed over a pillar, storing water for birds.

Bird chilli (Tabasco chilli)

Perennial chilli(*Capsicum frutescens*),with small sized pungent fruits.

Bisexual

Both sexes present and functional in the same flower.

Blackout system

A means of covering plants with black polythene or cloth to shorten the photoperiod to promote flowering of short day plants.

Blade

The expanded portion of a leaf, the lamina.

Blanching

(1) Heating of a fruit or vegetable product in boiling water or steam for a brief period to inactivate enzymes before processing.

(2) The technique of covering plant parts with soil or other materials to exclude light.

Bleeding

Loss of sap through wounding.

Blind shoot

A shoot in which the apical bud aborts, resulting in no further growth.

Bloom

- (1) The state of flowering.
- (2) Blossom.
- (3) Delicate waxy or powdery substance on the surface of leaves, berries etc.

Blossom

See Bloom.

Bluing

The objectionable development of blue pigment in flower petals usually after harvest.

Bole

The basal region of the stem or trunk of a tree.

Bolting

Process by which plants produce flower stalks and flowers.

Bonsai

Japanese art of growing miniature trees and shrubs in shallow containers by extreme dwarfing treatments.

Bonsai style

Training plants in bonsai-like fashion.

Bonus crop

An additional crop of economic importance taken in intercropping / mixed cropping systems without any extra inputs.

Border plants

Plants located at the perimeter of landscapes or experimental plots.

Botanical garden

A garden used for growing and displaying ornamental plants for educational and research purposes.

Botanical name

Scientific name assigned to a plant species.

Botanical pesticides (Botanicals)

Pesticides obtained from plants.

Bottle garden

The art of making miniature garden by growing delicate plants inside bottles.

Bound water

Water held by the cell against freezing.

Box ridging

A system in which box shaped ridge is formed around the base of the plant to control erosion and aid irrigation.

Bracing

Method of grafting done to support branches which are in danger of breaking off.

Bract

A modified, often very small leaf / leaf-like structure subtending a flower or inflorescence. It may appear to be the part of the flower.

Bramble

A fruit which is a member of the Rubus genus.

Break

New lateral shoot, often developing after the removal of apical dominance by pinching.

Breaker

A device at the end of a hose to permit application of water at low velocity.

Breeder seed

The seed raised and controlled by the originating or sponsoring institution or breeder.

Bridge grafting

The repair grafting done when the root system of the tree is injured.

Brining

Treating vegetables with solution of salt in water (brine) to improve flavour and to serve as a heat transfer medium for facilitating processing.

Brix

The percentage of total soluble solids in fruit juices, plant saps etc., measured using Brix hydrometer.

Broadcasting

The process of scattering agricultural inputs, such as seed, fertiliser and manure on the surface of the soil by hand or by implements for uniform distribution over the entire field.

Brown budding

A budding method commonly adopted in rubber using buds taken from bud wood of one year growth and stock plants of ten months or more growth.

Brown head

A bloom that is excessively open.

Browning

The process of browning of cut surfaces of fruits and plant parts due to polyphenol oxidation.

Brush (in grapes)

Vascular strands remaining on the pedicel of grapes after the berry is detached.

Bud

(1) Undeveloped shoot or flower, often enclosed by reduced or specialised leaves called bud scales.

(2) A vegetative outgrowth from yeast.

Bud break

The resumption of growth of resting buds.

Bud mutation

Mutation in bud, causing variation in the arising branch, flower or fruit (Synonym: Bud sport, Bud variation).

Bud sport

Mutation in bud, causing variation in the arising branch, flower or fruit (Synonym: Bud mutation, Bud variation).

Budded stump

Planting material comprised of the stock plus a dormant or recently activated bud, the stock being cut off a few centimeters above the bud.

Budding

(1) A form of grafting using a single bud.

(2) Production of a shoot from an underground stem.

(3) The new growth in the spring.

(4) The process by which yeasts produce vegetative outgrowths.

Bud rubbing

The removal of buds from spurs or shoots by pushing or rubbing with hand.

Bud scale

Protective scale-like leaves which cover the shoot apex, flower and embryonic leaves.

Bud sport (Bud mutation)

A plant or portion of a plant arising by spontaneous mutation in the apical meristem of a bud.

Bud stick

A shoot or twig used as a source of bud for budding.

Bud take

The success of budding operation as observed by the presence of green, healthy bud which is in the process of bud union.

Bud wood

Shoot from which bud is selected for budding.

Bulb

A specialized underground plant organ consisting of a greatly reduced stem (basal plate) surrounded by fleshy, modified leaves called scales.

Bulbel (Bulbils, Bulblets)

- (1) Small or miniature bulbs arising from the parent bulb.
- (2) Aerial bulblets.

Bulb cutting

Cutting of bulb used for propagation.

Bull

The inflorescence of banana during its ascent up the pseudostem.

Bull head

- (1) The corm of a banana plant which has flowered.
- (2) A condition when the short petals or excess number of petals give a blunt, broad appearance to a flower.

Burning

The browning of leaves caused by excess fertiliser.

Bush

A low woody plant, without a distinct trunk, but with a number of branches at or near the ground level.

Button

(1) In coconut, female flower which is a small spherical body about 1.3 cm in diameter with resemblance to a small nut.

(2) The young emerging fruit of a mushroom.

Buttress

Outgrowth of the trunk and roots at or above the surface of the ground to give the plant additional support.

C₃ plants

Plants showing decreased carbohydrate production due to photorespiration and in which three-carbon sugars are the first stable intermediates in the Calvin Benson cycle of photosynthesis.

C₄ Plants

Plants that can photosynthesize at a faster rate than C₃ plants due to special leaf anatomy and a unique biochemical pathway which begins with a stable, four-carbon sugar intermediate.

Cabbage

(1) The piece of banana pseudostem discarded from the head or large corm.

(2) The terminal bud of coconut.

(3) *Brassica oleracea* var. *capitata*, the vegetable coming under Cruciferae family.

Cacti

A group of xerophytic plants, not having true leaves, thriving without being watered for several days.

Caducous

(1) Falling off early or prematurely, as the calyx in some plants.

(2) Not persistent.

Caffeine

The purine base alkaloid found in tea and coffee which works as stimulant.

Callus

Mass of parenchymatous cells, developing on or around a wound or from an explant.

Calli clone

Plants regenerated from callus.

Calyx

The outer parts of the flower (sepals) is collectively called calyx.

Cambium

A lateral meristem in vascular plants which produces increases in diameter of stems and roots through the production of xylem, phloem and parenchyma cells.

Campanulate

Bell shaped.

CAM plants

Desert plants in which Crassulacean Acid Metabolism (CAM) system is prevalent where the CO₂ is fixed at night e.g. *Bryophyllum calycinum* and cactus plants.

Candied fruit/vegetable

A fruit / vegetable impregnated with cane sugar or glucose syrup, and subsequently drained free of syrup and dried.

Cane

(1) A main stem of a small fruit plant or vining crop.

(2) In grapes the term applies to previous season's growth or new shoots after they lose their leaves.

Canker

A dead area caused by a fungal disease.

Canning

A method of preserving food in a fresh condition by processing and sealing in airtight containers.

Canopy

The overhead cover or horizontal projection of a plant formed by its leaves, branches etc.

Caoutchouc

American Indian name for rubber, meaning weeping wood.

Capillary watering

See Mat watering.

Capsule

A simple, dry, dehiscent fruit, formed of two or more united carpels.

Carbonated beverages

Carbonated drinks prepared by using fruit juices.

Carbon nitrogen ratio (C:N ratio)

The ratio of carbonaceous materials to nitrogen in plant or soil.

Carotene

An orange pigment occurring in certain plastids; precursor of vitamin A.

Carpel

One of the innermost floral structures which bears or encloses the ovules.

Carpel bedding

Covering the beds in gardens with dense, low growing herbaceous plants.

Carpellody

Abnormal development of the stamen into carpel like, fleshy structures, resulting in misshapen 'catface' fruits e.g. papaya.

Caryopsis

An indehiscent fruit with one seed which is completely fused to the inner surface of the pericarp.

Cash crop

A high value marketable crop e.g. tea; cardamom.

Casual

An introduced plant which has not become established, although sometimes found in places where it is not cultivated.

Catabolism

Metabolic process in which complex materials are converted into simple compounds e.g., respiration.

Catch crop

(1) A quick growing crop incidentally planted and harvested between two major crops in consecutive seasons.

(2) A contingency crop grown to replace a major crop which has failed.

Catch wire

A wire that serves as an attachment for developing grape shoots or other plants with tendrils.

Catkin

A hanging type of spike inflorescence that has male or female flowers with a perianth.

Cauliflorous

Bearing inflorescence on the trunk or woody branches e.g. cocoa; jack.

Cauline

Arising from or inserted on the stem.

Central leader

System of training a fruit tree in which it is trained to form a trunk extending from the soil to the top of the tree.

Centre of diversity

An area where the genetic and specific diversity is very high.

Certified plants

Plants produced under strict guidelines and inspections controlled by a regulatory agency to ensure trueness to type and freedom from damage, insects, diseases etc.

Certified seed

The progeny of breeder, foundation or registered seeds, so handled as to maintain satisfactory genetic purity and identity.

Chat

An assortment of fresh dessert fruits cut into pieces and sprinkled with salt and spices.

Check

A row or plot of standard variety included in field experimentation for comparison.

Chemical mutagen

A chemical capable of causing genetic mutation.

Chemical thinning

Thinning of blossoms by the use of chemical substances.

Chemotropism

A bending or turning in response to chemical stimulus.

Cherelle

Small and immature pods of cocoa.

Chicory

Roots of *Cichorium intybus* used for blending and mixing with coffee to the extent of 40 per cent.

Chilling injury

Damage to plant parts resulting from exposure to cold, above freezing temperature.

Chilling requirement

The number of hours at or below a specific temperature, necessary for uniform bud break following winter dormancy.

Chilling unit

A period of time at or below a specified threshold temperature that has the maximum effect toward fulfilling the chilling requirement of a given plant.

Chimera

A plant having tissues of different genetic composition adjacent to each other.

Chinese layerage

See Air layering.

Chip budding (Yemma budding)

Budding where a single bud with a piece of wood is fitted to a suitable cut in the stock.

Chlorophyll

Green pigment found in plants, used for photosynthesis.

Chlorosis

Yellowing caused by loss of or reduced production of chlorophyll.

Chromoplast

A coloured plastid containing pigments other than chlorophyll, often yellowish or red.

Chupon

Vertical stems or shoots of cocoa.

Ciliate

Margined with hairs

Cion

Obsolete term for scion.

Circumposition

See Air layering.

Circumutation

An irregular spiral movement of a plant which takes place from unequal growth rates.

Citrage

An intergeneric hybrid between *Poncirus trifoliata* and *Citrus sinensis*, used as rootstock.

Cladophyll (Cladode)

A stem that resembles a leaf in appearance.

Clarifying agents

Substances used to remove haziness or sediment produced by oxidative deterioration in fruit juices, wines, beer etc.

Clean cultivation

Periodic soil tillage to eliminate all vegetation other than the crop being grown.

Cleft grafting

A grafting method where the scion piece is placed in a split (cleft) formed on a stock plant (See Wedge grafting).

Cleistogamy

Self pollinating nature of closed flowers.

Cleistogamous

Flowers which fertilise themselves without opening.

Climacteric

The maximum respiration rate of a fruit, reached just before full ripening.

Climacteric fruits

Fruits exhibiting increased rate of respiration before full ripening e.g. mango; banana.

Climate

The aggregate of weather conditions over a long period of time.

Climate control greenhouse

Greenhouse in which climatic factors like temperature, light (intensity and duration) and humidity are controlled manually or automatically.

Climax vegetation

The most fully developed natural vegetation the climate can sustain.

Climber

Annual or perennial herb or shrub with special structures to climb over a support.

Clonal propagation

Asexual propagation of plants from a single plant, resulting in true-to-type and uniform progenies.

Clonal seed

A seed collected from a clone.

Clone

A group of genetically uniform plants, vegetatively propagated from a single parent.

CO₂ compensation point

The concentration of carbon dioxide at which photosynthesis balances respiration and there is no net CO₂ flux. In C₃ plants this is about 50 ppm, whereas in C₄ plants it is almost zero.

Coconut milk

The milky juice obtained from macerated coconut kernel (endosperm).

Coconut water (Liquid endosperm)

In coconut, water like liquid filling the entire cavity of the endosperm when young and partially filled when fully ripe.

Coffeine

The purine base alkaloid in tea and coffee, acting as a stimulant.

Colchicine

A poisonous (alkaloid) drug obtained from *Colchicum autumnale*, used for inhibiting spindle formation during mitosis at metaphase for doubling of chromosome number.

Cold frame

An enclosed bed for propagating or protecting plants in temperate climate, where the source of heat is solar energy (See Hot bed).

Cold hardiness

The ability of a plant to resist injury during exposure to low temperature.

Cold storage

An insulated storage using mechanical refrigeration to maintain a stable low temperature for long term storage of agricultural products.

Cold test

A germination test in which seeds are planted for a period in cool moist soil before transferring to a high temperature in order to assess the seedling vigour.

Cole crops

- (1) Cabbage and its various allies.
- (2) Representatives of the species *Brassica oleracea*

Coleoptile

A protective sheath covering, the first leaf of a grass seedling.

Collar pruning

Pruning of a mature tea bush by cutting close to the soil, thereby removing all the frame, leaving only the central stem (See Rejuvenation pruning).

Collective fruit

Fruit formed from a complete inflorescence or from several flowers as of mulberry and pineapple.

Colouring agents

Substances added to food products to make them attractive and appetising.

Combining ability

The relative ability of an inbred line or a clone, when crossed to another inbred line or clone, to transmit desirable trait(s) to its cross.

Command area

The land area that can be irrigated by canal or from a dam or an irrigation project.

Commercial Floriculture

Area of horticulture related to the commercial production and marketing of cut flowers, flowering pot plants, foliage plants and bedding plants.

Community forestry

Forest managed for the interest of local community or village, run almost exclusively by them.

Companion crop

Any subsidiary crop grown in association with a main crop.

Compatibility

(1) In sex cells, the ability to unite and form a fertilized egg that can grow to maturity.

(2) Congenial condition for successful graft union between stock and scion.

Compatible varieties

(1) Varieties that will set seed when cross pollinated

(2) Varieties that will make a successful graft union when inter-grafted.

Compensation point

The light intensity at which the photosynthetic intake of carbon dioxide is equal to the respiratory output of carbon dioxide.

Competition (Interference)

The process in which two individual plants or two populations of plants interact such that at least one exerts a negative effect on the other.

Complete flower

A flower having pistil(s), stamens, petals and sepals.

Component crops

Individual crops of a cropping system.

Compost

A product obtained by the controlled decomposition of organic matter having a C:N ratio of about 10:1.

Compote

(1) Fruits cooked in sugar syrup, retaining their shape.

(2) A stemmed container used for arranging flowers.

Compound layering (Serpentine layering)

Layering method where a flexible branch is alternately covered and exposed along its length, resulting in several new plants.

Compound leaf

A leaf composed of two or more leaflets e.g. ferns.

Concrete (Floral concrete)

The substance containing odoriferous principles of commercial flowers like jasmine, rose and tuberose obtained by solvent extraction (See Absolute).

Condiments

These are substances of plant origin with pronounced odour and piquancy, used for seasoning food and stimulating appetite (See Spices and condiments).

Congeneric

Belonging to the same genus.

Conifer

A cone bearing plant or gymnosperm.

Conservation

Sustainable use of natural resources, such as soils, water, plants, animals and minerals.

Conservatory (Fernery)

A greenhouse of the tropics which protects plants from fierce sunlight and strong wind.

Continental climate

A climate having large daily and annual ranges of temperature.

Continuous cropping

Growing of crops one after the other without seasonal fallowing.

Contour planting

Planting crops along the contour.

Control

- (1) The untreated plant for comparison with the experimental treatment (See Check).
- (2) To direct or regulate as in induction of organogenesis in cultures through hormone regulation.

Controlled atmosphere storage (CA storage)

A storage method in which the concentrations of atmospheric gases (mainly O₂ and CO₂) and atmospheric pressure are adjusted to extend the storage life of fresh produce (See Modified atmosphere storage).

Cool season vegetables (Temperate vegetables)

Vegetables whose growth and productivity are favoured by low temperatures; most of them have the ability to withstand frost; also known as winter vegetables.

Coppice farming

Practice of intensive exploitation of land capability by regular harvesting of trees which produce numerous shoots from the stump after cutting.

Coppicing

The cutting back of trees or shrubs close to the main trunk or ground level resulting in the production of a number of vigorous new shoots (See Pollarding).

Copra

The mature endosperm (kernel) of coconut when dried to about six per cent moisture content.

Cordate

Heart-shaped.

Cordial

A sparkling, clear, sweetened fruit juice from which pulp and other insoluble substances have been completely removed.

Corm

The underground swollen base of stem axis enclosed by scale leaves.

Cormel

Miniature corm arising from a parent corm.

Corona

An appendage between the petals and stamens e.g. cup of the daffodil.

Cosmetic pruning

Minor pruning of dead flowers and weak or crossing shoots to keep a plant tidy and balanced in shape.

Cotyledons

Embryonic seed leaves that stores nutrients to sustain the growth of a newly germinated plant.

Coumarin

A naturally occurring plant growth inhibitor.

Cover crop

A crop grown alone or in between rows of crops to reduce soil erosion, conserve nutrients, and supplement organic matter.

Creeper

A plant which spreads along the ground surface or other substrata.

Critical level

Concentration of a nutrient element below which deficiency symptoms may develop or a response to addition of the nutrient may be observed.

Crocks

Broken pieces of earthen pots.

Crop

Plants sown and harvested by man for economic purposes.

Crop cafeteria

The demonstration of identified efficient crops / varieties in an agrometeorological region/zone offering an opportunity to the farmer to choose a suitable crop or crop combination commensurating with the available resources and requirements.

Crop canopy

The overhead cover or horizontal projection of a crop formed by its leaves, branches etc. which can influence the penetration and interception of radiant energy.

Crop competition

The tendency of plants of the same or different species growing together to strive for and capture common resources like light, water, nutrients and space, resulting in reduced growth and/or altered form of the crop(s).

Crop duration

Days taken by a crop from germination to maturity.

Cropping pattern

Yearly sequence and spatial arrangements of crops and fallow, on a given area.

Cropping system

Cropping pattern and its interaction with farm resources, farm enterprises and available technology.

Crop residue management

Use of the non-commercial portion of the crop for soil protection and improvement.

Crop rotation

The practice of growing different crops on the same land in a regular, recurring sequence.

Crop season

The most favourable weather condition to get better yield.

Crop timing

Regulating the harvesting time of crops by way of adjusting the planting time, pruning or suitable treatments.

Cross pollination

Transfer of pollen from the anther of one plant to the stigma of another plant (unless of the same clone).

Crotch

Any angle formed between two woody branches, or that point where the main trunk divides into branches.

Crown

- (1) The junction between stem and root near the ground level.
- (2) The tree-top.
- (3) Leafy top of pineapple fruit used for vegetative propagation.
- (4) Part of a rhizome with a large bud suitable for propagation.

Crown bud

A flower bud, whose development has ceased, resembling a crown.

Crown budding

Replacing the undesirable and susceptible crown of a high yielding tree with a resistant clone by budding.

Crown grafting

A graft union made at the crown of a plant on an established rootstock.

Crown slips

Shoots growing on the crown of pineapple (between fruit and crown), used for planting after rooting.

Cruciferous

Of or pertaining to the mustard family, Cruciferae.

Crush

Fruit beverage containing at least twenty five per cent fruit juice or pulp and fifty five per cent total soluble solids.

Cryo-preservation

Storage of cells, tissues, organs and seeds at super-low temperature.

Crystallised fruit/vegetable

Candied fruit/vegetable when covered or coated with crystals of sugar, either by rolling in finely powdered sugar or by allowing sugar crystals to deposit on them from a dense syrup.

CTC method

Crushing, tearing and curling method of processing tea.

Culinary

Suitable for cooking or processing in some form.

Culm

The joined stem of a grass, which is usually hollow, except at the nodes.

Cultigen

A plant species or race which has arisen in the course of cultivation.

Cultivar (cv.)

A contraction of the phrase 'cultivated variety' which designates a group of plants which are significant in agriculture, forestry or horticulture.

Cultivation

Labour and care taken in the raising of plants such as stirring soil, fertilising etc. or loosening the soil around a plant for weed control and providing soil mulch.

Curing

Natural or artificial aging of the plant produce brought about by some (dry or wet) heat treatment.

Cuticle

The waxy covering on plant parts like leaves and fruits, which prevents excess moisture loss.

Cuttage

Method of plant propagation by means of cuttings.

Cutting

The portion of a plant cut and removed for rooting, in asexual propagation.

Cybrid

Hybrid of two cells, produced by protoplast fusion, having the cytoplasm of both and nucleus of one.

Cyclic

Having floral parts in whorls.

Cymba

A woody, boat like spathe which encloses the inflorescence in certain palms.

Cyme

An inflorescence in which primary axis bears single terminal flower that develops first, the arrangement being repeated by axis of secondary and higher orders.

Cytokinins

Group of plant growth substances which promote cell division and exert other growth regulatory functions e.g. zeatin, kinetin, benzyl adenine, 2iP.

Cytoplasmic male sterility

A type of male sterility conditioned by the cytoplasm rather than the nuclear genes and transmitted only through the female parent.

Cytotoxic

Toxic to cells.

Damping off

A seedling disorder caused by microorganisms.

Dark storage

Storage of foliage plants, cut flowers etc. in darkness during transit (from harvest to end use).

Datun

A brush made from a small twig of a tree used for cleaning teeth.

Day neutral plants

Plants in which flowering is not affected by day length.

De-acclimation

De-hardening or the loss of adaptation to a climate.

Dead-head

To prune the spent flowers or the unripe seed pods from a plant.

Dead heading

Removal of dead flowers or the unripe seed pods from plants.

De-blossoming

Removing blossoms from a plant.

De-budding

Removal of floral or vegetative buds.

De-bunching

The removal of the bunch soon after emergence to speed up growth of the follower.

Deciduous

(1) Shedding leaves during winter or dormant season.

(2) The falling of plant parts at the end of a growing period.

Deciduous plants

Trees and shrubs that drop their leaves before entering onto the rest period.

Decortication

Removal of bark or outer covering of plant or plant produce.

Decumbent

Lying on the ground with the end ascending.

De-differentiation

Process in which the inter-organ, inter-tissue and inter-cellular relations are broken, leading to the formation of a mass of parenchymatous cells, called callus.

Defleating

The cutting down of leaves that could scar the fruit, leaves with leaf spot and leaves that have collapsed.

Defoliant (Defoliator)

Chemical used for inducing leaf fall, usually to facilitate harvest.

Defoliate

To strip off leaves .

Defoliation

The removal of leaves by hand or using chemicals or by withholding water.

Degrees Brix

A measure of total soluble solids content which approximates the percentage of sugar found in juice or a fruit. Corresponds to Degrees *Balling*.

Dehanding

Removal of the false hand (hand with undeveloped fingers) and / or the last apical hand of banana at the time of bagging.

Dehisce

To open spontaneously when ripe.

Dehiscence

The bursting or splitting of fruit (to emit the seeds) or anther (to emit the pollen grains).

Dehiscent fruits

A type of dry fruit in which the carpels split along definite sutures at maturity.

Dehydration

Removal of water by sun drying or by artificial heat under controlled conditions of temperature humidity, and air flow.

Dehydro- freezing

A process of freezing food where freezing is preceded by partial dehydration.

De-novo

Arising spontaneously from unknown or very simple precursors.

Dentate

Toothed leaf margin.

De-potting

Removing the plant from the original container mainly for repotting.

Desert

Places where the annual rainfall is often less than 250 mm and with extreme temperature fluctuations.

Deshooting

Removal of shoots that are unwanted.

Desiccate

To dry thoroughly to remove moisture from an object to below normal level.

Desiccation

The process of drying up of tissues due to excess water loss or due to conditions that prevent the entry of water to the roots / shoot.

Dessert

A final course of fruits, puddings or other sweets at the end of meals.

Dessert fruit

Any fruit which may be served after meals.

Determinant inflorescence

Inflorescence in which the apical flower blooms first.

Devernalization

Negation of a vernalizing stimulus by temperatures above a critical level.

Dew-point (Dew point temperature)

The temperature at which condensation will start and 100 per cent relative humidity results in a given mixture of air and water vapour.

Diallel crossing

Crossing of a number of genotypes in all possible combinations.

Diandrous

Having two-stamens.

Diara cultivation

Cultivation of vegetables in the river beds, making use of the organic sediments and subterranean moisture.

Dibbling

A method of sowing by placing crop seeds in the holes manually by using a dibbler,

maintaining specific spacing and number of plants between the rows and within the rows.

Dicliny

A condition in which male and female organs are separate and in different flowers.

Diclinous

Unisexual and requiring two flowers to represent both sexes.

Dicotyledon (Dicot)

Class of plants having embryos with two cotyledons.

Die-back

Death of shoots, originating from the shoot tip.

Differentiation

The process of changes in composition, structure and function of cells and tissues during growth.

Digitate leaf

Leaf with many finger like leaflets radiating from a central point, or joined only at the base.

Dihybrid

Plants that differs by two pairs of genes.

Dimorphic

Exhibiting two distinct forms.

Dimorphism

The occurrence of two types of leaves, flowers or other structures on a single plant or on different plants of the same species.

Dioecious

Condition in which staminate and pistillate flowers are produced on separate plants.

Diploid

A nucleus, organism, or generation that has two sets of chromosomes.

Disbudding

The removal of vegetative or floral buds.

Disc floret

The central regular five lobbed floret of a flower-head in compositae.

Diseminule

A part of a plant which gives rise to a new plant (propagule).

Dish garden

The art of making miniature garden by growing delicate plants in containers such as bowl shaped drinking cups or a brandy goblet.

Distal

Opposite from the point of origin or attachment; toward the apex.

Diurnal

Of or during the day; not nocturnal.

Diversified cropping

The cropping plan in which no single crop contributes to 50 per cent or more towards the annual crop production or income.

Division

(1) A taxonomic grouping of plants belonging to similar classes.

(2) The process of cutting into sections of rhizomes, stem tubers, tuberous roots etc. for propagation.

Dominance

Ability of an allele to express itself in the heterozygous state.

Donor plant

See Mother plant.

Door yard fruit

Fruit species grown in small numbers around homes.

Dormancy

Resting state of buds, seeds and spores that fail to grow when provided with seemingly optimal conditions.

Dormin

Initial name given to abscisic acid (ABA). A dormancy inducing substance which has been extracted from buds and leaves. Also known as abscisin II.

Double

Term to describe flowers having more than the usual number of petals.

Double cropping

Taking two crops a year in sequence from the same piece of land.

Double cross

A cross between two single crosses involving four different inbreds.

Double fertilization

Union of two male gametes with the female gamete and polar nuclei.

Double hedge planting

Pairs of row of plants form a double hedge where the spacing within the rows and between the set of two rows are close but the spacing between pairs of rows is wider.

Double leader

Two shoots competing as leaders on a tree, each trying to assert apical dominance.

Double recessive

An organism with two recessive alleles for a particular trait.

Double working

Type of grafting where the graft combination contains an interstock between the scion and the stock.

Downy

Term to describe soft hairs; also called pubescent e.g. African violet.

Drainage

The process of removal of excess water from the land.

DRC

Dry rubber content, ascertained by coagulating a weighed sample of latex.

Drip culture (Sand culture)

A modification of hydroponics where plants are kept in sand medium and watered with a nutrient solution.

Drip irrigation (Trickle irrigation)

The application of small quantities of water directly to the root zone through various types of delivery systems.

Drought

Lack of moisture that hinders plant growth.

Drupe

A fleshy one-seeded indehiscent fruit with the seed enclosed in a strong endocarp.

Drupelet

A small drupe as that in an aggregate fruit as the blackberry.

Dry farming

The production of crops without irrigation on the land which receives annual rainfall of less than 500 mm.

Dry fruits

Class of fruits in which the pericarp is often hard and brittle at maturity.

Dry ice

Frozen solid carbon dioxide.

Drying off

The process of preparing bulbs and tubers for their necessary rest or dormant period by withholding water.

Dry matter

Remains of the plant after the removal of water.

Dry-pack storage

The storage of cut flowers in vapour-proof containers, usually at 0°C.

Duff (Litter)

The partially decomposed organic matter (e.g. leaves, flowers, fruits etc.) found beneath plants, as on a forest floor.

Dwarfing rootstock

Rootstock which has a dwarfing effect on scion.

Earth vegetables

All forms of vegetables in which food is stored in underground parts.

Echinate

Having prickles or spines.

Ectocarp

The outer layer of cells of the pericarp or fruit wall.

Eco-climate

Climate under the crop canopy.

Eco-system

An ecological system involving living and non-living units where a stable cyclic interchange of energy and materials occur in a defined space and time.

Eco-type

Plant type or strain within a species, resulting from exposure to a particular environment.

Edgings

A border of bricks, low shrubs or dwarf perennials provided to demarcate garden paths or to make an area more conspicuous.

Effective rooting depth

Soil depth from which the full grown crop extracts most of the water needed for evapotranspiration.

Electronic leaf

Device in a mist system to switch on the mist as and when the cuttings/plants become dry.

Elite plant

A plant with superior traits.

Elite variety

An improved variety developed by plant breeders and released to farmers due to its superiority in at least one respect.

Elliptic

Oval but narrowed towards the rounded ends.

Emasculation

Removal of stamens of self fertile plant to aid self sterility.

Embryo

The rudimentary plant within the seed.

Embryo culture

In vitro culture of isolated mature or immature embryo.

Enation

Outgrowth on a plant surface.

Endemic

Peculiar to a particular area.

Endocarp

(1) The inner layer of cells of the pericarp or fruit wall.

(2) The stony part of a drupe or pome.

Endodormancy

Dormancy regulated by endogenous physiological factors.

Endogenous

Arising from deep-seated tissues.

Endosperm

Triploid food storage tissue of angiosperm seed resulting from triple fusion.

Endospermic seeds

Seeds with dominant endosperm.

Enemophilous

Desert-loving.

Energy cropping plantation

Growing of crops like casuarina and eucalyptus for energy purpose.

Enology

The art and science of wine making.

Entire

Without lobes or indentations.

Entomophilous

Insect-pollinated.

Epicarp

Outer layer of fruit wall.

Epicormic shoots

A cluster of shoots, derived from dormant adventitious buds, on a main stem or branch after a wound or cut has been made.

Epicotyl

That portion of an embryo or seedling above the cotyledons.

Epidermis

Outermost cell layer of young plants and some parts of older plants (like leaves and fruits).

Epigeal

Plants in which the cotyledons appear above the soil surface (See Hypogeal).

Epigeous germination

Germination pattern of seed where the hypocotyl elongates and raises the cotyledons above ground level.

Epigynous

Condition in which the perianth and stamens of a flower are attached above the ovary.

Epinasty

Condition in which the upper surface of a structure, such as a leaf, grows more rapidly than the lower surface, causing a downward curvature.

Epiphyte

Nonparasitic plant growing on another plant, absorbing atmospheric moisture with the help of velamen roots.

Episodic growth

Growth occurring in spurts or flushes, as against continuous growth.

Equable

Uniform, even or smooth.

Eremophyte

Desert plant.

Erratic bearing (Irregular bearing)

Inconsistent and unpredictable flowering and fruiting behaviour.

Esculentus

Means 'edible' (used in botanical names).

Espalier

Plants trained to grow flat against a wall.

Essential oil

Volatile aromatic extracts prepared by steam distillation of ground spices (See Spice essential oils).

Estate

A property where rubber, tea, coffee etc. are cultivated.

Estivation

See Aestivation.

Ethereal oil

Essential oil.

Ethylene

A gaseous plant growth substance, regulating vegetative growth, fruit ripening and abscission of plant parts.

Etiolation

Development of plants or plant parts in darkness, resulting in elongated stem, small leaves, and reduced chlorophyll content.

Etiology (Aetiology)

The science of the cause or origin of diseases.

Even span greenhouse

A greenhouse whose roof-slopes are of equal length and angle.

Evergreen

Plants that have persistent green leaves for two or more growing seasons.

Excised embryo test

Germination test of seeds whose embryos require long periods of after-ripening.

Exhausting

The process of removing air from the contents of the can, for preserving food and reducing corrosion.

Exocarp

The outer skin-like region of the fruit pericarp.

Exogenous

Arising from the external tissues.

Exotic plant

A newly introduced plant, not native to a place (See Indigenous).

Explant

Excised plant part used for tissue culture.

Explantation

The removal of living tissue from an organism and its culturing in an artificial medium.

Explosive fruit

Fruit which bursts suddenly and violently, scattering seeds over a considerable area.

Extensive production

Crop production using large area of land with minimum labour and inputs.

External dormancy

Dormancy imposed by unfavourable external conditions like moisture stress, extreme temperature and sub-optimal levels of oxygen and light.

Ex-vitro

Conditions, reactions or responses of organisms removed from *in vitro* conditions. (In Latin *ex vitro* means 'from glass')

Eye

- (1) Common term for a bud.
- (2) Bud of a tuber.
- (3) A lateral bud as on a rose stem.
- (4) Small opening on a fig which is the site of pollination.

F₁ (First filial generation)

The first generation of offspring resulting from an arranged cross between selected parents in breeding programmes (See Monohybrid).

F₂ (Second filial generation)

The second generation of offspring resulting from crosses between individuals of the F₁ generation.

Face-packing

Packing fruits for market with the top layer of the container artistically arranged, while the fruits below are without arrangement and often inferior in quality.

Facilitation

The process in which two individual plants or two populations of plants interact in such a way that at least one exerts a positive effect on the other. Double facilitation is equivalent to mutualism.

Facultative long and short night plants

Plants which do not require a night length longer or shorter than a given critical length for a response to occur, but which will respond faster if the dark period is longer or shorter, respectively, than a critical length.

Fallow

A system in which cultivated land is left without a crop for long periods.

False cardamom

See Large cardamom.

False fruit (Pseudocarp)

A fruit that incorporates in addition to the ovary wall, other parts of the flower, such as the receptacle.

Family

Group of genera.

Fan branches

The main branches of a shrub or a tree appearing like the leaves of a fan.

Fan-and-pad cooling system

A cooling system, utilized in greenhouses, where cooling is brought about by evaporation of air drawn in through wet pads with the help of fans.

Farm forestry

Practice of growing trees specifically for fuel, food and a variety of other resources on a farm.

Farming system

Appropriate combinations of cropping systems, livestock, fisheries, poultry and forestry, ensuring ecological and socio economic balances.

Farming system research

Research on farming systems, multi and interdisciplinary in nature, to enhance and stabilize agricultural production.

Fasciation

A malformation in plant shoots resulting in an enlarged and flattened shoot, as if several shoots are fused.

Fauna

Pertaining to the animal life of a locality or region or that existing during a specific geological period or time.

Favism

Haemolytic anaemia caused by eating broad beans or by inhaling the pollen of its flower.

Feeder roots

Ultimate branches of a root system with a large absorbing area.

Feni

Fermented wine made from cashew apple in Goa.

Fermentation

(1) Anaerobic breakdown of organic substances by microorganisms, producing heat, wastage gases and a variety of end products.

(2) Process after maceration (rolling) in the production of tea.

(3) A step in cocoa processing to get rid of the pulp around the beans and to induce chemical changes for improving the quality.

(4) A step in processing of parchment coffee where the mucilage is removed by natural fermentation.

Fernery (Conservatory)

A greenhouse of tropics which protects plants from fierce sunlight and strong wind.

Fertilization

(1) The fusion of male and female gametes to produce zygote, containing chromosomes of both the parents.

(2) The application of fertilisers to the soil to increase fertility.

Fertiliser

Substance which supplies mineral nutrients to plants in required quantity.

Fibrous root system

Root system in which primary and lateral roots develop almost equally and have a limited quantity of cortex.

Field test

An evaluation test whereby the field performance of experimental plants, their response to inputs and physical factors etc. are assessed in comparison to control.

Filament

The stalk of a stamen or male flower part.

Filiform

Thread-like.

Fimbriate

Bordered with hair, fringed.

Finger

The individual fruit in the hand of a banana bunch.

Fish leaves

In tea, the first two leaves formed on a shoot as it grows from a bud.

Flaccid

Wilted.

Flat

Shallow tray made of wood, plastic or metal with drainage holes for germinating seeds or rooting of cuttings.

Flat grafting

Grafting in which smooth transverse cut is made on both scion and stock (as in cactus) and the flat surfaces are held firmly in position by thread or raffia.

Fleshy fruits

Class of fruits having soft and fleshy pericarp at maturity; includes berry, pepo, hesperidium, drupe and pome.

Fleshy root

A root that accumulates and stores a rich supply of reserve food for the plant.

Flexuous

With a wavy form.

Flora

- (1) The plant life of a locality or of a geological era.
- (2) Plants taken collectively.
- (3) A book in which all the plants from a particular area are described.

Floral concrete

See Concrete.

Floral foam

A water absorbing material (a substitute for pin holder or wire mesh) used in floral decoration to keep the cut flowers in place.

Florets

Small, individual flowers that make up a very dense inflorescence.

Florican

A flowering and fruiting stem of a bramble, the season after it was produced (in the season of production, it is called primocane).

Floriculture

The art and science of growing and marketing flowering and foliage plants.

Florigen

Hypothetical hormone like substance implicated in floral initiation in many plant species.

Florist

One who is involved in the procurement and selling of flowers.

Flower

The angiosperm reproductive structure which may include calyx, corolla, androecium and gynoecium.

Flower bud

An unopened flower.

Flower bud initiation

Formation of floral primordium.

Flower blasting

Flower bud abortion after the completion of flower differentiation.

Flower differentiation

Complete morphological differentiation of the floral organs following flower bud initiation.

Flower initiation

Visible organisation of flower primordia (buds) at the stem apex.

Flower induction

An invisible developmental process that occurs prior to visible flower bud initiation.

Floral preservative

Chemical used to prolong the vase life of cut flowers.

Floral primordium

Very early stage of flower bud.

Florescence

Refers to anthesis or flowering time, the state of being in bloom.

Flotation

A method for separating a valuable material from a less valuable material by placing them in a liquid in which one will sink and the other will float.

Foliar

Pertaining to leaves.

Foliar diagnosis

Estimation of mineral nutrient deficiency or excess by analysing the chemical composition, colour and/or growth characteristics of the foliage.

Foliar embryos

Vegetative embryos developed at the edge of leaves, capable of growing into new plants.

Foliar feeding

Feeding plants with nutrient solution through the leaves.

Foliage plant

Any plant grown primarily for its foliage, utilized for interior decorations or landscaping.

Follicle

Simple dry dehiscent fruit having one locule which splits along one suture.

Follower

A banana sucker which has been allowed to grow for bunch production.

Forcing

The manipulation of environment factors for producing a marketable pot plant or cut flower, especially during off season.

Forest

A plant community, predominantly of trees and other woody vegetation, usually with a closed canopy.

Forestry

- (1) Management of forest for maximum sustained yield of their resources and benefits.
- (2) The science or management of forests.

Forkert budding

A modification of patch budding where the lower portion of the patch of the rootstock is not cut but retained as a flap. The bud patch is inserted in the portion and the flap is drawn over the inserted bud, followed by wrapping as usual.

Form

A member of a population that differs from the others to a degree not great enough that it can be called a cultivar.

Foundation planting

Planting of trees, shrubs or ground covers in front of a building foundation.

Frame work

The 'skeleton' of main branches of a tree or shrub.

Free clones

Clones that can be purchased and resold without any agreement or prohibition.

Free pollination

Pollination without control. The offsprings are of unknown parentage.

Free water

Water released by the cell when freezing occurs in intercellular spaces (See Bound water).

Freeze-drying

A method of food processing where the material is initially frozen at super low temperature and then vacuum dried.

Freezing agents

Substances used for chilling foods.

Fresh weight (Wet weight)

The weight of a plant or plant part including the water content.

Fronde

General term designating leaf of coconut, oilpalm, fern etc.

Frost

Minute crystals of ice collected or deposited on ground or plants when the nights are cold and temperature falls below freezing point.

Frost damage

Damage caused by low temperature.

Frost day

Day with a minimum temperature less than 0 °C.

Frost injury (Freezing injury)

Injury or killing of plant tissues caused by exposure to low temperature and consequent formation of ice.

Frost pocket

A depression in the terrain into which cold air drains but from which it cannot escape, making the plants of the area prone to freezing injury.

Fructification

- (1) The act of producing fruit.
- (2) The production of a reproductive structure.

Fruit

A ripened ovary or ovaries with or without accessory floral parts and / or seeds.

Fruit buds

Buds containing underdeveloped flowers; also referred to as flower buds.

Fruit butter

Product prepared by boiling screened fruit pulp with or without adding sugar, fruit juices, and spices to a semisolid mass of homogenous consistency.

Fruit confections

General term used to describe candies in which fruits are used.

Fruit drop

Any substantial dropping of immature fruits.

Fruit growing

The cultivation of edible fruits that are consumed either fresh or processed.

Fruiting habit

The relative position of fruiting on the shoots of a plant (See Bearing habit).

Fruit juice concentrate

A fruit juice from which water has been mostly removed by heating or freezing.

Fruit juice powder

Fruit juice converted into a free flowing, highly hygroscopic powder by puff-drying, freeze-drying, vacuum drying, spray-drying or drum-drying.

Fruit leather

See Fruit paste.

Fruit paste (Fruit leather)

A product like fruit butter, but is dried in the sun or by artificial heat to a solid consistency or to approximately the consistency of putty.

Fruit preserve

Product made by cooking prepared fruit in sugar (sucrose) syrup until the concentration of sugar reaches 55 to 70 per cent. The fruit should be crisp and retain its form.

Fruit set

Persistence and development of an ovary and/or adjacent tissue following bloom.

Fruit vegetable

Fruits used as vegetables (e.g. plantain and tomato).

Fugacious

Falling off soon or fading away.

Full bloom

The plant at the period at which most of its flowers are blossoming.

GA₃

See Gibberellins.

Gametes

Male and female sex cells.

Gametoclone

A plant regenerated from the *in vitro* cultures of gametic tissue.

Gametoclonal variation

Variation among the plants regenerated from the cultures of gametic cells.

Gametogenesis

Sexual reproduction.

Garden

A piece of land used for growing flowers, fruits, vegetables etc. Often used as a place for recreation.

Garden agriculture

Cultivating crops like vegetables in land more or less adjacent to settlements, utilising organic wastes.

Gardening

Cultivation of plants in enclosed areas for ornamental purposes.

GATT

General Agreement on Tariffs and Trade.

Gene pool

All the genes and their different alleles that are present in a population of a plant.

Genera

Plural of genus.

Generation

A single complete life cycle in the life of a plant or insect.

Generative nucleus

The nucleus of pollen grains which by division forms sperms.

Genetic architecture

The general genetic structure of a species.

Genetic breakdown

Loss of vigour and often the early death of F₂ plants which lack the necessary adaptive complexes of either or both the original parents.

Genetic drift

A change in gene frequency from generation to generation as a result of chance events.

Genetic engineering

Technology involving man made changes in the genetic constitution of cells (apart from selective breeding).

Genetic purity

Trueness to type /varietal purity conforming to the characteristics of the variety as described by the breeders.

Genetic shift

Change in genetic make up of a variety due to growth for several consecutive generations in areas outside their adaptation.

Genotype

The genetic make up of a nucleus or individual.

Genus

A group of closely related species (Genera is the plural). In a scientific name genus is the first of the two names given for an organism.

Geocarpy

The development of a fruit beneath the ground which originates from a flower above the ground.

Geotaxis

Plant orientation with respect to gravity.

Geotropism

Growth in response to gravity.

Germination

The initiation and development of vegetative growth of an embryo, spore, seed or other reproductive body, forming a new individual plant.

Germplasm

A collection of genotypes of a particular organism.

Gestation period

The period taken from germination / planting to commencing regular flowering and fruiting.

Gibberellins

A group of plant growth substances that influence cell elongation, cell division and other physiological processes in plants e.g. GA₁, GA₂ etc.

Girdling

The removal of a narrow ring of bark from a shoot, cane, spur or trunk to favour fruit set, size, and /or ripening.

Glabrous

Lacking hairs or projections; smooth surfaced.

Glaze fruit

Product obtained by coating candied fruit with a concentrated solution of sugar and confectioners' glucose syrup, followed by careful drying to give a transparent glaze to the surface (See Candied fruit).

Glasshouse

A structure that has a transparent cover and an artificial heat source for growing plants, mainly in temperate regions (See Green house).

Glaucus

A surface with a waxy, white coating that can be rubbed off.

Glazing

Covering of fruit/vegetable with a thin transparent coating of sugar, which imparts them a glossy appearance.

Goottee

Synonym for air layering, marcottage, circumposition, and Chinese layerage

Gourmandisers

Strong shoots arising from the stem as in cocoa, coffee etc.

Grading

The process of sorting into different lots conforming to certain pre-determined standards.

Graft

Planting material consisting of a scion and a rootstock.

Graftage

See Grafting.

Graft chimeras

Chimeras produced artificially by grafting or budding.

Graft incompatibility

The inability of two different plant parts when grafted together to have a successful, long lived graft union.

Grafting (Graftage)

Fusing or uniting one part of a plant (rootstock) with that of another (scion), for producing a graft.

Grandiflorus

Comparatively large flowered; used in botanical names.

Gravel culture

Modification of hydroponics where granites of irregular shape and size are used as the medium and nutrient solutions are applied.

Gravitational water

Water in excess of the holding capacity of soil; removed by drainage.

Green budding

A method of budding where seedlings of 2-6 months are used as stock while the bud wood is only 6-8 weeks.

Green bulbs

Bulbs with leaves, used in propagation.

Green house

A structure which protects plants from wind, precipitation, excessive radiation, extremes of temperature etc.

Greenhouse effect

The quality of the atmosphere to permit most of the insolation and prevent back radiation.

[Solar radiation is predominantly of short wavelengths which passes through the atmosphere. Terrestrial radiation is of much longer wavelength and is trapped or reflected by the atmosphere. The selective transmission of radiant energy by the atmosphere is similar to that of the glass in a greenhouse.]

Greenhouse gardening

Growing of unusual and out of season vegetables, fruits and flowers using greenhouse, especially under temperate climatic conditions.

Green leaf manuring

The practice of collecting and incorporating green leaves and tender green twigs into the soil.

Green manure crop

Crop grown and incorporated when succulent, to improve soil, especially of organic matter.

Green manuring

The practice of growing green manure crops and incorporating into the soil.

Green plants (Foliage plants)

Ornamental plants valued aesthetically for their foliage.

Green pruning

Pruning of actively growing rose plants without the benefit of a dormancy period.

Gregarious

Plants of one kind which occur naturally in close proximity.

Gregarious flowering

Simultaneous flowering as in bamboo, coffee etc.

Grooming

The operation of cleaning out lichens and mosses which develop on rubber trees during monsoons.

Ground cover

Plants grown for their low, spreading habit to prevent the growth of weeds and for protecting soil.

Ground layering

Layering method where ground is utilized as a rooting medium.

Ground sucker

A sucker or shoot arising from below the soil.

Growing point

Region at the tips of both stems and roots where cell division occurs and new cells are formed.

Growth

An irreversible process in which there is an increase in size, dry weight or volume of an organism.

Growth hormone

See Plant growth hormone.

Growth inhibitor

Any chemical that suppresses plant growth e.g. CCC; B-9

Growth regulator

See Plant growth regulator.

Growth retardant

A chemical (such as chloro choline chloride or CCC) that selectively interferes with normal hormonal promotion of growth, but without appreciable toxic effects.

Growth ring (Annual ring)

A distinct layer of growth as seen in the cross section of a woody stem.

Growth stimulant

Any chemical that encourages plant growth.

Growth substance

See Plant growth substance.

Gutta percha

Poly-isoprene obtained from the leaves of *Palaquium oblongifolium*.

Guttation

Exudation of water by uninjured plants usually on the edges or tips of leaves from hydathodes.

Guying

Supporting a tree by use of cables, rope or wires until root growth is established.

Gynogenesis

See Pseudogamy.

Habit

A characteristic form or mode of growth.

Habitat

Natural home or dwelling place of an organism.

Habituation

The acquired ability of cultures to grow and develop without depending on external source of plant growth substances.

Hailstorm

Prolonged and severe storm consisting largely of hail or frozen raindrops.

Half-standard

In floriculture, trees or shrubs grown with about one metre of clear stem.

Hamper

Container used for shipping gladiolus.

Hand

The two rows of banana fingers, having a common base in the bunch stalk.

Hand pollination

Pollination done by handbrush or hand.

Hanging basket

A container suspended from a ceiling or wall.

Haploid

A plant with half the number of chromosomes of the normal diploid.

Hardening

(1) The process of gradually exposing tissue culture plants to higher temperature and light intensity and lower relative humidity to make them establish *ex vitro*.

(2) The treatments given in the nursery to enable

seedlings /planting materials to withstand the transplanting shock and/or the adverse conditions in the main field.

Hardiness

Quality of plants to resist injury from unfavourable temperatures.

Hard pan

An impervious layer in a soil which restricts root penetration as well as movement of air and water.

Hard seed

Seeds that have a seed coat impervious to water or oxygen required for germination

Hard water

Water which contains certain minerals, usually calcium and magnesium sulphates, chlorides or carbonates in solution, to the extent of causing a curd or precipitation rather than a lather, when soap is added.

Hard wood cutting

Cuttings from hardwood for propagation as in the case of pomegranate, grape, fig, plum etc.

Harvest index

Yield of the plant parts of economic interest (economic yield) as percentage of total biological yield in terms of dry matter.

Haulm

Stems of herbaceous plants as distinct from hollow culms of grasses.

Heading-back (Heading)

A type of pruning where terminal portion of the shoot is removed, causing side buds to grow below the cut.

Head-house

A building in close proximity to or attached to a greenhouse, used as a workshop, storage area, pesticide room, potting area, eating area etc.

Heart wood

The darker, denser part in the central portion of a woody stem, consisting of dead elements which lost their conducting ability.

Heat delay

Delay in the initiation of a flower bud due to an abnormally high temperature.

Heaving

Occurs during alternate periods of freezing and thawing, where roots become exposed and frequently die.

Heavy soil

A soil predominantly composed of clay.

Hedge

Plants grown close together, forming a row of massed foliage.

Hedge planting (Single hedge planting)

The method of planting where the spacing between plants within the row is closer than that between rows.

Heel cutting

Cutting, with a heel (small slice of older wood) at the base for maximising rooting.

Heel of cutting

The expanded base of a side shoot after removing it away from the main stem of a plant.

Heeling-in

Placing plants in the ground for temporary storage (when planting cannot be done immediately) keeping the roots in contact with moist soil.

Herb

(1) Plants grown for their flavour, aroma or medicinal value.

(2) Any vascular plant which is not woody.

Herbaceous

Having the characteristics of a herb; not woody.

Herbaceous cutting

Cutting made for vegetative propagation from succulent herbaceous plants.

Herbage

Leaves, stems and other succulent parts of forage plants used as animal feed.

Herbarium

Collection of dried plants, systematically arranged and labelled.

Herbicide

Substance used for killing or inhibiting the growth of weeds.

Hermaphrodite

A flower with both stamens and pistils.

Hesperidium

A syncarpous, polycarpellary berry with a separable leathery rind, characteristic of orange.

Heterograft (Xenograft)

An interspecific graft.

Heterophylly

The production of more than one leaf form in a plant species.

Heterosis

Superiority of the F₁ over the parents (Synonym: Hybrid vigour).

Heterostyly

A condition which favours cross pollination in bisexual flowers due to the presence of male and female parts at different levels.

Heterotroph

An organism which cannot synthesize its own food, and hence depends on previously synthesized foodstuffs.

Heterozygous

Condition where one or more genes on a chromosome differ from that on the other member of the chromosome pair.

Hidden hunger

A condition when a plant shows no obvious symptoms of nutrient deficiency, yet the nutrient content is not sufficient enough to give the expected yield.

Hill

A circular area housing several vegetable seeds.

Hip (Hep)

The seed pod of the rose.

Hirsute

Rough, hairy.

Homestead cultivation

Cultivation in the surrounding land of a house, by the householders.

Homozygous

A condition where all the genes on one chromosome are similar to all those of the other chromosome pair.

Hormone

See Plant growth hormone.

Hortensis (Hort.)

Pertaining to gardens, or plants found only in gardens.

Horticulture

- (1) Latin, *Hortus*, "garden"; *cultura*, "cultivation".
- (2) The art and science of production and processing of fruits, vegetables, ornamentals, spices, plantation crops, medicinal plants and aromatic plants.

Horticultural fruit

A fruit which is edible on ripening.

Horticulture therapy (Hort therapy)

Treatment of unhappy and mentally retarded people, by diverting their attention to ornamental gardening, flower decoration and growing vegetables, fruits and other horticultural crops.

Hot bed

Propagating structure, in temperate regions, where temperature is enhanced for germinating seeds, rooting cutting and growing nursery stock (See Cold frame).

Hot pack (Hot fill)

Filling of pasteurised or sterilised food, while hot, into clean (not necessarily sterile) containers under clean (not necessarily aseptic) conditions.

House plant

A plant adapted to the micro-environmental conditions of houses and other buildings.

Humid tropics

The tropical areas with excessive moisture and relative humidity, characterized by isothermal conditions which facilitate year round crop production.

Humification

Process of organic decomposition.

Humus

An organic soil material consisting of partially or completely decomposed plant and animal matter.

Hybrid

An individual resulting from the union of gametes differing in one or more genes.

Hybridization

The process of crossing individuals with different genetic make up.

Hybrid sterility

The inability of some hybrids to produce viable gametes due to absence of homologous chromosomes.

Hybrid vigour

The increased vigour over the parental types exhibited by hybrids.

Hydro-cooling

A cooling method for fresh produce in which the product is flooded with large volumes of cold water to remove field heat.

Hydrogen swell

Swelling of food cans due to the hydrogen gas produced by the action of food acids on the metal.

Hydro-handling

System of unloading containers and conveying fruits and vegetables in water to minimize bruising.

Hydrophilous

- (1) Pollinated by water.
- (2) Preferring moist places or water as a habitat.

Hydrophyte

A plant which lives in water or a moist environment.

Hydroponics (Soil-less culture)

The technique of growing plants without using soil, either in circulated, aerated nutrient solutions or in inert media such as gravel, sand, peat, vermiculite or saw dust, to which a nutrient solution is added.

Hydrotropism

Growth movement of plants in response to water or moisture stimulus.

Hygrochatic process

Opening of fruit or movement of organs as a result of water uptake; usually connected with the dispersal of seeds or spores.

Hygrophilous

Living in fresh water or moist places.

Hypobaric (Sub-atmospheric pressure) storage

Storage of agricultural produce in low atmospheric pressure where the concentration of oxygen and ethylene are reduced, resulting in low rate of respiration.

Hypocotyl

The part of the embryo or seedling below the cotyledonary node and above the radicle or root; the transition region connecting the stem and root.

Hypogeal

- (1) Plants in which the cotyledons remain below the surface of the soil (See Epigeal).
- (2) Subterranean or occurring beneath the surface of the soil or underground.

Hypogeous germination

Germination in which the cotyledons remain below the surface of the soil.

Hysteranthous

Developing leaves after the appearance of flowers, as the almond.

Ikebana

Japanese style of flower arrangement which has a spiritual and religious background.

Illegitimate clonal seeds

Seeds collected from the budded area of known-rubber clones; but produced by natural cross pollination.

Imbibition

Process of absorption of water as by seeds during germination.

Imbricated

Covered with overlapping scales like tiles on roof.

Immunity

Natural or acquired resistance of a plant to active infection by the pathogenic microorganisms or to the adverse effects of a particular parasite.

Imperfect flower

Flower lacking either the stamen or the pistil.

Impermeable seed

Seed which does not allow passage of water or gases through the seed coat (See Hard seed).

Implant

A grafted portion of a tissue.

Inarching

A grafting method where rootstock is taken to the scion donor plant for grafting. Stock and scion are independent for their nourishment till the completion of the graft union (Synonym : Approach grafting).

Inbred

The progeny of either a single cross pollinated plant obtained by selfing or two closely related plants obtained by inbreeding.

Inbreeding

The crossing of closely related plants, which leads to increase in homozygous gene pairs as well as genetically linked undesirable characters.

Incompatible varieties

Varieties which do not successfully cross pollinate or intergraft.

Incompatibility

(1) Condition preventing pollen grains from functioning on a pistil.

(2) Inability to form a successful, long lived graft union.

Incomplete flower

Flower lacking one or more of the four sets of floral parts.

Indeterminate growth

Growth that is potentially limitless.

Indexing

Determining the presence of disease or verifying the assumption of freedom from disease or virus.

Indexed plants

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Abscisic acid (ABA, Abscisin, Dormin)

Naturally occurring plant growth inhibitor, promoting senescence, abscission and / or dormancy.

Abscission

Detachment of leaves, flowers, fruits or other plant parts.

Abscission zone (Abscission layer)

Zone where transverse division and separation of cells occur, leading to abscission of organ.

Absolute

Purified floral concrete. Impurities like plant waxes, albumin, colouring matter etc., are removed by separation techniques using absolute alcohol (See Concrete).

Accessory

In Floriculture, an item used in support of landscape or floral design such as figurine, bird bath, pool or accent rocks.

Accessory bud

A bud located above or beside the main axillary bud.

Accessory fruit

A fruit developing from accessory floral parts like floral tube, receptacle etc., in addition to the ovary.

Acclimatization

The process of adapting to a new environment.

Achene

A dry indehiscent, one seeded fruit in which the ovary wall remains free from the seed coat.

Acropetal

From a physiological base to a physiological apex.

Acuminate

Tapering to a point, as a leaf.

Adaptability

The capacity of an organism or species to become suited to its environment.

Adaptation

The fitness of a population in a given environment.

Adaptive trial

A trial conducted to assess the adaptability of a technology or a variety to a particular region.

Adventitious

Produced in an unusual or abnormal position, or at an unusual time of development or away from the natural habitat.

Adventitious embryony (Nucellar embryony)

Type of apomixis where embryos arise from a cell or group of cells either in the nucellus (usually) or in the integuments in addition to the regular embryo.

Aeration

Supply of oxygen to the roots of plants and micro-organisms in the soil.

Aerenchyma

Tissue of thin walled cells with large, air filled intercellular spaces, found in roots and stems of some aquatic and marsh plants.

Aerial roots

Roots absorbing moisture from the air e.g. orchids.

Aeroponics

A system of growing plants where the roots are suspended and bathed in a nutrient mist rather than a nutrient solution as in hydroponics. **Aerosol**

Type of formulation of insecticide, antibiotic or plant growth substances dispersed as very fine droplets on application, forming smoke or fog.

Aestivation (Estivation)

The arrangement of sepals and petals in the flower bud before expansion.

Aetiology (Etiology)

The science of the cause or origin of diseases.

Afforestation

Artificial establishment of a forest where tree crops are not previously grown or on deforested land.

After-cultivation

Harrowing, tilling and other cultural operations in a field after the emergence of the crop.

After-ripening

The physiological changes that occur in a dormant seed to enable germination.

Agar (Agar agar)

A gelatinous substance obtained from certain species of red algae, widely used as a solidifying agent in aseptic culture.

Aggregate fruit

A fruit developing from a flower having several pistils that ripen together in a single mass.

Agriculture

(1) An activity of man aimed at the production of food, fibre, fuel etc., by the use of terrestrial resources.

(2) The art, science and industry of managing the growth of plants and animals for human use.

Agri-silviculture

Use of land for the concurrent production of agricultural and forest crops.

Agro-climatic regions

Broadly homogenous zones with respect to climate and edaphic factors.

Agro-ecology

The study of the relation of agricultural crops and environment.

Agro-forestry

Self-sustaining land management system combining production of agricultural crops with that of tree crops with or without livestock.

Agrostology

The science which deals with the study of grasses, their classification, management and utilization.

Air drainage

Air outlets and convection currents which prevent dead air and frost pockets.

Air-inarching

Technique of grafting a branch to the trunk of a tree.

Air layering

Layering in above ground branches by removing a ring of bark and placing the rooting medium around.

Air plants

Plants not attached to the ground.

Air root-grafting

The grafting of roots on to a branch while it is still attached to the tree.

Aitonomic

Able to develop parthenocarpic fruits only in response to some stimulus external to the ovary.

Akene

Dry, one seeded, small, indehiscent fruit of one carpel, seed like in appearance.

Albido

The white tissue beneath the peel of citrus fruit.

Albino

An organism lacking normal pigmentation due to genetic factors. The condition is albinism.

Alkaloids

Group of nitrogen containing basic organic compounds which possess poisonous and medicinal properties e.g. atropine, morphine, quinine and strychnine.

Allelopathy

Any direct/indirect harmful effect that one plant has on another or mutually on each other through the production of chemical compounds that escape into the environment.

Alley

A narrow passage left across rows to facilitate harvesting and cultural operations.

Allogamy

Cross fertilization in plants.

Allograft (Homograft)

A graft between like species.

Allopolyploidy

Polyploidy involving the combination of chromosomes from two or more species.

Alpine garden A garden comprised of plant species normally found growing at high elevations.

Alpine plant

A plant suitable for rock gardens or one that normally grows in exposed mountain regions.

Alternate

An arrangement of leaves, buds, and other organs borne singly at different heights on either side of the stem or axis.

Alternate bearing (Biennial bearing)

The phenomenon of producing heavy bearing during 'on year' which is alternated by shy bearing during 'off year.'

Altitude (Elevation)

Vertical distance of a level, a point or an object from mean sea level (MSL).

Ambient

- (1) The environment of a particular time.
- (2) Set of climatic conditions existing during an experiment.

Amphimixis

Normal sexual reproduction in which the morphologically dissimilar male and female gametes unite together for the formation of zygote.

Analogues

Organs of different plants with like function but of unlike origin.

Androecium

The collective term for stamens of a flower.

Androdioecious

Condition in which male and hermaphrodite flowers are borne on separate plants. **Androgenesis**

Plant development from male gametophytes.

Andromonoecious

Condition in which both male and hermaphrodite flowers are borne on the same plant.

Anemophily (Anemophilous)

Pollination by wind.

Angel crops

Crops raised without chemical fertilisers, plant protection chemicals and growth stimulants.

Angiosperm

A member of the group of flowering vascular plants whose seeds are enclosed within a mature ovary (fruit) in contrast to the seeds of gymnosperms which are not enclosed in an ovary.

Annual

Plant that completes its life cycle from seed to seed within one year or one growing season.

Annual ring

A distinct layer of growth as seen in the cross section of a woody stem (See Growth ring).

Annual up timing (Crop timing)

Adjusting planting and / or adopting cultural operations to facilitate harvesting of the crop at a specified time.

Anther

The portion of the male flower that bears the pollen.

Anthocyanin

Chemical plant pigment; usually red or blue. **Anti-auxin**

Substance which can inhibit growth by antagonising the activity of auxins.

Anticoagulant

Material added to rubber latex to prevent coagulation by natural means before it reaches the factory.

Antioxidants

Substances which are antagonistic to oxidation process.

Antitranspirants

Substances that retard or inhibit transpiration.

Apetalous

Without petals.

Apogamy

A type of apomixis in which the embryo develops from the cells other than egg cell.

Apomixis

Occurrence of an asexual reproductive process in place of normal sexual reproduction involving reduction division and fertilization.

Approach grafting

A grafting method where rootstock is taken to the scion donor plant for grafting. Stock and scion are independent for their nourishment till the completion of the graft union (Synonym : Inarching).

Aquaculture

(1) The cultivation or rearing of aquatic plants or animals. (2) The technique of growing plants without using soil (hydroponics) either in circulated, aerated nutrient solutions or in inert media such as gravel, sand, peat, vermiculite or saw dust, to which a nutrient solution is added.

Aquatic plant

Any plant that grows in or near water.

Arborescent

Becoming tree like, nearly the size of a tree.

Arboretum

Area set aside for growing and displaying different kinds of woody ornamental trees, shrubs and vines with proper labelling.

Arboriculture

Cultivation of trees and shrubs.

Areole

The area occupied by a group of spines or hairs on a cactus.

Arid fruit culture

The cultivation of edible fruits in arid region that are consumed either fresh or processed.

Aril

(1) Modified mesocarp covering the seed of nutmeg Also called mace.

(2) An appendage or outer covering of a seed, growing from the hilum or funiculus.

Aromatic

Chemical compound derived from the hydrocarbon, benzene (C₆ H₆), having a pungent odour.

Aromatic plants Plants which yield aromatic essential oils on steam distillation or solvent extraction e.g. lemongrass; patchouli.

Artificial long days

Interruption of dark period or extension of natural daylength to prevent flower bud initiation of short day plants.

Artificial seed

Encapsulated or coated somatic embryos used for planting like seeds.

Aseptic

Free of all microorganisms.

Aseptic canning

A technique in which food is sterilised outside the can and then aseptically placed in previously sterilised cans which are subsequently sealed in an aseptic environment.

Asexual

Lacking or not involving sex; sexless; not involving union of gametes.

Asexual propagation

(1) The multiplication of plants using a vegetative plant part.

(2) Plant propagation not involving union of gametes. The propagation using parthenogenetic seed (as in mangosteen) is asexual.

Astringency

A puckering taste to the mouth caused by tannins.

Astroturf A synthetic lawn, popularly used in developed countries in roof gardens , as well as in stadium (mainly in football and hockey).

Atrophy

Dwarfing or reduction in size, often extreme, through disease affecting the whole plant or part.

Attenuation

The decrease in the intensity of radiation caused by the absorption and scattering of the radiation as it passes through the matter.

Autecology

The study of the interaction of a plant species with its environment.

Autogamy

Self fertilisation or the fertilisation of a flower by its own pollen.

Autograft

A type of graft which involves transplantation of tissue or an organ from one part of an individual to another part of the same individual.

Autopolyploidy

Polyploidy with similar sets of chromosomes.

Autotroph

A self sufficient organism that synthesizes its own food from inorganic molecules.

Auxanometer

An instrument used to measure growth of plants.

Auxin Plant growth regulator that functions more by stimulation of cell elongation than through an effect on cell division.

Axenic culture

A culture without foreign or undesired life forms.

Axillary bud

A bud origination in an axil or point where a leaf stalk or branch forms an angle with the main stem.

Baccate

Berry like ; pulpy or fleshy.

Back cross

A cross of a hybrid with one of its parents with the purpose of transferring a specific gene.

Bactericidal

Capable of killing bacteria.

Balata

A product analogous to "gutta percha" obtained from the bark of *Mimusops globosa*.

Balled and burlapped

Any plant dug with a soil ball and tied up in burlap.

Balling

The aggregation of macerated tea leaves into lumps or balls during rolling or fermentation.

Bare root (Bare root plant)

Rooted plant without soil, opposite to balled and burlapped.

Bari

Tea plantation in which trees are allowed to grow without pruning to produce seed.

BarkThe tough exterior covering of a woody stem or root outside the cambium.

Bark grafting

A method of grafting in which dormant scion is inserted between the bark and wood of a rootstock.

Bark inversion

A method of grafting for dwarfing a plant in which a complete ring of a bark is removed from the trunk, inverted and regrafted into place.

Bark ringing

The removal of a ring of bark from the trunk of a plant to regulate shoot growth and flowering.

Barley water

Fruit beverage containing at least twenty five per cent fruit juice or pulp, thirty per cent total soluble solids and 0.25 per cent barley starch.

Basipetal

- (1) Development in succession towards the base, oldest at the apex and younger at the base.
- (2) Transport of substances away from the apex, within a plant.

Bearing habit

The relative position of flowering and fruiting on the shoots of a plant (See Fruiting habit).

Bed

- (1) Narrow flat-topped ridge on which crops are grown with a narrow furrow on each side to facilitate irrigation and drainage.
- (2) An area in which seedlings or sprouts are grown before transplanting.

Bed plantingPlanting on elevated level beds, which are separated by narrow furrows.

Bedding plants

Plants that are raised by commercial growers and sold in the early stages of growth for use in outdoor gardens.

Bench grafting (Root Grafting)

Grafting where roots are used as the rootstock.

Berry

A simple fruit with one or more carpels and having the entire pericarp fleshy.

Berry fruits

A synonym of small fruits or soft fruits.

Biennial

A plant with a two year life cycle, growing vegetatively and storing food in the first year and producing flowers and seeds in the second year.

Biennial bearing

See Alternate bearing.

Bifarious

Arranged in two opposite rows.

Bilateral cordon

Training system as in grapes, where the trunk is divided into two branches extending horizontally on a supporting wire.

Binomial system of nomenclature

The assignment of names to organisms using two Latin words, the first denoting the genus and the second denoting the species e.g. *Mangifera indica*.

Bio-aesthetic planning Planting of trees and plants for beautifying roads, parks, public and private places.

Bioassay

Determination of the biological activity as well as relative strength of a substance (hormone, drug etc.) by comparing its effect on a test organism with that of a standard preparation.

Biomass

The combined dry or wet weight of all the organisms in a habitat.

Biometrics

The science dealing with the application of statistical procedures for the study of biological problems.

Biosynthesis

Biological synthesis, building or forming of biochemical compounds in a living organism.

Biotechnology

The application of biological organisms, systems or processes in industrial scale for the benefit of man.

Biotic

Pertaining to life.

Biotype

Physiological race or form within a species which is morphologically identical, but is different in genetic, physiological, biochemical or pathogenic characteristics.

Bird baths

A garden adornment consisting of a bowl shaped container fixed over a pillar, storing water for birds.

Bird chilli (Tabasco chilli)

Perennial chilli (*Capsicum frutescens*), with small sized pungent fruits.

Bisexual

Both sexes present and functional in the same flower.

Blackout system

A means of covering plants with black polythene or cloth to shorten the photoperiod to promote flowering of short day plants.

Blade

The expanded portion of a leaf, the lamina.

Blanching

(1) Heating of a fruit or vegetable product in boiling water or steam for a brief period to inactivate enzymes before processing.

(2) The technique of covering plant parts with soil or other materials to exclude light.

Bleeding

Loss of sap through wounding.

Blind shoot

A shoot in which the apical bud aborts, resulting in no further growth.

Bloom

- (1) The state of flowering.
- (2) Blossom.
- (3) Delicate waxy or powdery substance on the surface of leaves, berries etc.

Blossom

See Bloom.

Bluing

The objectionable development of blue pigment in flower petals usually after harvest. **Bole**

The basal region of the stem or trunk of a tree.

Bolting

Process by which plants produce flower stalks and flowers.

Bonsai

Japanese art of growing miniature trees and shrubs in shallow containers by extreme dwarfing treatments.

Bonsai style

Training plants in bonsai-like fashion.

Bonus crop

An additional crop of economic importance taken in intercropping / mixed cropping systems without any extra inputs.

Border plants

Plants located at the perimeter of landscapes or experimental plots.

Botanical garden

A garden used for growing and displaying ornamental plants for educational and research purposes.

Botanical name

Scientific name assigned to a plant species.

Botanical pesticides (Botanicals)

Pesticides obtained from plants.

Bottle garden

The art of making miniature garden by growing delicate plants inside bottles.

Bound water

Water held by the cell against freezing.

Box ridgingA system in which box shaped ridge is formed around the base of the plant to control erosion and aid irrigation.

Bracing

Method of grafting done to support branches which are in danger of breaking off.

Bract

A modified, often very small leaf / leaf-like structure subtending a flower or inflorescence. It may appear to be the part of the flower.

Bramble

A fruit which is a member of the Rubus genus.

Break

New lateral shoot, often developing after the removal of apical dominance by pinching.

Breaker

A device at the end of a hose to permit application of water at low velocity.

Breeder seed

The seed raised and controlled by the originating or sponsoring institution or breeder.

Bridge grafting

The repair grafting done when the root system of the tree is injured.

Brining

Treating vegetables with solution of salt in water (brine) to improve flavour and to serve as a heat transfer medium for facilitating processing.

Brix

The percentage of total soluble solids in fruit juices, plant saps etc., measured using Brix hydrometer.

BroadcastingThe process of scattering agricultural inputs, such as seed, fertiliser and manure on the surface of the soil by hand or by implements for uniform distribution over the entire field.

Brown budding

A budding method commonly adopted in rubber using buds taken from bud wood of one year growth and stock plants of ten months or more growth.

Brown head

A bloom that is excessively open.

Browning

The process of browning of cut surfaces of fruits and plant parts due to polyphenol oxidation.

Brush (in grapes)

Vascular strands remaining on the pedicel of grapes after the berry is detached.

Bud

(1) Undeveloped shoot or flower, often enclosed by reduced or specialised leaves called bud scales.

(2) A vegetative outgrowth from yeast.

Bud break

The resumption of growth of resting buds.

Bud mutation

Mutation in bud, causing variation in the arising branch, flower or fruit (Synonym: Bud sport, Bud variation).

Bud sport

Mutation in bud, causing variation in the arising branch, flower or fruit (Synonym: Bud mutation, Bud variation).

Budded stump

Planting material comprised of the stock plus a dormant or recently activated bud, the stock being cut off a few centimeters above the bud.

Budding

(1) A form of grafting using a single bud.

(2) Production of a shoot from an underground stem.

(3) The new growth in the spring.

(4) The process by which yeasts produce vegetative outgrowths.

Bud rubbing

The removal of buds from spurs or shoots by pushing or rubbing with hand.

Bud scale

Protective scale-like leaves which cover the shoot apex, flower and embryonic leaves.

Bud sport (Bud mutation)

A plant or portion of a plant arising by spontaneous mutation in the apical meristem of a bud.

Bud stick

A shoot or twig used as a source of bud for budding.

Bud take

The success of budding operation as observed by the presence of green, healthy bud which is in the process of bud union.

Bud wood

Shoot from which bud is selected for budding.

Bulb A specialized underground plant organ consisting of a greatly reduced stem (basal plate) surrounded by fleshy, modified leaves called scales.

Bulbel (Bulbils, Bulblets)

(1) Small or miniature bulbs arising from the parent bulb.

(2) Aerial bulblets.

Bulb cutting

Cutting of bulb used for propagation.

Bull

The inflorescence of banana during its ascent up the pseudostem.

Bull head

(1) The corm of a banana plant which has flowered.

(2) A condition when the short petals or excess number of petals give a blunt, broad appearance to a flower.

Burning

The browning of leaves caused by excess fertiliser.

Bush

A low woody plant, without a distinct trunk, but with a number of branches at or near the ground level.

Button

(1) In coconut, female flower which is a small spherical body about 1.3 cm in diameter with resemblance to a small nut.

(2) The young emerging fruit of a mushroom.

Buttress Outgrowth of the trunk and roots at or above the surface of the ground to give the plant additional support.

C₃ plants

Plants showing decreased carbohydrate production due to photorespiration and in which three-carbon sugars are the first stable intermediates in the Calvin Benson cycle of photosynthesis.

C₄ Plants

Plants that can photosynthesize at a faster rate than C₃ plants due to special leaf anatomy and a unique biochemical pathway which begins with a stable, four-carbon sugar intermediate.

Cabbage

(1) The piece of banana pseudostem discarded from the head or large corm.

(2) The terminal bud of coconut.

(3) *Brassica oleracea* var. *capitata*, the vegetable coming under Cruciferae family.

Cacti

A group of xerophytic plants, not having true leaves, thriving without being watered for several days.

Caducous

(1) Falling off early or prematurely, as the calyx in some plants.

(2) Not persistent.

Caffeine

The purine base alkaloid found in tea and coffee which works as stimulant.

Callus

Mass of parenchymatous cells, developing on or around a wound or from an explant.

Calli clone

Plants regenerated from callus.

Calyx

The outer parts of the flower (sepals) is collectively called calyx.

Cambium

A lateral meristem in vascular plants which produces increases in diameter of stems and roots through the production of xylem, phloem and parenchyma cells.

Campanulate

Bell shaped.

CAM plants

Desert plants in which Crassulacean Acid Metabolism (CAM) system is prevalent where the CO₂ is fixed at night e.g. *Bryophyllum calycinum* and cactus plants.

Candied fruit/vegetable

A fruit / vegetable impregnated with cane sugar or glucose syrup, and subsequently drained free of syrup and dried.

Cane

- (1) A main stem of a small fruit plant or vining crop.
- (2) In grapes the term applies to previous season's growth or new shoots after they lose their leaves.

Canker

A dead area caused by a fungal disease. **Canning**

A method of preserving food in a fresh condition by processing and sealing in airtight containers.

Canopy

The overhead cover or horizontal projection of a plant formed by its leaves, branches etc.

Caoutchouc

American Indian name for rubber, meaning weeping wood.

Capillary watering

See Mat watering.

Capsule

A simple, dry, dehiscent fruit, formed of two or more united carpels.

Carbonated beverages

Carbonated drinks prepared by using fruit juices.

Carbon nitrogen ratio (C:N ratio)

The ratio of carbonaceous materials to nitrogen in plant or soil.

Carotene

An orange pigment occurring in certain plastids; precursor of vitamin A.

Carpel

One of the innermost floral structures which bears or encloses the ovules.

Carpel bedding

Covering the beds in gardens with dense, low growing herbaceous plants.

Carpellody Abnormal development of the stamen into carpel like, fleshy structures, resulting in misshapen 'catface' fruits e.g. papaya.

Caryopsis

An indehiscent fruit with one seed which is completely fused to the inner surface of the pericarp.

Cash crop

A high value marketable crop e.g. tea; cardamom.

Casual

An introduced plant which has not become established, although sometimes found in places where it is not cultivated.

Catabolism

Metabolic process in which complex materials are converted into simple compounds e.g., respiration.

Catch crop

(1) A quick growing crop incidentally planted and harvested between two major crops in consecutive seasons.

(2) A contingency crop grown to replace a major crop which has failed.

Catch wire

A wire that serves as an attachment for developing grape shoots or other plants with tendrils.

Catkin

A hanging type of spike inflorescence that has male or female flowers with a perianth.

Cauliflorous

Bearing inflorescence on the trunk or woody branches e.g. cocoa; jack. **Cauline**

Arising from or inserted on the stem.

Central leader

System of training a fruit tree in which it is trained to form a trunk extending from the soil to the top of the tree.

Centre of diversity

An area where the genetic and specific diversity is very high.

Certified plants

Plants produced under strict guidelines and inspections controlled by a regulatory agency to ensure trueness to type and freedom from damage, insects, diseases etc.

Certified seed

The progeny of breeder, foundation or registered seeds, so handled as to maintain satisfactory genetic purity and identity.

Chat

An assortment of fresh dessert fruits cut into pieces and sprinkled with salt and spices.

Check

A row or plot of standard variety included in field experimentation for comparison.

Chemical mutagen

A chemical capable of causing genetic mutation.

Chemical thinning

Thinning of blossoms by the use of chemical substances.

Chemotropism

A bending or turning in response to chemical stimulus.

Cherelle

Small and immature pods of cocoa. **Chicory**

Roots of *Cichorium intybus* used for blending and mixing with coffee to the extent of 40 per cent.

Chilling injury

Damage to plant parts resulting from exposure to cold, above freezing temperature.

Chilling requirement

The number of hours at or below a specific temperature, necessary for uniform bud break following winter dormancy.

Chilling unit

A period of time at or below a specified threshold temperature that has the maximum effect toward fulfilling the chilling requirement of a given plant.

Chimera

A plant having tissues of different genetic composition adjacent to each other.

Chinese layerage

See Air layering.

Chip budding (Yemma budding)

Budding where a single bud with a piece of wood is fitted to a suitable cut in the stock.

Chlorophyll

Green pigment found in plants, used for photosynthesis.

Chlorosis

Yellowing caused by loss of or reduced production of chlorophyll.

Chromoplast

A coloured plastid containing pigments other than chlorophyll, often yellowish or red. **Chupon**

Vertical stems or shoots of cocoa.

Ciliate

Margined with hairs

Cion

Obsolete term for scion.

Circumposition

See Air layering.

Circumutation

An irregular spiral movement of a plant which takes place from unequal growth rates.

Citrangle

An intergeneric hybrid between *Poncirus trifoliata* and *Citrus sinensis*, used as rootstock.

Cladophyll (Cladode)

A stem that resembles a leaf in appearance.

Clarifying agents

Substances used to remove haziness or

sediment produced by oxidative deterioration in fruit juices, wines, beer etc.

Clean cultivation

Periodic soil tillage to eliminate all vegetation other than the crop being grown.

Cleft grafting

A grafting method where the scion piece is placed in a split (cleft) formed on a stock plant (See Wedge grafting).

Cleistogamy

Self pollinating nature of closed flowers.

Cleistogamous

Flowers which fertilise themselves without opening.

Climacteric

The maximum respiration rate of a fruit, reached just before full ripening.

Climacteric fruits

Fruits exhibiting increased rate of respiration before full ripening e.g. mango; banana.

Climate

The aggregate of weather conditions over a long period of time.

Climate control greenhouse

Greenhouse in which climatic factors like temperature, light (intensity and duration) and humidity are controlled manually or automatically.

Climax vegetation

The most fully developed natural vegetation the climate can sustain.

Climber

Annual or perennial herb or shrub with special structures to climb over a support.

Clonal propagation

Asexual propagation of plants from a single plant, resulting in true-to-type and uniform progenies.

Clonal seed

A seed collected from a clone.

Clone

A group of genetically uniform plants, vegetatively propagated from a single parent.

CO₂ compensation point

The concentration of carbon dioxide at which photosynthesis balances respiration and there is no net CO₂ flux. In C₃ plants this is about 50 ppm, whereas in C₄ plants it is almost zero.

Coconut milk

The milky juice obtained from macerated coconut kernel (endosperm).

Coconut water (Liquid endosperm)

In coconut, water like liquid filling the entire cavity of the endosperm when young and partially filled when fully ripe.

Coffeine

The purine base alkaloid in tea and coffee, acting as a stimulant.

Colchicine

A poisonous (alkaloid) drug obtained from *Colchicum autumnale*, used for inhibiting spindle formation during mitosis at metaphase for doubling of chromosome number.

Cold frame

An enclosed bed for propagating or protecting plants in temperate climate, where the source of heat is solar energy (See Hot bed).

Cold hardiness

The ability of a plant to resist injury during exposure to low temperature.

Cold storage

An insulated storage using mechanical refrigeration to maintain a stable low temperature for long term storage of agricultural products.

Cold test A germination test in which seeds are planted for a period in cool moist soil before transferring to a high temperature in order to assess the seedling vigour.

Cole crops

(1) Cabbage and its various allies.

(2) Representatives of the species *Brassica oleracea*

Coleoptile

A protective sheath covering, the first leaf of a grass seedling.

Collar pruning

Pruning of a mature tea bush by cutting close to the soil, thereby removing all the frame, leaving only the central stem (See Rejuvenation pruning).

Collective fruit

Fruit formed from a complete inflorescence or from several flowers as of mulberry and pineapple.

Colouring agents

Substances added to food products to make them attractive and appetising.

Combining ability

The relative ability of an inbred line or a clone, when crossed to another inbred line or clone, to transmit desirable trait(s) to its cross.

Command area

The land area that can be irrigated by canal or from a dam or an irrigation project.

Commercial Floriculture

Area of horticulture related to the commercial production and marketing of cut flowers, flowering pot plants, foliage plants and bedding plants.

Community forestry

Forest managed for the interest of local community or village, run almost exclusively by them.

Companion crop

Any subsidiary crop grown in association with a main crop.

Compatibility

(1) In sex cells, the ability to unite and form a fertilized egg that can grow to maturity.

(2) Congenial condition for successful graft union between stock and scion.

Compatible varieties

(1) Varieties that will set seed when cross

pollinated

(2) Varieties that will make a successful graft union when inter-grafted.

Compensation point

The light intensity at which the photosynthetic intake of carbon dioxide is equal to the respiratory output of carbon dioxide.

Competition (Interference)

The process in which two individual plants or two populations of plants interact such that at least one exerts a negative effect on the other.

Complete flower

A flower having pistil(s), stamens, petals and sepals.

Component crops

Individual crops of a cropping system.

Compost A product obtained by the controlled decomposition of organic matter having a C:N ratio of about 10:1.

Compote

(1) Fruits cooked in sugar syrup, retaining their shape.

(2) A stemmed container used for arranging flowers.

Compound layering (Serpentine layering)

Layering method where a flexible branch is alternately covered and exposed along its length, resulting in several new plants.

Compound leaf

A leaf composed of two or more leaflets e.g. ferns.

Concrete (Floral concrete)

The substance containing odoriferous principles of commercial flowers like jasmine, rose and tuberose obtained by solvent extraction (See Absolute).

Condiments

These are substances of plant origin with pronounced odour and piquancy, used for seasoning food and stimulating appetite (See Spices and condiments).

Congeneric

Belonging to the same genus.

Conifer

A cone bearing plant or gymnosperm.

Conservation

Sustainable use of natural resources, such as soils, water, plants, animals and minerals.

Conservatory (Fernery) A greenhouse of the tropics which protects plants from fierce sunlight and strong wind.

Continental climate

A climate having large daily and annual ranges of temperature.

Continuous cropping

Growing of crops one after the other without seasonal fallowing.

Contour planting

Planting crops along the contour.

Control

(1) The untreated plant for comparison with the experimental treatment (See Check).

(2) To direct or regulate as in induction of organogenesis in cultures through hormone regulation.

Controlled atmosphere storage (CA storage)

A storage method in which the concentrations of atmospheric gases (mainly O₂ and CO₂) and atmospheric pressure are adjusted to extend the storage life of fresh produce (See Modified atmosphere storage).

Cool season vegetables (Temperate vegetables)

Vegetables whose growth and productivity are favoured by low temperatures; most of them have the ability to withstand frost; also known as winter vegetables.

Coppice farming

Practice of intensive exploitation of land capability by regular harvesting of trees which produce numerous shoots from the stump after cutting.

Coppicing The cutting back of trees or shrubs close to the main trunk or ground level resulting in the production of a number of vigorous new shoots (See Pollarding).

Copra

The mature endosperm (kernel) of coconut when dried to about six per cent moisture content.

Cordate

Heart-shaped.

Cordial

A sparkling, clear, sweetened fruit juice from which pulp and other insoluble substances have been completely removed.

Corm

The underground swollen base of stem axis enclosed by scale leaves.

Cormel

Miniature corm arising from a parent corm.

Corona

An appendage between the petals and stamens e.g. cup of the daffodil.

Cosmetic pruning

Minor pruning of dead flowers and weak or crossing shoots to keep a plant tidy and balanced in shape.

Cotyledons

Embryonic seed leaves that stores nutrients to sustain the growth of a newly germinated plant.

Coumarin

A naturally occurring plant growth inhibitor.

Cover crop

A crop grown alone or in between rows of crops to reduce soil erosion, conserve nutrients, and supplement organic matter. **Creeper**

A plant which spreads along the ground surface or other substrata.

Critical level

Concentration of a nutrient element below which deficiency symptoms may develop or a response to addition of the nutrient may be observed.

Crocks

Broken pieces of earthen pots.

Crop

Plants sown and harvested by man for economic purposes.

Crop cafeteria

The demonstration of identified efficient crops / varieties in an agrometeorological region/zone

offering an opportunity to the farmer to choose a suitable crop or crop combination commensurating with the available resources and requirements.

Crop canopy

The overhead cover or horizontal projection of a crop formed by its leaves, branches etc. which can influence the penetration and interception of radiant energy.

Crop competition

The tendency of plants of the same or different species growing together to strive for and capture common resources like light, water, nutrients and space, resulting in reduced growth and/or altered form of the crop(s).

Crop duration

Days taken by a crop from germination to maturity.

Cropping pattern

Yearly sequence and spatial arrangements of crops and fallow, on a given area.

Cropping system

Cropping pattern and its interaction with farm resources, farm enterprises and available technology.

Crop residue management

Use of the non-commercial portion of the crop for soil protection and improvement.

Crop rotation

The practice of growing different crops on the same land in a regular, recurring sequence.

Crop season

The most favourable weather condition to get better yield.

Crop timing

Regulating the harvesting time of crops by way of adjusting the planting time, pruning or suitable treatments.

Cross pollination

Transfer of pollen from the anther of one plant to the stigma of another plant (unless of the same clone).

Crotch

Any angle formed between two woody branches, or that point where the main trunk divides into branches.

Crown

- (1) The junction between stem and root near the ground level.
- (2) The tree-top.
- (3) Leafy top of pineapple fruit used for vegetative propagation.
- (4) Part of a rhizome with a large bud suitable for propagation.

Crown bud

A flower bud, whose development has ceased, resembling a crown.

Crown budding

Replacing the undesirable and susceptible crown of a high yielding tree with a resistant clone by budding.

Crown grafting

A graft union made at the crown of a plant on an established rootstock.

Crown slips

Shoots growing on the crown of pineapple (between fruit and crown), used for planting after rooting.

Cruciferous

Of or pertaining to the mustard family, Cruciferae.

Crush

Fruit beverage containing at least twenty five per cent fruit juice or pulp and fifty five per cent total soluble solids.

Cryo-preservation

Storage of cells, tissues, organs and seeds at super-low temperature.

Crystallised fruit/vegetable Candied fruit/vegetable when covered or coated with crystals of sugar, either by rolling in finely

powdered sugar or by allowing sugar crystals to deposit on them from a dense syrup.

CTC method

Crushing, tearing and curling method of processing tea.

Culinary

Suitable for cooking or processing in some form.

Culm

The joined stem of a grass, which is usually hollow, except at the nodes.

Cultigen

A plant species or race which has arisen in the course of cultivation.

Cultivar (cv.)

A contraction of the phrase 'cultivated variety' which designates a group of plants which are significant in agriculture, forestry or horticulture.

Cultivation

Labour and care taken in the raising of plants such as stirring soil, fertilising etc. or loosening the soil around a plant for weed control and providing soil mulch.

Curing

Natural or artificial aging of the plant produce brought about by some (dry or wet) heat treatment.

Cuticle

The waxy covering on plant parts like leaves and fruits, which prevents excess moisture loss.

Cuttage Method of plant propagation by means of cuttings.

Cutting

The portion of a plant cut and removed for rooting, in asexual propagation.

Cybrid

Hybrid of two cells, produced by protoplast fusion, having the cytoplasm of both and nucleus of one.

Cyclic

Having floral parts in whorls.

Cymba

A woody, boat like spathe which encloses the inflorescence in certain palms.

Cyme

An inflorescence in which primary axis bears single terminal flower that develops first, the arrangement being repeated by axis of secondary and higher orders.

Cytokinins

Group of plant growth substances which promote cell division and exert other growth regulatory functions e.g. zeatin, kinetin, benzyl adenine, 2iP.

Cytoplasmic male sterility

A type of male sterility conditioned by the cytoplasm rather than the nuclear genes and transmitted only through the female parent.

Cytotoxic

Toxic to cells.

Damping off

A seedling disorder caused by microorganisms.

Dark storage Storage of foliage plants, cut flowers etc. in darkness during transit (from harvest to end use).

Datun

A brush made from a small twig of a tree used for cleaning teeth.

Day neutral plants

Plants in which flowering is not affected by day length.

De-acclimation

De-hardening or the loss of adaptation to a climate.

Dead-head

To prune the spent flowers or the unripe seed pods from a plant.

Dead heading

Removal of dead flowers or the unripe seed pods from plants.

De-blossoming

Removing blossoms from a plant.

De-budding

Removal of floral or vegetative buds.

De-bunching

The removal of the bunch soon after emergence to speed up growth of the follower.

Deciduous

- (1) Shedding leaves during winter or dormant season.
- (2) The falling of plant parts at the end of a growing period.

Deciduous plants Trees and shrubs that drop their leaves before entering onto the rest period.

Decortication

Removal of bark or outer covering of plant or plant produce.

Decumbent

Lying on the ground with the end ascending.

De-differentiation

Process in which the inter-organ, inter-tissue and inter-cellular relations are broken, leading to the formation of a mass of parenchymatous cells, called callus.

Defleating

The cutting down of leaves that could scar the fruit, leaves with leaf spot and leaves that have collapsed.

Defoliant (Defoliator)

Chemical used for inducing leaf fall, usually to facilitate harvest.

Defoliate

To strip off leaves .

Defoliation

The removal of leaves by hand or using chemicals or by withholding water.

Degrees Brix

A measure of total soluble solids content which approximates the percentage of sugar found in juice or a fruit. Corresponds to Degrees *Balling*.

Dehanding

Removal of the false hand (hand with undeveloped fingers) and / or the last apical hand of banana at the time of bagging.

Dehisce

To open spontaneously when ripe.

Dehiscence

The bursting or splitting of fruit (to emit the seeds) or anther (to emit the pollen grains).

Dehiscent fruits

A type of dry fruit in which the carpels split along definite sutures at maturity.

Dehydration

Removal of water by sun drying or by artificial heat under controlled conditions of temperature humidity, and air flow.

Dehydro-freezing

A process of freezing food where freezing is preceded by partial dehydration.

De-novo

Arising spontaneously from unknown or very simple precursors.

Dentate

Toothed leaf margin.

De-potting

Removing the plant from the original container mainly for repotting.

Desert

Places where the annual rainfall is often less than 250 mm and with extreme temperature fluctuations.

Deshooting

Removal of shoots that are unwanted.

Desiccate

To dry thoroughly to remove moisture from an object to below normal level.

Desiccation

The process of drying up of tissues due to excess water loss or due to conditions that prevent the entry of water to the roots / shoot.

Dessert

A final course of fruits, puddings or other sweets at the end of meals.

Dessert fruit

Any fruit which may be served after meals.

Determinant inflorescence

Inflorescence in which the apical flower blooms first.

Devernalization

Negation of a vernalizing stimulus by temperatures above a critical level.

Dew-point (Dew point temperature)

The temperature at which condensation will start and 100 per cent relative humidity results in a given mixture of air and water vapour.

Diallel crossing

Crossing of a number of genotypes in all possible combinations.

Diandrous

Having two-stamens.

Diara cultivation

Cultivation of vegetables in the river beds, making use of the organic sediments and subterraneous moisture.

Dibbling

A method of sowing by placing crop seeds in the holes manually by using a dibbler, maintaining specific spacing and number of plants between the rows and within the rows.

Dicliny

A condition in which male and female organs are separate and in different flowers.

Diclinous

Unisexual and requiring two flowers to represent both sexes.

Dicotyledon (Dicot)

Class of plants having embryos with two cotyledons.

Die-back

Death of shoots, originating from the shoot tip.

Differentiation

The process of changes in composition, structure and function of cells and tissues during growth.

Digitate leaf

Leaf with many finger like leaflets radiating from a central point, or joined only at the base.

Dihybrid

Plants that differs by two pairs of genes.

Dimorphic

Exhibiting two distinct forms.

Dimorphism

The occurrence of two types of leaves, flowers or other structures on a single plant or on different plants of the same species.

Dioecious

Condition in which staminate and pistillate flowers are produced on separate plants.

Diploid

A nucleus, organism, or generation that has two sets of chromosomes. ***Disbudding***

The removal of vegetative or floral buds.

Disc floret

The central regular five lobbed floret of a flower-head in compositae.

Diseminule

A part of a plant which gives rise to a new plant (propagule).

Dish garden

The art of making miniature garden by growing delicate plants in containers such as bowl shaped drinking cups or a brandy goblet.

Distal

Opposite from the point of origin or attachment; toward the apex.

Diurnal

Of or during the day; not nocturnal.

Diversified cropping

The cropping plan in which no single crop contributes to 50 per cent or more towards the annual crop production or income.

Division

(1) A taxonomic grouping of plants belonging to similar classes.

(2) The process of cutting into sections of rhizomes, stem tubers, tuberous roots etc. for propagation.

Dominance

Ability of an allele to express itself in the heterozygous state.

Donor plant

See Mother plant.

Door yard fruit Fruit species grown in small numbers around homes.

Dormancy

Resting state of buds, seeds and spores that fail to grow when provided with seemingly optimal conditions.

Dormin

Initial name given to abscisic acid (ABA). A dormancy inducing substance which has been extracted from buds and leaves. Also known as abscisin II.

Double

Term to describe flowers having more than the usual number of petals.

Double cropping

Taking two crops a year in sequence from the same piece of land.

Double cross

A cross between two single crosses involving four different inbreds.

Double fertilization

Union of two male gametes with the female gamete and polar nuclei.

Double hedge planting

Pairs of row of plants form a double hedge where the spacing within the rows and between the set of two rows are close but the spacing between pairs of rows is wider.

Double leader

Two shoots competing as leaders on a tree, each trying to assert apical dominance.

Double recessiveAn organism with two recessive alleles for a particular trait.

Double working

Type of grafting where the graft combination contains an interstock between the scion and the stock.

Downy

Term to describe soft hairs; also called pubescent e.g. African violet.

Drainage

The process of removal of excess water from the land.

DRC

Dry rubber content, ascertained by coagulating a weighed sample of latex.

Drip culture (Sand culture)

A modification of hydroponics where plants are kept in sand medium and watered with a nutrient solution.

Drip irrigation (Trickle irrigation)

The application of small quantities of water directly to the root zone through various types of delivery systems.

Drought

Lack of moisture that hinders plant growth.

Drupe

A fleshy one-seeded indehiscent fruit with the seed enclosed in a strong endocarp.

Drupelet

A small drupe as that in an aggregate fruit as the blackberry. ***Dry farming***

The production of crops without irrigation on the land which receives annual rainfall of less than 500 mm.

Dry fruits

Class of fruits in which the pericarp is often hard and brittle at maturity.

Dry ice

Frozen solid carbon dioxide.

Drying off

The process of preparing bulbs and tubers for their necessary rest or dormant period by withholding water.

Dry matter

Remains of the plant after the removal of water.

Dry-pack storage

The storage of cut flowers in vapour-proof containers, usually at 0°C.

Duff (Litter)

The partially decomposed organic matter (e.g. leaves, flowers, fruits etc.) found beneath plants, as on a forest floor.

Dwarfing rootstock

Rootstock which has a dwarfing effect on scion.

Earth vegetables

All forms of vegetables in which food is stored in underground parts.

Echinate

Having prickles or spines.

Ectocarp

The outer layer of cells of the pericarp or fruit wall.

Eco-climate

Climate under the crop canopy.

Eco-system

An ecological system involving living and non-living units where a stable cyclic interchange of energy and materials occur in a defined space and time.

Eco-type

Plant type or strain within a species, resulting from exposure to a particular environment.

Edgings

A border of bricks, low shrubs or dwarf perennials provided to demarcate garden paths or to make an area more conspicuous.

Effective rooting depth

Soil depth from which the full grown crop extracts most of the water needed for evapo-transpiration.

Electronic leaf

Device in a mist system to switch on the mist as and when the cuttings/plants become dry.

Elite plant

A plant with superior traits.

Elite variety

An improved variety developed by plant breeders and released to farmers due to its superiority in at least one respect.

Elliptic

Oval but narrowed towards the rounded ends.

Emasculation

Removal of stamens of self fertile plant to aid self sterility.

Embryo

The rudimentary plant within the seed. ***Embryo***

culture

In vitro culture of isolated mature or immature embryo.

Enation

Outgrowth on a plant surface.

Endemic

Peculiar to a particular area.

Endocarp

(1) The inner layer of cells of the pericarp or fruit wall.

(2) The stony part of a drupe or pome.

Endodormancy

Dormancy regulated by endogenous physiological factors.

Endogenous

Arising from deep-seated tissues.

Endosperm

Triploid food storage tissue of angiosperm seed resulting from triple fusion.

Endospermic seeds

Seeds with dominant endosperm.

Enemophilous

Desert-loving.

Energy cropping plantation

Growing of crops like casuarina and eucalyptus for energy purpose.

Enology

The art and science of wine making.

Entire

Without lobes or indentations.

Entomophilous

Insect-pollinated.

Epicarp

Outer layer of fruit wall. **Epicormic shoots**

A cluster of shoots, derived from dormant adventitious buds, on a main stem or branch after a wound or cut has been made.

Epicotyl

That portion of an embryo or seedling above the cotyledons.

Epidermis

Outermost cell layer of young plants and some parts of older plants (like leaves and fruits).

Epigeal

Plants in which the cotyledons appear above the soil surface (See Hypogeal).

Epigeous germination

Germination pattern of seed where the hypocotyl elongates and raises the cotyledons above ground level.

Epigynous

Condition in which the perianth and stamens of a flower are attached above the ovary.

Epinasty

Condition in which the upper surface of a structure, such as a leaf, grows more rapidly than the lower surface, causing a downward curvature.

Epiphyte

Nonparasitic plant growing on another plant, absorbing atmospheric moisture with the help of velamen roots.

Episodic growth

Growth occurring in spurts or flushes, as against continuous growth.

Equable Uniform, even or smooth.

Eremophyte

Desert plant.

Erratic bearing (Irregular bearing)

Inconsistent and unpredictable flowering and fruiting behaviour.

Esculentus

Means 'edible' (used in botanical names).

Espalier

Plants trained to grow flat against a wall.

Essential oil

Volatile aromatic extracts prepared by steam distillation of ground spices (See Spice essential oils).

Estate

A property where rubber, tea, coffee etc. are cultivated.

Estivation

See Aestivation.

Ethereal oil

Essential oil.

Ethylene

A gaseous plant growth substance, regulating vegetative growth, fruit ripening and abscission of plant parts.

Etiolation

Development of plants or plant parts in darkness, resulting in elongated stem, small leaves, and reduced chlorophyll content.

Etiology (Aetiology)

The science of the cause or origin of diseases.

Even span greenhouse A greenhouse whose roof-slopes are of equal length and angle.

Evergreen

Plants that have persistent green leaves for two or more growing seasons.

Excised embryo test

Germination test of seeds whose embryos require long periods of after-ripening.

Exhausting

The process of removing air from the contents of the can, for preserving food and reducing corrosion.

Exocarp

The outer skin-like region of the fruit pericarp.

Exogenous

Arising from the external tissues.

Exotic plant

A newly introduced plant, not native to a place (See Indigenous).

Explant

Excised plant part used for tissue culture.

Explantation

The removal of living tissue from an organism and its culturing in an artificial medium.

Explosive fruit

Fruit which bursts suddenly and violently, scattering seeds over a considerable area.

Extensive production

Crop production using large area of land with minimum labour and inputs.

External dormancy Dormancy imposed by unfavourable external conditions like moisture stress, extreme temperature and sub-optimal levels of oxygen and light.

Ex-vitro

Conditions, reactions or responses of organisms removed from *in vitro* conditions. (In Latin *ex vitro* means 'from glass')

Eye

- (1) Common term for a bud.
- (2) Bud of a tuber.
- (3) A lateral bud as on a rose stem.
- (4) Small opening on a fig which is the site of pollination.

F₁ (First filial generation)

The first generation of offspring resulting from an arranged cross between selected parents in breeding programmes (See Monohybrid).

F₂ (Second filial generation)

The second generation of offspring resulting from crosses between individuals of the F₁ generation.

Face-packing

Packing fruits for market with the top layer of the container artistically arranged, while the fruits below are without arrangement and often inferior in quality.

Facilitation

The process in which two individual plants or two populations of plants interact in such a way that at least one exerts a positive effect on the other. Double facilitation is equivalent to mutualism.

Facultative long and short night plants Plants which do not require a night length longer or shorter than a given critical length for a response to occur, but which will respond faster if the dark period is longer or shorter, respectively, than a critical length.

Fallow

A system in which cultivated land is left without a crop for long periods.

False cardamom

See Large cardamom.

False fruit (Pseudocarp)

A fruit that incorporates in addition to the ovary wall, other parts of the flower, such as the receptacle.

Family

Group of genera.

Fan branches

The main branches of a shrub or a tree appearing like the leaves of a fan.

Fan-and-pad cooling system

A cooling system, utilized in greenhouses, where cooling is brought about by evaporation of air drawn in through wet pads with the help of fans.

Farm forestry

Practice of growing trees specifically for fuel, food and a variety of other resources on a farm.

Farming system

Appropriate combinations of cropping systems, livestock, fisheries, poultry and forestry, ensuring ecological and socio economic balances. ***Farming***

system research

Research on farming systems, multi and interdisciplinary in nature, to enhance and stabilize agricultural production.

Fasciation

A malformation in plant shoots resulting in an enlarged and flattened shoot, as if several shoots are fused.

Fauna

Pertaining to the animal life of a locality or region or that existing during a specific geological period or time.

Favism

Haemolytic anaemia caused by eating broad beans or by inhaling the pollen of its flower.

Feeder roots

Ultimate branches of a root system with a large absorbing area.

Feni

Fermented wine made from cashew apple in Goa.

Fermentation

(1) Anaerobic breakdown of organic substances by microorganisms, producing heat, wastage gases and a variety of end products.

(2) Process after maceration (rolling) in the production of tea.

(3) A step in cocoa processing to get rid of the pulp around the beans and to induce chemical changes for improving the quality.

(4) A step in processing of parchment coffee where the mucilage is removed by natural fermentation.

Fernery (Conservatory) A greenhouse of tropics which protects plants from fierce sunlight and strong wind.

Fertilization

(1) The fusion of male and female gametes to produce zygote, containing chromosomes of both the parents.

(2) The application of fertilisers to the soil to increase fertility.

Fertiliser

Substance which supplies mineral nutrients to plants in required quantity.

Fibrous root system

Root system in which primary and lateral roots develop almost equally and have a limited quantity of cortex.

Field test

An evaluation test whereby the field performance of experimental plants, their response to inputs and physical factors etc. are assessed in comparison to control.

Filament

The stalk of a stamen or male flower part.

Filiform

Thread-like.

Fimbriate

Bordered with hair, fringed.

Finger

The individual fruit in the hand of a banana bunch.

Fish leaves

In tea, the first two leaves formed on a shoot as it grows from a bud.

Flaccid Wilted.

Flat

Shallow tray made of wood, plastic or metal with drainage holes for germinating seeds or rooting of cuttings.

Flat grafting

Grafting in which smooth transverse cut is made on both scion and stock (as in cactus) and the flat surfaces are held firmly in position by thread or raffia.

Fleshy fruits

Class of fruits having soft and fleshy pericarp at maturity; includes berry, pepo, hesperidium, drupe and pome.

Fleshy root

A root that accumulates and stores a rich supply of reserve food for the plant.

Flexuous

With a wavy form.

Flora

- (1) The plant life of a locality or of a geological era.
- (2) Plants taken collectively.
- (3) A book in which all the plants from a particular area are described.

Floral concrete

See Concrete.

Floral foam

A water absorbing material (a substitute for pin holder or wire mesh) used in floral decoration to keep the cut flowers in place. **Florets**

Small, individual flowers that make up a very dense inflorescence.

Floriscane

A flowering and fruiting stem of a bramble, the season after it was produced (in the season of production, it is called primocane).

Floriculture

The art and science of growing and marketing flowering and foliage plants.

Florigen

Hypothetical hormone like substance implicated in floral initiation in many plant species.

Florist

One who is involved in the procurement and selling of flowers.

Flower

The angiosperm reproductive structure which may include calyx, corolla, androecium and gynoecium.

Flower bud

An unopened flower.

Flower bud initiation

Formation of floral primordium.

Flower blasting

Flower bud abortion after the completion of flower differentiation.

Flower differentiation

Complete morphological differentiation of the floral organs following flower bud initiation.

Flower initiation

Visible organisation of flower primordia (buds) at the stem apex.

Flower induction An invisible developmental process that occurs prior to visible flower bud initiation.

Floral preservative

Chemical used to prolong the vase life of cut flowers.

Floral primordium

Very early stage of flower bud.

Florescence

Refers to anthesis or flowering time, the state of being in bloom.

Flotation

A method for separating a valuable material from a less valuable material by placing them in a liquid in which one will sink and the other will float.

Foliar

Pertaining to leaves.

Foliar diagnosis

Estimation of mineral nutrient deficiency or excess by analysing the chemical composition, colour and/or growth characteristics of the foliage.

Foliar embryos

Vegetative embryos developed at the edge of leaves, capable of growing into new plants.

Foliar feeding

Feeding plants with nutrient solution through the leaves.

Foliage plant Any plant grown primarily for its foliage, utilized for interior decorations or landscaping.

Follicle

Simple dry dehiscent fruit having one locule which splits along one suture.

Follower

A banana sucker which has been allowed to grow for bunch production.

Forcing

The manipulation of environment factors for producing a marketable pot plant or cut flower, especially during off season.

Forest

A plant community, predominantly of trees and other woody vegetation, usually with a closed canopy.

Forestry

- (1) Management of forest for maximum sustained yield of their resources and benefits.
- (2) The science or management of forests.

Forkert budding

A modification of patch budding where the lower portion of the patch of the rootstock is not cut but retained as a flap. The bud patch is inserted in the portion and the flap is drawn

over the inserted bud, followed by wrapping as usual.

Form A member of a population that differs from the others to a degree not great enough that it can be called a cultivar.

Foundation planting

Planting of trees, shrubs or ground covers in front of a building foundation.

Frame work

The 'skeleton' of main branches of a tree or shrub.

Free clones

Clones that can be purchased and resold without any agreement or prohibition.

Free pollination

Pollination without control. The offsprings are of unknown parentage.

Free water

Water released by the cell when freezing occurs in intercellular spaces (See Bound water).

Freeze-drying

A method of food processing where the material is initially frozen at super low temperature and then vacuum dried.

Freezing agents

Substances used for chilling foods.

Fresh weight (Wet weight)

The weight of a plant or plant part including the water content.

Fronde

General term designating leaf of coconut, oilpalm, fern etc.

Frost

Minute crystals of ice collected or deposited on ground or plants when the nights are cold and temperature falls below freezing point. **Frost**

damage

Damage caused by low temperature.

Frost day

Day with a minimum temperature less than 0 °C.

Frost injury (Freezing injury)

Injury or killing of plant tissues caused by exposure to low temperature and consequent formation of ice.

Frost pocket

A depression in the terrain into which cold air drains but from which it cannot escape, making the plants of the area prone to freezing injury.

Fructification

- (1) The act of producing fruit.
- (2) The production of a reproductive structure.

Fruit

A ripened ovary or ovaries with or without accessory floral parts and / or seeds.

Fruit buds

Buds containing underdeveloped flowers; also referred to as flower buds.

Fruit butter

Product prepared by boiling screened fruit pulp with or without adding sugar, fruit juices, and spices to a semisolid mass of homogenous consistency.

Fruit confections

General term used to describe candies in which fruits are used.

Fruit drop Any substantial dropping of immature fruits.

Fruit growing

The cultivation of edible fruits that are consumed either fresh or processed.

Fruiting habit

The relative position of fruiting on the shoots of a plant (See Bearing habit).

Fruit juice concentrate

A fruit juice from which water has been mostly removed by heating or freezing.

Fruit juice powder

Fruit juice converted into a free flowing, highly hygroscopic powder by puff-drying, freeze-drying, vacuum drying, spray-drying or drum-drying.

Fruit leather

See Fruit paste.

Fruit paste (Fruit leather)

A product like fruit butter, but is dried in the sun or by artificial heat to a solid consistency or to approximately the consistency of putty.

Fruit preserve

Product made by cooking prepared fruit in sugar (sucrose) syrup until the concentration of sugar reaches 55 to 70 per cent. The fruit should be crisp and retain its form.

Fruit set

Persistence and development of an ovary and/or adjacent tissue following bloom.

Fruit vegetable Fruits used as vegetables (e.g. plantain and tomato).

Fugacious

Falling off soon or fading away.

Full bloom

The plant at the period at which most of its flowers are blossoming.

GA₃

See Gibberellins.

Gametes

Male and female sex cells.

Gametoclone

A plant regenerated from the *in vitro* cultures of gametic tissue.

Gametoclonal variation

Variation among the plants regenerated from the cultures of gametic cells.

Gametogenesis

Sexual reproduction.

Garden

A piece of land used for growing flowers, fruits, vegetables etc. Often used as a place for recreation.

Garden agriculture

Cultivating crops like vegetables in land more or less adjacent to settlements, utilising organic wastes.

Gardening

Cultivation of plants in enclosed areas for ornamental purposes.

GATT General Agreement on Tariffs and Trade.

Gene pool

All the genes and their different alleles that are present in a population of a plant.

Genera

Plural of genus.

Generation

A single complete life cycle in the life of a plant or insect.

Generative nucleus

The nucleus of pollen grains which by division forms sperms.

Genetic architecture

The general genetic structure of a species.

Genetic breakdown

Loss of vigour and often the early death of F₂ plants which lack the necessary adaptive complexes of either or both the original parents.

Genetic drift

A change in gene frequency from generation to generation as a result of chance events.

Genetic engineering

Technology involving man made changes in the genetic constitution of cells (apart from selective breeding).

Genetic purity

Trueness to type /varietal purity conforming to the characteristics of the variety as described by the breeders.

Genetic shift Change in genetic make up of a variety due to growth for several consecutive generations in areas outside their adaptation.

Genotype

The genetic make up of a nucleus or individual.

Genus

A group of closely related species (Genera is the plural). In a scientific name genus is the first of the two names given for an organism.

Geocarpy

The development of a fruit beneath the ground which originates from a flower above the ground.

Geotaxis

Plant orientation with respect to gravity.

Geotropism

Growth in response to gravity.

Germination

The initiation and development of vegetative growth of an embryo, spore, seed or other reproductive body, forming a new individual plant.

Germplasm

A collection of genotypes of a particular organism.

Gestation period

The period taken from germination / planting to commencing regular flowering and fruiting.

Gibberellins

A group of plant growth substances that influence cell elongation, cell division and other physiological processes in plants e.g. GA₁, GA₂ etc. **Girdling**

The removal of a narrow ring of bark from a shoot, cane, spur or trunk to favour fruit set, size, and /or ripening.

Glabrous

Lacking hairs or projections; smooth surfaced.

Glaze fruit

Product obtained by coating candied fruit with a concentrated solution of sugar and confectioners' glucose syrup, followed by careful drying to give a transparent glaze to the surface (See Candied fruit).

Glasshouse

A structure that has a transparent cover and an artificial heat source for growing plants, mainly in temperate regions (See Green house).

Glaucus

A surface with a waxy, white coating that can be rubbed off.

Glazing

Covering of fruit/vegetable with a thin transparent coating of sugar, which imparts them a glossy appearance.

Goottee

Synonym for air layering, marcottage, circumposition, and Chinese layerage

Gourmandisers

Strong shoots arising from the stem as in cocoa, coffee etc.

Grading

The process of sorting into different lots conforming to certain pre-determined standards.

Graft Planting material consisting of a scion and a rootstock.

Graftage

See Grafting.

Graft chimeras

Chimeras produced artificially by grafting or budding.

Graft incompatibility

The inability of two different plant parts when grafted together to have a successful, long lived graft union.

Grafting (Graftage)

Fusing or uniting one part of a plant (rootstock) with that of another (scion), for producing a graft.

Grandiflorus

Comparatively large flowered; used in botanical names.

Gravel culture

Modification of hydroponics where granites of irregular shape and size are used as the medium and nutrient solutions are applied.

Gravitational water

Water in excess of the holding capacity of soil; removed by drainage.

Green budding

A method of budding where seedlings of 2-6 months are used as stock while the bud wood is only 6-8 weeks.

Green bulbs

Bulbs with leaves, used in propagation. **Green house**

A structure which protects plants from wind, precipitation, excessive radiation, extremes of temperature etc.

Greenhouse effect

The quality of the atmosphere to permit most of the insolation and prevent back radiation.

[Solar radiation is predominantly of short wavelengths which passes through the atmosphere. Terrestrial radiation is of much longer wavelength and is trapped or reflected by the atmosphere. The selective transmission of radiant energy by the atmosphere is similar to that of the glass in a greenhouse.]

Greenhouse gardening

Growing of unusual and out of season vegetables, fruits and flowers using greenhouse, especially under temperate climatic conditions.

Green leaf manuring

The practice of collecting and incorporating green leaves and tender green twigs into the soil.

Green manure crop

Crop grown and incorporated when succulent, to improve soil, especially of organic matter.

Green manuring

The practice of growing green manure crops and incorporating into the soil.

Green plants (Foliage plants)

Ornamental plants valued aesthetically for their foliage.

Green pruning

Pruning of actively growing rose plants without the benefit of a dormancy period. **Gregarious**

Plants of one kind which occur naturally in close proximity.

Gregarious flowering

Simultaneous flowering as in bamboo, coffee etc.

Grooming

The operation of cleaning out lichens and mosses which develop on rubber trees during monsoons.

Ground cover

Plants grown for their low, spreading habit to prevent the growth of weeds and for protecting soil.

Ground layering

Layering method where ground is utilized as a rooting medium.

Ground sucker

A sucker or shoot arising from below the soil.

Growing point

Region at the tips of both stems and roots where cell division occurs and new cells are formed.

Growth

An irreversible process in which there is an increase in size, dry weight or volume of an organism.

Growth hormone

See Plant growth hormone.

Growth inhibitor

Any chemical that suppresses plant growth e.g. CCC; B-9

Growth regulator

See Plant growth regulator. **Growth retardant**

A chemical (such as chloro choline chloride or CCC) that selectively interferes with normal hormonal promotion of growth, but without appreciable toxic effects.

Growth ring (Annual ring)

A distinct layer of growth as seen in the cross section of a woody stem.

Growth stimulant

Any chemical that encourages plant growth.

Growth substance

See Plant growth substance.

Gutta percha

Poly-isoprene obtained from the leaves of *Palaquium oblongifolium*.

Guttation

Exudation of water by uninjured plants usually on the edges or tips of leaves from hydathodes.

Guying

Supporting a tree by use of cables, rope or wires until root growth is established.

Gynogenesis

See Pseudogamy.

Habit

A characteristic form or mode of growth.

Habitat

Natural home or dwelling place of an organism.

Habituation

The acquired ability of cultures to grow and develop without depending on external source of plant growth substances.

Hailstorm Prolonged and severe storm consisting largely of hail or frozen raindrops.

Half-standard

In floriculture, trees or shrubs grown with about one metre of clear stem.

Hamper

Container used for shipping gladiolus.

Hand

The two rows of banana fingers, having a common base in the bunch stalk.

Hand pollination

Pollination done by handbrush or hand.

Hanging basket

A container suspended from a ceiling or wall.

Haploid

A plant with half the number of chromosomes of the normal diploid.

Hardening

(1) The process of gradually exposing tissue culture plants to higher temperature and light intensity and lower relative humidity to make them establish *ex vitro*.

(2) The treatments given in the nursery to enable seedlings /planting materials to withstand the transplanting shock and/or the adverse conditions in the main field.

Hardiness

Quality of plants to resist injury from unfavourable temperatures.

Hard pan

An impervious layer in a soil which restricts root penetration as well as movement of air and water.

Hard seed Seeds that have a seed coat impervious to water or oxygen required for germination

Hard water

Water which contains certain minerals, usually calcium and magnesium sulphates, chlorides or carbonates in solution, to the extent of causing a curd or precipitation rather than a lather, when soap is added.

Hard wood cutting

Cuttings from hardwood for propagation as in the case of pomegranate, grape, fig, plum etc.

Harvest index

Yield of the plant parts of economic interest (economic yield) as percentage of total biological yield in terms of dry matter.

Haulm

Stems of herbaceous plants as distinct from hollow culms of grasses.

Heading-back (Heading)

A type of pruning where terminal portion of the shoot is removed, causing side buds to grow below the cut.

Head-house

A building in close proximity to or attached to a greenhouse, used as a workshop, storage area, pesticide room, potting area, eating area etc.

Heart wood

The darker, denser part in the central portion of a woody stem, consisting of dead elements which lost their conducting ability. **Heat delay**

Delay in the initiation of a flower bud due to an abnormally high temperature.

Heaving

Occurs during alternate periods of freezing and thawing, where roots become exposed and frequently die.

Heavy soil

A soil predominantly composed of clay.

Hedge

Plants grown close together, forming a row of massed foliage.

Hedge planting (Single hedge planting)

The method of planting where the spacing between plants within the row is closer than that between rows.

Heel cutting

Cutting, with a heel (small slice of older wood) at the base for maximising rooting.

Heel of cutting

The expanded base of a side shoot after removing it away from the main stem of a plant.

Heeling-in

Placing plants in the ground for temporary storage (when planting cannot be done immediately) keeping the roots in contact with moist soil.

Herb

- (1) Plants grown for their flavour, aroma or medicinal value.
- (2) Any vascular plant which is not woody.

Herbaceous

Having the characteristics of a herb; not woody.

Herbaceous cutting

Cutting made for vegetative propagation from succulent herbaceous plants.

Herbage

Leaves, stems and other succulent parts of forage plants used as animal feed.

Herbarium

Collection of dried plants, systematically arranged and labelled.

Herbicide

Substance used for killing or inhibiting the growth of weeds.

Hermaphrodite

A flower with both stamens and pistils.

Hesperidium

A syncarpous, polycarpellary berry with a separable leathery rind, characteristic of orange.

Heterograft (Xenograft)

An interspecific graft.

Heterophylly

The production of more than one leaf form in a plant species.

Heterosis

Superiority of the F₁ over the parents (Synonym: Hybrid vigour).

Heterostyly

A condition which favours cross pollination in bisexual flowers due to the presence of male and female parts at different levels.

HeterotrophAn organism which cannot synthesize its own food, and hence depends on previously synthesized foodstuffs.

Heterozygous

Condition where one or more genes on a chromosome differ from that on the other member of the chromosome pair.

Hidden hunger

A condition when a plant shows no obvious symptoms of nutrient deficiency, yet the nutrient content is not sufficient enough to give the expected yield.

Hill

A circular area housing several vegetable seeds.

Hip (Hep)

The seed pod of the rose.

Hirsute

Rough, hairy.

Homestead cultivation

Cultivation in the surrounding land of a house, by the householders.

Homozygous

A condition where all the genes on one chromosome are similar to all those of the other chromosome pair.

Hormone

See Plant growth hormone.

Hortensis (Hort.)

Pertaining to gardens, or plants found only in gardens.

Horticulture

- (1) Latin, *Hortus*, "garden"; *cultura*, "cultivation".
- (2) The art and science of production and processing of fruits, vegetables, ornamentals, spices, plantation crops, medicinal plants and aromatic plants.

Horticultural fruit

A fruit which is edible on ripening.

Horticulture therapy (Hort therapy)

Treatment of unhappy and mentally retarded people, by diverting their attention to ornamental gardening, flower decoration and growing vegetables, fruits and other horticultural crops.

Hot bed

Propagating structure, in temperate regions, where temperature is enhanced for germinating seeds, rooting cutting and growing nursery stock (See Cold frame).

Hot pack (Hot fill)

Filling of pasteurised or sterilised food, while hot, into clean (not necessarily sterile) containers under clean (not necessarily aseptic) conditions.

House plant

A plant adapted to the micro-environmental conditions of houses and other buildings.

Humid tropics

The tropical areas with excessive moisture and relative humidity, characterized by isothermal conditions which facilitate year round crop production.

Humification

Process of organic decomposition. **Humus**

An organic soil material consisting of partially or completely decomposed plant and animal matter.

Hybrid

An individual resulting from the union of gametes differing in one or more genes.

Hybridization

The process of crossing individuals with different genetic make up.

Hybrid sterility

The inability of some hybrids to produce viable gametes due to absence of homologous chromosomes.

Hybrid vigour

The increased vigour over the parental types exhibited by hybrids.

Hydro-cooling

A cooling method for fresh produce in which the product is flooded with large volumes of cold water to remove field heat.

Hydrogen swell

Swelling of food cans due to the hydrogen gas produced by the action of food acids on the metal.

Hydro-handling

System of unloading containers and conveying fruits and vegetables in water to minimize bruising.

Hydrophilous

- (1) Pollinated by water.
- (2) Preferring moist places or water as a habitat.

Hydrophyte

A plant which lives in water or a moist environment.

Hydroponics (Soil-less culture)

The technique of growing plants without using soil, either in circulated, aerated nutrient solutions or in inert media such as gravel, sand, peat, vermiculite or saw dust, to which a nutrient solution is added.

Hydrotropism

Growth movement of plants in response to water or moisture stimulus.

Hygrochatic process

Opening of fruit or movement of organs as a result of water uptake; usually connected with the dispersal of seeds or spores.

Hygrophilous

Living in fresh water or moist places.

Hypobaric (Sub-atmospheric pressure) storage

Storage of agricultural produce in low atmospheric pressure where the concentration of oxygen and ethylene are reduced, resulting in low rate of respiration.

Hypocotyl

The part of the embryo or seedling below the cotyledonary node and above the radicle or root; the transition region connecting the stem and root.

Hypogeal

- (1) Plants in which the cotyledons remain below the surface of the soil (See Epigeal).
- (2) Subterranean or occurring beneath the surface of the soil or underground.

Hypogeous germination

Germination in which the cotyledons remain below the surface of the soil.

Hysteranthous

Developing leaves after the appearance of flowers, as the almond.

Ikebana

Japanese style of flower arrangement which has a spiritual and religious background.

Illegitimate clonal seeds

Seeds collected from the budded area of known-rubber clones; but produced by natural cross pollination.

Imbibition

Process of absorption of water as by seeds during germination.

Imbricated

Covered with overlapping scales like tiles on roof.

Immunity

Natural or acquired resistance of a plant to active infection by the pathogenic microorganisms or to the adverse effects of a particular parasite.

Imperfect flower

Flower lacking either the stamen or the pistil.

Impermeable seed

Seed which does not allow passage of water or gases through the seed coat (See Hard seed).

Implant

A grafted portion of a tissue.

Inarching

A grafting method where rootstock is taken to the scion donor plant for grafting. Stock and scion are independent for their nourishment till the completion of the graft union (Synonym : Approach grafting).

Inbred

The progeny of either a single cross pollinated plant obtained by selfing or two closely related plants obtained by inbreeding.

Inbreeding

The crossing of closely related plants, which leads to increase in homozygous gene pairs as well as genetically linked undesirable characters.

Incompatible varieties

Varieties which do not successfully cross pollinate or intergraft.

Incompatibility

(1) Condition preventing pollen grains from functioning on a pistil.

(2) Inability to form a successful, long lived graft union.

Incomplete flower

Flower lacking one or more of the four sets of floral parts.

Indeterminate growth

Growth that is potentially limitless.

Indexing

Determining the presence of disease or verifying the assumption of freedom from disease or virus.

Indexed plants Plants that have been tested and found to be free of known pathogens.

Indicator plants

Plants which reflect deficiency of plant nutrients, soil moisture stress etc. indicating the suitability for growing crops.

Indigenous

A plant that is native to a particular country, habitat or climate, as distinct from an introduced plant.

Induced mutations

The mutations artificially produced using mutagens.

Infilling (Supplying)

The operation of replacing vacant sites in a plantation with new plants.

Inflorescence

A collective term for flowers when several are borne on one main axis , as panicle, raceme, umbel, etc.

Inhibitory polyculture

Polyculture of crop species where there is undesirable interaction resulting in a net negative effect on all species.

Insecticidal plants

Plants having insecticidal properties.

Insecticide

Any substance that kills insects.

In situ

In the natural or original position, location or site.

Insolation

Radiation received from the sun.

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Integrated pest management

System of pest management blending cultural, biological and chemical controls along with host plant resistance or tolerance.

Intensive cropping

Intensive land utilization adopting multiple cropping, intercropping, frequent succession of crops etc.

Intercropping

(1) Growing short term crops or dissimilar crops in the interspaces of the main crop.

(2) Growing two or more crops simultaneously on the same field.

Intercultivation (Interculturing)

Soil cultivation in a standing crop.

Interfertile

Allowing union of male and female gametes of different individuals or groups.

Inter-generic hybrid

A hybrid resulting from crossing species of two or more genera.

Intermediate stock (Interstock)

Stem or root piece present between the (desirable) scion and original rootstock that provides the root system. Double grafting is involved.

Internode

The length of space on a plant stem between two adjacent nodes or stem joints.

Inter-specific

Between species.

Interspecific competition

Competition amongst plants belonging to different species.

Intra-generic hybrid

A hybrid resulting from crossing between species within a genus.

Intra-specific

Within species.

Intraspecific competition

Competition amongst plants belonging to the same species.

Introduction

See Plant introduction.

In vitro

Latin for 'in glass'. Reactions, responses, or experiments in an artificial environment in isolation from the whole organism.

In vivo

Latin for 'in living'. Biological processes that occur within the whole, living organism.

Involucre

Collection of bracts or leaves surrounding a flower or inflorescence.

IPR

Intellectual Property Right.

Irradiate

- (1) To illuminate.
- (2) To expose to waves of light, heat or nuclear emissions.

Irregular bearing

See Erratic bearing.

Irrigation

Method of supplying water by artificial means.

Isograft (Syngraft)

A graft between genetically identical individuals.

Isolation distance

Distance maintained between the seed crop and the contaminant plants.

Isolated seed garden

An area planted with selected clones / varieties and completely isolated from other clones / varieties by specific isolation distance all round

Jack

- (1) Jack tree (*Artocarpus heterophyllus*).
- (2) Japanese tool for bending trunks and branches (in bonsai culture).

Jam

The product prepared by boiling fruit pulp with sugar (sucrose) to a moderately thick consistency.

Jelly

The product prepared by boiling fruit with or without water, expressing and straining the

juice, adding sugar (sucrose) and concentrating to such consistency that gelatinisation takes place on cooling. A perfect jelly is clear sparkling, transparent and of attractive colour.

Jorquette

The point at which fan branches emerge from the vertical chupon stem of cocoa.

Juvenile budling

A budling in which the scion is derived from a young plant, usually less than two years old.

Juvenile period (Juvenile phase/condition)

Early period of plant growth when flowering is not observed or cannot be induced. Also characterised by easiness in rooting of cuttings in difficult to root species.

Juvenile plant

A young plant that has not yet gained the ability to flower.

Juvenility

Juvenile condition.

Kernel

Seed or 'stone' within a shell, or husk of one seeded fruit.

Kharif

Crop sown just before the south- west monsoon and usually harvested in August- September.

Kind

One or more related species or sub-species of crop plants, each individually or collectively known by one common name e.g. mango, banana etc.

King of spices

Black pepper (*Piper nigrum*).

Knee roots

A root arising above ground level as a result of flooding or poor soil drainage.

Kniffen

System of training grapevine, named after William Kniffen. The arms of the vine are tied to horizontal wire on the same level above the ground.

Labellum

Lip.

Lacquering

Process of coating the inside of tin cans with some material (lacquer) which prevents discoloration but does not affect the flavour or wholesomeness of the contents (food inside).

Lactiferous

Containing latex (milky sap).

Lanceolate

Lance (sword) shaped.

Landscaping (Landscape gardening)

Planting and planning of outdoor space to have harmony between land-forms, architecture and plants to meet human needs for function and beauty.

Large cardamom (False cardamom)

Aframomum spp. or *Amomum* spp., important cash crop of Sikkim and Darjeeling.

Latent bud

A bud which may usually remain dormant for indefinite period.

Lateral shoot

A shoot growing sideways to the leader or main branch.

Latex

Milky fluid found in specialised latex producing cells, called lactiferous cells, of many higher plants e.g. rubber tree, papaya.

Lath house

A structure made up of lath or other materials for storing container grown nursery stock in shade.

Latitude

The distance measured in degrees north or south from the equator.

Lawn

An area covered by green carpet of grass and kept clipped by regular mowing.

Lawn mower

Hand operated or power-driven machine used for cutting the grass in the lawn.

Layering (Layerage)

Method of asexual propagation in which rooting is induced from stem, branches or roots.

Layout (Layout plan)

A planting plan with respect to land, space, time and planting materials.

Leaching

The removal of soluble plant nutrients from the soil by excess water running through it.

Leader

- (1) The major supporting stem or trunk of a tree or shrub.
- (2) A shoot selected to form or extend a branch or trunk.

Leaf bud

A bud that produces only leaves.

Leaf bud cutting

Cutting consisting of a single leaf with the axillary bud and a small portion of stem.

Leaf cutting

Entire leaf with or without petiole.

Leaflet

One of the ultimate segments of a compound leaf.

Leaf mould

Partially decayed or decomposed leaves, useful for improving soil structure and fertility.

Lean to greenhouse

A greenhouse built against the side of another structure such that it has only one sloping roof.

Leavening agents

Substance used in yeast foods to promote the growth of baker's yeast.

Legitimate clonal seed

A clonal seed of known parentage.

Light saturation

A level of irradiance above which there is no further increase in net photosynthesis.

Lignin

A complex substance which impregnates the walls of woody cells.

Limb cutting

Large unrooted stem cutting used for vegetative propagation as in drumstick

Line

A group of uniform individuals reproduced by seed from a common ancestry. It is a narrower group than a strain or variety.

Liner

Nursery stock of small size planted at close spacing in a bed for rooting, ready for transplanting.

Liquid endosperm

In coconut, water like liquid filling the entire cavity of the endosperm when young and partially filled when fully ripe.

Litter

See Duff.

Living landscape (Sakai)

Art of growing and developing plants in pots creating miniature replicas of a natural landscape.

Loam

Soil having reasonably balanced amounts of sand, silt, and clay. Loam soils contain 7-28 per cent clay, 28-50 per cent silt, and less than 52 per cent sand.

Lobe

A part or segment of a leaf or petal.

Lobule

A part or segment of a lobe (usually of leaf).

Local variety

A variety well adapted to local environment. It is endemic to an area with its origin dating back to several hundred years.

Long day plants

Plants which flower only in daylength which exceed a particular duration called 'critical day length'.

Longevity

Length of time the seed can remain dormant and still be viable.

Lopping

Pruning or cutting away aerial parts of shrubs or trees.

Lux

Illumination on a surface of one square meter at a distance of one meter from a uniform source of one candela. An old unit for measuring light intensity (0.0929 foot candles).

Luxury consumption

The absorption of nutrients by plants in excess of their need for growth.

Lye-peeling

Peeling of fruits using dilute acid solutions.

Mace

Modified mesocarp covering the seed of nutmeg (See Aril).

Macro-climate

The climate of a large general region.

Macro nutrients

Elements necessary in relatively large quantity for successful crop growth; Essential inorganic nutrient elements such as N, P, K, Ca, Mg and S.

Maiden

- (1) One - year old growth, tree or shrub.
- (2) A rose in its first season after budding.

Maiden sucker

A large but non-fruiting ratoon.

Maintenance pruning (tea)

Regular pruning done in tea plantations, in one to five years to renew the foliage and to regulate the height of the plucking table.

Malling Merton series

A group of apple rootstocks resulted by crossing the Malling series with 'Northern Spy' to incorporate resistance to woolly aphis.

Malling series

A group of apple rootstocks evolved at the East Malling Research Station in England, which vary very much in vigour. M₂₇ is a popular dwarfing rootstock of the series.

Mame

Miniature bonsai.

Mame bonsai (Miniature bonsai)

Bonsai using very dwarf plants (5-20 cm).

Mango-ginger

Curcuma amada, a spice with the smell of unripe mango and colour of ginger; commonly used for pickling.

Manual thinning

Removal of some branches, flower buds, flowers or fruits by hand (See Chemical thinning).

Marcottage

See Air layering.

Market gardening

Growing an assortment of vegetables for local or roadside markets.

Maritime climate

Climate influenced by the ocean (or other factors having the same influence) resulting in mild temperature and small daily and annual variations in temperature.

Marmalade

Clear jelly in which slices of fruit or peel are suspended.

Mat (Hill)

Whole banana plant.

Mattocking

Gradual removal of the pseudostem after harvesting the banana bunches, for favouring the uninterrupted growth of the follower sucker.

Mature type budling

A budling in which the scion is derived from a bud of a mature plant.

Maturity

- (1) Stage of full growth, development or ripeness.
- (2) Stage at which a plant is capable of reproducing by seed.

Mat watering (Capillary watering)

Irrigation of potted plants by capillarity. The pots are kept on an absorbent mat which provides a constant supply of water to the base of the plants.

Maximum cropping

Cropping for the highest possible production per unit area per unit time without considering cost of production or net return.

Maxi stumped budling

A budling of rubber which has been allowed to grow in the nursery for three to four years and cut back at two to three metres above the bud union, for transplanting (See Mini stumped budling)

Media

Substrates in which plants are grown e.g. soil, sand, peat, moss, vermiculite, humus etc.

Medicinal plants

Plants yielding secondary metabolites like alkaloids, steroids, glycosides, coumarins, flavanoides, etc. which have preventive and curative properties.

Mericlinal chimera

A chimera in which the outer layer of genetically different tissue does not extent completely around the stem, occupying only a segment of the circumference.

Mericlones

Plants regenerated by meristem culture.

Meristem

A tissue of actively dividing cells, from which various organs or tissues are developed.

Meristem culture

In vitro culture of excised apical meristem.

Mesocarp

The middle layer of cells of the pericarp or fruit wall; found between the endocarp and exocarp.

Mesophytes

Plants with characteristics intermediate to xerophytes and hydrophytes and adapted where moisture and aeration are between the extremes.

Metrolac

A hydrometer used for determining the density of latex and calculating its drc.

Michie Golledge

A widely used tapping knife of rubber.

Micro-budding

Budding in which the bud piece is reduced to very small size.

Micro-climate

The local climatic condition around and within the plant canopy, resulting from the modifications of the general climatic conditions by local difference in relief, exposure, cover etc.

Micro-cutting

A tiny cutting from an *in vitro* culture.

Micro-grafting

- (1) Grafting of tiny plant parts.
- (2) *In-vitro* grafting.

Micro-nutrients (Minor elements or Trace elements)

Plant nutrient elements necessary in extremely small amounts only (usually less than 50 parts per million) for normal plant growth. These include B, Cl, Cu, Fe, Mn, Mo and Zn.

Micro-habitat

See Microclimate.

Micro-plots

Small plots used for the accurate determination of the comparative performances of varieties.

Micropropagation

In vitro propagation of plants using micro sized plant materials.

Micro-species

Species of very small size and range of genetic diversity which may later be considered as genetic variants of larger species.

Midrib

The main vein of a leaf.

Miniature garden

A rock garden done on a miniature scale, laid in troughs of concrete, stone or wood.

Miniatures

Cut flowers consisting of several flowers , supported on short and branched stems.

Mini stumped budling

Smaller stumped budling of rubber having brown colour up to 60 cm of the scion (See Maxi stumped budling).

Minor element

See Micro nutrient.

Mist

A gentle spray of water over the surface of plants.

Mist chamber

A nursery structure where high relative humidity is maintained through intermittent spraying of water for facilitating easy propagation of cuttings.

Mixed Bud

Bud containing primordial tissue for both leaves and flowers.

Mixed cropping

- (1) Growing perennials along with the main crop.
- (2) Growing two or more crops simultaneously without any definite row arrangement.

Mixed farming

Farming involving the raising of crops and rearing of animals and or poultry; based on the principle that land should support animals and *vice versa*.

Mixed intercropping

Growing two or more crops simultaneously with no distinct row arrangement.

Mixoploid

Having variable sets of chromosomes.

Modified atmosphere storage

See Controlled atmosphere storage.

Modified leader

System of training trees, intermediate between central leader and open centre.

Molar solution

One gram molecular weight of a substance dissolved in one litre of water or solvent.

Monocotyledon (Monocot)

A plant having one cotyledon in the seed.

Monocrop

A cropping system in which the same crop is grown year after year in the same field.

Monoculture (Monocrop)

A cropping system in which the same crop is grown year after year in the same field.

Monoecious

Condition in which staminate and pistillate flowers are produced on the same plant.

Monoembryonic

Having seed with a single embryo.

Monohybrid

F₁ that is heterogeneous at one locus.

Monotypic

A genus with only one species.

Moribana

'Piled flowers' in which the flower arrangements are made in shallow containers (One style of Ikebana).

Moribund

In a dying state.

Morimono

Flower arrangement in combination with fruit and or vegetables.

Mother block

The parent plants from which cuttings are taken at regular intervals.

Mother of clove

The ripe fruit of the clove tree.

Mother plant (Donor plant)

The source plant used for propagation.

Mound layering (Stool layering)

Layering in which the new shoots developing just above the soil surface are mounded around their base for excluding light and enhancing root formation.

Mucronate

With short narrow point.

Mulch

Material (straw, leaves, plastic etc.) spread on soil surface for conserving moisture, stabilizing soil temperature, suppressing weed growth etc.

Mulch farming

A system of farming in which the organic residues are left on the soil surface instead of ploughing in.

Multiple cropping

(1) Growing more than one annual and /or perennial crops in the interspaces of the main crop.

(2) Growing two or more crops consequently in the same field in the same year.

Multiple cross

A cross among many inbreds with pollination between desired lines.

Multistory cropping

Growing a friendly combination of crops, having their canopies intercepting solar energy at varying heights and roots foraging the soil at different zones.

Multitier cropping

See Multistory cropping.

Must

Crushed berries and juice.

Mutagen

A physical or chemical agent that is capable of inducing mutation in organisms.

Mutagenic

Capable of causing or inducing a mutation.

Mutant

An organism or gene which has undergone mutation.

Mutation

A sudden heritable change in the genetic make up of the cell; can be spontaneous or artificial.

Mutualism (Eusymbiosis)

Form of symbiosis in which two organisms belonging to different species live in intimate association to the advantage of both.

Mutation breeding

Artificial creation of mutations and their utilisation for crop improvement.

Mycorrhizae

Fungi having a symbiotic, non pathogenic association with the roots of many vascular plants. They may remain superficial(ectotropic) or within the host cell (endotropic).

Mycotoxin

Toxin produced by a variety of fungi such as Aspergillus, Penicillium, Rhizopus and Fusarium. Ingestion of the toxin containing food causes the syndrome known as mycotoxicosis.

Nanism

Dwarf growth.

Narcotic

A drug that in mild doses dulls the senses, relieves pain, and induces profound sleep but in excessive doses causes stupor, coma or convulsions.

Nastic movements (Sleep movements)

Reversible and repeatable plant movements produced in response to stimuli e.g. leaf movement in *Mimosa*.

Natural rubber

Natural rubber a high molecular weight polymeric substance with visco elastic properties, obtained from the latex of plant species, mainly, *Hevea brasiliensis*. Structurally it is cis 1, 4-poly isoprene (See Synthetic rubber).

Necrosis

Tissue browning and drying up due to death of cells.

Nectary

Any structure that secretes nectar (such as glands trichomes or stomata like orifices).

Negative tropism

Growth of plant parts away from the source of stimulus (Roots are generally negatively phototropic).

Neocarp

Fruit production by an immature plant.

Neophytosis

Embryo bath

Neoteny

The occurrence (retention) of juvenile characters in the adult phase or *vice versa*.

New growth

Growth of the current year.

New wood

The current year's growth in plants.

Nira

Alcoholic beverage prepared from the juice of the palm trees.

Node

A joint where both leaves and buds appear on the stem.

Nomenclature

The system of naming plants (See Binomial system of nomenclature).

Non climacteric fruit

A fruit without a climacteric peak during ripening (See Climacteric fruit).

Non-recurrent apomixis

Apomixis in which a haploid embryo arises from the egg nucleus without fertilization.

Nucellar embryo

A true to type somatic embryo developed from the nucellus.

Nucellar embryony (Adventitious embryony)

A type of apomixis where somatic embryos arise from a cell or group of cells either in the nucellus or in the integuments, in addition to the normal embryo.

Nucellus

A tissue originally making up the major part of the young ovule in which the embryosac develops.

Nurse crops

(1) Crops grown during the early years of plantation crops for providing protection against wind and frost damages.

(2) Companion crops which nourish the main crop by way of nitrogen fixation.

Nurse root grafting

Temporary grafting in which the nurse root sustains the plant till the scion forms its own roots.

Nursery

A place where young plants are raised and maintained for permanent planting.

Nursery bed

Prepared soil area of convenient size, where seedlings are raised for transplanting to the main field.

Nursery business

A business that specializes in the production of planting materials.

Nursery stock

Trees, shrubs, vines and other plants grown in a nursery.

Nut

An indehiscent, dry, one seeded fruit having a hard seed coat.

Nutlet

A little nut.

Nutriculture

See Hydroponics.

Nutrient film technique (NFT)

A water culture technique in which the plant roots are suspended in shallow circulating nutrient solutions, delivered as a continuous film of liquid.

Nux

Nut.

Nyctinasty

Daily nastic movements, especially of leaves which open during the day and fold at night (See Nastic movements; Photonasty).

Oblong

Longer than broad with margins nearly parallel for most of their length.

Obovate

Egg-shaped with broader end upwards.

Officinale

Applied to medicinal plants, especially those used by herbalist.

Offset (Offshoot)

(1) An asexually produced sucker or basal shoot, bulbil or cormlet.

(2) A young plant that appears naturally on a parent, and is easily detached and propagated.

Off shoot

A lateral shoot or branch which arises from one of the main stems of a plant.

Off-type

(1) Any notable deviation from the normal or standard.

(2) Plant or seed significantly deviating from the characteristics of a variety.

Off-year

The year in which an alternate bearing plant does not produce fruits.

Old wood

Ripened wood that is at least one year old.

Oleoresins

See Spice oleoresins

Olericulture

The art and science of vegetable growing.

On-farm research

Research conducted on farms with the active participation of the farmers.

Ontogeny

The process of development of an organism, organ or tissue towards maturation.

Open pollination

The free exchange of pollen between flowers and plants irrespective of flower type or cultivar.

Orbicular

Circular or disc shaped.

Orcharding

Commercial production of fruits, mainly from perennials.

Organic farming

It is a method of farming, utilising organic inputs, which maintains soil health and ecological balance.

Organic manure

Carbonaceous materials of plant / animal origin incorporated in soil for improving fertility and physical properties.

Organic matter

Carbonaceous materials of either plant or animal origin, which exists in all stages of decomposition in soils.

Ornamental Floriculture

The study and cultivation of various groups of ornamental plants which are used to decorate indoor and outdoor gardens.

Ornamental Gardening

The study and cultivation of various groups of ornamental plants which are used to decorate indoor and outdoor gardens (Synonym: Ornamental floriculture).

Ornamental Horticulture

The branch of horticulture specializing in the areas of floriculture, tuft grass management, nursery stock production and landscaping.

Ornamentals (Ornamental plants)

Plants grown for their aesthetic value rather than commercial usefulness or food value.

Ornithophily

Pollination by birds.

Ortet

The original mother plant or donor plant from which a group of vegetatively propagated plants is derived.

Orthodox seeds

Seeds that can be dried to a low moisture level and which show a loss of viability with the rise in moisture content (See Recalcitrant seed).

Orthotropic

Vertically oriented, with an upright growth habit. The antonym is plagiotropic.

Osmosis

The diffusion of liquid through a semi-permeable membrane.

Osmunda fibre

The root mass of *Osmunda regalis* (royal fern) used for potting, particularly for certain epiphytic orchids and bromeliads.

Otto of roses

Essential oil (volatile oil) used as perfume.

Out-breeding

Crossing of genetically different plants. It is used to introduce new genes and increase heterozygosity (See Inbreeding and Heterosis).

Outcross

An off type resulting from the crossing of a parent plant with a plant other than the selected parent.

Ovary

The enlarged basal portion of a pistil which contains the ovules or the seeds.

Over budding

Budding done at higher levels for converting an existing bud wood nursery of a clone to another clone, without replanting.

Ovule

The structure which develops into a seed after the fertilization of the contained egg.

Packaging

The process of filling, weighing and sealing bags or containers.

Packing gases

Inert gases for preventing oxidative and other changes in foods.

Pallet

Low portable bench used to grow and transport bedding and potted plants.

Palmate

Lobed, divided in a palm-like manner.

Panicle

An indeterminate branching racemose inflorescence with stalked flowers.

Paniculate

Resembling a panicle.

Panning

Transplanting or potting of rooted cuttings or bulbs.

Papain

Water soluble proteolytic enzyme (protease) present in the latex of unripe papaya fruit. It is

used as a meat tenderizer and has industrial and pharmaceutical applications.

Pappus

Modified outer perianth segments of a floret in compositae.

Paprika (Hungarian paprika, Sweet pepper)

A non-pungent variety of chilli belonging to *Capsicum annum*.

PAR

See Photosynthetically active radiation.

Paradormancy

Dormancy initiated by external physical factors or biochemical signals.

Parasite

An organism that lives and derives its food from another plant or animal.

Parts per million (ppm)

Unit of measurement used for expressing the quantity of material in a solution or mixture. In metric units, one part per million is equal to one milligram of material in one litre of the solution or mixture.

Parthenocarpy

Fruit development without fertilization, resulting in seedless fruit.

Parthenogenesis

Seed development without fertilization.

Parthenogenetic seed

A seed developed by parthenogenesis.

Pasteurization

The selective destruction of some, but not all, living micro-organisms. Helpful to eliminate harmful disease organisms and to retain the beneficial micro organisms. Temperature usually does not exceed 82°C unlike in sterilization (100 °C). Terms are often incorrectly used as synonyms.

Pathogen

Infectious agent that causes disease.

Patio

An open court area in the garden that is usually covered with concrete, bricks, flag stone or other materials.

Pea berry

A coffee berry with only one seed instead of the normal two.

Pectin

Soluble gelatinous polysaccharides in ripe fruits. Used as a setting agent in jams and jellies.

Pedicel

Flower stalk.

Peduncle

Inflorescence stalk.

Peeper

Very young banana sucker, bearing scale leaves only, as it appears above the soil surface.

Pepos

Berries having a hard rind around the fruit.

Perennation

- (1) Surviving from year to year.
- (2) Persistence of fruit long after its usual season of maturity.

Perennials

Plants which do not perish after flowering but continue to live for at least three or more years or seasons.

Pergola

An extension of an arch using climbers in a garden.

Perianth

A collective term for the floral envelopes, usually the combined calyx (sepals) and corolla (petals).

Pericarp

The fruit wall, consisting of three distinct layers *viz.*, the exocarp, the mesocarp and the endocarp.

Periclinal

Parallel to the surface.

Periclinal chimera

Chimera in which genotypically or cytoplasmically different tissues are arranged in concentric layers.

Perlite

Small pieces of expanded volcanic rock, used in potting media.

Permanent sod

A soil management system in which a sod is periodically mowed but no tillage is carried out.

Petal

A portion of the corolla.

Petiole

Leafstalk.

Petiolule

Stalk of a leaflet.

pH

Negative logarithm of hydrogen ion concentration.

Phased planting

Spreading the planting of a crop over an optimum period in order to extend the availability of a produce for a protracted period or to minimise competition among the component crops in intercropping (See Staggered planting).

Phenotype

The external physical appearance of an organism (without reference to its genetic nature) resulting from an interaction between the genotype of the individual and the environment.

Photoblastic seeds

Seeds in which the germination is influenced by light. Germination is stimulated by light in positively photoblastic seeds, and inhibited in negatively photoblastic seeds.

Photodormant seeds

Seeds which require exposure to light for germination.

Photomorphogenesis

The non-photosynthetic influence of light on germination, growth, development and reproduction.

Photonasty

Nastic movements as influenced by light e.g. opening and closing of flowers at different parts of the daily cycle (See Nastic movements).

Photo oxidation

Oxidation of certain cell constituents when light intensity exceeds a limit, resulting in the bleaching of chlorophyll and inactivation of enzymes.

Photoperiod

- (1) Day length.
- (2) Relative length of time a plant is exposed to light.

Photoperiodism

The developmental responses of plants to the relative lengths of light and dark periods.

Photorespiration

Respiratory utilisation of photosynthetic products during day time or light period. Observed in C₃ plants, unlike in C₄ plants which have little or no photo- respiration.

Photosynthesis

Synthesis of carbohydrate from carbon dioxide and water in the presence of chlorophyll, using light energy.

Photosynthetically active radiation (PAR)

That part of light spectrum (between 400 and 700 nm) which is primarily absorbed by plants and used in photosynthesis.

Photothermal

Pertaining to combined effects of light and temperature.

Phototropism

Growth of plants in response to light.

Phreatophyte

Plant having extremely long roots, reaching to the water table.

Phylachron

The time interval between the production of successive leaves.

Phyllotaxy (Phyllotaxis)

The radial leaf order around the stem of a plant.

Phylogeny

Evolutionary development of organisms.

Phylogenetic system

System of classification of plants according to their evolutionary pedigree.

Physiological drought

Non availability of water to the plant due to unfavourable physiological conditions.

Phytochrome

Photosensitive and photoreversible pigment system in plants.

Phytology

Study of plants.

Phytotoxic

Toxic to plants.

Pickling

The preservation of food in common salt or vinegar.

Pilose

Hairy with long soft hairs.

Pinching (Pinching back)

Removal of shoot apex to overcome apical dominance and promote lateral shoot development.

Pinholder

Device used for holding cut flowers in position in a container.

Pinna

Primary leaflet of a compound leaf.

Pinnate

A compound leaf having leaflets (pinnae) arranged in two ranks, one on each side of a leaf.

Piquancy

See Pungency.

Pistil

The ovule producing part of a flower which is composed of stigma, style and ovary.

Plagiotropic

Horizontal or prostrate growth habit (Antonym: Orthotropic).

Plantation

A self contained settlement or estate on which plantation crops are grown.

Plantation crops

A group of extensively cultivated perennial crops, demanding plant to plant attention.

Plant ecology

Branch of ecology which deals with the study of plants in relation to the environment.

Plant growth

A permanent increase in volume, dry weight or both.

Plant growth hormone

Organic compound, produced in very small amounts in one part of a plant and transported to another part where it promotes, inhibits or modifies physiological processes.

Plant growth substances (Plant growth regulators)

Organic compounds (natural or synthetic) other than nutrients which in very small amounts promote, inhibit or modify physiological processes in plants.

Planter

(1) Machine used for precision drilling, hill dropping or check - row planting.

(2) A farmer who owns large estate or farm.

Planting board

Device for planting trees in exact position. The planting board is usually 1.5 m long, 10 cm wide and 2.5 cm thick with a central notch and one hole on either end.

Planting distance

The minimum distance between two plants.

Plant introduction

A method of plant breeding in which a variety or a species is brought to an area where it is not grown before.

Plant murals

A hanging patch of green plants (herbaceous perennials) on the wall like a hanging picture, suitable for congested apartments in cities.

Plant tissue culture

In vitro cultivation of plant parts, whether a single cell, tissue or organ, under aseptic conditions in defined or semi defined media.

Plastic mulch

Black or transparent polyethylene film used for mulching.

Plastochron

The time interval between two successive and similar occurrences e.g. the rhythmic initiation of leaves by the apical meristem.

Pleiotropy

The condition in which several characteristics are affected by a single gene.

Ploidy

A general term indicating the number of sets of chromosomes e.g. diploid = two sets; triploid = three sets; tetraploid = four sets; pentaploid = five sets; hexaploid = six sets.

Plucking table

The upper surface of the tea bushes at which level the flush is harvested.

Plugging

The propagation of turf grass by means of vegetative sod pieces (pluggs).

Plumule

(1) The major young bud of the embryo within a seed from which develops the aerial portions of the plant.

(2) Part of the embryonic axis above the cotyledons.

Pneumatophores

Vertical extensions of the buried roots of certain trees (e.g. mangroves) in marsh or swamp habitats. They help for exchange of gases between the atmosphere and the submerged roots.

Pod

Dry dehiscent fruit which splits along two sutures e.g. the fruit of a legume.

Polarity

The phenomenon by which stem cuttings form shoot at the distal end and roots at the proximal end and root cuttings form roots at the distal end shoots at the proximal end.

Pollarding

The cutting back of trees or shrubs close to the main trunk or ground level resulting in the production of a number of vigorous new shoots (See Coppicing).

Pollen grain

Dust like material in the anther which gives rise to male sperm cells.

Pollination

Movement or transfer of pollen from the anther to the stigma.

Pollinator

(1) The agent of pollen transfer e.g. insects or wind.

(2) Plant or cultivar needed for fertilization and fruit set in another plant of the same species.

Polliniferous

Bearing or producing pollen.

Polyandrous

Having an indefinite number of stamens.

Polyculture

The cultivation of two or more species of crops in such a way that they interact agronomically (biologically).

Polyembryonic

Containing more than one embryo.

Polyembryony

The presence of more than one embryo in an ovule.

Polyethylene (Polythene)

A plastic material. It is extensively used for covering greenhouses and making containers for potting plants.

Polyethylene mulch

See Plastic mulch.

Polygamo-dioecious

With hermaphrodite and unisexual flowers on different individuals of the same species.

Polygamous

Bearing staminate, pistillate and hermaphrodite flowers at the same time.

Polymorphic

Composed of many different forms.

Polyploid

A condition having more than diploid number of chromosomes.

Pome

Inferior, indehiscent, many-seeded fruit, the greater part of which is developed from receptacle of the flower and not from the ovary e.g. apple.

Pomology

The art and science of fruit growing.

Pot-bound (Root-bound)

Having closely packed mass of roots on a plant that has grown too large for its container.

Pot layering

See Air layering.

Potential crop yield

Yield of a crop grown under the most ideal environmental and management conditions.

Potting

The act of planting a cutting or seedling in a pot containing potting medium (See Depotting and Repotting).

Potting mixture

Any mixture of soil and additives used for the potting of plants.

PPM

See Parts per million.

Precipitation

(1) Rain, drizzle, dew, snow, hail, fog or any other form of water from the sky.

(2) amount of precipitation expressed in depth of water which would cover a horizontal plane if there is no run off, infiltration or evapo-transpiration.

Precocious

Appearing or developing early.

Pre-emergence weedicide

A chemical applied to the land to destroy weed seeds before they germinate.

Pre-packaging

Packing a product in a consumer package by the wholesaler rather than by the retailer.

Preserve

See Fruit preserve.

Preservatives

Substances used in food processing, capable of

inhibiting, retarding or arresting the growth of micro-organisms.

Prey crop

The crop grown for eliminating undesirable plants through physical or allelopathic effects.

Primary branch

A branch arising from the trunk of a tree.

Primary flower, fruit

The terminal flower or fruit in the central axis of the flower or fruit cluster.

Primary plant foods

See Major nutrients.

Primary root

The root developing directly from the radicle.

Processing

Preparing for future use as in canning, freezing, preserving and dehydrating.

Processing technology

A branch of Horticulture, dealing with the post-harvest handling, storage and processing of horticultural produces.

Procumbent

Trailing over the ground, but not rooting.

Productivity

The yield or biomass production capacity of a plant per unit area per unit time.

Progeny

Plant derived from the seed of a parent plant.

Proliferous

Bearing adventitious buds on the leaves or in the flowers which can root and form separate plants.

Propagule

Any structure, sexual or asexual that becomes separated from the parent plant and serves as a means of propagation.

Propagulam

Propagule.

Proprietary clones

Clones distributed under agreement with certain estates or institutions which can be multiplied but are not re-saleable.

Prostrate

Lying close to the ground surface.

Protandry

Condition where the male organ matures earlier than female organ in bisexual flowers.

Protected cultivation

Cultivation of crops in artificial structures providing ideal micro climate and acceptable growing conditions.

Protoclones

Plants regenerated from protoplasts.

Protocorms

Small corm like bodies arising from orchid explants cultured *in vitro*.

Protogyny

Condition where the female organ matures earlier than male organ in bisexual flowers.

Protoplast

A cell from which the rigid cell wall has been removed, using cell wall digesting enzymes.

Proximal

- (1) Situated near the point of reference.
- (2) Next to the point of origin or attachment.
- (3) Away from the apex.
- (4) Opposite of distal.

Prune

Dried plum.

Prune fruits

Fruits of the plants of Rosaceae family which have many central seeds in each fruit.

Pruning

Selective removal of plant parts such as buds, shoots and roots to maintain a desirable form and to improve plant health and fruit yield.

Psammophyte

Plant that grows in sand.

Pseudo-bulb

Specialised storage structure of many orchid species consisting of an enlarged fleshy section of stem with one or more nodes.

Pseudo-carp

See False fruit.

Pseudo-hermaphrodite

Functional unisexuality in the presence of apparently well developed stamens and pistils.

Pseudo-stem

(1) A type of shoot arising from an underground rhizome, consisting of overlapping petioles.

(2) The shoot of a banana plant.

Psychrometer

Instrument to measure the humidity of the atmosphere.

Psychroxyerophyte

A drought resistant plant growing in cold regions.

Pterocarpus

Having winged fruit.

Pterocaulous

Having winged stem.

Pungency (Piquancy)

Sharp, stinging or biting quality of a spice or condiment, while tasting.

Pure line

Descendants of a single homozygous plant.

Pyrene

A hard, stony endocarp enclosing one or two seeds.

Pyrethrum

An insecticide prepared from the dried flower - heads of *Chrysanthemum cinerarifolium* and *C. roseum*.

Quadruple cropping

Growing four crops a year, in sequence.

Quality

(1) Various factors including flavour, texture, colour, appearance, odour and food value that influence the produce.

(2) Characteristic that helps in differentiating a product regarding its acceptability to the consumer.

Quarantine

(1) The isolation of plants to determine whether diseases or insect pests are present, in order to prevent infestation to healthy plants.

(2) Regulation forbidding sale or shipment of plants, to prevent disease or insect invasion in a specific area.

Queen of Spices

Cardamom (*Elettaria cardamomum*).

Quiescence (Eco-dormancy)

Period of non-visible growth caused by unfavourable environmental conditions like cold temperature or drought (Dormancy is subdivided into rest and quiescence).

Quonset type greenhouse

Greenhouse having semi-round roof. Ideally, 30m long and 10 m wide with 2.5 m sides and 4.0 m centre and covered with fibre glass or poly sheets.

Raceme

An inflorescence consisting of a long main axis, bearing stalked lateral flowers, the lowest opening first.

Radicant

Rooting, with reference to roots developing from stems or leaves.

Radical

(1) Proceeding from or pertaining to the roots.

(2) Of leaves arising from the base of a stem, or a rhizome.

Radicle

(1) The rudimentary root of the embryo, which forms the primary root of the young seedling.

(2) Lower portion of hypocotyl.

Rain forest

Tropical forest developed under fairly high rainfall.

Rambling

Straggling, climbing.

Ratoon

(1) New tillers, suckers or plants arising from the root, crown or rhizome of plants, which will be utilised for a subsequent crop.

(2) To send up new shoots after being cut down or cropped.

Ratoon crop

The crop produced from the suckers of an original planting as in pineapple and banana.

Ratooning

An intensive cropping in which more than one harvest is obtained, as the ratoons are retained after the harvest of the first crop.

Ray floret

The outer strap-shaped floret of a composite flower.

Recalcitrant seeds

Seeds that lose viability when dried below a certain critical moisture level, which is comparatively high for ordinary seeds. Recalcitrant seeds are short lived (See Orthodox seeds).

Reclaimed rubber

Obtained by treatment of vulcanised rubber to make it reusable as a raw material in the same manner as raw rubber.

Recurrent flowering

The successive production of several crops of flowers during one season.

Re-differentiation

Regeneration of organs from the callus mass.

Reforest

Establishment of forests on land from which trees have been removed by felling, fire etc.

Rejuvenate

Renewal of growth and vigour of plants by selective pruning, fertilisation, soil management, plant protection measures, treatment with plant growth substances etc.

Rejuvenation

Stimulation of new growth on old plants usually accompanied by pruning.

Rejuvenation pruning

Pruning done for rejuvenating plants.

Relative humidity (R.H.)

The amount of water vapour present in the air, expressed as a percentage of the maximum water vapour that the air would hold at the same temperature and pressure.

Relay intercropping

Growing two or more crops simultaneously during part of the life cycle of each.

Renewal pruning

Pruning of a tree or shrub for constant supply of young shoots or for maintaining vigour and flowering.

Reniform

Kidney-shaped.

Re-potting

Transfer of a plant from one pot to another filled with fresh potting mixture.

Reserve roots

Dormant roots which would take up active work when necessary arise.

Resins

Water insoluble complex oxidation products of various essential oils which normally oozes out through the plant bark and hardens on exposure to the air.

Rest

Condition in which growth will not occur due to physiological reasons, despite the presence of favourable environmental conditions (See Dormancy).

Rest period

Period of non-visible growth.

Retting

Process of fermentation for separating fibre from coconut husks by submerging them in water in tanks, ponds or streams.

Rhizobium

A bacterium which can infect legumes in a symbiotic relationship and fix atmospheric nitrogen.

Rhizocarpous

Having a perennial root but an annual stem.

Rhizome

Underground horizontal stem, serving as storage organ and capable of producing new shoots and roots at the nodes.

Rhizomatous

Producing or bearing rhizomes.

Rimose (Rimous)

Having numerous clefts of tissues as the bark of trees.

Rind

(1) Tough, external covering or layer of fruits and stems.

(2) Outer layer of the bark of a tree.

Ring barking

See Girdling.

Ringing

Removing a narrow strip of bark round the periphery of the stem to prevent downward translocation of food beyond that point.

Ripeness

State of complete maturation, prior to the onset of senescence.

Ripening

Composite changes occurring in fruits after the end of the maturation period and by the beginning of senescence.

Ripening hormone

Ethylene (C₂H₄) is known as the ripening hormone.

Rockery (Rock garden)

A garden constructed with boulders or rock pieces and soil where annuals, succulents, bog plants and ferns are grown. The term is derived from the words 'rocks' and 'cries'.

Rod

The main, woody stem of a vine.

Rogue

An off-type or undesirable plant present in a standing crop.

Roguing

The process of removing undesirable or off-type plants from a standing crop.

Roller

The traditional machine for macerating tea.

Rolling

Method of firming and smoothing ground surface, following seeding of a lawn.

Roof gardening (Terrace gardening)

Gardening on the flat roofs or terraces of buildings.

Root

Vegetative plant part which anchors the plant, absorbs water and minerals in solution and often stores food.

Root-bound

See Pot-bound.

Root cap

A protective mass of cells located at the root tip which help protect root cells in that area as the root pushes through the soil.

Root crop

Crop plants in which the reserve foods are stored primarily in enlarged roots e.g. sweet potato.

Root cuttings

Cuttings of the roots of plants, used for propagation.

Root grafting

Grafting where roots are used as the rootstock (Synonym: Bench grafting).

Root-hairs

Unicellular outgrowths from the epidermis of young roots, immediately behind their root tips, useful for absorbing water and nutrients from the soil.

Rooting hormone

Chemical used to encourage faster rooting or encourage rooting of more cuttings e.g. IBA, NAA, IAA etc.

Rootings

Rooted cuttings.

Root medium

A suitable substrate in which plant roots can grow. It consists of one or more mineral and/or organic components mixed together.

Root pressure

Pressure generated in the root and stem of plants, partially accounting for the rise of water in plants.

Root pruning

The practice of cutting back roots prior to re-potting or transplanting to stimulate root branching and growth.

Root stock (Under stock)

A seedling or other plant part on which the scion is grafted or budded.

Root sucker

A shoot arising from the root of a plant.

Rosemary

An evergreen fragrant shrub *Rosmarinus officinalis* with leaves used as a culinary herb, in perfumery etc.

Rose sick soil

Soil in which roses will not grow well due to their continuous cultivation for years.

Rosery

A rose garden.

Rosette

- (1) A radiating cluster of basal leaves.
- (2) Bunchy or rosette appearance in many plants due to profuse leaf development with retarded internode growth.

Rotation

See Crop rotation.

Row intercropping

Growing two or more crops simultaneously where one or more crops are planted in rows.

RTS (Ready-to-serve)

A fruit beverage which can be served without diluting.

Rubber

Natural or synthetic substance characterised by elasticity, water repellence, and electrical resistance.

Rubber honey

Honey produced from the extra floral nectary glands at the end of the petiole (where the leaflets join) of the rubber tree.

Runner

A horizontal, specialised above-ground stem that gives rise to new plants from the nodes touching the ground.

Russet

(1) Brownish rough area on the skin of fruits due to abnormal production of cork, caused by disease.

(2) Apple varieties having natural russet coloured skin.

Saddle grafting

Grafting in which the root stock is shaped in the form of a wedge and a cleft is made in the scion for effecting successful graft union.

Sakai (Living landscape)

Art of growing and developing plants in pots creating miniature replicas of a natural landscape.

Salad crops

Crops, the produce of which are consumed raw.

Samara

An indehiscent dry fruit, having flattened wing like outgrowth from pericarp.

Sand culture

A kind of hydroponics where plants are kept in sand medium and supplied with a nutrient solution.

Sap

Juice or fluid substance, circulating through the vascular tissues of a plant.

Sapling

Young seedlings of trees.

Saprophyte

Plant which lives on dead or decaying organic matter.

Sap wood

The young, living, light coloured outer annual rings of a tree.

Sarcocarp

Mesocarp.

Sarment

A runner or stolon.

Savanna

Grassland with scattered trees.

SC₁, SC₂, SC₃ etc.

Subsequent generations of somaclone.

Scaffold branches (Scaffold limbs)

The main support branches of a tree arising nearest to the ground.

Scale

A small often dry leaf or bract.

Scalping

Close mowing of lawn to remove the major portion of foliage.

Scandent

Climbing.

Scansorial

Having the habit of climbing.

Scape

The leafless peduncle of a flower which arises at or near the ground, as in the tulip.

Scapiflorous

Having flowers borne on a scape.

Scar

(1) A mark on a stem which marks the former attachment of a leaf, bud, flower or fruit.

(2) The hilum of a seed.

Scarification

Chemical or physical treatments given to some seeds in order to weaken the seed coat for facilitating germination.

Scientific name

Internationally accepted Latin name of an organism consisting of genus, species, varieties and forms and their subdivisions which avoids confusion while using common names (See Binomial system of nomenclature).

Scion

(1) Shoot or bud grafted or budded on a root stock.

(2) The upper part of the union of a graft.

Scooping

Removing the basal plate of a bulbous plant with the help of a scalpel or blade and exposing the cut surface of the bulb scale for propagation.

Scout harvesting

Collection of the small amounts of first formed fruits from young oil palms in areas where ablation has not been carried out.

Secateur

A handy garden tool used for pruning small branches.

Secondary clone

The vegetatively propagated offspring of a primary clone.

Secondary compounds

The compounds produced in the plant body as by-products of primary metabolic pathway e.g. hydrocyanic acid (HCN) in cassava.

Secondary dormancy

Dormancy observed for a second time in a seed when it is exposed to unfavourable environmental conditions after becoming imbibed.

Secondary metabolites

See Secondary plant metabolites.

Secondary plant metabolites

Plant metabolites, produced as the by-products of the primary metabolic pathway, used for protection and better adaptation to the environment e.g. alkaloids, terpenes, glycosides and tannins.

Secondary plant nutrients

Calcium, magnesium and sulphur are called secondary plant nutrients as they are not included in straight commercial fertilisers.

Seed

A mature ovule consisting of an embryonic plant together with stored food and surrounded by a protective coat.

Seed-at-stake

In situ sowing of seeds.

Seed bed

A well prepared land of convenient dimensions for sowing or planting.

Seed certification

Field inspections and seed tests to ensure genetic and physical purity and good germination of seed lots, and issuance of a certificate to that effect.

Seed hardening

Subjecting seeds before sowing to alternate cycles of wetting and drying to induce tolerance to drought.

Seed leaf

See Cotyledon.

Seedling

Young plant grown from seed.

Seed longevity

The period for which the seeds will remain viable.

Seed piece

Pieces cut from stem and used for vegetative propagation.

Seed processing

Process involved in the preparation of harvested seed for marketing.

Seed rate

The quantity of seed required for sowing in a unit area of land.

Seed technology

The science dealing with the production, harvesting, processing, testing, packaging and marketing of seeds.

Self-compatible (Self-fertile)

A plant that is capable of reproducing sexually by itself.

Self-fertilization

Fertilization of an egg by a pollen grain from the same plant.

Self-incompatibility

Inability to be self-pollinated or self-fruitful.

Self-pollination

Pollination with pollen from the same flower, from other flowers of the same plant, or from other flowers of plants with the same genetic constitution (from the same clone).

Self-sterile

Incapable of reproducing sexually by self fertilization.

Semi-hardwood cutting

Cutting made from newly matured stem with some bark.

Semi-hardy plants

Plants which are less resistant to frost.

Senescence

- (1) The aging process of an organ or organism.
- (2) Irreversible changes associated with the ripening of a fruit leading to its death.

Sepal

A segment of the calyx, or outermost floral part, which is normally green in colour.

Separation

Propagation using naturally detachable parts like bulbs and corms.

Sequential cropping

Growing two or more crops in sequence on the same field per year. There is no intercrop competition since crop intensification is only on the time dimension.

Sequestrants

Substances used to suppress the action of some objectionable but practically unavoidable ingredients in solution.

Serpentine layering

See Compound layering.

Serrate

Saw-tooth edge shape.

Service area

An area of a landscape set aside for necessary family use such as garbage storage, wood storage or clothes drying.

Sessile

Without stalk.

Sett

Portion of large tubers bearing one or more dormant buds or 'eyes' or small bulbs, used for propagation.

Sex dimorphic palm

In coconut, palms which produce pure male inflorescence during certain months and during other months they produce both male and female flowers.

Sex reversal

Phenomenon in plants like papaya where the sex of plants are changed, permanently or alternatively.

Shade net

Net woven from synthetic fibres to provide shade levels ranging from 20 to 90 per cent.

Shade house

Plant-growing structure used to shelter plants from excess sunlight (See Lath house).

Shade trees

Fast growing trees which provide shade to many crops in the tropics like coffee, tea and cocoa and to some orchards for their growth and development.

Shaping

A horticultural operation in perennial herbs and foliage plants, involving pruning, clipping or trimming of young branches for keeping them compact and elegant looking.

Sheathing

Surrounding base of stalk, either leaf-like or membranous.

Shield budding (T budding)

Budding where T shaped cut is made on the rootstock and the scion in the form a shield, is inserted under the two flaps of bark and the bud union is tied by exposing only the bud.

Shoot

Collective term for stem and its leaves.

Short-day plants

Plants which flower only in daylengths shorter than a particular duration called 'critical day length'.

Shot

See Peep.

Shrub

Woody perennial plant, low in stature with a habit of branching from the base and with bushy appearance.

Shrub land

Ecosystem in which relatively small (up to 6 m), woody, usually multistemmed, densely branched vegetation dominates.

Side dressing

The application of fertilisers along the side of a row or around a plant.

Side grafting

A method of grafting where an angular cut is made on one side of the stock, and the scion wood having slanting cut on both sides is inserted into this cut.

Silviculture

The art and science of cultivating forest crops.

Simple fruit

A fruit formed from single ovary without other parts adhering to it.

Simple layering

Layering method where ground or containers filled with medium is used for inducing rooting.

Single cross

A cross between two inbreds.

Sink

Plant part receiving translocated sugars and other metabolites synthesized or stored in other parts.

Sion

See Scion.

Skiffing

Pruning in tea at a high level to remove congested stems and resume flushing after a short interval.

Skim latex

The residual liquid of very low drc, being the by-product of concentration of normal latex by centrifuging.

Skim rubber

Rubber made from skimmed latex.

Skinning

See Peeling.

Slaughter tapping

All out bleeding of the rubber tree to obtain the maximum latex yield without regard to trees, which is adopted one or two years before replanting.

Sleepiness

Condition in flowers where petals curve upward, exhibiting wilted appearance.

Sleeves

Polythene covers used for raising seedlings or cuttings.

Slips

- (1) Herbaceous or softwood cuttings.
- (2) Shoots borne on the stem below the fruit of pineapple and which are used for vegetative propagation.

Small cardamom

See True cardamom.

Small fruits

Fruits produced by plants of small stature. Also called soft or berry fruits.

Smother crop

See Prey crop.

Snag

A short stump of a branch left after incorrect pruning.

Social forestry

Programme of forestry development and conservation through mixed plantations in waste lands and re-afforestation of degraded forests.

Social gardening

Plant husbandry having recreational, social, educational and economic values other than those covered by social forestry and Agriculture.

Sods (Turfs)

Pieces of earth with grass cover used for turfing.

Sod culture

System of soil management wherein the plants are grown in permanent grass without tillage.

Soft fruits

See Small fruits.

Soft pinch

The removal of only a portion of a shoot terminal at a point where the tissue has not become woody.

Soft wood cuttings

Cuttings taken from soft, succulent, new growth of woody plants.

Soil-less plants

See Hydroponics.

Sole crops

A crop grown in pure stand at optimum population density.

Somaclonal variation

Variation among plants regenerated through tissue culture.

Somatic embryogenesis

Development of embryos from vegetative cells.

Somatic hybrid

Hybrid cell or plant resulting from the fusion of two somatic cells belonging to different genotypes, varieties or species.

Somatic mutation

Mutation occurring in vegetative cells or tissues.

Spacing

The distance between crop rows (inter-row spacing) and between plants within the row (intra-row spacing).

Spadix

An elongated, fleshy flower spike with small flowers, surrounded by a spathe.

Sparkling wine

Wine containing carbon dioxide.

Specialized cropping

A cropping plan in which a single crop contributes to 50 per cent or more of the annual production or monetary receipt.

Speciosa

Handsome; showy (used in specific names).

Species

Closely related groups of plants which are sub divisions of a genus.

Spectabilis

Remarkable, conspicuous (used in specific names).

Spheroplast

A cell from which most of the cell wall has been removed.

Spicate

Spike like.

Spice essential oil

Volatile aromatic extracts prepared by steam distillation of ground spices.

Spice oleoresins

Volatile and non-volatile resins extracted from spices by suitable food grade solvents.

Spices

Plants, the products of which are used as food adjuncts to improve aroma and flavour (See Spices and condiments).

Spices and condiments

Natural plant or vegetable products or their mixture, used in whole or ground form for imparting flavour, aroma and piquancy to food and also for seasoning of foods.

Spike

A common name for a narrow elongated inflorescence.

Spikelet

The unit of the panicle.

Spindly

Characteristic of some plant growth when placed in areas of low light intensity.

Spine

A woody sharp pointed organ arising from a stem or leaf.

Splice grafting

A grafting method where a long slanting cut is made at the base of the scion and a similar cut is made at the top of the stock and kept in close contact by tying together.

Split

A flower having a split calyx, in which the petals protrude from the split.

Spore

'Seed' of ferns.

Sport (Bud sport)

A plant or portion of a plant that arises by spontaneous mutation.

Sprig

A small branch, shoot or twig.

Sprigging

Propagation by rhizomes or stolons placed in shallow furrows or small holes.

Sprout

The new growth from seeds or vegetative planting materials.

Spudding

Removal of weeds by cutting off below the soil surface.

Spur

A slow-growing short branch of a tree with short internodes that carries cluster of flower buds.

Squash

Fruit beverage containing at least twenty five per cent fruit juice or pulp and forty to fifty per cent total soluble solids.

Stacking

Fixing proper stakes for giving support to weak plants.

Staggered planting

Spreading the planting of a crop over an optimum period in order to extend the availability of a produce for a protracted period or to minimise competition among the component crops in intercropping.

Straggling

Growing long and weedy.

Stamen

The pollen producing male part of flower consisting of an anthers and filaments.

Standards

Living or non-living supports used for trailing vine crops.

Starter solution

Nutrient solution used for dipping seedlings while transplanting.

Stenospermocarpy

Development of seedless fruits, consequent to embryo abortion.

Sterilization

The process of making things sterile through

- (1) Rendering plants non-productive.
- (2) Killing of weeds and other parts in soil with heat or chemicals.
- (3) Complete destruction of micro organisms as in processing of fruits and vegetables.

Stigma

The part of the pistil to which pollen adheres.

Stimulatory parthenocarpy

Parthenocarpy in which pollination or pollen stimulus is required.

Stion

Combination of root stock and scion growing into a single plant.

Stionic effect

The reciprocal effects of stock and scion on each other.

Stipule

A leaf-like or membranous organ found at the base of leaves.

Stock (Root stock, Understock)

A seedling or other plant part on which the scion is grafted or budded.

Stock

A group of closely related plants.

Stock plant

The source plant from which cuttings, layers, scions or explants are obtained.

Stock sprout

A shoot or sprout appearing from the rootstock.

Stolon

Runners or stems that develop roots and shoots at nodes.

Stoloniferous

Having suckers or runners.

Stomata

Pores surrounded by guard cells utilised for the exchange of gases in leaves and stems for photosynthesis.

Stone fruits

Members of the Rosaceae family which have only one seed per fruit.

Stool

A clump of plants formed at the base of the mother plant as in chrysanthemums.

Storage industry

Industry dealing with the extension of the shelf life of horticultural produces.

Strain

A group of plants within the variety which differs from it in one or more genetic or physiological characters other than the main morphological characters.

Strap leaves

Abnormal strap like leaves, partially or completely missing the margins.

Stratification (Moist chilling)

Chilling of seeds under moist conditions to break dormancy.

Stress

A potentially injurious force or pressure acting on the plant which may lead to injury or death.

Strip intercropping

Growing two or more crops simultaneously in different strips wide enough to permit independent cultivation but narrow enough for the crops to interact agronomically.

Stump

(1) Plant whose stem has been cut back to a height suitable for transplanting to the field.

(2) Stalk on which pineapple fruit is borne.

Stumped budling

A budling which has been allowed to grow in the nursery for prolonged period and cut back at a convenient height for transplanting (See Mini stumped budling and Maxi stumped budling).

Style

The extension from the ovary which supports the stigma.

Sub-atmospheric pressure storage

See Hypobaric storage.

Sub-culture or passage

The process of transferring cultures from one vessel to another, having fresh medium.

Suberization

The formation of a complex wax like substance in the cell walls of wounded or cut plant tissue to reduce water loss and protect the area.

Sub-humid

Climate or region where the moisture content is below that of humid conditions but still adequate enough for growing many crops without irrigation.

Sub-lateral shoot

A shoot growing sideways to the lateral shoot.

Subordination

Severe heading back of all but one of the multiple leaders to restore apical dominance.

Subsistence crop

Crop grown in problematic conditions, when no other crop can be grown e.g. floating-rice in flood prone areas.

Subsistence farming

The farming to provide food and commodities just sufficient for the farming family and not capable of generating surplus to sell.

Sub-soil

That layer of soil directly below the top soil.

Substitution cropping

The substitution of an existing inefficient crop with an identical efficient crop.

Subtropical

Climate or region where occasional light frosts occur.

Successive planting

Planting at varied dates for extending the harvest period.

Succulent

Plants with fleshy leaves and stems, usually tolerant to water stress.

Sucker

(1) An off-shoot that develops from an adventitious bud of the roots or lower stem of a plant.

(2) Shoot growing in the axils of leaves (pineapple).

(3) In rose, a shoot growing from the rootstock.

Sun-curing

The process of drying in sun.

Sunken garden

A garden laid below the ground level.

Sunscald

The burning of a plant's foliage by the sun.

Super cooling

Cooling below the freezing point without solidification.

Support crops

Fast growing crops which work as support to vine crops (See Standards).

Sweet pepper

Capsicums (See Paprika).

Swell

Bulging of the ends of a can which was apparently normal and perfect with good vacuum (Synonym: Blower).

Sword sucker

A banana sucker bearing narrow sword leaves and attached to the mother rhizome.

Sympodial

A zig zag or irregular form of growth.

Syconium

The fruit of a fig.

Syconus

A multiple hollow fruit, consisting mainly of the much enlarged receptacle of the inflorescence e.g. fig.

Symbiosis

An intimate physiological association of two or more species resulting in mutual benefit e.g. Rhizobium bacteria on the roots of legumes.

Synergism

An activity of two or more agents in such a way that the total effect is greater than the sum of the independent effects.

Synthetic cross

A cross among many inbreds, clones or sibbed lines without control of pollination (Synonym: polycross, Strain building).

Synthetic rubber

Rubber produced synthetically from unsaturated hydrocarbons (See Natural rubber).

Syringing

The use of a high pressure spray of water to prevent wilting and to encourage growth.

Syrup

Fruit beverage containing at least twenty five per cent fruit juice or pulp and sixty five per cent total soluble solids.

Syruping

The process of using sugar solution (syrup) in canning of fruits to improve the flavour and to serve as a heat transfer medium for facilitating processing.

Systemic

Spreading throughout the vascular system of a plant.

Systemic insecticide

Any insecticide that is applied to the soil in soluble form and absorbed by the plant's roots and which is designed to kill most of the sucking insects.

T Budding (Shield budding)

Budding where T shaped cut is made on the rootstock and the scion in the form a shield, is inserted under the two flaps of bark and the bud union is tied by exposing only the bud.

Tabasco chilli

See Bird chilli.

Tailing

Tap root pruning (rubber)

Tamp

To firm the soil or sand around a tree or constructional material.

Tannin

(1) Organic compounds present in some plants, chiefly glucosidal in nature, that cause an astringent taste.

(2) Polyphenol compound in tea leaves. It is the second most valuable constituent of tea, after caffeine.

Tapping task

The number of trees to be tapped by a tapper in a day.

Taproot

Root originating from the radicle in dicotyledonous plants, growing vertically downward and providing anchorage to the plant.

Tasselled

Disc-like pattern.

Tea cream

The milky deposit which forms in an infusion of tea on cooling due to interaction between caffeine and phenols.

Temperate fruit

A fruit plant which requires a cool period and is deciduous e.g. apple, pear and peach.

Temperate vegetables (Cool season vegetables)

Vegetables whose growth and productivity are favoured by low temperatures; most of them have the ability to withstand frost; also known as winter vegetables.

Temperate zone plants

Plants that require a more or less extended chilling period for proper vegetative growth in areas that have periods of prolonged cold weather, often below freezing.

Tendrils

Slender prolongation of a stem or leaf that helps the plant to climb.

Terete

Approximately cylindrical , usually tapering at one or both ends.

Terminal

Apical.

Terrace gardening

- (1) Gardening done on raised space of ground (terrace).
- (2) Gardening on the flat roofs or terraces of buildings.

Terrarium

A transparent enclosure, usually of glass, for providing a clean, humid environment to plants.

Tetraploid

Plant having four sets of chromosomes.

Thinning

- (1) Removal of young fruits from a cluster to help the remaining ones to have more reserve food for development.
- (2) Removal of plants from thickly populated crop stand for maintaining optimum plant population.
- (3) Pruning branches for providing the remaining ones more space and reserve food for better growth.

Three way cross

A cross between a single cross used as female and an inbred used as male.

Tiller

- (1) Side-shoot growing from the base of the stem of a cereal or grass plant.
- (2) A sprout or stalk arising from the root or the axils of the lower leaves.

Timber industry

The industry concerned with harvesting and production of timber for construction purposes , furniture manufacture etc.

Tip bearer

Plants bearing most of their fruits at the tips of one-year old shoots.

Tip layering

Layering near the tip of the current season's shoot by placing in soil or medium.

Tipping

The process of removing flushes in tea bushes for producing a level plucking table.

Tips

The highest quality tea, rich in flavour, made from the tips of the flush.

Tissue analysis

Quantitative estimation of the nutrient content of plants using suitable procedures.

Tissue culture

In vitro cultivation of plant parts, whether a single cell, tissue or organ, under aseptic conditions in defined or semi-defined medium.

Tomentose

Covered with densely matted hair.

Top budding

Method of top-working using budding on vigorous shoots.

Top cross

A cross between an open pollinated variety and an inbred.

Top dressing

The application of manures and fertilisers to an established crop.

Top soil

The uppermost layer of the soil (usually 15 to 20 cm), comparatively rich in organic matter.

Topiary

The severe clipping of plants into unusual or geometric shapes for ornamental purpose.

Topography

Shape and physical features of the land surface that make up the landscape of an area.

Topophysis

The phenomenon, observed in vegetative propagation, in which the different growing parts of a plant perpetuate their specific features in the offspring.

Topping

Removal of the top of the plants for regulating growth.

Top working

Changing a tree from one cultivar to another by budding or grafting after cutting back the main scaffold branches.

Totipotency

The inherent ability of the plant cell to grow and develop into a whole plant.

Trace element

See Micro nutrient.

Trait

A loose synonym for character.

Training

Shaping or adapting plants to specific forms by pruning, fastening or bracing.

Transition stage

The integration period of juvenile and mature phases of growth.

Transpiration

Loss of water vapour from plant tissues through stomata, cuticles and lenticels.

Transplant

Transferring a planting material from the nursery to the main field.

Tree

A large, woody plant usually having a main stem or trunk.

Trellis

Any structure capable of supporting the growth of vines or other climbing plants.

Trench layering

A layering method in which a number of new plants are obtained from a stock plant by placing the shoots in horizontal position in a trench and filling with soil.

Trickle irrigation (Drip irrigation)

A method of irrigation directly near the root zone of the plants through a number of low flow-rate outlets.

Trifoliolate

Compound leaf with three leaflets.

Triple cropping

Growing three crops a year in sequence.

TRIPS

Trade Related Intellectual Property Rights.

Trophy

Arrangement of potted plants in different tiers around a central structure.

Tropical fruit

A fruit plant which is evergreen and cannot withstand freezing temperatures.

Tropical plant

Plants grown in areas free from frost, with growth ceasing in most of the crops at temperatures below 20°C.

Tropical region

Comprises the area between the Tropic of Cancer (23° 27' N latitude) and Tropic of Capricorn (23° 27' S latitude).

Tropism

Movement in response to an environmental signal, such as light or gravity (See Geotropism and phototropism).

Trough

A period of low availability of ripe fruits in oil palm.

Truck crop production

Large scale production of a limited number of vegetable crops for wholesale markets and shipping.

Truck up production

Large scale production of selected varieties of vegetables for distant markets.

True cardamom (Small cardamom)

Fruits of *Elettaria cardamomum*, commercially more important than large cardamom (*Aframomum* spp. or *Amomum* spp).

Trueness to type

Condition in which the characteristics and performance of the progeny plants closely resembles that of the parent plant.

Truss

- (1) A cluster of flowers or fruit.
- (2) Main supporting structure of the greenhouse roof.

Tube culture

A hydroponics technique where nutrient solution is pumped through PVC drain pipes.

Tuber

A swollen, modified underground stem or root, storing food.

Tuberous root

A root, producing tubers e.g. tapioca.

Tunnels

Temporary plant growing structures in the form of tunnels, approximately 1-2m high, made by steel tubes, bamboo etc. and covered with polythene sheet.

Turfs (Sods)

Pieces of earth with grass cover used for turfing.

Turf-grass industry

The production and maintenance of specialised grasses and other ground covers for utility, recreation, and beautification.

Turgid

Condition whereby the organ is completely filled with water.

Twiner

Annual or perennial herb or shrub which climb over support or a plant by twining themselves spirally around such support.

Type

A group of plants within a variety which differs in a few minor definable characteristics.

Umbel

A flower cluster in which all the individual flower stalks arise at one point, the cluster being flat shaped.

Upland

Cultivable land on high ground with good natural drainage.

Understock

See Rootstock.

Vacuum cooling

A method for extending shelf life of fruits and vegetables using a vacuum chamber where a low atmospheric pressure is maintained.

Vanillin

Most abundant volatile aromatic constituent of vanilla.

Vanillism

A form of poisoning which may appear in persons working with vanilla.

Variegation

A varied, somewhat mottled pattern of colouration in a leaf, flower or other plant parts due to non-uniform pigmentation.

Variety

A sub-division or group of plants within a species which differs in some minor definable characteristics.

Variety release

Release of varieties by appropriate authorities such as Central Variety Release Committee and State Variety Release Committee.

Vascular

Referring to the xylem, phloem or both.

Vase life

The length of time that a cut flower retains its aesthetic value after placing in a vase.

Vector

The organism or object which spreads a disease from one plant to another.

Vegetable

Edible herbaceous plant or plant parts, commonly used for culinary purposes or as salads.

Vegetable garden

Garden or place where vegetables are raised

Vegetable garden, floating

Production of vegetables on floating rafts.

Vegetable garden, forcing

Production of vegetables to grow out of their normal season.

Vegetable garden, kitchen(home)

Production of vegetables in homesteads for the consumption of family members.

Vegetable garden, market

Production of vegetables for local markets.

Vegetable garden, processing

Production of vegetables suitable for canning, dehydration or freezing, preferably around processing factories.

Vegetable garden, seed

Production of vegetables exclusively for seeds.

Vegetable garden, truck

Large scale production of selected varieties of vegetables for distant markets.

Vegetable pepsin

The dried latex obtained from fruits just before maturity; often called vegetable pepsin as it contains enzymes somewhat similar to pepsin.

Vegetative propagation

The production of a complete plant by asexual methods like cutting, layering, budding and grafting.

Vegetative reproduction

Vegetative propagation.

Veins

The conducting tissue within a leaf and other plant parts.

Ventilator

Opening in a greenhouse to ensure the exchange of air.

Vermiculite

A sterile mica product used in rooting/potting medium.

Vernalin

An hypothetical hormone - like substance in plants, consequent to vernalisation.

Vertical or upright storage

A storage structure whose height is greater than the width or diameter. Other term are silos, tanks and deep bins.

Vernalisation

Low temperature treatment of seeds and seedlings, found useful in some plants, to shorten the time required for flowering.

Vestigial bud

An imperfectly developed bud.

Viability

- (1) Ability of seeds to germinate.
- (2) Ability of vegetative plant propagules to sprout and grow.

Viability test

Test to ascertain the percentage of living cells or plants in a population.

Vigour

Sum total of all seed attributes which favour rapid and uniform stand establishment on the field.

Vine

A slender stemmed trailing or climbing plant.

Vinegar

Liquid obtained by alcoholic and acetic fermentation of suitable materials containing sugar and starch.

Vitality (Viability)

Capacity to renew growth or germinate.

Vitamin

An organic molecule that functions as a coenzyme or cofactor of enzymes.

Viticulture

The art and science of growing grapes.

Viviparous germination

Germination of seeds while they remain attached to the tree or fruit.

Volatile

A liquid readily vaporising or evaporating at relative low temperature and pressure.

Volatile oil (Essential oil)

Volatile aromatic extracts prepared by steam distillation of ground spices.

Volunteer plants

Unwanted plants growing from the remaining seeds of a previous crop.

Vulgaris

Common (used in scientific names to denote common species).

Wardian case

A glass-topped enclosure, supplied with provision for bottom heat, used for plant propagation.

Water gardening

Growing water plants in artificial pools, tanks, ponds etc.

Water harvesting

Conservation of rain water under unirrigated condition, by collecting run off of precipitation in order to supplement soil moisture in an adjacent area.

Water logged

Soil condition devoid of aeration due to blocking of the pore spaces by water.

Water shed

The line of separation between adjacent water catchment areas.

Water shoot (Water sprout)

A very vigorous and straight growing non productive shoot arising from trunks or branches of trees.

Water sucker

A banana sucker of superficial origin, bearing broad leaves.

Water table

The upper surface of ground water or that level below which the soil is saturated with water.

Waxing

A method of coating fruits with a thin film of wax for reducing the rate of respiration and extending the shelf life.

Wedge grafting (Cleft grafting)

A grafting method where the scion piece is placed in a split (cleft) formed on a stock plant.

Wetting agent

A substance added to a spray solution for improving its contact with plant surface.

Whip grafting

Method of grafting in which tongue shaped cuts are made on both stock and scion and are interlocked.

Whorl

Flowers or foliage arranged in a circle round the stalk or branches.

Wilting

Loss of freshness and drooping of foliage of a plant due to inadequate supply of moisture, excessive transpiration or by disease.

Wind break

A group of plants grown close together for protecting crops from strong winds.

Wind blast

Injury to leaves and twigs by strong winds.

Window garden (Window box garden)

Garden where plants are grown within the room just opposite or close to the window or on the window sill outside.

Winter vegetables (Cool season vegetables)

Vegetables whose growth and productivity are favoured by low temperatures; most of them have the ability to withstand frost; also known as temperate vegetables.

Wiring

The technique of winding wire around a branch, stem or trunk to change its shape as practiced for making bonsai plants.

Witches broom

The growth of many short twigs at one point on a branch.

Withering

The first stage in the processing of tea, lasting from 6 to 20 hours, where important chemical changes take place.

Woody plants

Plants with woody fibre.

Wrapping

Covering fruits with suitable materials for improving the post harvest life.

Xanthophyll

Yellow or orange carotinoid pigment associated with chlorophyll in chloroplasts, also present in certain chromoplasts.

Xenograft

See Heterograft.

Xeromorphic

Xerophytic.

Xerophyte

A plant adapted to a very dry environment.

Xylem

The upward conducting vessels within the plant.

Yemma budding (Chip budding)

Budding where a single bud with a piece of wood is fitted to a suitable cut in the stock.

Yield potential

Maximum production capability of a crop.