

LIST OF COMMON AND BOTANICAL NAMES

The convention in this book has been to use the common name for crop and pasture species and the Latin name for weed species, except at first mention within a chapter, where each plant is given its common name and its Latin name. The following list conforms with Hartley, W. (1979). *A Checklist of Economic Plants in Australia* (CSIRO, Melbourne).

<i>Achillea millefolium</i>	yarrow
<i>Acroptilon repens</i>	creeping knapweed
<i>Agropyron repens</i>	couch grass, English
<i>Allium vineale</i>	wild garlic
<i>Alopecurus myosuroides</i>	blackgrass (English)
<i>Amaranthus</i> spp.	Prince of Wales feathers
<i>Amsinckia</i> spp.	yellow burr weed
<i>Aphanes arvensis</i>	parsley piert
<i>Arachis hypogaea</i>	peanut
<i>Arctotheca calendula</i>	capeweed
<i>Avena fatua</i>	oats, wild
<i>Avena sativa</i>	oats, cultivated
<i>Brassica campestris</i>	rapeseed
<i>Brassica kaber</i>	charlock
<i>Brassica napus</i>	rapeseed
<i>Brassica tournefortii</i>	turnip, wild
<i>Bromus mollis</i>	brome, soft
<i>Bromus diandrus</i>	brome, great
<i>Bromus sterilis</i>	brome, sterile
<i>Cajanus cajan</i>	pigeon pea
<i>Capsella bursa-pastoris</i>	shepherd's purse
<i>Cardaria draba</i>	hoary cress
<i>Carduus</i> spp.	thistles (various)
<i>Carthamus lanatus</i>	thistle, saffron
<i>Carthamus tinctorius</i>	safflower
<i>Cassia obtusifolia</i>	sicklepod
<i>Chenopodium album</i>	fat hen, white goosefoot
<i>Chloris gayana</i>	Rhodes grass
<i>Chondrilla juncea</i>	skeleton weed
<i>Chrysopogon fallax</i>	golden beard grass
<i>Cicer arietinum</i>	chickpea
<i>Cucumis myriocarpus</i>	prickly paddy melon
<i>Cynodon dactylon</i>	couch grass, common
<i>Echinochloa crus-galli</i>	barnyard grass
<i>Echium plantagineum</i>	Paterson's curse
<i>Emex</i> spp.	spiny emex
<i>Fumaria</i> spp.	fumitory
<i>Glycine max</i>	soybean
<i>Gossypium hirsutum</i>	cotton
<i>Helianthus annuus</i>	sunflower

<i>Heliotropium europaeum</i>	heliotrope, common
<i>Heteropogon contortus</i>	bunch speargrass
<i>Hordeum leporinum</i>	barley grass
<i>Hordeum vulgare</i>	barley
<i>Juncus bufonius</i>	toad rush
<i>Kochia scoparia</i>	kochia
<i>Lactuca serriola</i>	prickly lettuce
<i>Lamium amplexicaule</i>	deadnettle
<i>Linum usitatissimum</i>	linseed
<i>Lithospermum arvense</i>	corn gromwell
<i>Lolium rigidum</i>	ryegrass, annual
<i>Lotus pedunculatus</i>	lotus
<i>Lupinus albus</i>	lupin, white
<i>Lupinus angustifolius</i>	lupin, narrowleaf
<i>Lupinus cosentinii</i>	lupin, sandplain
<i>Macroptilium atropurpureum</i>	siratro
<i>Medicago littoralis</i>	strand medic
<i>Medicago sativa</i>	lucerne
<i>Medicago truncatula</i>	barrel medic
<i>Nassella trichotoma</i>	serrated tussock
<i>Oxalis pes-caprae</i>	soursob
<i>Panicum maximum</i> var. <i>trichoglume</i>	green panic
<i>Pennisetum clandestinum</i>	kikuyu
<i>Phalaris aquatica</i> (= <i>P. tuberosa</i>)	phalaris
<i>Phalaris paradoxa</i>	paradoxa grass
<i>Phaseolus vulgaris</i>	navy bean
<i>Pisum arvense</i>	peas, field
<i>Poa annua</i>	winter grass
<i>Polygonum aviculare</i>	wireweed
<i>Portulaca oleracea</i>	pigweed
<i>Raphanus raphanistrum</i>	radish, wild
<i>Rumex acetosella</i>	sorrel
<i>Rumex crispus</i>	dock, curly
<i>Rumex pulcher</i>	dock, fiddle
<i>Schismus arabicus</i>	Arabian grass
<i>Secale cereale</i>	cereal rye
<i>Sisymbrium</i> spp.	mustard, wild
<i>Sorghum vulgare</i>	sorghum, grain
<i>Sporobolus elongatus</i>	slender rat's tail grass
<i>Stellaria media</i>	chickweed
<i>Striga asiatica</i>	witchweed
<i>Stylosanthes hamata</i>	Caribbean stylo
<i>Stylosanthes humilis</i>	Townsville stylo
<i>Stylosanthes scabra</i>	scrubby stylo
<i>Themeda australis</i>	kangaroo grass
<i>Tribulus terrestris</i>	caltrop
<i>Trifolium pratense</i>	red clover
<i>Trifolium repens</i>	white clover
<i>Trifolium subterraneum</i>	subterranean clover
x <i>Triticosecale</i> spp.	triticale
<i>Triticum aestivum</i>	wheat
<i>Vicia faba</i>	faba beans

<i>Vigna radiata</i>	mungbeans
<i>Vigna unguiculata</i>	cowpea
<i>Vulpia</i> spp.	silver grass
<i>Xanthium strumarium</i>	noogoora burr
<i>Zea mays</i>	maize

LIST OF HERBICIDES USED

In this book, chemical names have been preferred where they are in common usage in Australia. Trade names have been used where the chemical name is not in common use.

A. CHEMICAL NAMES

amitrole	diquat
atrazine	diuron
barban	flamprop-methyl
bentazone	fluazifop
benzoylprop-ethyl*	glyphosate
bromoxynil	ioxynil
chlorfenprop-methyl*	linuron
chlorsulfuron	MCPA
cyanazine	oryzalin
dicamba	paraquat
diclofop-methyl	picloram
2,2-DPA	simazine
2,4-D	terbutryne
3,6-dichloropicolinic acid	trallate
difenzoquat	trifluralin

* unregistered in Australia

B. TRADE NAMES

Avenge	:	difenzoquat
Bladex	:	cyanazine
Fusilade	:	fluazifop
Gesaprim	:	atrazine
Gesatop	:	simazine
Glean	:	chlorsulfuron
Hoegrass	:	diclofop-methyl
Mataven	:	flamprop-methyl
Spray.Seed	:	paraquat + diquat
Vorax AA	:	amitrole + atrazine
Yield	:	trifluralin + oryzalin
Ulvapron	:	petroleum oil (used as a carrier in ULV applications)

GLOSSARY OF SELECTED TERMS RELATED TO TILLAGE

The following terms have been adopted to ensure uniform usage in this book, rather than to standardise Australian usage. It is based primarily on *Technical Bulletin No. 32* of the Queensland Department of Primary Industries (Grevis-James and Kamel, 1977) with additions that reflect new practices and changed usage since 1977.

GENERAL

Annual cropping - A cropping system where one crop is grown per year.

Conservation farming - A farming system that creates a suitable environment for the growing crop and emphasises conservation of soil and water resources, consistent with sound economic practices. Preferred term to conservation tillage as it recognises that soil and water conservation frequently extend beyond crop establishment to include crop and pasture management in the broadest sense.

Conservation tillage - see **Conservation farming**

Conventional cultivation - see **District practice**

Crop management - A term that includes management options such as the choice of crops within a crop rotation, length and type of fallowing, time of sowing, residue management and type and number of tillage operations.

Direct sowing - Any method of sowing or system of crop or pasture establishment whereby seed is placed into previously untilled soil.

District practice - The normally accepted tillage sequence for ground preparation in order to establish a given crop in a given district. Traditionally this has meant multi-pass tillage with the removal of all or most of the plant material from an area prior to planting a crop. As district practice (or conventional cultivation) varies greatly it has been necessary for authors to describe the practice when it is referred to initially.

Double cropping - The growing of one summer and one winter crop on the same land within a 12-month period.

Erodibility - The vulnerability of the soil to erosion

Erosivity - The potential ability of an agent to cause erosion.

Fallowing - The practice of maintaining land free of plant growth. This traditionally means leaving land in a cultivated state for a period prior to sowing a crop or between successive crops. It is used primarily for water conservation but also where available nitrogen is inadequate and where cultivation is used to prepare a seedbed for sowing. The length of fallow varies with the crop rotation practised, but in a ley-farm system it can vary from 1-3 months

autumn fallow between crops, up to 9 months fallow for a crop following pasture. A fallow up to 14 months can precede wheat in a continuous sorghum-wheat cropping rotation in summer-rainfall areas.

Chemical fallow - A system of fallowing where vegetation is controlled exclusively by the use of herbicides. This is the preferred term for the synonyms no-tillage fallow, conservation fallow, chemical fallow, spray fallow.

Reduced tillage fallow - Any fallow in which herbicide partially replaces cultivation.

Herbicide - Chemical used to kill plants (preferred term to 'weedkiller').

Contact herbicide - Non-systemic chemicals active only at site of contact.

Systemic herbicide - Translocated away from site of absorption (roots or leaves) to sites of action.

Knockdown - Herbicides used to non-selectively kill plants. Not synonymous with contact herbicide.

Plant-back period - Is the minimum safe period before a crop can be planted back into soil treated with a chemical.

Ley-farming - A rotation in land use that specifically includes a legume-based pasture to improve soil fertility as well as provide grazing for stock in the farm system. The system is confined primarily to winter/spring dominant rainfall areas of Australia, specifically Western Australia, South Australia, Victoria and central-southern New South Wales. Crops are described as:

First crops - The first crop after pasture in a sequence of crops.

Stubble crops - Subsequent crops in the rotation.

Break crops - Any change in crop genotype to facilitate disease, pest or weed control.

Mulch - Natural or artificially applied protective covering of plant residue or other material such as stones, sand, bitumen or plastic on the surface of the soil. Plant residues may be left standing upright or otherwise treated to remain on the soil surface.

Opportunity cropping - A flexible cropping system that places primary emphasis on the level of stored soil moisture when determining whether or not to establish a crop.

Residue - Portion of a plant or crop, left in the field after harvest. Preferred term for 'stubble'. It implies the residue of crops; pasture residues are specified where necessary.

Residue management - Treatment of crop residues in the course of crop production. Usually, but not necessarily, it implies the retention of residues for soil and/or water conservation.

Residue (stubble) burning - Can take place at any time between crops and is usually done to facilitate the operation of cultivation and sowing equipment and for crop sanitation.

Residue (stubble) retention - Any of a group of management systems that retain substantial levels of plant residue in the field. The residue may be mulched or partially or fully incorporated into the soil.

Tillage - The mechanical manipulation of soil for any purpose, but in agriculture the term is usually restricted to the changing of soil conditions for crop production.

Tillage operation

Subsoiling (ripping) - The tillage of sub-surface soil without inversion for the purpose of breaking up dense layers which restrict water movement and root penetration.

Ploughing - A primary tillage operation that is performed to shatter soil with partial or complete soil inversion and to kill and bury existing vegetation.

Chisel ploughing - A primary tillage operation that is performed with a tined implement primarily to shatter the soil without inversion.

Scarifying - A primary or secondary tillage operation performed with a tined implement primarily to shatter soil and rearrange particles.

Cultivating - A shallow secondary tillage operation performed before or after sowing to achieve one or more of the following: a desired seedbed tilth, control weeds, improve aeration, improve infiltration.

Harrowing - A secondary tillage operation that pulverises, smooths and packs the soil during seedbed preparation, or controls weeds. It can be used to break up crusts forming between sowing and emergence.

Tillage, reduced (syn. reduced cultivation) - Any procedure for preparing ground for sowing where herbicides partially replace cultivation. Where the period of seedbed preparation exceeds one month, the term *reduced tillage fallow* is preferred.

Minimum tillage, minimum tillage fallow - Strictly speaking, the minimum soil manipulation considered necessary for crop production or for meeting tillage requirements under a particular set of weed, soil, and climatic conditions. It is used loosely to cover a range of conservation farming practices for which specific terms are preferred.

Weed management - A long-term approach to weeds, which integrates a range of control methods including grazing management, rotations and herbicides, frequently depending on an understanding of weed biology. The objective is to maintain weed populations economically below levels of economic concern.

USE-SPECIFIC TERMS

Contour tillage - A tillage system in which all tillage operations are conducted on, or near, the contour.

Direct drilling - Direct sowing of a crop following grazing and/or burning to remove crop residues and to control summer and autumn growth of weeds and pasture. Herbicides are used before sowing if required. Fallowing may be practised. Associated terminology includes **spray-ahead** where herbicides are applied up to one month before sowing, and **autumn fallow** for earlier application. It is synonymous with **Spray.Seeding**. The term is confined mainly to southern and western Australia. The term is sometimes applied to pastures where a complete kill of resident vegetation precedes sowing (see sod-seeding).

No-till fallow - Direct sowing with minimal soil disturbance into crop residues following a chemical fallow. The term is sometimes synonymous with **no-tillage** or **no-tillage fallow** (terms to avoid) and is used mainly in northern New South Wales. Stock play no part in the system.

Pasture manipulation - The use of herbicides in pastures to alter the botanical composition. It is used specifically in the last year of pasture before a crop to control weeds, especially grasses, for which no selective post-emergence chemical is available. The term usually applies to autumn/winter applications of herbicide and is used in ley-farm areas.

Seedbed salvage - A situation in which a seedbed prepared by cultivation is infested by a uniform germination of seedling weeds, which may be associated with wet seasonal conditions.

Herbicides are used to control these weeds before planting. It is most likely where cultivated fallows precede winter crops.

Sod-seeding - Direct sowing into pasture sod where the intention is to maintain or improve the pasture. It is usually confined to forage crops (e.g. oats) or pasture improvement (e.g. perennial grasses sown into legume-based pasture).

Spray-graze - The use of low rates of herbicides (mainly growth regulators) in conjunction with grazing to suppress certain broadleaf weeds.

Spray-topping - The use of low rates of knockdown herbicides applied to grasses at heading to prevent seed-setting.

Strip cropping - The growing of crops in a systematic arrangement of strips or bands that serve as barriers to water and/or wind erosion.

Strip tillage - A system in which only isolated bands of soil are tilled.

Stubble mulching - The management of plant residues on a year-round basis aimed primarily at protecting the soil surface from erosion. Harvesting, tillage, planting and cultivation operations are performed in such a way that adequate amounts of vegetative material are retained on the soil surface.

Surface sowing - Any technique that places seed on the surface of the ground.

Zero tillage - Non-specific term, often used to mean conservation farming or direct sowing.

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