

Section A1

Weed ID and Information

australian cotton cooperative research centre



WEEDpak

a guide for integrated management
of weeds in cotton



Cotton Catchment Communities CRC



Australian Government
Cotton Research and
Development Corporation

June 2012

Cover image:
Wide-leaf bladder ketmia
Hibiscus trionum var. *vesicarius*

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Weed Id and information tips on PDF use

This document is comprehensively bookmarked
Be sure to view bookmarks if viewing in a tablet.

Hot regions circled - (NB you may need to update to a more comprehensive PDF viewer than those provided as a standard on some tablets to access this functionality).

- Seed, Seedling and Adult image links forward you to weed of choice
- Hot regions of ID page return to respective seed, seedling, or adult index



Unknown weeds may be identified from a collection of seed, seedling and adult pictures, or by leafing through the collection. The seedling collection has been structured with seedlings with similar leaf shapes grouped together.

The adult collection places weeds in the same order as they occur in the seedling collection. The seed collection is listed by seed size against a common scale, and secondly by real seed size.

WEEDpak section A2

This document is part of a larger publication. The remaining parts and full version of the publication can be found at:

<http://www.cottoncrc.org.au/industry/Publications/Weeds>

Updated versions (when available) of this document and more weed information can also be found at the above web address.

This document is subject to the disclaimers and copyright of the full version from which it is extracted. These disclaimers and copyright statements are available in the appropriate document at the above web address. This document is a work in progress – as new weed become available they will be added.

Monitor the

[Weed Id tool page](#)

or [@cottonresearch](#) twitter feed

for updates on this and other cotton research based documents.

INDEX OF WEED NAMES

Graham Charles

(NSW Dept Primary Industries)

Weeds in the **Weed identification and Information Guide** are listed in alphabetical order by their botanical name. Grasses and sedges are listed first, followed by the broad-leaf weeds.

To assist with finding a weed, these weeds are listed by their preferred common names in the **Quick Index**. The preferred common names are generally those adopted by Shepherd *et. al.* (2001). However, an alternative preferred common name has been adopted where a weed is more widely known throughout the Australian cotton industry by a name other than the preferred common name.

These weeds are also listed in alphabetical order by their botanical name in the **Index of Botanical Names**, in the same order they occur in the **Weed identification and Information Guide**.

To assist in grouping the weeds, they are also listed by their families in the **Index of Botanical Names by Families**. Weeds in the same family are botanically related.

A complete listing of the weeds in the **Weed Identification and Information Guide**, listed by all their recognised names follows in the **Complete Index of Common Names**.

Unknown weeds may be identified from a collection of seed, seedling and adult pictures, or by leafing through the collection. The seedling collection has been structured with seedlings with similar leaf shapes grouped together. The adult collection places weeds in the same order as they occur in the seedling collection. The seed collection is listed by seed size against a common scale, and secondly by real seed size.

Index of Seedlings (page 1 of 3)



Sorghum



Johnson grass



Awnless barnyard grass



Liverseed grass



Button grass



Rhodes grass



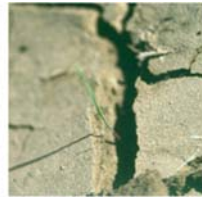
Brown beetle grass



Wheat



Prairie grass



Wild phalaris



Umbrella sedge



Rice flatsedge



Downs nutgrass



Nutgrass

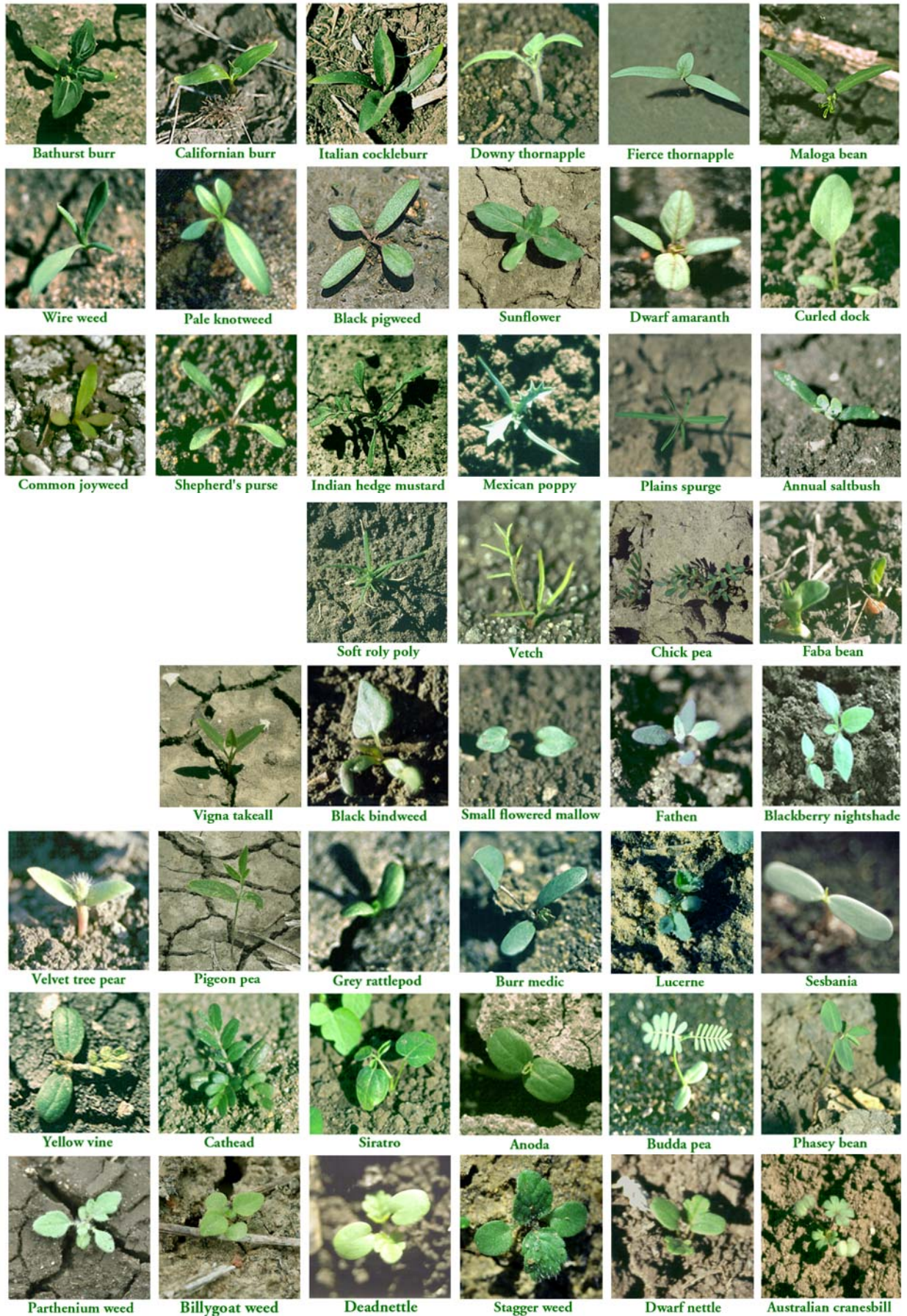


Dirty dora

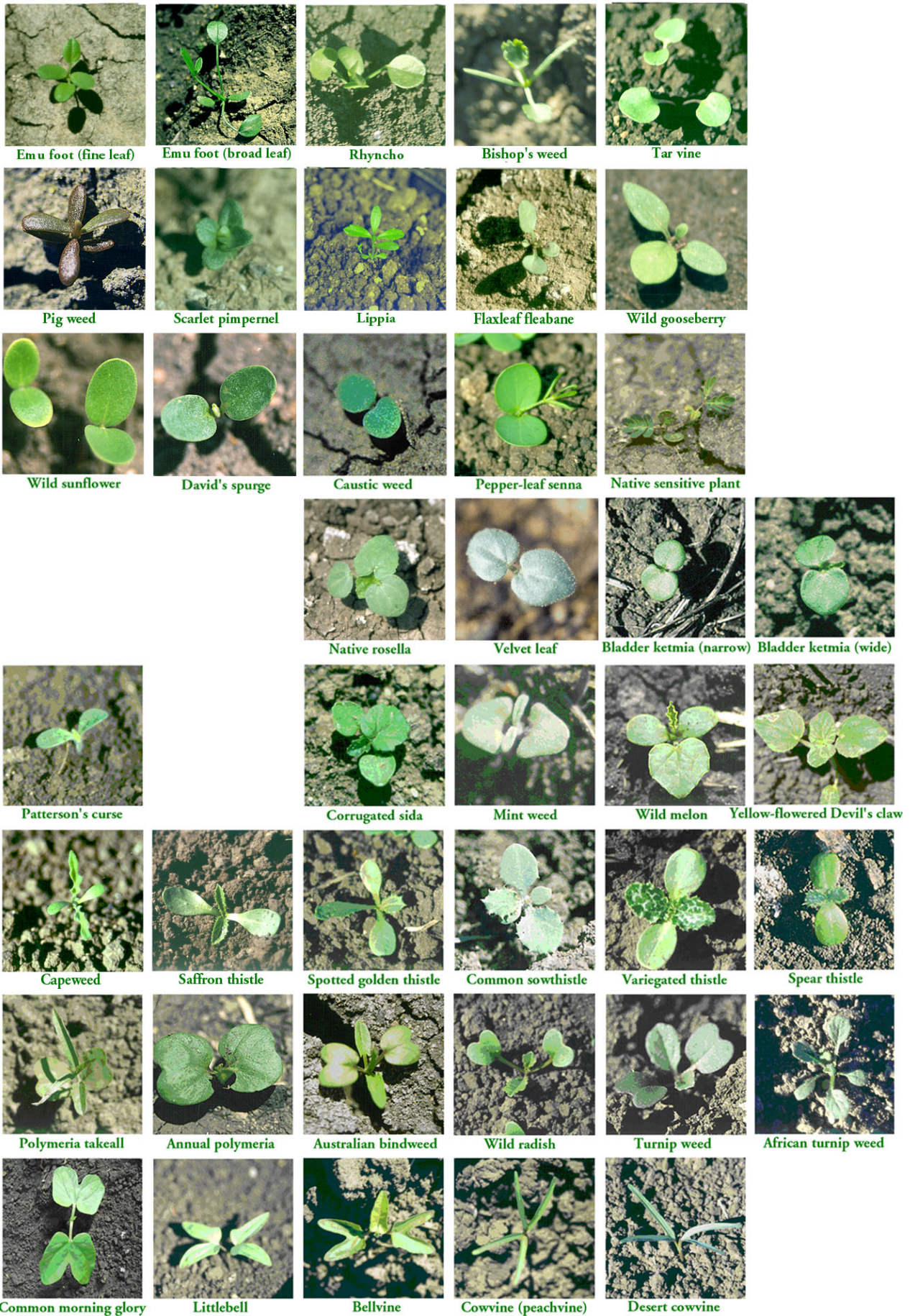


Leek lilly

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Index of Adults (page 1 of 3)



Sorghum



Johnson grass



Awnless barnyard grass



Liverseed grass



Button grass



Rhodes grass



Brown beetle grass



Wheat



Prarie grass



Wild phalaris



Umbrella sedge



Rice flatsedge



Downs nutgrass



Nutgrass

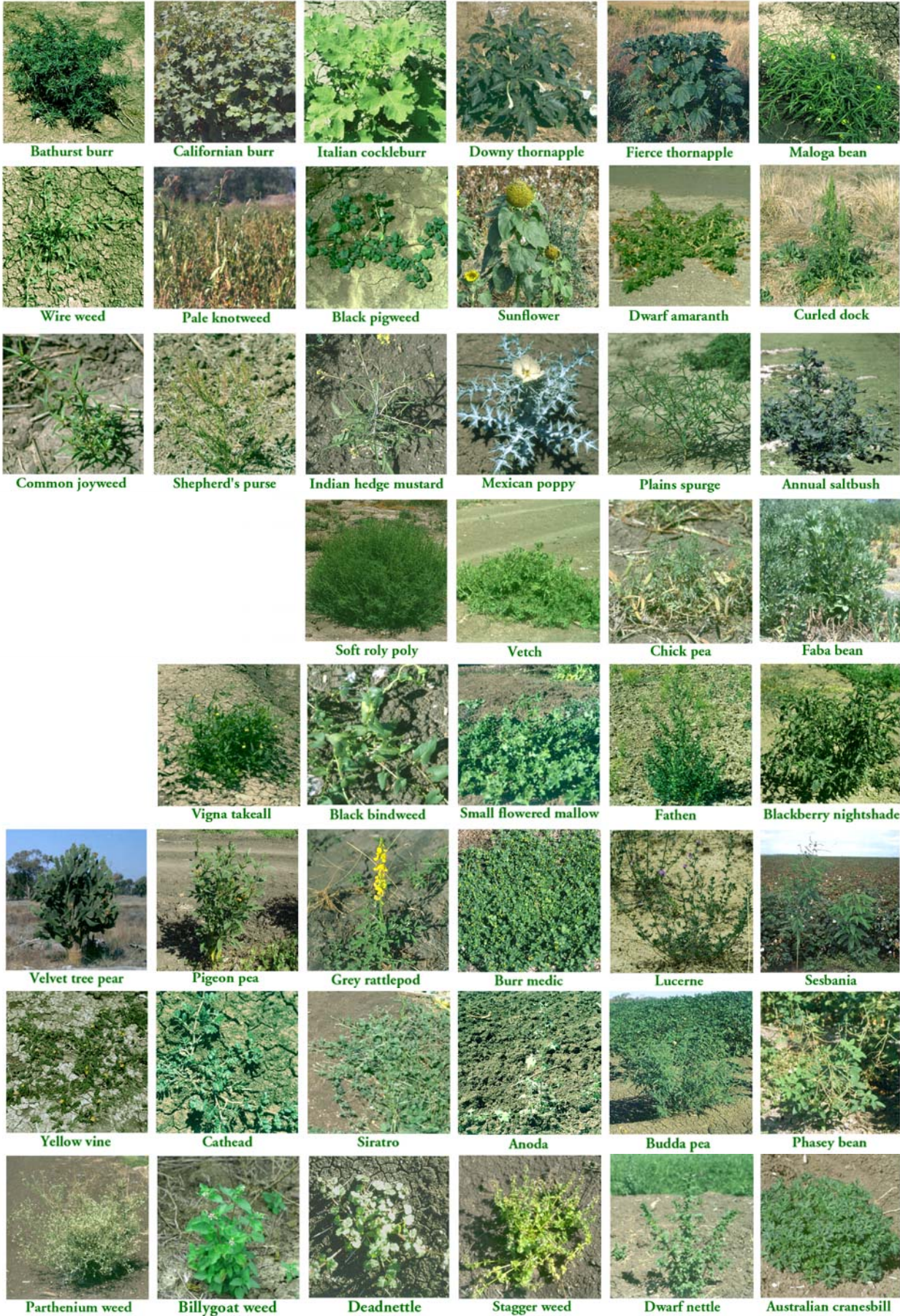


Dirty dora



Leek lily

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Emu foot (fine leaf)



Emu foot (broad leaf)



Rhyngo



Bishop's weed



Tar vine



Pig weed



Scarlet pimpernel



Lippia



Flaxleaf fleabane



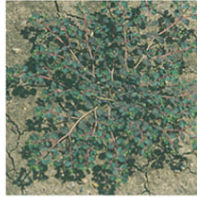
Wild gooseberry



Wild sunflower



David's spurge



Caustic weed



Pepper-leaf senna



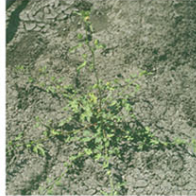
Native sensitive plant



Native rosella



Velvet leaf



Narrow-leaf Bladder ketmia wide-leaf



Yellow-flowered Devil's claw



Patterson's curse



Corrugated sida



Mint weed



Wild melon



Capeweed



Saffron thistle



Spotted golden thistle



Common sowthistle



Variegated thistle



Spear thistle



Polymeria takeall



Annual polymeria



Australian bindweed



Wild radish



Turnip weed



African turnip weed



Common morning glory



Littlebell



Bellvine

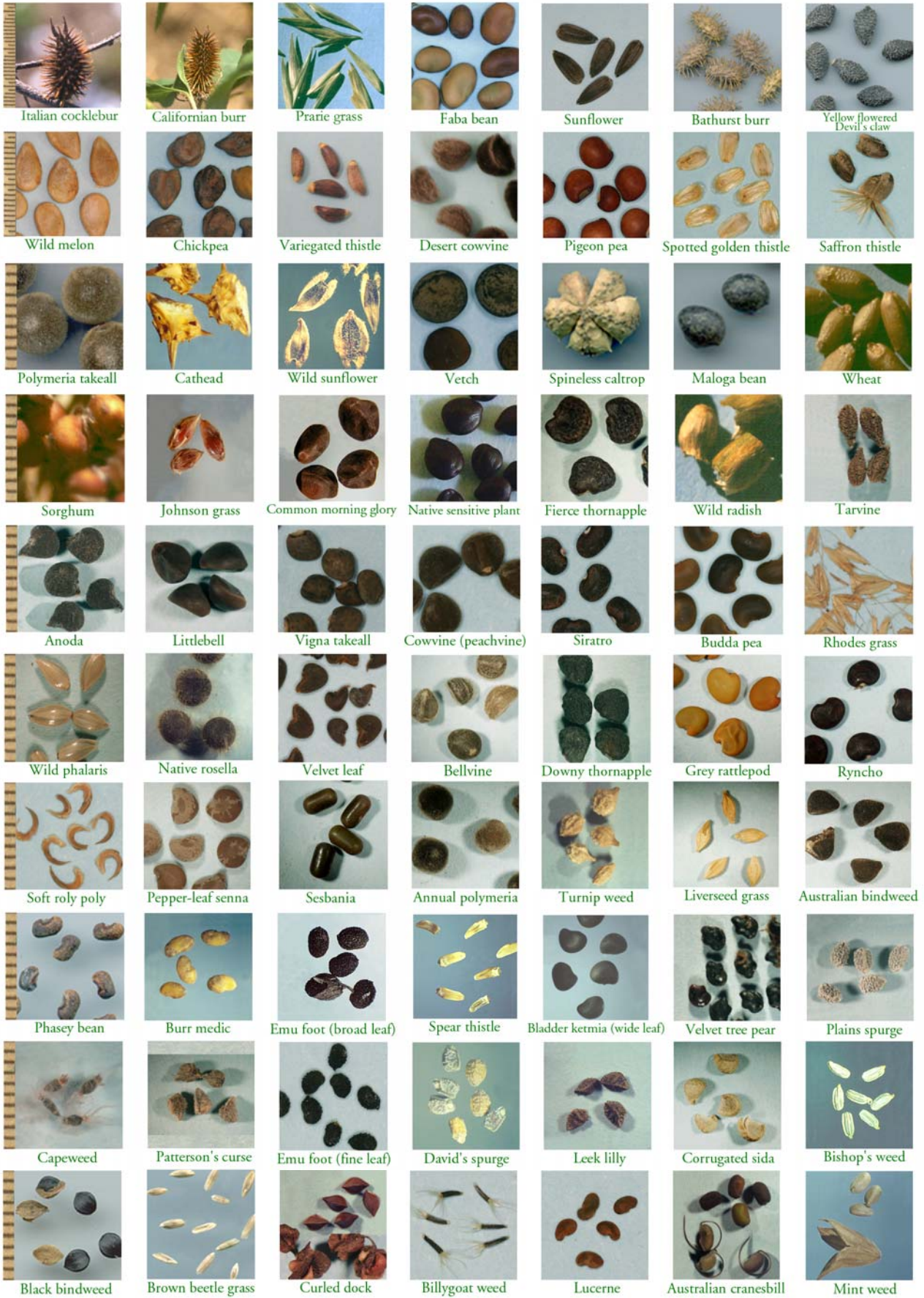


Cowvine (peachvine)

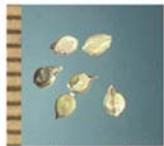


Desert cowvine

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Wireweed



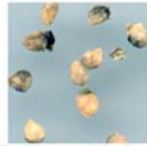
Stinging nettle



Bladder ketmia
(narrow leaf)



Deadnettle



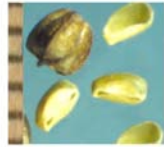
Blackberry nightshade



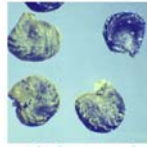
Stagger weed



Awnless barnyard grass



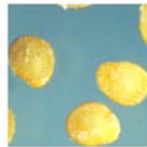
Caustic weed



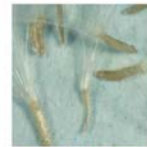
Black pigweed



Pale knotweed



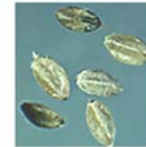
Wild gooseberry



Flaxleaf fleabane



Parthenium weed



Nutgrass



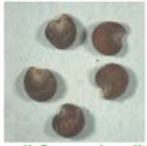
Shepherd's purse



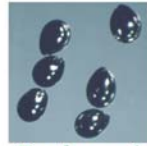
Lippia



Mexican poppy



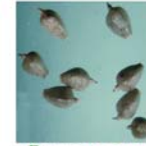
Small flowered mallow



Dwarf amaranth



Annual saltbush



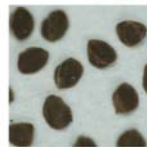
Downs nutgrass



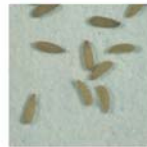
African turnip weed



Umbrella sedge



Scarlet pimpernel



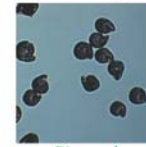
Common joyweed



Button grass



Common sowthistle



Pigweed



Dirty dora

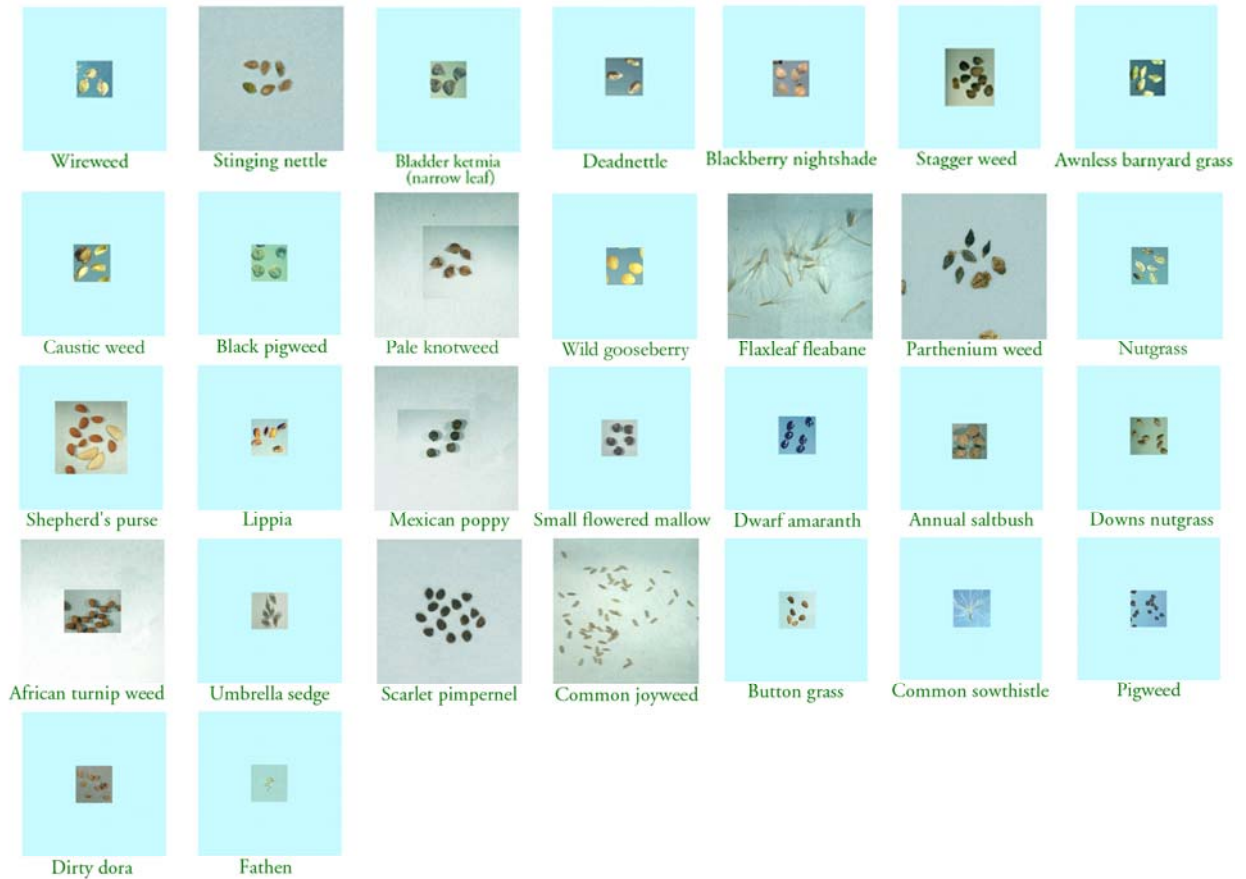


Fathen

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Index of Seeds by Real Size (page 1 of 2)



Bromus catharticus Vahl.

Prairie grass



Photographs: Graham Charles

Bromus catharticus

Family:

Poaceae (Grass family).

Common names:

Prairie grass, Annual prairie grass, Brome grass, Rescue grass.

Confused with:

Seedlings are indistinguishable from black oats

Description:

Seedlings - are initially erect with a hairy base and have hairs on the lower part of the leaves. Leaves 3 - 4 mm wide and 6 - 8 cm long.

Leaves - are flat to 30 cm long and 8 mm wide, with short hairs on the upper surface, tapering gradually to a point from about the middle of the leaf. Leaves have a rounded, papery ligule 4 - 5 mm long. Leaf margins are rough to the touch.

Plants - a densely tufted annual or perennial plant with erect or spreading stems 40 - 100 cm high. The stems are stout, unbranched and smooth with pigmented hairless nodes.

Seed heads - are a large open pyramid shape, 10 - 30 cm long which will often droop under its own weight. The spikelets are large 15 - 35 mm long, pale green and flattened with 6 - 12 flowers on each spikelet. Seeds are covered by lemma and palea 14 - 18 and 8 - 12 mm long with a short awn arising from slightly below the lemma tip.

Lifecycle/Biology:

Prairie grass generally grows in the cooler months and sets seed in spring, but it can be a biannual or perennial in favourable conditions.

Ecology:

Low numbers may be found in most farming and grazing situations under favourable conditions. Most common in lightly grazed, moist and shady areas.

The problem:

Prairie grass is a valuable pasture grass and a minor weed of cropping.

Distribution:

Found throughout Australia

Origin:

Introduced, a native of South America, Asia and Africa. Commercial pasture varieties of prairie grass are available and are suited to the tablelands.

References:

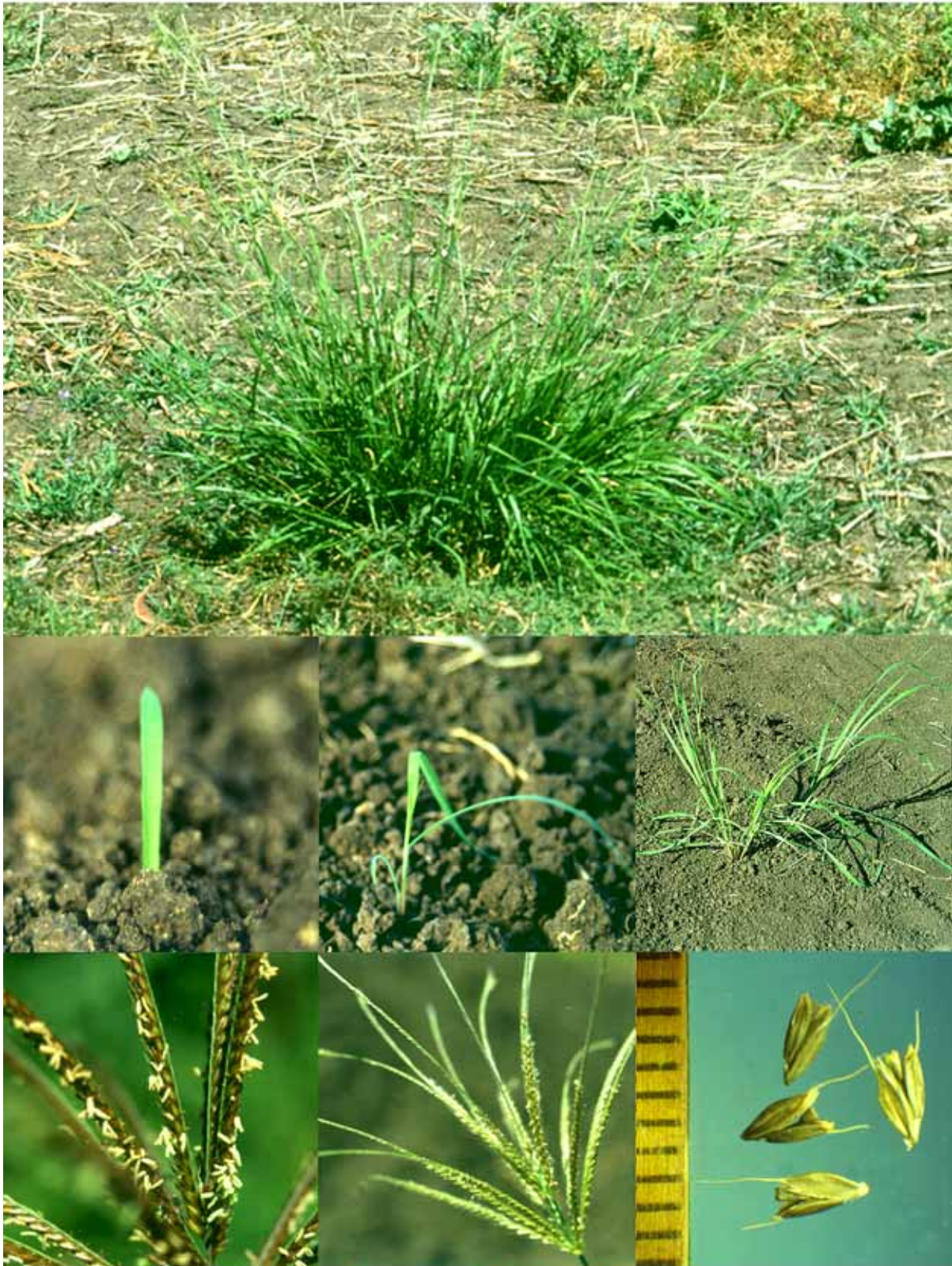
Plants of Western New South Wales, p. 71
Crop Weeds of Northern Australia, p. 7.

Compiled by:

Graham Charles

Chloris gayana Kunth

Rhodes grass



Photographs: Graham Charles

Chloris gayana

Family:

Poaceae (Grass family).

Common names:

Rhodes grass, Abyssinian Rhodes grass, Callide Rhodes grass, Common Rhodes grass.

Confused with:

Feathertop Rhodes grass (*C. ventricosa*)

Description:

Seedlings - leaves are up to 14 cm long and 3 mm wide and hang away from the main stem.

Adult leaves - are up to 50 cm long and 5 - 10 mm wide, folded towards the base and tapering to a fine point. Leaves have a few long hairs on their upper surface, predominantly towards the base.

Mature plants - a tufted, stoloniferous grass to 1.2 m in height. It spreads from both stolons and seed.

Seed heads - consist of 6 to 18 spikes spikes positioned at the top of the stems. Spikes are 5 - 10 cm long and arranged in a spreading to erect hand. Both lemma and palea are awned, with awns up to 6 and 3 mm in length. Seed (enclosed in lemma and palea) is light brown in colour, 3.6 mm in length.

Lifecycle/Biology:

Rhodes grass is a tropical grass, growing over the frost-free months and flowering in summer and autumn. It can grow prolifically following summer rains.

The problem:

Rhodes grass can be prolific along roadways and is a minor pest in cultivation, spreading from seed.

Distribution:

Widely found throughout Australia and very common through Queensland, especially on road sides.

Origin:

Introduced from Africa. Widely planted as a pasture species and to stabilise road-sides.

References:

Plants of Western New South Wales, p. 74.

Compiled by:

Graham Charles

Dactyloctenium radulans (R.Br) P.Beauv

Button grass



Photographs: Graham Charles

Dactyloctenium radulans

Family:

Poaceae (Grass family).

Common names:

Button grass, Coast button grass, Eight-day grass, Finger grass, Small crowsfoot.

Confused with:

Coast button grass (*D. aegyptium*).

Description:

Seedlings - are erect, but plants become prostrate as they get older. Leaves are 2 - 5 mm in width and 5 cm in length. The ligule is a low, papery rim (0.5 mm wide) capped with hairs.

Adult leaves - are 2.5 - 12 cm long and 2 - 6 mm wide at the base, tapering to the tip.

Mature plants - A short, sprawling summer growing annual grass with stems to 20 cm in length.

Seed heads - consists of a tight hand of 3 - 10 spikes, 5 - 12 mm long forming compact globular heads at the ends of the stems. Seeds are 1 mm in length and light brown with a very rough seed coat and short beak above the embryo.

Lifecycle/Biology:

Plants emerge rapidly after summer rain and quickly produce new seed. Button grass is generally a short-lived annual and is not frost tolerant, but can be a short-lived perennial.

Ecology:

A rapidly growing summer grass valued as a pasture grass in the drier areas. It is more common on lighter soils.

The problem:

Button grass will grow in fields and along ditches, roadways etc. It is not highly competitive due to its prostrate nature but can be a nuisance.

Distribution:

Widespread throughout Australia. A major weed of cultivation in Central Queensland and a minor weed elsewhere. Valued as a pasture grass in the drier areas.

Origin:

A native Australian grass.

References:

Plants of Western New South Wales, p. 79

Crop Weeds of Northern Australia, p. 19.

Compiled by:

Graham Charles

Echinochloa colona (L.) Link

Awnless barnyard grass



Photographs: Graham Charles

Echinochloa colona

Family:

Poaceae (Grass family).

Common names:

Awnless barnyard grass, Barnyard grass, River grass, Swamp grass, Tiger millet, Zebra grass.

Confused with:

Barnyard grass (*E. crus-galli*), Prickly barnyard grass (*E. muricata* var. *microstachya* and Hairy millet (*E. oryzoides*).

Description:

Seedlings - the seedling shoots are flattened and have a purple colouration at the base. Leaves are 20 - 30 mm long and 4 - 6 mm wide. Seedlings and adult plants do not have a ligule (a papery or hairy outgrowth at the leaf/stem junction) and this is a key identification point when comparing this species to other grasses.

Leaves - the adult leaves may have purple, red or black bands across the dull green surface. These stripes show variants within the species that are known as Tiger millet or Zebra grass. The leaves are hairless, 50 - 300 mm long and 3 - 10 mm wide, tapering to a fine point.

Mature plants - the plants either lay flat, or are semi-erect, tufted and 15 to 60 cm tall. The stems are slender and hairless, hollow, branched and may have a purple colouration at the base. The stems often root at the lower nodes with the nodes brown and thickened.

Seed heads - the seed head is pyramid-shaped, 40 - 150 mm long, 6 - 20 mm wide, with a number of racemes (smaller heads) that are each 7 - 40 mm long. This is in contrast to barnyard grass with racemes that are 100 mm long. The racemes of awnless barnyard grass become smaller towards the tips and the spikelets (a group of small flower heads) are formed in four irregular rows along one side of the raceme. The spikelets are 2 - 3 mm long.

Seeds - in contrast to barnyard grass, the seed covering does not have a stiff bristle-like hair (an awn) and the seed is pale in colour, 2 mm in length. The seed of barnyard grass is a pale brown. Seeds are able to emerge from depths greater than 75 mm.

Lifecycle/Biology:

An annual species that grows rapidly during the spring to autumn period. Flowering occurs during summer and autumn, particularly in response to rain. The seed is commonly spread in water.

Ecology:

The plant is common along stream banks, levees, irrigation channels, around waterholes and in gilgai country. The species is found on a wide range of soils, particularly heavy grey and black soils that are periodically flooded.

The problem:

The plant grows rapidly following establishment and seeding is prolific. The seeds are readily spread by irrigation or river water. Awnless barnyard grass is often found growing along irrigation channels, storage banks and in cultivated fields.

Distribution:

Northern NSW, Central NSW, Southern NSW, Southern Qld and Central Qld.

Origin:

There is uncertain as to whether this is a native or an introduced species.

References:

Plants of Western New South Wales, p. 88 - 89, (incorrectly spelt as *Echinochloa colonum*).

Crop Weeds of Northern Australia, p. 8.

Compiled by:

Graham Charles and Stephen Johnson

Leptochloa fusca subs. *fusca* (L.) Kunth

Brown beetle grass



Photographs: Graham Charles

Leptochloa fusca subsp. *fusca*

Family:

Poaceae (Grass family).

Common names:

Brown beetle grass, Small-flowered beetle grass.

Confused with:

Pale beetle grass (*L. fusca* subsp. *muelleri* previously *Diplachne muelleri*).

L. fusca subsp. *fusca* was previously known as *D. fusca* before it was combined with small-flowered beetle grass (*D. parviflora*) into the new subspecies.

Description:

Seedling leaves - seedlings are fine and erect with drooping leaves. Seedling leaves are 1- 4 cm long and 2 - 4 mm wide.

Adult leaves - are deep-green to purple, to 300 mm long and 5 mm wide, narrowed to a long slender point, rough with minute bristles and rolling inwards when dry.

Mature plants - are tussocks with fibrous roots and sometimes developing a short thick rhizome, 20 - 150 cm tall, with numerous hairless hollow stems that are straight or bent at the lower nodes and also with purple/black stem nodes.

Seed heads - the flowers are borne in heads that are branched, 10 - 50 cm long and 1 - 4 cm wide. Each spikelet (a group of small flower heads or florets) is nearly stalkless to stalked, and 7 - 15 mm long overall, olive to grey/green or partly purple when young but straw-coloured when older. Each spikelet contains 5 - 14 overlapping florets (sheathed flowers), each floret 2.5 - 5 mm long, fringed with short silky-white hairs. Seeds are pale brown in colour and 2 - 3 mm in length.

Lifecycle/Biology:

Brown beetle grass is a perennial or biennial plant, living for more than one year. The plant grows actively over summer after germinating in shallow water. It can maintain its growth for a considerable time after water has receded. Plants flower mainly in summer and autumn in response to rain and flooding. Mature seed develops rapidly. Fresh seed germinates well but may have some dormancy ensuring survival in future years. Seeds are spread easily in water and also in mud, on machinery and on clothing.

Ecology:

This plant is almost always found in or near water, for example in channels, ditches, drains, in melon-hole country, or in periodically flooded areas. It occurs in a wide range of soil types from clays to sandy lays, and on red earths. The plant is moderately salt-tolerant.

The problem:

Since the weed germinates and grows under and in water, there are a limited range of tools that can be used to manage it. It forms dense monocultures which can impede irrigation flow. The large seed production of this weed and its ability to spread in water make it difficult to control.

Distribution:

Northern NSW, Central NSW, Southern NSW and Southern Qld.

Origin:

A native Australian species.

References:

Plants of Western New South Wales, p. 88 (listed as *Diplachne fusca*).

Compiled by:

Graham Charles and Stephen Johnson

Phalaris paradoxa L.

Wild phalaris



Photographs: Graham Charles

Phalaris paradoxa

Family:

Poaceae (Grass family).

Common names:

Wild phalaris, Bristle-spiked canary grass, Paradoxa grass, Paradoxical canary grass.

Description:

Seedlings - are erect, with a distinctive red base. Seedlings become semi-prostrate as tillers develop.

Leaves - has a papery, rounded ligule 3 - 5 mm in length. Leaf blades are dark green 10 - 20 cm long and 2 - 9 mm wide.

Mature plants - an erect, hairless, tufted annual grass up to 1 m.

Seed heads - a dense, cylindrical head on the top of the stems that barely emerges above the upper leaves, 2 - 9 cm long and 1 - 2 cm wide. Seeds are pale and glossy, slippery to the touch, up to 3.5 mm in length. They mature from the top and fall out, leaving the top of the stem exposed.

Lifecycle/Biology:

A winter/spring growing annual weed that often emerges with a winter crop and sets seed in late spring before the crop has reached maturity.

Ecology:

A winter growing annual species that produces a bulk of useful pasture forage but is a major weed of winter cropping systems, particularly on heavy soils.

The problem:

Wild phalaris emerges at around planting time and competes strongly with winter crops. It is able to set seed before most crops are ready for harvest.

Distribution:

Found throughout the southern and central cropping areas of Australia.

Origin:

Native to the Mediterranean region.

Reference:

Plants of Western New South Wales, p. 131.

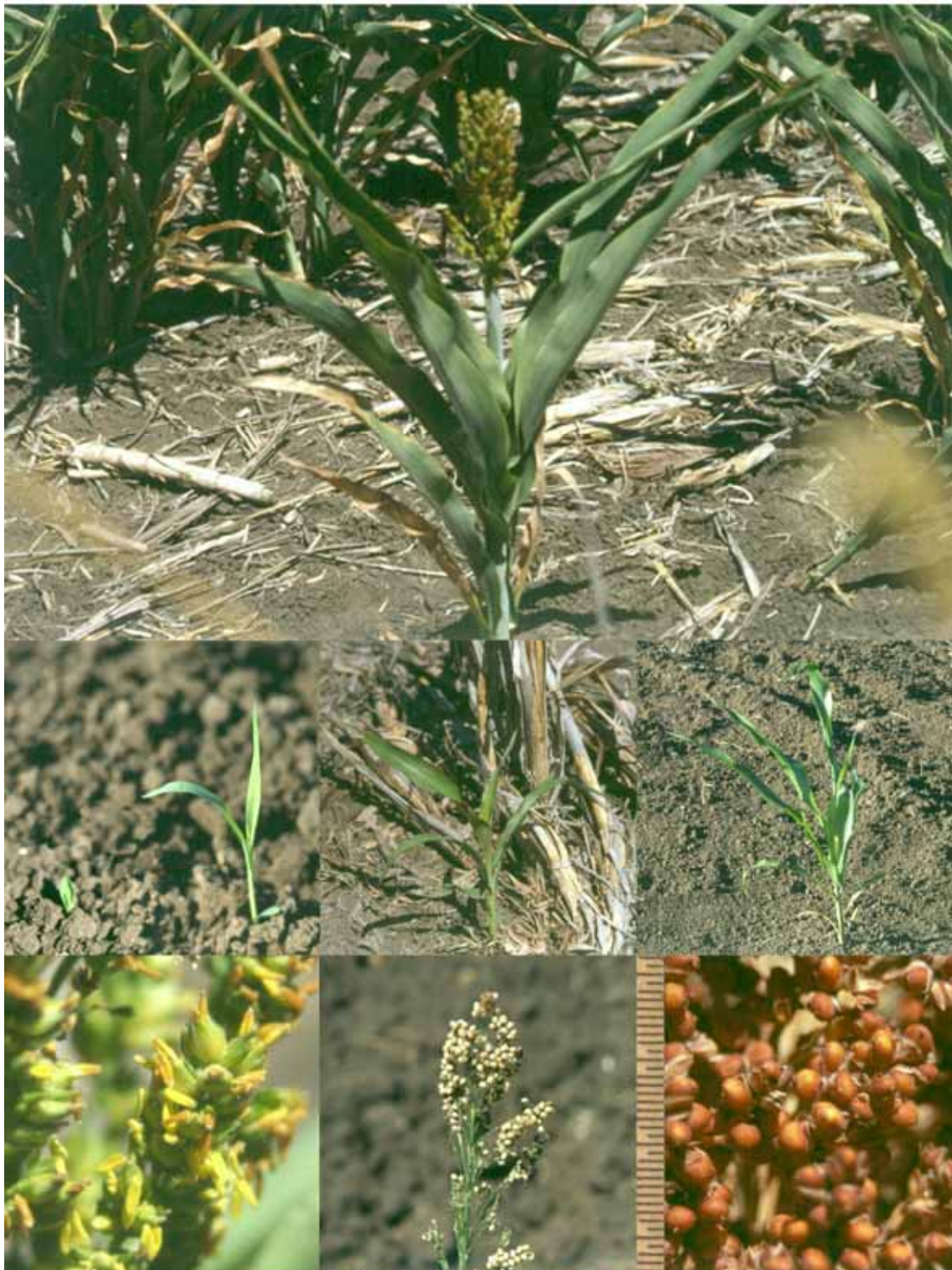
Crop Weeds of Northern Australia, p. 6.

Compiled by:

Graham Charles

Sorghum bicolor var. *bicolor* (L.) Moench

Sorghum



Photographs: Graham Charles

Sorghum bicolor subsp. *bicolor*

Family:

Poaceae (Grass family).

Common names:

Sorghum, Broom millet, Forage sorghum, Grain sorghum, Great millet, Sweet sorghum.

Confused with:

Johnson grass (*S. halepense*). This species (*S. bicolor*) also includes 3 other subspecies.

Description:

A range of grain and forage sorghums are available, giving rise to a wide range of plant characteristics. Hybrids between this and other species are also common.

Seedlings - erect and robust seedling. Leaves to 9 cm length and 1 cm width. Leaves of stressed seedlings and plants can develop red margins or stripes.

Leaves - up to 1 m in length and 8 cm width. The ligule is membranous, to 3 mm long.

Mature plants - erect, robust annual to short-lived perennial grass standing 1 - 3 m high. Stems are 1 - 3 cm in width and very strong.

Seed heads - a large loose panicle up to 45 cm long and 23 cm wide. Seeds are 4 - 5 mm in diameter and are commonly red or white in colour.

Roots - plants commonly develop adventitious roots on the bottom 5 - 7 cm of the stems.

Lifecycle/Biology:

Ratoon sorghum plants are common in zero tillage systems and sorghum establishes readily from seed during the warmer months. Sorghum is frost sensitive and will be burnt off over winter but ratoon plants can readily re-establish in spring.

Ecology:

A common volunteer crop plant. Sorghum can have a high cyanide content and may be toxic to grazing animals but sorghum stubble is commonly cut for hay for livestock.

The problem:

Volunteer sorghum plants can be major weeds of fallows and other crops. Volunteers along roadways and irrigation structures can also be troublesome.

Distribution:

Commonly grown summer crop plant in Qld. and Northern NSW.

Origin:

Introduced from Africa.

References:

Plants of Western New South Wales, p. 139.

Compiled by:

Graham Charles

Sorghum halapense (L.) Pers.

Johnson grass



Photographs: Graham Charles

Sorghum halepense

Family:

Poaceae (Grass family).

Common names:

Johnson grass, Aleppo grass, Evergreen millet.

Confused with:

Sorghum (S. bicolor).

Description:

Seedlings -erect and robust seedling. The leaf sheath of young seedlings is purplish-red. Leaves to 4 cm length and 3 mm width. Leaves of stressed seedlings and plants can develop red margins or stripes.

Leaves - are predominantly flat, with a prominent midrib, up to 45 cm in length and 5 - 20 mm width. The ligule is membranous, 1 - 3 mm long, capped with hairs to 2 mm in length and surrounded with shorter (1 mm) hairs across the leaf sheath.

Mature plants - an erect, robust perennial grass standing 1 - 2 m high. Stems are up to 1 cm in width and very strong.

Seed heads - a large open panicle 10 to 45 cm long and 20 cm wide. Seeds are 4 - 5 mm in length and covered with fine hairs. They are orange/red in colour.

Rhizomes - plants emerge both from seeds and from underground rhizomes.

Lifecycle/Biology:

Johnson grass establishes from seed and underground rhizomes during the warmer months. It is frost sensitive and is burnt off over winter but plants readily re-establish in spring from rhizomes.

Ecology:

A common weed along roadsides, crops and pastures, predominantly in wetter areas.

The problem:

Johnson grass can be a major weed of crops, pastures and fallows. It is readily grazed by livestock but can be toxic during dry times when plants are frosted, wilted or stunted. Johnson grass can hybridize with cultivated sorghum (*S. bicolor*) leading to problems with contamination, pests and diseases.

Distribution:

Found throughout most of Australia. Common along road ways.

Origin:

Introduced as a pasture grass but now considered a serious weed. A native of the Mediterranean area.

References:

Plants of Western New South Wales, p. 139 - 140.

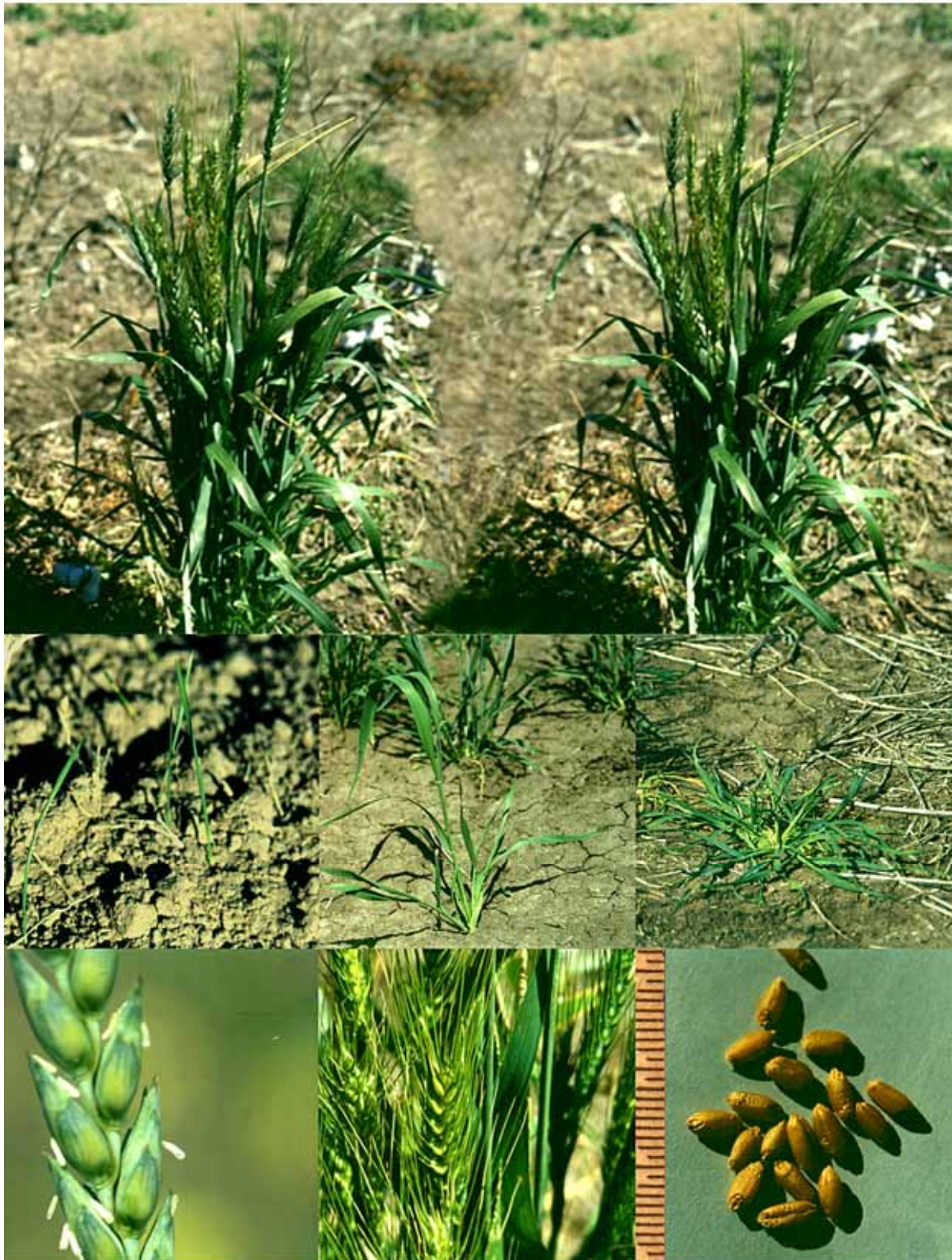
Crop Weeds of Northern Australia, p. 3.

Compiled by:

Graham Charles

Triticum aestivum L.

Wheat



Photographs: Graham Charles

Triticum aestivum

Family:

Poaceae (Grass family).

Common names:

Wheat, Bread wheat, Common wheat.

Description:

Wheat is a widely grown winter crop. A wide range of varieties are available including dwarf, semi-dwarf and bearded varieties. Specialist grazing varieties, and tall varieties for hay production are also available.

Seedlings - an erect seedling. Leaves are 10 - 20 cm long and up to 15 mm wide. Seedlings begin to tiller soon after emergence, with multiple tillers forming from the plant base.

Leaves - are largely flat, up to 40 cm long and 20 mm wide. The ligule is membranous, 0.5 - 2 mm long and broadly rounded. The auricles are membranous.

Mature plants - an erect annual grass to 1 m high.

Seed heads - form on the end of the stems. Heads are 5 - 10 cm in length, up to 2 cm in width and flattened with 2 rows of alternating seeds. They can be bearded, with stiff terminal awns up to 6 cm in length, or may be awnless. Seeds are typically around 4 - 5 mm in length.

Lifecycle/Biology:

Wheat is a winter growing annual plant that flowers in spring and senesces as temperatures increase in late spring. Volunteers may establish in early summer, but will quickly senesce in hot, dry conditions.

Ecology:

Wheat is adapted to a wide range of conditions. Volunteers are common in spring and early summer growing in fallows and rotation crops, on road sides, and in water ways.

The problem:

Volunteer wheat plants are common in fallows and rotation crops, on road sides, and in water ways. They are easily managed using glyphosate.

Distribution:

The most widely cultivated crop plant in Australia. Wheat is the most common rotation crop used in the cotton system.

Origin:

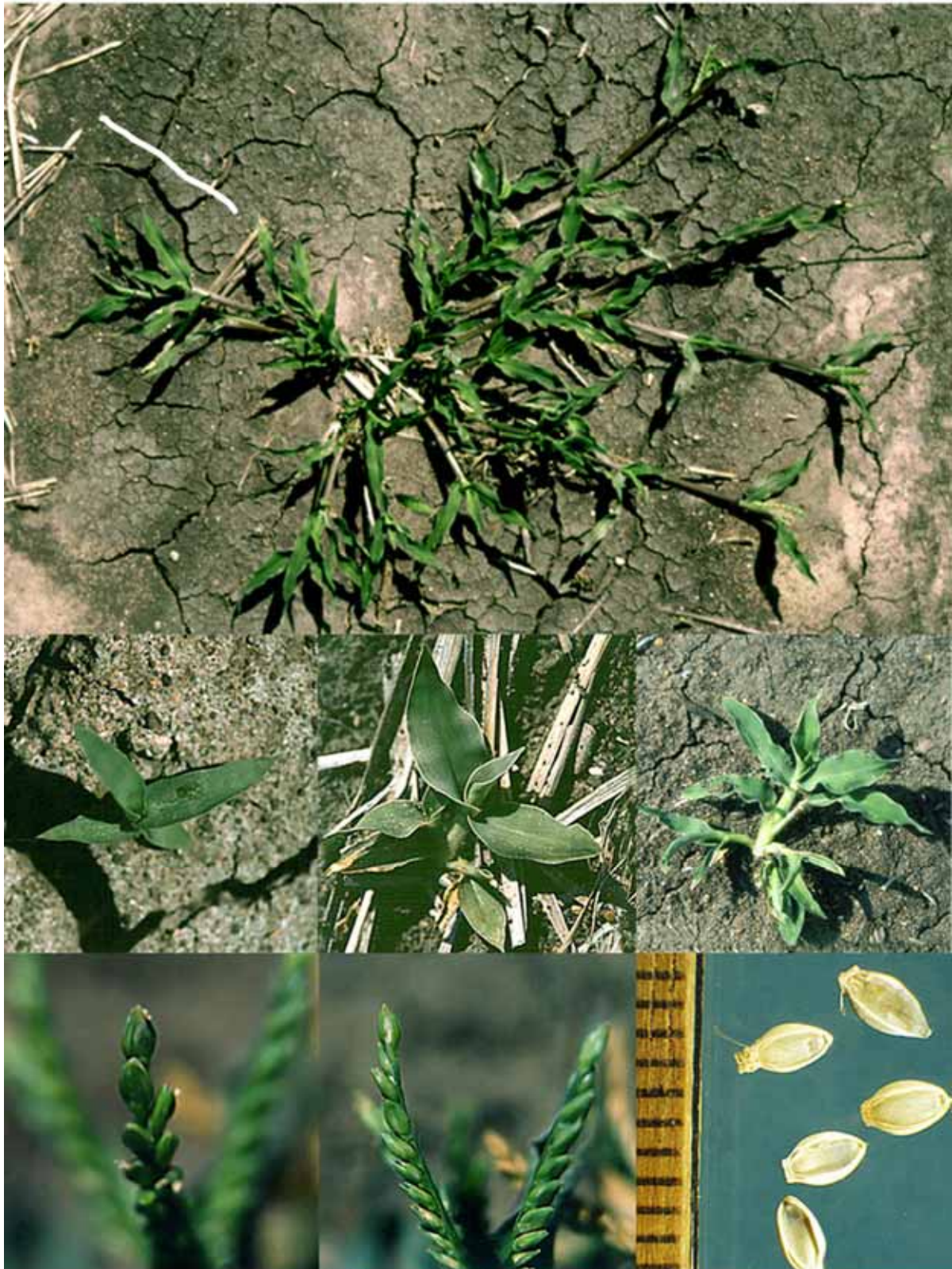
From the Mediterranean region.

Compiled by:

Graham Charles

Urochloa panicoides P.Beauv

Liverseed grass



Photographs: Graham Charles

Urochloa panicoides

Family:

Poaceae (Grass family).

Common names:

Liverseed Grass, *Urochloa* grass.

Description:

Seedling leaves - the seedling leaves are yellow/green, very broad, 4 - 7 mm wide, with hairs on the leaf margins and sheaths.

Adult leaves - the adult leaves are light-green to yellow/green, usually with long hairs that may be scattered or dense. The leaves are 2 - 20 cm long and 3 - 15 mm wide with crinkled or wavy leaf margins. The leaf blades expand at the point of attachment to the stem.

Mature plants - the stems either lie flat or bend upwards into an erect position, growing 15 - 80 cm high. The stems sometimes take root where the lower joints touch the ground. Plants may be tufted, or form a dense leafy mat.

Seed head - the seed head is about 10 cm long, has two to seven spikes (smaller heads) that arise off the main seed head stem. These spikes are 10 - 70 mm long. Seeds are produced in two rows along one side of each spike. The seed is produced in a spikelet (a group of small flower heads) that is 4 - 5 mm long. Seeds are light in colour, about 3 mm in length.

Lifecycle/Biology:

An annual species that germinates mostly in late spring and summer and into autumn. The bulk of seedlings appear to emerge early season (spring and early summer). Rapid growth and flowering occurs during late winter, spring, summer and autumn.

Ecology:

The plant is found on a wide variety of soils varying from clays to sands. The species is known to be a weed of disturbed ground, roadsides and cultivated areas.

The problem:

A troublesome weed in irrigated summer crops, including cotton. Liverseed grass produces a large number of seeds, making its management difficult.

Distribution:

Northern NSW, Central NSW, Southern NSW, Southern Qld and Central Qld.

Origin:

An introduced species.

References:

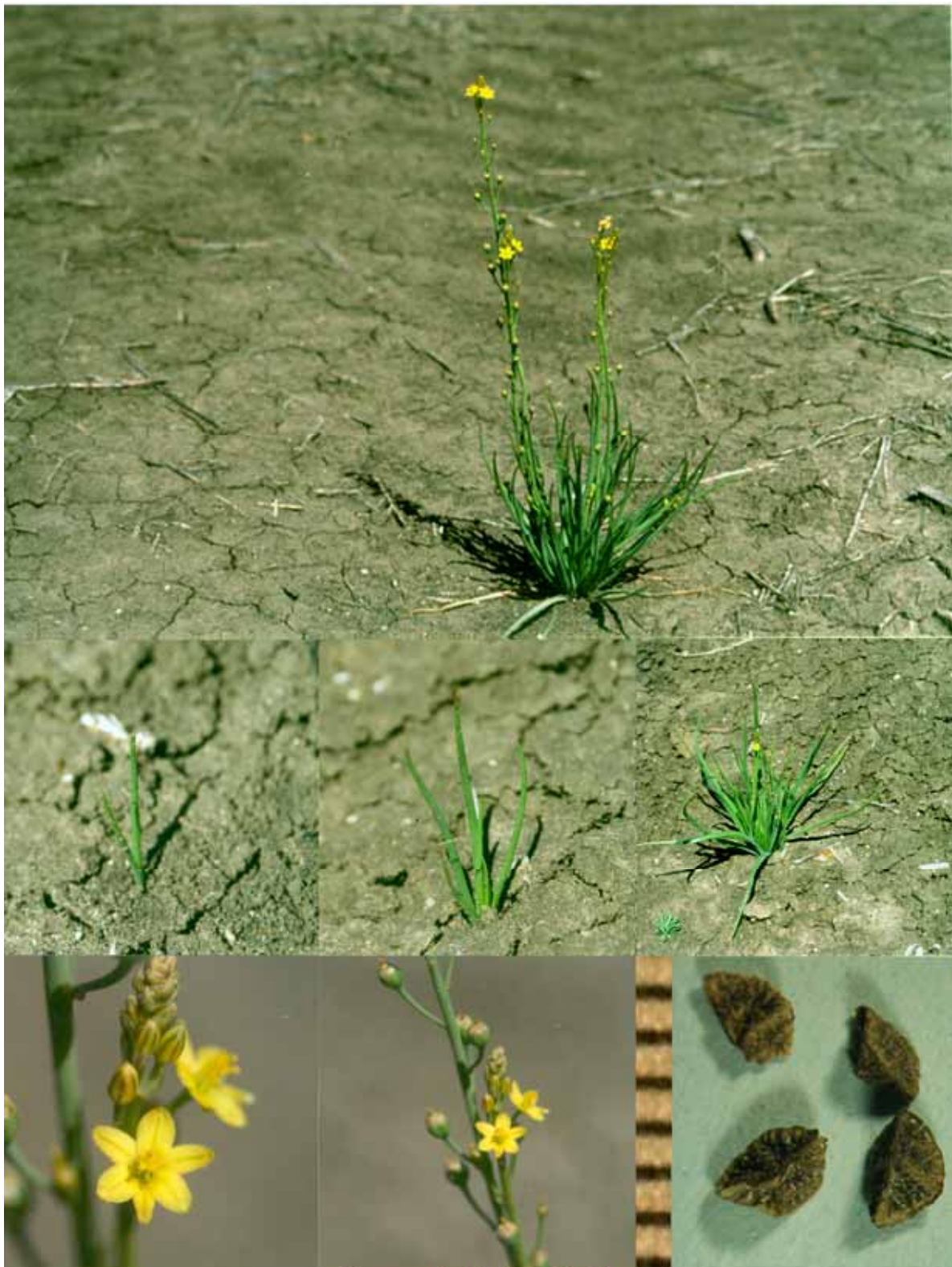
Plants of Western New South Wales, p. 152.
Crop Weeds of Northern Australia, p. 11.

Compiled by:

Graham Charles and Stephen Johnson

Bulbine semibarbata (R.Br.) Haw

Leek lilly



Photographs: Graham Charles

Bulbine semibarbata

Family:

Liliaceae (Lilly family).

Common names:

Leek lilly, Native leek, native onion weed, small onion weed, wild onion, wild yam.

Confused with:

Native leek (*B. bulbosa*)

Description:

Seedlings - erect, fine 3 cm in length and 1 - 2 mm diameter.

Leaves - emerge from the plant base. They are narrow, succulent, hollow, channelled 15 - 30 cm long and up to 5 mm in diameter.

Mature plants - are 30 - 50 cm high.

Flowers - Plant can have numerous flowers usually found in spring - summer. Flowers have 6 yellow petals about 6 mm long

Seeds - occur in a roughly globular 3-celled capsule 3 - 4 mm in diameter. Seeds are dark in colour, about 2 mm in diameter, 2.6 mm long and distinctly 3-sided.

Roots - are fibrous without a tuber

Lifecycle/Biology:

An annual or biannual herb that will grow after summer rains and responds rapidly to autumn rains.

Ecology:

Occurs on open areas.

The problem:

A minor pest on roadways and irrigation structures.

Distribution:

Can be found through out Australia from heavy through to sandy soils.

Origin:

An Australian native plant.

Reference:

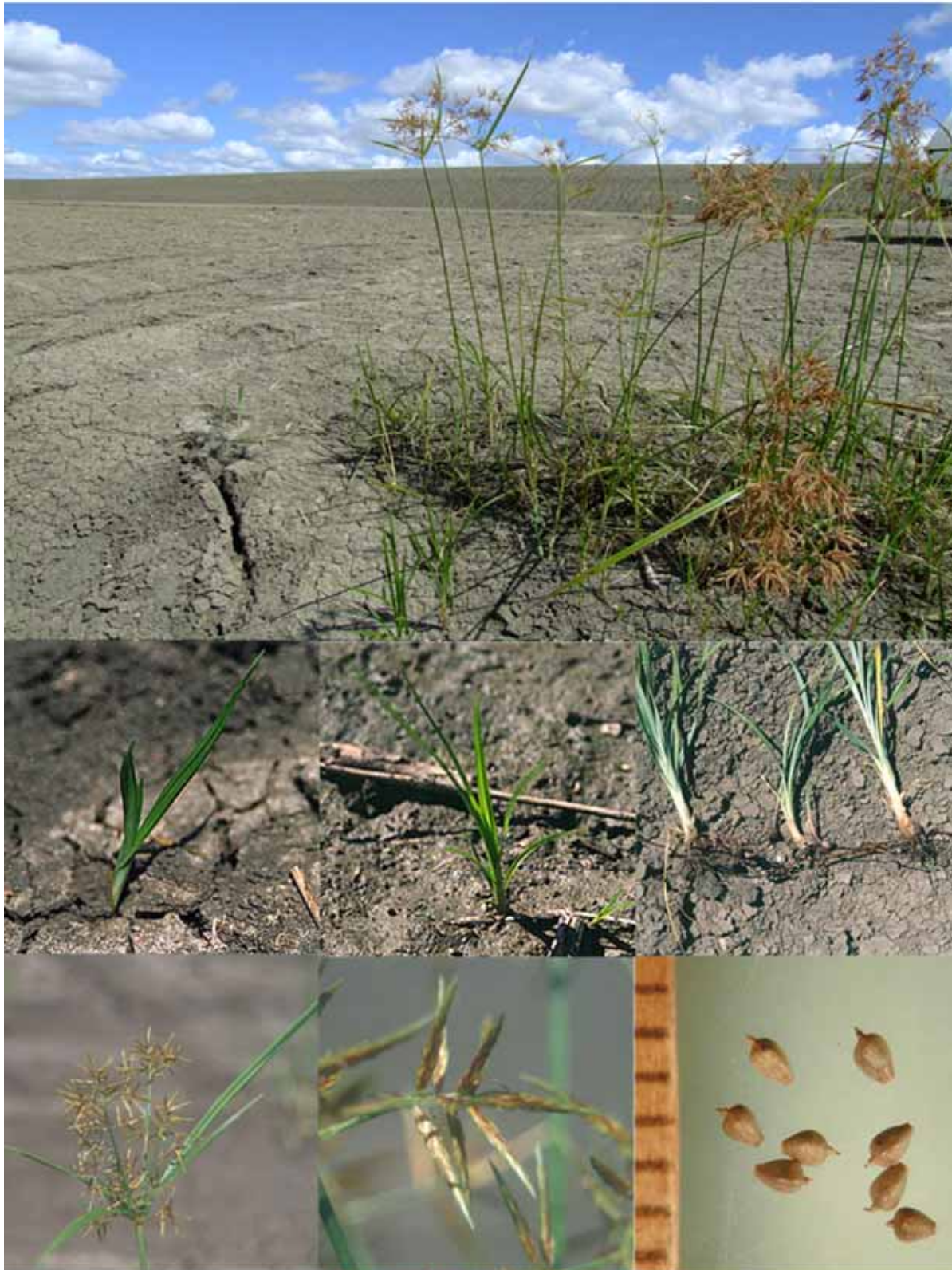
Plants of Western New South Wales, p. 182 - 183.

Compiled by:

Graham Charles

Cyperus bifax C.B. Clarke

Downs nutgrass



Photographs: Graham Charles

Cyperus bifax

Family:

Cyperaceae (Sedge family).

Common names:

Downs nutgrass, Western nutgrass.

Confused with:

Nutgrass (*C. rotundus*). The primary ways to distinguish nutgrass and Downs nutgrass in the field are:

- Nutgrass has a purple colouring in the top few layers of leaves at the leaf base. The colour then fades to white in successive layers. This colour can be seen by removing a plant and stripping the top few layers of leaves from the base. Downs nutgrass leaves are green and then white at the leaf base.
- Young nutgrass leaves tend to be a darker green and the flower heads a darker red/purplish in colour. Downs nutgrass is typically yellowier in colour and the flower heads are orange, fading to white.
- Downs nutgrass grows at lower density, even in heavy infestations, with bare dirt apparent between shoots.

Description:

Seedlings - fine, leaves 2 mm wide and 2 cm long, becoming pale at the base.

Leaves - up to 60 cm long, 3-4 mm wide and with a distinct keel.

Mature plants - a hairless perennial sedge that produces underground tubers at the tips of the rhizomes.

Seed heads - occur on the ends of erect, triangular stems, up to 90 cm tall and 4 mm in diameter. Seed heads are quite variable in shape and colour. They are generally orange, but can be a dark brown and fade to almost white. The seed heads can be small and compact around 5 cm in diameter, but may be large and spreading, to 30 cm in diameter (branches to 12 cm in length). Seeds are light brown in colour, 1.4 mm in length.

Tubers - are brown and firm with a white interior. They can be up to 3 cm in length and 10 mm diameter.

Lifecycle/Biology:

Downs nutgrass readily establishes from both seed and underground tubers. Tubers are continuously formed as the plant grows, with new shoots emerging from each new tuber, leading to plants linked in a daisy-chain manner. Up to around 50 new tubers may be formed from a single tuber each season. Large quantities of seed can enter a cotton field in flood water and large areas of infestation have been observed following floods.

Ecology:

Downs nutgrass is widely found throughout the interior floodplains but is generally not obvious until after heavy rains in the warmer months when it flowers. It is most common in depressions and wet areas. It may occur as scattered plants, but can form large thick patches.

The problem:

Downs nutgrass is established through most of the flood plains of the cotton growing region of Australia. Plants are often present prior to development and persist in cotton crops. The weed generally grows at relatively low densities and does not spread very quickly. It often appears to be a larger problem than it actually is, due to its height and brightly coloured seed heads that are apparent above the cotton canopy.

Downs nutgrass is relatively easily controlled by heavy cultivation and repeated glyphosate applications.

Distribution:

Widespread through inland Australia.

Origin:

A native Australian plant.

Reference:

Plants of Western New South Wales, p. 182 - 183.

Compiled by:

Graham Charles

Cyperus difformis L.

Dirty dora



Photographs: Graham Charles

Cyperus difformis

Family:

Cyperaceae (Sedge family).

Common names:

Dirty dora, Rice sedge, Variable flatsedge.

Confused with:

Nutgrass (*C. rotundus*).

Description:

Seedlings - very fine, leaves 1 mm wide and 10 mm long.

Leaves - up to 50 cm long, 2-4 mm wide, often a pale green or yellowish colour.

Mature plants - a hairless annual sedge without tubers with reddish fibrous roots. Stems are sharply triangular to 50 cm on length.

Seed heads - The stems end in 1 - 3 spreading leaves, the longest of which may be up to 15 cm . The seed head is positioned above these leaves and produces masses of very small, dust like light brown seed in a clustered seed head with 3 - 11 branches, each up to 5 cm in length. Seed are dusty brown in colour, 0.7 mm in length.

Lifecycle/Biology:

Dirty dora may grow and flower year round.

Ecology:

Background populations of dirty dora appear to be present through much of the cotton growing area. This weed can rapidly establish and spread under suitable conditions. Its growth is probably suppressed by the residual herbicides used with cotton production and it may become more problematic in transgenic cotton where few residual herbicides are used.

The problem:

Dirty dora is a prolific seed producer and seedlings can emerge in most wet areas including irrigation structures. It is not generally a problem in well drained fields but is a major weed or rice production and can be a pest in irrigation structures.

Distribution:

Widespread through inland Australia and most common in the southern irrigation area. Dirty dora seedlings have emerged from soil samples taken from throughout the cotton industry, even though this weed was not apparent at most of these sites.

Origin:

A native of Asia.

Reference:

Plants of Western New South Wales, p. 159.

Compiled by:

Graham Charles

Cyperus eragrostis Lam.

Umbrella sedge



Photographs: Graham Charles

Cyperus eragrostis

Family:

Cyperaceae (Sedge family).

Common names:

Umbrella sedge, Drain flatsedge, Umbrella grass, Victorian nutgrass.

Description:

Seedlings - fine, leaves 1.5 mm wide and 15 mm long.

Leaves - are erect, bright green and up to 100 cm in length, 4 - 8 mm in width.

Mature plants - a strongly tufted perennial sedge without tubers. It often occurs in dense clumps.

Seed heads - Stems are 25 - 100 cm long and rounded-triangular in cross section, ending in 5 - 9 leaves below the seed head. These leaves may be up to 30 cm in length. The seed head is relatively compact, with masses of seed in clusters arising from up to 12 branches that may be up to 12 cm in length. The seed heads are initially green but become brown with age. The seed is dark brown, about 1.2 mm in length.

Lifecycle/Biology:

Umbrella sedge can grow year round.

Ecology:

A common plant in drains, irrigation channels and other wet areas. The plant will die back to the base during dry times and re-shoot after rain.

The problem:

Umbrella sedge can grow prolifically on irrigation channels, especially where the water level remains relatively stable. The sedge will establish on the water line and can reduce water flow, will catch sediment, and makes it difficult to manage other weeds which may be present.

Distribution:

A common plant through most of Australia. Occurs mainly on irrigation supply channels that remain wet most of the season.

Origin:

A native of North and South America.

References:

Plants of Western New South Wales, p. 159.

Compiled by:

Graham Charles

Cyperus iria L.

Rice flatsedge



Photographs: Graham Charles

Cyperus iria

Family:

Cyperaceae (Sedge family).

Common names:

Rice flatsedge, Rice sedge.

Description:

Seedlings - are grass-like in appearance with erect leaves 4 - 10 cm long and 2 - 3 mm wide.

Leaves - up to 80 cm long and 4 mm in width.

Mature plants - an annual sedge with fibrous roots and rigid, erect stems.

Seed heads - Stems are triangular in section and up to 60 cm tall and 2 mm in diameter. They end in 2 to 5 leaves and a seed head with 3 - 8 branches of up to 10 cm length which end in seed heads.

Ecology:

Grows in wet areas, drains and irrigation structures.

The problem:

Rice flatsedge can be an occasional problem in tail drains and other wet areas. It is a major weed of rice and sugar cane production in Northern Australia.

Distribution:

Rice flatsedge occurs throughout Australia

Origin:

An Australian native sedge.

References:

Plants of Western New South Wales, p. 161 - 162

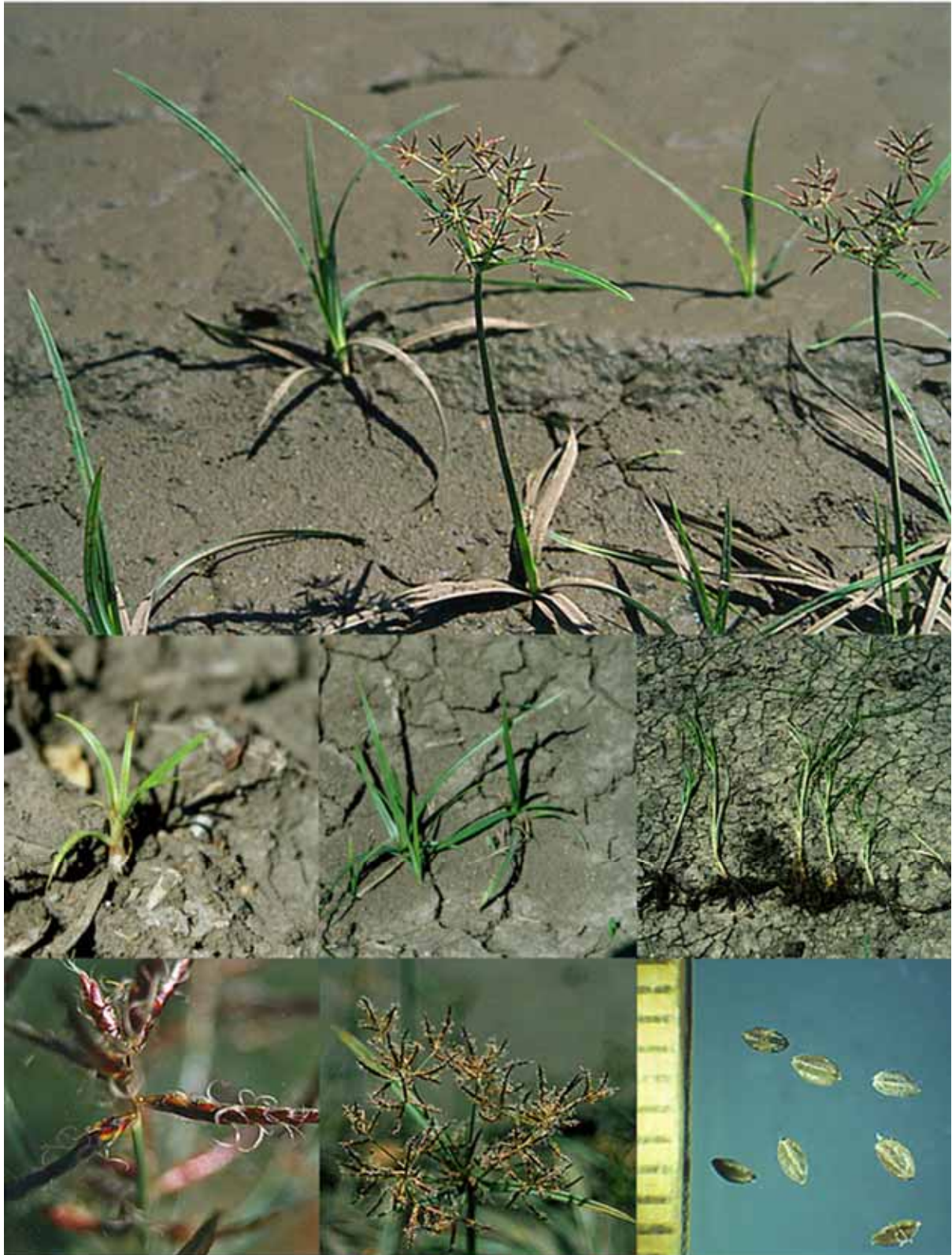
Crop Weeds of Northern Australia, p. 26 - 27.

Compiled by:

Graham Charles

Cyperus rotundus L.

Nutgrass



Photographs: Graham Charles

Cyperus rotundus

Family:

Cyperaceae (Sedge family).

Common names:

Nutgrass, Chufa, Coco grass, Dila, Ground almond, Hognut, Java grass, Nutgrass sedge, Nutsedge, Purple nutgrass, Purple nutsedge, Red grass, Water grass.

Confused with:

Downs nutgrass (*C. bifax*). The primary ways to distinguish nutgrass and Downs nutgrass in the field are:

- Nutgrass has a purple colouring in the top few layers of leaves at the leaf base. The colour then fades to white in successive layers. This colour can be seen by removing a plant and stripping the top few layers of leaves from the base. Downs nutgrass leaves are green and then white at the leaf base.
- Young nutgrass leaves tend to be a darker green and the flower heads a darker red/purplish in colour. Downs nutgrass is typically yellower in colour and the flower heads are orange, fading to white.
- Downs nutgrass grows at lower density, even in heavy infestations, with bare dirt apparent between shoots.

Description:

Seedlings - Nutgrass produces masses of seed but it has very strong seed dormancy and rarely establishes from seed. Seedlings have been observed in the tail ditch of a cotton field on one occasion.

Leaves - are 2 - 6 mm in width and up to 60 cm in height.

Mature plants - a perennial sedge that grows from underground tubers. Plants are often short, up to 30 cm, but can grow vigorously in irrigated crops such as cotton and may be 60 to 80 cm in height. In heavy infestations nutgrass shoots can completely cover the ground surface.

Seed heads - stems are triangular in cross section, up to 60 - 80 cm in length and 1 - 3 mm in diameter. Seed heads occur at the end of the stems and may be compact to spreading with 3 - 9 branches up to 10 cm in length. Seeds are brown to almost black in colour 1.8 mm in length.

Tubers - are brown and firm with a milky white interior. Tubers are generally 15 to 20 mm long and to 10 mm in diameter. They vary from globular to elongated. Tubers are produced on the ends of underground rhizomes, with a new plant typically producing 4 to 8 new tubers every 4 to 6 weeks. A new shoot arises from each new

tuber which then forms a new plant and starts the process again.

Lifecycle/Biology:

Nutgrass is not frost tolerant. Leaves are burnt off by frost over winter and tubers enter a dormant state. Shoots emerge from these tubers in spring, generally a few weeks before cotton is planted. Plants then rapidly grow as temperatures increase and begin flowering in early summer. New tubers and new plants are continuously produced until frosts again cease growth in late autumn and winter.

Ecology:

A major weed of river systems and irrigation. Nutgrass is present in most inland river systems and is a problem in most summer growing crops in these systems. It is especially difficult to manage in summer rainfall areas and perennial crops such as lucerne.

The problem:

Nutgrass spreads extremely quickly from tubers, producing up to 2000 new tubers in a cotton crop from a single tuber at the start of the season. Tubers are readily transported on cultivation equipment ensuring the rapid spread of this weed. Nutgrass is highly competitive with cotton, and heavy infestations are able to completely suppress cotton production. It is a difficult weed to manage, but can be controlled with strategic cultivation and glyphosate applications.

Distribution:

Occurs throughout Australia, but is rare in the western inland parts of the cotton industry beyond about Walgett. Nutgrass is a major weed in most tropical and semi-tropical parts of the world and in a very wide range of crops. It has been described as the world's worst weed due to the problem it causes in such a wide variety of crops and countries.

Origin:

A native of tropical Asia, but now a major weed in nearly every tropical and sub-tropical country of the world.

References:

Crop Weeds of Northern Australia, p. 24.
Charles, G. W. (pers. comm.)

Compiled by:

Graham Charles

Abelmoschus ficulneus (L.) Wight & Arn. Ex Wight

Native rosella



Photographs: Graham Charles

Abelmoschus

ficulneus

Family:

Malvaceae (Hibiscus family).

Common name:

Native rosella.

Confused with:

Wide-leaf bladder ketmia (*Hibiscus trionum* var. *vesicarius*) in the early seedling stages.

Description:

Seedling leaves - are similar in shape with one leaf almost circular with a slightly flattened base and the other broadly egg-shaped often with a notched base, and larger. Both leaves are hairy, 16 - 19 mm long and 20 - 21 mm wide, on stalks 14 - 18 mm long.

Early leaves - the first true leaf is roughly egg-shaped with a notched base, wrinkled in appearance, hairy, and has shallow teeth around the margins. The second and subsequent leaves become increasingly wrinkled, toothed around the margin with more prominent veins.

Adult leaves - are three to five lobed, up to 14 cm long and wide, sparsely to coarsely hairy, with heart-shaped bases and borne on stems 1 - 20 cm long.

Mature plants - are erect, woody, to 2 m high, with hairy green or red stems.

Flowers - has white hibiscus-like five-petalled flowers with deep red or purple-black centres, to 3 cm wide and on stalks 1 - 2 cm long. Flowers are borne in the upper leaf forks and, on older plants, on long flowering stems to 30 cm with 5 to at least 20 flowers.

Seed heads - are hairy and sticky, oval-cylindrical in shape, 25 - 40 mm long and 13 - 20 mm wide, have five prominent ribs and a short beak. Initially mid to dark green these pods turn dark brown on maturity and split from the tip into five segments to release 10 - 20 dark brown to black spherical seeds, 2.5 - 4 mm in diameter, covered in hairs.

Lifecycle/Biology:

Native rosella germinates in spring and summer after rainfall and irrigation. It grows rapidly over spring and summer, flowering through summer and autumn. Mature seed is produced within a month of flowering during late-summer and autumn when the long seed head stalks are a common sight above the cotton canopy.

Ecology:

The plant is found on heavy cracking black clay soils and is a common weed of cultivation from Central Queensland into northern Australia.

The problem:

Native rosella is a weed of summer crops including dryland and irrigated cotton in Central Queensland. It produces a large number of seeds that have a long seedbank life in the soil, making control and eradication difficult. There are no herbicides registered for controlling this weed.

Distribution:

Found throughout the northern half of Australia.

Origin:

A native species

Reference:

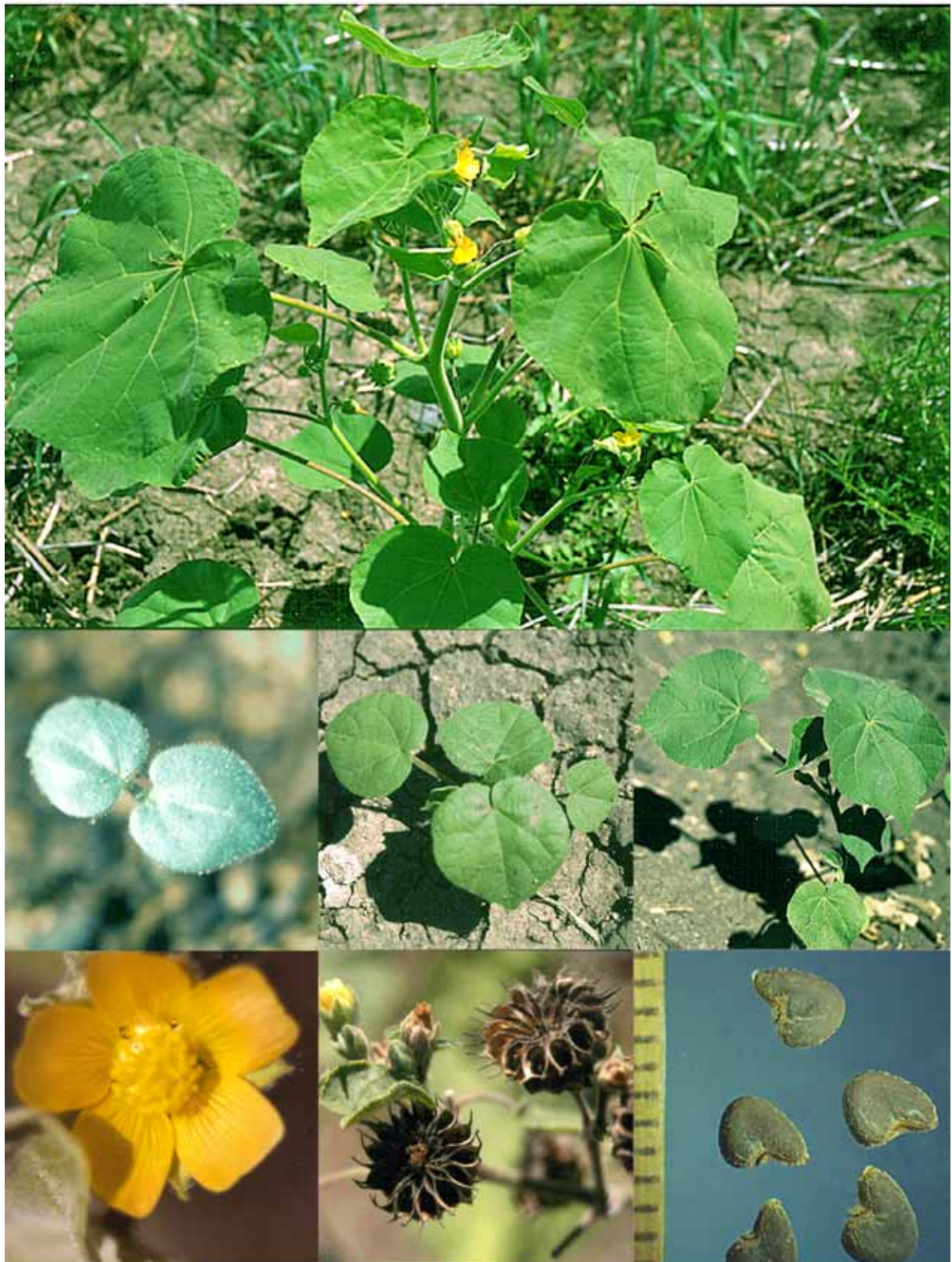
Crop Weeds of Northern Australia, p. 135 - 136.

Compiled by:

Graham Charles

Abutilon theophrasti Medik.

Velvetleaf



Photographs: Graham Charles

Abutilon *theophrasti*

Family:

Malvaceae (Hibiscus family).

Common names:

Velvetleaf, American jute, Chinese hemp, Chinese jute, Chinese lantern, Chingma lantern, Indian mallow, Lanternflower, Swamp Chinese lantern.

Confused with:

A. tubulosum (a similar species found in central Qld. with large yellow flowers).

Description:

Seedling leaves - are similar in shape, both with indented bases, one leaf circular to broadly oval in shape and the other broadly egg-shaped, 7 - 8 mm long and wide on stems to 10 mm long. The upper surface of the seedling leaves and stems are covered in small hairs to 0.5 mm long.

Early leaves - the first true leaf is roughly circular with subsequent leaves increasingly heart-shaped with slightly toothed margins and prominent leaf veins. Seedlings with only two true leaves have a deep tap root to 40+ cm.

Adult leaves - are heart-shaped, light- to mid-green, with a lobed base and pointed leaf tip, variable in size from 20 - 100 mm long and wide in drier areas, but to 300 mm wide in wet areas, borne on stems as long as the leaves and reddish to yellow-green in colour. The leaves are covered in a dense cover of soft silvery velvet-like hairs (hence the name velvetleaf). A dew-like exudate can sometimes be felt on adult leaves. The leaves have shallow teeth along the margins.

Mature plants - are erect, to 140 cm, arise from a deep taproot, with branches and stems covered in soft whitish hairs.

Flowers - the single hibiscus-like flowers are borne in the leaf forks, with yellow petals, 15 - 18 mm wide, on stalks 20 - 40 mm long.

Seed heads - are cup- to crown-shaped, covered in fine hairs, initially mid-green with soft green awns at the tip with a flattened top. On maturity the seed head turns to a mid- to dark-brown or black in colour, is 10 - 20 mm in diameter, with 10 - 15 awned valves that open vertically. Each valve contains two to three light grey, dark brown to nearly black kidney-shaped seeds, to 3 mm long and 2.5 mm wide. These seed heads are easily broken off the plants on maturity.

Lifecycle/Biology:

Seedlings emerge in successive flushes after rainfall or irrigation in spring, summer and autumn. Dense flushes in excess of 100 seedlings/m² may occur. Rapid growth occurs with flowering starting within 43 days. Flowering occurs throughout summer and autumn. Mature seed is set within 62 days of emergence, peaking in mid-summer to autumn with between 1,000 - 12,000 seeds produced on medium sized plants. Velvetleaf is an annual plant that is killed by frosts. The seed has strong dormancy, with very little fresh seed germinating. Seed may persist of up to 50 years.

Ecology:

This plant is an uncommon weed found in shallow depressions beside rivers, in swamp areas, and beside creek banks, water courses and on flood plain country. It is generally associated with clay soils.

The problem:

Relatively rare in irrigated and dryland cotton in Australia, but a significant weed in the USA. It may form persistent, dense patches, occurring in parts of the Gwydir, Namoi and Macquarie valleys, with isolated occurrences of the elsewhere. Seedlings emerge in successive flushes after rainfall and irrigation. This makes control particularly difficult. It is highly competitive and produces a large number of seeds, resulting in a persistent seed bank and problems in controlling this weed over a number of years. Seeds are easily spread in flood and irrigation water. New plants grow on the edge of water bodies shedding seeds into the water as they mature. Seeds are also spread by machinery and animals. Seeds can mature on chipped or hand-pulled plants so it is important to avoid spreading the seeds when destroying plants. Early control is important to prevent seed set, particularly by chipping and cultivation since no herbicides are registered for its control in Australia.

Distribution:

Northern NSW, Central NSW, Southern NSW, Southern Qld and Central Qld.

Origin:

An introduced species coming from the Mediterranean and Asia.

Reference:

Plants of Western New South Wales, p. 483.

Compiled by:

Graham Charles and Stephen Johnson

Aeschynomene *indica*

Family:

Fabaceae (Pea family).

Common names:

Budda pea, Butter pea.

Confused with: Sesbania (*Sesbania canabina*)

Budda pea and sesbania can be easily distinguished:

- **in the seedling stage** - budda pea true leaves emerge after the cotyledon leaves whereas sesbania has a 3rd cotyledon type seedling leaf before the true leaves
- **in older plants** - budda pea's leaflets are about 4 - 8 mm long, compared to 7 - 18 mm for sesbania
- **the flowers** - of budda pea have a red throat, whereas sesbania flowers are all yellow, with some brown specking on the outside
- **the fruit** - are distinctly different. The pods of budda pea are short (20 - 35 mm long) and segmented with 3 - 9 segments per pod, each seed breaking off enclosed in a separate segment. Sesbania pods are very long (10 - 20 cm), thin and bean-like, splitting down the middle to expose 20 - 35 seeds per pod.

Description:

Seedlings - the cotyledon leaves are oval to circular in shape and around 9 mm long. The first true leaves emerge immediately after the cotyledon leaves.

Early leaves - the first and second true leaves have between 5 - 6 pairs of leaflets (smaller leaves along the leaf stem).

Adult leaves - are made up of 15 - 70 pairs of long oblong-shaped leaflets, 4 - 12 mm long and 1 - 4 mm wide. Leaflets are rounded at the tip.

Mature plant - is erect or spreading with multiple branches, growing 30 - 200 cm high with many slightly rough branches.

Flowers - are yellow with a red throat, pea-like and about 9 mm long. Two to four flowers are borne in the leaf axils.

Fruit - is a compressed brown segmented pod 20 - 35 mm long, with 3 - 9 segments per pod, each seed breaking off enclosed in a separate segment 4 mm in length. Pods are borne on a stalk 5 - 10 mm long. Seeds are dark brown, about 3.8 mm in length.

Lifecycle/Biology:

An annual species that may become a short-lived perennial, living for two to three years if favourable moisture conditions are present. Budda pea germinates in spring and summer and will grow rapidly over summer, flowering in summer and autumn. Seed set and dispersal occurs within four weeks of flowering.

Ecology:

Often found in flooded areas, usually on grey heavy clay soils and in Mitchell grass communities.

The problem:

This weed has a prolific seed production with the seeds dispersing within four weeks of flowering. Although this weed is often confused with Sesbania, management for Budda pea differs slightly.

Distribution:

Found in all states of Australia except Victoria. It is not a common weed, but is prolific in some parts of the Gwydir river system.

Origin:

An Australian native plant.

References:

Plants of Western New South Wales, p. 383.

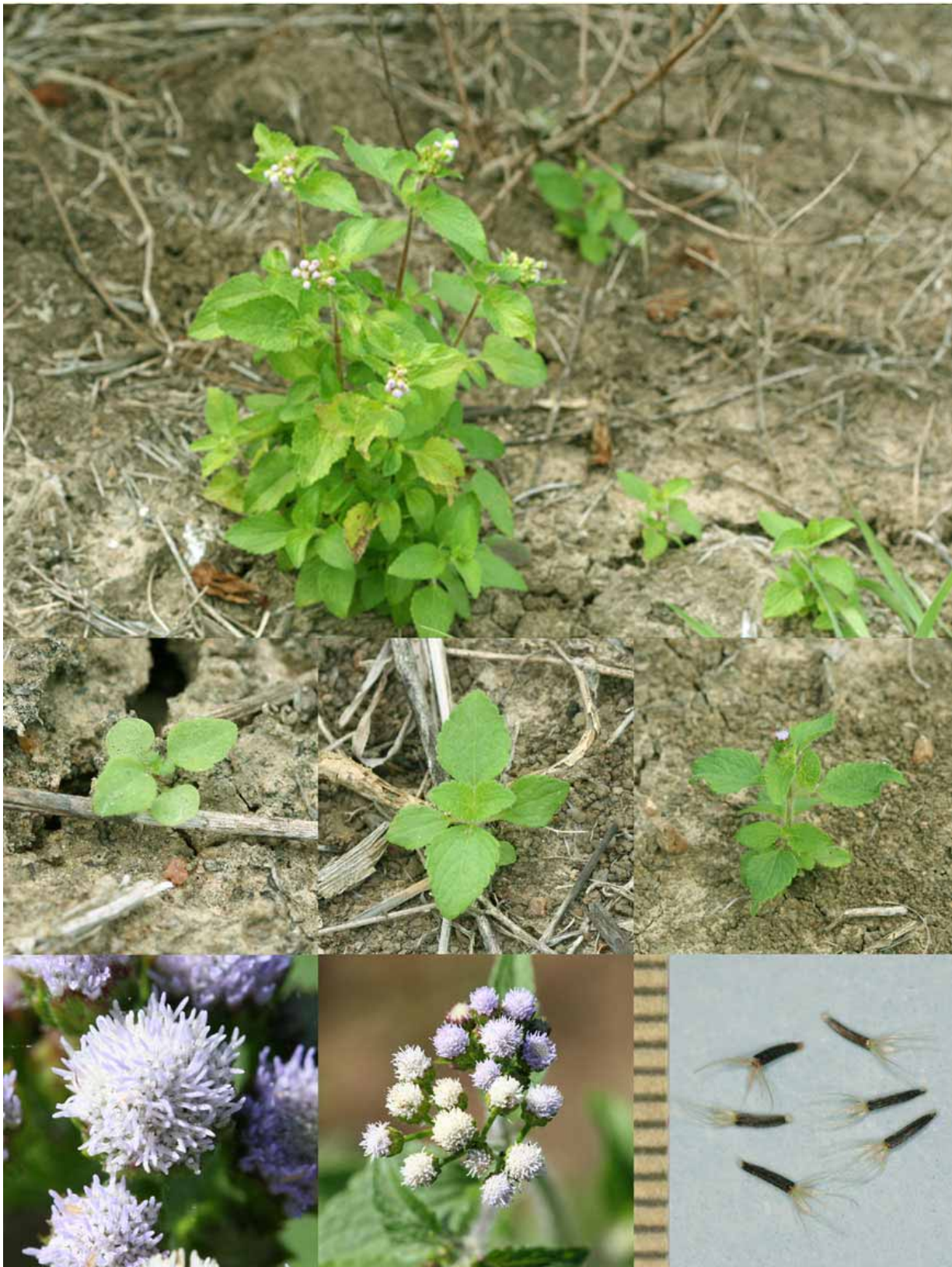
Charles, G. (1999) Weed Alert: Budda pea, Australian Cottongrower **20**, (5): p. 18 - 20.

Compiled by:

Graham Charles

Ageratum conyzoides L.

Billygoat weed



Photographs: Graham Charles

Ageratum conyzoides

Family:

Asteraceae (Daisy family).

Common names:

Billygoat weed, Blue bonnet, Bluetop, Goatweed.

Confused with:

Billygoat weed and blue billygoat weed (*A. houstonianum*) are very similar and readily confused. Billygoat weed is more common in northern Queensland.

Description:

Seedlings - cotyledons leaves are circular to egg shape, 3 mm long by 3.5 mm wide.

Early leaves - are broadly egg-shaped, with lightly serrated margins. The serrations are widely spaced, rounded and shallow. Later leaves have obviously serrated margins and clearly defined veins.

Leaves - are egg shaped to triangular, arranged in opposite pairs along the stems. Leaves are 10 - 100 mm long and 10 - 60 mm wide, borne on stems 5 - 50 mm long. Leaves are mid-green and lightly hairy.

Mature plants - an erect annual or short-lived perennial plant 30 - 100 cm high with hairy stems.

Flowers - are 4 - 5 mm across, pale lavender blue to white. They occur in fluffy clusters on the end of erect or slightly drooping stems.

Fruit - seeds 1 - 3 mm in length, black and topped by a fluffy pappus of 5 white hairs, 1.5 - 3 mm in length which assists the seeds in wind dispersal.

Lifecycle/Biology:

An annual or short-lived perennial plant which emerges and flowers year round.

Ecology:

Occur on a wide variety of soil types.

The problem:

Billygoat weed is a major weed of cropping in northern Queensland and a common weed of pastures and disturbed areas.

Distribution:

Occurs New South Wales north coast, Queensland and the Northern Territory. It is most common in northern Queensland and the Northern territory. It is a major weed in the Burdekin region.

Origin:

An introduced species from tropical America.

Reference:

Crop Weeds of Northern Australia, p. 104 - 105.

Compiled by:

Graham Charles

Alternanthera nodiflora R.Br

Common joyweed



Photographs: Graham Charles

Alternanthera nodiflora

Family:

Amaranthaceae (Amaranth family).

Common names:

Common joyweed, Joyweed, Native carpetweed.

Confused with:

The joyweed family includes several similar species.

Description:

Seedlings - cotyledons leaves are roughly elliptical in shape, being broadest at about 1/3rd of their length and tapering to a rounded tip. They have a noticeable mid-rib. Both the mid-rib and the leaf margins may have a red tinge.

Leaves - are arranged in opposite pairs along the stems. Leaves are 2 - 8 cm long and 6 - 8 mm wide, with a light green central rib.

Mature plants - a semi-prostrate annual plant which may have ascending stems to 30 cm in length. Adventitious roots may develop from the stem nodes.

Flowers - are clustered in the leaf axils. Clusters are white and up to 10 - 25 mm in diameter.

Fruit - seeds are brown and covered in fine protrusions. They are elongated, 1.1 mm in length and 3 mm in width.

Lifecycle/Biology:

Seedlings emerge in winter and spring and summer and flower over spring and early summer.

Ecology:

Occur on a wide variety of soil types and is most common in wetter spots. Plants that establish in moist and shaded locations may survive well into summer.

The problem:

Common joyweed is a minor weed in the cotton cropping system but can occur in high densities when conditions allow. It can be a weed of winter fallows and cereal crops.

Distribution:

Common in all states of Australia and throughout the cotton growing area.

Origin:

A native species.

Reference:

Plants of Western New South Wales, p. 281 - 282.

Compiled by:

Graham Charles

Amaranthus macrocarpus var. pallidus

Family:

Amaranthaceae (Amaranth family).

Common names:

Dwarf amaranth, *Amaranthus*, Boggabri weed, Desert amaranth.

Confused with:

Boggabri weed (*A. mitchellii*).

Description:

There are two varieties of Dwarf amaranth, *A. macrocarpus* var. *pallidus* and var. *macrocarpus*. The stems of var. *macrocarpus* are white to red in colour. The flowers of var. *macrocarpus* are red/brown in colour. The mature seed heads of var. *macrocarpus* are vary from red, brown to almost black in colour.

Seedlings - the green seedling leaves have purple leaf margins and veins. These seedlings are more prostrate than other *Amaranthus* species, with the exception of native amaranth (*A. interruptus*).

Adult leaves - these leaves are alternate, an elongated oval-shape, short and rounded but notched at the tip, 5 - 25 mm long, 4 - 13 mm wide, and have stalks 4 - 25 mm long.

Mature plants - mature plants either lie flat along the ground, or are semi-erect. The white or straw coloured stems are hairless and up to 30 cm long.

Flowers - the flowers are white or straw-coloured and found in dense globular clusters in the upper leaf forks.

Seed heads - the seed head is a capsule, 3 - 5 mm long, pear-shaped, spongy and wrinkled, and straw-coloured, when mature.

Lifecycle/Biology:

An annual species that germinates and grows in spring, summer and autumn. Flowering commonly occurs in summer with var. *macrocarpus* flowering slightly earlier than var. *pallidus*. Mature seed heads are often found in late spring and through summer and autumn.

Ecology:

A common plant in a wide range of vegetation types, particularly on clay soils but not restricted to them. It is often found in depressions and in other wet areas.

The problem:

A common weed of summer cropping, particularly in irrigated crops like cotton. The weed is also found in summer fallows. It can be an alternative host to some pathogens which cause cotton diseases.

Distribution:

A common weed in the eastern states of Australia. Only var. *macrocarpus* has been recorded in Southern NSW.

Origin:

A native weed.

References:

Plants of Western New South Wales, p. 282 - 283.

Crop Weeds of Northern Australia, p.113 - 118.

Compiled by:

Graham Charles and Stephen Johnson

Ammi majus L.

Bishop's weed



Photographs: Graham Charles

Ammi majus

Family:

Apiaceae (Carrot family).

Common names:

Bishop's Weed, Bullwort, Meadowsweet, Queen Anne's Lace, Woodnep.

Confused with:

Parthenium weed (*Parthenium hysterophorus*) and Hemlock (*Conium maculatum*).

Description:

Seedling leaves - the seedling leaves have a long oval-shape and are hairless.

Early leaves - the first true leaf may be oval or divided, with serrated leaf margins. Later seedling leaves are usually divided into three to five leaflets.

Adult leaves - the leaves at the base of the plant are 30 - 150 mm long, but are divided into oval-shaped segments, 10 - 60 mm long and 2 - 20 mm wide. The leaves on the upper stem have narrower segments. All the leaves have toothed or serrated margins.

Mature plants - mature plants grow upright from 25 - 130 cm high, are hairless and also have divided leaves.

Flowers - the flowers are white, flat topped and numerous, clustered into a 30 - 70 mm wide umbel (a flower head shaped like an inside out umbrella in which all the flower stalks all arise from a single point). The stem of this flower head is up to 20 cm long. Beneath each umbel is a ring of leaf-life bracts that may be up to 50 mm long. Individual flowers have five petals, are 1.5 - 3 mm in diameter and are borne on stalks 1 - 10 mm long.

Seed heads - each flower produces a seed head with two oblong- or egg-shaped segments, 1.5 - 2 mm long, with pale ridges.

Lifecycle/Biology:

An annual or biennial plant that germinates during winter and spring. Flowering mainly occurs in spring and summer but may continue through until July.

Ecology:

Commonly found in disturbed wasteland near habitation, roadsides and pastures.

The problem:

Rarely found in cultivated cotton fields but is a common weed on disturbed ground beside fields, roads and in waste areas on farm.

Distribution:

Found throughout most of Australia. Common on the roadsides throughout the cotton area, although its presence is very seasonal. It can occur at very high densities when suitable wet winter and spring conditions occur.

Origin:

An introduced species. A native of Europe, Asia and North Africa.

Reference:

Plants of Western New South Wales, p. 539 - 540.

Compiled by:

Graham Charles

Anagallis arvensis L.

Scarlet pimpernel



Photographs: Graham Charles

Anagallis *arvensis*

Family:

Primulaceae (Primula family).

Common names:

Scarlet pimpernel, Blue pimpernel, Pimpernel, Red pimpernel.

Description:

Seedling leaves - are glossy, angular and diamond to egg shaped, 6 mm long and 6 mm wide.

Leaves - are egg shaped with a pointed end, hairless and with no stalk, 5 - 25 mm long and 3 - 10 mm wide. The leaves are lightly glossy, yellowish-green to mid-green, soft and dotted with small black glands on the under side. Mature leaves have a prominent, indented mid-vein.

Mature plants - a small, prostrate to semi-prostrate annual plant with spreading branches and weak 4-angled stems 5 - 30 cm long.

Flowers - are 5 - 12 mm across with 5 petals. They are very open, almost flat in sunlight but fold up in the dark. Flowers can be bright red, orange-red, or violet-blue with a dark purplish centre. Flowers emerge from the leaf forks, borne on slender stalks 7 - 12 mm in length

Seeds - form in a green, spherical capsule 3 - 5 mm across. The capsule is thin walled and becomes brown and brittle as it dries. When dry it splits around the middle, releasing the seeds. It is surrounded at the base by five, narrow, pointed sepals 5 - 7.5 mm long which remain attached to the capsule. Seeds are very small, 1 - 1.5 mm long, dark brown and angular with 3 sides.

Lifecycle/Biology:

A winter-growing annual herb which flowers in late winter and spring. Plants can flower over the summer and perenniate under suitable conditions, but will not survive in hot summers.

Ecology:

A common weed of pastures, fallows, gardens and waste areas. Scarlet pimpernel grows on a range of soil types, usually in moister situations.

The problem:

A common but minor weed in temperate areas.

Distribution:

Found through much of Australia.

Origin:

An introduced species from the Mediterranean region.

References:

Crop Weeds of Northern Australia, p. 86 - 87.

Plants of Western New South Wales, p. 546 - 547.

Compiled by:

Graham Charles

Anoda cristata (L.) Schlttdl

Anoda



Photographs: Graham Charles

Anoda cristata

Family:

Malvaceae (Hibiscus family).

Common names:

Anoda, Spurred anoda.

Description:

Seedling leaves - are similar in shape, one leaf almost circular with a slight notch at the base and the other broadly egg-shaped with a deeper notch, 10 - 13 mm long and 11 - 14 mm wide, on stems to 7 mm long. The edges of the seedling leaves and stems are covered in small hairs to 0.5 mm long.

Early leaves - the first true leaf has a broad egg-shape with shallow teeth around the margin. Older leaves become more triangular in shape.

Adult leaves - are triangular to oval-shaped, 35 - 100 mm long, 30 - 95 mm wide, with three to five shallow lobes and irregular teeth on the margins. The leaves are light- to mid-green sometimes with a scarlet splash of colour where the leaf is attached. The leaf stalk is 20 - 35 mm long.

Mature plants - grow up to 200 cm, with many semi-erect branches, the stems and leaves may be covered in small hairs.

Flowers - the single hibiscus-like flowers are borne in the upper leaf forks, range from nearly white to lavender-blue, and paler at the centre, to 25 mm wide, on stalks 20 - 60 mm long.

Seed heads - are star-shaped, 15 - 35 mm wide, hairy, with a central round section much like a sliced pie with 9 - 20 segments, each containing one seed. The seed head turns from mid-green to brown once it matures. The seeds are brown to black, broadly kidney-shaped, are to 4 mm long and 3 mm wide.

Lifecycle/Biology:

Seedlings emerge in successive flushes after rainfall or irrigation in spring, summer and autumn. Flushes in excess of 100 seedlings/m² may occur. Seedlings grow rapidly, with flowering starting within 56 days of emergence, and peak flowering during February. Mature seed can be produced within 73 days of emergence and small amounts of seed may be produced in Dec and Jan. Seed production peaks in late March - May. Up to 4,000 seed can be produced on medium sized plants. Anoda is a frost sensitive annual plant. Seeds have strong dormancy with little fresh seed germinating, but a relatively short seed bank life. Seed longevity increases with burial depth, 40% of seed remaining viable after two years of burial.

Ecology:

An uncommon weed of crops and pastures, generally associated with heavy cracking clay soils.

The problem:

A common weed in cotton in Qld, and spreading in NSW. Also a weed of peanuts, summer grain and forage crops, and pastures. Seedlings emerge in successive flushes after rainfall and irrigation, making control particularly difficult. A large number of seeds are produced resulting in a persistent seed bank and problems in controlling this weed over a number of years. The seeds persist for some time in the soil. The seeds are easily spread by harvesting machinery, and in mud, cotton lint, forage and hay. Young plants are similar in colour to cotton and are difficult to detect in the plant line. Plants may only become apparent as they grow above the crop canopy from January onwards. Early control is important for preventing seed set.

Distribution:

Found through much of Australia. Scattered populations of anoda occur in most valleys of the cotton growing region.

Origin:

An introduced species from tropical America.

References:

Crop Weeds of Northern Australia, p. 133.

Johnson, S. B. Ecology and management of bladder ketmia (*Hibiscus trionum*) and other emerging problem Malvaceae weeds.

Compiled by:

Graham Charles and Stephen Johnson

Arctotheca calendula (L.) Levyns

Capeweed



Photographs: Graham Charles

Arctotheca calendula

Family:

Asteraceae (Daisy family).

Common names:

Capeweed, African marigold, Cape dandelion.

Description:

Seedlings - cotyledon leaves are long with a rounded end. Leaf width increases from the base to the end. The first true leaves have a wavy outline which becomes lobed in later leaves.

Leaves - 5 - 25 cm long and 2 - 6 cm wide, becoming increasingly lobed with age. Leaves are green, but their undersides are paler to white and covered in fine down. Leaves have a prominent lighter coloured rib.

Plants - a succulent annual with a strong rosette up to 50 cm in diameter. The stems are soft and juicy, covered with fine white hairs. They can stand 30 cm tall.

Flowers - occur on the ends of the stems. Flowers have a black centre 15 mm in diameter, surrounded by 15 - 20 prominent yellow petals 12 - 25 mm in length that may become paler away from the centre.

Seeds - are enveloped in a brown cotton like mass and are difficult to extract from this envelope. Seeds are dark brown, 2.7 mm long and 1 mm wide.

Lifecycle/Biology:

Seedlings germinate after rain in autumn and winter and flower in spring. Whole paddocks can be covered in yellow capeweed flowers in spring. Plants die off as temperatures increase.

Ecology:

Occurs throughout the farming area of Australia. It is adapted to most soil types, although it is better suited to the lighter soil types and grows most aggressively on highly fertile soils.

The problem:

Capeweed develops a strong, highly competitive rosette, choking out most other crop and pasture plants. It is well adapted to the climate of the tablelands, slopes and plains and can occur at very high densities. It may come to dominate degraded pastures and cropping areas, limiting the reestablishment of other more desirable annual and perennial species.

Distribution:

Found throughout Australia. Capeweed is a very common pest of pastures and winter crops in the farming belt of Australia.

Origin:

A native of South Africa.

Reference:

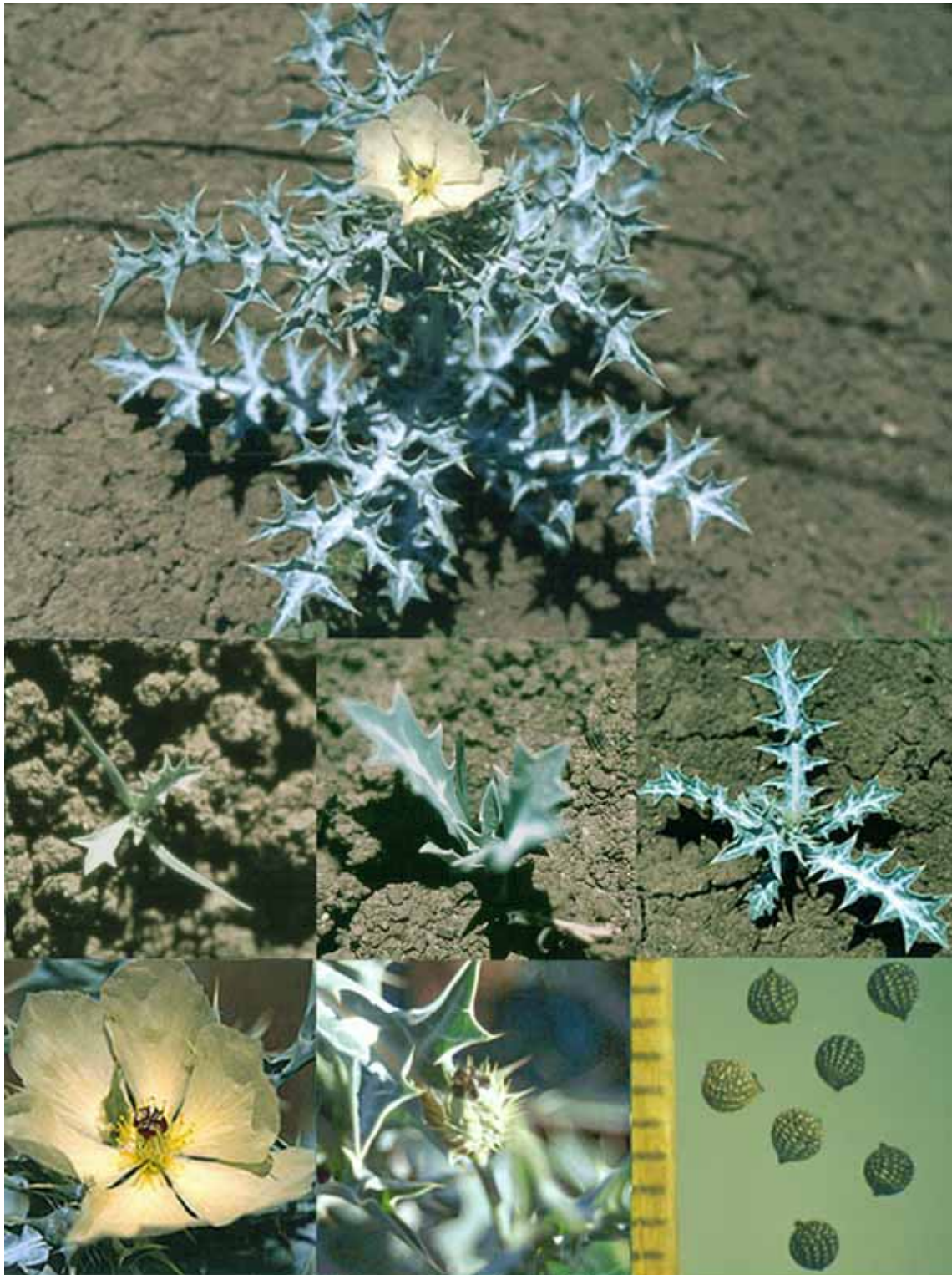
Plants of Western New South Wales, p. 680 - 681.

Compiled by:

Graham Charles

Argemone ochroleuca Sweet *ssp. ochroleuca*

Mexican poppy



Photographs: Graham Charles

Argemone ochroleuca ssp. ochroleuca

Family:

Papaveraceae (Poppy family).

Common names:

Mexican poppy, Biniguy thistle, Devil's fig, Golden thistle-of-Peru, Mexican thistle, Prickly poppy, White thistle, Yellow poppy.

Confused with:

Prickly poppy (*A. mexicana*) and American poppy (*A. subfusiformis* subsp. *subfusiformis*). These species can be distinguished by:

- **Flowers** - Mexican poppy's flowers are cream to pale yellow in colour. The flowers of prickly poppy are bright yellow, and the flowers of American poppy are butter yellow.
- Neither prickly poppy and nor American poppy are common weeds of cultivation. Prickly poppy is not known to occur in NSW.

Description:

Seedling leaves - are narrow and spear-shaped, curved, 26 mm long and 1.3 mm wide, white-turquoise in colour and without stalks.

Early leaves - the first true leaf has three triangular pointed lobes at the leaf tip with a tapering base, while the second true leaf has many lobes. Early leaves are lobed, prickly and form a rosette (ring or cluster of leaves). They are white-turquoise and have white veins.

Adult leaves - have 7 - 11 lobes each ending in a prickle, are generally stem-clasping on the upper stem, white-turquoise or blotched with white, 60 - 200 mm long and 30 - 100 mm wide.

Mature plants - are erect, 30 - 150 cm tall, arising from a branching taproot. Plants are blue-green to grey-green and have prickly leaves and stems. The stem exudes yellow sap when broken.

Flowers - the buds are oblong-shaped, 8 - 18 mm long and 4 - 11 mm wide and the poppy-like flower petals are pale cream, 25 - 30 mm long and 14 - 40 mm wide. Flowers are borne singly, generally without stalks at the ends of branches, with 4 - 6 petals, and are 30 - 70 mm wide. The petals are readily shed.

Seed heads - are 20 - 50 mm long and 10 - 20 mm wide, covered in spines and full of small round dark brown to black speckled seeds to 1.5 mm in diameter. Seeds are shed through small

holes at the top of the seed head before the seed head splits opens.

Lifecycle/Biology:

An annual plant with germination at any time of the year provided there is soil moisture. Plants rosette during winter and produce flowering stems during spring and summer. Seed production can vary between 4,000 and 30,000 seeds/plant. Most seeds fall close to the parent plant, move in surface water flows, in mud, on machinery and as grain impurities. Seed dormancy prevents the germination of newly shed seed until several weeks to months later.

Ecology:

A common weed of disturbed areas and alluvial areas beside water courses where it may form dense stands. Occurs on a wide range of soil types including heavy clays and is common on sandy/loamy soils. The weed appears to favour low fertility areas and is a common weed in degraded pasture.

The problem:

A widespread and common weed of cereal crops, recently cultivated land, roadsides and wasteland. Although not particularly aggressive it is a minor weed of cotton crops. It is difficult to eradicate as it tolerate most herbicides and because of the large number of seeds it produces.

Distribution:

Found in most states of Australia. It is a widespread weed of the northern cropping areas.

Origin:

A native of America.

References:

Plants of Western New South Wales, p. 312 - 313.

Crop Weeds of Northern Australia, p. 54.

Compiled by:

Graham Charles

Atriplex muelleri Benth.

Annual saltbush



Photographs: Graham Charles

Atriplex muelleri

Family:

Chenopodiaceae (Saltbush family).

Common names:

Annual saltbush, Mueller's saltbush, Green saltbush, Lagoon saltbush, Queensland saltbush.

Confused with:

Lagoon saltbush (*A. suberecta*). A large number of other native salt bushes also occur in Australia.

Description:

Seedlings - have very long, narrow cotyledon leaves with rounded ends. The first true leaves are spade shaped with pointed or rounded tips. The stems and leaf margins may have a reddish tinge.

Leaves - are alternate, 1 - 7 cm long, 0.6 - 3.5 cm wide on stalks 1 - 10 cm long. Leaves are green, but the underside is whitish in colour.

Plants - a spreading annual plant with woody stems growing to 60 cm.

Flowers - small and creamy coloured clustered in the leaf axils

Seeds - are held in a light brown, fan shaped and flattened capsule with 3 shallow protrusions at the end. Capsules are 2 - 3 mm in length. Seeds are brown, teardrop shaped and 1.5 mm in diameter.

Lifecycle/Biology:

Emerges after rain and flowers most of the year round.

Ecology:

Most commonly found on grey and brown clay soils.

The problem:

Annual saltbush is a minor weed on channel banks and roadways.

Distribution:

Found throughout much of Australia. Present in Western NSW and Queensland.

Origin:

A native Australian plant.

References:

Plants of Western New South Wales, p. 241.

Crop weeds of Northern Australia, p. 98 - 99.

Crop Weeds of Northern Australia, p. 11.

Compiled by:

Graham Charles

Boerhavia dominii Meikle & Hewson

Tarvine



Photographs: Graham Charles

Boerhavia *dominii*

Family:

Nyctaginaceae (Tarvine family).

Common names:

Tarvine, Common spiderling, Hogweed, Giotcho, Murra, Tah-vine.

Description:

This species can be quite variable in leaf structure and flower colour.

Seedlings - the cotyledon leaves are nearly circular, 3 - 4 mm in diameter. Early true leaves are broadly diamond in shape, though flattened and rounded to 10 mm long and 6 mm wide. Leaves occur in pairs, one smaller than the other.

Leaves - become darker and glossy as the plant matures. The underside of the leaves is paler. Older leaves are heavily veined and the stems may be reddish in colour. Leaves are 1 - 4 cm in length and 5 - 25 mm wide, growing from stalks 3 - 35 mm long.

Plants - an annual or perennial, prostrate spreading plant that can grow to 2 m in diameter or more. The plant has a stout taproot from which it can regenerate, allowing it to perenniate.

Flowers - are produced on long, slender stalks that emerge from the leaf axils. Flowers can be white, pink or purplish in colour, 5 mm in length, arrange singularly or in clusters of up to 4 flowers.

Seeds - are 3 - 4 mm in length, brown, and have 5 prominent darker brown ribs. They are sticky, and readily attaching to hair and clothing.

Lifecycle/Biology:

A summer growing, annual or perennial plant that flowers in summer and autumn. The plant will die off in winter and then regenerate from the taproot or seed.

Ecology:

Adapted to a range of soil types, but more common in summer rainfall areas.

The problem:

A summer growing weed of cropping and pastures. Tarvine is quite hardy, but can grow rapidly following summer rain. The plants open architecture allows it to grow amongst other plants and exploit any open areas.

Distribution:

Found throughout Australia. It is common on throughout the cotton area.

Origin:

An Australian native plant.

References:

Plants of Western New South Wales, p. 289 - 290.

Crop weeds of Northern Australia, p. 92.

Compiled by:

Graham Charles

Cajanus cajan (L.) Millsp.

Pigeon pea



Photographs: Graham Charles

Cajanus

cajan

Family:

Fabaceae (Pea family).

Common names:

Pigeon pea, Congo pea, No-eye pea, Red gram, Tree pea.

Description:

Seedlings - the cotyledon leaves are oblong, 30 - 40 mm long and 10 - 15 mm wide, with an indented, central vein.

Early leaves - the first true leaves and all subsequent leaves are trifoliate, the central leaflet longer than the side leaflets.

Leaflets - are broadly spear shaped, 25 - 100 mm long and 10 - 35 mm wide. The central leaflet is longer than the side leaflets and is borne on a short stalk, 10 - 16 mm long. Leaves are green, with a velvety upper surface. The underneath of the leaf is silvery green, covered with whitish hairs. Leaves have small, yellowish glands which give them a subtle golden hue.

Plants - an annual or short-lived erect perennial, 1 - 3 m tall. Plants may regenerate from the taproot, allowing them to perennialize.

Flowers - are produced along slender stalks 20 - 70 mm long, that emerge from the leaf axils, with 6 - 12 flowers per stalk. Flowers are a typical pea-shape, bright yellow, with reddish-brown markings on the backs of the petals.

Pods - are 45 - 100 mm long, 8 - 15 mm wide and contain 4 - 7 seeds.

Seeds - are ovoid, 4 - 7 mm in length and reddish-brown.

Lifecycle/Biology:

An annual or short-lived perennial plant that flowers in spring, summer and autumn. Plants are frost-sensitive.

Ecology:

Adapted to a range of soil types. Plants generally occur as volunteers following a pigeon pea crop. Isolated plants may occur on channels, beside roads or in other areas where trash has accumulated.

The problem:

Grown as an insect refuge in combination with Bollgard II cotton varieties. Volunteer pigeon pea plants can be problematic in following crops.

Distribution:

Commonly planted throughout the cotton area. May be planted as a commercial grain crop. Small naturalised populations occur in northern New South Wales and Queensland.

Origin:

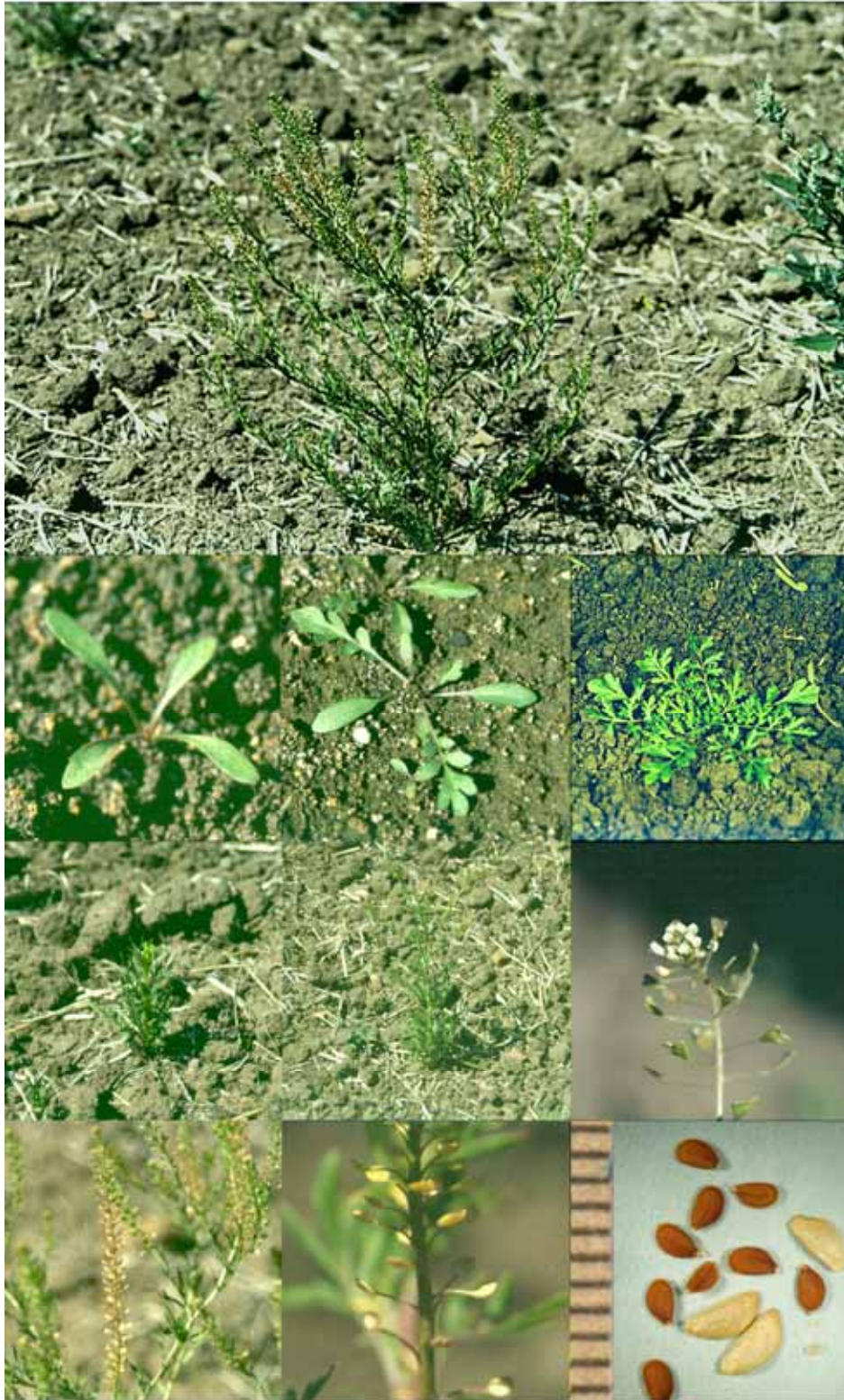
May have originated in India.

References:

Compiled by:

Graham Charles

Capsella bursa-pastoris (L.) Medik Shepherd's purse



Photographs: Graham Charles

Capsella bursa-pastoris

Family:

Brassicaceae (Cabbage family).

Common names:

Shepherd's purse, Locowort, Pickpocket, Shepherd's heart, St. James weed, Toywort.

Description:

Seedlings - the cotyledon leaves are long and thin with a rounded end, tapering to the widest at about 2/3 their length. Cotyledons are about 7 mm in length and 2 - 3 mm width. The first 2 true leaves are similar in size and shape to the cotyledons, but by the 4th leaf, size and shape have changed, with leaves generally becoming deeply lobed.

Leaves - lower leaves are stalked, and often heavily lobed, up to 15 cm long including the stalk and 3 cm wide. Upper leaves have no stalk.

Plant - initially forms a rosette, but becoming erect to 40 cm in height with a strong central stem as the plant approaches flowering.

Flowers - are white, about 2.5 mm across and occur in dense clusters on the ends of the branches. More flowers are progressively formed as the branch grows, with maturing seed pods occurring lower on the branch

Seeds - are formed in pods that are attached by fine stalks 7 - 20 mm in length. The pods are heart shaped 3 - 4 mm long and wide. Pods break into 2 sections that each contain a plain orange/brown seed 1.9 mm in length.

Lifecycle/Biology:

A winter growing weed that flowers in spring and early summer. It is a prolific seed producer.

Ecology:

Common in pastures and cultivation. Often found along roadways and fence lines. It can become very plentiful in favourable seasons.

The problem:

Can establish and compete with crops and pastures. A weed of cereal crops.

Distribution:

Found throughout Australia and the world.

Origin:

A native of Europe.

References:

Plants of Western New South Wales, p. 320.

Compiled by:

Graham Charles

Carthamus lanatus L.

Saffron thistle



Photographs: Graham Charles

Carthamus lanatus

Family:

Asteraceae (Daisy family).

Common names:

Saffron thistle, Distaff thistle, False star thistle, Woolly safflower, Woolly star thistle, Woolly thistle, Yellow star thistle.

Confused with:

There are a number of thistles which may appear similar in the rosette stage. Saffron thistle is distinctive at the mature stage. Could be confused with safflower (*C. tinctorius*), star thistle (*Centaurea calcitrapa*), golden thistle (*Scolymus hispanicus*) and spotted golden thistle (*S. maculatus*).

Description:

Seedlings - the cotyledon leaves are glossy green and spoon shaped, 12 - 17 mm long by 6 - 9 mm wide.

Early leaves - the first true leaves spoon shaped, but with a more pointed tip. They are lightly serrated, with each serration tipped by a short spine, and have an indented, white central vein. Later leaves are more heavily serrated and become highly multi-lobed with each protrusion tipped by a sharp spine. Leaves grow up to 150 mm long. Plants form a dense rosette.

Later leaves - plants develop a central rigid, erect stem as temperatures rise in spring. Clasping, stalkless, rigid leaves develop along the stem. They are prominently veined, lobed and terminate with long, rigid, sharp spines. Numerous smaller spines tip the lobes along the sides of the leaves.

Plants - an erect annual herb, 80 - 120 cm tall with rigid stems. Plants are unbranched at the base, but become multi-branched towards the top. Each branch terminates with a flower head.

Flower heads - single heads develop at the end of each branch. The flowers are creamy yellow and are clasped within the flower head. The flowered head is surrounded by several rows of rigid, lobed leaves tipped and edged with spines. Head are 50 - 70 mm wide, including the spined leaves.

Seeds - are 5 - 7 mm long, grey-brown and wedge shaped. They are topped with a stiff pappus 7 - 10 mm long.

Lifecycle/Biology:

An annual plant that germinates after rain in autumn or early winter and forms a dense, competitive rosette. In spring a rigid, erect central stem develops and the rosette leaves die off. Flowers develop in spring and early summer. Some plants may germinate following rain in spring and flower in late summer and autumn. Seeds of saffron thistle may remain dormant in the soil for several years.

Ecology:

Adapted to a range of soil types, but most common on better soils with high fertility. Saffron thistle is a common invader of improved pastures and winter crops.

The problem:

A competitive, widely occurring, major weed of winter crops, pastures and waste areas. Plants are palatable to livestock in the rosette stage, but are not eaten once the central stem develops. Spines can cause injuries and remain problematic for months after the plants mature. Mature plants can be a serious problem in cereal crops, choking harvesting equipment and contaminating grain samples. Seeds are difficult to remove by grading. Saffron thistle is readily controlled with herbicides such as 2,4-D amine in cereal crops, but is difficult to control in pastures where legumes are a valuable component of the pasture.

Distribution:

One of the most widely distributed introduced weeds in Australia. Saffron thistle occurs in every state.

Origin:

Originating from Europe.

References:

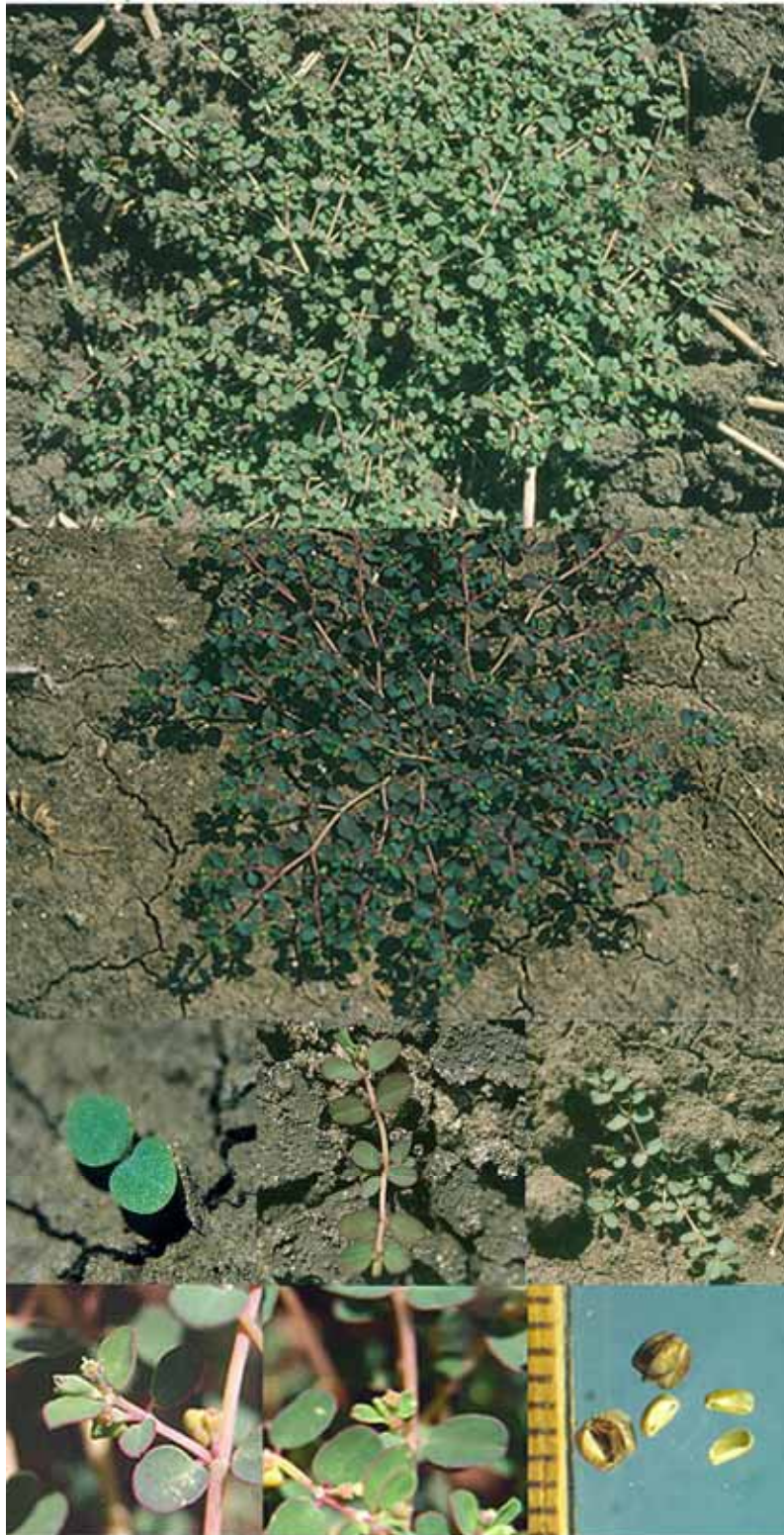
Plants of Western New South Wales, p. 721 - 722.

Compiled by:

Graham Charles

Chamaesyce drummondii (Boiss.) D.C. Hassall

Caustic weed



Photographs: Graham Charles

Chamaesyce drummondii

Family:

Euphorbiaceae (Spurge family).

Common names:

Caustic weed, Caustic creeper, Creeping spurge, Doily weed, Flat spurge, Mat spurge, Milkweed, Spurgewort. Formerly named *Euphorbia drummondii*.

Confused with:

Red caustic creeper (*C. prostrata*), and Hairy caustic weed (*C. australis*).

Description:

Seedlings - cotyledon leaves are roughly circular in shape and very small, 2 - 3 mm across. Older leaves are blue/green in colour, oblong to oval in shape and may have a red to margins.

Leaves - older leaves are similar in shape 2 - 10 mm long and 2 - 5 mm wide but with a minute tooth near the tip. The leaves are produced opposite each other on the stems. The leaves are almost stalkless and may have a reddish tinge.

Plants - a hairless, prostrate annual or short-lived perennial that grows in a compact doily shape up to 60 cm in diameter. The plant is variable in colour. Stems are green to red/purple. When broken, the stems contain a white milky sap. These stems become woody at the base as they age. Plants may be produced from a thick or woody rhizome.

Flowers - are tiny, pink/white and are produced in the leaf forks.

Seeds - are enclosed in a yellow/green capsule, 2 - 3 mm across and with three lobes, each containing a seed. These seeds readily separate when mature, with each seed roughly a 1/3rd segment of a sphere, about 2 mm long.

Lifecycle/Biology:

An annual or short-lived perennial species that germinates at any time of the year. Spring and summer are the main growth periods of the weed. Flowering occurs in spring and summer.

Ecology:

The plant is a weed of disturbed ground/cultivated fields and found on a wide range of soil types. It is relatively drought tolerant.

The problem:

Caustic weed is difficult to control with herbicides, cultivation or chipping and at high densities can compete with the crop early in the season. It can also impede in-field water movement.

Distribution:

Found in all states of Australia, it is a very common weed throughout the cotton industry.

Origin:

A native Australian plant.

References:

Plants of Western New South Wales, p. 455 - 456.

Crop Weeds of Northern Australia, p. 93.

Compiled by:

Graham Charles

Chenopodium album L.

Fathen



Photographs: Graham Charles

Chenopodium album

Family:

Chenopodiaceae (Saltbush family).

Common names:

Fathen, Blueweed, Fat hen, Giant fathen, Goosefoot, Lamb's quarters, White goosefoot.

Description:

Seedlings - the cotyledon leaves are oblong in shape with a rounded end, about 7 mm long and 2 mm wide. The first true leaves are broader and rounder than the cotyledon leaves, but later leaves are more triangular in shape and have a wavy margin. New leaves have the typical whitish waxy saltbush appearance, but this appearance disappears as the leaves age.

Leaves - are alternate along the stems, triangular to diamond shaped 2 - 10 cm long and 1 - 7 cm wide with wavy to toothed margins. Leaves appear bluish/green in colour and are greyish/green or whitish underneath.

Plants - an erect, branched annual plant up to 2 m in height with stout, ribbed, green or reddish stems.

Flowers - are in clusters at the ends of the branches. They are very small, green or greyish.

Seeds - are very small, 0.35 - 1 mm in length, light brown to black and may have a furrow running down their length.

Lifecycle/Biology:

Fathen can grow year round. In the northern areas it is a winter weed, but in the southern areas it is more a summer weed.

Ecology:

A common weed of roadsides, stockyards, gardens.

The problem:

Fathen can be a minor weed of cultivation and may become apparent at or after picking in wet years. It can grow very rapidly in warm conditions. Its size and seed producing ability can make it an important weed.

Distribution:

A common weed throughout Australia and much of the world.

Origin:

A native of the Mediterranean region.

References:

Plants of Western New South Wales, p. 258.

Crop weeds of Northern Australia, p. 136 - 138.

Compiled by:

Graham Charles

Cicer arietinum L.

Chickpea



Photographs: Graham Charles

Cicer arietinum

Family:

Fabaceae (Pea family).

Common names:

Chickpea, Garbanzo bean, Gram.

Confused with:

A diverse range of chickpea varieties can be grown. They may vary widely in leaf shape, flower colour, and seed colour and shape. Only one type is described here.

Description:

Seedlings - the first leaves have 2 or 3 pairs of leaflets with a terminal leaflet. Leaflets are 3 - 5 mm long and 2 - 3 mm wide, with serrated edges. Pairs are arranged along a short stem 15 - 20 mm long, borne on a stem 4 - 6 mm long. These leaves continue to grow as new leaves emerge.

Older leaves - are made up of 4 to 8 pairs of leaflets with a terminal leaflet. Leaflets are 6 - 20 mm long, 3 - 14 mm wide with a serrated margin. Leaves are green to bluish in colour.

Plants - a multi-branched annual plant growing into a clumpy bush 30 - 50 cm high. The leaves have a very distinctive oily feel due to a secretion of malic and oxidic acid from glandular hairs that cover the leaves and stems.

Flowers - are a typical pea shape, with bright maroon red petals borne on stems 6 - 20 mm long which emerge from the leaf axils. Flowers are 10 - 20 mm in width.

Seeds - are borne in a light green pea-pod 25 - 35 mm long, with 2 - 3 seeds per pod. Pods become brown as they dry. Seeds are an unusual, angular shape, brown and 8 - 10 mm long, depending on variety.

Lifecycle/Biology:

Germinates in autumn and winter, flowering in spring.

Ecology:

Most commonly grown on fertile and heavy clay soils. Isolated plants may grow from seed lost from trucks etc.

The problem:

Volunteer chickpeas can be a minor weed in a following crop. Volunteers can be very problematic if a crop such as cotton is planted immediately following a chickpea crop, as emerging chickpeas may be readily predated by heliothus grubs. These grubs will move to the main crop when the volunteers are controlled.

Distribution:

An alternative winter legume crop grown in most States.

Origin:

A native of the Mediterranean region.

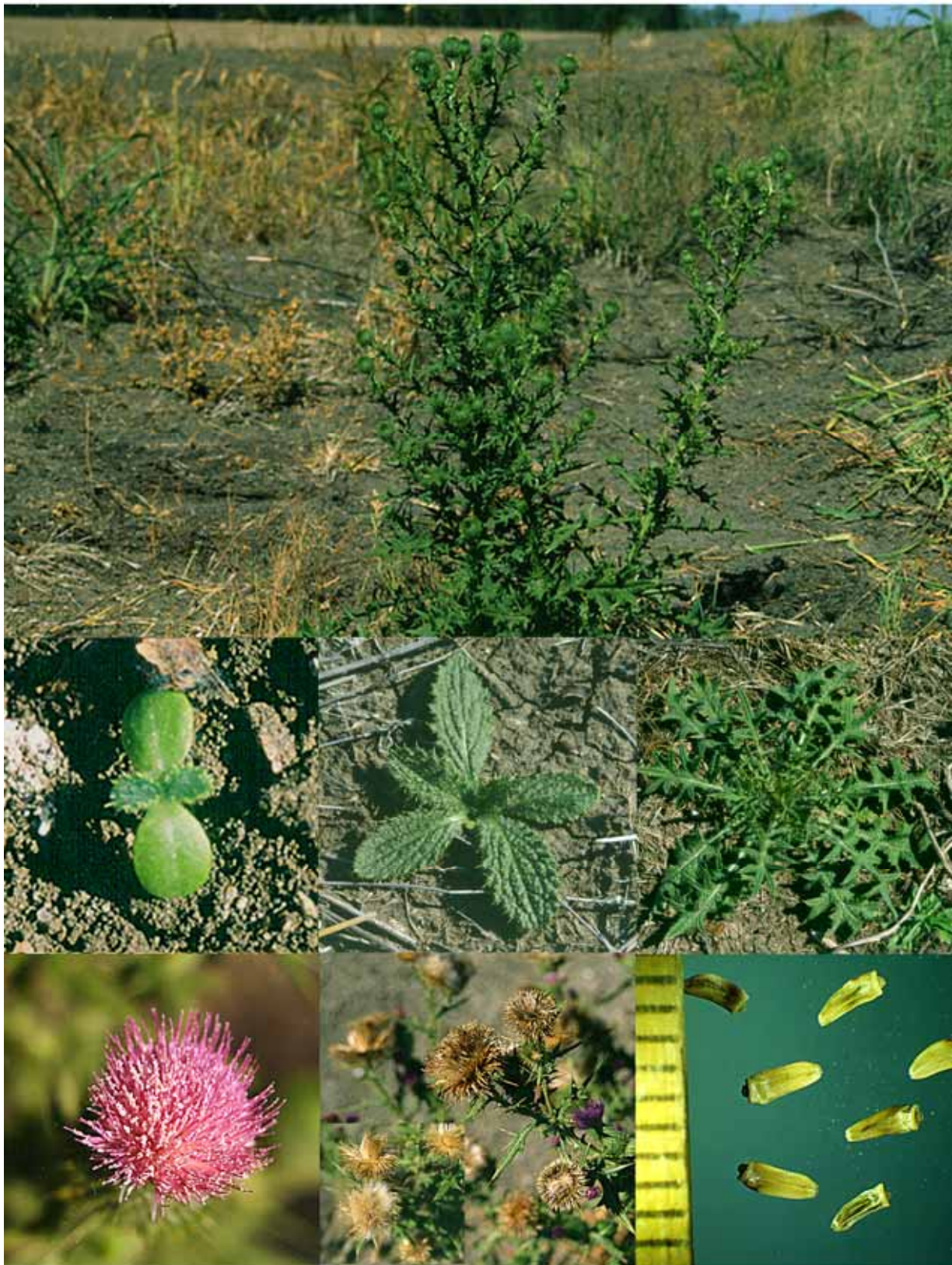
References:

Compiled by:

Graham Charles

Cirsium vulgare (Savi) Ten.

Spear thistle



Photographs: Graham Charles

Cirsium vulgare

Family:

Asteraceae (Daisy family).

Common names:

Spear thistle, Black thistle, Bull thistle, Fuller's thistle, Green thistle, Scotch thistle.

Confused with:

Scotch thistle (*Onopordum acanthium*)

Description:

Seedlings - the cotyledon leaves are almost circular in shape, but longer than broad. The early true leaves are similar in shape, although more elongated and have prominent spines on their leaf margins. They are bright, waxy green in appearance

Leaves - older leaves are up to 30 cm long and 10 cm wide. They are deeply divided, with prominent long, sharp spines terminating each protrusion. Leaves on the stems and branches are alternate, becoming smaller on the higher branches. Leaves are dark green above, but white and woolly underneath.

Plants - an annual or biennial hairy weed that forms a dense rosette to 60 cm in diameter. A strong, spiny, branched stem to 1 m in height forms from the rosette, with each branch terminating in a flower head. The branches are winged and spiny.

Flower heads - are green to whitish and globular to ovoid in shape, 25 - 35 mm in diameter. They are covered in spines. The flower is bright crimson to purple in colour, with the colourful florets protruding from the top of the flower head.

Seeds - are grey to light brown, smooth, an elongated spade in shape, 2.5 - 6 mm in length. They are capped by a parachute of spreading hairs 8 - 11 mm in length that allows for some wind dispersion of this weed.

Lifecycle/Biology:

Commonly germinates in autumn and winter, running up to head in spring. However, this weed is capable of establishing and flowering at any time of the year when conditions allow.

Ecology:

Most common on fertile and heavy clay soils. A weed of irrigation, cultivation and pastures. Best adapted to more productive areas, drains, irrigation channels etc.

The problem:

Spear thistle develops into a large, highly competitive weed that is unpalatable to livestock and unacceptable in cropping.

Distribution:

Found throughout most of Australia.

Origin:

A native of the Mediterranean region.

References:

Plants of Western New South Wales, p. 723.

Crop weeds of Northern Australia, p. 58 - 59.

Compiled by:

Graham Charles

Citrullus lanatus (Thunb.) Matsum. & Nakai var. *lanatus*

Wild melon



Photographs: Graham Charles

Citrullus lanatus

var. lanatus

Family:

Cucurbitaceae (Melon family).

Common names:

Wild melon, Afghan melon, Bastard melon, Bitter apple, Bitter melon, Camel melon, Jam melon, Mickey melon, Paddy melon, Pie melon, Watermelon.

Confused with:

Colocynth (*C.s colocynthis*) and Prickly paddy melon (*Cucumis myriocarpus*). The commonly cultivated watermelon is a different variety of *C. lanatus*, that is *var. caffer*.

Description:

Seedling leaves - are oval shaped with a small notch at the leaf tip, 30 mm long and 20 mm wide, borne on a short stalk 3 mm long.

Early leaves - the first true leaf is roughly circular to triangular and has a long bristly stalk, wavy margins and pale veins. This leaf is notched at the base. The second true leaf is similar in shape but has three to five deep lobes.

Adult leaves - are deeply divided into three to seven deep crinkly lobes, the middle lobe being the longest. The leaves are 20 - 200 mm long, 25 - 190 mm wide and are oval to heart-shaped. Leaves are generally hairless on the upper surface but have short hairs on the lower surface that make them rough to touch. There are long hairs on the leaf veins. The leaf stalk is rough to touch, 20 - 120 cm long.

Plants - are prostrate vines, covered in long soft hairs with stems up to three metres in length that are woolly towards the tip. The long tendrils (thread-like structures at the tip of the stem) are often forked. The plant has a solid taproot with numerous lateral root branches.

Flowers - the plant produces yellow five-petalled male and female flowers, both on the same plant. The petals of the male flowers are 6 - 16 mm long, on stalks 10 - 80 mm long, while the female flowers petals are about 10 mm long on stalks 3 - 40 mm long. Flowers are 30 - 40 mm in diameter and tubular, produced singly in the leaf axils.

Fruits - are melon-like, spherical to oblong, from 6 - 30 cm in diameter, smaller than cultivated melons, and bitter to taste. They are hairy, dark-

green, mottled with pale green or yellowish, long stripes, and contain white flesh.

Seeds - are initially white but become brown with black stripes when mature. Seeds are oval-shaped and flat, 9 - 10 mm long and 6 mm wide.

Lifecycle/Biology:

This annual weed germinates well during periods of warm weather and rainfall, often following spring and summer rains. Its growth is rapid as temperatures increase, particularly over summer. Flowers and fruits develop during summer and autumn, and the plant dies off in autumn. The deep taproot allows the plants to be extremely drought tolerant once established, with plants rarely dying without fruiting. The seeds can be blown by wind or carried along in water.

Ecology:

Widespread throughout mainland Australia. A common species in semi-arid areas. The plant is often found on sandy or flooded soils, along roadsides, neglected areas, watercourses, channels, and also in cultivated situations. The density of the weed varies from year to year, depending on moisture.

The problem:

Commonly found in channels and other areas that retain soil moisture. The seeds are readily spread via irrigation water and appear to remain dormant for several years. Dense stands can be very competitive and deplete the soil of water and nutrients. The long dead stems may also tangle in implements.

Distribution:

Found throughout Australia.

Origin:

A native of Africa.

References:

Plants of Western New South Wales, p. 624 - 625.

Crop Weeds of Northern Australia, p. 145 - 146.

Compiled by:

Graham Charles and Stephen Johnson

Convolvulus erubescens Sims

Australian bindweed



Photographs: Graham Charles

Convolvulus erubescens

Family:

Convolvulaceae (Bindweed family).

Common names:

Australian bindweed, Australian dodder, Blushing bindweed, Pink bindweed.

Confused with:

Field bindweed (*Convolvulus arvensis*).

Botanists now recognise a large number of distinct species and subspecies of the species formerly known as *C. erubescens*. The most common species found throughout most cotton growing areas include *C. graminetinus*, *C. clementii* and *C. remotus*. The following description is generalised to cover all such species. The plant photos in WEEDpak may be a mixture of *C. remotus* and *C. graminetinus*.

Description:

Seedling leaves - the seedling leaves are almost square with a rounded base and a deeply notched tip, 7 mm long and 8 mm wide. This is in contrast to field bindweed where only the seedling leaf tips are slightly notched.

Seedlings - the seedlings are initially erect, but become prostrate as they mature.

Early leaves - the first three to four true leaves are oblong with rounded or bluntly pointed tips.

Adult leaves - are variable in shape, sometimes oblong to oval-shaped, but often shaped like an arrowhead with deeply divided lobes at the leaf base. These leaves are 10 - 80 mm long and 2 - 40 mm wide, and are borne on leaf stalks that are up to 5 - 30 mm long. The margins of the leaves are toothed.

Mature plants - have hairy, prostrate, trailing or climbing stems that arise from a thick taproot. The stems may be more than one metre long and are grey to light-green in colour.

Flowers - are trumpet-shaped and pink or white, 10 - 20 mm in diameter and borne singly, or in groups of up to four, on slender stalks that are up to 45 mm long. The flowers are borne in the leaf forks.

Seed head - is an egg-shaped to spherical, papery capsule, 5 - 10 mm long and wide containing four dark-brown to black angular seeds that are up to 4 mm long. The seeds may be warty, smooth, or covered in short hairs.

Lifecycle/Biology:

A perennial plant with a thick taproot that allows the plant to persist during periods of low soil moisture and to re-shoot if shoot material is damaged. The species regenerates from taproot material and seedlings during the cooler autumn - spring months and flowers throughout the year, often during the spring-autumn period. In excess of 220 seeds have been recorded on large plants. Plants appear to have some frost tolerance.

Ecology:

A common weed in high rainfall and irrigated areas, but also of drainage lines cultivated and wasteland areas. It grows on a wide variety of soil types, from alluvium, to clay, loams and sands.

The problem:

Australian bindweed is a common weed of channel banks and could become a problem in minimum tillage and dryland cotton where it twines through the branches of surrounding cotton plants. Mature plants are difficult to eradicate with herbicides or light cultivation and will regrow from the tap root.

Distribution:

Common throughout all of Australia.

Origin:

A native Australian plant.

References:

Plants of Western New South Wales, p. 556.

Crop Weeds of Northern Australia, p. 126.

Compiled by:

Graham Charles and Stephen Johnson

Conyza bonariensis (L.) Cronquist

Flaxleaf fleabane



Photographs: Graham Charles

Conyza bonariensis

Family:

Asteraceae (Daisy family).

Common names:

Flaxleaf fleabane, Ragweed, Rough conyza, Tall fleabane.

Confused with:

Canadian fleabane (*C. canadensis*) and Tall fleabane (*C. sumatrensis*). The species can be distinguished by:

- **Flowers** - Canadian fleabane flowers when flattened are about 5 mm across, in contrast to the other species where the flowers are about much larger at about 10 mm across.
- **Mature plant height** - flaxleaf fleabane are up to 1 m, where tall fleabane can be up to 2 m
- **Branching** - the lateral branches of flaxleaf fleabane are at least as long as the main stem, whereas the main stem of tall fleabane is longer than the laterals.

Description:

Seedlings - the cotyledon leaves are long and thin (3 mm by 1 mm) with a rounded tip and hairless. The first true leaves are almost circular, 4 mm in diameter and are covered with short hairs.

Leaves - later leaves are more spoon shaped and may have notched margins. They are 2 - 10 cm long and to 15 mm wide and are softly haired. Later leaves on the stems are much smaller than the rosette leaves.

Plants - an annual or short-lived perennial plant that initially forms a rosette. The mature plant is large, erect and spreading to 1 m in height, and may be wider than height. It typically have numerous main branches that arise from the base of the plant. Numerous additional short secondary branches may develop towards the ends of the main branches.

Flower heads - are numerous, pale green to whitish and located at the end of each branch, about 1 cm across when pressed. They are often clustered around the end of a main branch.

Seeds - Seeds are light brown, 1.5 - 2 mm long and thin (about 0.5 mm), and tufted by a parachute of 16 - 20 fine hairs 4 - 6 mm in length that assist in the aerial dispersion of this weed.

Lifecycle/Biology:

Generally emerges in autumn and winter and matures in spring, flowering from spring to autumn.

Ecology:

Found on most soil types and situations. Common in pastures, waste areas and cultivation. Very well adapted to the minimum tillage cropping system. It is a prolific seed producer and seeds are readily dispersed by wind and water.

The problem:

Flaxleaf fleabane is becoming a serious weed of minimum tillage farming systems. It is relatively tolerant to glyphosate, is a prolific seed producer, and its establishment from its small seed is favoured by the microenvironment created by minimum tillage and stubble retention.

Distribution:

Found throughout Australia.

Origin:

A native of South America.

References:

Plants of Western New South Wales, p. 662.

Crop weeds of Northern Australia, p. 61 - 62.

Compiled by:

Graham Charles

Crotalaria dissitiflora Benth.

Grey rattlepod



Photographs: Graham Charles

Crotalaria dissitiflora

Family:

Fabaceae (Pea family).

Common names:

Grey rattlepod, *Crotalaria* takeall, Plains rattlepod, Wild liquorice.

Confused with:

Gambia Pea (*C. goreensis*) and Yellow/Sand Rattlepod (*C. mitchelli*).

Description:

Seedling leaves - oblong to oval-shaped and waxy in appearance. Seedlings and young plants have silvery hairy stems.

Adult leaves - are grey-green, with three oval-shaped leaflets, each 7 - 40 mm long and 4 - 18 mm wide with tiny dots on the surface. The leaflets are hairless on the upper surface and downy underneath. The leaf stalks are up to 11 - 28 mm long.

Plants - are erect or sprawling to bushy, generally less than 30 cm high but up to 100 cm tall and much branched. Stems may or may not be covered in short hairs while the young growth is covered in silvery hairs.

Flowers - are pea-like, rounded, 8 - 11 mm long, bright golden-yellow and borne in groups of 10 - 30 on long flowering stems that are 80 - 260 mm long. Flowering stems occur at the tips of stems and branches, with the uppermost flowers on the flowering stems opening first.

Seed heads - are slightly hairy, rounded oblong pods, 13 - 30 mm long and 4 - 8 mm wide, with an upturned point. The seeds are yellow and 3 mm long. The loose seeds rattle in the seed head when shaken.

Lifecycle/Biology:

A perennial species that grows from seed, but also grows vegetatively from thick underground woody roots. Germination occurs after summer rains followed by rapid growth. Flowering occurs after rainfall year round, but is most common in summer and autumn. It sheds its leaves during winter.

Ecology:

Found in cultivation, rangeland and roadside situations, on heavy clay soils.

The problem:

Grey Rattlepod is known as a take-all species because of its woody underground root system and ability to form dense competitive stands. It is capable of surviving long dry spells and quickly re-shoots after rain. It is difficult to control because of this regenerative potential.

Distribution:

Occurs throughout central and northern Australia.

Origin:

A native Australian species.

References:

Plants of Western New South Wales, p. 387.

Crop Weeds of Northern Australia, p. 76.

Compiled by:

Graham Charles

Cullen tenax (Lindl.) J.W. Grimes

Emu foot (broad leaf type)



Photographs: Graham Charles

Cullan tenax (broad leaf type)

Family:

Fabeaceae (Pea family).

Common names:

Emu foot, Emu grass, Native lucerne, Tough scurfpea, Tough psoralea, Wild lucerne.

Confused with:

There are two distinctly different varieties of this weed, a fine-leaf and a broad-leaf variety. Within the broad-leaf variety are glossy leaf and a dull leaf varieties.

Description:

Seedlings - cotyledon leaves are bright to dark green and glossy. They are oval in shape 4-6 mm long, 3 mm wide, borne on short stems. The two first true leaves are almost circular in shape, 6 mm in length, with a prominent mid-rib, on stems to 20 mm in length. Later leaves are divided.

Leaves - are divided into hands of 5 - 7 finger-like leaflets 4 cm long and 1.5 cm wide. They are glossy to dull green and heavily veined.

Plants - a perennial dense semi-prostrate bush to 50 cm in height.

Flowers - purple, typical pea-like flowers in clusters along the end of branches up to 15 cm long that arise from the leaf axils. Flowers are followed by clusters of black seed pods clasped to the stem.

Seeds - a black, shiny bean-like seed 2.5 - 3 mm long enclosed in tight rough blank pod.

Lifecycle/Biology:

Can germinate, grow and flower year-round and flowers over the summer months. It commonly emerges with cotton after irrigation and will grow with the crop, setting seed from mid-summer on.

Ecology:

Common on heavy clays and lighter soils around water courses.

The problem:

Emu foot is a minor weed, but is becoming more problematic in cotton as it is a perennial that is not well controlled by minimum tillage and reduced tillage systems and it is tolerant of glyphosate. Consequently, plants are establishing in cotton crops and setting seed, with the population increasing over time. This weed has the potential to be problematic if the problem is allowed to continue uncontrolled.

Distribution:

A common plant in the eastern states.

Origin:

An Australian native plant.

References:

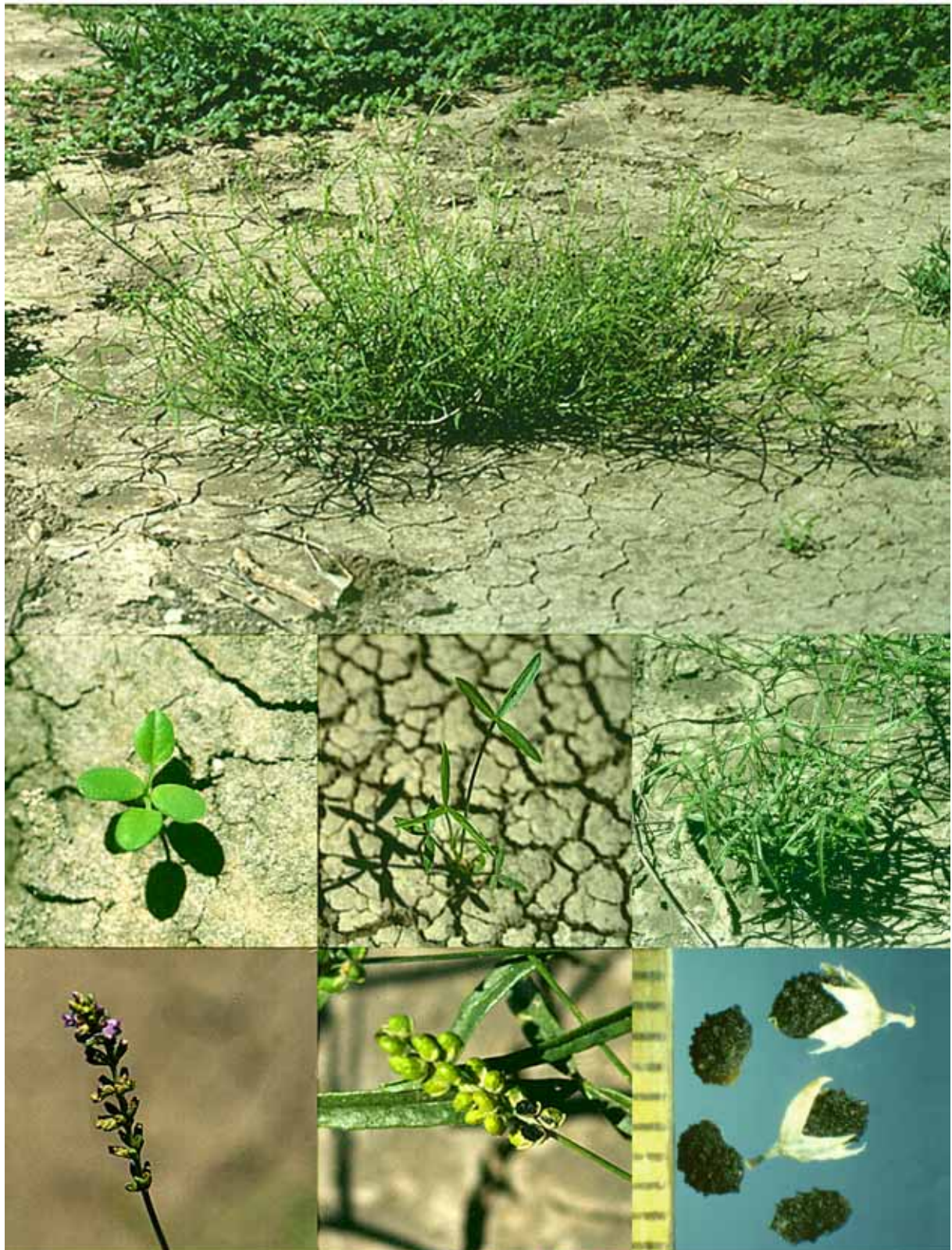
Plants of Western New South Wales, p. 408 - 409 (a description of the fine-leaf variety).

Compiled by:

Graham Charles

Cullen tenax (Lindl.) J.W. Grimes

Emu foot (fine leaf type)



Photographs: Graham Charles

Cullan tenax (fine leaf type)

Family:

Fabeaceae (Pea family).

Common names:

Emu foot, Emu grass, Native lucerne, Tough scurfpea, Tough psoralea, Wild lucerne.

Confused with:

There are two distinctly different varieties of this weed, a fine-leaf and a broad-leaf variety.

Description:

Seedlings - cotyledon leaves are bright to dark green and glossy. They are oval in shape 4-6 mm long, 3 mm wide, borne on short stems. The two first true leaves are more circular in shape, 6 mm in length, with a prominent mid-rib, on stems to 20 mm in length. Later leaves are highly divided.

Leaves - are divided into hands of 3 - 7 finger-like leaflets 2 - 6 cm long and 0.2 - 1 cm wide. They are glossy green.

Plants - a perennial dense semi-prostrate bush to 50 cm in height.

Flowers - purple, typical pea-like flowers in clusters along the end of branches up to 15 cm long that arise from the leaf axils. Flowers are followed by clusters of black seed pods clasped to the stem.

Seeds - a black, shiny bean-like seed 2.5 - 3 mm long enclosed in tight rough blank pod.

Lifecycle/Biology:

Can germinate, grow and flower year-round and flowers over the summer months. It commonly emerges with cotton after irrigation and will grow with the crop, setting seed from mid-summer on.

Ecology:

Common on heavy clays and lighter soils around water courses.

The problem:

Emu foot is a minor weed, but is becoming more problematic in cotton as it is a perennial that is not well controlled by minimum tillage and reduced tillage systems and it is tolerant of glyphosate. Consequently, plants are establishing in cotton crops and setting seed, with the population increasing over time. This weed has the potential to be problematic if the problem is allowed to continue uncontrolled.

Distribution:

A common plant in the eastern states.

Origin:

An Australian native plant.

Reference:

Plants of Western New South Wales, p. 408 - 409.

Compiled by:

Graham Charles

Datura ferox L.

Fierce thornapple



Photographs: Graham Charles

Datura *ferox*

Family:

Solanaceae (Tomato family).

Common names:

Fierce thornapple, Castor oil, False castor oil, Long-spined thornapple, Long-spurred thornapple, Thornapple.

Confused with:

Common thornapple (*D. stramonium*), Downy thornapple (*D. inoxia*) and Hairy thornapple (*D. wrightii*). Natural hybridisation between fierce thornapple and common thornapple may occur.

The species can be distinguished by:

- **Seedlings** - fierce thornapple stems are purplish-black in colour whereas the stems of common thornapple are green.
- **Fruit** - the mature fruit of fierce thornapple and common thornapple stand erect, but the fruit of the other thornapple species hang down. The fruit of fierce thornapple and common thornapple can be readily distinguished as fierce thornapple fruit have 40 - 60 stout (fierce) spines 15 - 35 mm in length, whereas the fruit of common thornapple have many more (100 - 200) fine spines 6 - 16 mm long.

Description:

Seedling leaves - spear or lance-shaped, 18 - 30 mm long and 4 mm wide, on stalks 2 - 4 mm long.

Seedlings - the stem is a purplish-black colour below the seedling leaves.

Early leaves - the first two leaves are shovel-shaped. Subsequent leaves are broadly oval, and angular to triangular in shape, with wavy, scalloped margins.

Leaves - are arranged alternately along the branches 8 - 17 cm long and 6 - 16 cm wide, dark-green and have an unpleasant odour when crushed. The leaves tend to be borne near the branch tips.

Plants - grow up to 2 m high and have smooth, repeatedly forked stems. Stems are green or purple towards the base and may have some hairs.

Flowers - are pink to white, trumpet-shaped and up to 7 cm long. Flowers are borne singly on short stalks in the forks of the branches. They

are made of 5 segments, with each segment ending in a fine point.

Seed heads - oval-shaped, 2 - 4.5 cm long, 1.5 - 3.5 cm diameter, grow upright and are covered with forty to sixty long, 15 - 35 mm, sharp, stout spines. These seed heads are initially green but become brown as they mature and split into 4 segments as they dry. The seeds are kidney-shaped, black or grey, pitted and 4 - 5 mm long.

Lifecycle/Biology:

An annual summer growing species with a vigorous growth habit, particularly under wet conditions. Growth rates of up to two centimetres per day have been recorded. Germinates predominantly in spring and summer from depths of up to 7 - 8 cm in temperatures of 20 to 35°C. Seeds may however germinate at any time of the year given at least 10 mm of rainfall or irrigation. Cultivation appears to stimulate germination by exposing the seeds to light. Flowering occurs from late spring to autumn and can occur within two weeks of emergence. Fierce thornapple is hard seeded coat.

Ecology:

A common weed of cultivation and disturbed areas, often found in summer crops. Widespread throughout many cotton-growing areas, but more common on lighter alluvial soils rather than heavy clays.

The problem:

A large weed that strongly competes with cotton for water, light and nutrients and has the potential to obstruct harvesting machinery.

Distribution:

A common weed throughout Australia.

Origin:

A native of China.

References:

Plants of Western New South Wales, p. 585.
Crop Weeds of Northern Australia, p. 95 - 96.

Compiled by:

Graham Charles and Stephen Johnson

Datura innoxia Mill.

Downy thornapple



Photographs: Graham Charles

Datura *inoxia*

Family:

Solanaceae (Tomatoe family).

Common names:

Downy thornapple, Hoary thornapple, Recurved thornapple.

Confused with:

Common thornapple (*D. stramonium*), Fierce thornapple (*D. ferox*) and Hairy thornapple (*D. wrightii*).

The species can be distinguished by:

- **Leaves and stems** - downy thornapple is covered by a velvety down of fine hairs, particularly on the stems and the undersides of the leaves. None of the other thornapple species are covered with fine hairs except for hairy thornapple which is a relatively uncommon weed.

Description:

Seedling leaves - spear- or lance-shaped, 18 - 30 mm long and 4 mm wide, on stalks 2 - 4 mm long.

Early leaves - the first two leaves are shovel-shaped. Subsequent leaves are broadly oval, and angular to triangular in shape.

Leaves - (and stems) are densely haired, especially on the underside. Leaves are arranged alternately along the branches 6 - 20 cm long and 3 - 12 cm wide and dark-green. The leaves tend to be borne near the branch tips.

Plants - an annual or perennial summer growing weed up to 1.5 m high with velvety, repeatedly forked stems.

Flowers - are white, trumpet-shaped and 15 - 17 cm long. The flowers are borne singly, on short stalks in the forks of the branches. They are made of 5 segments.

Seed heads - spherical in shape, 3.5 - 5 cm in diameter and sit above a thickish collar. Flower buds are initially erect, but tend to droop at flowering and the seed heads point downwards. Seed heads are covered with numerous spines 5 - 10 mm in length. These seed heads are initially green but become brown as they mature, and may split irregularly as they dry. The seeds resemble small pebbles and are black, pitted and 3 - 5 mm in length.

Lifecycle/Biology:

Germinates in spring and summer. Flowering occurs from late spring to autumn and can commence within only a few weeks of emergence. Plants are killed by frost in winter but may regenerate in spring from the root stock.

Ecology:

A weed of waterways, cultivation and disturbed areas, Occurs throughout the cotton-growing area.

The problem:

A smaller, less competitive weed than fierce thornapple, but can still compete strongly with cotton for water, light and nutrients and has the potential to obstruct harvesting machinery.

Distribution:

Found throughout mainland Australia.

Origin:

A native of the Americas.

Reference:

Plants of Western New South Wales, p. 585.

Compiled by:

Graham Charles

Echium indica L.

Patterson's curse



Photographs: Graham Charles

Echium plantagineum

Family:

Boraginaceae (Heliotrope family).

Common names:

Paterson's curse, Blue echium, Blueweed, Lady Campbell weed, Plantain-leaf viper's bugloss, Purple bugloss, Purple echium, Purple vipers bugloss, Riverina bluebell, Salvation Jane.

Description:

Seedlings - cotyledon leaves are oblong, 10 mm long by 6 mm wide with a rounded tip. Leaves and stems are covered in short hairs about 1.5 mm in length.

Leaves - older leaves are less rounded at the tip and are heavily veined. Leaves to 30 cm long and 8 cm wide, are on stalks up to 8 cm in length. These stalks are white at the base and may have red/brown strips on each side running parallel with the stalk. After the rosette stage, the upper leaves on the stems are much smaller and have no stalk.

Plants - an annual or biennial plant with a short, stout taproot, initially forming a large, dense rosette to 60 cm diameter. Mature plants are multi-branched and erect standing to 1.2 m. Stems and branches are covered with short bristles and are unpleasant to the touch.

Flowers - are bright purple, with a reddish tinge towards the base, or occasionally pink or white, 2 - 3 cm long and bell shaped. Flowers have 5 stamens, 2 of which protrude beyond the flower. Flowers are grouped together at the ends of the main and auxiliary branches

Seeds - a rough, angular brown seed 2.7 mm in length.

Lifecycle/Biology:

Germinates in autumn and winter and flowers mainly in spring and early summer. In cooler conditions it may persist through the summer and regrow in the following season.

Ecology:

Paterson's curse is adapted to all soil types. It is most commonly found in disturbed areas, cultivation and over-grazed areas.

The problem:

Is a highly competitive weed with a large, aggressive rosette that competes strongly with crops and pastures. Paterson's curse is toxic to all livestock if eaten in sufficient quantities.

Distribution:

An important weed through all Australia. It is most problematic in pastures that are set-stocked, especially in areas where horses are the main grazer.

Origin:

A native of Europe.

Reference:

Plants of Western New South Wales, p. 561.

Compiled by:

Graham Charles

Euphorbia davidii Subils

David's spurge



Photographs: Graham Charles

Euphorbia davidii

Family:

Euphorbiaceae (Spurge family).

Common names:

David's spurge.

Description:

Seedling leaves - the seedling leaves are oval-shaped to 100 mm long.

Early leaves - the first true leaves are also oval-shaped but have serrated edges.

Adult leaves - are oval to lance shaped, borne opposite each other on the stem, and to 60 mm long and 20 mm wide with indented veins on stalks 5 - 10 mm long. The leaves may be alternate near the base and smaller on flowering branches.

Mature plants - are erect, 5 - 50 cm tall, generally with some lateral branching on stems that are red/purple at the base. The plant is covered in short sparse hairs. The plant turns bright red in autumn and early winter.

Flowers - are in clusters at the end of the branches.

Seed heads - are 2 - 3 mm long and 4 - 5 mm wide with seeds that are around 2.6 mm long, covered in small wart like growths and mottled light brown or grey in colour.

Lifecycle/Biology:

Very little is known about the lifecycle and biology of this summer annual species. Germination occurs throughout spring and summer and there appear to be two seed production flushes on some plants, the first on very small plants to 5 cm high in late spring/early summer and the second on the same, larger plants during autumn. The seeds have considerable seed dormancy.

Ecology:

There are only isolated occurrences of this weed but it is often locally abundant when it occurs. The plant grows well on heavy clay soils.

The problem:

A comparatively rare cotton cropping weed that occurs as scattered plants and in dense stands in places. David's spurge is difficult to control with the current management tools available. The plants probably produce a large amount of seed making control difficult.

Distribution:

Scattered populations in NSW and Southern Qld.

Origin:

An introduced species from South America.

Reference:

Weeds The Ute Guide p. 123.

Compiled by:

Graham Charles and Stephen Johnson

Euphorbia planiticola D.C.Hassall

Plains surge



Photographs: Graham Charles

Euphorbia planiticola

Family:

Euphorbiaceae (Spurge family).

Common name:

Plains spurge.

Confused with:

A number of other spurges occur throughout the area.

Description:

Seedlings - has a very fine seedling, with long, fine leaves to 10 mm long and 3 mm wide with a rounded tip, on a long stem.

Leaves - older leaves are similar in shape but even longer to 50 mm long and 5 mm wide with a slight keel.

Plants - a fine, much branched annual plant 30 - 50 cm in height. The fine stems contain a latex-like sap that is exposed when the stems are broken.

Flowers - are yellow, very small and borne on short stalks 3 - 5 mm long in the leaf axils.

Seeds - are in a 3-seeded dark green pod that becomes brown at maturity. Seeds are 2.7 mm in length, angular, light brown and deeply pitted

Lifecycle/Biology:

Seedlings emerge in spring with the cotton or after the first irrigation. Flowering occurs in summer and autumn

Ecology:

Plains spurge grows on open areas of heavy clay soils of the western plains.

The problem:

Plains spurge is a minor weed of cotton, but significant numbers can emerge with cotton in early spring and require control.

Distribution:

More common in the more westerly areas of the cotton belt.

Origin:

An Australian native species.

Reference:

Plants of Western New South Wales, p. 457.

Compiled by:

Graham Charles

Fallopia convolvulus (L.) Á.Löve

Black bindweed



Photographs: Graham Charles

Fallopia convolvulus

Family:

Polygonaceae (Dock family).

Common names:

Black bindweed, Climbing buckwheat, Knot bindweed, Wild buckwheat.

Confused with:

New Zealand spinach (*Tetragonia tetragoniodes*) and Spiny emex (*Emex australis*) at the seedling stage.

Description:

Seedling leaves - the seedling leaves are pale green and have an elongated, oval-shape.

Early leaves - the first true leaves are egg-shaped, have a notched base and an arrowhead-shape.

Adult leaves - are arrowhead-shaped tapering to a narrow point, 15 - 70 mm long and 8 - 40 mm wide.

Plants - an annual or biennial climbing plant with thin stems to at least 100 cm long. The plants may be hairless or covered in very small fine hairs.

Flowers - are small, with white or pale green petal-like structures 3 - 4 mm long. Flowers occur in either small clusters at the end of stems or on long flowering stems that arise from the leaf forks.

Seed head - the seeds are three-angled, 4 - 5 mm long, hard and dark brown or black with a roughened surface. Seeds have the same general shape and are tightly enclosed in these heads, smooth, glossy black 2.5 - 4 mm in length.

Lifecycle/Biology:

Germinates in spring and summer, and flowers during late spring and summer.

Ecology:

Common on heavy clay soils. A common weed in wheat cropping systems.

The problem:

Black bindweed is a common weed of winter cropping and fallows, and can be an early season weed of cotton crops as well as gardens and waste areas. Problems generally occur when it is not adequately controlled in preceding wheat crops. It is difficult to control and if left to grow unchecked will form dense competitive patches where it climbs over cotton plants smothering and binding them together.

Distribution:

Occurs in most states of Australia.

Origin:

An introduced species from Europe/Asia.

References:

Plants of Western New South Wales, p. 231 (this species was previously known as *Polygonum convolvulus*).

Crop Weeds of Northern Australia, p. 112 - 113.

Compiled by:

Graham Charles

Geranium solanderi var. *solanderi* Carolin

Australian cranesbill



Photographs: Graham Charles

Geranium solanderi

var. solanderi

Family:

Geraniaceae (Geranium family).

Common names:

Australian cranebill, Native geranium, Austral cranebill, Cut-leaf cranebill, Hairy geranium.

Confused with:

Several other of the cranebill family occur in the area of which the most common is Common cranebill (*G. retrorsum*).

Description:

Seedlings - Cotyledon leaves are 2-lobed, with a distinct middle vein, 5 mm long by 7 mm wide. The cotyledon stems have a reddish tinge. The first true leaves are circular, but divided into 5 - 8 lobes and have a reddish centre and stems. Older leaves are increasingly more heavily lobed, with further lobes developing at the ends of the lobes.

Leaves - are 1 - 3 cm long, 1 - 5 cm wide and deeply divided into 5 - 10 lobes, that again divide towards the tip into 3 - 5 additional lobes. Leaf stalks are to 5 cm in length and covered in fine hairs.

Plants - a squat or spreading, annual or perennial plant covered with fine, soft hairs. Stems to 50 cm length developing from a swollen taproot.

Flowers - are 1 - 1.5 cm across, with 5 pale pink petals, with lighter veins. Single or more commonly double flowers occur on the ends of stalks 2.5 - 5 cm in length, arising from a common stalk 1 - 6 cm long.

Seeds - are enclosed in a hairy capsule with a prominent awn 9 - 12 mm long that curves around the capsule. Seeds are dark brown to almost black, 1.5 - 2.5 mm in length and covered with fine pits that are not obvious to the naked eye.

Lifecycle/Biology:

A winter growing species that flowers and sets seed in spring.

Ecology:

Occurs on a range of soil types and situations. Can be found in cotton fields from the Namoi through to Dirranbandi.

The problem:

Australian cranebill is a minor weed of cotton, with scattered plants occurring in occasional fields. Plants will be favoured and may perenniate in minimum tillage systems.

Distribution:

Found throughout most of Australia.

Origin:

A native of Australia.

Reference:

Plants of Western New South Wales, p. 433.

Compiled by:

Graham Charles

Helianthus annuus L.

Sunflower



Photographs: Graham Charles

Helianthus annuus

Family:

Asteraceae (Daisy family).

Common names:

Sunflower, Annual sunflower, Common sunflower.

Confused with:

Wild sunflower (*Verbesina encelioides*). These plants can be distinguished by:

- **seedling leaf shape** - sunflower leaves are a slightly flattened oval shape with a pointed end. Wild sunflower are a blade shape, with a tapering, pointed end.
- **adult plants** - sunflowers have dark green leaves and a single stem or may have some branching towards the top. Wild sunflowers are blue/green in colour and highly branched, with branches emerging from near the base.
- **seeds** - sunflower has a flattened, wedge shape black seed with grey stripes. Wild sunflower has a smaller brown seed. The inner seeds in the head are winged, with a prominent pale wing surrounding the seed

Description:

Seedlings - can emerge from very deep in the soil. Cotyledon leaves are oar-shaped, 15 - 20 mm long and 5 - 8 mm wide. The first true leaves are rounded, with a pointed tip and prominent, white central vein, 20 - 30 mm long and 10 - 15 mm wide. A strong, hairy central stem quickly develops, lifting these leaves above the ground.

Leaves - are large, alternate, spade shaped, with a pointed and prominent veins. They have serrated edges and are up to 30 - 40 cm long and to 35 cm wide, borne on stalks 15 - 25 cm long.

Plants - in cultivation may be large, to 2 m in height, terminating in a large, dinner plate sized flower head. Sunflowers have a long taproot. In waste areas, plants are often shorter, multi-branched, with much smaller leaves and many, much smaller flower heads.

Flower heads - may be up to 30 cm across, with a ring of bright yellow "petals" 2 - 4 cm long surrounding the centre of the flower head. The flower head arranged in a complex pattern of

whorls and is surrounded by 2 layers of green, pointed bracts. Flower heads generally face the sun, following the sun's path during the day. This pattern ceases as the heads mature. Heads become black at maturity as the flower parts drop off, exposing the seeds.

Seeds - are large, wedge shaped and flattened, 5 - 16 mm long, grey to black with longitudinal streaks.

Lifecycle/Biology:

An annual or biennial, summer growing plant which is relatively drought tolerant. Volunteer plants can be seen at most times of the year, following rain, and will flower from spring through to autumn.

Ecology:

Can occur on a range of soil types and situations, but prefers sandy soils and wetter places. Can be found on road sides, disturbed areas, waste area and fallow paddocks wherever sunflower is grown.

The problem:

Sunflower is a minor weed, with scattered plants occurring along roadsides wherever sunflowers are grown.

Distribution:

Found throughout most of Australia where sunflowers are grown. It can also be a garden escape.

Origin:

A native of North America.

Reference:

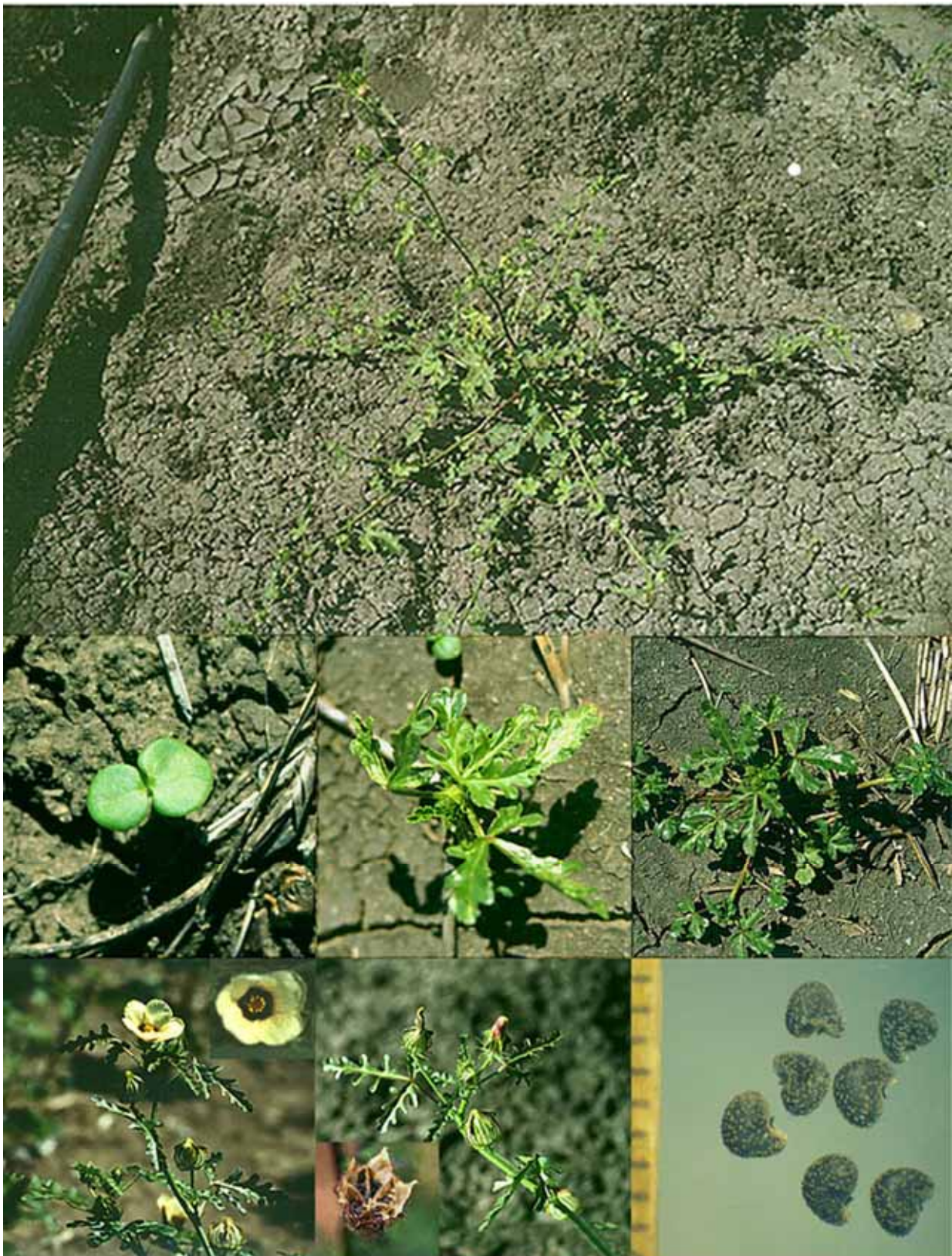
Plants of Western New South Wales, p. 679 - 680.

Compiled by:

Graham Charles

Hibiscus verdcourtii Craven

Narrow-leaf bladder ketmia



Photographs: Graham Charles

Hibiscus verdcourtii

Family:

Malvaceae (Hibiscus family).

Common names:

Narrow-leaf bladder ketmia, Bladder ketmia, Flower-of-an-hour, Rose mallow, Wild gooseberry.

Confused with:

Wide-leaf bladder ketmia (*H. tridactylites*). The varieties can be distinguished by:

- **Leaf shape** - narrow-leaf bladder ketmia leaves are 2 - 9 cm long and deeply divided with the lobes much wider at the middle and towards the tip than at the base, where wide-leaf bladder ketmia leaves are 2 - 10 cm long and wide and the lobes are more or less uniformly wide to the tip.
- **Flower colour** - narrow-leaf bladder ketmia flowers have a deep red/purple throat, where wide-leaf bladder ketmia flowers are uniformly creamy/white.

Description:

Seedling leaves - the cotyledon leaves are similar in shape with one leaf circular to broadly oval in shape and slightly larger, and the other circular with a slightly flattened base, 7 - 16 mm long and 9 - 15 mm wide and on stems to 10 - 20 mm long.

Early leaves - the first true leaf is roughly circular with a number of rounded teeth. Successive leaves are three-lobed and deeply divided.

Adult leaves - are three-lobed, 20 - 90 mm long and 15 - 115 mm wide, borne on 20 - 65 mm long stems, with deeply toothed or indented leaf margins, often tinged with purple or red. There is some variability in leaf shape.

Mature plants - are erect, to 130 cm, with some branches semi-erect. Plants arise from a taproot to 100 cm deep. Adult plants have many branches that may be covered in sparse hairs. The stems are green-brown and sometimes purplish.

Flowers - the single hibiscus-like flowers are borne in the upper leaf forks, with five cream to yellow petals, with deep red/purple centres around 30 mm wide, on stalks 5 - 20 mm long.

Seed heads - the light-grey, papery, bladder-like seed heads are nearly see through at maturity, 10 - 20 mm diameter, are covered in soft hairs, have raised purple ribs (that are purple in colour prior to maturity), split into five segments on maturity and are easily broken off the plant when mature. Each seed head contains 30 - 40 dull, light- to mid-grey or brown kidney-shaped seeds that are 2 mm and 1.5 mm wide that have a pimpled seed surface.

Lifecycle/Biology:

Seedlings can emerge in successive flushes at any time after rainfall or irrigation, at densities of up to 200 seedlings/m². Soil disturbance increases emergence. Seedlings grow rapidly and can flower within 30 days of emergence in spring, summer and autumn, A flush of flowers may occur a week or more after rainfall and irrigation. Flowers open for only a day or less and are self pollinated. Mature seed can be set within 46 days of emergence. Seed production can continue year round and peaks in summer and early autumn. Seed can be produced on plants less than 5 cm high, with 1,500 to 16,000 seeds produced on medium sized plants. Bladder ketmia is an annual plant with strong seed dormancy. Seed can persist for a long period, with 65% viable after two years.

Ecology:

This plant is a common weed of summer crops, degraded pastures, disturbed areas, roadsides and wasteland. Cultivars of this variety are planted as garden ornamentals. It is found on a wide variety of soil types, and particularly on heavy cracking clays.

The problem:

A common weed of irrigated and dryland crops and can be an alternative host for insects and cotton pathogens. This variety is more of a problem in eastern and cooler cotton growing areas. Individual plants are not overly competitive, but dense stands can cause yield losses. Early control is important to prevent seed set. Plants are generally killed by frost, although some plants may continue to grow and produce seed over winter.

Distribution:

Occurs throughout Australia.

Origin:

Thought to be an introduced plant.

References:

Plants of Western New South Wales, p. 481.

Crop Weeds of Northern Australia, p. 134 - 135. The description fits both varieties. The wide-leaf variety is shown on page 135.

Johnson, S. B. Ecology and management of bladder ketmia (*Hibiscus trionum*) and other emerging problem Malvaceae weeds.

Compiled by:

Graham Charles and Stephen Johnson

Hibiscus tridactylites Lindley

Wide-leaf bladder ketmia



Photographs: Graham Charles

Hibiscus tridactylites

Family:

Malvaceae (Hibiscus family).

Common names:

Wide-leaf bladder ketmia, Bladder ketmia, Flower-of-an-hour, Rose mallow, Wild gooseberry.

Confused with:

Narrow-leaf bladder ketmia (*H. verdcourtii*), and Native rosella (*Abelmoschus ficulneus*) at the seedling stage. The bladder ketmia varieties can be distinguished by:

- **Leaf shape** - narrow-leaf bladder ketmia leaves are 2 - 9 cm long and deeply divided with the lobes much wider at the middle and towards the tip than at the base. Wide-leaf bladder ketmia leaves are 2 - 10 cm long and wide and the lobes are more or less uniformly wide to their base.
- **Flower colour** - narrow-leaf bladder ketmia flowers have a deep red/purple throat. Wide-leaf bladder ketmia flowers are uniformly creamy/white.

Description:

There are two types of wide-leaf bladder ketmia, differentiated by the colour of the flower centre. The yellow centre flower type (pictured) is common throughout NSW and Southern Qld. The red centre flower type (on the cover of WEEDpak) co-occurs on the Darling Downs and is found in Central Qld. The types are similar in growth and lifecycle and in the problems they cause.

Seedling leaves - the cotyledon leaves are similar in shape with one leaf circular to broadly oval in shape and slightly larger, and the other circular with a slightly flattened base, 14 - 22 mm long and wide, and on stems 10 - 20 mm long.

Early leaves - the first true leaf is broadly oval-shaped with shallow rounded teeth along the margins. The second and third true leaves are generally unlobed, while the fourth true has three shallow lobes.

Adult leaves - are three to five-lobed, the yellow centre flower type 20 - 105 mm long, 15 - 105 mm wide, and borne on stems 20 - 35 mm long. The leaves of the red centre flower type are 20 - 110 mm long and 15 - 75 mm wide borne on stems 30 mm long. Leaves usually have a shiny waxy texture and feel with shallow and irregular teeth.

Mature plants - are erect, to 150 cm high and sometimes with coarse hairs on the stem, have some branching and a deep taproot to 100 cm depth. Stems are always green.

Flowers - the single hibiscus-like flowers are borne in the upper leaf forks, with five cream to white petals, and either yellow or cream coloured centres, or deep red-maroon centres, depending on type. Flowers are around 30 mm wide, borne

on stems 5 - 20 mm long and are often longer on plants of the red centre flower type.

Seed heads - are straw to brown-coloured and bladder-like, covered in rough hairs, with raised ribs, 10 - 20 mm long that split into five valves at maturity. Seed heads contain 25 - 40 shiny black kidney shaped seeds 3 mm long by 2 mm wide.

Lifecycle/Biology:

Seedlings emerge in successive flushes of up to 200 seedlings/m² after rainfall or irrigation during the spring - autumn period. Seedlings grow rapidly and can begin flowering within 40 days of emergence. Flowering occurs from late-spring, to autumn, with flushes of flowers a week or more after rainfall and irrigation. Flowers open for a day, or less. Mature seed can be set within 50 - 60 days of emergence on plants less than 5 cm high. Seed production peaks in late summer and early autumn. Medium sized plants produce up to 8,000 seeds. Wide-leaf bladder ketmia is a frost sensitive annual with strong seed dormancy. Seed can persist for long periods with 50% remaining viability after one year and 15% after two years.

Ecology:

A common weed of summer crops, disturbed areas and of wasteland. Common on heavy clay soils, particularly after flooding and heavy rainfall.

The problem:

A common weed of irrigated and dryland crops and may be an alternate host to some insect and crop pathogens. This variety is more a problem in the western and warmer areas where cotton is grown. While individual plants are not overly competitive, dense stands can cause yield losses and early control is important to prevent seed set.

Distribution:

Occurs throughout Australia

Origin:

Probably a native species.

References:

Crop Weeds of Northern Australia, p. 134 - 135. The description is relevant for both wide-leaf and narrow-leaf varieties. The central Qld specimen on page 135 is probably the red centre flower type.

Johnson, S. B. Ecology and management of bladder ketmia (*Hibiscus trionum*) and other emerging problem Malvaceae weeds.

Compiled by:

Graham Charles and Stephen Johnson

Ibicella lutea (Lindl.) Van Eselt.

Yellow-flowered Devil's claw



Photographs: Graham Charles

Ibicella

Lutea

Family:

Martyniaceae (Devil's claw family)

Common names:

Yellow-flowered devil's claw, Devil's grip, Double claw, Eagle's claw, Elephant tusks, Goat's head, Pumpkin vine, Ram's horn, Unicorn plant.

Confused with:

Purple-flowered devil's claw (*Proboscidea louisianica*). The species can be distinguished by:

- **Flowers** - yellow-flowered devil's claw has golden/yellow flowers with darker orange streaks inside the flowers which are clustered at the end of the stems. Purple-flowered devil's claw has pale/lilac flowers often spotted with yellow or purple inside which are borne on short stalks.

Description:

Seedlings - the cotyledon leaves are triangular with a rounded tip and gently rounded base, to 4 cm in width, with prominent lighter veins. The leaves and stems are covered with dense hairs.

Leaves - round or heart shaped hairy leaves 5 - 20 cm in diameter, opposite, on stalks 10 - 15 cm long. Leaves have prominent light green to white veins.

Plants - a spreading, pumpkin like annual plant to 30 cm high and up to 2 m diameter with a strong smell. Plants are covered with short hairs which exude a sticky material that makes the plant clammy to the touch.

Flowers - trumpet shaped with 5 unequal lobes, 2 - 5 cm long, 4 - 6 cm in diameter, golden/yellow with darker orange streaks inside borne in dense clusters at the ends of the stems.

Seed pods - are initially green but becoming brown at maturity. Pods become a distinctive clasping, 2 clawed hand at maturity, with inward curving claws 5 - 15 cm long in total. Seeds are black, rough, angular 1 cm in length

Lifecycle/Biology:

Emerges in spring and flowers in late summer and autumn. Plants are killed by frost.

Ecology:

Occurs in pastures and cultivation. Well adapted to lighter clays.

The problem:

Devil's claw is a large, spreading plant that can be competitive with cotton and can cause difficulties for cultivation and harvesting equipment.

Distribution:

Found throughout the Eastern States of Australia.

Origin:

A native of South America.

Reference:

Plants of Western New South Wales, p. 603.

Compiled by:

Graham Charles

Ipomoea diamantinensis

Desert cowvine



Photographs: Graham Charles

Ipomoea *diamantiniensis*

Family:

Convolvulaceae (Bindweed family).

Common name:

Desert cowvine.

Confused with:

Cowvine (*I. lonchophylla*) and bellvine (*I. plebeia*). These species can be distinguished by:

- **The cotyledon leaves** - Bellvine cotyledons are not deeply divided, with the base of the fingers dividing at nearly half the length of the cotyledon. Cowvine and desert cowvine have deeply divided cotyledons, with 2 long, thin fingers. These fingers are 3 - 4 cm long in cowvine and 4 - 6 cm long in desert cowvine.
- **Leaf shape and size** - desert cowvine leaves are 5 - 15 cm long and 2 - 8 cm wide with a pommel-like protrusion at the base. Cowvine leaves are 3 - 10 cm long, 1 - 7 cm wide and relatively flat at the base, and bellvine leaves are 3 - 8 cm long, 1 - 6 cm wide and cut up from the base of the leaf to the stem.
- **Plant size** - desert cowvine is a much larger, more succulent plant than the other morning glory's found in cotton, with hollow stems 5 - 6 mm in diameter.

Description:

Seedlings - a large, succulent seedling. The cotyledons are deeply divided into two long fingers with rounded tips and an indented mid-rib, each finger 3 - 5 cm long, and 4 - 6 mm across. The first true leaves are a long, thin, tapering, sword shape, with a rounded pommel at the base, 4 - 8 cm long, 1 - 1.5 cm wide.

Leaves - older leaves develop a broader shape, 5 - 15 cm long, 2 - 8 cm wide, still with a pommel-like base, although less pronounced than earlier leaves. Leaves have a deep central vein and are borne on stalks 2 - 10 cm long.

Plants - a trailing, semi-prostrate annual vine with thick, hollow stems 5 - 6 mm in diameter. Plants can grow to 5 or 6 m in diameter or more.

Flowers - a small, white trumpet-shaped flower 13 - 16 mm diameter with 5 joined petals borne on a short stalk 2 - 3 cm long.

Seeds - 4 or 5 segmented, densely haired seeds are enclosed in a capsule 9 - 17 mm in diameter that splits open at maturity. Seeds are brown and 6 - 8 mm in length.

Lifecycle/Biology:

Emerges in spring and flowers in summer and autumn.

Ecology:

Grows on the clay floodplain soils.

The problem:

Only a few plants have been found in cotton, but this weed has the potential to be a major problem as it is a prolific grower, produces a large amount of seed and is tolerant of most of the herbicides used in cotton. It may become a problem in low-input systems. The main WEEDpak identification photo was of a single young plant on the edge of a cotton field in January showing the growth potential of this weed.

Distribution:

Found in the northern half of Australia.

Origin:

An Australian native weed.

Reference:

The description of desert cowvine in Plants of Western New South Wales, p. 557, is not consistent with the plant described in WEEDpak.

Compiled by:

Graham Charles

Ipomoea lonchophylla J.M.Black

Cowvine



Photographs: Graham Charles

Ipomoea lonchophylla

Family:

Convolvulaceae (Bindweed family).

Common names:

Cowvine, Common cowvine, Peachvine.

Confused with:

Bellvine (*I. plebeia*), Common morning glory (*I. purpurea*), Desert cowvine (*I. diamantinensis*). These species can be distinguished by:

- **The cotyledon leaves** - cowvine and desert cowvine have deeply divided cotyledons, with 2 long, thin fingers. These fingers are 3 - 4 cm long in cowvine and 4 - 6 cm long in desert cowvine. Bellvine and common morning glory cotyledons are not deeply divided, with the base of the fingers dividing at nearly half the length of the cotyledon.

- **Leaf shape and size** - cowvine leaves are 3 - 10 cm long, 1 - 7 cm wide and relatively flat at the base. Desert cowvine leaves are 5 - 15 cm long and 2 - 8 cm wide with a pommel-like protrusion at the base, and bellvine and common morning glory leaves are 3 - 8 cm long, 1 - 6 cm wide and cut up from the base of the leaf to the stem.

Description:

Seedling leaves - long and deeply divided into two fingers 3 - 4 cm long by 4 mm wide.

Early leaves - the first true leaf is long and spear-shaped and subsequent leaves are triangular and have flat or notched bases and wavy margins.

Seedlings - the young stems may be purplish in colour.

Adult leaves - egg-shaped with notched bases, with margins that tend to fold inwards. Leaves are 3 - 10 cm long and 1 - 7 cm wide and are generally hairless or only slightly hairy. These leaves are borne on stalks 1 - 6 cm long.

Plants - have rough or smooth stems that may be up to 40 cm long and 20 cm high. The stems rarely twine.

Flowers - are white and trumpet-shaped, about 9 - 12 mm long. Single or paired flowers arise from the leaf forks on stalks that are 5 - 30 mm long.

Seed head - a spherical, papery capsule about 7 - 9 mm in diameter, containing 3 or 4 angular downy seeds 4 - 6 mm long.

Lifecycle/Biology:

An annual and occasionally perennial species that predominantly grows during spring, summer and autumn. Seedlings emerge after rainfall and irrigation throughout the year, but only surviving in frost-free periods. Plants grow rapidly and can flower within a few weeks of emergence when they are only 5 cm in height and have up to three true leaves. Plants continue to flower and produce seed throughout spring, summer and autumn. Adult plants develop long twining branches that form thick ground covering mats. At least 1000 seeds have been found on plants up to 3 m in diameter. These seeds have a strong seed dormancy and survive many years in the soil. Around 90% of seeds can survive in the soil from year to year. Seed banks of 1000 to 2500 seeds/m² have been found, with 80% in the upper 30 cm of the soil, or 45% in the top 10 cm of the soil. Seeds seldom emerge from greater than 5 cm in depth.

Ecology:

Found on the heavy clay soils of floodplains and other cotton growing areas. A common species throughout the coolibah woodlands and Mitchell grassland communities (some of which are now occupied by cotton growing areas). Dense stands of the weed may occur following summer floods or heavy rains.

The problem:

A common weed of many summer growing crops including cotton. It is difficult to control with conventional management and competes strongly for light, soil water and nutrients.

Distribution:

Found throughout much of the higher rainfall areas inland of northern and central Australia.

Origin:

A native species.

References:

Plants of Western New South Wales, p. 558.

Crop Weeds of Northern Australia, p. 123 - 124.

Charles, G. 2002. Managing cowvine in cotton. WEEDpak.

Compiled by:

Graham Charles and Stephen Johnson

Ipomoea plebeia R.Br.

Bellvine



Photographs: Graham Charles

Ipomoea plebeia

Family:

Convolvulaceae (Bindweed family).

Common name:

Bellvine.

Confused with:

Cowvine (*I. lonchophylla*), Common morning glory (*I. purpurea*), and Desert cowvine (*I. diamantinensis*). These species can be distinguished by:

- **The cotyledon leaves** - cowvine and desert cowvine have deeply divided cotyledons, with 2 long, thin fingers. These fingers are 3 - 4 cm long in cowvine and 4 - 6 cm long in desert cowvine. Bellvine and common morning glory cotyledons are not deeply divided. Bellvine cotyledons are divided with the fingers more than half the length of the cotyledon, and the cotyledon longer than it is wide. Common morning glory cotyledons are divided with the fingers less than half the length of the cotyledon, and the cotyledon as wide as it is long.
- **Leaf shape and size** - bellvine leaves are 3 - 8 cm long, 1 - 6 cm wide and generally triangular in shape, cut up from the base of the leaf to the stem. Cowvine leaves are 3 - 10 cm long, 1 - 7 cm wide and relatively flat at the base. Desert cowvine leaves are 5 - 15 cm long and 2 - 8 cm wide with a pommel-like protrusion at the base. Common morning glory leaves are 2 - 10 cm long and wide, almost circular in shape, cut up from the base of the leaf to the stem and have a distinctly pointed tip.

Description:

Seedling leaves - are v-shaped with a broad flat base that extends slightly beyond the sides, 25 - 30 mm long and wide, on 11 - 16 mm long stalks.

Early leaves - the first true leaf is egg-shaped with a notched base. Subsequent leaves have scattered hairs and a notched base. The notch becomes more pronounced as the leaves mature and this is a consistent feature in all leaves.

Adult leaves - are egg to oval-shaped or almost triangular 25 - 80 mm long and 10 - 60 mm wide, with lobes at the base either side of the stem and scattered hairs. The leaves are borne on stalks 10 - 60 mm long.

Plants - weak stemmed, either prostrate or climbing, twining over other plants. Plants are covered in soft hairs.

Flowers - white, trumpet-shaped 9 - 13 mm, and arise from the leaf forks on stalks 5 - 15 mm long. One to three flowers are borne in each leaf fork.

Seed head - a thin, papery spherical capsule 7 - 9 mm in diameter containing four hairy, segmented brown seeds 3 - 5 mm in length. Seeds have a light brown strip running down their length.

Lifecycle/Biology:

An annual species that germinates mainly during spring and summer. Bellvine grows throughout spring, summer and autumn, but may grow throughout the year under suitable conditions when sheltered from frost. Plants flower under decreasing day length in autumn.

Ecology:

A common weed of cultivation and disturbed areas. Common on heavy cracking clay soils.

The problem:

A common weed roadsides, irrigation structures and many summer growing crops including cotton; more common in Qld. The weed is difficult to control in cotton with conventional management. It can cause blockages to harvesting machinery by binding cotton plants together requiring herbicide application to kill the weed.

Distribution:

Found throughout much of the higher rainfall areas of northern and central Australia.

Origin:

A native species.

Reference:

Crop Weeds of Northern Australia, p. 124 - 125.

Compiled by:

Graham Charles and Stephen Johnson

Ipomoea purpurea (L.) Roth

Common morning glory



Photographs: Graham Charles

Ipomoea purpurea

Family:

Convolvulaceae (Bindweed family).

Common names:

Common morning glory, Morning glory, Small morning glory, Tall morning glory.

Confused with:

Littlebell (*I. triloba*), Bellvine (*I. plebia*), Cowvine (*I. lonchophylla*), and Desert cowvine (*I. diamantinensis*). These species can be distinguished by:

- **The cotyledon leaves** - cowvine and desert cowvine have deeply divided cotyledons, with 2 long, thin fingers. These fingers are 3 - 4 cm long in cowvine and 4 - 6 cm long in desert cowvine. Littlebell, bellvine and common morning glory cotyledons are not deeply divided. Littlebell cotyledons are divided with the fingers about $\frac{3}{4}$ the length of a "V" shaped cotyledon leaf. Bellvine cotyledons are divided with the fingers more than half the length of the cotyledon, and the cotyledon longer than it is wide. Common morning glory cotyledons are divided with the fingers less than half the length of the cotyledon, and the cotyledon as wide as it is long.
- **Leaf shape and size** - common morning glory leaves are 2 - 10 cm long and wide, almost circular in shape, cut up from the base of the leaf to the stem and have a distinctly pointed tip. Cowvine leaves are 3 - 10 cm long, 1 - 7 cm wide and relatively flat at the base. Desert cowvine leaves are 5 - 15 cm long and 2 - 8 cm wide with a pommel-like protrusion at the base. Bellvine leaves are 3 - 8 cm long, 1 - 6 cm wide and generally triangular in shape, cut up from the base of the leaf to the stem. Young littlebell leaves are intermediate in shape between bellvine and common morning glory, 2 - 8 cm long and wide, heart shaped. Older leaves develop a distinctive 3-lobed shape, with all 3 lobes distinctly pointed.
- **Flower colour** - littlebell has a pinkish/purple flower with a darker throat. Common morning glory flowers vary from almost white to bright crimson to purplish with a lighter or white throat, and bellvine, cowvine and desert cowvine all have white flowers.

Description:

Seedling leaves - are butterfly-shaped, 22 - 26 mm long and 23 - 27 mm wide on stalks that are 23 to 25 mm long.

Leaves - the first true leaves and subsequent adult leaves are heart-shaped. These leaves have short hairs on both leaf surfaces and are pale green underneath. The margins of the leaves may be

three-lobed or entire, are 20 - 150 mm long and 20 - 120 mm wide and are borne on stalks 5 - 150 mm long.

Plants - have climbing stems that are generally greater than 50 cm long.

Flowers - are trumpet-shaped, 30 - 60 mm long and wide. Flower colour varies from white to mauve or violet/blue. Flowers occur singly or in groups of two to three on flowering stalks that are 30 - 180 mm long and arise from the leaf forks.

Seeds - the seed head is a round, papery capsule, 8 - 10 mm wide, with up to six angular brown seeds 4 - 5 mm in length that are covered in small membranous scales.

Lifecycle/Biology:

A vigorous annual climber that emerges in spring and summer and can flower throughout the year, although flowering in most common in spring and summer.

Ecology:

A weed of cultivated and disturbed/neglected areas. This species can grow on a wide variety of soil types from sandy/alluvium to heavy clays.

The problem:

A garden escape that is still commonly grown in gardens as an ornamental. Common morning glory competes for light, soil water and nutrients, and can twine through and over cotton plants, interfering with in-crop management and harvesting by binding cotton plants together. It has the potential to be a similar problem to bellvine in cotton. Scattered populations of common morning glory have been found in the Emerald and Bye cotton areas.

Distribution:

Scattered populations occur throughout New South Wales and Queensland

Origin:

An introduced species from Tropical America. It was introduced as a garden ornamental and is still commonly grown in gardens.

References:

Plants of Western New South Wales, p. 557.

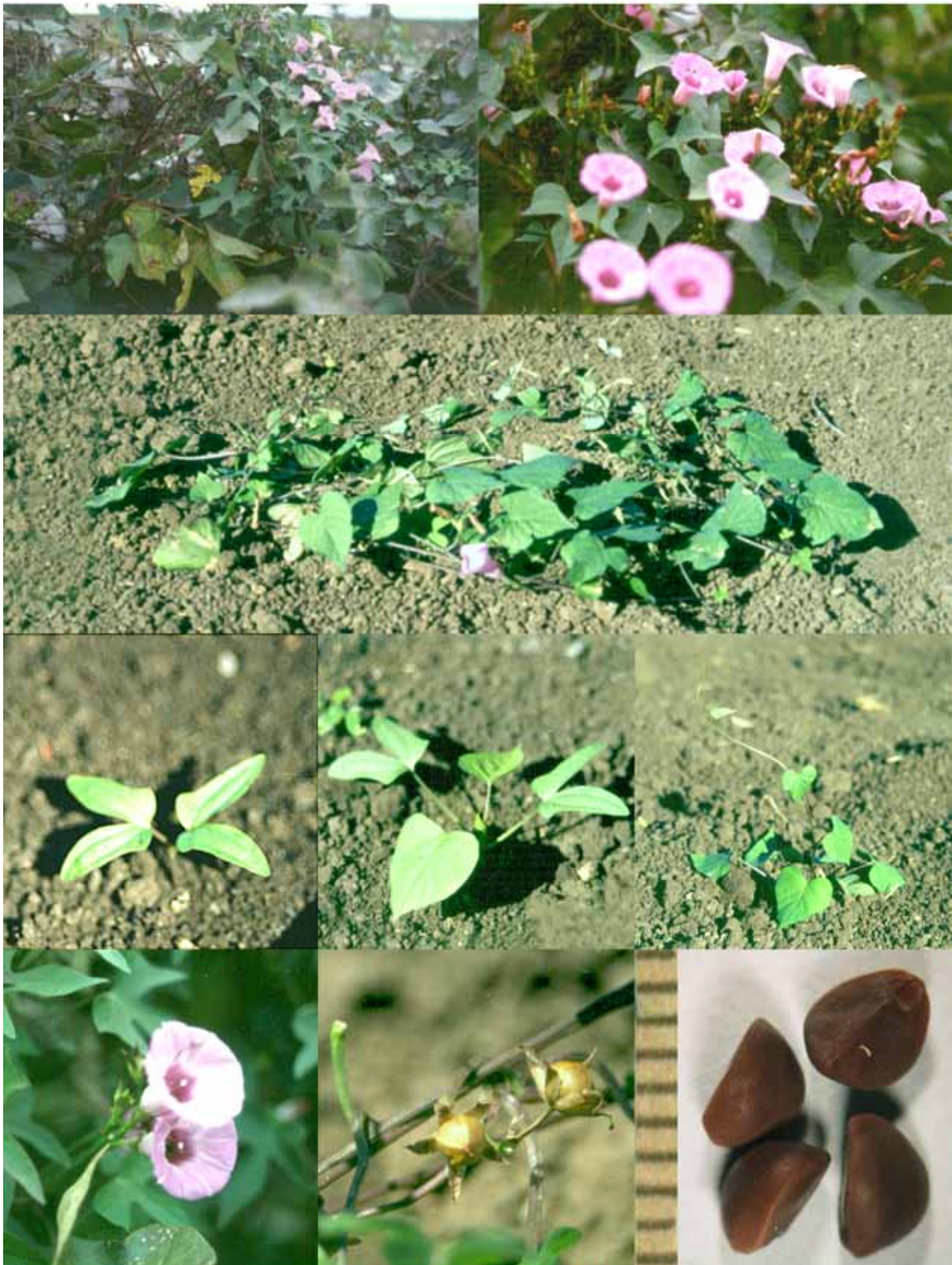
Crop Weeds of Northern Australia, p. 125 - 126.

Compiled by:

Graham Charles

Ipomoea triloba L.

Littlebell



Photographs: Graham Charles

Ipomoea triloba

Family:

Convolvulaceae (Bindweed family).

Common names:

Littlebell, Pink convolvulus, Potato vine.

Confused with:

Common morning glory (*I. purpurea*), Bellvine (*I. plebia*), Cowvine (*I. lonchophylla*), and Desert cowvine (*I. diamantinensis*). These species can be distinguished by:

- **The cotyledon leaves** - Cowvine and desert cowvine have deeply divided cotyledons, with 2 long, thin fingers. These fingers are 3 - 4 cm long in cowvine and 4 - 6 cm long in desert cowvine. Littlebell, bellvine and common morning glory cotyledons are not deeply divided. Littlebell cotyledons are divided with the fingers about $\frac{3}{4}$ the length of a "V" shaped cotyledon leaf. Bellvine cotyledons are divided with the fingers more than half the length of the cotyledon, and the cotyledon longer than it is wide. Common morning glory cotyledons are divided with the fingers less than half the length of the cotyledon, and the cotyledon as wide as it is long.
- **Leaf shape and size** - Cowvine leaves are 3 - 10 cm long, 1 - 7 cm wide and relatively flat at the base. Desert cowvine leaves are 5 - 15 cm long and 2 - 8 cm wide with a pommel-like protrusion at the base. Bellvine leaves are 3 - 8 cm long, 1 - 6 cm wide and generally triangular in shape, cut up from the base of the leaf to the stem. Common morning glory leaves are 2 - 10 cm long and wide, almost circular in shape, cut up from the base of the leaf to the stem and have a distinctly pointed tip. Young littlebell leaves are intermediate in shape between bellvine and common morning glory, 2 - 8 cm long and wide, heart shaped. Older leaves develop a distinctive 3-lobed shape, with all 3 lobes distinctly pointed.
- **Flower colour** - littlebell has a pinkish/purple flower with a darker throat. Common morning glory flowers are bright crimson to purplish with a lighter or white throat, and bellvine, cowvine and desert cowvine all have white flowers.

Description:

Seedlings - are v-shaped with a broad flat base, 25 - 30 mm long and 30 - 35 mm wide, on 11 - 16 mm long stalks. The leaves are wider than

long and are deeply notched, with the leaves separating at about 1/4 of the length.

Leaves - the first true leaves are a rounded heart-shape with a notched base that is more apparent in subsequent leaves. Older leaves may develop a distinctive 3-lobed shape, with all 3 lobes distinctly pointed. Leaves are 3 - 8 cm long and 2 - 8 cm wide, and are borne on a stalk 5 - 35 mm long.

Plants - an annual or perennial twining vine that will twine through and over other plants.

Flowers - are pinkish/purple with a darker throat, 2 - 3 cm in diameter, that arise singularly or in a small cluster on stalks 1 - 10 cm long.

Seeds - are in a thin, papery capsule 5 - 6 mm in diameter that splits at maturity releasing 4 dark brown, angular seeds 4 mm in length.

Lifecycle/Biology:

Littlebell seedlings emerge in spring and early summer and grown vigorously with the cotton similarly to bellvine. Plants flower in mid-summer through to autumn and set large quantities of seed. The above-ground plant parts die off over winter, but shoots can re-emerge in spring.

Ecology:

Not a common weed in the cotton area, but appears to be well adapted to heavy clays and irrigation. Isolated plants were found in cotton at Emerald.

The problem:

This weed has the potential to be as troublesome as bellvine in cotton, with the added feature of being a perennial that will be favoured by minimum tillage systems.

Distribution:

A weed of Queensland and the Northern Territory.

Origin:

A native of tropical America.

Compiled by:

Graham Charles

Lamium amplexicaule L.

Deadnettle



Photographs: Graham Charles

Lamium amplexicaule

Family:

Lamiaceae (Mint family).

Common names:

Deadnettle, Henbit, Henbit deadnettle, Pink weed, Stingless nettle.

Confused with:

Stagger weed (*Stachys arvensis*) and dwarf nettle (*Urtica urens*). These species can be distinguished by:

- **Seedlings** - dwarf nettle leaves are dark green with sharply serrated edges. Stems are reddish towards the base. Stagger weed leaves are yellowish-green and egg-shaped, longer than they are wide. Stagger weed leaves have a minty smell when crushed. Deadnettle are darker green than stagger weed and more of a pointed-fan shape, wider than they are long.
- **Flowers** - Dwarf nettle flower are white and very small. The flower head is green. Stagger weed pale pink to pale lilac. Deadnettle flowers are purple to bright red.

Description:

Seedling leaves - the seedling leaves are oval-shaped, to 4 mm long and 3 mm wide, with a slightly notched base. These leaves have stalks that are 4 mm long.

Early leaves - the first true leaves are mid-green, hairy, egg-shaped, again with a notched base and with rounded teeth along the margin.

Leaves - the lower adult leaves are 7 - 20 mm long, 10 - 25 mm wide, are broadly egg-shaped with a flattened leaf base, again with rounded teeth along the margins. The leaves are borne opposite each other on the stem on 10 - 60 mm long stalks. The upper leaves are 20 - 40 mm in diameter and do not have stalks but have stem-clasping leaf bases.

Plants - have few to many fine hairs with square, hollow, green to purple stems, 15 - 45 cm tall. The upper leaves are stalkless, instead the bases clasp the stem. The plant branches from the base and stems root at the nodes when in contact with the ground. The plant arises from a fibrous taproot to 20 cm depth with some tap root material.

Flowers - the flowers are pink/red to purple, sometimes with darker spots. The flowers are

tube-like, 12 - 20 mm long and clustered in groups of 6 - 12, in the forks of the upper leaf pairs. These flower clusters appear to ring the stem. Each individual flower has two lip like structures at the top, the upper lip hooded and the lower lip three-lobed.

Seeds - the seed head has four small brown-grey pear-shaped nuts or seeds that are white spotted on the inner face, 2.5 - 3 mm long and 1 - 1.5 mm wide.

Lifecycle/Biology:

An annual or biennial plant that may germinate throughout the year with flushes in the winter/spring period. Flowering occurs most of the year, particularly from April to November. Between 2,000 and 60,000 seeds have been recorded per plant. Newly shed seeds are dormant and generally require one or more winters before germinating.

Ecology:

Deadnettle is a weed of disturbed areas like cropped fields, fallows, roadsides, grazing land and waste areas. It is found on a range of soil types including heavy cracking clays and is most common in cooler, wetter areas.

The problem:

Deadnettle is a widespread weed of winter crops and fallow areas. It produces a large amount of seed and is difficult to eradicate once established. It is important to control seedling flushes to ensure seed is not added to the soil.

Distribution:

A common weed in southern and central Australia.

Origin:

A weed of Europe, Asia and Africa.

References:

Plants of Western New South Wales, p. 572.
Crop Weeds of Northern Australia, p. 85 - 86.

Compiled by:

Graham Charles

Macroptilium atropurpureum
(Moç. & Sessé ex DC.) Urb.

Siratro



Photographs: Graham Charles

Macropodium atropurpureum

Family:

Convolvulaceae (Bindweed family).

Common names:

Australian bindweed, Australian dodder, Blushing bindweed, Pink bindweed.

Confused with:

Field bindweed (*Convolvulus arvensis*).

Botanists now recognise a large number of distinct species and subspecies of the species formerly known as *C. erubescens*. The most common species found throughout most cotton growing areas include *C. graminetinus*, *C. clementii* and *C. remotus*. The following description is generalised to cover all such species. The plant photos in WEEDpak may be a mixture of *C. remotus* and *C. graminetinus*.

Description:

Seedling leaves - the seedling leaves are almost square with a rounded base and a deeply notched tip, 7 mm long and 8 mm wide. This is in contrast to field bindweed where only the seedling leaf tips are slightly notched.

Seedlings - the seedlings are initially erect, but become prostrate as they mature.

Early leaves - the first three to four true leaves are oblong with rounded or bluntly pointed tips.

Adult leaves - are variable in shape, sometimes oblong to oval-shaped, but often shaped like an arrowhead with deeply divided lobes at the leaf base. These leaves are 10 - 80 mm long and 2 - 40 mm wide, and are borne on leaf stalks that are up to 5 - 30 mm long. The margins of the leaves are toothed.

Mature plants - have hairy, prostrate, trailing or climbing stems that arise from a thick taproot. The stems may be more than one metre long and are grey to light-green in colour.

Flowers - are trumpet-shaped and pink or white, 10 - 20 mm in diameter and borne singly, or in groups of up to four, on slender stalks that are up to 45 mm long. The flowers are borne in the leaf forks.

Seed head - is an egg-shaped to spherical, papery capsule, 5 - 10 mm long and wide containing four dark-brown to black angular seeds that are up to 4 mm long. The seeds may be warty, smooth, or covered in short hairs.

Lifecycle/Biology:

A perennial plant with a thick taproot that allows the plant to persist during periods of low soil moisture and to re-shoot if shoot material is damaged. The species regenerates from taproot material and seedlings during the cooler autumn - spring months and flowers throughout the year, often during the spring-autumn period. In excess of 220 seeds have been recorded on large plants. Plants appear to have some frost tolerance.

Ecology:

A common weed in high rainfall and irrigated areas, but also of drainage lines cultivated and wasteland areas. It grows on a wide variety of soil types, from alluvium, to clay, loams and sands.

The problem:

Australian bindweed is a common weed of channel banks and could become a problem in minimum tillage and dryland cotton where it twines through the branches of surrounding cotton plants. Mature plants are difficult to eradicate with herbicides or light cultivation and will regrow from the tap root.

Distribution:

Common throughout all of Australia.

Origin:

A native Australian plant.

References:

Plants of Western New South Wales, p. 556.
Crop Weeds of Northern Australia, p. 126.

Compiled by:

Graham Charles

Macroptilium lathyroides (L.) Urb

Phasey bean



Photographs: Graham Charles

Macroptilium lathyroides

Family:

Fabaceae (Pea family).

Common names:

Phasey bean.

Description:

Seedlings - cotyledons are a flattened oval in shape 6 - 10 mm long and 4 - 8 mm wide, borne on stalks 4 - 5 mm long. The stem are reddish towards the base and covered in fine hairs.

Early leaves - the first and subsequent leaves have three leaflets, the terminal leaflet larger than the lower two leaflets and on a short stalk 10 - 15 mm long.

Leaves - have three lance- to oval-shaped leaflets each, 40 - 80 mm long and 10 -30 mm wide. The leaflets may have short hairs. The leaf stalk is 10 - 40 mm long.

Plants - have erect or climbing stems to 100 cm. The stems are covered in short hairs. In cotton, phasey bean can develop into a stout, branched bush to 1 m in height with robust, woody stems.

Flowers - are pea-like, 10 - 15 mm long, pink to crimson in colour, sometimes tinged with green and borne on flowering stems are up to 400 mm long. The flowers have a twisted keel (the lower two flower petals).

Seed heads - are softly hairy, linear to curved brown pods, 80 - 100 mm long and around 3 mm wide. There are up to 20 bean-like seeds in each pod, each 3 - 4 mm long, and mottled orange/brown in colour. Seeds are dispersed when the pod twists in a spiral fashion at maturity spilling the seeds.

Lifecycle/Biology:

An annual species that germinates after rainfall in spring and summer, and flowers in summer and autumn.

Ecology:

Found in pastures and along roadsides and found on heavy clay soils. A major weed in the Theodore and Emerald cotton areas.

The problem:

A major weed of cotton in Central Queensland. Very dense populations of phasey bean can establish and compete strongly with cotton. Plants are relatively tolerant of glyphosate and are very difficult to remove from the cotton plant line. Plants can produce a lot of seed which has strong dormancy characteristics, ensuring staggered germination over many seasons.

Distribution:

An occasional weed in Northern NSW, and found throughout most of Eastern Queensland.

Origin:

An introduced species from Central America.

Compiled by:

Graham Charles

Malva parviflora L.

Small-flowered mallow



Photographs: Graham Charles

Malva parviflora

Family:

Malvaceae (Hibiscus family).

Common names:

Small-flowered mallow, Egyptian mallow, Little mallow, Marshmallow, Ring-leaf mallow, Small-flowered marshmallow, Whorl-flowered mallow, Whorl mallow.

Confused with:

Australian hollyhock (*Lavatera plebeia*).

Description:

Seedling leaves - are reverse heart-shaped, 8 - 9.5 mm long and 6 - 7 mm wide, with the base of the heart at the long, purple leaf stalks, 11.5 - 13 mm in length.

Early leaves - the first true leaf is round, has a notched base and teeth around its margin. Leaves have prominent veins and are borne on purple stalks that are longer with each successive leaf.

Leaves - are rounded and wrinkled, 17 - 100 mm in diameter, with prominent veins and have 5 - 7 shallow lobes, toothed margins, notched bases and are borne on green to purple/green stalks that are sometimes up to 24 cm long.

Plants - are woody with spreading and upright branches 30 - 100 cm high with stems covered in stiff hairs. Plants are initial semi-prostrate, but become more erect with maturity.

Flowers - the pale pink to white hibiscus-like flowers with five petals are 4 - 6 mm long, and are in small clusters of 2 - 5 in the leaf forks, on stalks 7 - 22 mm long.

Seed heads - are light to dark-brown, flattened and circular, 5 - 10 mm across, with 8 - 12 hard woody wedge-shaped segments that are wrinkled on the outside edges. The seeds are red/brown and rounded, 1 - 2 mm in diameter.

Lifecycle/Biology:

Small-flowered mallow is an annual weed that emerge after rainfall or irrigation in late autumn and winter. Plants grow quickly throughout winter and spring and flower during spring and summer (7 - 13 weeks after emergence). Seed can be set within two weeks of flowering. The seed has strong dormancy with very little fresh seed germinating, but only a shortish seed-bank life with only 25% of seed remaining viable after one year of burial and less than 12% after two years.

Ecology:

This plant is a widespread weed of wasteland, cultivation, degraded pasture, roadsides, along watercourses and in gardens. It can be found on a wide variety of soil types.

The problem:

This weed has become more common under reduced tillage conditions. It tolerates a wide range of herbicides including glyphosate and can be a host of many insects and pathogens that are important for cotton production.

Distribution:

A common weed throughout all states of Australia.

Origin:

Introduced from the Mediterranean region.

References:

Plants of Western New South Wales, p. 482.
Crop Weeds of Northern Australia, p. 89 - 90.

Compiled by:

Graham Charles and Stephen Johnson

Medicago polymorpha L.

Burr medic



Photographs: Graham Charles

Medicago polymorpha

Family:

Fabaceae (Pea family).

Common names:

Burr medic, Burr clover, Burr trefoil, Creeping burr, Medic clover, Medic burr, Native trefoil, Rough medic, Shinnier's burr medic, Toothed burr clover, Toothed medic, Trefoil, Trefoil clover.

Confused with:

A number of other medic species occur throughout the cotton growing area including Barrel medic (*M. truncatula*), Woolly burr medic (*M. minima*), Cut-leaved medic (*M. laciniata*) and Spotted burr medic (*M. arabica*).

Description:

Seedling leaves - are oval- to club-shaped, up to 11 mm long and 6 mm wide.

Early leaves - the first true leaf is a single, broadly kidney shaped leaf to 13 mm wide. The second and subsequent leaves are trifoliate with the terminal leaflet on a slightly longer stalk.

Adult leaves - are trifoliate with heart- to wedge-shaped leaflets, often with toothed margins, particularly near the blunt tip, 8 - 27 mm long and 7 - 20 mm wide. The upper leaflet surfaces may have dark flecks or a darker basal patch. The lower leaf surfaces may or may not have hairs. Each leaf has a leafy, toothed sheath to 10 mm long where it joins the main stem.

Mature plants - are prostrate, sometimes twining and growing erect when surrounded by taller plants, are hairless and have stems up to 50 cm long. The stems are square in cross-section.

Flowers - the flowers are pea-like and yellow, 3 - 6 mm long. Flowering heads have 1 to 10 flowers.

Seed head - the seed heads are cylindrical, with 1.5 to 7 coils, covered in 4 mm long, thin and slightly hooked spines, 2 - 10 mm long, 2.5 - 9 mm in diameter, containing 3 - 11 bean-shaped seeds that are 2 - 4 mm long and 1 mm wide. Seed heads are covered in short warty outgrowths giving the overall burr characteristic.

Lifecycle/Biology:

An annual species which predominantly germinates in autumn and winter. Plants grow predominantly during winter and spring and flower in spring. In-field observations have shown that burr medic plants not uncommonly emerge, grow and flower year-round in cotton fields, with plants emerging following rain or irrigation even in mid-summer.

Ecology:

Burr medic can be found growing in a wide range of habitats from open grasslands and improved pastures to woodlands. It also grows on a wide variety of soil types and is particularly suited to heavy clay soils.

The problem:

Burr medic is tolerant of most of the cotton herbicides including glyphosate and is favoured by a reduced tillage system. Increasing numbers of plants can build up in cotton over several seasons and eventually become a significant competitor for soil moisture. A build-up of plants has been observed in both dryland and irrigated cotton fields.

Distribution:

A common plant throughout Australia. Burr medic has become naturalized in pastures through much of the cotton growing area.

Origin:

Introduced from the Mediterranean region.

References:

Plants of Western New South Wales, p. 402 - 403.

Compiled by:

Graham Charles

Medicago sativa L. ssp. *sativa*

Lucerne



Photographs: Graham Charles

Medicago sativa ssp. sativa

Family:

Fabaceae (Pea family).

Common names:

Lucerne, Alfalfa, Perennial lucerne, Violet-flowered lucerne.

Confused with:

Seedlings of lucerne are easily confused with number of similar plants in this family. Adult plants are readily distinguished by their erect growth habit, flower colour and seed pods.

Description:

Seedlings - the cotyledon leaves are oar-shaped, with a rounded end, 5 - 7 mm long and 3 - 5 mm wide.

Leaves - the true leaves are trifoliolate, with 3 leaflets with lightly serrated edges. All leaflet are borne on short stalks, the stalk of the terminal leaflet is longer than the side leaflets, at about 4 mm. The leaflets are a pointed oval shape, 8 - 28 mm long and 3 - 15 mm wide. The leaves are borne on stems 20 to 40 mm long

Plants - an erect, multi-branched perennial plant with a very deep tap root. Plants develop a woody crown at ground level, with stems rising from the crown to around 1 m height.

Flowers - are purplish/mauve, with lighter strips. Flowers are a typical pea shape 12 - 15 mm long and develop in dense clusters of 20 - 30 flowers at the tips of the branches.

Seeds - form in a pod which develops in a whorl shape 5 - 9 mm across with 2 to 4 loose coils. Pods are initially green, but become brown and tough as they mature. The seeds are a typical bean shape, light- to mid-brown in colour, 2 - 3 mm in length, with 2 - 6 per pod.

Lifecycle/Biology:

Lucerne is a perennial plant which will grow year round, but grows most actively in the warmer months. Some lucerne varieties grow more actively over winter, while others will be relatively dormant (winter active and winter dormant varieties). Plants can flower and set seed throughout the warmer months.

Ecology:

Lucerne grows on most soil types, but prefers alkaline soils and doesn't tolerate water logging.

The problem:

Established and volunteer lucerne plants can be very difficult to control in fallows and following crops.

Distribution:

A widely planted species, used in pastures and for hay production in much of temperate and sub-tropical Australia. Lucerne strips have been used in conjunction with cotton production on some properties. Established plants can be very difficult to remove after the lucerne phase is completed and volunteer seedlings can be problematic in crops and fallows. The plant is not highly competitive, but develops a very deep tap-root which allows it to continue to grow through dry conditions.

Origin:

Introduced from the Mediterranean region.

References:

Plants of Western New South Wales, p. 404.

Compiled by:

Graham Charles

Neptunia gracilis Benth.

Native sensitive plant



Photographs: Graham Charles

Neptunia gracilis

Family:

Mimosaceae (Wattle family).

Common names:

Native sensitive plant, Selenium weed, Sensitive plant.

Description:

Seedlings - the cotyledon leaves are circular to oval 5 - 7 mm long by 4 - 6 mm wide, with an indented base. Three lighter coloured veins run the length of the cotyledons, 1 in the centre and 2 parallel towards the margins of the leaves. The first true leaf is comprised of 6 oblong leaflets, 2 pairs opposite on the leaf stem and 2 leaflets at the apex. The leaflets are 3 - 6 mm long and 2 mm wide. The stems and the leaf margins have a reddish tinge.

Leaves - later leaves consist of 2 to 6 pairs of groups of leaflets, with 6 - 22 leaflets in each group. Leaflets are 4 - 11 mm long by 1 - 3 mm wide and are sensitive to the touch; the leaflets fold in to the centre in response to touch. They are borne on stems 8 - 30 mm long.

Plant - a semi-prostrate, perennial plant that can grow to 2 m in diameter with numerous branched stems, and can develop into a small shrub.

Flowers - are in clusters of 15 - 35 yellow flowers 2 - 3 cm in diameter, borne on stalks 3 - 14 cm long that arise from the leaf axils, each flower 2 - 3 mm long.

Seeds - seed pods develop in from the clusters of flowers. Pods are flat 15 - 30 mm long and 5 - 8 mm wide, reddish, and becoming browner at maturity. Pods split to release 3 - 8 roughly circular, flattened seeds 2 - 5 mm in length. Seeds are dark brown and glossy, with a peak at the end.

Lifecycle/Biology:

Seedlings emerge in spring and flower in summer and autumn. Plants may die off in late autumn but can re-shoot in spring.

Ecology:

Scattered plants grow on the heavy brown and grey clays of the floodplains and on the coast.

The problem:

Native sensitive plant is a minor weed in cotton. Plants emerge through spring and are difficult to control with the commonly used herbicides.

Distribution:

Occurs though New South Wales and Queensland.

Origin:

A native weed.

References:

Plants of Western New South Wales, p. 375 - 376.

Crop weeds of Northern Australia, p. 82 - 83.

Compiled by:

Graham Charles

Opuntia tomentosa Salm-Dyck

Velvet tree pear



Photographs: Graham Charles

Opuntia tomentosa

Family:

Cactaceae (Cactus family).

Common name:

Velvet tree pear.

Confused with:

A number of other cactus species may be found in the cotton area

Description:

Seedlings - small, succulent seedlings, with glossy, blade shaped cotyledons and densely haired initial "true" leaves.

Leaves - consist of a series of connected, green segments 15 - 30 cm long, 6 - 12 cm wide, and flattened, 15 - 30 mm thick. Leaves have some spines 10 - 25 mm long.

Plants - can develop into a small, compact perennial tree up to 6 m in height.

Flowers - are a deep orange/ red 4 -5 cm in diameter with bright yellow flower parts.

Seeds - develop in a fleshy red fruit 5 cm long by 3.5 cm in diameter, with an indented, white cap on the end. The fruit have a few short, hairy spines. Seeds are glossy black, irregularly shaped, 2.5 - 3 mm in length.

Lifecycle/Biology:

Seedlings may emerge with cotton in spring and early summer. Older plants flower in spring and summer, with fruits forming some weeks later.

Ecology:

Well adapted to the heavy black soils of the brigalow belt, through to much lighter soils.

The problem:

Velvet tree pear was a major weed of the brigalow belt of Queensland and is still common on road sides and in pastures. Scattered plants may establish in crops. This weed can be highly competitive and large plants can be a major problem for livestock and machinery. Plants are generally kept under control by insect predation.

Distribution:

Found in the Eastern States of Australia. Scattered populations still occur through the Western Downs and Southern Queensland.

Origin:

A native of Mexico.

Compiled by:

Graham Charles

Parthenium hysterophorus L.

Parthenium weed



Photographs: Graham Charles

Parthenium *hysterophorus*

Family:

Asteraceae (Daisy family).

Common names:

Parthenium weed, Bitterweed, Carrot grass, Congress grass, Escoba amarga, False ragweed, Feverfew, Parthenium, Ragweed, Ragweed parthenium, Whitetop.

Description:

Seedlings - cotyledons are a rounded paddle shape, 3 - 4 mm long, borne on short stalks 1 - 2 mm long. The first true leaves are egg-shaped and covered in fine, white hairs. Older leaves become increasingly lobed and deeply divided.

Young plants - develop into a rosette, with leaves to 80 - 200 mm long and 40 - 50 mm wide.

Older plants - develop an erect, highly branched stem 30 - 150 cm high, and a deep taproot. Deeply divided leaves develop along the stem, which is deeply grooved. Stems and leaves are covered in short, white hairs. Plants develop a bluish or greyish appearance.

Flower heads - occur in clusters at the top of the plant, borne on short stalks, arising from the leaf forks. Flower heads are white, 4 - 10 mm across and form an unusual, 5-sided shape, with longer white flowerlets (ray flowers) in the corners. Flower heads become hard and brown as they mature.

Seeds - are striped grey to black and a narrow diamond shape, 2 mm long and flattened. They have a brown tuft on the end formed from 2 broad scales 0.5 mm long. Seeds are tightly grasped in a brown outer coat, which gives them more of a tufted triangle appearance. Generally only 4 seeds develop in each head.

Lifecycle/Biology:

Parthenium weed can germinate at any time of the year, with the main germination in spring and early summer. Plants can flower 4 - 8 weeks after germination, and flowering may continue for 6 to 8 months. Seed has no dormancy. Mature plants have some frost tolerance.

Ecology:

Parthenium weed is a perennial plant which is well adapted to invade much of the Australian farmland area.

The problem:

Parthenium weed is an aggressive invader of fallows, wastelands, roadsides, overgrazed pastures and less competitive crops. It produces a range of toxins which affect other plants and animals. It is not commonly eaten by livestock but can taint meat and toxins will pass into milk. Regular contact with parthenium causes dermatitis in animals and humans and can cause respiratory problems including asthma.

Distribution:

Parthenium weed has become established in central and northern Queensland, the western Downs and the Northern Territory.

New South Wales is a parthenium weed exclusion zone. Any parthenium plants observed in New South Wales must be immediately reported to the NSW Dept. Primary Industries or a Local Council Weeds Inspector who will organise for their eradication.

Farmers should pay particular attention to sites of header breakdowns, as these have been a common source of infestation due to the release of parthenium seeds following the removal of panels during repairs.

Origin:

An introduced weed from North and South America.

Reference:

Crop Weeds of Northern Australia, p. 63 - 64.

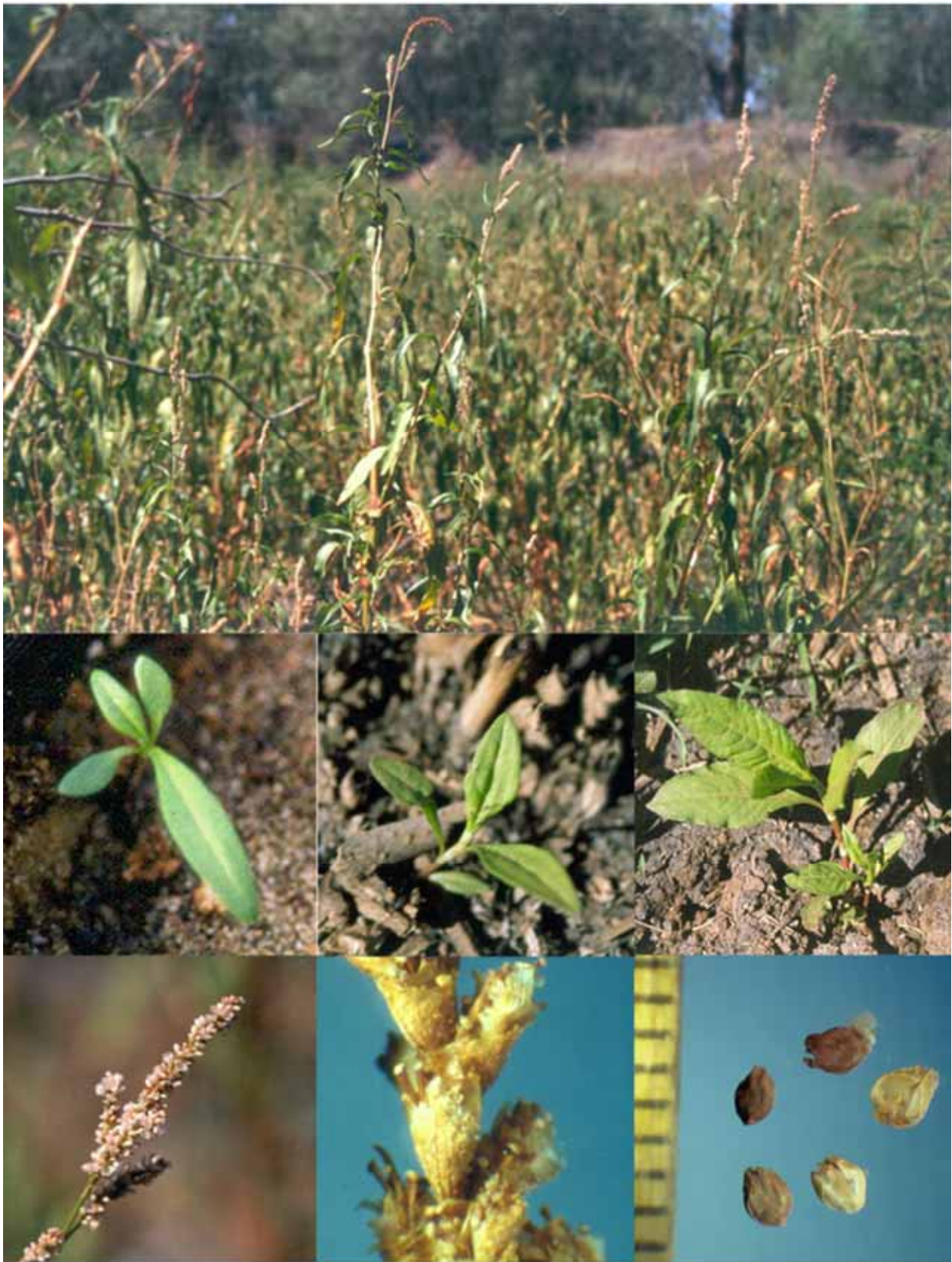
Noxious Weeds of Australia, p. 292 - 296.

Compiled by:

Graham Charles

Persicaria lapathiflolia (L.) Gray

Pale knotweed



Photographs: Graham Charles

Persicaria laphthifolia

Family:

Polygonaceae (Dock family).

Common names:

Pale knotweed, Pale persicaria, Pink knotweed.

Confused with:

A number of other similar knotweed species may occur in the cotton area.

Description:

Seedlings - the cotyledon leaves are small, an elongated oval in shape, 4 mm long by 2 mm wide, borne on stalks 1 - 1.5 mm in length. The first true leaf is similar, although slightly longer, without a stalk and with an indented central vein. The 2nd true leaf is much larger and elongated, 5 mm long by 4 mm wide. The seedling stem is reddish in colour.

Leaves - are alternate along the stem, blade shaped 6 - 20 cm long and 1 - 6 cm wide borne on a short stalk 5 - 22 mm long, and with indented, often pink to brown central and lateral venation. The lower surface of the leaves is covered in glands, with fewer on the upper surface.

Plants - an erect, persistent annual plant with long, reddish stems to 1.8 m. Stems in contact with damp soil or water may develop adventitious roots from the nodes.

Flowers - are pink, but very small, in clusters 2 - 7 cm long and 4 - 7 mm in diameter, running up the tips of the branches

Seeds - a small brown seed 1.5 - 2 mm in length.

Lifecycle/Biology:

Plants emerge year round and flower in summer. Dense stands of pale knotweed may persist throughout the year giving the impression of a perennial weed.

Ecology:

Common on the banks of streams and around swamps and water ways, especially on alluvial and heavy clay soils. Dense populations can develop in irrigation ditches and drains.

The problem:

Pale knotweed can form very dense clumps in drains and irrigation channels, often growing in water and obstructing water movement. It is difficult to control with herbicides due to the proximity with water and troublesome to remove mechanically.

Distribution:

Common throughout the Eastern States of Australia.

Origin:

Uncertain. This may be a native weed.

Reference:

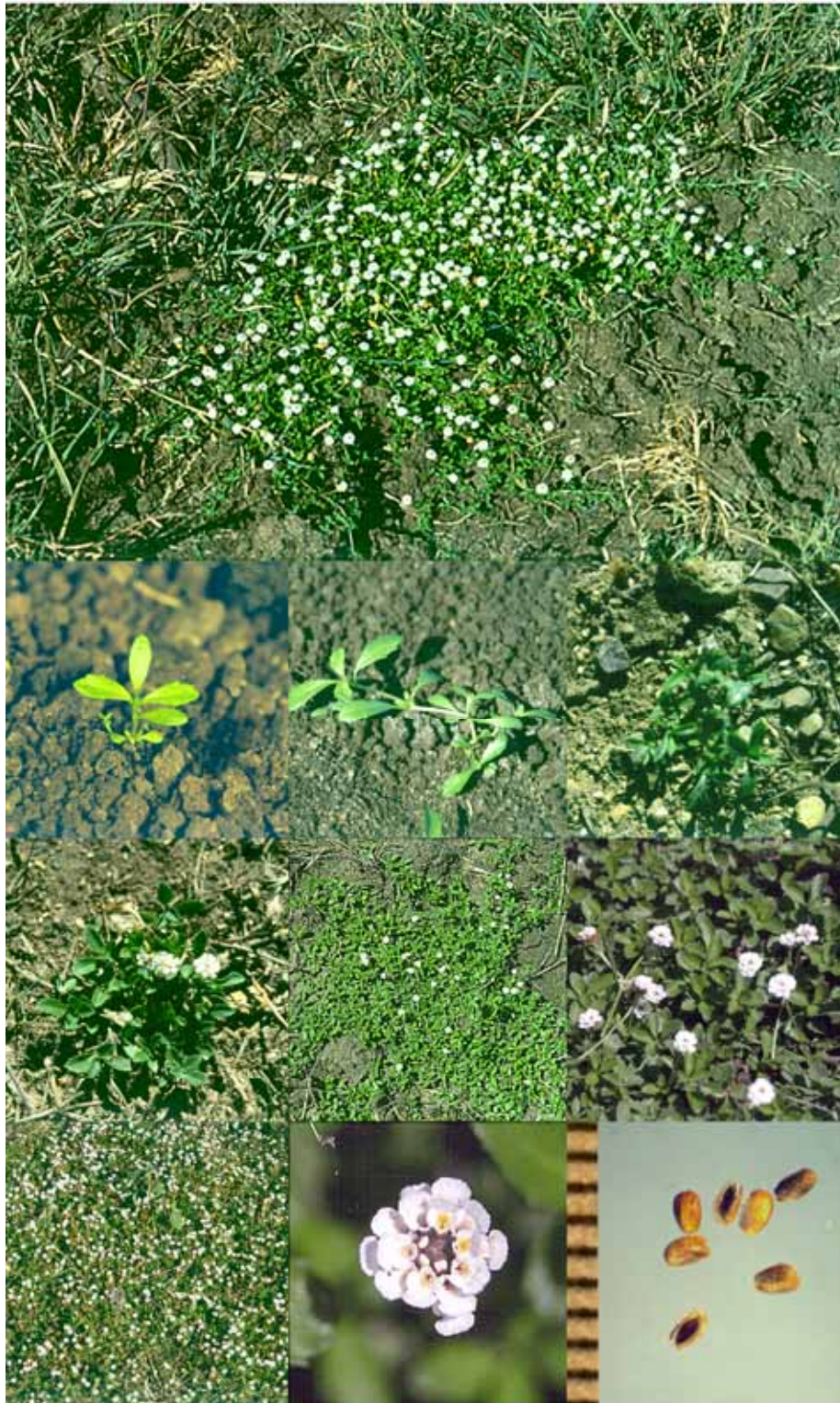
Plants of Western New South Wales, p. 232. Note the change of genus name from *Polygonum* to *Persicaria*.

Compiled by:

Graham Charles

Phyla canescens (Kunth) Greene

Lippia



Photographs: Graham Charles



Phylla canescens

Family:

Verbenaceae (Verbena family).

Common names:

Lippia, Carpetweed, Fog fruit.

Description:

Seedlings - cotyledons are a broad club shape and very small, 2.5 mm long. The first true leaf is roughly the same shape, but much larger, 8 - 10 mm long by 3 - 4 mm wide. Later leaves are again larger, and are serrated towards the tip.

Leaves - are broadly club shaped, with serrated teeth towards the tip, 5 - 15 mm long, 2 - 4 mm wide, and opposite along the stems. Leaves are borne on a short stalk 1 - 8 mm long.

Plants - a highly invasive, prostrate, matting, perennial weed with an extensive root system. Stems are 30 - 90 cm long and highly branched. Plants readily root at the stem nodes and can establish from short stem sections.

Flowers - are in small clusters on the end of stalks 1 - 10 cm long. Flowers are generally white with a light yellow centre, but can be pink or mauve. Flowers are each 2 - 2.5 mm in diameter.

Seeds - each fruit contains 2 light brown seeds 1.8 mm in length.

Lifecycle/Biology:

Lippia flowers through spring, summer and autumn, setting large quantities of seed. It also readily establishes from small pieces, particularly after flooding. Plants become dormant in winter, but grow actively during the warmer months.

Ecology:

Lippia grows in flood plains and damp area, such as road table drains. In favourable conditions, lippia grows very rapidly and spreads through the plant under story, eventually choking out other plants. It is able to climb up and over most pasture plants.

The problem:

Lippia does not tolerate cultivation, and so is not a problem in cultivation country. However, it is a major weed of pastures and could be increasingly problematic in zero-tillage cultivation and on irrigation structures. Lippia produces only a relatively small bulk of feed and has a major negative impact on pastures by replacing other species in what are often the most productive areas. Lippia also has a major negative impact on water ways, as its extensive root system dries the soil to depth, leading to extensive soil cracking, leaving the soil very open to erosion. This characteristic could easily lead to cracking and failure of storages and irrigation banks if this weed becomes established on these places. Lippia is not difficult to kill with herbicides, but can re-establish rapidly from seed.

Distribution:

Has become established in many of the river systems of Australia.

Reference:

Plants of Western New South Wales, p. 568.

Compiled by:

Graham Charles

Physalis minima L.

Wild gooseberry



Photographs: Graham Charles

Physalis minima

Family:

Solanaceae (Tomato family).

Common names:

Wild gooseberry, Chinese lantern, Indian gooseberry weed, Native gooseberry, Perennial gooseberry.

Confused with:

Ground cherry (*P. ixocarpa*), Perennial ground cherry (*P. virginiana*), and Apple-of-Peru (*Nicandra physalodes*). There is some dispute as to whether this plant is *P. minima* or *P. angulata*. However, the plant in WEEDpak most closely fits the description of *P. minima*.

Description:

Seedling leaves - egg-shaped and pale green, 8 mm long and 4.5 mm wide. These leaves have stalks 1 mm long.

Early leaves - the first two leaves are oval, and subsequent leaves are egg-shaped with notched, wavy margins and prominent, indented central and lateral veins.

Leaves - oval to spear shaped with tapering tips and irregularly toothed margins. The leaves are alternate, 3 - 10 cm long and 2 - 4 cm wide, borne on stalks 4 - 6 cm long.

Plants - erect, soft and pale green, 30 - 80 cm tall with spreading, bushy branches. Some small hairs may be present on the plant.

Flowers - white to creamy yellow with five large brown spots in the centre, cup-shaped, about 5 - 10 mm in diameter and borne singly in the forks of the leaves on stalks 15 - 25 mm long. This is in contrast to the shorter flower stalks of ground cherry, that are 5 - 10 mm in length.

Seeds - the mature seed head has a yellow gooseberry-like berry, enclosed within a papery husk with ten ribs, five ribs more distinct than the other five. The seed head is initially pale green, becoming pale brown to straw coloured when mature. It is 22 - 30 mm long, and borne on a stalk that is 12 - 25 mm long. Each seed head contains a fleshy berry 8 - 14 mm in diameter. The berries contain numerous roughly circular, flattened, yellow seeds 2 mm across.

Lifecycle/Biology:

An annual species that germinates predominantly during spring and early summer, grows and flowers in summer and autumn, and is killed by frosts. Plants can flower with 8 weeks of emergence and produce up to 500 seed berries per plant. Each berry contains numerous seeds that have strong seed dormancy.

Ecology:

Commonly found near rivers, growing quickly after flooding has occurred.

The problem:

Wild gooseberry is a highly competitive plant with strong seed dormancy that can emerge and grow with young cotton, rapidly swamping cotton seedlings. Mature berries can also contaminate and stain the cotton lint.

Distribution:

Occurs in most Australian States.

Origin:

A native Australian species.

Reference:

Crop Weeds of Northern Australia, p. 121 - 122.

Compiled by:

Graham Charles

Polygonum aviculare L.

Wireweed



Photographs: Graham Charles

Polygonum aviculare

Family:

Polygonaceae (Dock family).

Common names:

Wireweed, Hogweed, Ironweed, Knotweed, Prostrate knotweed.

Confused with:

Sand wireweed (*P. arenastrum*) and Tree hogweed (*P. patulum*).

Description:

Seedling leaves - the seedling leaves are bluish-green, narrow-oblong in shape, 7 - 10 mm long and 1.4 mm wide, with no stalk

Leaves - have a transparent sheath at the base that clasps the stem to 5 mm long. The leaves are oval-to diamond-shaped, tapering at both ends, 5 - 50 mm long and 1 - 15 mm wide, blue-green in colour with a short leaf stalk to 3 mm. Leaves decrease in size towards the stem tips.

Plants - arise from a thick and deep taproot with fibrous roots to 60 cm depth, with many stiff wiry stems that are flat along the ground or spread upright to 100 cm long. The young stems are red, turning green when older with ribs and with enlarged red stem joints. The plants are hairless.

Flowers - the flowers are small and white to pale pink, sometimes greenish or red, in clusters of one to six and occur in the forks of leaves.

Seed head - the seed heads are three-sided, dark red-brown or black nuts with seeds about 2.2 - 3 mm long and 1-2 mm wide.

Lifecycle/Biology:

Wireweed is an annual or short-lived perennial weed. Some plants may over winter and regrow in the following year. Seed germination occurs all year and especially from late spring to early autumn. Seeds can emerge from 60 mm in depth, but more commonly from 10 - 20 mm. Soil disturbance increases seedling emergence. Growth is rapid during the summer period with flowering 5 - 11 weeks after emergence. Freshly harvested seeds are dormant and require chilling before germination. Seeds are semi-persistent in the seed bank with only 10% of seed viable after two years although seeds buried at depth maintain greater viability.

Ecology:

Found on a wide range of soil types and is very prevalent on loam soils, especially in disturbed areas. Wireweed can form dense mats especially in fallows, newly sown pasture situations and crops. There are a number of varieties of this weed differing in plant erectness and leaf size.

The problem:

Wireweed is a widespread weed of winter crops throughout Australia, particularly in wheat, lucerne, pastures and fallows. It is a minor weed of cotton crops. The weed has some tolerance to a wide range of herbicides and is a prolific seed producer.

Distribution:

An important weed of cultivation throughout Australia.

Origin:

Introduced from the Mediterranean region.

References:

Plants of Western New South Wales, p. 231.

Crop Weeds of Northern Australia, p. 83 - 84.

Compiled by:

Graham Charles

Polymeria longifolia Lindl.

Polymeria take-all



Photographs: Graham Charles

Polymeria longifolia

Family:

Convolvulaceae (Bindweed family).

Common names:

Polymeria take-all, Clumped bindweed, Erect bindweed, Peak Downs curse, Polymeria.

Confused with:

Peak Downs curse (*Teucrium integrifolium*), and Annual polymeria (*P. pusilla*).

Description:

Seedling leaves - the seedling leaves are roughly square in shape, 15 - 20 mm long and wide, light to mid green, with a slight notch at the tip and stem base. The main leaf veins are prominent and sometimes slightly red or yellow. In contrast, new vegetative shoots produce lance- to oval-shaped leaves to 40 mm long and 10 mm wide arising from dark brown red rhizomes.

Early leaves - the early leaves of both seedlings and vegetative shoots are similar and lance- to oval-shaped. Young true leaves on seedlings may have more rounded tips and occur within two weeks of emergence.

Leaves - are narrowly oval-shaped, 20 - 70 mm long and 2-10 mm wide, with leaf bases that are rounded or lobed and leaf stems to 4 mm in length. Older leaves become successively more hairy.

Plants - are erect, 5 - 50 cm high with stems and leaves usually covered with silky hairs, giving plants a grey-green to silver appearance. The stems may be slightly branched.

Flowers - the single flowers are bell-shaped, 10 - 20 mm long and wide, commonly pale pink, and occasionally mauve or white with a yellow centre, borne on stems 15 - 60 mm long that arise from the leaf forks.

Seed heads - the mid-brown papery seed head is roughly spherical, 6 - 8 mm in diameter with a single and rarely two dark brown seeds that are covered in short dense hairs. Seeds are 6 mm in diameter.

Lifecycle/Biology:

Polymeria seedlings emerge from Nov to March, with new vegetative shoots from Oct to April. Shoots grow rapidly over spring and summer. Flowering occurs mainly from spring to autumn, several weeks after rainfall or irrigation. Flowers open for a day, or rarely for two days under cooler conditions. Seeds mature within 30 days of

flowering and are shed within another 15 days. Up to 142 seeds are produced per m² with some seed dormancy. Polymeria can occur as scattered plants but dense patches with up to 220 stems/m² are more common. Plants commonly lose leaves with low soil moisture and cooler temperatures in autumn. Shoots tend to die back as a result of frosts although some shoots may continue to grow throughout winter in sheltered positions.

Ecology:

Found on heavy cracking black, grey and less commonly red and brown clay soils. A common species found in Mitchell grasslands, and in coolibah and brigalow woodlands. In particular, found in localised wet areas such as near watercourses and drainage lines, on flood plains, in depressions and near swamps. Polymeria tolerates heavy flooding.

The problem:

A common weed of irrigated and dryland summer crops and a minor weed of winter crops, degraded pastures and roadsides. It is a serious weed of cultivation because of its capacity for vegetative reproduction. New vegetative shoots are produced from existing plants and from transplanted vegetative fragments. Polymeria has a deep and extensive rhizome system. Rhizomes may exceed two metres in length, with roots extending to over 2 m in depth. 80% of rhizomes and 65% of roots occur in the top metre of soil and 49% of rhizomes in the 10 - 30 cm of the soil profile. It is extremely drought tolerant. Patches with densities of 100 stems per m² can occur in cotton, out competing all other plants.

Distribution:

Occurs in most States of Australia, and is a common weed in much of the western part of the cotton region.

Origin:

Polymeria take-all is native to Australia.

References:

Plants of Western New South Wales, p. 558.

Crop Weeds of Northern Australia, p. 32.

Johnson, S. B. (2000) Biology and management of the 'take-all' weed *Polymeria longifolia* in cotton. PhD thesis, University of New England. 326 pp.

Compiled by:

Graham Charles and Stephen Johnson

Polymeria pursilla R.Br.

Annual polymeria



Photographs: Graham Charles

Polymeria

pusilla

Family:

Convolvulaceae (Bindweed family).

Common names:

Annual polymeria, Polymeria.

Confused with:

Polymeria take-all (*P. longifolia*).

Description:

Seedling leaves - the first two seedling leaves are roughly square shaped, up to 10 mm square, but notched at the base and tip. The first two true leaves are generally egg-shaped.

Leaves - subsequent leaves are oblong to oval-shaped, 10 - 30 mm long and 7 - 20 mm wide and are notched at the base. They have prominent, depressed central and lateral venation. The leaf stalks are 2 - 25 mm long.

Plants - are generally hairless. The stems run along the ground producing roots at the nodes. Adult plants may be 2 - 3 m in diameter, but rarely grow higher than 5 cm, with runners to at least 50 cm.

Flowers - small and trumpet-shaped 6 - 13 mm in diameter, produced over summer and autumn. The flowers are pale-pink or mauve with yellow centres. Single flowers are borne on stems.

Seeds - produced either above- or below-ground in capsules that are 4 - 6 mm in diameter and borne on a short down-turned stem. Seeds are 3 - 3.5 mm in diameter, light brown, spherical in shape and covered with short, dense hairs.

Lifecycle/Biology:

Seedlings emerge in spring and summer. Flowering and seed set is rapid and occurs during summer and autumn.

Ecology:

Commonly found on the heavy clay soils that were open grassy woodland, and in areas that may be flooded seasonally.

The problem:

Annual polymeria is a minor weed of reduced tillage cropping and is difficult to control with conventional management.

Distribution:

Northern NSW, Southern and Central Qld. and the Northern Territory.

Origin:

A native species.

References:

Plants of Western New South Wales, p. 558. The *Polymeria* sp. (aff. *ambigua*) is annual polymeria.

Crop Weeds of Northern Australia, p. 91 - 92.

Compiled by:

Graham Charles and Stephen Johnson

Portulaca oleracea L.

Pigweed



Photographs: Graham Charles

Portulaca oleracea

Family:

Portulacaceae (Portulaca family).

Common names:

Pigweed, Common pigweed, Common purslane, Munyeroo, Neverdie, Perennial pigweed, Portulaca weed, Purslane, Red pigweed.

Confused with:

Hairy pigweed (*P. pilosa*).

Description:

Pigweed is a variable species.

Seedling leaves - the seedling leaves are 6 mm long and 2 mm wide and have an elongated, oval shape and a short leaf stalk. Both the seedling and first true leaves are purple/green in colouration and have purple leaf margins.

Early leaves - the first true leaves are club-shaped and waxy, 7 mm long and 4 mm wide.

Leaves - can be opposite, or alternate, and are often clustered towards the ends of the branches. Adult leaves are shiny, oblong-, wedge- or club-shaped, 5 - 25 mm long, 3 - 10 mm wide and borne on stalks 2 - 5 mm long.

Plants - have fleshy circular stems that lie along the ground and vary in colour from green/brown to red/brown. The stems are 30 - 40 cm long and are easily broken.

Flowers - are yellow, 8 mm across and have four to six petals 4 - 7 mm long. Flowers are found in the leaf axils, are solitary, or in groups of between two and thirty flowers. The flowers remain open for only one day and then fall off to reveal a green cup that becomes the seed head capsule.

Seeds - the seed capsule is 3 - 6 mm long and contains numerous red/brown or black seeds that are released when the capsule top breaks off at maturity. The seeds are 0.5 - 1 mm in length, roughly circular and flattened, with a protruding rounded beak at the base.

Lifecycle/Biology:

An annual or sometimes perennial species that germinates, grows and flowers in the warmer months. Mature seed is shed soon after flowering, when the upper part of the seed capsule lifts off to release numerous black seeds which have a high degree of hard seededness. Pigweed also propagates from stem sections that are easily broken off and transplanted with cultivation. It is very drought tolerant. Plants and stem sections disturbed by cultivation can sit on the soil surface for many weeks even in the middle of summer, before developing roots and re-establishing following rain or irrigation. Dense mats of pigweed can occur and tend to prevent the growth of other plants.

Ecology:

Pigweed is adapted to a wide range of soil types and grows in most vegetation communities. It is a common weed of disturbed places, such as cultivation country, summer fallows and heavily grazed areas.

The problem:

A common weed in irrigated cropping, cultivated fields, along headlands, roads and channel banks. A difficult weed to control, particularly due to the weeds' ability to reproduce vegetatively.

Distribution:

A very common weed, found throughout Australia.

Origin:

Pigweed is found throughout the world.

References:

Plants of Western New South Wales, p. 300.

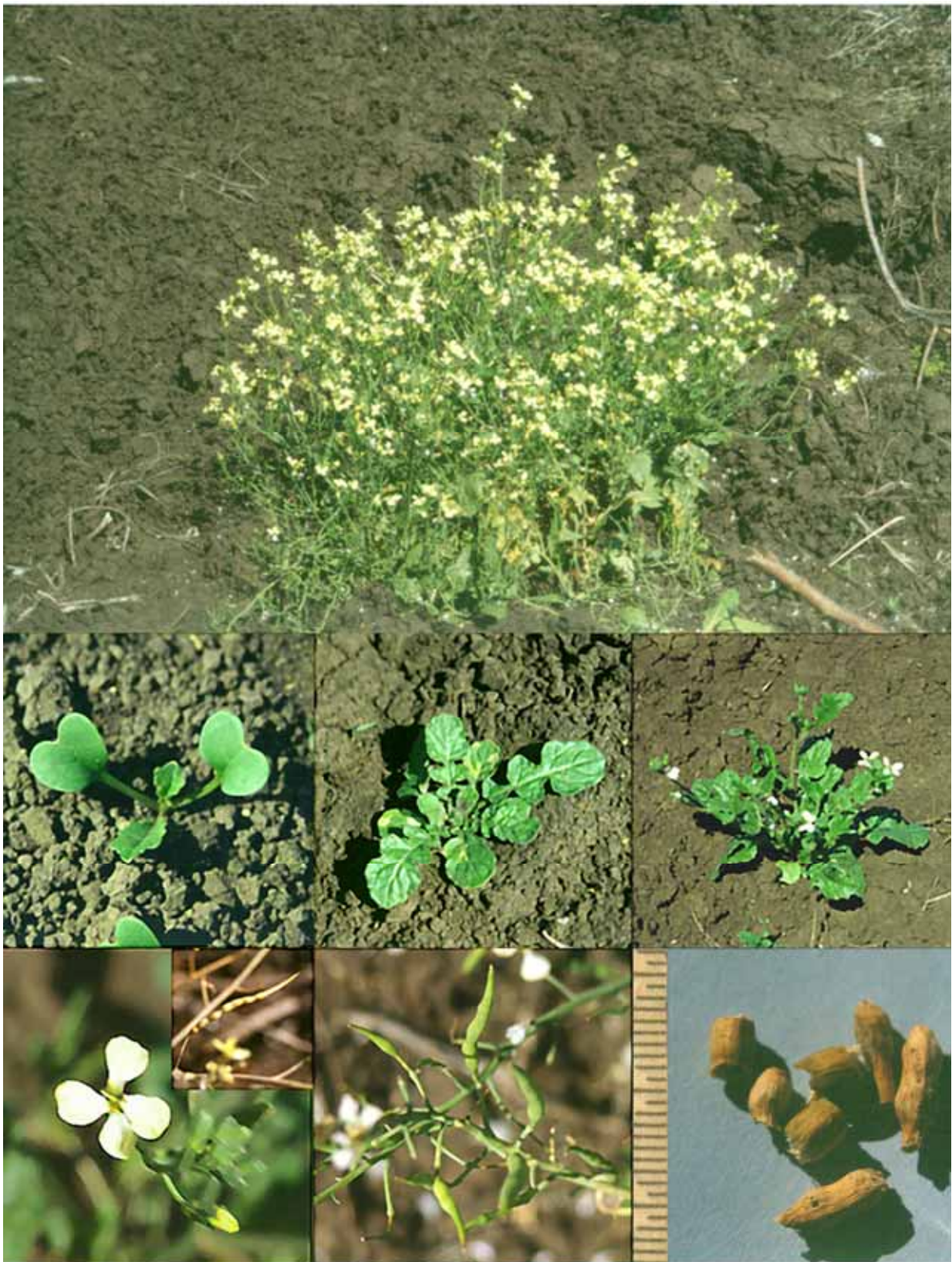
Crop Weeds of Northern Australia, p. 70.

Compiled by:

Graham Charles and Stephen Johnson

Raphanus raphanistrum L.

Wild radish



Photographs: Graham Charles

Raphanus raphanistrum

Family:

Brassicaceae (Cabbage family).

Common names:

Wild radish, Jointed charlock, Radish, Radish weed, Runch, White charlock, Wild charlock, Wild kale, Wild turnip.

Confused with:

Turnip weed (*Rapistrum rugosum*) and Wild turnip (*Brassica tournefortii*). These species can be distinguished by:

- **Cotyledons** - the cotyledons of wild radish have 12 - 20 mm long stalks, where the stalks of turnip weed are 8 mm long. Wild turnip cotyledons are kidney shaped, rather than heart shaped.
- **Flowers** - wild radish flower are white or pale yellow with purple veins. Turnip weed has a bright yellow flower, and wild turnip a pale yellow flower which becomes white with age.
- **Seed pods** - wild radish has a highly segmented pod containing multiple seeds. These pods break off at maturity and enclose the seed. Turnip weed has a short, bulbous pod that does not break apart at maturity. Wild turnip pods are long and cylindrical, breaking apart at maturity to release the seeds.

Description:

Seedlings - the cotyledon leaves are broadly heart shaped, 13 mm long and 12 - 14 mm wide, borne on stalks 12 - 20 mm long.

Leaves - the first true leaves are oval to rectangular in shape, with a wavy edge, more heavily notched at the base. Later leaves are more heavily lobed, 15 - 20 cm long, 5 - 10 cm across. Leaves have prominent, indented central and lateral veins.

Plants - an annual or biennial weed that forms a rosette to 40 cm in diameter. The plant has a woody taproot and at maturity develops numerous erect stems and branches, 30 - 60 cm high, with numerous bristles on the lower stems. Leaves are smaller towards the tops of the stems and branches and may not be lobed.

Flowers - develop at the tips of the branches, with 4 white or pale yellow petals, to 4 cm in diameter.

Seeds - seedpods are 2 - 9 cm long and 3 - 6 mm in diameter, with a slender beak at the end 6

- 12 mm long, borne on stalks 15 mm long. Pods are segmented, containing 3 - 9 seeds, with a restriction between each seed. These segments readily break off at maturity, with the seed remaining enclosed in its segment about 4 - 6 mm long.

Lifecycle/Biology:

Seedlings emerge in late autumn or winter, growing over winter and early spring and flowering in spring and early summer. The lifecycle can match closely that of a wheat crop, with seeds maturing with the crop.

Ecology:

Well adapted to both southern and northern cropping zones. Wild radish can be a major weed problem in all winter cropping areas.

The problem:

Wild radish emerges with the winter crop and competes very strongly with the crop. Plants set seed as the crop is maturing, and the seed is difficult to remove from the crop sample, especially in wheat samples.

Distribution:

Found in nearly all states of Australia. Wild radish is a major problem weed of winter cropping, and especially wheat as the seed segments of wild radish is difficult to remove from a wheat sample.

Origin:

A native of the Mediterranean region.

References:

Plants of Western New South Wales, p. 330.

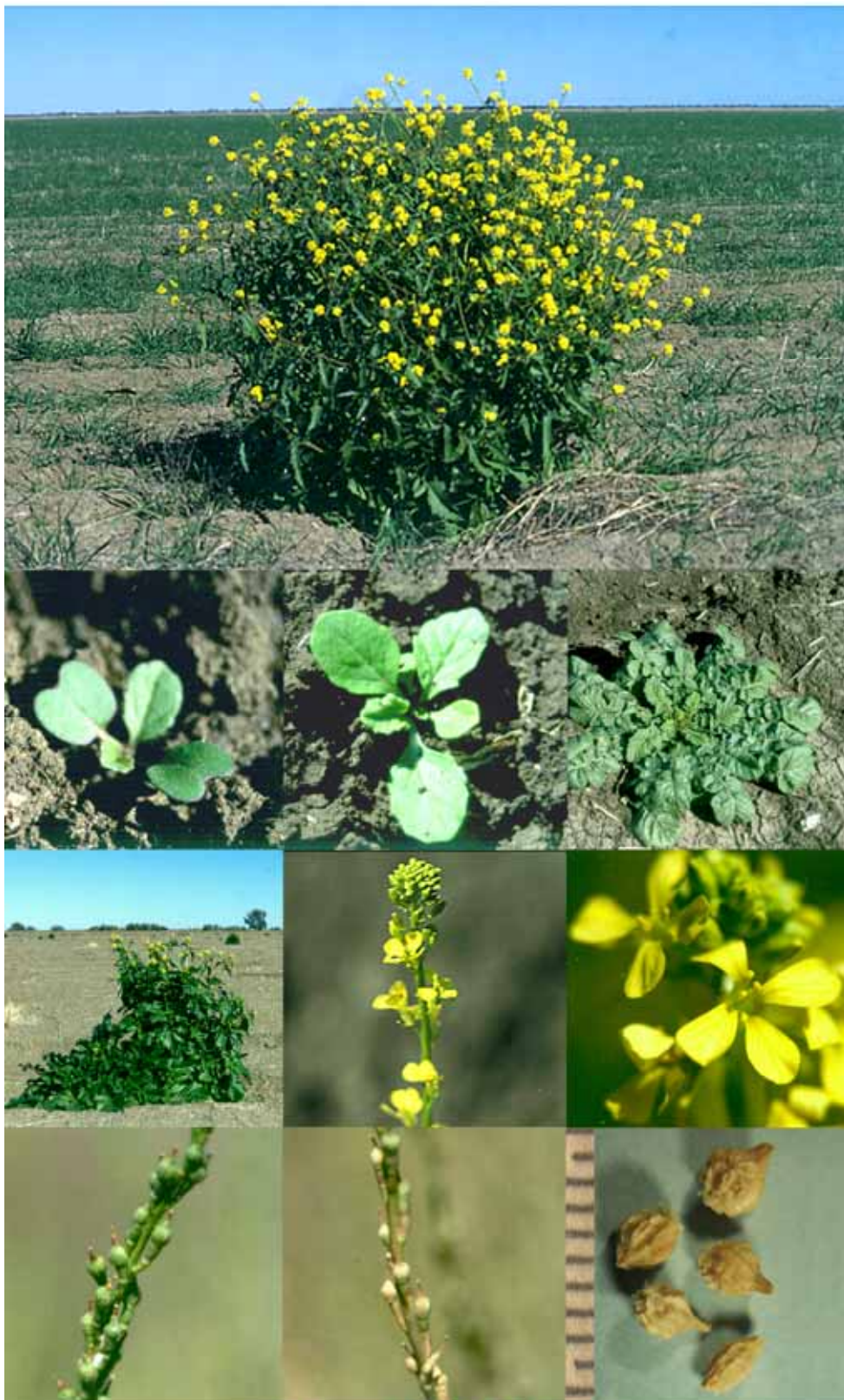
Crop weeds of Northern Australia, p. 45 - 47.

Compiled by:

Graham Charles

Rapistrum rugosum (L.) All.

Turnip weed



Photographs: Graham Charles

Rapistrum rugosum

Family:

Brassicaceae (Cabbage family).

Common names:

Turnip weed, Ball turnip, Giant mustard, Rapistrum weed, Short-fruited turnip, Short-fruited wild turnip, Wild turnip.

Confused with:

Wild radish (*Raphanus raphanistrum*), and Wild turnip (*Brassica tournefortii*). These species can be distinguished by:

- **Cotyledons** - the cotyledons of wild radish have 12 - 20 mm long stalks, where the stalks of turnip weed are 8 mm long. Wild turnip cotyledons are kidney shaped, rather than heart shaped.
- **Flowers** - wild radish flower are white or pale yellow with purple veins. Turnip weed has a bright yellow flower, and wild turnip a pale yellow flower which becomes white with age.
- **Seed pods** - wild radish has a highly segmented pod containing multiple seeds. These pods break off at maturity and enclose the seed. Turnip weed has a short, bulbous pod that does not break apart at maturity. Wild turnip pods are long and cylindrical, breaking apart at maturity to release the seeds.

Description:

Seedlings - the cotyledon leaves are broadly heart shaped, sometimes with a squarish base, 11 mm long and 13 mm wide, borne on stalks 8 mm long.

Leaves - the first true leaves are oval to circular in shape, with a wavy edge and coarsely haired. Later leaves may be heavily lobed, 8 - 25 cm long, 6 - 8 cm wide. Leaves have prominent, indented central and lateral veins.

Plants - an annual or biennial weed that forms a rosette to 40 cm in diameter. The plant has a woody taproot and at maturity develops numerous erect stems and branches, 30 - 100 cm high, with numerous bristles. Leaves are smaller towards the tops of the stems and branches and may not be lobed or stalked.

Flowers - develop at the tips of the branches, with 4 bright yellow petals, to 3 cm in diameter, on stalks 2 - 5 mm long.

Seeds - seedpods are bulbous in shape 3 - 10 mm long and 3 - 4 mm in diameter, with a short beak at the end 2 - 3 mm long, borne on stalks 2 - 5 mm long. Pods contain 1 - 3 seeds that are retained within the pod at maturity.

Lifecycle/Biology:

Seedlings emerge in late autumn and winter, growing over winter and early spring and flowering in spring and early summer. The lifecycle can match closely that of a cereal crop, with seeds maturing with the crop.

Ecology:

Well adapted to both southern and northern cropping and grazing zones. Turnip weed may dominate pastures in winter and spring, out competing other more valuable species and can be a major weed problem in fallows and winter crops.

The problem:

Turnip weed emerges with the winter crop and competes very strongly with the crop. Plants set seed as the crop is maturing.

Distribution:

Found in all states of Australia. Turnip weed is a major problem weed of winter cropping.

Origin:

A native of Europe.

References:

Plants of Western New South Wales, p. 330 - 331.

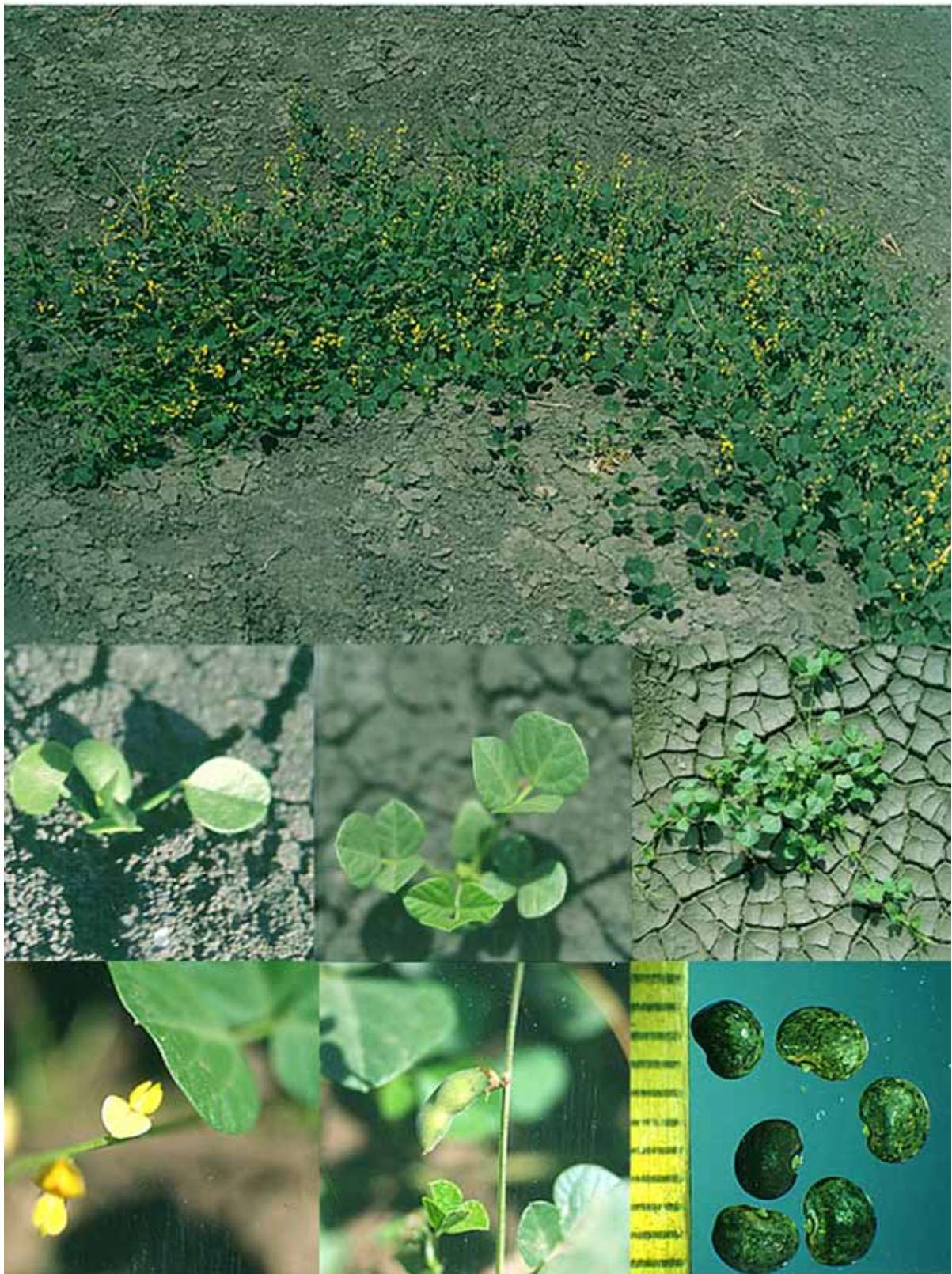
Crop weeds of Northern Australia, p. 45 - 47.

Compiled by:

Graham Charles

Rhynchosia minima (L.) DC.

Ryncho



Photographs: Graham Charles

Rhynchosia

minima

Family:

Fabaceae (Pea family).

Common names:

Ryncho, Rhynchosia.

Confused with:

Tinaroo glycine (*Neonotonia wightii*).

Description:

Seedlings - the seedling leaves are dark-green and broadly egg-shaped with notched bases, 9 - 10 mm long and 7 - 9 mm wide, on stalks 4 - 5 mm long. The cotyledons have a deeply indented central vein, giving the leaf an overall V shape.

Leaves - the first true leaves and adult leaves have three leaflets with two green, hairy outgrowths at the leaf fork to 2 mm long. Each leaflet is broadly oval in shape, 5 - 30 mm long and wide, although generally wider than longer. The terminal leaflet stalk is slightly longer than the other leaflets. The lower surface of leaflets usually has a number of small brown resin glands. The leaf stalk is 1 - 6 cm long. Eaves have prominent, indented central and lateral veins.

Plants - have slender trailing or twining green vine stems. Plants vary from hairless to those covered in velvety hairs, may have slightly sticky stems and are 100 - 200 cm long.

Flowers - are borne on erect and sometimes branched stalks 2 - 10 cm long arising from leaf forks. The flowers are pea-like, yellow with reddish-brown-purple markings and are 4 - 10 mm long. Between 2 and 15 flowers occur on each stalk.

Seeds - the seed heads are flattened, oblong, slightly curved, 1 - 2 cm long and 2 - 6 mm wide, pale brown, do not have segments and are covered in short fine hairs. Each seed head contains 1 - 2 compressed, kidney-shaped grey, brown, black or mottled in colour seeds 2 - 3 mm long.

Lifecycle/Biology:

A perennial species that may lose its leaves in early winter. It germinates after rain in spring, summer and autumn, flowers spring to summer and produces seed in summer.

Ecology:

Ryncho is common on heavy self-mulching clay soils but also grows in a wide variety of habitats on loamy and even gravel soils.

The problem:

Ryncho is a hard seeded species, persisting for many years in the seed bank. Under suitable conditions it grows rapidly and produces an abundance of seed.

Distribution:

Occurs in most mainland states of Australia.

Origin:

A native species.

References:

Plants of Western New South Wales, p. 410 - 411.

Crop Weeds of Northern Australia, p. 78 - 79.

Compiled by:

Graham Charles and Stephen Johnson

Rumex crispus L.

Curled dock



Photographs: Graham Charles

Rumex crispus

Family:

Polygonaceae (Dock family).

Common names:

Curled dock, Yellow dock.

Confused with:

A number of different dock species grow in the cotton area.

Description:

Seedlings - the cotyledon leaves are lance shaped, 10 mm long and 3 mm wide. They may be green or purplish. The 1st true leaf is more oval shaped, larger and wider, 20 - 25 mm long and 14 - 15 mm wide, with a prominent, indented, lighter coloured main vein and has a 13 - 15 mm long stalk. Later leaves are larger again

Leaves - are blade shaped, wavy, with serrated margins, 11 - 40 cm long and 2 - 10 cm wide on long stalks, with prominent, indented, lighter coloured main and lateral veins.

Plants - a perennial weed with a large, long taproot. Plants initially form a dense rosette, and develop long, erect, robust branched stems to 1.5 m high as they mature. The upper leaves are smaller and narrower than the lower leaves.

Flowers - large numbers of flowers develop on the upper ends of the stems.

Seeds - are enclosed in a reddish/brown, 3-winged fruit 3 - 6 mm long. Seeds are similar in colour, angular, 3 sided, 2 - 3 mm in length.

Lifecycle/Biology:

Curly dock seedlings emerge in autumn and winter, forming dense rosettes in the cooler months and flowering in late spring and early summer. Plants then die off or flourish in wet conditions over summer. They will re-shoot from the taproot after rainfall in autumn or winter.

Ecology:

Adapted to a wide range of situations, including cultivation, pastures, road sides and creek banks. Often occurs in dense stands in suitable positions.

The problem:

A highly competitive winter and spring growing weed that will flourish in wet conditions. Established plants are difficult to control with herbicides and perenniate from the taproot.

Distribution:

A widespread weed that grows throughout Australia.

Origin:

A native of Europe.

References:

Plants of Western New South Wales, p. 234 - 235.

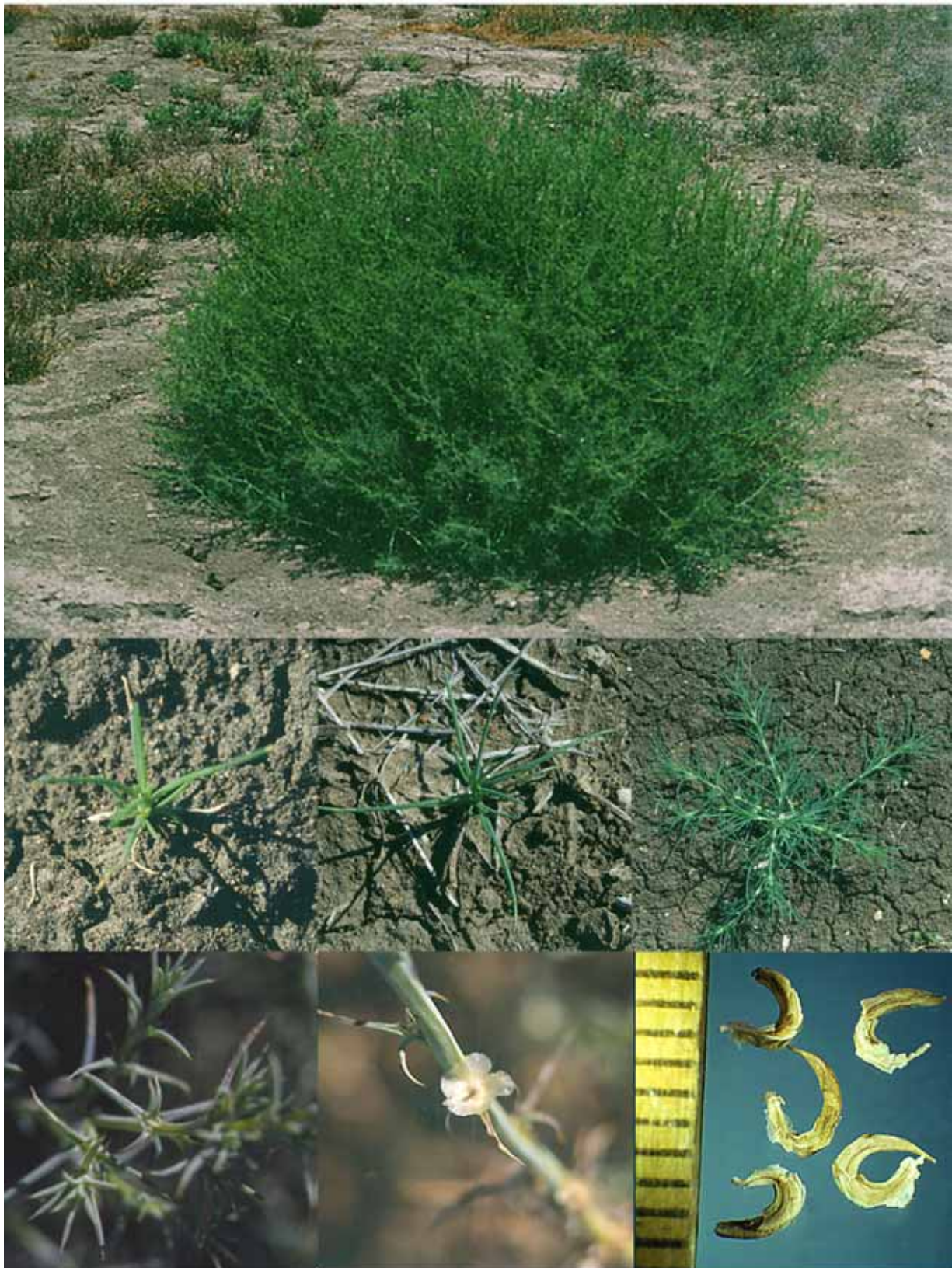
Crop weeds of Northern Australia, p. 56 - 57.

Compiled by:

Graham Charles

Salsola kali L.

Soft roly poly



Photographs: Graham Charles

Salsola kali

Family:

Chenopodiaceae (Saltbush family).

Common names:

Soft roly poly, Buckbush, Prickly roly poly, Prickly saltwort, Russian thistle, Saltwort, Tumbleweed.

Confused with:

A large number of the saltbush family occur in the western part of the cotton growing area.

Description:

Seedlings - cotyledon leaves are succulent, cylindrical, linear, 1 cm long and 1 mm diameter, powdery blue/green in colour. The early true leaves are similar in shape, but longer and broader, ending in a prickly point.

Leaves - are alternate, cylindrical and linear, up to 5 cm long and 4 mm wide, ending in a prickly point and becoming smaller towards the tips of the branches.

Plants - an erect, compact, spreading annual or biennial bush that develops into an almost spherical clump, to 1 m high and up to 2 m in diameter.

Flowers - are papery, white to mauve in colour, located along the branches

Seeds - are papery crescents to semi-circles, 3 - 4 mm across, and about 1 mm thick.

Lifecycle/Biology:

Flowers during the warmer months.

Ecology:

Well adapted to a wide range of conditions in the lower rainfall areas. Soft roly poly has come to dominate many of the pastures of the lower rainfall area, colonizing degraded pastures.

The problem:

Soft roly poly often dominates pastures in the western part of the cotton area. Plants die after maturity and break off at the base, leaving a 1 - 2 m diameter mass that blows in the wind and can move considerable distances. Plants are a minor hazard to vehicles, can choke irrigation channels and can lodge in cotton fields. Soft roly poly is also a minor weed in fallows, on irrigation structures etc.

Distribution:

Found throughout Australia. A very common plant in the western part of the cotton area.

Origin:

An Australian native.

References:

Plants of Western New South Wales, p. 279.

Crop weeds of Northern Australia, p. 99 - 100.

Compiled by:

Graham Charles

Salvia reflexa Hornem.

Mint weeds



Photographs: Graham Charles

Salvia reflexa

Family:

Lamiaceae (Mint family).

Common names:

Mintweed, Lance-leaf sage, Narrow-leaf sage, Wild mint.

Description:

This plant has a strong mint smell when crushed. This feature can be used to readily identify young plants.

Seedling leaves - cotyledons are triangular, with a cut off, notched tip, 6 mm long and 7.5 mm wide, on stems 4 mm long. They are greyish/green in colour and covered in glands. The first pair of true leaves are oval-shaped, with several shallow teeth and very fine hairs on the margins. These leaves are compressed, in a V shape around the prominent, indented central vein which is lighter in colour than the rest of the leaf. All leaves are borne in opposite pairs and have a strong mint smell when crushed.

Leaves - are an elongated oval in shape and pale grey-green-blue, 15 - 60 mm long and 3 - 12 mm wide, on 3 - 20 mm long stalks. Leaves

Plants - have erect, square-shaped stems, are multi-branched and grow from 20 - 70 cm high. Plants may be covered in short, dense, grey-white hairs. Leaves are a flattened V shape, with prominent, indented central and lateral veins.

Flowers - the flowers are pale mauve/blue, tubular, 7 - 12 mm long, borne in pairs opposite each other, or in groups of three or four, found on the stem and at the ends of flowering branches. The flowers have two lips with the lower lip longer than the upper lip.

Seeds - each brown-coloured cup-shaped seed head has up to four fawn to cream-coloured seeds 2.5 - 3 mm long and 1 - 1.5 mm wide.

Lifecycle/Biology:

Mintweed is an annual plant germinating during the period August - March, under good soil moisture conditions when temperatures are between 4 and 30°C. Flowering occurs rapidly during the October - May period. The time between emergence and flowering is shorter in late season germination flushes (32 days in February compared to 56 days for August). Seed set can occur 6 - 8 weeks after emergence and generally occurs from late spring onwards, with up to 179,000 seeds produced per plant. Seed dormancy prevents germination up to six months after the seed is shed. Chilling breaks this dormancy, commonly producing seedling flushes in spring and autumn. Plants die in late autumn and early winter.

Ecology:

Mintweed is mainly on the floodplains on grey and black cracking self-mulching clay soils and is less commonly found on other soils that are periodically flooded. A common weed of cotton fields as well as other summer and winter crops, degraded pastures, flood plains and roadsides.

The problem:

Mintweed often occurs in dense competitive stands and competes strongly with cotton.

Distribution:

A common weed in Australia, especially the Southern States.

Origin:

An introduced species from the Americas.

References:

Plants of Western New South Wales, p. 575 - 576.

Crop Weeds of Northern Australia, p. 96 - 97.

Compiled by:

Graham Charles and Stephen Johnson

Scolymus maculatus L.

Spotted golden thistle



Photographs: Graham Charles

Scolymus maculatus

Family:

Asteraceae (Daisy family).

Common names:

Spotted golden thistle, Spotted thistle.

Confused with:

A number of other thistles occur in the cotton area.

Description:

Seedlings - the cotyledon leaves are bottle shaped 10 - 15 mm long and 7 - 9 mm wide. The true leaves are longer, with a serrated edge and taper to the stem. They have a prominent, indented, lighter coloured central vein.

Leaves - older rosette leaves are longer, 4 - 20 cm and 2 - 8 cm wide, and highly lobed, with spines terminating the lobes.

Plants - an annual weed with a strong taproot that forms a rosette 40 - 50 cm in diameter. As the plant matures, a strong, branched central stem forms from the rosette to 1 m high. Leaves form from the branches, but the branches are also ribbed with lines of much reduced leaflets from the leaf bases. The stems are much lighter in colour than the leaves. The margins of the leaves and stems are thickened and white.

Flowers - a yellow flower, tightly clasped within a thorny head 10 - 25 mm in diameter.

Seeds - are papery, 3 - 7 mm long, wedge shaped and light brown with some darker speckling.

Lifecycle/Biology:

Seedlings emerge in autumn and winter, and plants develop rapidly in spring. They flowers in spring and early summer and then die off, leaving a spiny bush that may stand for many months.

Ecology:

A weed of pastures and roadsides, most common on heavy grey clay soils.

The problem:

Spotted golden thistle forms a competitive rosette and develops into a very thorny bush.

Distribution:

Only found in Central and Northern New South Wales and Queensland.

Origin:

A native of the Mediterranean region.

Reference:

Plants of Western New South Wales, p. 722.

Compiled by:

Graham Charles

Senna barclayana (Sweet) Randell

Pepper-leaf senna



Photographs: Graham Charles

Senna barclayana

Family:

Caesalpiniaceae (Cassia family).

Common names:

Pepper-leaf senna, Antbush, Smooth senna, Yellow peabush.

Description:

Seedlings - the cotyledon leaves are circular, 8 - 10 mm in diameter, with lighter veination. The first true leaves and subsequent leaves have multiple pairs of leaflets, initially with 2 pairs, one pair terminal. Leaflets are

Leaves - are 8 - 12 cm long, with a gland at the base of the leaf and comprise of 4 - 10 pairs of pointed oval shaped leaflets, each 2 - 5 cm long and 4 - 10 mm across, borne on stalks 1 - 3 cm long.

Plants - a multi-stemmed perennial shrub to 1.5 m high and 2 m wide.

Flowers - develop from the upper leaf axils. They are bright yellow, with 5 petals, each 1 cm long, and are borne on stalks 2 - 3.5 cm long

Seeds - develop in a green, slightly curved pod 3 - 5 cm long and 6 - 9 mm in diameter, that becomes brown and brittle as it matures. The pod splits at maturity, releasing broadly bean shaped, flattened seeds 3 - 4 mm in diameter. The seed colour varies from mottled whitish/brown to brown.

Lifecycle/Biology:

Plants emerge in spring and flower over the warmer months. Pepper-leaf senna is very drought tolerant, and flourishes after heavy rains in summer.

Ecology:

Commonly on roadsides and stream banks, on a variety of soil types.

The problem:

Becoming a more common weed of pastures and roadsides. It is unpalatable to stock and can invade cultivation areas.

Distribution:

Most common in inland New South Wales and Queensland.

Origin:

Uncertain. May be a native species.

References:

Plants of Western New South Wales, p. 378.

Compiled by:

Graham Charles

Sesbania canabina (Retz.) Pers.

Sesbania



Photographs: Graham Charles

Sesbania canabina

Family:

Fabaceae (Pea family).

Common names:

Sesbania, Danchi, Dhaircha, Nardoo, Peabush, Sesbania pea, Yellow peabush.

Confused with:

Budda pea (*Aeschynomene indica*). Budda pea and sesbania can be easily distinguished as:

- **Seedlings** - budda pea true leaves emerge after the cotyledon leaves whereas sesbania has a 3rd cotyledon type seedling leaf before the true leaves emerge
- **Older plants** - budda pea's leaflets are 4 - 8 mm long, compared to 7 - 18 mm for sesbania
- **Flowers** - budda pea flowers have a red throat, whereas sesbania flowers are all yellow, with some brown specking on the outside
- **Pods** - are distinctly different. The pods of budda pea are short (20 - 35 mm long) and segmented with 3 - 9 segments per pod, each seed breaking off enclosed in a separate segment. Sesbania pods are very long (10 - 20 cm), thin and bean-like, splitting down the middle to expose 20 - 35 seeds per pod.

Description:

Seedlings - the cotyledons are oblong in shape, 1 - 2.5 cm long and 5 mm wide, borne on a very short stalk.

Early leaves - the first true leaf has an elongated oval-shape, 17 mm long and borne on a very short stalk. The second true leaf has 5 pairs of leaflets. The number of leaflets increases on later leaves. The young stems and leaves often have spreading hairs.

Leaves - mature leaves are 5 - 20 cm long and made up of a number of oblong, mostly hairy pairs of leaflets, often 12 - 30 pairs, but sometimes up to 45. Each leaflet is 5 - 20 mm long and 1.5 - 4 mm wide and has a small point on the rounded leaflet tip.

Plants - are erect, almost hairless, 1 - 3.5 m tall. The stems are green or reddish/purple and much branched, generally on the upper stem.

Flowers - are pea-like and yellow to yellow/orange, 10 - 15 mm long, with dark-purplish streaks or spots on the back. The flowers occur in the leaf forks singly, or in groups of up to six, on stalks 5 - 40 mm long.

Seeds - the seed head is a long cylindrical pod, 12 - 20 cm long and 2.5 - 4 mm wide, slender and drooping, olive-green to brown when ripe,

with darker markings between the seeds. Each pod contains 20 - 35 smooth, dark-green to brown, cylindrical seeds 3 - 4 mm long.

Lifecycle/Biology:

An annual shrub that germinates in successive flushes in spring, summer and autumn. Seedling flushes may exceed 50/m². Plants grow rapidly in summer, either as scattered individuals or in small to large stands. Growth rates can exceed 40 mm/day in summer. Sesbania flowers from late spring to early autumn. Over 1200 mature seed pods may be produced (each with 10 - 20 seeds) on adult plants. Plants are particularly frost sensitive but dead plants often remain standing during winter, shedding seeds every time they are shaken. The seeds may be relatively long-lived in the soil.

Ecology:

Found most commonly on grey heavy clay soils in coolibah, black box and river gum communities on riverbanks, floodplains and in swamps. Very common in watercourses and irrigation channels.

The problem:

A common and highly competitive weed in the northern and central cotton growing areas, particularly on cultivated fields, storages, channels and other wet areas. The plant is difficult to control once it has attained at least 50 cm in height and its rapid growth rate can make timely control challenging. If unmanaged, the stems of the plant may become so thick that they need to be cut with an axe before the field can be picked. Heavy infestations do occur in fields and may prevent picking altogether, or if not, are costly to control. As seeds are not produced until later in the season, timely control will prevent seed dispersal.

Distribution:

Found in the Central and Northern regions of Australia.

Origin:

A native species.

References:

Plants of Western New South Wales, p. 411 - 412.

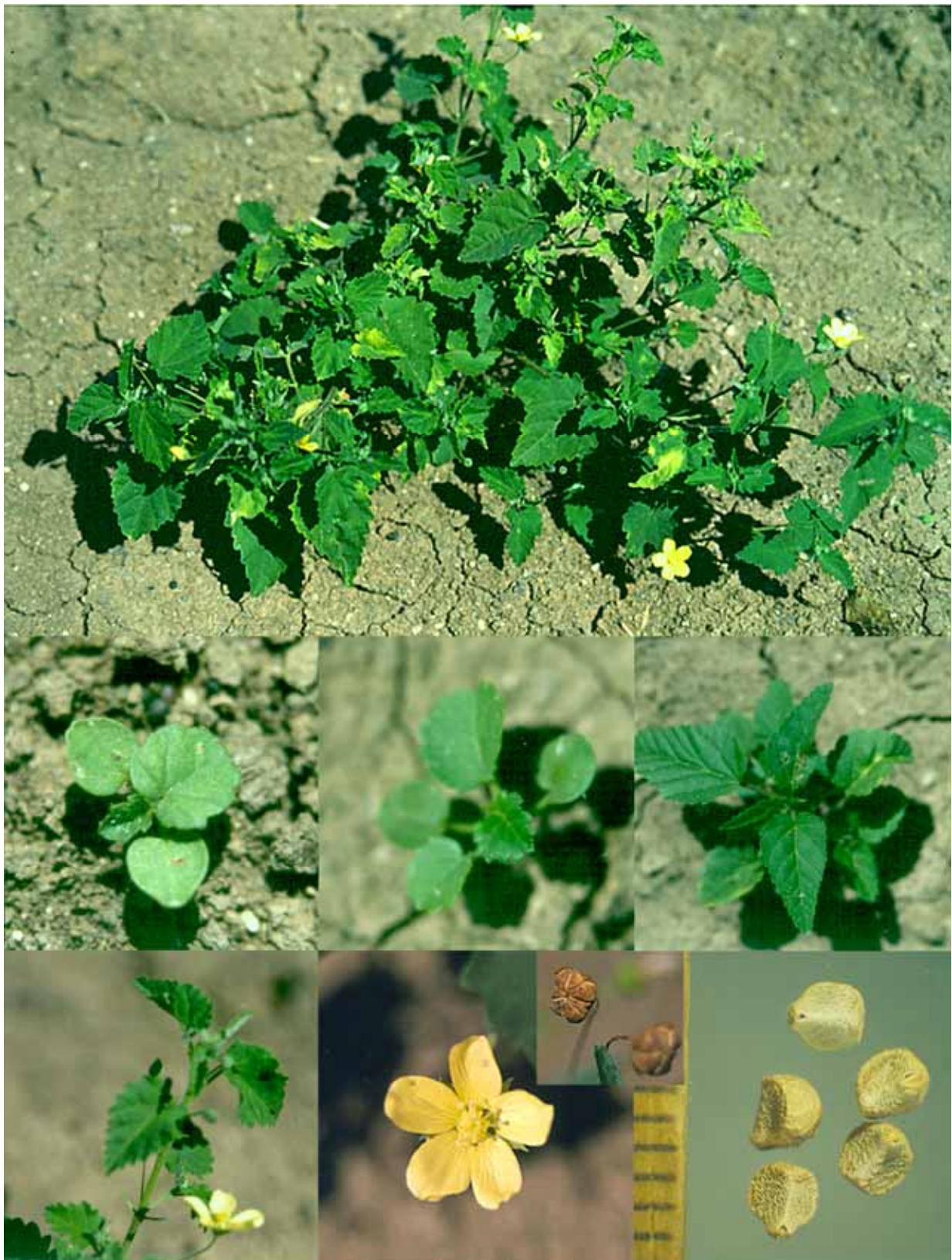
Crop Weeds of Northern Australia, p. 75.

Compiled by:

Graham Charles and Stephen Johnson

Sida corrugata Lindl.

Corrugated sida



Photographs: Graham Charles

Sida corrugata

Family:

Malvaceae (Hibiscus family).

Common names:

Corrugated sida, Dwarf sida, Native sida, Sage weed, Variable sida.

Confused with:

- The sida genus has not been well defined. There are over 40 sida species in Australia, many of which occur in the regions where cotton is grown. The species *Sida corrugata* is described as being very variable and may include a number of different species which have not yet been classified.

Description:

Seedling leaves - the cotyledon leaves are shiny green and spade shaped, with a blunt point, 3 - 4 mm long and wide.

Early leaves - the first true leaves are roughly circular in shape with a number of rounded teeth along the edge. Successive leaves become more elongated, becoming almost triangular. They are prominently veined, with "corrugated" indented mid-rib and veins.

Adult leaves - are oval to triangular, about twice as long as broad, 10 - 40 mm long and 6 - 30 mm wide. They are borne on stems 2 - 30 mm long. The leaves are deep green and have toothed margins. There is some variability in leaf shape. The underneath side of the leaves is covered in short, fine hairs.

Mature plants - are prostrate to semi-erect, to 30 cm high, with some branches semi-erect. Plants arise from a thick, woody taproot.

Flowers - single flowers are borne in the leaf forks. Flowers are 8 - 12 mm wide with five yellow petals and a yellow centre, borne on slender stalks 2 - 35 mm long.

Seed heads - are circular and flattened on top, green, becoming brown at maturity, 5 - 9 mm diameter. Seed heads split into six to ten segments on maturity and easily break apart when mature. The segments are brown, 2 - 4 mm in diameter and have a highly corrugated surface.

Lifecycle/Biology:

Seedlings can emerge in early spring after rainfall or irrigation. Plants flower in late spring and summer.

Ecology:

This plant is a relatively common minor weed of the summer cropping area. It is very drought tolerant and is found on a wide variety of soil types including heavy clay and sandy soils. It is considered a valuable pasture species in the dryer areas.

The problem:

A minor weed of irrigated and dryland crops. It may be an alternate host for insects and cotton pathogens.

Distribution:

Occurs throughout much of mainland Australia.

Origin:

A native Australian plant.

References:

Plants of Western New South Wales, p. 487. The plant photographed here is only broadly similar to the plant described in WEEDpak.

Compiled by:

Graham Charles

Silybum marianum (L.) Gaertn.

Variegated thistle



Photographs: Graham Charles

Silybum marianum

Family:

Asteraceae (Daisy family).

Common names:

Variegated thistle, Blessed milk thistle, Bull thistle, Cabbage thistle, Gundagai thistle, Gundy, Holly thistle, Lady's thistle, Milk thistle, Spotted milk thistle, Spotted thistle, St. Mary's thistle, Variegated artichoke.

Confused with:

Variegated thistle could be confused with a number of other thistles that grow in the area, but plants are larger than most other thistles and leaves have a pronounced mottled, or variegated appearance, with almost equal areas of green 'leaf' and white 'veins'.

Description:

Seedlings - the cotyledon leaves are oval in shape 15 - 20 mm long and 10 - 15 mm wide. The true leaves are longer and taper more towards the base and tip, and are mottled, or variegated in colour, with a mix of white and green. Leaves are shiny and lightly toothed with small spines.

Leaves - are heavily lobed, 20 - 50 cm long and 5 - 25 cm wide, with numerous spines on the margins. They form a dense rosette to 90 cm in diameter.

Plants - a robust annual or biennial weed to 2 m high. Plants develop stout, branched stems as they mature that end in bright red/purple flowers. The leaves on the stems are much smaller than the rosette leaves, becoming smaller towards the flowers, and become little more than spiny protrusions clasping the stem.

Flowers - a heavily spined flower head 5 - 12 cm in diameter topped by a dense bright red/purple cluster.

Seeds - are dark brown to black, 5 - 8 mm long and 2.5 - 4 mm wide, topped by a dense tuft of silky bristles 12 - 20 mm long..

Lifecycle/Biology:

Seedlings emerge predominantly in the cooler months and plants grow rapidly as temperatures increase, flowering in spring and summer. Plants generally die off as temperatures increase, but can survive through summer under favourable conditions.

Ecology:

Variegated thistle grows in most situations where moisture is adequate, including pastures, flood plains, cultivation and roadsides. It develops a large, competitive rosette and plant, displacing most other species. Plants often grow in dense clumps, producing masses of seed in late spring and summer.

The problem:

Variegated thistle is very competitive and produces a large plant that would interfere with any farming operations. It is not favoured by livestock.

Distribution:

A common weed in most Australian States.

Origin:

A native of the Mediterranean region.

References:

Plants of Western New South Wales, p. 724 - 725.

Crop weeds of Northern Australia, p. 55.

Compiled by:

Graham Charles

Sisymbrium thellingii O.E.Schulz

African turnip weed



Photographs: Graham Charles

Sisybrium thellingii

Family:

Brassicaceae (Cabbage family).

Common name:

African turnip weed.

Confused with:

Turnip weed (*Rapistrum rugosum*), Wild radish (*Raphanus raphanistrum*), and Wild turnip (*Brassica tournefortii*). These species can be distinguished by:

- **Cotyledons** - the cotyledons of African turnip weed are squarish, with a notched tip, and 2 - 3 mm long stems. Wild radish cotyledons have 12 - 20 mm long stalks and are heart shapes, where turnip weed are also heart shaped, but the stalks of are 8 mm long. Wild turnip cotyledons are kidney shaped, rather than heart shaped.
- **Flowers** - wild radish flower are white or pale yellow with purple veins. Turnip weed has a bright yellow flower with rounded petals 5 - 10 mm long and wide, and wild turnip a pale yellow flower which becomes white with age. The petals are 5 - 8 mm long and 2 - 3 mm wide. African turnip weed has a bright yellow flower, with petals 6 - 8 mm long and 2 - 3 mm wide.
- **Seed pods** - wild radish has a highly segmented pod containing multiple seeds. These pods break off at maturity and enclose the seed. Turnip weed has a short, bulbous pod that does not break apart at maturity. Wild turnip and African turnip weed pods are long and cylindrical, breaking apart at maturity to release the seeds. Wild turnip pods have a beak 1 - 2 cm long at the tip, where African turnip weed pods have no beak.

Description:

Seedlings - the cotyledon leaves are squarish in shape with a notched tip, 4 - 5 mm long and wide, borne on stalks 2 - 3 mm long.

Leaves - the first true leaves are oval in shape, 10 - 15 mm long and 7 - 8 mm wide and coarsely haired. Later leaves may be heavily lobed, 10 - 30 cm long, 8 - 12 cm wide. Leaves have prominent, indented central and lateral veins.

Plants - a hairy annual weed that forms a rosette to 1 m in diameter. The plant has a woody taproot and at maturity develops numerous erect stems and branches, 70 - 100 cm high. Leaves

are smaller towards the tops of the stems and branches and are not lobed or stalked.

Flowers - develop at the tips of the branches, with 4 bright yellow petals 6 - 8 mm long and 2 - 3 mm wide. The flowers are about 2 cm in diameter.

Seeds - seedpods are stem-like in shape 3 - 11 cm long and 2 mm in diameter, on stalks 1 - 3 cm long. Pods contain 60 - 80 seeds or more that are retained within the pod at maturity. Seeds are brown, egg-shaped, 1 - 1.5 mm in length.

Lifecycle/Biology:

Seedlings emerge in late autumn and winter, growing over winter and early spring and flowering in spring and early summer. The lifecycle can match closely that of a cereal crop, with seeds maturing before or with the crop.

Ecology:

Well adapted to the more westerly cropping and grazing zones. African turnip weed can dominate pastures in winter and spring, out competing other more valuable species and can be a major weed problem in fallows and winter crops.

The problem:

African turnip weed emerges with the winter crop and competes very strongly with the crop. Plants are well adapted to dry conditions and grow aggressively even when soil moisture is limiting to the crop, as is the case in the WEEDpak photos. Plants set seed before the crop is mature.

Distribution:

A weed of Northern New South Wales and Queensland.

Origin:

A native of South Africa.

Reference:

Crop weeds of Northern Australia, p. 48 - 51.

Compiled by:

Graham Charles

Solanum nigrum L.

Blackberry nightshade



Photographs: Graham Charles

Solanum nigrum

Family:

Solanaceae (Tomato family).

Common names:

Blackberry nightshade, Black nightshade, Nightshade, Potato bush, Tomato bush, Wild currents.

Confused with:

Glossy nightshade (*S. americanum*), Greenberry nightshade (*S. opacum*), and Cherry nightshade (*S. physalifolium* var. *nitidibaccutum*).

Description:

Seedling leaves - are egg-shaped often with a pointed tip, 6 - 9 mm long and 3 - 5 mm wide, covered in soft hairs, and have leaf stalks 1.5 - 3 mm long. The stems and cotyledons may have a purple tinge. The first true leaves are similar in shape to the cotyledon leaves, but longer and broader.

Leaves - are egg-shaped with wavy margins, soft to touch, 2 - 14 cm long and 1 - 8 cm wide. These leaves are deep-green or purple-tinged with few to many hairs. The leaf stalks have narrow wings in the upper section of the stalk and are 5 - 40 mm long.

Plants - are erect with many branches and grow 30 - 120 cm tall. The stems are often ribbed, with purple or green stems and leaf mid-veins, and able to develop adventitious roots from the nodes. Adult plants are generally hairy.

Flowers - are star-shaped, with five white or purple-tinged petals, and are 8 - 12 mm in diameter. There is a central ring of five bright yellow stamens in the centre of each flower. The flowers/berries are produced in groups of 4 - 12 on stalks that are up to 1 cm long.

Seeds - the fruit is a green berry, 6 - 8 mm in diameter that turns purple-black or black when ripe. The berries are borne in clusters, with each berry arising at intervals along the stalk and not all from the same point (similar to a bunch of grapes). The fruit stalks turn downwards when in fruit. The berries produce small, flat, circular light brown seeds 2 - 2.5 mm in diameter.

Lifecycle/Biology:

An annual or short-lived perennial weed that germinates throughout the year, though mostly from late winter to mid summer. Plants are able to reshoot from deep seated taproot material producing a number of stems that rapidly produce seed heads and compete with cotton early season. Flowering occurs mainly during the warmer months. Several thousand individual berries flower and ripen at slightly different times over a period of several weeks. Berries contain a large number of seeds. Plants may over-winter in standing stubble or in wheat crops and rapidly produce mature berries in warmer weather.

Ecology:

A common weed of cultivated fields and wasteland. Blackberry nightshade grows in a wide range of soil and vegetation types.

The problem:

Blackberry nightshade is a competitive weed that can emerge with the cotton stand and out-compete young cotton plants. It is a weed favoured by reduced cultivation systems and can perenniate from the taproots. Mature berries can stain the cotton lint.

Distribution:

A widespread weed, naturalised throughout Australia.

Origin:

A native of Europe.

References:

Plants of Western New South Wales, p. 588.

Crop Weeds of Northern Australia, p. 118 - 119.

Compiled by:

Graham Charles and Stephen Johnson

Sonchus oleraceus L.

Common sowthistle



Photographs: Graham Charles

Sonchus oleraceus

Family:

Asteraceae (Daisy family).

Common names:

Common sowthistle, Annual sowthistle, Common milk thistle, Milk thistle, Milkweed, Sowthistle, Thalaak.

Confused with:

Rough sowthistle (*S. asper*) The main difference between common sowthistle and rough sowthistle is that the latter has stiffer, less divided leaves, with the spines on the leaf margins more pronounced. Intermediate forms between the two species may occur.

Description:

Seedling leaves - are round, 3 - 6 mm in diameter and bluish-green. The first true leaf is wider than the cotyledons, almost circular, and has a few spines on the leaf margin. The second true leaf has many backward-pointing spines.

Leaves - are bluish-green to dark green, 6 - 35 cm long and 3 - 12 cm wide. They are thin and soft, becoming increasingly lobed as they mature and are irregularly-toothed with small, soft spines.

Plants - are generally 60 - 80 cm high but can grow up to 1.8 m. They develop a deep taproot. Plants initially form a rosette 20 - 30 cm across, and develop multiple erect stems as they mature. The lower stem leaves are similar to the rosette leaves, while the upper leaves clasp the stem and have tapering tips. When broken, both seedling and adult plants produce a milky sap. The spines which are initially soft become harder as plants mature.

Flowers - are borne on long stalks at the ends of branches. These branches arise from the upper leaf forks, are hollow, cylindrical or slightly angular, and have purple pigmentation. The flower heads are about 5 - 18 mm long with swollen bases and a tuft of bright yellow florets at the top.

Seeds - are 1 - 3 mm long, up to 1 mm wide and brown. The seeds are light with white parachutes of silky hairs, 6 - 7 mm long which allow them to be dispersed in the wind.

Lifecycle/Biology:

An annual species that emerges, grows and flowers at anytime of the year. The plant is particularly abundant in winter and spring. Common sowthistle has a small seed that is only able to emerge from the soil surface or very shallow depths. It is favoured by reduced tillage and stubble retention systems that can provide an ideal microenvironment for establishment.

Ecology:

A common weed of reduced tillage and stubble retention systems, well adapted on most soil types and a range of environments.

The problem:

Common sowthistle is a competitive weed and problem in pastures and an increasing problem in both summer and winter cropping systems. Some populations of the weed collected from wheat fields around the Darling Downs, Macintyre and Gwydir valleys have resistance to chlorsulfuron herbicides. Plants are more of a problem in zero-tillage fields and readily establish in retained, standing stubble. Common sowthistle plants can establish after any rainfall event year round, rapidly producing seed from small plants, and masses of seed from larger plants if left uncontrolled. Management is particularly difficult in standing stubble.

Distribution:

A widespread weed, naturalised throughout Australia.

Origin:

An introduced species from Europe.

References:

Plants of Western New South Wales, p. 718.
Crop Weeds of Northern Australia, p. 53.

Compiled by:

Graham Charles

Stachys arvensis (L.) L.

Stagger weed



Photographs: Graham Charles

Stachys arvensis

Family:

Lamiaceae (Mint family).

Common names:

Stagger weed, Corn woundwort, Field stachys, Field wound root, Field woundwort, Hedge nettle, Mintweed, Woundwort.

Confused with:

Deadnettle (*Lamium amplexicaule*) and dwarf nettle (*Urtica urens*). These can be distinguished by:

- **Seedlings** - dwarf nettle leaves are dark green with sharply serrated edges. Stems are reddish towards the base. Stagger weed leaves are yellowish-green and egg-shaped, longer than they are wide. Stagger weed leaves have a minty smell when crushed. Deadnettle are darker green than stagger weed and more of a pointed-fan shape, wider than they are long.
- **Flowers** - Dwarf nettle flower are white and very small. The flower head is green. Stagger weed pale pink to pale lilac. Deadnettle flowers are purple to bright red.

Description:

Seedling leaves - are round, 3 - 5 mm in diameter and yellowish-green with short stalks. The first true leaves are broadly egg-shaped, with an indented base where they meet the leaf stalk. Leaves are lightly covered in hairs, and are corrugated by central and lateral veins. The leaf margins are roundly toothed.

Older leaves - are yellowish-green, opposite and on stems less than 20 mm long. New branches arise from the leaf axils. Leaves are 8 - 45 mm long and 4 - 32 mm wide. Leaves are lightly covered in hairs, and are corrugated by central and lateral veins. The leaf margins are roundly toothed.

Plants - a semi-erect annual to 35 cm high, yellowish-green in colour. Stems are slender and 4-angled, 15 - 45 cm high and covered with spreading hairs. Plants emit a mint-like odour when crushed.

Flowers - are white to pale pink, 5 - 7 mm long, borne in clusters of 2 - 6 in the forks of the leaves.

Seeds - 1 - 4 seeds develop in a "cup" in the leaf forks. Seeds are dark brown and lightly mottled, 2 - 2.5 mm long.

Lifecycle/Biology:

An annual plant that emerges in autumn and winter, flowering in winter and spring.

Ecology:

A common weed of cereal cops and winter fallows, and will established in pastures.

The problem:

Stagger weed is a minor pest of cereal crops and winter fallows, irrigation channels and waste areas. Stagger weed can be eaten by livestock and will cause staggers. The poison is cumulative and the effects become apparent in stressed stock. Stagger weed can kill stock.

Distribution:

A widespread weed, occurring in all states, except the Northern Territory.

Origin:

An introduced species from Europe and the Mediterranean region.

References:

Plants of Western New South Wales, p. 576 - 577.

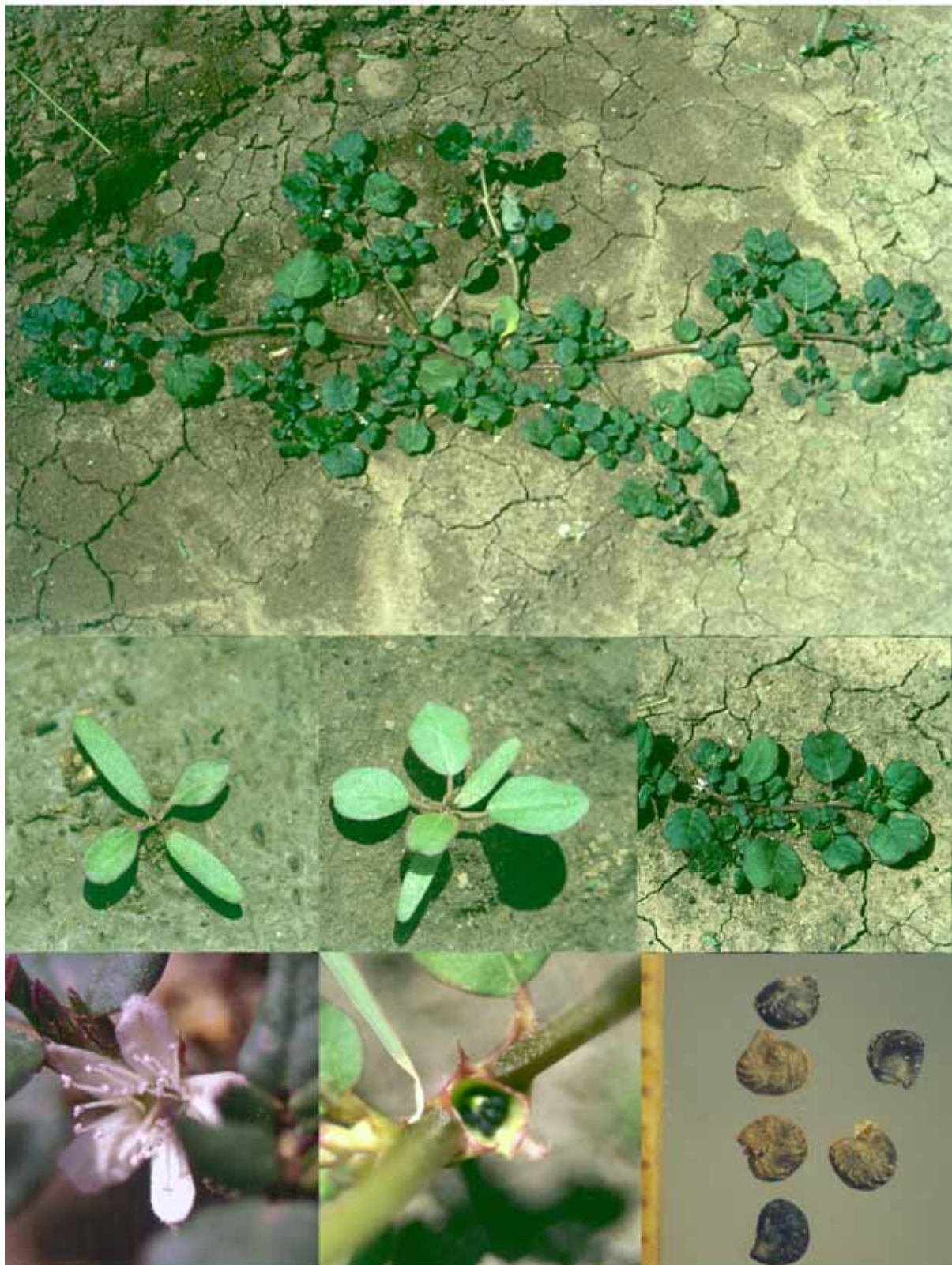
Crop Weeds of Northern Australia, p. 84 - 85.

Compiled by:

Graham Charles

Trianthema portulacastrum L.

Black pigweed



Photographs: Graham Charles

Trianthema portulacastrum

Family:

Aizoaceae.

Common names:

Black pigweed, Giant pigweed.

Description:

Seedling leaves - are fleshy and waxy, have an elongated oval shape and are 15 mm long by 5 mm wide. The first true leaf is club-shaped, has purple margins and is borne on a short stalk about 1 mm long.

Leaves - are fleshy, borne opposite each other on the stem, broadly oval-shaped, and are flattened or slightly notched at the tip. One of the pair of opposite leaves is smaller than the other, both in the seedlings and adult plants. The adult leaves have purple margins, are crinkly, 5 - 50 mm long and 4 - 45 mm wide. The leaf stalks are variable in length from 2 - 35 mm long and swollen to form a cup at the base.

Plants - are prostrate or ascending with green to red/purple fleshy stems, 50 cm or more in length. Young stems may be covered in very short hairs.

Flowers - single pink, white or purple flowers occur in cup-like structures in the leaf forks. The five flower lobes are each 2 - 5 mm long.

Seeds - the seed head is a capsule with an inverted-cone shape, 2 - 4 mm long. There are between 3 and 15 small, round, brown to dull-black, flattened, snail-shaped seeds released from each capsule at maturity. The seeds are 3 - 5 mm long and 1.8 - 2.5 mm wide.

Lifecycle/Biology:

An annual plant that grows vigorously during spring and summer. This plant may grow throughout the year when sheltered from frost. Seeds germinate readily between 20 and 40°C in alternating light and dark conditions. Emergence occurs after early season rains from up to 7.5 cm depth, although emergence is greatest in the top 2.5 cm of the soil. The plant is known for its rapid growth, flowering during summer and autumn, 20 to 30 days after emergence. Seeds mature 15 - 20 days after flowering, with around 7,000 seeds produced per plant. Freshly shed seeds have some dormancy.

Ecology:

Black pigweed is often found along rivers and in other damp areas, pastures, wasteland, beside roads and in lawns and gardens. It tolerates saline soils.

The problem:

Black pigweed is a weed of cultivation and summer cropping, particularly dryland cotton and can form dense mats after rainfall in spring and summer, choking out struggling cotton plants.

Distribution:

Found in Central and Northern Australia.

Reference:

Crop Weeds of Northern Australia, p. 71.

Compiled by:

Graham Charles and Stephen Johnson

Tribulus micrococcus Domin

Yellow vine



Photographs: Graham Charles

Tribulus micrococcus

Family:

Zygophyllaceae.

Common names:

Yellow vine, Native yellow vine, Spineless caltrop.

Confused with:

Cat-head (*T. terrestris*). There has been some confusion between yellow vine and cat-head, and different varieties within yellow vine itself. The species can be distinguished by:

- **Leaves** - yellow vine's leaflets are bright green, 6 - 13 mm long and 3 - 5 mm wide, where as cat-head's are a bluish/grey colour generally 4 - 8 mm long and 2 - 4 mm wide.
- **Flowers** - yellow vine has open, bright yellow flowers with petals 6 - 13 mm in length, where as cat-head's flowers are normally not prominently open, with petals 3 - 6 mm long.
- **Seed head** - the yellow vine seed and seed head is spineless, or nearly so, where as cat-head seeds each have 4 robust spines, 2 spines that spread near the tip, 3 - 8 mm long, and 2 shorter spines at the base, 1 - 4 mm long.

Description:

Seedling leaves - the cotyledon leaves are oval-shaped, 8 mm long and 5 mm wide, with a flattened tip and are borne on stalks about 1 - 2 mm long. Seedlings grow prostrate, along the ground. The 1st and 2nd true leaves have two and three pairs of leaflets (smaller leaves on a short stem) respectively. The number of leaflets increases on later leaves.

Leaves - have 3 - 7 pairs of oblong-shaped leaflets, 6 - 13 mm long and 3 - 5 mm wide. These leaves appear to shine and have hairs on the leaf margins.

Plants - the mature plants lie flat on the ground. The adult stems are red or purple/brown in colour and 1 - 2 m in length. The stem tips are covered in fine white hairs. A taproot aids in the survival of this species.

Flowers - occur singly and have five, bright yellow, broadly paddle shaped petals each 6 - 13 mm long and 8 - 10 mm across. The flower diameter ranges from 15 - 25 mm.

Seeds - the seed head is a globular burr, initially green, but becoming pale red/brown at maturity, 7 - 12 mm wide with five woody segments, each containing 1 - 3 seeds, and with 2 short very spines that spread near the tip 0.5 - 2.5 mm long.

Lifecycle/Biology:

Normally an annual weed, responding very quickly to summer rain, and dieing off as soil moisture levels drop. Germination occurs after effective rainfall in the warmer months. Flowering and seed head production occurs from spring to autumn. The burr segments protect the seeds and allow them to remain viable for many years before germinating.

Ecology:

A common plant found on clay and clay-loam soils, and a weed of disturbed situations.

The problem:

Yellow vine can be a major summer weed in summer fallows. It is able to respond very quickly to rain, forming a thick mat within a few weeks of rain that is very difficult to manage with cultivation.

Distribution:

Occurs mainly in New South Wales and Queensland. A common weed in the inland farming area.

Origin:

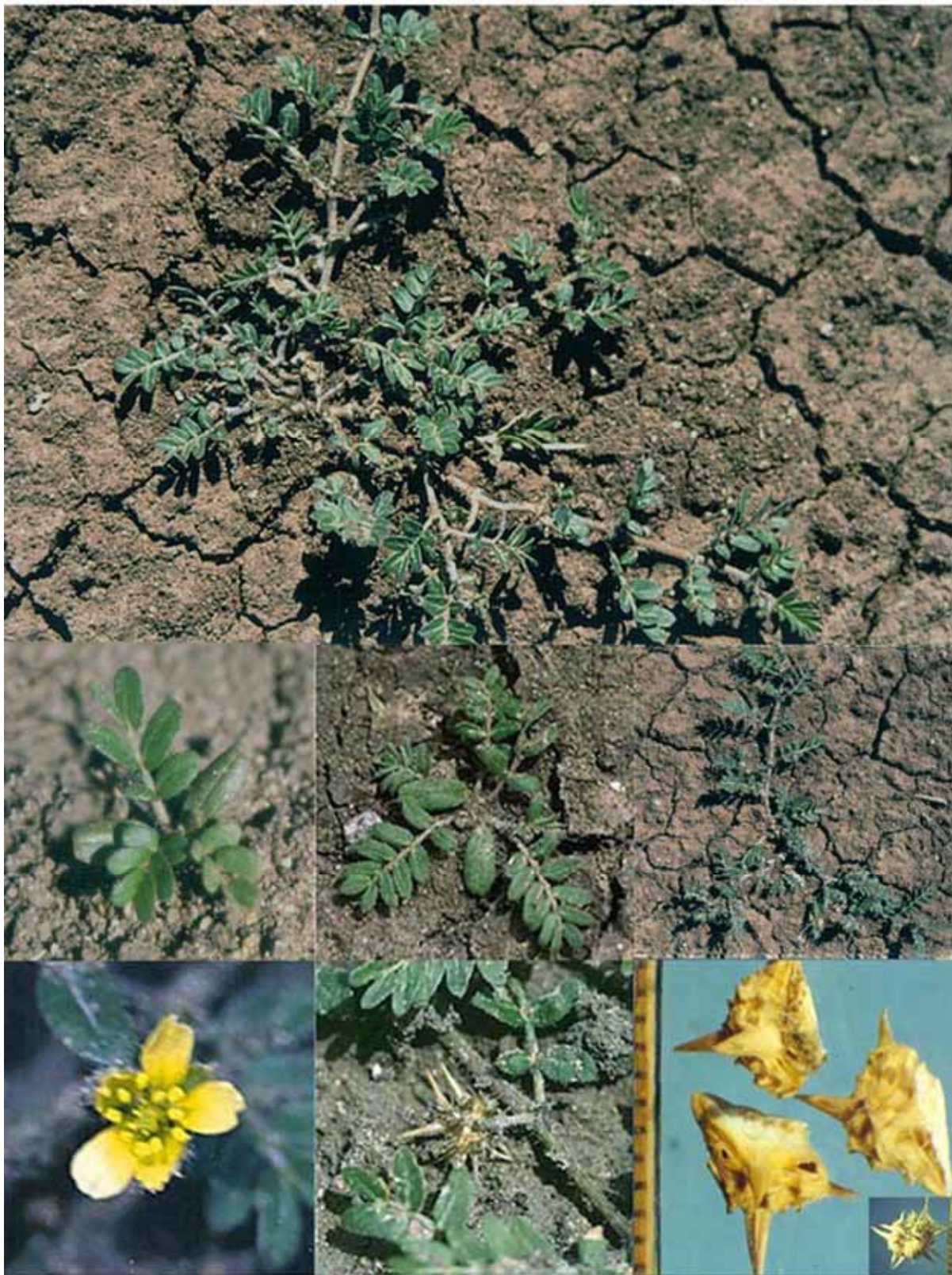
Probably a native species.

Compiled by:

Graham Charles and Stephen Johnson

Tribulus terrestris L.

Cathead



Photographs: Graham Charles

Tribulus terrestris

Family:

Zygophyllaceae.

Common names:

Cathead, Bindyi, Burnut, Bullhead, Bull's head, Caltrop, Cat's head, Devil's thorn, Goathead, Goat head burr, Goat's head, Puncture vine.

Confused with:

Yellow vine (*T. micrococcus*). There has been some confusion between yellow vine and cat-head, and different varieties within yellow vine itself. The species can be distinguished by:

- **Leaves** - yellow vine's leaflets are bright green, 6 - 13 mm long and 3 - 5 mm wide, where as cat-head's are a bluish/grey colour generally 4 - 8 mm long and 2 - 4 mm wide.
- **Flowers** - yellow vine has open, bright yellow flowers with petals 6 - 13 mm in length, where as cat-head's flowers are normally not prominently open, with petals 3 - 6 mm long.
- **Seed head** - the yellow vine seed and seed head is spineless, or nearly so, where as cat-head seeds each have 4 robust spines, 2 spines that spread near the tip, 3 - 8 mm long, and 2 shorter spines at the base, 1 - 4 mm long.

Description:

Seedling leaves - the cotyledon leaves are oval-shaped with a flattened tip, 8 mm long and 4.5 mm wide, borne on stalks 1 - 2 mm long. They have a prominent, indented, central mid-rib. The 1st and 2nd true leaves have 2 and 3 pairs of leaflets, respectively. The number of leaflets increases on later leaves. The early leaflets are mid to dark green, shiny and have hairs on their margins.

Leaves - have 4 - 8 pairs of elongated oval-shaped leaflets, 4 - 10 mm long, 2 - 4 mm wide and have short stalks or no stalk at all. The leaflet pairs are not equal in length. The upper leaflet surface is green to greyish/blue. The lower leaf surface is paler and also hairy giving the surface a silvery appearance. Leaves are opposite on the stem.

Plants - young stems and leaves are covered in long silky hairs. Plants have a prostrate growth habit with the adult stems much branched, purple/brown to red/brown, to 2 m in length. The weed often forms mats and radiates out from a deep woody taproot that extends to 2.6 metres in depth and has a number of fibrous lateral roots.

Flowers - occur singly and have 5 yellow petals, 3 - 6 mm long. The flower diameter ranges from 6.5 - 12 mm. Flowers are borne in the leaf fork of the smaller leaf in the leaflet pair and last only one day.

Seeds - the mature seed head is a star-shaped, woody, brown to red burr, 6 - 15 mm in diameter, with 5 wedge-shaped woody segments. Each segment has 4 hard spines, 2 spines that spread near the tip, 3 - 8 mm long, and 2 shorter spines at the base, 1 - 4 mm long. The seeds are yellow, oval-shaped, 2 - 5 mm long. There are 2 to 4 seeds in each segment, or up to 20 per burr.

Lifecycle/Biology:

An annual or biennial plant that germinates after rainfall in late spring and summer, from up to 5 cm depth in lighter soils. Plants grow rapidly, developing a deep root system within a few weeks. First flowers can appear within 3 weeks of emergence and the first seed heads in 5 - 6 weeks. 100 - 500 seed heads can be produced by a mature plant. Flowering continues over summer and autumn, until the plants are frosted off and die. Very few seeds germinate after shedding, but dormancy disappears within six months. The woody covering protects the seeds and allows buried seed to remain viable for many years. The plant can regrow from the taproot and in more tropical areas may reshoot from the taproot in the following season. The burr segments are easily dispersed as they stick to tyres, shoes etc.

Ecology:

A weed of cultivation, degraded pastures, roadsides, irrigation channels and mechanically disturbed areas. Well adapted to all soil types, growing particularly well on lighter soils.

The problem:

A common but troublesome weed to control on irrigation structures and rotabucks, and in many cultivated crops, particularly on recently developed fields. Control of this weed is difficult to achieve through cultivation alone because of successive germination events and the ability of the plant to reshoot from the taproot. The hard spines can puncture tyres and cause physical injury.

Distribution:

Common in all mainland States of Australia.

Origin:

A cosmopolitan weed originating in the Mediterranean region.

References:

Plants of Western New South Wales, p. 438.

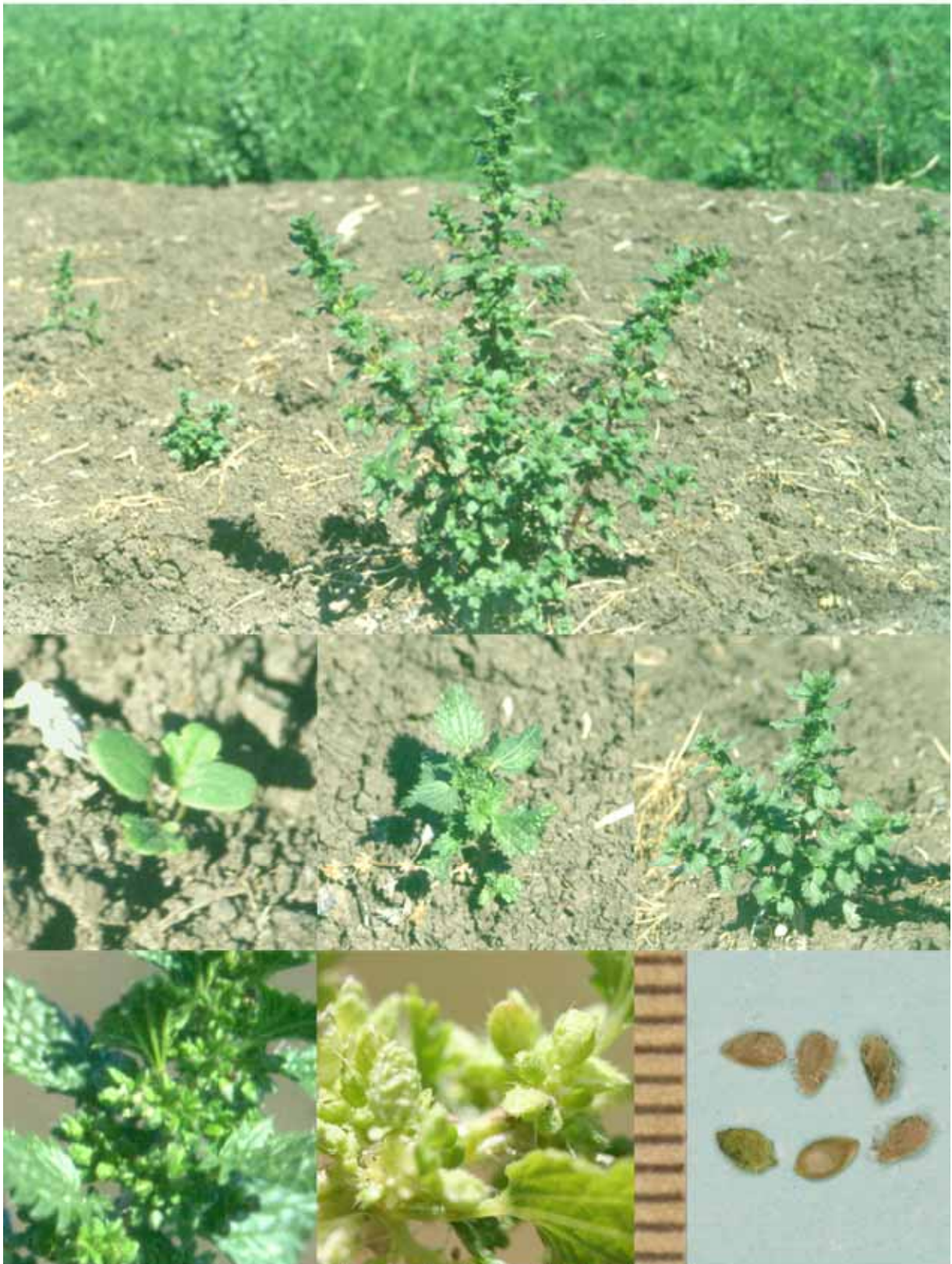
Crop Weeds of Northern Australia, p. 74.

Compiled by:

Graham Charles and Stephen Johnson

Urtica urens L.

Dwarf nettle



Photographs: Graham Charles

Urtica urens

Family:

Urticaceae (Nettle family).

Common names:

Dwarf nettle, Annual nettle, Burning nettle, English stinging nettle, Lesser nettle, Lesser stinging nettle, Nettle, Small nettle, Stinging nettle.

Confused with:

Deadnettle and stagger weed. The species can be distinguished by:

- **Seedlings** - dwarf nettle leaves are dark green with sharply serrated edges. Stems are reddish towards the base. Stagger weed leaves are yellowish-green and egg-shaped, longer than they are wide. Stagger weed leaves have a minty smell when crushed. Deadnettle are darker green than stagger weed and more of a pointed-fan shape, wider than they are long.
- **Flowers** - Dwarf nettle flower are white and very small. The flower head is green. Stagger weed pale pink to pale lilac. Deadnettle flowers are purple to bright red.

Description:

Seedling leaves - are roundly oval, 3 - 5 mm in diameter and with stalks 1 - 2 mm long. The first true leaves are broadly circular, with noticeable indentations on the sides. Leaves are lightly covered in hairs, and are corrugated by central and lateral veins. The leaf margins are roundly toothed.

Older leaves - are dark green, 10 - 50 mm long and 10 - 40 mm wide, borne on leaf stems 10 - 30 mm long. The underside of the leaf is paler in colour than the top. Leaves are lightly covered in stinging hairs, and are corrugated by central and lateral veins. The leaf margins are sharply toothed, with a serrated appearance.

Plants - an erect annual to 60 cm high, dark green in colour. Stems are green at the top with vertical red stripes for much of the length and covered with stinging hairs.

Flowers - are very small and white, and occur in clusters in the upper leaf axils. The green flowering structures are much more apparent than the flowers.

Seeds - are a pointed oval shape, flattened, light brown, 2 - 2.5 mm long.

Lifecycle/Biology:

An annual plant that emerges over the cooler months, flowering soon after emergence in winter and spring.

Ecology:

A weed of gardens, waste areas, cultivation and stock camps. Well adapted to all soil types, but favours high organic matter content.

The problem:

A common and minor weed of cultivation. Dwarf nettle is not controlled by typical field rates of glyphosate and rarely eaten by livestock.

Distribution:

Common in all states.

Origin:

A cosmopolitan weed, originating in Europe.

References:

Plants of Western New South Wales, p. 210 - 211.

Compiled by:

Graham Charles

Verbesina encelioides (Cav.) A.Gray

Wild sunflower



Photographs: Graham Charles

Verbesina encelioides

Family:

Asteraceae (Daisy family).

Common names:

Wild sunflower, American dogweed, Butter daisy, Crownbeard, Golden crownbeard, Goldweed, South African daisy.

Confused with:

Self-sown sunflower (*Helianthus annuus*). These plants can be distinguished by:

- **seedling leaf shape** - sunflower leaves are a slightly flattened oval shape with a pointed end. Wild sunflower are a blade shape, with a tapering, pointed end.
- **adult plants** - sunflowers have dark green leaves and a single stem or may have some branching towards the top. Wild sunflowers are blue/green in colour and highly branched, with branches emerging from near the base.
- **seeds** - sunflower has a flattened, wedge shape black seed with grey stripes. Wild sunflower has a smaller brown seed. The inner seeds in the head are winged, with a prominent pale wing surrounding the seed

Description:

Seedling leaves - the cotyledons are oval, 10 - 14 mm long and nearly as wide. The 1st true leaf is a broad blade shape, with a slightly toothed margin and covered with hairs. Leaves have a prominent, light coloured, slightly indented mid-rib.

Leaves - are wedge-shaped to triangular, bluish/grey in colour, 4 - 10 cm long, 1 - 4 cm wide and alternate along the stems. The margins are coarsely toothed. Leaves have prominent, light coloured, slightly indented central and lateral veins. New leaves are covered in fine hairs and have a downy, frosted look. Leaves are greyish/white beneath.

Plants - an erect, branched annual plant to 60 cm tall that strongly resembles self-sown sunflower.

Flower heads - are bright yellow, 2 - 5 cm in diameter, with yellow centres, on the end of long, erect, leafless stalks 15 - 25 cm in length that arise from the leaf axils. The heads consist of 12 - 15 yellow outer petals 1 - 2 cm long that have 3 teeth on the ends.

Seeds - are flattened, brown in colour, 5 - 7 mm long. The outer seeds in the head are wingless and the inner seeds winged, as in the WEEDpak photo.

Lifecycle/Biology:

Seedlings emerge in autumn and winter, and plants grow rapidly in spring and summer. Flowering commences in late spring and continues on to autumn, or to when the plants senesce due to moisture stress.

Ecology:

Prefers lighter soils, although it will grow on clay soils. Common in some areas on roadsides, irrigation channels, etc.

The problem:

Wild sunflower is a minor pest in irrigated cotton in the Emerald area. It can be common along roadside and is toxic to livestock.

Distribution:

Found in the Eastern States of Australia.

Origin:

A native of America.

Reference:

Plants of Western New South Wales, p. 680.

Compiled by:

Graham Charles

Vicia faba L.

Faba bean



Photographs: Graham Charles

Vicia faba

Family:

Fabaceae (Pea family).

Common names:

Faba bean, Broad bean, Horse bean, Pigeon bean, Tick bean.

Confused with:

There are a number of different faba bean varieties commercially available. These vary in some morphological details, especially seed size.

Description:

Seedling leaves - emerge from the seed and soil as an erect shoot (the cotyledons remain in the soil). The seedling leaves unfurl from this shoot. The first true leaves are in pairs, each leaflet 30 - 40 mm long and 25 - 35 mm wide. Leaflets are a rounded diamond shape, glossy green on top and paler underneath and are borne on a short leaf stem, 5 - 10 mm long. Central and lateral veins are apparent on the bottom side of the leaflets. Two scale leaves clasp the stem at the junction of the stem and the leaf stems. Leaflets may not initially emerge from the bottom 2 pairs of scale leaves.

Later leaflets - are more rounded, to oval in shape, 60 - 70 mm long and 30 - 40 mm wide. They consist of a terminal pair of leaflets, borne on a stem 10 - 60 mm long. An additional 2 to 4 leaflets may be spaced along the leaf stem in an alternate pattern.

Plants - an erect, branched annual plant, 1 to 1.5 m tall, additional branches emerge from the base of the main stem. Stems are square, with vertical ridges defining the sides of the square and appear to be very robust, 10 - 13 mm wide. However, they are relatively weak and easily damaged. Stems may be red-tinged towards the top.

Flowers - are yellowish-white, with black stripes on the inside of the upper petal. The keel petals are black with white edges. Flowers emerge in clusters in the leaf axils, with 3 - 6 flowers in each cluster.

Seed pods - develop in the leaf terminals from the flowers, initially green and fleshy, 60 - 100 mm long, depending on variety. Pods are furry and have a sharp point on the end. Pods blacken and shrivel as they mature.

Seeds - are 8 - 15 mm long or more, depending on variety. Seeds are light to dark brown and

flattened, with a black strip running around the outside edge from the embryo to the end.

Lifecycle/Biology:

Faba bean has no hardseedness, and seedlings will emerge at any time of the year when moisture allows. Plants die quickly in hot summer conditions. Commercial crops are planted in late autumn. Seedlings emerge and grow rapidly over winter and spring. Flowering commences in winter but pods will not form until after the frost period.

Ecology:

Suited to most soils, and grows well on heavy clay soils. Faba bean is susceptible to a range of pests and diseases and will not compete well with weeds. Control of broadleaf weeds in faba beans can also be problematic.

The problem:

Faba bean is a minor weed of following crops and fallows. High densities of seedlings can emerge soon after the crop is harvested and may be a source of heliothus grubs.

Distribution:

Faba beans are commercially grown in all states.

Origin:

A native of Europe.

Compiled by:

Graham Charles

Vicia villosa Roth. ssp. *eriocarpa* (Hausskn) P.W. Ball

Woollypod vetch



Photographs: Graham Charles

Vicia villosa ssp. *eriocarpa*

Family:

Fabaceae (Pea family).

Common names:

Woollypod vetch.

Confused with:

There are a number of similar naturalised vetch species and varieties. Woollypod vetch can be readily distinguished by the flowers, with 3 - 30 flowers along a stem which arises from the leaf axil; the flower stem is 25 - 70 mm long. Other vetch species have around 1 to 5 flowers in each cluster.

Description:

Seedling leaves - emerge from the seed and soil as an erect shoot (the cotyledons remain in the soil). The seedling leaves unfurl from this shoot. The first true leaves have around 5 leaflets, each leaflet 8 - 10 mm long and 1 - 2 mm wide. Leaflets are a narrow, rounded oblong in shape, darker green on top and paler underneath and are borne on a short leaf stem, 5 - 10 mm long. Two small scale leaves 4 - 8 mm long and 1 - 3 mm wide clasp the stem at the junction of the stem and the leaf stems.

Later leaflets - are more rounded, oblong in shape, 5 - 40 mm long and 2 - 8 mm wide. They are borne on a stem 40 - 50 mm long, which terminates in 2 or 3 clasping tendrils. Leaves are 50 - 110 mm long, with 8 - 24 leaflets.

Plants - a spreading, branched annual or biennial plant, 30 - 40 cm tall.

Flowers - are deep purplish-red, 10 - 20 mm long. 3 - 40 flowers are clustered along a flower stem, 25 - 70 mm long, with the first flower about half way along the stem, and subsequent flowers spaced along the stem. Flower stems arise from the leaf axils.

Seed pods - develop along the flower stems. They are initially green, but become light-tan with age. Pods are 20 - 40 mm long, 6 - 12 mm wide, and flattened, 3 - 6 mm wide.

Seeds - are 3 - 6 mm wide, light to dark brown and may be mottled, with a black strip running around the outside edge from the embryo to the end.

Lifecycle/Biology:

Woollypod vetch seedlings normally emerge in autumn and winter, and begin flowering in late winter and spring. Woollypod vetch can persist in suitable conditions, but plants normally die in hot summer conditions. Commercial crops are planted in late autumn. Most vetch varieties are very hardseeded, and seed may persist in the soil for many years.

Ecology:

Suited to most soils and does well on heavy clay and alkaline soils. Woollypod vetch is susceptible to a range of pests and diseases and does not compete well with weeds during early growth. Control of broadleaf weeds in vetch can be problematic.

The problem:

Ideally woollypod vetch is grown as a green manure crop, plowed in before it can set seed. If vetch does set seed, it may be an annoying weed for many years in following crops and fallows. Some woollypod vetch varieties are very hardseeded, so seed can persist for many years, with weedy escapes adding to the seed bank over time. Seedlings may emerge after a following crop is watered up and can be difficult to remove from the crop.

Distribution:

Woollypod vetch is grown as a pasture, for hay production and as a green manure crop in all states except the Northern Territory and has become naturalised in many of the wetter areas. It is readily eaten by livestock.

Origin:

A native of Europe.

Compiled by:

Graham Charles

Vigna lanceolata var. *filiformis* Benth.

Maloga bean



Photographs: Graham Charles

Vigna lanceolata var. *filiformis*

Family:

Fabaceae (Pea family).

Common names:

Maloga bean, Native bean, Parsnip bean, Vigna take-all.

Confused with:

There are three recognised varieties of this species, *V. lanceolata* var. *filiformis* (maloga bean), *V. lanceolata* var. *latifolia* (vigna takeall) and *V. lanceolata* var. *lanceolata* (native bean). These varieties can be distinguished by leaf shape & size:

- var. *latifolia* (vigna takeall) has a wedge shaped leaf, 2 - 6 cm long and 10 - 35 mm wide with a slightly lobed base (lobed to each side, see Plants of Western New South Wales, p. 430),
- var. *lanceolata* (native bean) has a much narrower leaf, 2 - 7 cm long and 3 - 10 mm wide with a slightly lobed base (lobed to each side, see Crop Weeds of Northern Australia, p. 77 - 78).
- var. *filiformis* (maloga bean) has a narrower leaf, 4 - 8 cm long and 2 - 7 cm wide that is no lobed at the base.

Description:

Seedling leaves - the cotyledon leaves are narrow and spear-shaped, to 3 cm long and 6 mm wide, on stalks up to 10 mm long. These and later leaves have a pronounced, indented mid-rib. The 1st true leaf and subsequent leaves have three long narrow leaflets. The tips of the early leaves are rounded, but become more pointed on later leaves.

Leaves - are long and narrow, 40 - 80 mm long and 2 - 7 mm wide, with a pointed tip and indented mid-rib. There are 2 small outgrowths in each leaf fork with the leaf stalk 20 - 60 mm long.

Plants - are slender, twining or sometimes erect. The stems are fairly hairless, growing to 2 m long, spreading out from a long taproot that is at least 30 - 40 cm deep. Plants often twine up cotton plants.

Flowers - are pea-like, bright yellow, 7 - 10 mm long, in groups of up to 5, at the ends of flowering stems 8 - 20 cm long that are borne in leaf forks. The lower petals of the flower are curved inwards.

Seed heads - are cylindrical pods 2 - 4 cm long and 4 - 8 mm wide, slightly segmented, turning from mid green to brown when ripe. There are 4 -7 mottled black and roughly oval-shaped seeds in a pod, each 4 mm long and 3 mm wide.

Lifecycle/Biology:

A perennial species that establishes readily from seed in spring and early summer, and can reshoot from the taproot in reduced cultivation systems. Plants flower in summer and autumn.

Ecology:

The plant is common on sandy soils of creek beds and banks, and also in cultivation on black clay soils.

The problem:

Maloga bean may occur as scattered plants and as more localised dense stands that are very competitive primarily due to the deep taproot and perennial nature. Plants emerge with cotton and twine through and over cotton plants.

Distribution:

Found in the northern parts of Australia. Maloga bean is a minor weed on the Darling Downs.

Distribution:

An Australian native species.

References:

Plants of Western New South Wales, p. 430 (*V. lanceolata* var. *latifolia*).

Crop Weeds of Northern Australia, p. 77 - 78 (*V. lanceolata* var. *lanceolata*).

Compiled by:

Graham Charles

Vigna lanceolata var. *latifolia* Benth.

Vigna takeall



Photographs: Graham Charles

Vigna lanceolata var. *latifolia*

Family:

Fabaceae (Pea family).

Common names:

Vigna take-all, Maloga bean, Native bean, Parsnip bean.

Confused with:

There are three recognised varieties of this species, *V. lanceolata* var. *filiformis* (maloga bean), *V. lanceolata* var. *latifolia* (vigna takeall) and *V. lanceolata* var. *lanceolata* (native bean). These varieties can be distinguished by leaf shape & size:

- var. *latifolia* (vigna takeall) has a wedge shaped leaf, 2 - 6 cm long and 10 - 35 mm wide with a slightly lobed base (lobed to each side, see Plants of Western New South Wales, p. 430),
- var. *lanceolata* (native bean) has a much narrower leaf, 2 - 7 cm long and 3 - 10 mm wide with a slightly lobed base (lobed to each side, see Crop Weeds of Northern Australia, p. 77 - 78).
- var. *filiformis* (maloga bean) has a narrower leaf, 4 - 8 cm long and 2 - 7 cm wide that is no lobed at the base.

Description:

Seedling leaves - the cotyledon leaves are wedge shaped, to 20 - 25 mm long and 7 mm wide, on stalks 7 - 10 mm long. These and later leaves have a pronounced, indented mid-rib. The 1st true leaf and subsequent leaves have three wedge shaped leaflets. The tips of the early leaves are rounded, but become more pointed on later leaves.

Leaves - are long and narrow, 2 - 6 cm long and 10 - 35 mm wide, with a tightly rounded tip and indented mid-rib, on stalks 2 - 4 cm long. There are 2 small outgrowths in each leaf fork with the leaf stalk 20 - 60 mm long.

Plants - are twining to semi-erect. The stems are fairly hairless, growing to 2 m long, spreading out from a long taproot that is at least 30 - 40 cm deep. Plants often twine up cotton plants.

Flowers - are pea-like, bright yellow, 7 - 10 mm long, in groups of up to 5, at the ends of flowering stems 8 - 20 cm long that are borne in leaf forks. The lower petals of the flower are curved inwards.

Seed heads - are cylindrical pods 2 - 5 cm long and 4 - 5 mm wide, slightly segmented, turning from mid-green to brown when ripe. There are 4 -7 mottled brown and oval bean shaped seeds in a pod, each 4 mm long and 3 mm wide.

Lifecycle/Biology:

A perennial species that establishes readily from seed in spring and early summer, and can reshoot from the taproot in reduced cultivation systems. Plants flower in summer and autumn.

Ecology:

The plant is common on sandy soils of creek beds and banks, and also in cultivation on black clay soils.

The problem:

Maloga bean may occur as scattered plants and as more localised dense stands that are very competitive primarily due to the deep taproot and perennial nature. Plants emerge with cotton and grow with the crop. Light infestations are of little concern, but this weed is difficult to control with glyphosate and has the potential to become a major weed problem in minimum tillage Roundup Ready systems.

Distribution:

Found in the northern parts of Australia. Common on the lower Gwydir and Macintyre systems.

Origin:

An Australian native species.

References:

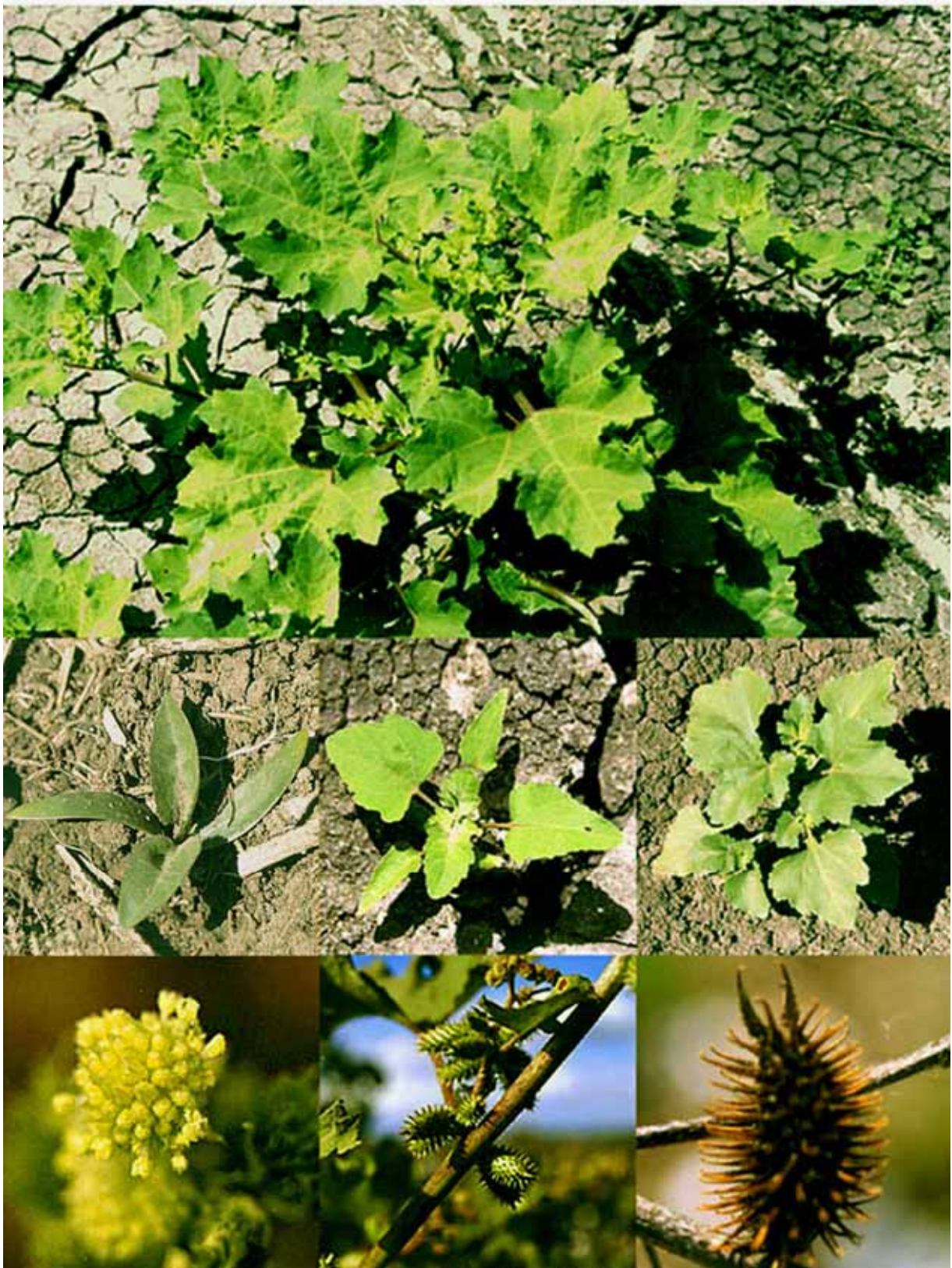
Plants of Western New South Wales, p. 430.

Compiled by:

Graham Charles

Xanthium italicum Moretti

Italian cocklebur



Photographs: Graham Charles

Xanthium italicum

Family:

Asteraceae (Daisy family).

Common names:

Italian cockleburr, Hunter burr.

Confused with:

Californian burr (*X. orientale*), Noogoora Burr (*X. occidentale*), and South American burr (*X. cavanillesii*). These species are sometimes lumped together as a single species, *X. strumarium*. They can be most readily distinguished by the burrs.

- **South American burr** - burrs 25 - 30 mm long, with numerous hooked spines 4 - 5 mm long, and strait, hooked diverging terminal spines 6 - 8 mm long, not hooked at the tips.
- **Italian cockleburr** - burrs 25 - 30 mm long, with numerous hooked spines 3 - 4 mm long, and diverging terminal spines 5 - 7 mm long, curving inwards at the tips.
- **Californian burr** - burrs 18 - 24 mm long, with fewer hooked spines 2 - 4 mm long and diverging, hooked terminal spines 4 - 6 mm long.
- **Noogoora burr** - burrs 16 - 22 mm long, with numerous hooked spines 1 - 2 mm long, and with strait, almost parallel terminal spines, not hooked at the tips.

Distinguishing the species is complicated by the occurrence of hybrids between Italian cockleburr and noogoora burr.

Description:

Seedling leaves - yellowish-green and are a narrow egg-shape, 6 - 33 mm long and 9 - 10 mm wide. The first true leaves are egg-shaped and have toothed margins. These leaves gradually expand to become triangular in shape.

Leaves - very broadly egg-shaped to triangular, 6 - 9 cm long, 6 - 12 cm wide, usually 3-lobed, and toothed, borne on 40 - 110 mm long stalks. They have prominent central and lateral veins. Both leaf surfaces are rough to touch.

Plants - grow from 60 to 120 cm tall. The stems are also rough to touch.

Flower heads - the male flower heads occur at the ends of branches, while the female flower heads occur in the lower parts of these branches.

Burrs - the female heads develop into hard woody, spiny burrs. These burrs are oval-shaped, brown, 25 - 30 mm long, covered in hooked spines, 4 - 5 mm long, with longer

terminal spines, 6 - 8 mm long. These terminal spines spread apart (are divergent) and are curved inward at the tip.

Lifecycle/Biology:

An annual species that germinates from early spring to summer. Several flushes of germination may occur after rainfall and irrigation. Flowering usually begins in February or March due to a photoperiodic response, regardless of plant size, continuing throughout autumn. The burrs contain two seeds, one larger than the other. The larger seed has limited dormancy and usually germinates in the season it is produced or the following season. The smaller seed has a longer period of dormancy, and may germinate in the year following its production or later.

Ecology:

A common weed of cultivation and pastures, adapted to a wide range of soil types. Italian cockleburr is often abundant after flooding or heavy summer rain, forming dense stands on stream banks and across the floodplain.

The problem:

A common weed that competes strongly for light, soil water and nutrients. Dense stands of Italian cockleburr can establish on stream banks and around depressions following summer flooding, producing large masses of seed, some of which is strongly dormant. This weed emerges at the same time as cotton, is highly competitive, forming a large, robust plant, and produces masses of burrs that can entangle the cotton, causing harvesting difficulties and increased ginning costs. Italian cockleburr is difficult to control with preemergent herbicides and can emerge from relatively deep in the soil, often emerging from below the residual herbicide band. Inter-row cultivation, post-emergent herbicides and chipping may all be required to control this weed.

Distribution:

New South Wales and possibly Southern Queensland.

Origin:

An introduced species from America.

Compiled by:

Graham Charles and Stephen Johnson

Xanthium orientale L.

Californian burr



Photographs: Graham Charles

Xanthium orientale

Family:

Asteraceae (Daisy family).

Common names:

Californian burr, Beach cockleburr, Burrweed, Clotburr, Cockleburr, European cockleburr, Italian cockleburr, Large cockleburr, Rough cockleburr, Sheep's burr.

Confused with:

Italian cockleburr (*X. italicum*), Noogoora Burr (*X. occidentale*), and South American burr (*X. cavanillesii*). These species are sometimes lumped together as a single species, *X. strumarium*. They can be most readily distinguished by the burrs.

- **South American burr** - burrs 25 - 30 mm long, with numerous hooked spines 4 - 5 mm long, and strait, hooked diverging terminal spines 6 - 8 mm long, not hooked at the tips.
- **Italian cockleburr** - burrs 25 - 30 mm long, with numerous hooked spines 3 - 4 mm long, and diverging terminal spines 5 - 7 mm long, curving inwards at the tips.
- **Californian burr** - burrs 18 - 24 mm long, with fewer hooked spines 2 - 4 mm long and diverging, hooked terminal spines 4 - 6 mm long.
- **Noogoora burr** - burrs 16 - 22 mm long, with numerous hooked spines 1 - 2 mm long, and with strait, almost parallel terminal spines, not hooked at the tips.

Distinguishing these species is complicated by the occurrence of hybrids between Italian cocklebur and noogoora burr.

Description:

Seedling leaves - yellowish-green and are a narrow egg-shape, 6 - 33 mm long and 9 - 10 mm wide. The first true leaves are egg-shaped and have toothed margins. These leaves gradually expand to become triangular in shape.

Leaves - very broadly egg-shaped to triangular, 5 - 14 cm long, 5 - 15 cm wide, usually 3-lobed, and toothed, borne on 3 - 8 cm long stalks. They have prominent central and lateral veins. Both leaf surfaces are rough to touch.

Plants - grow from 60 to 100 cm tall. The stems are also rough to touch.

Flower heads - the male flower heads occur at the ends of branches, while the female flowers occur in the lower parts of these branches.

Burrs - the female heads develop into hard woody, spiny burrs. These burrs are oval-shaped, brown, 18 - 24 mm long, covered in

hooked spines, 2 - 4 mm long, with longer terminal spines, 4 - 6 mm long. These terminal spines spread apart (are divergent) and are hooked at the tip.

Lifecycle/Biology:

An annual species that germinates from early spring to summer. Several flushes of germination may occur after rainfall and irrigation. Flowering is triggered by reducing daylength, usually beginning in February or March, regardless of plant size, and continuing through autumn. Burrs contain two seeds, one larger than the other. The larger seed has limited dormancy and usually germinates in the season it is produced or the following season. The smaller seed has a longer period of dormancy, and may germinate in the year following its production or later.

Ecology:

A common weed of cultivation and pastures, adapted to a wide range of soil types. Californian burr is often abundant after flooding or heavy summer rain, forming dense stands on stream banks and across the floodplain.

The problem:

A common weed that competes strongly for light, water and nutrients. Dense stands can establish on stream banks and around depressions following summer flooding, producing large masses of seed, some of which is strongly dormant. This weed emerges at the same time as cotton, is highly competitive, forming a large, robust plant, and produces masses of burrs that can entangle the cotton, causing harvesting difficulties and increased ginning costs. Californian burr is difficult to control with pre-emergent herbicides and can emerge from relatively deep in the soil, often emerging from below the residual herbicide band. Inter-row cultivation, post-emergent herbicides and chipping are required to control it in cotton.

Distribution:

Found throughout the Eastern States of Australia, although it is more common in the south.

Origin:

An introduced species from America.

Reference:

Plants of Western New South Wales, p. 727.

Compiled by:

Graham Charles and Stephen Johnson



Xanthium spinosum L.

Bathurst burr



Photographs: Graham Charles

Xanthium spinatum

Family:

Asteraceae (Daisy family).

Common names:

Bathurst burr, Burrweed, Cat's eggs, Common cocklebur, Prickly burrweed, Spiny clotbur, Spiny cocklebur.

Description:

Seedling leaves - the cotyledon leaves are dark-green and are an elongated oval in shape, 15 mm long and 5 mm wide, with short stalks, 4 mm long. The first true leaves are egg-shaped, with notches on the lower part of the leaf margins and are covered in fine white hairs. They are borne on white stalks 15 - 20 mm long, and have prominent, indented white central and lateral veins.

Leaves - have three to five irregular lobes, are dark-green on the upper surface, 3 - 8 cm long and 8 - 20 mm wide, and are paler on the lower surface. These leaves are covered with fine white hairs, borne on white stalks 1 - 3 cm long. The leaves have sparse hairs and prominent white veins.

Plants - are compact bushes with many branches, 60 to 100 cm tall. The stems of mature plants have many yellow, 3-pronged spines. These spines are 7 - 25 mm long. One or two of these spines occur at the base of each leaf or branch. The plant has a deep taproot and an extensive lateral root system.

Flower heads - there are a few male flower heads, borne in clusters at the branch ends or in the forks of the upper leaves. Solitary female flower heads can be found in the leaf forks.

Burrs - the female heads develop into oval, brown, woody burrs, 8 -15 mm long and 4 - 5 mm wide. These burrs are covered in numerous hooked spines, to 3 mm long, with two longer, straight, unequal spines at the tip of the burr. Two seeds are enclosed within each burr. One of the seeds is slightly larger than the other.

Lifecycle/Biology:

An annual species that germinates during spring and summer, with several germination flushes likely. Plants flower and set seed from mid-summer into autumn. Plants that emerge in late summer can produce burrs within several weeks. Seed has some degree of dormancy.

The smaller seed in the burr usually germinates in the first season after production, while the larger seed will not germinate until several seasons later. Plants usually die in early winter. Many burrs are retained on dead plants.

Ecology:

A common weed of pastures, cultivated and fallow land, along roadsides, and in watercourse and river areas. Dense stands often develop after flooding or heavy summer rains. Bathurst burr is adapted to on a wide range of soil types and environmental conditions, and is common on high fertility soils. It is a major weed problem on the lighter soils of the Western grazing zone where sheep are the primary grazing animal.

The problem:

A common weed that competes strongly for light, soil water and nutrients. Bathurst burr is often problematic on lighter soils, and in recently developed cotton fields that were previously used for grazing, especially on paddocks with a long history of grazing with sheep and around trees and stock camps. Seed dormancy, multiple germinations and the relatively large size of mature bushes contribute to the problematic nature of this weed. The burrs of the weed can entangle the cotton lint and increase ginning costs. Hand hoeing is an effective control measure for Bathurst burr. Plants with green seed heads should be removed from fields and burnt so that they do not mature and contribute to the seed bank.

Distribution:

A common weed of pastures and cropping throughout Australia.

Origin:

A native of South America.

References:

Plants of Western New South Wales, p. 727 - 728.

Crop Weeds of Northern Australia, p. 139.

Compiled by:

Graham Charles and Stephen Johnson

Quick Index

Common name	Botanical name	Common name	Botanical name
Grasses			
Awnless barnyard grass	<i>Echinochloa colona</i>	Brown beetle grass	<i>Leptochloa fusca</i>
Button grass	<i>Dactyloctenium radulans</i>	Johnson grass	<i>Sorghum halepense</i>
Liverseed grass	<i>Urochloa panicoides</i>	Prairie grass	<i>Bromus catharticus</i>
Rhodes grass	<i>Chloris gayana</i>	Sorghum	<i>Sorghum bicolor</i>
Wheat	<i>Triticum aestivum</i>	Wild phalaris	<i>Phalaris paradoxa</i>
Sedges			
Dirty dora	<i>Cyperus difformis</i>	Downs nutgrass	<i>Cyperus bifax</i>
Leek lilly	<i>Bulbine semibarbata</i>	Nutgrass	<i>Cyperus rotundus</i>
Rice flatsedge	<i>Cyperus iria</i>	Umbrella sedge	<i>Cyperus eragrostis</i>
Broad-leaf weeds			
African turnip weed	<i>Sisymbrium thellingii</i>	Annual polymeria	<i>Polymeria pusilla</i>
Annual saltbush	<i>Atriplex muelleri</i>	Anoda	<i>Anoda cristate</i>
Australian bindweed	<i>Convolvulus erubescens</i>	Australian cranesbill	<i>Geranium solanderi var. solanderi</i>
Bathurst burr	<i>Xanthium spinosum</i>	Bellvine	<i>Ipomoea plebeia</i>
Bishops weed	<i>Ammi majus</i>	Blackberry nightshade	<i>Solanum nigrum</i>
Black bindweed	<i>Fallopia convolvulus</i>	Black pigweed	<i>Trianthema portulacastrum</i>
Bladder ketmia – wide leaf	<i>Hibiscus tridactylites</i>	Bladder ketmia – narrow leaf	<i>Hibiscus verdcourtii</i>
Billygoat weed	<i>Ageratum conyzoides</i>	Budda pea	<i>Aeschynomene indica</i>
Burr medic	<i>Medicago polymorpha</i>	Californian burr	<i>Xanthium orientale</i>
Capeweed	<i>Arctotheca calendula</i>	Cathead	<i>Tribulus terrestris</i>
Caustic weed	<i>Chamaesyce drummondii</i>	Chickpea	<i>Cicer arietinum</i>
Common joyweed	<i>Alternanthera nodiflora</i>	Common morning glory	<i>Ipomoea purpurea</i>
Common sowthistle	<i>Sonchus oleraceus</i>	Corrugated sida	<i>Sida corrugata</i>
Cowvine	<i>Ipomoea lonchophylla</i>	Curled dock	<i>Rumex crispus</i>
David's spurge	<i>Euphorbia davidii</i>	Deadnettle	<i>Lamium amplexicaule</i>
Desert cowvine	<i>Ipomoea diamantinensis</i>	Downy thornapple	<i>Datura innoxia</i>
Dwarf amaranth	<i>Amaranthus macrocarpus</i>	Dwarf nettle	<i>Urtica urens</i>
Emu foot	<i>Cullen tanex</i>	Faba bean	<i>Vicia faba</i>
Fathen	<i>Chenopodium album</i>	Fierce thornapple	<i>Datura ferox</i>
Flaxleaf fleabane	<i>Conyza bonariensis</i>	Grey rattlepod	<i>Crotalaria dissitiflora</i>
Italian cocklebur	<i>Xanthium italicum</i>	Lippia	<i>Phyla canescens</i>
Littlebell	<i>Ipomoea triloba</i>		
Lucerne	<i>Medicago sativa ssp. sativa</i>	Maloga bean	<i>Vigna lanceolata var. filiformis</i>
Mexican poppy	<i>Argemone ochroleuca</i>	Mintweed	<i>Salvia reflexa</i>
Native rosella	<i>Abelmoschus ficulneus</i>	Native sensitive plant	<i>Neptunia gracilis</i>
Pale knotweed	<i>Persicaria lapathifolia</i>	Parthenium weed	<i>Parthenium hysterophorus</i>
Paterson's curse	<i>Echium plantagineum</i>	Pepper-leaf senna	<i>Senna barclayana</i>
Phasey bean	<i>Macroptilium lathyroides</i>	Pigeon pea	<i>Cajanus cajan</i>
Pigweed	<i>Portulaca oleracea</i>	Plains spurge	<i>Euphorbia planiticola</i>
Polymeria takeall	<i>Polymeria longifolia</i>	Ryncho	<i>Rhynchosia minima</i>
Saffron thistle	<i>Carthamus lanatus</i>	Sesbania	<i>Sesbania cannabina</i>
Shepherd's purse	<i>Capsella bursa-pastoris</i>	Scarlet pimpernel	<i>Anagallis arvensis</i>
Siratro	<i>Macroptilium atropurpureum</i>	Small flowered mallow	<i>Malva parviflora</i>
Soft roly poly	<i>Salsola kali</i>	Spear thistle	<i>Cirsium vulgare</i>
Spotted golden thistle	<i>Scolymus maculatus</i>	Stagger weed	<i>Stachys arvensis</i>
Sunflower	<i>Helianthus annuus</i>	Tarvine	<i>Boerhavia dominii</i>
Turnip weed	<i>Rapistrum rugosum</i>	Variiegated thistle	<i>Silybum marianum</i>
Velvetleaf	<i>Abutilon theophrasti</i>	Velvet tree pear	<i>Opuntia tomentosa</i>
Vigna takeall	<i>Vigna lanceolata var. latifolia</i>	Wild gooseberry	<i>Physalis minima</i>
Wild melon	<i>Citrullus lanatus</i>	Wild radish	<i>Raphanus raphanistrum</i>
Wild sunflower	<i>Verbesina encelioides</i>	Wireweed	<i>Polygonum aviculare</i>
Woollypod vetch	<i>Vicia sativa ssp. sativa</i>	Yellow-flowered Devil's claw	<i>Ibicella lutea</i>
Yellow vine	<i>Tribulus micrococcus</i>		

Index of Botanical Names

Botanical name	Common name	Botanical name	Common name
Grasses			
<i>Bromus catharticus</i>	Prairie grass	<i>Chloris gayana</i>	Rhodes grass
<i>Dactyloctenium radulans</i>	Button grass	<i>Echinochloa colona</i>	Awnless barnyard grass
<i>Leptochloa fusca</i>	Brown beetle grass	<i>Phalaris paradoxa</i>	Wild phalaris
<i>Sorghum bicolor</i> var. <i>bicolor</i>	Sorghum	<i>Sorghum halepense</i>	Johnson grass
<i>Triticum aestivum</i>	Wheat	<i>Urochloa panicoides</i>	Liverseed grass
Sedges			
<i>Bulbine semibarbata</i>	Leek lilly	<i>Cyperus bifax</i>	Downs nutgrass
<i>Cyperus difformis</i>	Dirty dora	<i>Cyperus eragrostis</i>	Umbrella sedge
<i>Cyperus iria</i>	Rice flatsedge	<i>Cyperus rotundus</i>	Nutgrass
Broad-leaf weeds			
<i>Abelmoschus ficulneus</i>	Native rosella	<i>Abutilon theophrasti</i>	Velvetleaf
<i>Aeschynomene indica</i>	Budda pea	<i>Ageratum conyzoides</i>	Billygoat weed
<i>Alternanthera nodiflora</i>	Common joyweed	<i>Amaranthus macrocarpus</i>	Dwarf amaranth
<i>Ammi majus</i>	Bishops weed	<i>Anagallis arvensis</i>	Scarlet pimpernel
<i>Anoda cristate</i>	Anoda	<i>Arctotheca calendula</i>	Capeweed
<i>Argemone ochroleuca</i>	Mexican poppy	<i>Atriplex muelleri</i>	Annual saltbush
<i>Boerhavia dominii</i>	Tarvine	<i>Cajanus cajan</i>	Pigeon pea
<i>Capsella bursa-pastoris</i>	Shepherd's purse	<i>Carthamus lanatus</i>	Saffron thistle
<i>Chamaesyce drummondii</i>	Caustic weed	<i>Chenopodium album</i>	Fathen
<i>Cicer arietinum</i>	Chickpea	<i>Cirsium vulgare</i>	Spear thistle
<i>Citrullus lanatus</i>	Wild melon	<i>Convolvulus erubescens</i>	Australian bindweed
<i>Conyza bonariensis</i>	Flaxleaf fleabane	<i>Crotalaria dissitiflora</i>	Grey rattlepod
<i>Cullen tanex</i>	Emu foot	<i>Datura ferox</i>	Fierce thornapple
<i>Datura innoxia</i>	Downy thornapple	<i>Echium plantagineum</i>	Paterson's curse
<i>Euphorbia davidii</i>	David's spurge	<i>Euphorbia planiticola</i>	Plains spurge
<i>Fallopia convolvulus</i>	Black bindweed	<i>Geranium solanderi</i> var. <i>solanderi</i>	Australian cranesbill
<i>Helianthus annuus</i>	Sunflower	<i>Hibiscus trionum</i>	Bladder ketmia
<i>Ibicella lutea</i>	Yellow-flowered Devil's claw	<i>Ipomoea diamantinensis</i>	Desert cowvine
<i>Ipomoea lonchophylla</i>	Cowvine	<i>Ipomoea plebeia</i>	Bellvine
<i>Ipomoea purpurea</i>	Common morning glory	<i>Ipomoea triloba</i>	Littlebell
<i>Lamium amplexicaule</i>	Deadnettle	<i>Macroptilium atropurpureum</i>	Siratro
<i>Macroptilium lathyroides</i>	Phasey bean	<i>Malva parviflora</i>	Small-flowered mallow
<i>Medicago polymorpha</i>	Burr medic	<i>Medicago sativa</i> ssp. <i>sativa</i>	Lucerne
<i>Neptunia gracilis</i>	Native sensitive plant	<i>Opuntia tomentosa</i>	Velvet tree pear
<i>Parthenium hysterophorus</i>	Parthenium weed	<i>Persicaria lapathifolia</i>	Pale knotweed
<i>Phyla canescens</i>	Lippia	<i>Physalis minima</i>	Wild gooseberry
<i>Polygonum aviculare</i>	Wireweed	<i>Polymeria longifolia</i>	Polymeria take-all
<i>Polymeria pusilla</i>	Annual polymeria	<i>Portulaca oleracea</i>	Pigweed
<i>Raphanus raphanistrum</i>	Wild radish	<i>Rapistrum rugosum</i>	Turnip weed
<i>Rhynchosia minima</i>	Ryncho	<i>Rumex crispus</i>	Curled dock
<i>Salsola kali</i>	Soft roly poly	<i>Salvia reflexa</i>	Mintweed
<i>Scolymus maculatus</i>	Spotted golden thistle	<i>Senna barclayana</i>	Pepper-leaf senna
<i>Sesbania cannabina</i>	Sesbania	<i>Sida corrugata</i>	Corrugated sida
<i>Silybum marianum</i>	Variiegated thistle	<i>Sisymbrium thellingii</i>	African turnip weed
<i>Solanum nigrum</i>	Blackberry nightshade	<i>Sonchus oleraceus</i>	Common sowthistle
<i>Stachys arvensis</i>	Stagger weed	<i>Trianthema portulacastrum</i>	Black pigweed
<i>Tribulus micrococcus</i>	Yellow vine	<i>Tribulus terrestris</i>	Cathead
<i>Urtica urens</i>	Dwarf nettle	<i>Verbesina encelioides</i>	Wild sunflower
<i>Vicia faba</i>	Faba bean	<i>Vicia villosa</i> ssp. <i>eriocarpa</i>	Woollypod vetch
<i>Vigna lanceolata</i> var. <i>filiformis</i>	Maloga bean	<i>Vigna lanceolata</i> var. <i>latifolia</i>	Vigna takeall
<i>Xanthium italicum</i>	Italian cocklebur	<i>Xanthium orientale</i>	Californian burr
<i>Xanthium spinosum</i>	Bathurst burr		

Index of Botanical Names by Families

Botanical name	Common name	Botanical name	Common name
Amaranthaceae Amaranth family			
<i>Alternanthera nodiflora</i>	Common joyweed	<i>Amaranthus macrocarpus</i>	Dwarf amaranth
Apiaceae Carrot family			
<i>Ammi majus</i>	Bishops weed		
Asteraceae Daisy family			
<i>Ageratum conyzoides</i>	Billygoat weed	<i>Arctotheca calendula</i>	Capeweed
<i>Carthamus lanatus</i>	Saffron thistle	<i>Cirsium vulgare</i>	Spear thistle
<i>Conyza bonariensis</i>	Flaxleaf fleabane	<i>Helianthus annuus</i>	Sunflower
<i>Parthenium hysterophorus</i>	Parthenium weed	<i>Scolymus maculatus</i>	Spotted golden thistle
<i>Silybum marianum</i>	Variegated thistle	<i>Sonchus oleraceus</i>	Common sowthistle
<i>Verbesina encelioides</i>	Wild sunflower	<i>Xanthium italicum</i>	Italian cocklebur
<i>Xanthium orientale</i>	Californian burr	<i>Xanthium spinosum</i>	Bathurst burr
Aizoaceae Black pigweed family			
<i>Trianthema portulacastrum</i>	Black pigweed		
Boraginaceae Heliotrope family			
<i>Echium plantagineum</i>	Paterson's curse		
Brassicaceae Cabbage family			
<i>Capsella bursa-pastoris</i>	Shepherd's purse	<i>Raphanus raphanistrum</i>	Wild radish
<i>Rapistrum rugosum</i>	Turnip weed	<i>Sisymbrium thellingii</i>	African turnip weed
Cactaceae Cactus family			
<i>Opuntia tomentosa</i>	Velvet tree pear		
Caesalpiniaceae Cassia family			
<i>Senna barclayana</i>	Pepper-leaf senna		
Chenopodiaceae Saltbush family			
<i>Atriplex muelleri</i>	Annual saltbush	<i>Chenopodium album</i>	Fathen
<i>Salsola kali</i>	Soft roly poly		
Convolvulaceae Bindweed family			
<i>Convolvulus erubescens</i>	Australian bindweed	<i>Ipomoea diamantinensis</i>	Desert cowvine
<i>Ipomoea lonchophylla</i>	Cowvine	<i>Ipomoea plebeia</i>	Bellvine
<i>Ipomoea purpurea</i>	Common morning glory	<i>Ipomoea triloba</i>	Littlebell
<i>Polymeria longifolia</i>	Polymeria take-all	<i>Polymeria pusilla</i>	Annual polymeria
Cucurbitaceae Melon family			
<i>Citrullus lanatus</i>	Wild melon		
Cyperaceae Sedge family			
<i>Cyperus bifax</i>	Downs nutgrass	<i>Cyperus difformis</i>	Dirty dora
<i>Cyperus eragrostis</i>	Umbrella sedge	<i>Cyperus iria</i>	Rice flatsedge
<i>Cyperus rotundus</i>	Nutgrass		
Euphorbiaceae Spurge family			
<i>Chamaesyce drummondii</i>	Caustic weed	<i>Euphorbia davidii</i>	David's spurge
<i>Euphorbia planiticola</i>	Plains spurge		
Fabaceae Pea family			
<i>Aeschynomene indica</i>	Budda pea	<i>Cajanus cajan</i>	Pigeon pea
<i>Cicer arietinum</i>	Chickpea	<i>Crotalaria dissitiflora</i>	Grey rattlepod
<i>Cullen tanex</i>	Emu foot	<i>Macroptilium atropurpureum</i>	Siratro
<i>Macroptilium lathyroides</i>	Phasey bean	<i>Medicago polymorpha</i>	Burr medic
<i>Medicago sativa</i> ssp. <i>sativa</i>	Lucerne	<i>Rhynchosia minima</i>	Ryncho
<i>Sesbania cannabina</i>	Sesbania	<i>Vicia faba</i>	Faba bean
<i>Vicia villosa</i> ssp. <i>eriocarpa</i>	Woollypod vetch	<i>Vigna lanceolata</i> var. <i>filiformis</i>	Maloga bean
<i>Vigna lanceolata</i> var. <i>latifolia</i>	Vigna takeall		
Geraniaceae Geranium family			
<i>Geranium solanderi</i> var. <i>solanderi</i>	Australian cranesbill		

Liliaceae	Lilly family		
<i>Bulbine semibarbata</i>	Leek lilly		
Laminaceae	Mint family		
<i>Lamium amplexicaule</i>	Deadnettle	<i>Salvia reflexa</i>	Mintweed
<i>Stachys arvensis</i>	Stagger weed		
Malvaceae	Hibiscus family		
<i>Abelmoschus ficulneus</i>	Native rosella	<i>Abutilon theophrasti</i>	Velvetleaf
Anoda cristate	Anoda	<i>Hibiscus trionum</i>	Bladder ketmia
<i>Malva parviflora</i>	Small-flowered mallow	<i>Sida corrugata</i>	Corrugated sida
Martyniaceae	Devil's claw family		
<i>Ibicella lutea</i>	Yellow-flowered Devil's claw		
Mimosaceae	Wattle family		
<i>Neptunia gracilis</i>	Native sensitive plant		
Nyctaginaceae	Tarvine family		
<i>Boerhavia dominii</i>	Tarvine		
Papaveraceae	Poppy family		
<i>Argemone ochroleuca</i>	Mexican poppy		
Poaceae	Grass family		
<i>Bromus catharticus</i>	Prairie grass	<i>Chloris gayana</i>	Rhodes grass
<i>Dactyloctenium radulans</i>	Button grass	<i>Echinochloa colona</i>	Awnless barnyard grass
<i>Leptochloa fusca</i>	Brown beetle grass	<i>Phalaris paradoxa</i>	Wild phalaris
<i>Sorghum bicolor</i> var. <i>bicolor</i>	Sorghum	<i>Sorghum halepense</i>	Johnson grass
<i>Triticum aestivum</i>	Wheat	<i>Urochloa panicoides</i>	Liverseed grass
Polygonaceae	Dock family		
<i>Fallopia convolvulus</i>	Black bindweed	<i>Persicaria lapathifolia</i>	Pale knotweed
<i>Polygonum aviculare</i>	Wireweed	<i>Rumex crispus</i>	Curled dock
Portulacaceae	Portulaca family		
<i>Portulaca oleracea</i>	Pigweed		
Primulaceae	Primula family		
<i>Anagallis arvensis</i>	Scarlet pimpernel		
Solanaceae	Tomato family		
<i>Datura ferox</i>	Fierce thornapple	<i>Datura innoxia</i>	Downy thornapple
<i>Physalis minima</i>	Wild gooseberry	<i>Solanum nigrum</i>	Blackberry nightshade
Urticaceae	Nettle family		
<i>Urtica urens</i>	Dwarf nettle		
Verbenaceae	Verbena family		
<i>Phyla canescens</i>	Lippia		
Zygophyllaceae	Caltrop family		
<i>Tribulus micrococcus</i>	Yellow vine	<i>Tribulus terrestris</i>	Cathead

Complete Index of Common Names

Weeds are listed in alphabetical order by their common names and corresponding botanical name. Common names vary from region to region and a common name is not necessarily unique to a given weed. Always check that the weed listed

here is the weed in question by cross checking with the **Weed Identification Guide**. Where more than one weed listed in this guide has the same common name, the more likely botanical name is underlined>.

Common name	Botanical name	Common name	Botanical name
Grasses and sedges			
Abyssinian Rhodes grass	<i>Chloris gayana</i>	Aleppo grass	<i>Sorghum halepense</i>
Annual prairie grass	<i>Bromus catharticus</i>	Awnless barnyard grass	<i>Echinochloa colona</i>
Barnyard grass	<i>Echinochloa crus-galli, E. colona</i>	Bread wheat	<i>Triticum aestivum</i>
Brome grass	<i>Bromus catharticus</i>	Broom millet	<i>Sorghum bicolor</i>
Brown beetle grass	<i>Leptochloa fusca</i>	Button grass	<i>Dactyloctenium radulans</i>
Callide Rhodes grass	<i>Chloris gayana</i>	Canary grass	<i>Phalaris paradoxa</i>
Chufa	<i>Cyperus rotundus</i>	Coast button grass	<i>Dactyloctenium radulans</i>
Coco grass	<i>Cyperus rotundus</i>	Common Rhodes grass	<i>Chloris gayana</i>
Common wheat	<i>Triticum aestivum</i>	Dila	<i>Cyperus rotundus</i>
Dirty dora	<i>Cyperus difformis</i>	Downs nutgrass	<i>Cyperus bifax</i>
Drain flatsedge	<i>Cyperus eragrostis</i>	Evergreen millet	<i>Sorghum halepense</i>
Eight-day grass	<i>Dactyloctenium radulans</i>	Finger grass	<i>Dactyloctenium radulans</i>
Forage sorghum	<i>Sorghum bicolor</i>	Grain sorghum	<i>Sorghum bicolor</i>
Great millet	<i>Sorghum bicolor</i>	Ground almond	<i>Cyperus rotundus</i>
Hognut	<i>Cyperus rotundus</i>	Java grass	<i>Cyperus rotundus</i>
Johnson grass	<i>Sorghum halepense</i>	Jungle rice	<i>Echinochloa colona</i>
Leek lilly	<i>Bulbine semibarbata</i>	Liverseed grass	<i>Urochloa panicoides</i>
Native leek	<i>Bulbine semibarbata</i>	Native onion weed	<i>Bulbine semibarbata</i>
Nutgrass	<i>Cyperus rotundus</i>	Nutgrass sedge	<i>Cyperus rotundus</i>
Nutsedge	<i>Cyperus rotundus</i>	Pale beetle grass	<i>Leptochloa fusca</i>
Paradoxa grass	<i>Phalaris paradoxa</i>	Paradoxical canary grass	<i>Phalaris paradoxa</i>
Prairie grass	<i>Bromus catharticus</i>	Purple nutgrass	<i>Cyperus rotundus</i>
Purple nutsedge	<i>Cyperus rotundus</i>	Red grass	<i>Cyperus rotundus</i>
Rescue grass	<i>Bromus catharticus</i>	Rhodes grass	<i>Chloris gayana</i>
Rice flatsedge	<i>Cyperus iria</i>	Rice sedge	<i>Cyperus difformis, C. iria</i>
River grass	<i>Echinochloa colona</i>	Silver grass	<i>Leptochloa fusca</i>
Silvertop	<i>Leptochloa fusca</i>	Small crowfoot	<i>Dactyloctenium radulans</i>
Small-flowered beetle grass	<i>Leptochloa fusca</i>	Small onion weed	<i>Bulbine semibarbata</i>
Sorghum	<i>Sorghum bicolor</i>	Swamp grass	<i>Echinochloa colona</i>
Sweet sorghum	<i>Sorghum bicolor</i>	Umbrella grass	<i>Cyperus eragrostis</i>
Umbrella sedge	<i>Cyperus eragrostis</i>	Urochloa grass	<i>Urochloa panicoides</i>
Variable flatsedge	<i>Cyperus difformis</i>	Victorian nutgrass	<i>Cyperus eragrostis</i>
Water grass	<i>Cyperus rotundus</i>	Western nutgrass	<i>Cyperus bifax</i>
Wheat	<i>Triticum aestivum</i>	Wild onion	<i>Bulbine semibarbata</i>
Wild phalaris	<i>Phalaris paradoxa</i>	Wild yam	<i>Bulbine semibarbata</i>
Zebra grass	<i>Echinochloa colona</i>		
Broad-leaf weeds			
Afgan melon	<i>Citrullus lanatus</i>	African marigold	<i>Arctotheca calendula</i>
African turnip weed	<i>Sisymbrium thellinji</i>	Alfalfa	<i>Medicago sativa ssp. sativa</i>
American dogweed	<i>Verbesina encelioides</i>	American jute	<i>Abutilon theophrast</i>
Annual nettle	<i>Urtica urens</i>	Annual polymeria	<i>Polymeria pusilla</i>
Annual saltbush	<i>Atriplex muelleri</i>	Annual sowthistle	<i>Sonchus oleraceus</i>
Annual sunflower	<i>Helianthus annuus</i>	Anoda	<i>Anoda cristata</i>
Antbush	<i>Senna barclayana</i>	Australian bindweed	<i>Convolvulus erubescens</i>
Austral cranesbill	<i>Geranium solanderi</i>	Australian cranesbill	<i>Geranium solanderi</i>
Australian dodder	<i>Convolvulus erubescens</i>	Bastard melon	<i>Citrullus lanatus</i>
Bathurst burr	<i>Xanthium spinosum</i>	Beach cockleburr	<i>Xanthium orientale</i>
Ball turnip	<i>Rapistrum rugosum</i>	Bellvine	<i>Ipomoea plebeia</i>
Billygoat weed	<i>Ageratum conyzoides</i>	Bindyi	<i>Tribulus terrestris</i>
Biniguy thistle	<i>Argemone ochroleuca</i>	Bishops weed	<i>Ammi majus</i>
Bitter apple	<i>Citrullus lanatus</i>	Bitter melon	<i>Citrullus lanatus</i>
Bitterweed	<i>Parthenium hysterophorus</i>	Black bindweed	<i>Fallopia convolvulus</i>
Black nightshade	<i>Solanum nigrum</i>	Black pigweed	<i>Trianthema portulacastrum</i>
Black thistle	<i>Cirsium vulgare</i>	Blackberry nightshade	<i>Solanum nigrum</i>

Bladder ketmia	<i>Hibiscus trionum</i>	Blessed milk thistle	<i>Silybum marianum</i>
Blue bonnet	<i>Ageratum conyzoides</i>	Blue echium	<i>Echium plantagineum</i>
Blue pimpernel	<i>Anagallis arvensis</i>	Bluetop	<i>Ageratum conyzoides</i>
Blueweed	<i>Chenopodium album, Echium plantagineum</i>		
Blushing bindweed	<i>Convolvulus erubescens</i>	Boar thistle	<i>Cirsium vulgare</i>
Broad bean	<i>Vicia faba</i>	Buckbush	<i>Salsola kali</i>
Budda pea	<i>Aeschynomene indica</i>	Bullhead	<i>Tribulus terrestris</i>
Bull's head	<i>Tribulus terrestris</i>	Bull thistle	<i>Cirsium vulgare, Silybum marianum</i>
Bullwort	<i>Ammi majus</i>	Burning nettle	<i>Urtica urens</i>
Burr medic	<i>Medicago polymorpha</i>	Burnut	<i>Tribulus terrestris</i>
Burr trefoil	<i>Medicago polymorpha</i>		
Burr weed	<i>Xanthium occidentale, X. orientale, X. spinosum</i>		
Butter daisy	<i>Verbesina encelioides</i>	Butter pea	<i>Aeschynomene indica</i>
Cabbage thistle	<i>Silybum marianum</i>	Californian burr	<i>Xanthium orientale</i>
Caltrop	<i>Tribulus terrestris</i>	Camel melon	<i>Citrullus lanatus</i>
Cape dandelion	<i>Arctotheca calendula</i>	Capeweed	<i>Arctotheca calendula</i>
Carpetweed	<i>Phyla canescens</i>	Carrot grass	<i>Parthenium hysterophorus</i>
Castor oil	<i>Datura ferox</i>	Cathead	<i>Tribulus terrestris</i>
Cat's eggs	<i>Xanthium spinosum</i>	Cat's head	<i>Tribulus terrestris</i>
Caustic creeper	<i>Chamaesyce drummondii</i>	Caustic weed	<i>Chamaesyce drummondii</i>
Chickpea	<i>Cicer arietinum</i>	Chinese hemp	<i>Abutilon theophrasti</i>
Chinese jute	<i>Abutilon theophrasti</i>		
Chinese lantern	<i>Physalis minima, Abutilon theophrasti</i>		
Chingma lantern	<i>Abutilon theophrasti</i>	Climbing buckwheat	<i>Fallopia convolvulus</i>
Clotburr	<i>Xanthium occidentale, X. orientale</i>	Clumped bindweed	<i>Polymeria longifolia</i>
Cockleburr	<i>Xanthium occidentale, X. orientale</i>	Common cocklebur	<i>Xanthium spinosum</i>
Common cowvine	<i>Ipomoea lonchophylla</i>	Common joyweed	<i>Alternanthera nodiflora</i>
Common milkthistle	<i>Sonchus oleraceus</i>	Common morning glory	<i>Ipomoea purpurea</i>
Common pigweed	<i>Portulaca oleracea</i>	Common purslane	<i>Portulaca oleracea</i>
Common sowthistle	<i>Sonchus oleraceus</i>	Common spiderling	<i>Boerhavia dominii</i>
Common sunflower	<i>Helianthus annuus</i>	Congo pea	<i>Cajanus cajan</i>
Congress grass	<i>Parthenium hysterophorus</i>	Corn woundwort	<i>Stachys arvensis</i>
Corrugated sida	<i>Sida corrugate</i>	Cowvine	<i>Ipomoea lonchophylla</i>
Creeping spurge	<i>Chamaesyce drummondii</i>	Crotalaria takeall	<i>Crotalaria dissitiflora</i>
Crownbeard	<i>Verbesina encelioides</i>	Cut-leaf cranesbill	<i>Geranium solanderi</i>
Curled dock	<i>Rumex crispus</i>	Danchi	<i>Sesbania cannabina</i>
	David's spurge	<i>Euphorbia davidii</i>	
Deadnettle	<i>Lamium amplexicaule</i>	Desert amaranth	<i>Amaranthus macrocarpus</i>
Desert cowvine	<i>Ipomoea diamantinensis</i>	Devil's thorn	<i>Tribulus terrestris</i>
Dhaircha	<i>Sesbania cannabina</i>	Doily weed	<i>Chamaesyce drummondii</i>
Downy thornapple	<i>Datura inoxia</i>	Devil's fig	<i>Argemone ochroleuca</i>
Devil's grip	<i>Ibicella lutea</i>	Devil's thorn	<i>Tribulus terrestris</i>
Distaff thistle	<i>Carthamus lanatus</i>	Double claw	<i>Ibicella lutea</i>
Dwarf amaranth	<i>Amaranthus macrocarpus</i>	Dwarf nettle	<i>Urtica urens</i>
Dwarf sida	<i>Sida corrugate</i>	Eagle's claw	<i>Ibicella lutea</i>
Egyptian mallow	<i>Malva parviflora</i>	Elephant tusks	<i>Ibicella lutea</i>
Elephants trunk	<i>Ibicella lutea</i>	English stinging nettle	<i>Urtica urens</i>
Erect bindweed	<i>Polymeria longifolia</i>	Emu foot	<i>Cullen tanex</i>
Emu grass	<i>Cullen tanex</i>	European cockleburr	<i>Xanthium occidentale, X. orientale</i>
Faba bean	<i>Vicia faba</i>	False castor oil	<i>Datura ferox</i>
False ragweed	<i>Parthenium hysterophorus</i>	False star thistle	<i>Carthamus lanatus</i>
Fathen	<i>Chenopodium album</i>	Feverfew	<i>Parthenium hysterophorus</i>
Field stachys	<i>Stachys arvensis</i>	Field woundwort	<i>Stachys arvensis</i>
Fierce thornapple	<i>Datura ferox</i>	Flat spurge	<i>Chamaesyce drummondii</i>
Flaxleaf fleabane	<i>Conyza bonariensis</i>	Flower-of-an-hour	<i>Hibiscus trionum</i>
Fog fruit	<i>Phyla canescens</i>	Fuller's thistle	<i>Cirsium vulgare</i>
Garbanzo bean	<i>Cicer arietinum</i>	Giant fathen	<i>Chenopodium album</i>
Giant mustard	<i>Rapistrum rugosum</i>	Giant pigweed	<i>Trianthema portulacastrum</i>
Giotcho	<i>Boerhavia dominii</i>	Goathead	<i>Tribulus terrestris</i>
Goat head burr	<i>Tribulus terrestris</i>	Goat's head	<i>Ibicella lutea, Tribulus terrestris</i>
Goatweed	<i>Ageratum conyzoides</i>	Golden crownbeard	<i>Verbesina encelioides</i>
Golden thistle-of-Peru	<i>Argemone ochroleuca</i>	Gold weed	<i>Verbesina encelioides</i>
Goosefoot	<i>Chenopodium album</i>	Gram	<i>Cicer arietinum</i>
Green saltbush	<i>Atriplex muelleri</i>	Green thistle	<i>Cirsium vulgare</i>
Grey rattlepod	<i>Crotalaria dissitiflora</i>	Gundagai thistle	<i>Silybum marianum</i>
Gundy	<i>Silybum marianum</i>	Hairy geranium	<i>Geranium solanderi</i>
Hedge nettle	<i>Stachys arvensis</i>	Henbit	<i>Lamium amplexicaule</i>

Hoary thornapple	<i>Datura</i> sp.		
H ogweed	<i>Polygonum aviculare</i> , <i>Boerhavia dominii</i>		
Holly thistle	<i>Silybum marianum</i>	Horse bean	<i>Vicia faba</i>
Hunter burr	<i>Xanthium italicum</i>	Indian gooseberry weed	<i>Physalis minima</i>
Indian mallow	<i>Abutilon theophrasti</i>	Ironweed	<i>Polygonum aviculare</i>
Italian cocklebur	<i>Xanthium italicum</i> , <i>X. occidentale</i> , <i>X. orientale</i>		
Jam melon	<i>Citrullus lanatus</i>	Jointed charlock	<i>Raphanus raphanistrum</i>
Joyweed	<i>Alternanthera nodiflora</i>	Knot bindweed	<i>Fallopia convolvulus</i>
Knotweed	<i>Polygonum aviculare</i> , <i>Persicaria lapathifolia</i>		
Lady Campbell weed	<i>Echium plantagineum</i>	Lady's thistle	<i>Silybum marianum</i>
Lagoon saltbush	<i>Atriplex muelleri</i>	Lamb's quarters	<i>Chenopodium album</i>
Large cocklebur	<i>Xanthium occidentale</i> , <i>X. orientale</i>	Lance-leaf sage	<i>Salvia reflexa</i>
Lanternflower	<i>Abutilon theophrasti</i>	Lesser nettle	<i>Urtica urens</i>
Lesser stinging nettle	<i>Urtica urens</i>	Littlebell	<i>Ipomoea triloba</i>
Lippia	<i>Phyla canescens</i>	Little mallow	<i>Malva parviflora</i>
Locowort	<i>Capsella bursa-pastoris</i>	Long-spined thornapple	<i>Datura ferox</i>
Long-spurred thornapple	<i>Datura ferox</i>	Mallow	<i>Malva parviflora</i>
Lucerne	<i>Medicago sativa</i> ssp. <i>sativa</i>	Maloga bean	<i>Vigna lanceolata</i>
Marshmallow	<i>Malva parviflora</i>	Mat spurge	<i>Chamaesyce drummondii</i>
Meadowsweet	<i>Medicago polymorpha</i>	Mexican poppy	<i>Argemone ochroleuca</i>
Mexican thistle	<i>Argemone ochroleuca</i>	Mickey melon	<i>Citrullus lanatus</i>
Milk thistle	<i>Sonchus oleraceus</i> , <i>Silybum marianum</i>		
Milkweed	<i>Sonchus oleraceus</i> , <i>Chamaesyce drummondii</i>		
Mintweed	<i>Salvia reflexa</i> , <i>Stachys arvensis</i>	Morning glory	<i>Ipomoea</i> sp.
Mueller's saltbush	<i>Atriplex muelleri</i>	Munyeroo	<i>Portulaca oleracea</i>
Murra	<i>Boerhavia dominii</i>	Nardoo	<i>Sesbania cannabina</i>
Narrow-leaf bladder ketmia	<i>Hibiscus trionum</i>	Narrow-leaf sage	<i>Salvia reflexa</i>
Native bean	<i>Vigna lanceolata</i>	Native carpetweed	<i>Alternanthera nodiflora</i>
Native gooseberry	<i>Physalis minima</i>	Native lucerne	<i>Cullen tanex</i>
Native sensitive plant	<i>Neptunia gracilis</i>	Native sida	<i>Sida corrugate</i>
Native rhynchosia	<i>Rhynchosia minima</i>	Native rock trefoil	<i>Rhynchosia minima</i>
Native rosella	<i>Abelmoschus ficulneus</i>	Native trefoil	<i>Medicago polymorpha</i>
Native yellow vine	<i>Tribulus micrococcus</i>	Nettle	<i>Urtica urens</i>
Neverdie	<i>Portulaca oleracea</i>	Nightshade	<i>Solanum nigrum</i>
No-eye pea	<i>Cajanus cajan</i>	Paddy melon	<i>Citrullus lanatus</i>
Pale knotweed	<i>Persicaria lapathifolia</i>	Pale persicaria	<i>Persicaria lapathifolia</i>
Parsnip bean	<i>Vigna lanceolata</i>	Parthenium weed	<i>Parthenium hysterophorus</i>
Paterson's curse	<i>Echium plantagineum</i>	Peabush	<i>Sesbania cannabina</i>
Peachvine	<i>Ipomoea lonchophylla</i>	Peak Downs curse	<i>Polymeria longifolia</i>
Pepper-leaf senna	<i>Senna barclayana</i>	Perennial gooseberry	<i>Physalis minima</i>
Phasey bean	<i>Macroptilium lathyroides</i>	Perennial pigweed	<i>Portulaca oleracea</i>
Perennial lucerne	<i>Medicago sativa</i> ssp. <i>sativa</i>	Pickpocket	<i>Capsella bursa-pastoris</i>
Pie melon	<i>Citrullus lanatus</i>	Pigeon bean	<i>Vicia faba</i>
Pigeon pea	<i>Cajanus cajan</i>	Pigweed	<i>Portulaca oleracea</i>
Pimpernel	<i>Anagallis arvensis</i>	Pink bindweed	<i>Convolvulus erubescens</i>
Pink convolvulus	<i>Ipomoea triloba</i>	Pink knotweed	<i>Persicaria lapathifolia</i>
Pink weed	<i>Lamium amplexicaule</i>	Plains rattlegod	<i>Crotalaria dissitiflora</i>
Plains spurge	<i>Euphorbia planiticola</i>	Plantain-leaf viper's bugloss	<i>Echium plantagineum</i>
Polymeria	<i>Polymeria longifolia</i> , <i>P. pusilla</i>	Polymeria takeall	<i>Polymeria longifolia</i>
Portulaca weed	<i>Portulaca oleracea</i>	Potato bush	<i>Solanum nigrum</i>
Potato vine	<i>Ipomoea triloba</i>	Prickly burweed	<i>Xanthium spinosum</i>
Prickly poppy	<i>Argemone ochroleuca</i>	Prickly roly poly	<i>Salsola kali</i>
Prickly saltwort	<i>Salsola kali</i>	Prostrate knotweed	<i>Polygonum aviculare</i>
Pumpkin vine	<i>Ibicella lutea</i>	Puncture vine	<i>Tribulus terrestris</i>
Purple bean	<i>Macroptilium atropurpureum</i>	Purple bugloss	<i>Echium plantagineum</i>
Purple-leaf senna	<i>Senna barclayana</i>	Purple echium	<i>Echium plantagineum</i>
Purslane	<i>Portulaca oleracea</i>	Queen Anne's lace	<i>Medicago polymorpha</i>
Queensland saltbush	<i>Atriplex muelleri</i>	Radish	<i>Raphanus raphanistrum</i>
Radish weed	<i>Raphanus raphanistrum</i>		
Ragweed	<i>Conyza bonariensis</i> , <i>Parthenium hysterophorus</i>		
Ragweed parthenium	<i>Parthenium hysterophorus</i>	Ram's horn	<i>Ibicella lutea</i>
Rapistrum weed	<i>Rapistrum rugosum</i>	Recurved thornapple	<i>Datura innoxia</i>
Red gram	<i>Cajanus cajan</i>	Red pigweed	<i>Portulaca oleracea</i>
Red pimpernel	<i>Anagallis arvensis</i>	Rhynchosia	<i>Rhynchosia minima</i>
Rose mallow	<i>Hibiscus trionum</i>	Rough conyza	<i>Conyza bonariensis</i>
Ring-leaf mallow	<i>Malva parviflora</i>	Riverine bluebell	<i>Echium plantagineum</i>
Rough cocklebur	<i>Xanthium occidentale</i> , <i>X. orientale</i>	Rough medic	<i>Medicago polymorpha</i>
Runch	<i>Raphanus raphanistrum</i>	Russian thistle	<i>Salsola kali</i>

Ryncho	<i>Rhynchosia minima</i>	Saffron thistle	<i>Carthamus lanatus</i>
Sage weed	<i>Sida corrugate</i>	Saltwort	<i>Salsola kali</i>
Salvation Jane	<i>Echium plantagineum</i>	Scarlet pimpernel	<i>Anagallis arvensis</i>
Selenium weed	<i>Neptunia gracilis</i>	Sensitive plant	<i>Neptunia gracilis</i>
Sesbania	<i>Sesbania cannabina</i>	Scotch thistle	<i>Cirsium vulgare</i>
Sheep's burr	<i>Xanthium occidentale, X. orientale</i>	Shepherd's heart	<i>Capsella bursa-pastoris</i>
Shepherd's purse	<i>Capsella bursa-pastoris</i>	Short-fruited turnip	<i>Rapistrum rugosum</i>
Short-fruited wild turnip	<i>Rapistrum rugosum</i>	Siratro	<i>Macroptilium atropurpureum</i>
Small-flowered mallow	<i>Malva parviflora</i>	Small-flowered marshmallow	<i>Malva parviflora</i>
Small morning glory	<i>Ipomoea purpurea</i>	Small nettle	<i>Urtica urens</i>
Smooth senna	<i>Senna barclayana</i>	Soft roly poly	<i>Salsola kali</i>
South African daisy	<i>Verbesina encelioides</i>	Sowthistle	<i>Sonchus oleraceus</i>
Spear thistle	<i>Cirsium vulgare</i>	Spineless caltrop	<i>Tribulus micrococcus</i>
Spiny clotbur	<i>Xanthium spinosum</i>	Spiny cocklebur	<i>Xanthium spinosum</i>
Spotted milk thistle	<i>Silybum marianum</i>	Spotted golden thistle	<i>Scolymus maculatus</i>
Spotted thistle	<i>Scolymus maculatus, Silybum marianum</i>		
Spurgewort	<i>Chamaesyce drummondii</i>	Spurred anoda	<i>Anoda cristata</i>
St. Mary's thistle	<i>Silybum marianum</i>	St. James weed	<i>Capsella bursa-pastoris</i>
Stagger weed	<i>Stachys arvensis</i>	Stinging nettle	<i>Urtica urens</i>
Stingless nettle	<i>Lamium amplexicaule</i>	Sunflower	<i>Helianthus annuus</i>
Swamp Chinese lantern	<i>Abutilon theophrasti</i>	Tah-vine	<i>Boerhavia dominii</i>
Tall fleabane	<i>Conyza bonariensis</i>	Tall morning glory	<i>Ipomoea purpurea</i>
Tarvine	<i>Boerhavia dominii</i>	Thalaak	<i>Sonchus oleraceus</i>
Thornapple	<i>Datura sp.</i>	Tick bean	<i>Vicia faba</i>
Tomato bush	<i>Solanum nigrum</i>	Toothed medic	<i>Medicago polymorpha</i>
Tough psoralea	<i>Cullen tanex</i>	Tough scurfpea	<i>Cullen tanex</i>
Toywort	<i>Capsella bursa-pastoris</i>	Tree pea	<i>Cajanus cajan</i>
Trefoil clover	<i>Medicago polymorpha</i>	Tumbleweed	<i>Salsola kali</i>
Turnip weed	<i>Rapistrum rugosum</i>	Unicorn plant	<i>Ibicella lutea</i>
Variable sida	<i>Sida corrugate</i>	Variogated thistle	<i>Silybum marianum</i>
Variogated artichoke	<i>Silybum marianum</i>	Velvet leaf	<i>Abutilon theophrasti</i>
Velvet tree pear	<i>Opuntia tomentose</i>	Vigna take-all	<i>Vigna lanceolata</i>
Violet-flowered lucerne	<i>Medicago sativa ssp. sativa</i>	Watermelon	<i>Citrullus lanatus</i>
White charlock	<i>Raphanus raphanistrum</i>	White goosefoot	<i>Chenopodium album</i>
White thistle	<i>Argemone ochroleuca</i>	Whitetop	<i>Parthenium hysterophorus</i>
Whorl flowered mallow	<i>Malva parviflora</i>	Whorled mallow	<i>Malva parviflora</i>
Wide-leaf bladder ketmia	<i>Hibiscus trionum</i>	Wild buckwheat	<i>Fallopia convolvulus</i>
Wild charlock	<i>Raphanus raphanistrum</i>	Wild currents	<i>Solanum nigrum</i>
Wild gooseberry	<i>Physalis minima, Hibiscus trionum</i>	Wild kale	<i>Raphanus raphanistrum</i>
Wild liquorice	<i>Crotalaria dissitiflora</i>	Wild lucerne	<i>Cullen tanex</i>
Wild melon	<i>Citrullus lanatus</i>	Wild mint	<i>Salvia reflexa, Stachys arvensis</i>
Wild radish	<i>Raphanus raphanistrum</i>	Wild sunflower	<i>Verbesina encelioides</i>
Wild turnip	<i>Brassica tournefortii, Raphanus raphanistrum, Rapistrum rugosum</i>		
Wireweed	<i>Polygonum aviculare</i>	Woodnep	<i>Ammi majus</i>
Woollypod vetch	<i>Vicia villosa ssp. eriocarpa</i>	Woolly safflower	<i>Carthamus lanatus</i>
Woolly thistle	<i>Carthamus lanatus</i>	Woundwort	<i>Stachys arvensis</i>
Yam bean	<i>Vigna lanceolata</i>	Yellow dock	<i>Rumex crispus</i>
Yellow flowered devil's claw	<i>Ibicella lutea</i>		
Yellow peabush	<i>Sesbania cannabina, Senna barclayana</i>		
Yellow poppy	<i>Argemone ochroleuca</i>	Yellow star thistle	<i>Carthamus lanatus</i>
Yellow vine	<i>Tribulus micrococcus</i>	Yellow vine	<i>Tribulus micrococcus</i>