

# The encyclopaedia of arable weeds



## How to use this encyclopaedia

This publication provides an easy reference to the major broad-leaved and grass weeds in the UK, including how to identify and manage them.

The weeds are ordered alphabetically by common names and quick access to a particular weed can also be gained through the Contents.

There are two pages of information (structured identically) for every weed. A banner provides, at a glance, both the common and the scientific name. Tick boxes identify if the weed is usually competitive in winter wheat (WW), winter oilseed rape (WOSR) and/or spring crops. Tick boxes also show where populations resistant to herbicides have been identified. Finally, where appropriate, the value of the weed to biodiversity, because of rarity value or support to birds or insects, is also indicated.

Each weed has a more detailed description, under the headings; Life cycle, Location, Description (including key features), Biology and Management. This is complemented by photographs of the weed at the different growth stages. A simple Glossary of terms can be found together with a weed list by EPPO Code at the end of the encyclopaedia. Where herbicides are suggested, this is to guide the reader to possible options. Before applying herbicides, always check product labels for recommendations and approvals.

This encyclopaedia and other information can be accessed via:  
[ahdb.org.uk/knowledge-library/encyclopaedia-of-arable-weeds](http://ahdb.org.uk/knowledge-library/encyclopaedia-of-arable-weeds)



# Introduction

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This encyclopaedia has been produced to fill the gap that exists in currently available texts and to provide the reader, in one easy to use format, with a better understanding of weeds, their distribution and biological characteristics together with the best agricultural practice and the impact and importance of both cultural and herbicide use.

It is not a manual on 'how to do it', but a source of reference based on an accumulation of research and information about the weeds, their identification and growing habits, to help the reader identify problem weeds and plan their crop management.

Crop production is a competitive balance between crop and weed for light and nutrients. A weed is a plant in an undesired place. It can often grow and reproduce aggressively and/or harbour and spread pests or pathogens which infect or degrade the quality of crops. Some can cause skin irritation or are hazardous if eaten. Although many weeds have undesirable consequences they can also provide feed for birds, are attractive to look at or fulfil a key ecological role. Understanding weeds and their biology enables more effective management. The Encyclopaedia of Arable Weeds provides this in an easily usable format. Supplemented by its on-line partner edition, it provides an essential tool for weed management in arable rotations.

**Please note this publication was rebranded in 2018, not revised.  
The information was correct at the time of printing in 2008.**

## Acknowledgements

This publication has been substantially based on the encyclopaedia in Weed Manager, which was developed by: ADAS, BASF, Bayer CropScience, Dow AgroSciences, DuPont, HGCA, Rothamsted Research, SAC, SRI, and Syngenta under the Sustainable Arable LINK (Government sponsor Defra); from which the vast majority of text and images are derived.

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# Contents

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2	How to use this encyclopaedia	56	Cornflower
3	Introduction	58	Cow parsley
6	Annual meadow-grass	60	Creeping bent
8	Awned canary-grass	62	Creeping thistle
10	Barley	64	Crested dog's-tail
12	Barren brome	66	Curled dock
14	Black bent	68	Cut-leaved crane's-bill
16	Black-bindweed	70	Daisy
18	Black-grass	72	Dandelion
20	Black mustard	74	Dove's-foot crane's-bill
22	Black nightshade	76	Fat hen
24	Broad-leaved dock	78	Field bean
26	Canadian fleabane	80	Field bindweed
28	Charlock	82	Field forget-me-not
30	Cleavers	84	Field horsetail
32	Cock's-foot	86	Field pansy
34	Common chickweed	88	Fool's parsley
36	Common couch	90	Garlic mustard
38	Common field-speedwell	92	Great brome
40	Common fumitory	94	Green field-speedwell
42	Common hemp-nettle	96	Groundsel
44	Common mouse-ear	98	Hedge mustard
46	Common nettle	100	Hemlock
48	Common orache	102	Henbit dead-nettle
50	Common poppy	104	Italian rye-grass
52	Common vetch	106	Ivy-leaved speedwell
54	Corn spurrey	108	Knapweed

# Contents

---

110	Knot-grass	164	Sharp-leaved fluellen
112	Linseed	166	Shepherd's-needle
114	Long-headed poppy	168	Shepherd's-purse
116	Loose silky bent	170	Small nettle
118	Meadow brome	172	Smooth sow-thistle
120	Nipplewort	174	Soft brome
122	Oat	176	Spear thistle
124	Oilseed rape	178	Spreading hedge-parsley
126	Onion couch	180	Sugar beet
128	Pale persicaria	182	Sunflower
130	Parsley-piert	184	Timothy
132	Pea	186	Venus's-looking-glass
134	Perennial rye-grass	188	Wall speedwell
136	Perennial sow-thistle	190	Wheat
138	Pineappleweed	192	White campion
140	Potato	194	Wild carrot
142	Prickly sow-thistle	196	Wild-oat
144	Ragwort	198	Wild pansy
146	Red dead-nettle	200	Wild radish
148	Red fescue	202	Winter wild-oat
150	Redshank	204	Yorkshire-fog
152	Rough-stalked meadow-grass	206	Weed list by EPPO code
154	Round-leaved fluellen	210	Glossary
156	Rye brome	218	Index
158	Scarlet pimpernel	222	Further information
160	Scented mayweed		
162	Scentless mayweed		

# Annual meadow-grass

*Poa annua*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

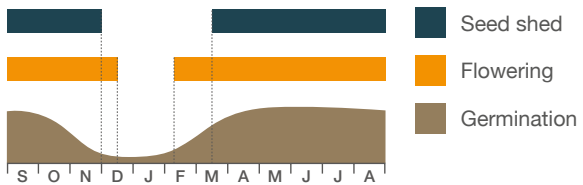
Seed longevity: >5 years

Seed weight: 0.2mg

Seeds/flower: 1

Seeds/plant: 10–500

## Life cycle



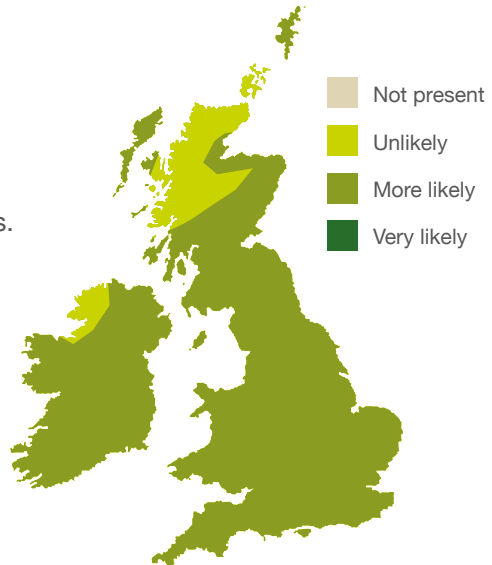
## Location

### Geographic location

Annual meadow-grass grows nationwide and up to an altitude of 1,200m.

### Soil type

It prefers fertile, heavily disturbed soils.



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## Description

It is a tufted annual or short-lived perennial grass, often compact, 3–30cm tall. Shoots and leaves appear flattened. The flowers form an open pyramid on the shoot.

## Key features

**Young plant:** The leaves are light green and flattened, with a curved tip; the undersides have a distinctive central ridge.

**Flowers:** It flowers all year round.

## Biology

Annual meadow-grass is the most common grass weed in winter- and summer-sown arable crops throughout most of the UK. As it can overwinter, plants are found at all growth stages during the year. It can complete its life cycle in 6 weeks. Although most reproduction is by seed, annual meadow-grass has long lateral roots and can also regenerate from shoots detached from the main plant by disturbance.

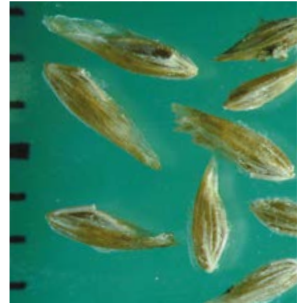
Annual meadow-grass poses little threat to crop yield, but can delay ripening and interfere with harvest.

## Management

It is encouraged by minimum tillage compared to ploughing. Residual herbicides control it both in cereals and other crops.

It has developed resistance to some herbicides: paraquat in hops and simazine in orchards.

Scale: 1 space = 1mm



# Awned canary-grass

*Phalaris paradoxa*

Competitive in



WW



WOSR



Spring crops



Resistance



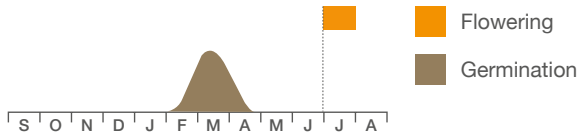
Value to biodiversity

## Seed statistics

Seed weight: 1.25mg

## Life cycle

Unknown



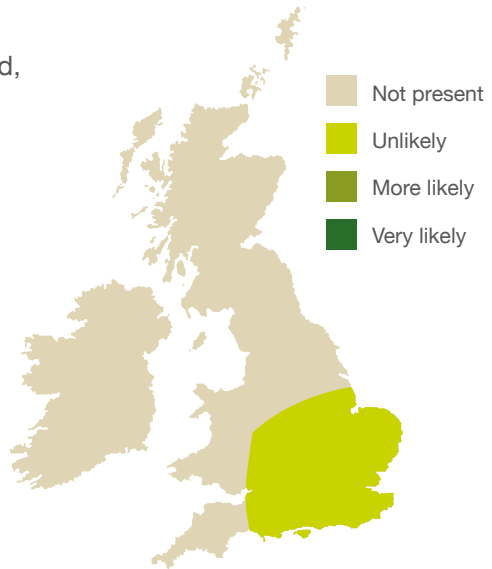
## Location

### Geographic location

Awned canary-grass is a lowland weed, especially in south Britain.

### Soil type

It likes moisture-retentive soils.





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## Description

It is a tufted annual grass up to 1m tall, freely tillering, with long tapering leaves and a long pointed ligule. The flowerheads are upright, broad and densely packed with spikelets which have green and white striped markings.

## Key features

**Flowers/fruit:** The flowerheads fall intact when ripe.

## Biology

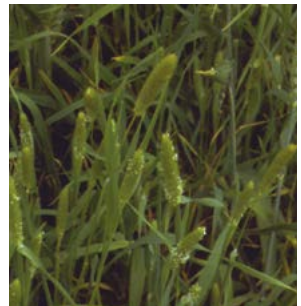
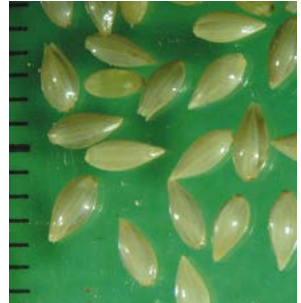
Awned canary-grass is an annual grass which only reproduces by seed. Although it is uncommon, it is a fairly new but increasing problem. It is generally found in the same areas as black-grass, in moisture-retentive soils. It is competitive with cereal crops.

It spreads initially from volunteers of previous bird-seed crops. It is difficult to control with the usual grass herbicides and can be a serious weed in winter crops.

## Management

Seeds may be buried by deep ploughing, and leaving in the seedbank for 2–3 years. Cycloxydim may be used in some broad-leaved crops.

Scale: 1 space = 1mm



# Barley

*Hordeum vulgare*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: <1 year

Seed weight: 58mg

Seeds/ear: 19–25

Seeds/plant: 60–75

## Life cycle



## Location

### Geographic location

Winter and spring barleys are found as weeds in lowland areas, on road verges and wasteland, as well as in cereal crops.

### Soil type

Weed barleys are found on all soil types, though are less common in soils under organic management.

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## Description

Barley is a tufted grass 60–120cm tall, with few leaves.

## Key features

**Young plant:** The leaf blades are hairless and yellow-green, with a clockwise twist.

**Flowers/fruit:** The nodding flowerheads have very long awns.

## Biology

Barley volunteers from the previous crop can germinate after harvest if soil conditions are favourable. The young plants persist overwinter and will flower before the following wheat crop. However, they seldom persist in the seedbank beyond 2 years if controlled. Barley is a particular nuisance as a weed in cereal seed crops, and in milling and processing crops.

## Management

It can be controlled with herbicides in broadleaved crops and, with certain grass herbicides, in wheat.

Scale: 1 space = 1mm



# Barren brome

*Anisantha sterilis*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: 1–5 years

Seed decline: 90% per year

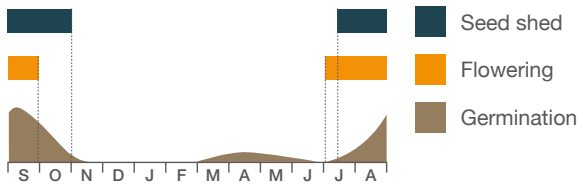
Germination depth: 5cm

Seed weight: 8.4mg

Seeds/flower: 1

Seeds/plant: 200

## Life cycle



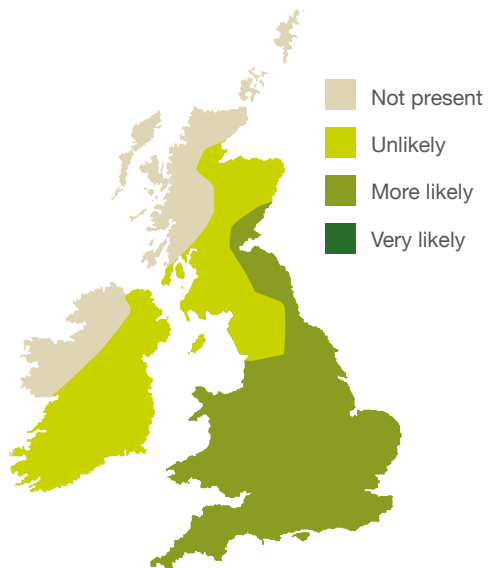
## Location

### Geographic location

Found mainly in England and the arable areas of Scotland, barren brome is usually a lowland grass, but has been shown to reach altitudes of over 350m. Its natural habitat includes verges, field headlands and waste ground.

### Soil type

It grows on waste or cultivated land on well-drained soils.



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## Description

It is an annual tufted grass that can grow to 100cm in height. The leaf blades are green, turning purple, and are finely pointed and covered in short hairs. It is also known as sterile brome.

## Key features

**Plant:** The ligule is very pointed.

**Flower:** The long-awned drooping flowerhead is tinged with purple after flowering.

## Biology

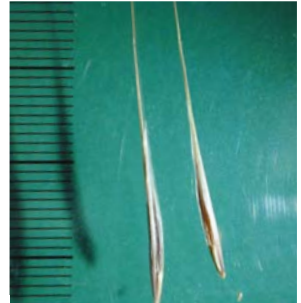
Barren brome is a weed of winter crops, causing lodging when present in large populations. Plants overwinter with green leaves; seeds germinate mainly in autumn. Spring-germinating seedlings can flower the same year. Population increase is favoured by cereal monoculture, early-autumn cereal sowing, no-till cultivation and lack of break crops. Seed germination is inhibited by drought and by low temperatures after shedding. Barren brome can be very competitive in the early stages of crop growth of autumn-sown cereals, particularly where the crop is established by reduced cultivations.

## Management

Seed dormancy varies between populations but is lost rapidly. Seed burial can induce dormancy. Seed should be left on the soil surface as light aids germination. Spray off with glyphosate prior to drilling.

Barren brome is unlikely to emerge from a depth >10cm so deep ploughing to 15cm immediately after harvest helps control.

Scale: 1 space = 1mm



# Black bent

*Agrostis gigantea*

Competitive in



WW



WOSR



Spring crops



Resistance



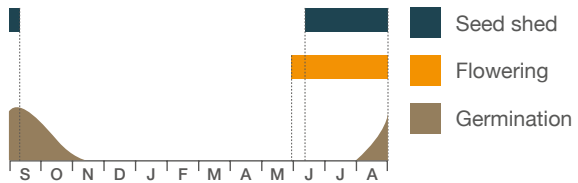
Value to biodiversity

## Seed statistics

Seed longevity: >5 years

Seed weight: 0.067mg

## Life cycle



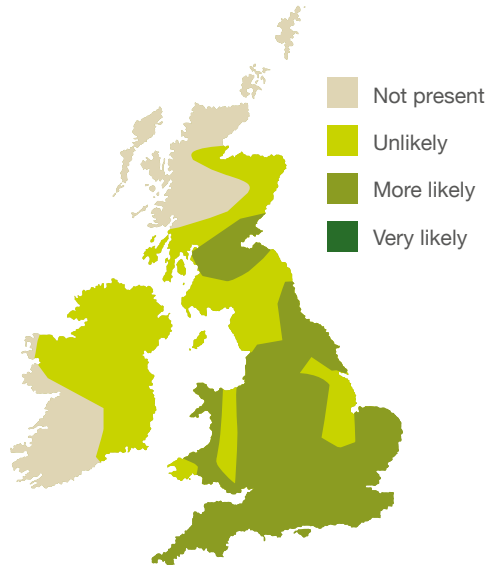
## Location

### Geographic location

Black bent is mainly found in arable fields in lowland areas of England, the arable areas of Scotland and locally in Ireland.

### Soil type

It spreads in light sandy soils where it reproduces both from rhizomes and from seed. In wetter soils it can propagate only from rhizomes.



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## Description

It is a loosely tufted perennial grass that can grow to a height of 40–120cm. It has tough creeping rhizomes.

## Key features

**Plant:** The leaves are dull, green and hairless; the blades are flat, broad and taper to a point; the sheaths are rounded and smooth.

**Flowers:** The large green or purplish flowerheads are upright, oval and usually open, with many branches carrying singleflowered spikelets.

## Lookalikes

Black bent may be confused with creeping bent.

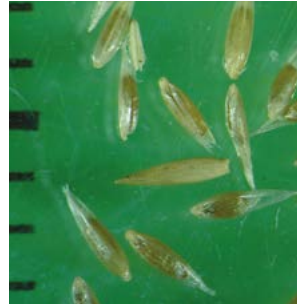
## Biology

Black bent can develop into dense patches which are often a problem in fields that are frequently irrigated and where weather is cool. The plants can reproduce vegetatively from fragments of rhizome.

## Management

Spring cropping reduces vigour. When cultivating, beware of breaking the rhizomes as black bent can root from every broken node. Glyphosate used in summer on uncropped land or pre-harvest in early harvested crops controls rhizomes. Some residual herbicides may affect the seedlings.

Scale: 1 space = 1mm



# Black-bindweed

*Fallopia convolvulus*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

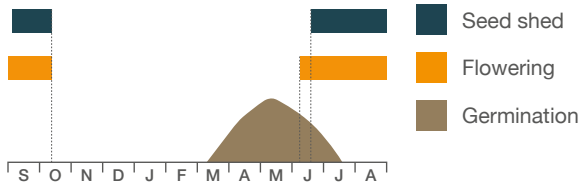
## Seed statistics

Seed longevity: >5 years

Seed weight: 5mg

Seeds/plant: 100–1,000

## Life cycle



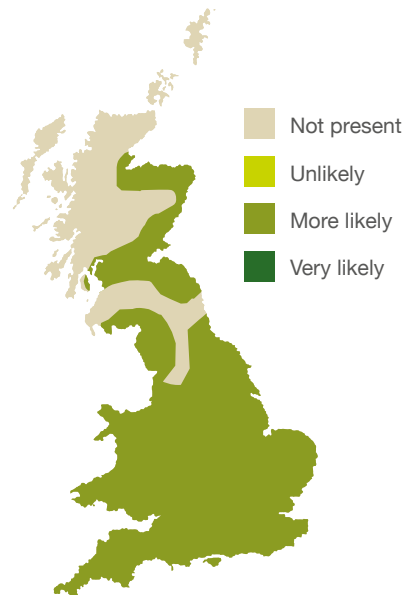
## Location

### Geographic location

Black-bindweed is mainly found in lowland areas but can grow up to an altitude of 400m, in arable, especially cereal crops, disturbed land, other bare ground and road sides.

### Soil type

It grows on fertile, moist soils with pH >5.





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## Description

It is a summer annual that scrambles as high as the supporting vegetation will allow. The flowers grow on loose flowering spikes.

## Key features

**Seedling:** The hypocotyl is crimson and the cotyledons and first leaves reddish.

**Plant:** Although the leaves are heart-shaped and resemble field bindweed, the lower lobes of black-bindweed leaves are more rounded than those of field bindweed.

## Lookalikes

Young plants of black-bindweed can be confused with those of field bindweed.

The difference is in the cotyledons; black-bindweed has long cotyledons with short stalks, while field bindweed has oval cotyledons, notched at the tip.

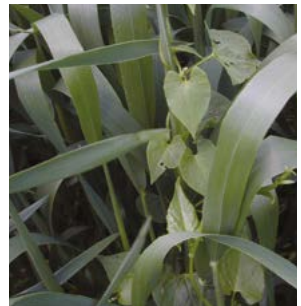
## Biology

Black-bindweed is one of the most common weeds of cereals; it occurs particularly in spring cereals and in open crops of winter wheat. It is also found in potato, beet and maize crops. It grows rapidly from large seedlings mainly germinating in spring and is deep rooting. Seeds are dispersed in cereal grains. Plants germinating in autumn do not survive winter.

## Management

In cereals, combinations of sulfonylureas and hormonal and contact herbicides are often needed for good control. In spring broadleaved crops and maize, control can be variable if soil conditions are dry and residual herbicides do not work well.

Scale: 1 space = 1mm



# Black-grass

*Alopecurus myosuroides*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: 1–5 years

Seed decline: 80% per year

Germination depth: 5.7cm

Seed weight: 1.8mg

Seeds/head: 100

Seeds/plant: 800

## Life cycle



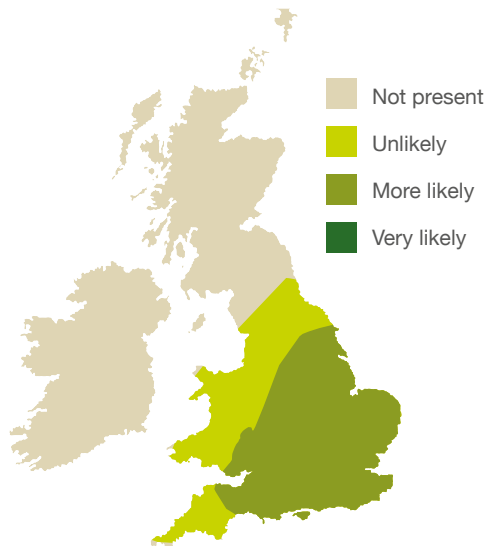
## Location

### Geographic location

Black-grass is most abundant in cultivated land in south-east England, but it is distributed all over the British Isles. It has gradually spread north and west, recently appearing in south-east Scotland and Northumberland, but is still rare in northern Scotland.

### Soil type

It is found on heavy and light soils, but thrives on heavy, poorly drained soils.



## Description

It is an annual grass, 20–85cm tall with upright, round and slender stems which have few nodes. Black-grass grows in graceful tufts. The very narrow, dark purple flowerhead is packed with single-flowered spikelets.

## Key features

**Young plant:** The leaves are fine and smooth with a shiny upper surface; the leaf blade is twisted with a blunt tip. The lower sheath of larger seedlings is often purple.

## Lookalikes

Black-grass can be confused with loose silky bent at the young plant stage of development, due to the reddish/purple colouring of the leaf sheath, but silky-bent tends to prefer lighter soils.

## Biology

Black-grass is a major weed of winter-sown cereals with very high seed production. Crop profit is reduced because of yield loss, herbicide cost and delayed sowing. Seeds produced in high numbers are shed before crop harvest. About 80% will germinate in winter and these tiller in early spring. Black-grass can emerge from clods broken down during winter. There is very little spring emergence from undisturbed soils.

## Management

Ploughing buries new seed but older seed brought to the soil surface may germinate. Some 80% of the buried seed dies in the first year. Restricting ploughing to alternate years minimises old seed from being ploughed up. Stale seedbeds and delayed drilling allow more time for black-grass to emerge and be sprayed off with a non-selective herbicide before drilling.

There is a high risk of herbicide resistance developing if 'fop', 'dim' or ALS herbicides are used repeatedly. It is best to control black-grass in break crops, as the different herbicide groups used with broad-leaved crops reduce the risk of resistance development. Spring-sown crops can also help.

Scale: 1 space = 1mm



# Black mustard

*Brassica nigra*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

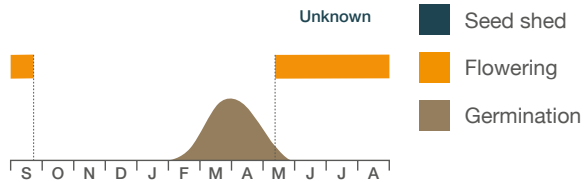
## Seed statistics

Seed longevity: >5 years

Seed weight: 3.33mg

Seeds/plant: 10–100

## Life cycle



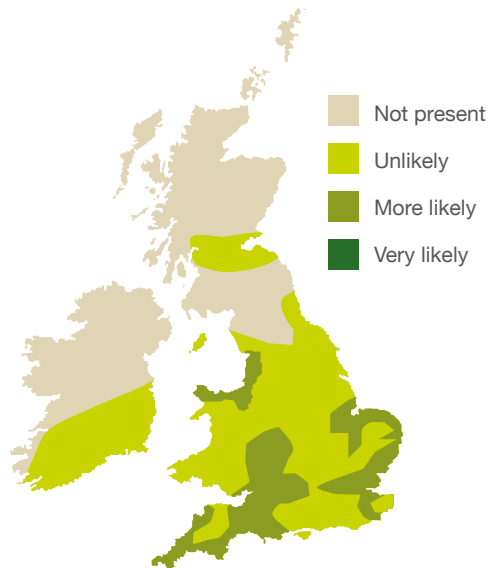
## Location

### Geographic location

Generally a lowland plant, black mustard grows persistently near rivers, in flood plains, in arable field margins and in waste ground.

### Soil type

It prefers nutrient-rich and damp clays and silts.



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## Description

It is a tall, branched, annual dicotyledon, 40–200cm tall with a bristly lower stem. The flowers are bright yellow.

## Key features

**Leaves:** The leaves are lobed and hairy.

## Biology

Black mustard was formerly cultivated as mustard seed, though it is now rarely grown. Although some early-germinating plants overwinter they are not hardy and seldom survive the winter, so seed germinating in spring is more of a problem in late-sown wheat and spring-sown crops.

## Management

Use a stale seedbed approach before sowing spring crops. Control seedlings with harrows and established plants with hoeing. Black mustard can be controlled with foliar-acting herbicides.

Scale: 1 space = 1mm



# Black nightshade

*Solanum nigrum*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

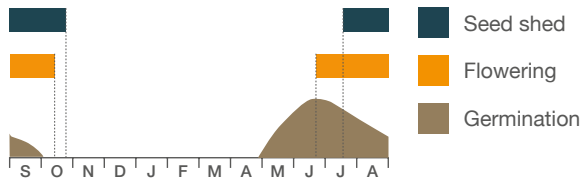
Germination depth: 5.5cm

Seed weight: 1mg

Seeds/flower: 40

Seeds/plant: 500

## Life cycle



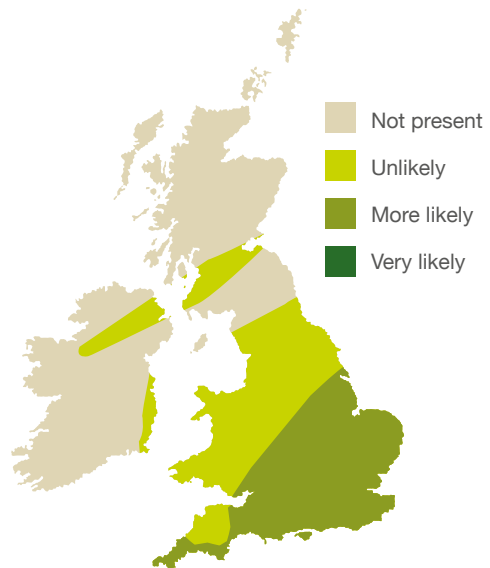
## Location

### Geographic location

Black nightshade is fairly widespread in vegetable crops, gardens, vineyards and on banks and rubbish tips.

### Soil type

It prefers loose, free-draining, nutrient-rich soils in the pH range 5 to 7.



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## Description

It is a branched, bushy annual plant with dark oval leaves, growing up to 70cm tall. The flowers resemble white potato flowers and occur in groups of 5 to 10.

## Key features

**Young plant:** The hypocotyls and cotyledons are hairy.

**Fruit:** The fruit is spherical and glossy black.

## Biology

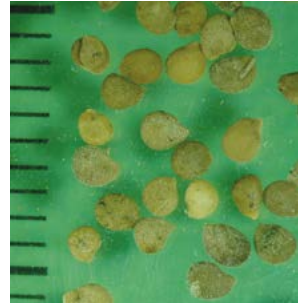
Black nightshade is a common weed of vegetable and spring legume crops. Flowers are pollinated by insects and are self-fertile. It germinates in spring and summer, fruiting in the same year. The seeds are distributed by birds. It does not persist in winter crop rotations and where there are large grass breaks.

## Management

There are a number of herbicides available to control black nightshade in winter wheat but it is easier to control the weed in uncropped land. In row crops, use hoes where herbicides are not available.

Biotypes resistant to simazine have been found in the UK.

Scale: 1 space = 1mm



# Broad-leaved dock

*Rumex obtusifolius*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

Germination depth: 5cm

Seed weight: 1.43mg

Seeds/flower: 1

Seeds/plant: 7,000

## Life cycle



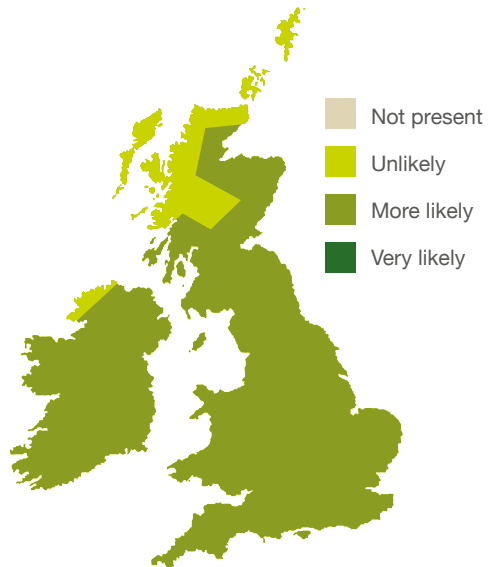
## Location

### Geographic location

Broad-leaved dock grows in meadows, pastures, ditches, waste ground and neglected cultivated ground up to an altitude of 850m.

### Soil type

It prefers high-nitrogen, humus-rich clay or loam soils.





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## Description

It is an upright perennial with a long tap root, branched stems and sturdy broad leaves. The flower spike may be branched with clusters of flowers spaced apart.

## Key features

**Leaves:** The blades of the first true leaves are broad, rounded at the tip and heart-shaped at the base.

**Flowers:** The margins of the flowers are toothed.

**Fruit:** The segments have spiny teeth.

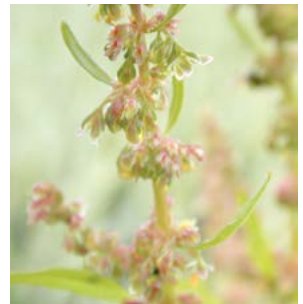
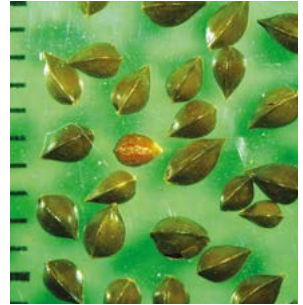
## Biology

Broad-leaved dock occurs more rarely on arable land than does curled dock, with which it is able to hybridise. It tends to grow in compacted and damp soil around field edges and in gateways. It overwinters as a rosette, flowering in the second year. It can reproduce from root fragments detached by ploughing.

## Management

Broad-leaved dock can be controlled with herbicides in cereals, grass and uncropped land, but can be difficult to control in other crops except by pulling or hoeing.

Scale: 1 space = 1mm



# Canadian fleabane

*Conyza canadensis*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

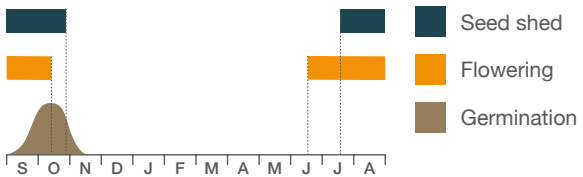
## Seed statistics

Seed weight: 0.333mg

Seeds/flower: 45

Seeds/plant: 0–50,000

## Life cycle



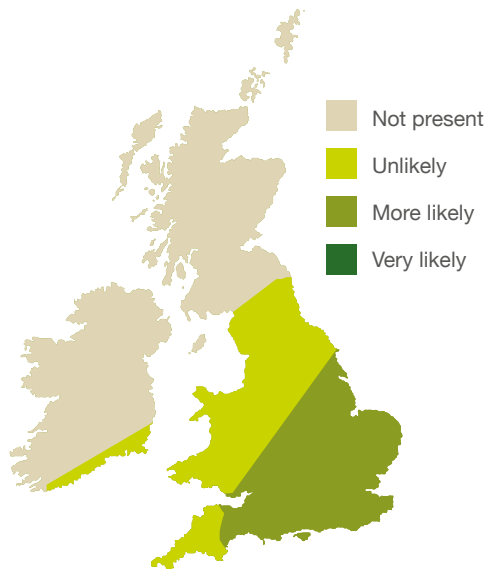
## Location

### Geographic location

Canadian fleabane is a plant of open lowland habitats such as gardens, waste ground, railway ballast and urban areas.

### Soil type

It grows on rough, stony, sandy or drained loam soils with some nitrogen.



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## Description

It is an upright, branched annual dicotyledon, growing up to 180cm tall. The plant germinates in winter and overwinters as a small rosette of long hairy leaves, sometimes with toothed edges, from which the flowering stem grows during late spring. Small daisy-like flowers with upward-pointing petals are tightly enclosed by the sepals, and occur in loose flower spikes.

## Lookalikes

Canadian fleabane may be confused with daisy which is similar in the seedling stage, but has more-rounded cotyledons.

Field forget-me-not is similar at the seedling stage, but has hairy cotyledons.

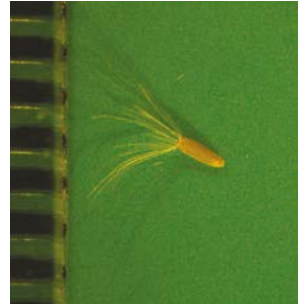
## Biology

Canadian fleabane only occurs sporadically but increasingly in annual arable and vegetable crops, e.g. carrot and parsnip.

## Management

The rosettes can be destroyed by autumn cultivations.

Scale: 1 space = 1mm



# Charlock

*Sinapis arvensis*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

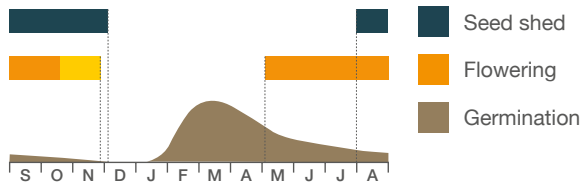
Germination depth: 4.3cm

Seed weight: 2mg

Seeds/flower: 8–13

Seeds/plant: 16–25,000

## Life cycle



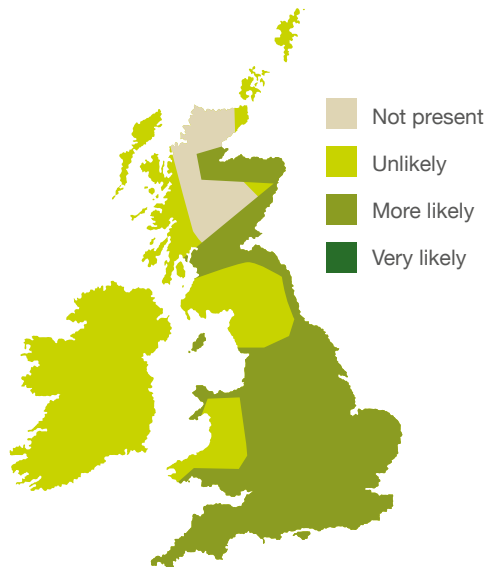
## Location

### Geographic location

Charlock is generally a weed of lowland areas though it has been found at altitudes up to 450m. It grows in open habitats, such as arable fields or recently disturbed soil.

### Soil type

It is found on well-aerated and well-watered but drained, alkaline-rich soils, which have a high organic matter content.



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## Description

Charlock is a 20–200cm high, dark-green to purplish hairy annual; it can be very variable in form, with irregularly toothed leaves.

The pale yellow four-petaled flowers occur at the top of the flowering spike.

## Key features

**Flowers:** The flower sepals spread horizontally.

**Fruit:** The fruit has a beak 7mm or more long.

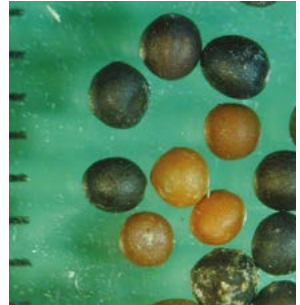
## Biology

Charlock is common on arable land. It used to be a serious weed of cereals, but it is now more commonly found in broad-leaved crops. It is highly competitive in cereals. It mainly germinates in spring, but summer-germinating plants and plants emerging in the autumn in early-sown oilseed rape may survive a mild winter. The seeds can be dispersed in crop seeds, or by ingestion by birds.

## Management

Charlock is difficult to control in brassica crops but is readily controlled by residual and foliar herbicides in cereal and legume crops. Between 4 and 6 weeks after germinating, its hairy leaf surface traps herbicide so it is more susceptible at this stage.

Scale: 1 space = 1mm



# Cleavers

*Galium aparine*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: 1–5 years

Germination depth: 7cm

Seed weight: 8.3mg

Seeds/flower: 2

Seeds/plant: 300–400

## Life cycle



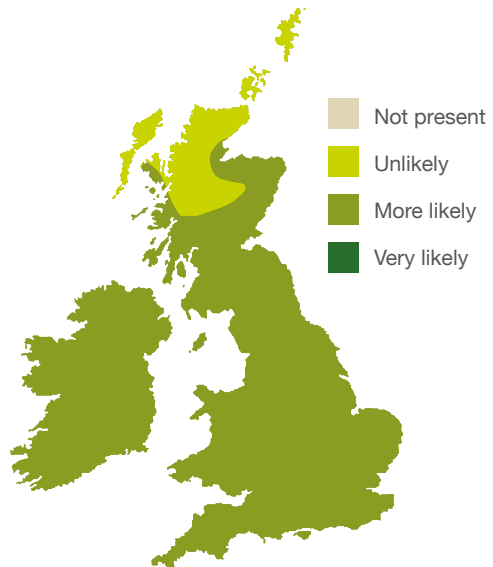
## Location

### Geographic location

Cleavers is found all over Britain except for the very highest mountainous areas. It has spread north and west following the trends in winter cropping.

### Soil type

It is found on well-watered humus-rich loam and clay soils and grows best on highly fertile soils.



## Description

It is a scrambling or climbing annual dicotyledon. The stems are four-angled, 50–200cm long, covered with minute, down-curved prickly hairs.

## Key features

**Young plant:** The oval cotyledons are notched at the tip.

**Flowers:** The flowers are white.

## Lookalikes

Cleavers may be confused with ivy-leaved speedwell at the cotyledon stage. Cleaver cotyledons are notched at the tip and have longer cotyledon stalks. Cleavers may also be confused with some hemp-nettles.

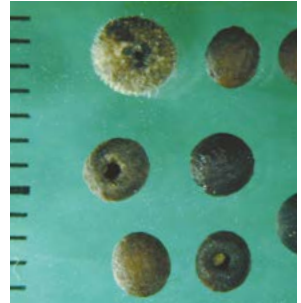
## Biology

Cleavers can germinate and young plants continue to grow over mild winters, although mature plants die before frost starts. Adult cleavers plants are very competitive; they can be very large and can choke wheat crops by growing over the top of the canopy, causing crop lodging and affecting combining. Seeds are moved in crop grain or by clinging to fur or clothing and require chilling before germination. A long autumn germination period is supported in a winter cropping system. 3% of oilseed rape samples are rejected because they contain more than 4% of cleavers seed. The seeds can also be difficult to remove from cereal samples and cause losses of grain.

## Management

Cleavers cannot be controlled purely by cultural methods. Mechanical and tine weeders can be used to remove a proportion of emerged cleavers within the wheat crop. Ploughing may increase seedling emergence, when seeds brought to the soil surface germinate. There are a number of herbicides that can be used to control cleavers in arable crops.

Scale: 1 space = 1mm



# Cock's-foot

*Dactylis glomerata*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

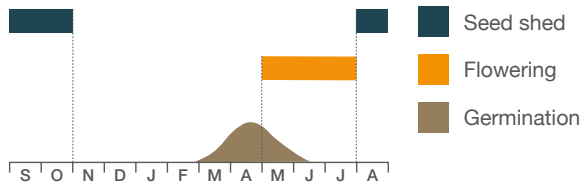
## Seed statistics

Seed longevity: 1–5 years

Seed weight: 2mg

Seeds/head: 100

## Life cycle



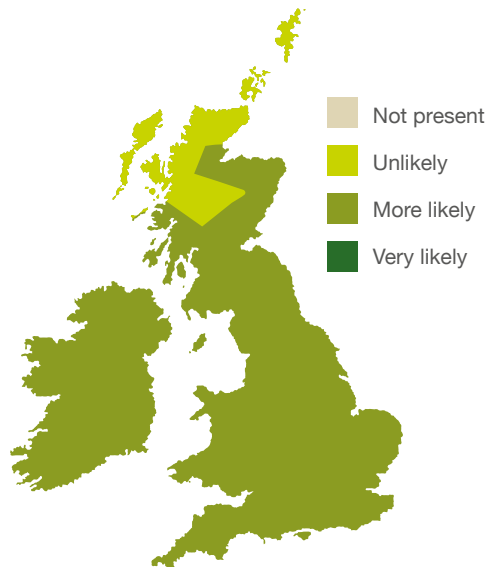
## Location

### Geographic location

Cock's-foot is usually found in meadows, pastures, waste ground, roadsides, or field edges. It grows to an altitude of 700m.

### Soil type

It is found on a wide range of fertile, neutral or alkaline soils.





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## Description

It is a large, densely tufted, perennial grass of coarse appearance, 30cm to 1.2m tall. There are many strains, with differing growth habits. The broad leaf blades have a prominent ridge on the undersides and are often bluish-green in colour. The flowerheads are often triangular and appear densely packed.

## Key features

**Plant:** The stems are flattened, especially at the base.

## Biology

Cock's-foot is sown as an agricultural grass and may be present in arable fields after ploughing. It remains green all winter.

It mainly reproduces by seed which can persist from 2–3 years on the soil surface. Seed set is high and the fruit fairly mobile.

## Management

Although it is often found in first-year cereals after grass, it seldom persists in routinely cultivated soils. It is best controlled at the time of grass destruction or in fallow.

Scale: 1 space = 1mm



# Common chickweed

*Stellaria media*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

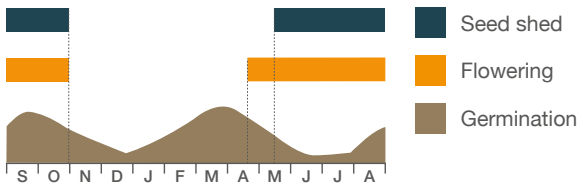
Germination depth: 3.6cm

Seed weight: 0.35mg

Seeds/flower: 8

Seeds/plant: 2,500

## Life cycle



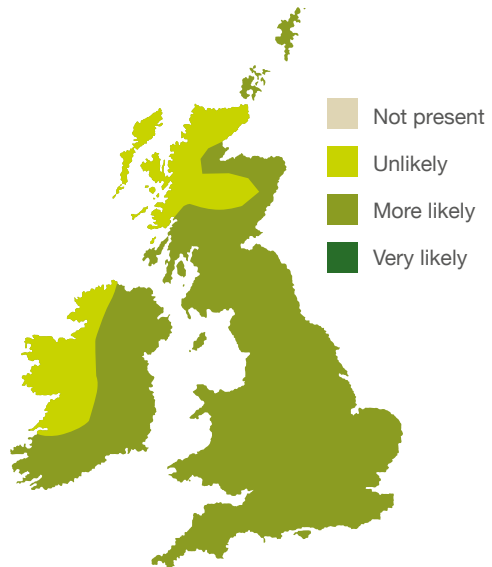
## Location

### Geographic location

Common chickweed can be found all over Britain, especially in crops, usually below an altitude of 200m but able to grow up to 400m.

### Soil type

It grows on fertile nitrogen-rich soils which are not highly acid. It prefers watered but not waterlogged situations.



## Description

It is an annual low-growing bright-green plant, with tiny five-petalled white flowers.

## Key features

**Plant:** The stems are rounded with a single line of hairs.

**Leaves:** The leaves are oval, usually 8mm or longer, and end in a slight point.

## Lookalikes

Common chickweed may be confused with common mouse-ear.

## Biology

Common chickweed can grow at relatively low temperatures and may suppress overwintered crops or, if dense, severely restrict crop growth. Germination of chickweed can occur throughout the year, with up to three generations possible in any one year in winter cereals, particularly wheat; plants may be seen to be flowering at any time. Spring-germinating plants die in late summer, while autumn-germinating plants survive the winter as a dense low-growing mat. Plants may reproduce by seed, moved by birds, or vegetatively by root cuttings.

## Management

Control by preventing seed production and re-establishment after cultivation. Early shallow tillage encourages the seed germination; when the seedlings emerge, the land should be tilled again and then drilled with the crop.

Sulfonylurea resistance in chickweed has been confirmed in the UK. Where sulfonylurea herbicides are used, mix with a herbicide with an alternative mode of action.

Scale: 1 space = 1mm



# Common couch

*Elytrigia repens*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

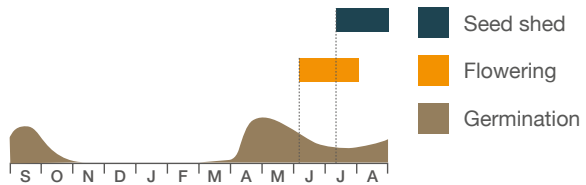
Seed longevity: 1–5 years

Seed weight: 2.5mg

Seeds/head: 100

Seeds/plant: 15–400

## Life cycle



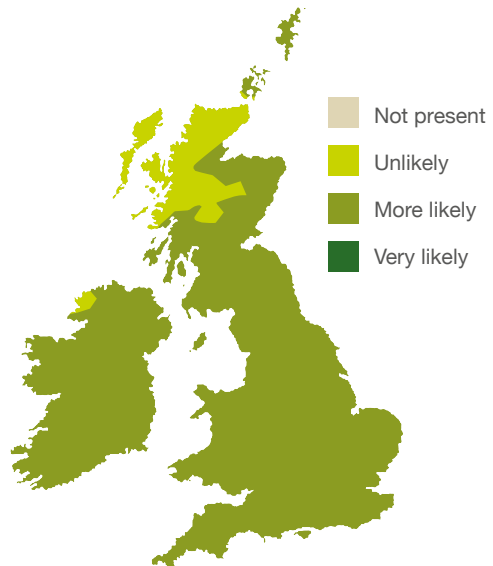
## Location

### Geographic location

Couch grows country-wide on fertile disturbed soils, waste and cultivated ground up to an altitude of 430m.

### Soil type

It is present on all soil types including seaside sands and shingles.



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## Description

It is a tall, very vigorous perennial grass up to 20cm with white, creeping underground rhizomes growing into large groups or patches. The leaves are hairy on the inner surface and rough at the edges. Spikelets are arranged in two opposite rows.

## Key features

**Plant:** As the rhizome extends, common couch plantlets seem to grow in straight lines. The individual plants have an upright form.

**Flower:** Spikelets lie flat against the stem so they feel smooth when fingers are moved along the flowerhead.

## Lookalikes

The flowerhead is superficially similar to that of rye-grass (*Lolium* spp.) but in rye-grass the narrow, rounded side of the spikelet is adjacent to the stem.

## Biology

Common couch is a highly competitive weed of all crops. Mature shoots die back in the autumn but young shoots can overwinter. The plant can reproduce from rhizome fragments and from seed.

## Management

Intensive cultivations at 2–3 week intervals will fragment the rhizomes and induce growth, exhausting food reserves. Bury the weakened rhizomes with deep ploughing or spray with glyphosate. Control of couch is cheaper and more effective with glyphosate in uncropped land, stale seedbeds or combinable crops than in break crops.

Scale: 1 space = 1mm



# Common field-speedwell

*Veronica persica*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

Seed weight: 0.52mg

Seeds/flower: 7

Seeds/plant: 50–10,000

## Life cycle



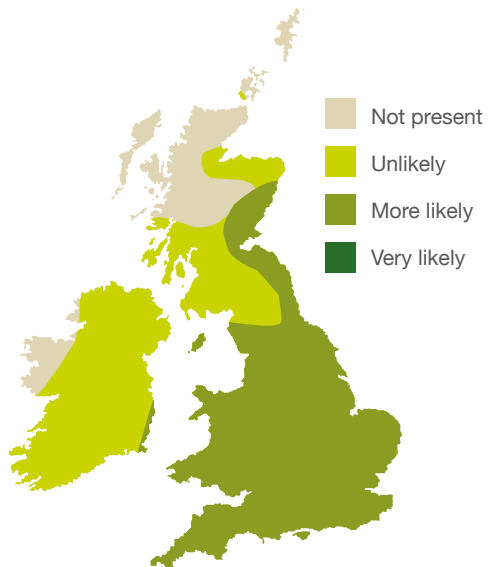
## Location

### Geographic location

Common field-speedwell grows up to an altitude of 350m and prefers flat or gently sloping ground. It is a common weed of arable land and other bare soils such as disturbed or waste ground.

### Soil type

It prefers damp, nutrient-rich loam soils, pH 6–8.



## Description

It is a low sprawling hairy annual with a sturdy stem, forming loose cushions 10–40cm across. The leaves are broadly triangular and toothed, on short stalks.

The large flowers, 9–14mm are borne on long stalks growing from the leaf axils; the upper petals are sky blue and the lower white.

## Key features

**Flower:** Flowers are large and predominantly sky blue.

## Biology

Common field-speedwell is frequently found on arable land, both on fallow ground and beneath the crop canopy. It is found on autumn- and spring-sown crops probably encouraged by an increase in winter cropping. Plants can overwinter and even flower throughout the year, giving rise to two generations per season; the large seeds are probably dispersed by ants. Shoot fragments are able to regenerate.

## Management

Residual herbicides are generally quite effective in autumn- and spring-sown crops; sulfonylureas and contact herbicides are effective in cereals.

Scale: 1 space = 1mm



# Common fumitory

*Fumaria officinalis*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

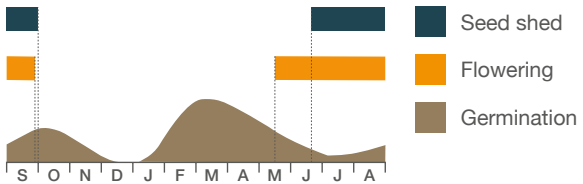
Seed longevity: >5 years

Seed weight: 4mg

Seeds/flower: 1

Seeds/plant: 1,600

## Life cycle



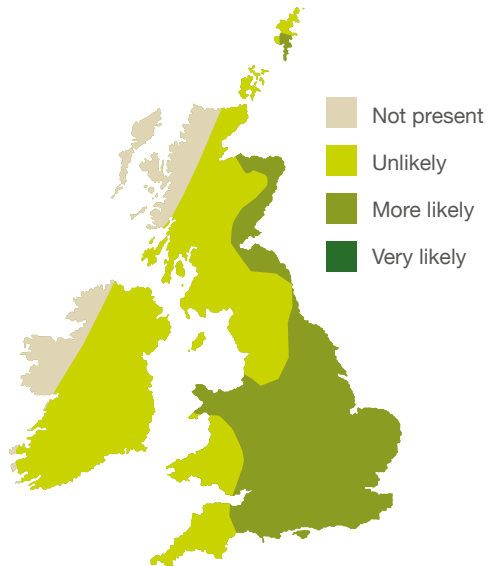
## Location

### Geographic location

Common fumitory is a lowland plant, growing up to an altitude of 300m. It appears in winter and Spring crops and may be increasing in fields of winter cereals in the north of England and in Scotland where there is poor control by residual herbicides.

### Soil type

It prefers nutrient-rich chalky loams with good water availability and is an indicator of good soil conditions.





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## Description

It is a slender, hairless, semi-upright or sprawling, branched annual dicotyledon, growing up to 40cm tall. The smooth leaves are divided, feathery and slightly greyish in colour. The flower stems have many pinkish lipped flowers, 7–8mm long and tipped with dark purple-red.

## Key features

**Plant:** The sap is colourless.

**Flower:** The sepal is less than half the flower length. There are often more than 20 flowers on a flowering spike.

**Fruit:** It is shaped like a flattened globe.

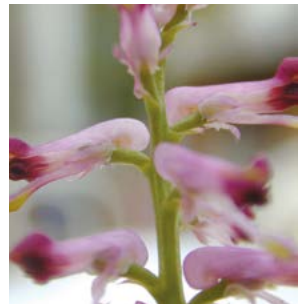
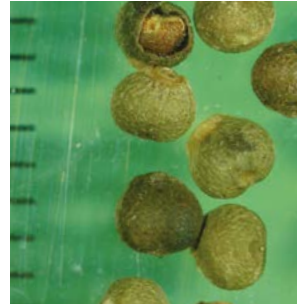
## Biology

Common fumitory is widespread on arable land. It mainly germinates in spring and can set seed in one year. It can be self-fertile or can cross-fertilise.

## Management

Control of established plants is difficult with herbicides. Seedlings can be controlled with mecoprop-P and HBN herbicides in cereals.

Scale: 1 space = 1mm



# Common hemp-nettle

*Galeopsis tetrahit*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

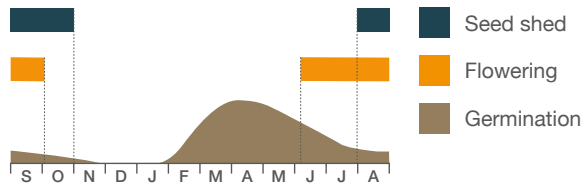
Germination depth: 3cm

Seed weight: 4.83mg

Seeds/flower: 4

Seeds/plant: 300–2,400

## Life cycle



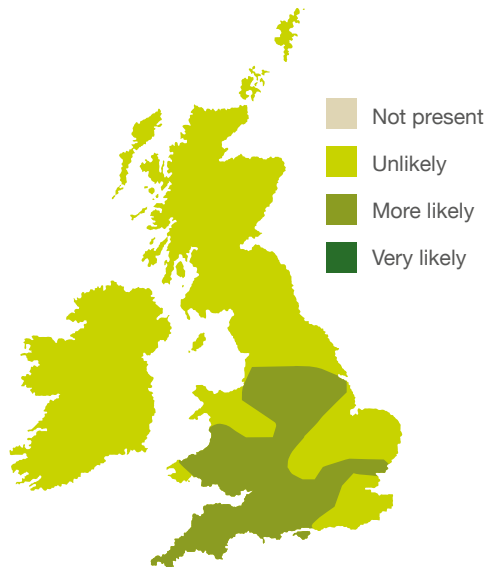
## Location

### Geographic location

Common hemp-nettle occurs in disturbed ground with high levels of bare soil, often in broad-leaved crops, or in moist sites near river banks and hedgerows, up to an altitude of 400m. It commonly occurs in spring cereals in northern England and Scotland.

### Soil type

It can grow on a wide range of soils pH 4.5–7, and may be more common in soils of relatively high organic matter or in areas where soils remain moist in the summer.



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## Description

It is a bristly annual dicotyledon, with leaves resembling those of common nettle. The stems are brittle and usually have distinct swellings below the attachment of each leaf-pair. The flowers are cream or pink and similar to those of dead nettle.

## Key features

**Plant:** There is a distinct swelling where the leaf stalk meets the stem. Plants can have a bristly appearance.

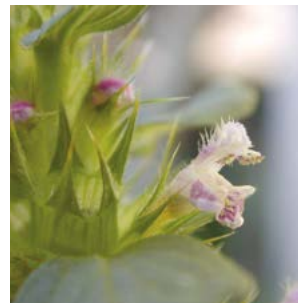
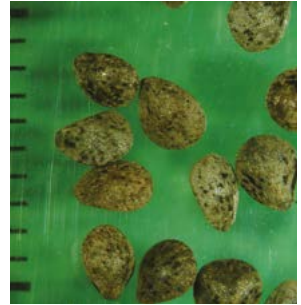
## Biology

Common hemp-nettle forms more robust plants in broad-leaved crops and fallow ground than in cereal crops. The plants reproduce by seed, which is produced in smaller quantities than in similar plants and may still be on the plant during harvest, so contaminating crop grain. Seeds germinate only after overwintering.

## Management

It is controlled by a range of broad-leaved weed herbicides.

Scale: 1 space = 1mm



# Common mouse-ear

*Cerastium fontanum*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

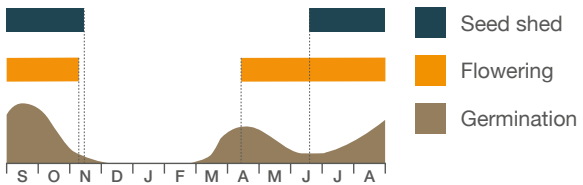
Seed longevity: >5 years

Seed weight: 0.1mg

Seeds/flower: 40

Seeds/plant: 0–1,200

## Life cycle



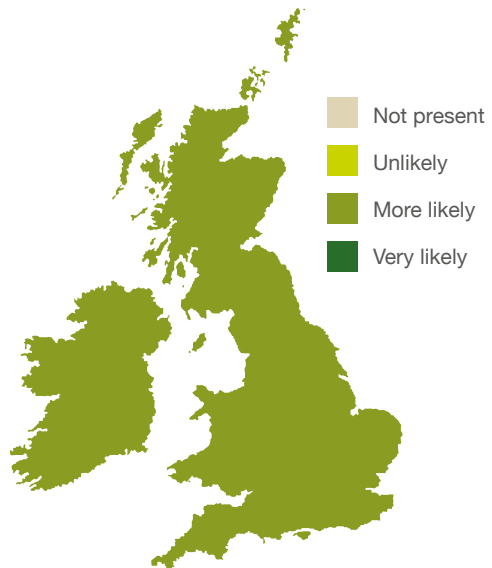
## Location

### Geographic location

Common mouse-ear grows to altitudes of above 1,000m in all areas of Britain, in fertile habitats including meadows, pastures, cultivated ground, dunes and shingle.

### Soil type

It likes acidic, wetter soils, rich in nutrients.



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## Description

It is a sprawling or upright, perennial dicotyledon 5–50cm tall. The small oval leaves and the stem are covered with dense white hairs. The flowers have five white petals, with sepals the same length as the petals.

## Key features

**Young plant:** The seedlings are very small and hairy.

## Biology

Common mouse-ear is a perennial, which functions as an annual in arable fields. The seeds are dispersed by wind or eaten by birds. It can emerge throughout the year, given sufficient soil moisture.

## Management

It is less common where soils are routinely cultivated and is likely to be encouraged by reduced cultivation and direct drilling. It does not compete in dense, vigorous crops.

Scale: 1 space = 1mm



# Common nettle

*Urtica dioica*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

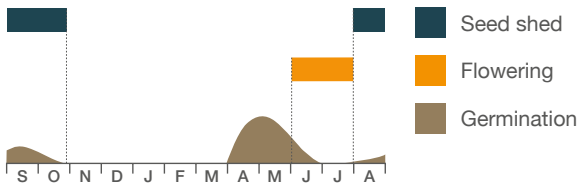
## Seed statistics

Seed longevity: >5 years

Seed weight: 0.13mg

Seeds/flower: 1

## Life cycle



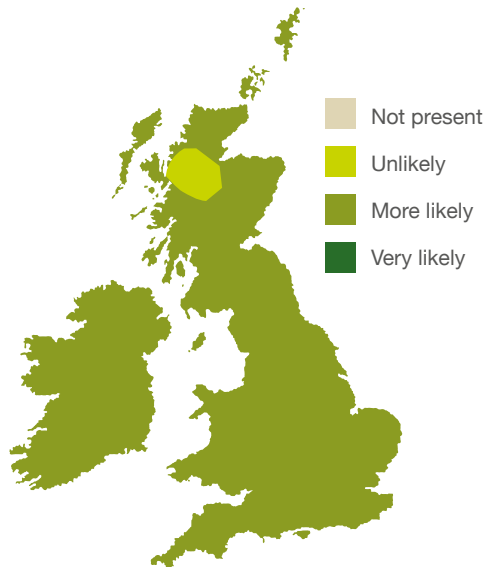
## Location

### Geographic location

Common nettle is found in a wide variety of habitats including cultivated and waste ground, scrub, unmanaged grassland, and fen and river banks, up to an altitude of 850m.

### Soil type

It prefers nutrient-rich soils.



## Description

This common hedgerow perennial grows to above 1.5m and has extensive creeping rooting stolons. The leaves are pointed with toothed edges. The stem is square in cross section and covered with stinging hairs. The tiny green male and female flowers are borne in tassels by different plants.

## Key features

**Young plant:** It has longer and more triangular first true leaves than annual nettle.

**Plant:** It is tall and upright, with leaves larger than those of small nettle. The leaves and stem are covered in stinging hairs.

## Lookalikes

Common nettle may be confused with small nettle, however it has shorter cotyledons than small nettle and the first true leaves of common nettle are longer and more triangular.

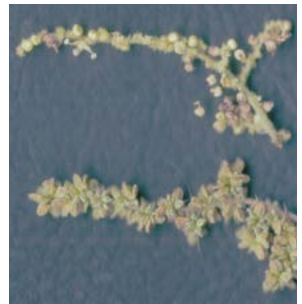
## Biology

Common nettle is frequently found in waste places and field margins, though it does encroach onto arable land. It is a particular problem in perennial crops and grassland. Some young shoots of nettle can overwinter, but the plant mostly dies back, growing strongly in spring. The plants reproduce when stolons are fragmented or from seed ingested by animals.

## Management

It will be reduced by continuous cutting. For control, use glyphosate in fallow or selective treatments in grassland.

Scale: 1 space = 1mm



# Common orache

*Atriplex patula*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

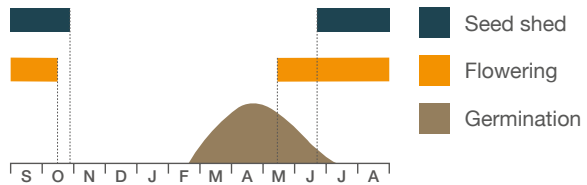
## Seed statistics

Seed longevity: >5 years

Seed weight: 2mg

Seeds/plant: 100–6,000

## Life cycle



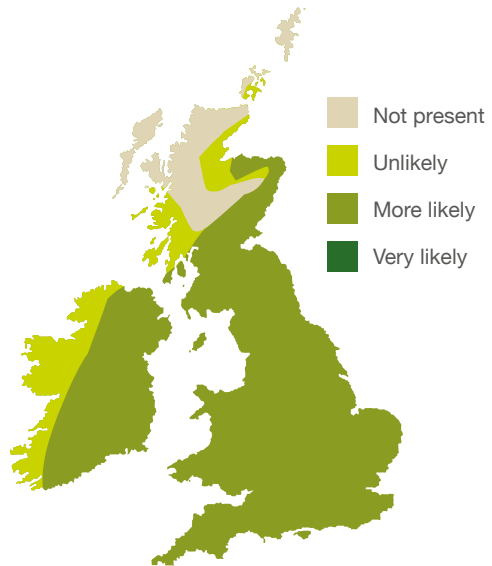
## Location

### Geographic location

Common orache is mainly a lowland weed but can grow up to an altitude of 400m. It is found on arable land, on manure heaps, demolition sites, and areas with a large amount of bare soil.

### Soil type

It prefers moist soils with pH > 5.





## Description

It is a sturdy annual plant, growing up to 80cm tall. It has a branched stem and long, horizontally spreading branches. Leaves are initially mealy, later turning green on both sides. Flowers form in small clusters along the flowering stalk, the female flowers are pyramid-shaped.

## Key features

**Plant:** The young leaves are mealy. The shoots of the growing plants have upright triangular leaves at the top.

## Lookalikes

Common orache may be confused with fat-hen: fat-hen and Good King Henry also have mealy leaves. Orache has broader cotyledon stalks with leaf and cotyledon having a bright-green underside, whilst young fat-hen plants may be bright purple on the underside of the cotyledons.

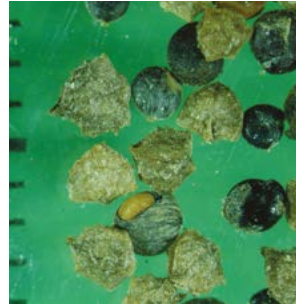
## Biology

Common orache is particularly common in broad-leaved crops or fallow areas. Plants regenerate only by seed, which can be an impurity in crop seed, and may be spread by birds or small mammals. The plants do not overwinter. Early sown winter crops are usually too competitive to be affected by this spring-germinating species but the deep tap root can interfere with harvesting of beet crops.

## Management

Minimum tillage may reduce emergence. It can be controlled by a range of herbicides at the seedling stage.

Scale: 1 space = 1mm



# Common poppy

*Papaver rhoeas*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: Up to 100 years

Germination depth: 0.5cm

Seed weight: 0.09mg

Seeds/flower: 1,360

Seeds/plant: 20,000

## Life cycle



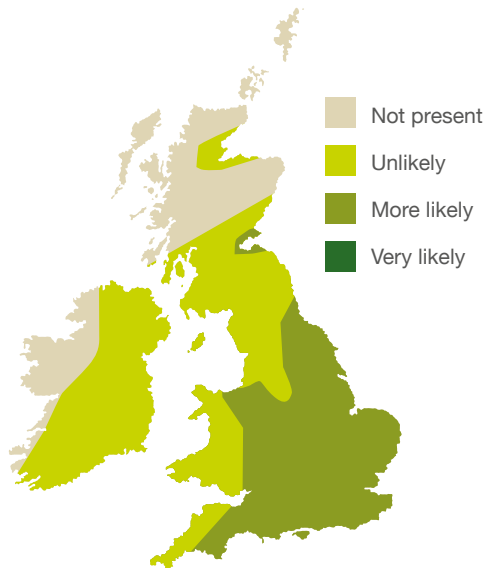
## Location

### Geographic location

Poppy is widely distributed in all areas of the British Isles, but is less abundant in northern Scotland. It tends to prefer lowland areas.

### Soil type

Poppy prefers soils with reasonable moisture and will spread in areas with bare soil.



## Description

It is an upright, hairy annual 20–80cm tall. The stems are bristly and sometimes spreading. The dull green leaves at the base form a rosette with divided segments. The broken stem bleeds a white sap. The large flowers have four petals sometimes with a large black spot at the centre. The ovary is short and smooth.

## Key features

**Fruit:** The seed head is short and smooth.

## Lookalikes

Common poppy may be confused with young plants of shepherd's-purse but the cotyledons of common poppy are narrower. The hairs of the common poppy stand singly and may be forked, while those of shepherd's-purse form little star-like clusters.

## Biology

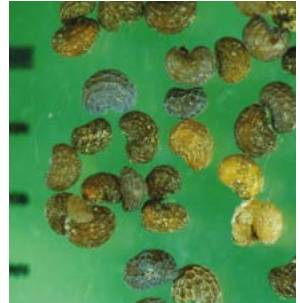
Common poppy occurs particularly in winter cereals and oilseed rape where it is competitive, but is also found in spring crops, fallows and more rarely vegetables and clover crops. Autumn-germinating seedlings can overwinter. Plants flower in midsummer, but there may be a second flush of flowers once the wheat crop has been harvested. The plant reproduces entirely by seed. The very long seed persistence means that poppy appears in newly cultivated land.

## Management

The best control method is to stimulate germination through cultivation before spraying with glyphosate. Common poppy is controlled by a wide range of herbicides in cereals and legumes, but control is more difficult in brassica crops.

Sulfonylurea resistance has been confirmed in the UK.

Scale: 1 space = 1mm



# Common vetch

*Vicia sativa*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

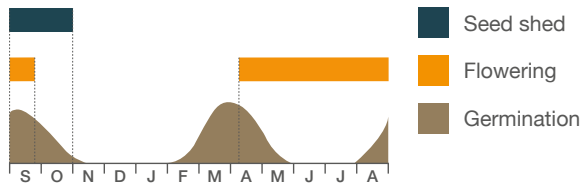
## Seed statistics

Seed longevity: >5 years

Seed weight: 100mg

Seeds/flower: 4–12

## Life cycle



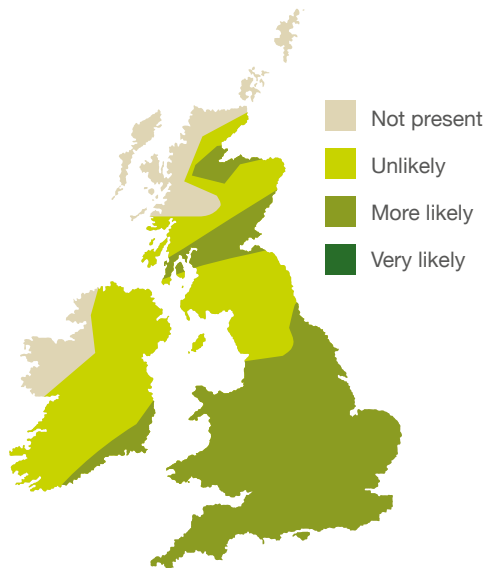
## Location

### Geographic location

Although it is widely found in lowland areas in most of the British Isles, in Ireland it is mainly confined to the east coast.

### Soil type

It prefers dry and sandy soils.



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## Description

A scrambling dicotyledon, the stems grow to 20–120cm in length. The leaves are divided into 3–8 pairs of oval leaflets and end in a tendril. The flowers are like those of a pea and occur in the last few leaf axils.

## Key features

**Young plant:** The first true leaves are long and narrow with no leaflets.

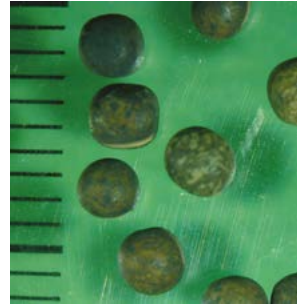
## Biology

Common vetch was once grown as a cultivated plant. It is found in grassy field margins, but may also be seen in arable crops, sometimes as cultivated forms where vetches form part of the cropping rotation. Common vetch usually germinates in autumn and overwinters; more rarely it is a summer annual. Undisturbed plants may be biennial. It is often seen in spring-sown crops where it can interfere with harvesting and seed can contaminate grain.

## Management

Seedlings can be harrowed out, but once established it is not readily controlled except with hoeing. Vetches are generally susceptible to sulfonyleureas and some hormone herbicides such as mecoprop-P and dicamba.

Scale: 1 space = 1mm



# Corn spurrey

*Spergula arvensis*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity:

Longest ever recorded over 170 years

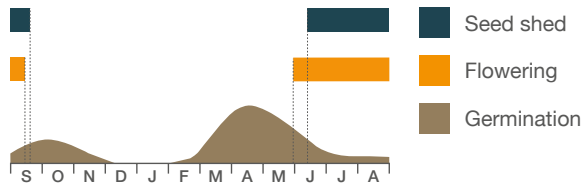
Germination depth: 3.9cm

Seed weight: 1mg

Seeds/flower: 25

Seeds/plant: 1,000–10,000

## Life cycle



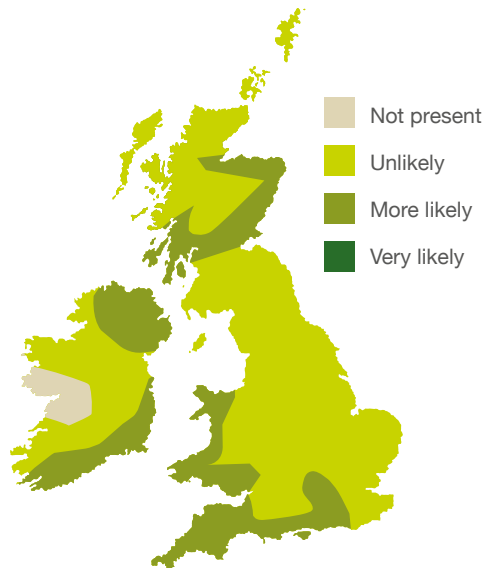
## Location

### Geographic location

Corn spurrey occurs in cereal fields or other cultivated land up to an altitude of 450m.

### Soil type

It occurs most frequently on light soils and surface-leached sandy soils with a low pH.



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## Description

It is an annual weed, growing to 60cm tall, with white star-like flowers. The very narrow leaves are in groups of four.

## Key features

**Young plant:** The cotyledons and first true leaves are similar, both needle-shaped

**Plant:** The leaves are needle-shaped and arranged in whorls.

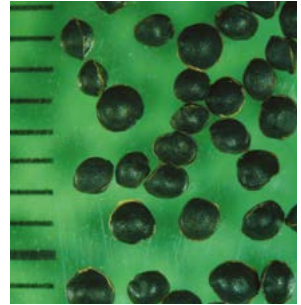
## Biology

Corn spurrey can be a troublesome weed of cereals, because of its dense mats of growth. Two generations can occur in one season because plants can set many seeds within 10 weeks of germinating and just a fortnight after flowering. There is a persistent seedbank. Seeds can be transported by birds or mammals, or agricultural machinery.

## Management

Raising the pH over time will reduce corn spurrey and encourage the competitiveness of the crop.

Scale: 1 space = 1mm



# Cornflower

*Centaurea cyanus*

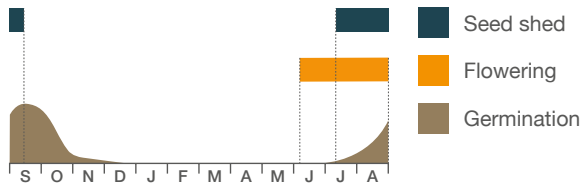
Competitive in

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WW	WOSR	Spring crops	Resistance	Value to biodiversity

## Seed statistics

Seed longevity: 1–5 years  
Germination depth: 3cm  
Seed weight: 4.35mg  
Seeds/plant: 700–1,600

## Life cycle



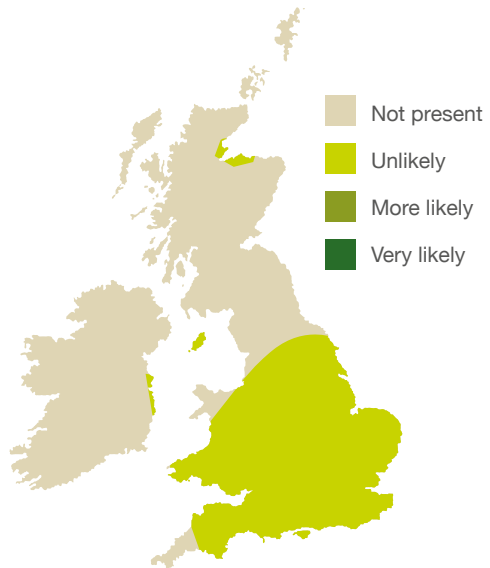
## Location

### Geographic location

Although cornflower has become rare as a wild plant, it may be found in waste places, roadsides and rubbish tips, often as a garden escapee. It is occasionally found in the north-east of England and Scotland.

### Soil type

It grows best in sandy loams and chalky clays.





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## Description

It is an annual dicotyledon with upright habit, growing up to 1m tall. The stem and leaves are covered with woolly hairs and the flowerhead has a ring of usually bright blue flowers.

## Key features

**Plant:** The long thin leaves are covered with woolly hairs.

**Flowers:** The flowers are bright blue.

## Biology

Cornflower can emerge in autumn- and spring-sown crops and can compete quite well with cereals; in the past it was capable of reducing yields and interfering with harvesting. Autumn-germinating plants overwinter and produce more seeds than spring-germinating plants.

## Management

Use a stale seedbed approach before sowing crops. Harrows will control seedlings but hoeing is required for larger plants. Cornflower is susceptible to the main spring-applied herbicides.

Scale: 1 space = 1mm



# Cow parsley

*Anthriscus sylvestris*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

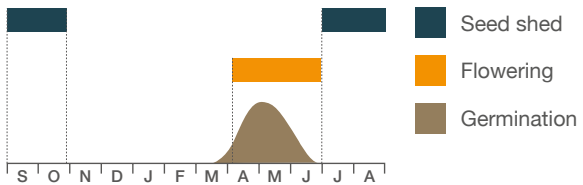
Seed longevity: 1–5 years

Seed weight: 3.33mg

Seeds/floret: 2

Seeds/plant: 100–1,000

## Life cycle



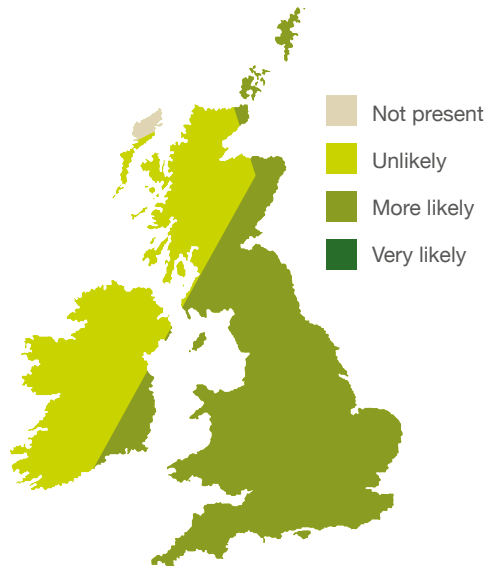
## Location

### Geographic location

Cow parsley grows throughout Britain in hedgerows, verges, meadows and river banks.

### Soil type

It is found most frequently on alkaline soils. It does not like very wet or very dry conditions.



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## Description

It is a robust perennial dicotyledon, 40–150cm tall, with upright branched hollow stems. The leaves are divided two to three times giving a feathery appearance. Small white flowers cluster in a dense umbrella-shaped head up to 6cm across.

## Key features

**Plant:** It has hollow furrowed unspotted stems, sometimes purplish in colour, and triangular grooved leaf stems.

**Flowers:** Cow parsley is the first umbellifer to flower.

## Lookalikes

Cow parsley may be confused with shepard's-needle or other similar umbellifers when young: The leaflets are coarser and less divided than shepard's-needle, and the cotyledons longer and thinner than fool's parsley.

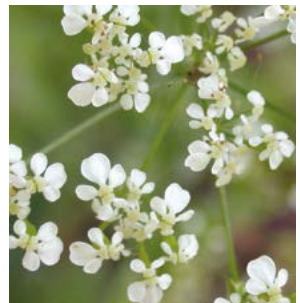
## Biology

Cow parsley spreads into crop headlands from hedgerows. It is usually found as a seedling in cereal crops. The seeds require chilling to germinate and the seedlings grow slowly. Mature plants can overwinter forming new leaves in the spring; these die off as the flowering stem grows. The plant can also regenerate from the buds in the axils of the basal leaves.

## Management

Spread may be reduced by ploughing and probably moderate cultivation. It can be partly controlled with cereal herbicides.

Scale: 1 space = 1mm



# Creeping bent

*Agrostis stolonifera*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

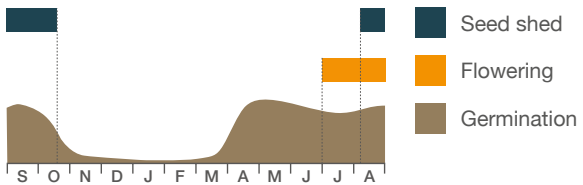
## Seed statistics

Seed weight: 0.067mg

Seeds/head: 100

Seeds/plant: 1,000–10,000

## Life cycle



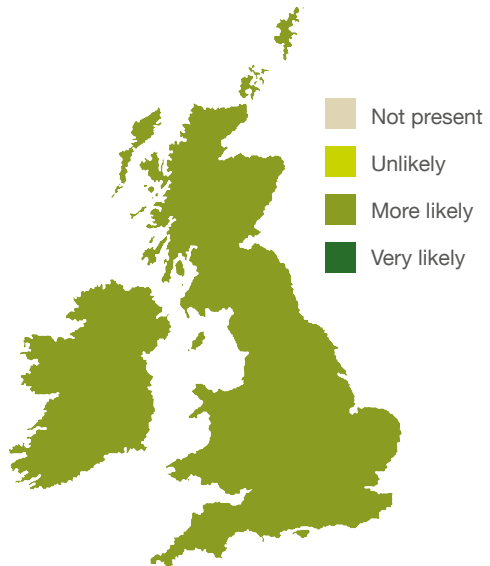
## Location

### Geographic location

Creeping bent grows throughout the British Isles up to an altitude of 950m. It tolerates a wide range of habitats from salt marshes to sand dunes and grassland to arable.

### Soil type

It is found on all soil types, from wet to dry, heavy or light soils.



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## Description

It is a close-tufted, perennial grass 8–40cm tall, spreading by means of fine stolons which produce small roots when in contact with water or moist soil. Leaves are long, narrow and pointed. The flowerhead forms an open dainty cylinder.

## Key features

**Plant:** Leaves are green or greyish-green and hairless; sheaths are rounded and smooth.

**Flowers:** The flowerheads are upright, cylindrical and usually open.

## Lookalikes

Creeping bent may be confused with black bent: creeping bent has a narrower, tighter flowerhead, and spreads by stolons not rhizomes, forming a loose tuft.

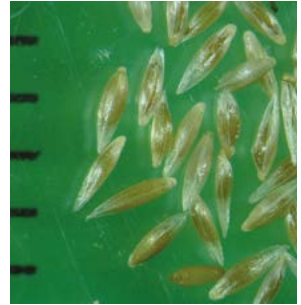
## Biology

Creeping bent can be a weed of headlands, but seldom goes far into arable fields. The plants can overwinter. In arable fields propagation by detached shoots is an important means of spread.

## Management

Spring cropping can reduce the vigour. Reasonable control of creeping bent stolons can be achieved with glyphosate, most effectively in uncropped land or summer fallows, but pre-harvest in early-harvested crops. Some residual herbicides may affect seedlings. Early cultivations can stimulate shed seed to germinate, so stale seedbeds may be used to control the young germinating plants, which can be killed by subsequent cultivation.

Scale: 1 space = 1mm



# Creeping thistle

*Cirsium arvense*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

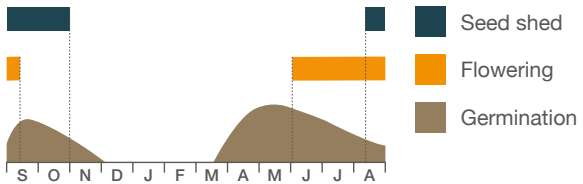
Germination depth: 5.3cm

Seed weight: 1.25mg

Seeds/head: 10–100

Seeds/plant: 4,000–5,000

## Life cycle



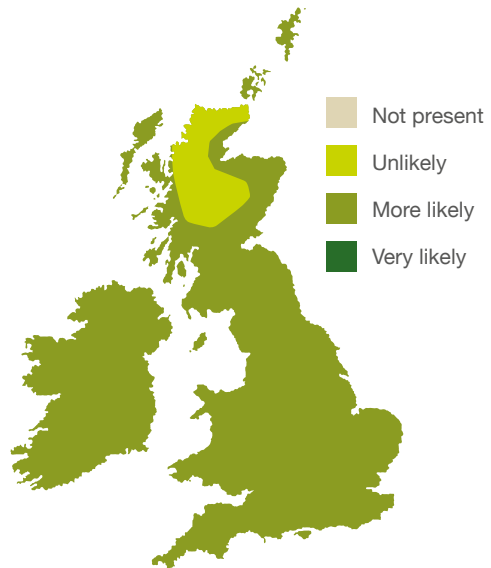
## Location

### Geographic location

Creeping thistle is found almost everywhere in Britain, on cultivated land or overgrazed pastures.

### Soil type

It prefers loams rich in nitrogen and other nutrients, which are slightly damp, and is an indicator of thin crops.



## Description

It is a perennial vigorous dicotyledon, with extensive creeping rhizomes. Plants grow up to 150cm tall, often in extensive clumps.

## Key features

**Plant:** In the field plants group close together. The stems are unwinged and shiny and the flower stalks have many small flowerheads.

## Lookalikes

Creeping thistle may be confused with spear thistle; the young plants of thistles are often difficult to tell apart. Creeping thistle is less likely to set fertile seed than other thistles. There are few marginal spines on creeping thistle. The large second leaf of spear thistle is densely hairy.

## Biology

Creeping thistle is one of the most troublesome weeds of arable land. Dense patches can interfere with cereal harvest and can be even more of a problem in potatoes and sugar beet. The plant dies back in winter while seeds are still retained in the seed head. The separate sexes need to be within a few hundred metres for seeds to be fertile, although some plants may be self-fertile. Only about 3% of the seed is viable. Plants regenerate aggressively from the extensive system of branched, lateral roots, each of which may give rise to new shoots, resulting in the formation of large clonal patches which can expand at the rate of 6m per year.

## Management

Creeping thistle is difficult to eradicate because of the extensive root system and because the waxy coating on the leaves reduces herbicide adhesion. It can be controlled by combinations of herbicides, ploughing and crop rotations, but avoid chisel ploughing or cultivations which break up rhizomes as they readily regenerate. It is possible to drag the rhizomes to the surface for desiccation in fallows.

Scale: 1 space = 1mm



# Crested dog's-tail

*Cynosurus cristatus*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

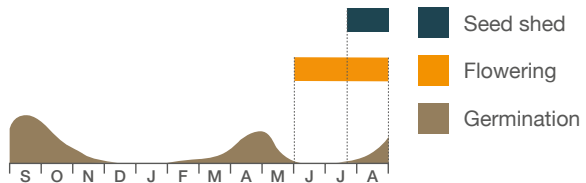
## Seed statistics

Seed weight: 0.5mg

Seeds/head: 1

Seeds/plant: 1,100

## Life cycle



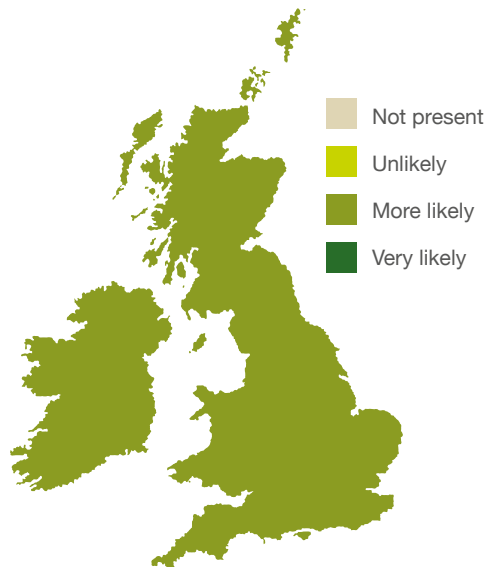
## Location

### Geographic location

Crested dog's-tail is generally a plant of lowland areas and its distribution is widespread throughout the British Isles. It is usually associated with pasture, meadow, or short swards but can be found in fallow.

### Soil type

It likes neutral to alkaline-rich well-drained soils of low- to mid-fertility.





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## Description

It is a short, densely tufted perennial grass, wiry and upright. 5–75cm tall. The leaf blades are narrow, fine and pointed. The flowerheads are densely packed with spikelets.

## Biology

Crested dog's-tail was formerly sown as a pasture plant. It remains green all winter, but in the summer the leaves die off.

## Management

It does not persist in regularly cultivated soils and can be controlled with hoeing and harrowing.

Scale: 1 space = 1mm



# Curled dock

*Rumex crispus*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

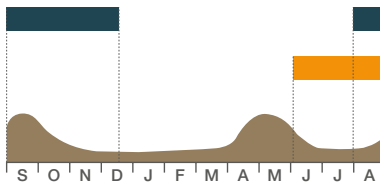
Germination depth: 3cm

Seed weight: 2mg

Seeds/head: 1

Seeds/plant: 3,000–40,000

## Life cycle



- Seed shed
- Flowering
- Germination

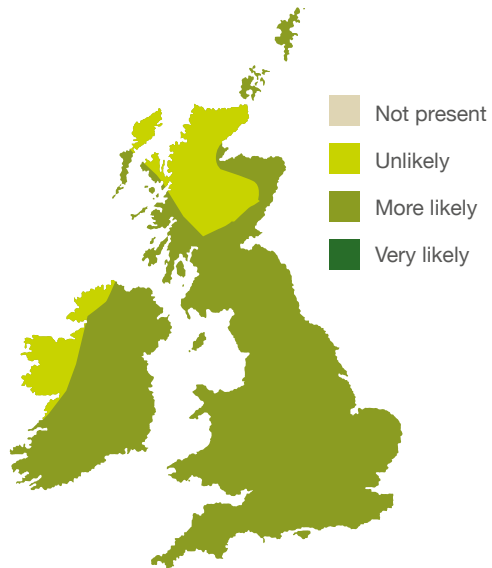
## Location

### Geographic location

Curled dock is found on verges, wasteland and arable land up to an altitude of 850m.

### Soil type

It likes nutrient-rich and compacted clay loams, and damp soils.



## Description

Curled dock is a robust dicotyledon, 50–120cm tall, though it may grow higher. It has long coarse basal leaves with wavy edges. The flowering shoot has individual flowers with heart-shaped petals in dense clusters.

## Key features

**Young plant:** The cotyledons are more slender than those of broad-leaved dock.

**Plant:** The leaves are 4–8 times longer than broad, with wavy margins.

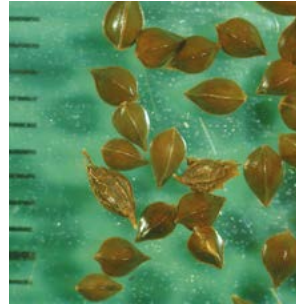
## Biology

Curled dock is often abundant on arable land with heavy, damp soils. It is found more frequently in spring than winter crops and can be difficult to control in crops other than cereals. Curled dock can overwinter as a rosette of small leaves; it is the size of this rosette which determines if the plant will flower the following year. Sometimes two crops of seeds may be produced a season. Reproduction is mainly by seed but the plant may produce vegetatively from root fragments.

## Management

In row crops, routine hoeing or pulling may be required. Control established plants in uncropped land or in grass breaks with suitable herbicides.

Scale: 1 space = 1mm



# Cut-leaved crane's-bill

*Geranium dissectum*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: 1–5 years

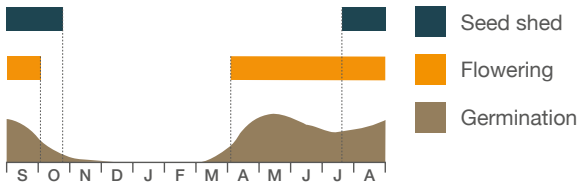
Germination depth: 6cm

Seed weight: 1.67mg

Seeds/flower: 5

Seeds/plant: 0–9,500

## Life cycle



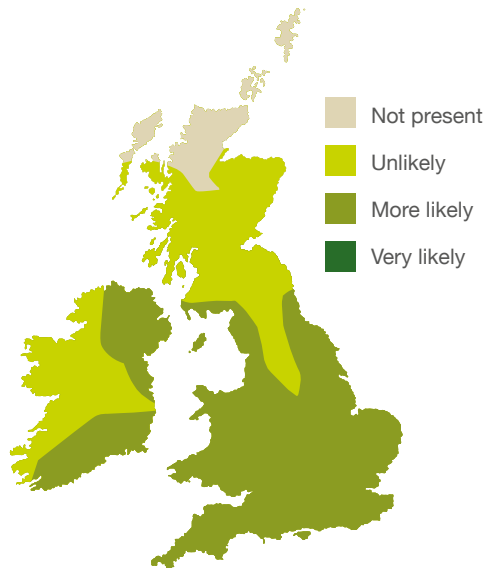
## Location

### Geographic location

Cut-leaved crane's-bill grows in disturbed warm soils up to an altitude of 350m.

### Soil type

It prefers loose, nutrient-rich, fresh loam soils.



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## Description

It is a hairy, semi-upright or sprawling, branched annual dicotyledon which grows to 60cm tall. The small pink flowers have five notched petals.

## Key features

**Plant:** The deeply divided leaves have seven lobes and a rounded outline. Stem and leaf hairs frequently end in glands (a hand lens is required).

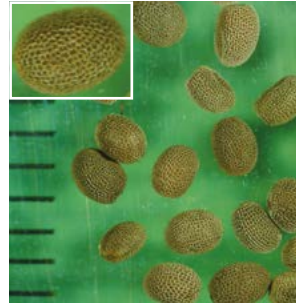
## Biology

Cut-leaved crane's-bill is fairly common in cereal crops, particularly on lighter soils and fallows. Reproduction is by seed and 80–90% of the seeds germinate. Autumn-germinating plants can overwinter.

## Management

Herbicide control is variable with residual herbicides. Sulfonylureas have useful activity.

Scale: 1 space = 1mm



# Daisy

*Bellis perennis*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

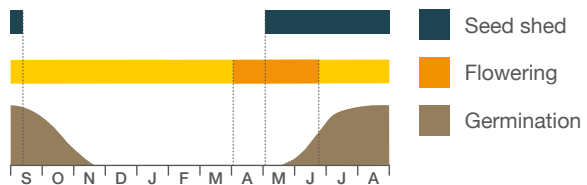
Seed longevity: 1–5 years

Seed weight: 0.125mg

Seeds/head: 150

Seeds/plant: 1,000–10,000

## Life cycle



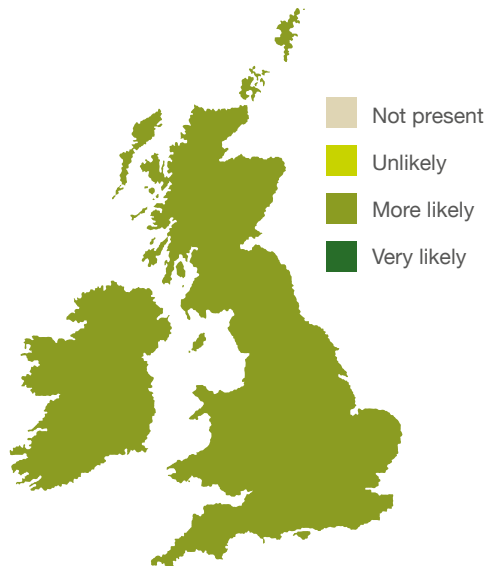
## Location

### Geographic location

Daisy is widespread throughout the British Isles, up to an altitude of 915m, growing best in mown, grazed or trampled grassland, with low or moderate amounts of bare ground.

### Soil type

It prefers neutral or chalky soils with  $\text{pH} > 5.5$ , especially those which are reasonably wet for a period.



## Description

It is a small perennial plant with a dense leaf rosette and several upright leafless stems, approximately 5–15cm long, each bearing a flowerhead of typical daisy-like flowers.

## Key features

**Young plant:** The leaves have bristly hairs.

## Lookalikes

Young daisy plants may be confused with Canadian fleabane: daisy is larger, slightly bluer and has more-rounded cotyledons.

## Biology

Daisy is a potentially perennial, broad-leaved grassland species that may be found in compacted moist soils in arable crops, particularly in field margins. A serious problem in turf grasses, it is seldom weedy in other crops and has some biodiversity value. Plants overwinter with green leaves showing and may even continue growing. Reproduction is mainly vegetative from stolons, although the seeds can germinate over a wide temperature range. The flowers develop very fast in spring and summer. Seeds may be dispersed on feet and vehicles.

## Management

Daisy does not persist with routine cultivation or hoeing, and is susceptible to cereal and some grassland herbicides.

Scale: 1 space = 1mm



# Dandelion

*Taraxacum* agg.

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

Germination depth: 2cm

Seed weight: 1mg

Seeds/head: 180

Seeds/plant: 5,000

## Life cycle



## Location

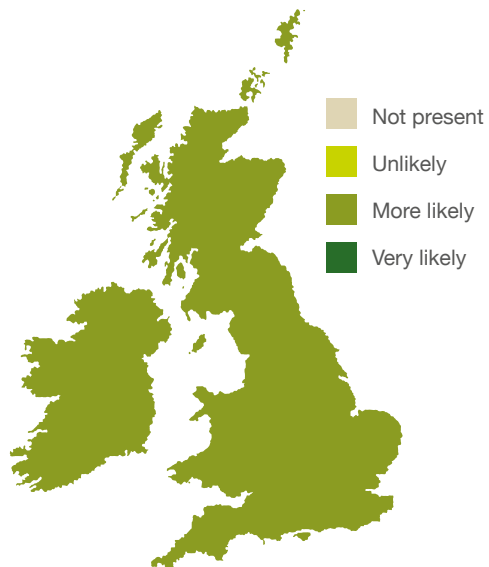
### Geographic location

Dandelion has many micro-species that are difficult to tell apart.

The whole group is found throughout the British Isles up to an altitude of 1,220m, preferring fertile, disturbed and artificial habitats.

### Soil type

Dandelions are found everywhere. They are most frequent where soils have pH >7.0





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## Description

Dandelions are often variable and have similar micro-species. All have lobed leaves in a rosette on the ground with smooth flower-bearing stems. The flowers are large and yellow.

## Key features

**Plant:** Stems all have a milky sap.

## Biology

Dandelion can be found in low-growing grassland, where there is limited disturbance. Plants can overwinter as a small rosette. New leaves are produced above those of the previous season. Reproduction is by seed or by fragmentation of the long tap root. The plant is self-fertile, pollinated by insects and the fruit is wind-dispersed.

## Management

Although found in arable crops, it is rarely a nuisance as it does not tolerate cultivation or many cereal herbicides.

Scale: 1 space = 1mm



# Dove's-foot crane's-bill

*Geranium molle*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

Seed weight: 1.25mg

Seeds/flower: 5

Seeds/plant: 100–1,500

## Life cycle



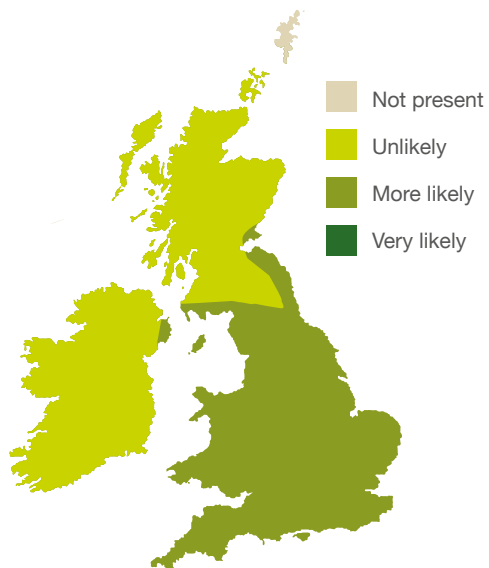
## Location

### Geographic location

Dove's-foot crane's-bill occurs in a wide range of habitats, up to an altitude of 550m. It prefers some bare ground and is not frequent in arable crops.

### Soil type

It is found on moderately dry, loose sandy soils, rich in humus and nutrients with pH >5.



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## Description

An annual dicotyledon, 10–30cm tall. The leaves are cut to less than halfway and have a rounded outline.

## Key features

**Plant:** It is distinguished from other geraniums by the almost round leaves. The stems are covered by both long and short hairs, so look softly hairy.

**Flower:** The pink petals have broad, blunt notches at the tip.

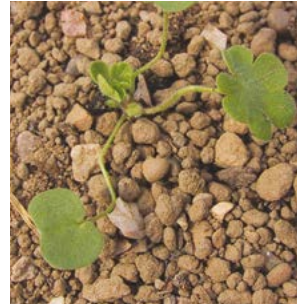
## Biology

Dove's-foot crane's-bill is found on lightly grassed margins and in arable crops, particularly in headland areas. Reproduction is by seed. It is most often seen in spring crops, but it can germinate in the autumn and overwinter and grow vigorously in more open winter crops.

## Management

In more open winter crops, control can be variable with residual herbicides. Sulfonylureas have some activity.

Scale: 1 space = 1mm



# Fat hen

*Chenopodium album*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

Seed decline: 21% per year

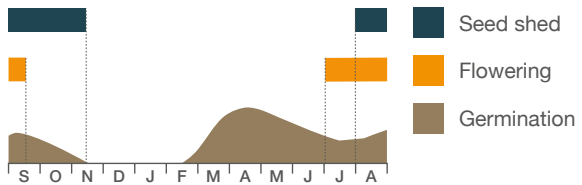
Germination depth: 4.8cm

Seed weight: 0.77mg

Seeds/flower: 1

Seeds/plant: 3,000–20,000

## Life cycle



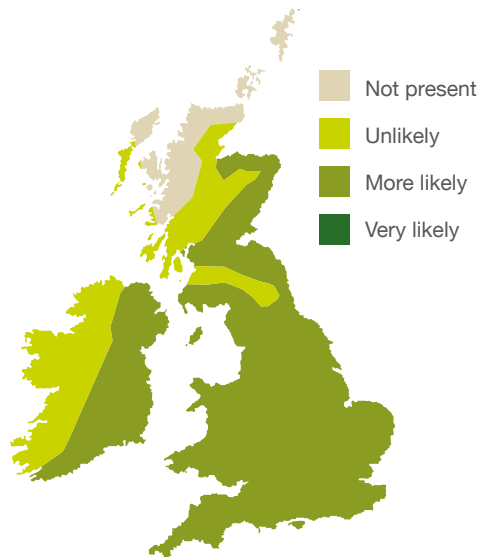
## Location

### Geographic location

This is mainly a lowland weed, distributed widely in England and Wales and the arable areas of Scotland. It prefers arable or other cultivated ground.

### Soil type

Can be found in most soil types, but prefers moist, high-nitrogen, humus-rich loams and sandy soil.



## Description

It is an annual dicotyledon, grey-green colour. It is upright, 20–50cm tall but growing to 2m in crops. The leaves are diamond shaped. The flowers are green and inconspicuous in many-flowered spikes.

## Key features

**Plant:** The plant is often narrow without spreading branches and the leaves are mealy.

## Lookalikes

Fat hen may be confused with common orache: fat hen has broader cotyledons and the undersides are often bright purple, unlike those of orache, which are bright green.

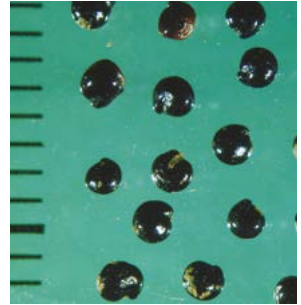
## Biology

Fat hen is one of the most important and widespread of all weeds. Primarily it is a spring weed of broad-leaved crops such as potatoes, sugar beet and open row crops. Seeds may germinate in autumn but only spring-germinating seedlings go on to flower and set seed. Seeds are spread by crop contamination and dispersed by birds and mammals; about 20% germinate immediately. Fat hen extracts large quantities of nutrients from the soil. It has a highly persistent seedbank and seeds can remain dormant in the soil for many years.

## Management

It is vital to prevent seed shed from fat hen to control population increase. There are a number of broad-spectrum herbicides that give good control.

Scale: 1 space = 1mm



# Field bean

*Vicia faba*

Competitive in



WW



WOSR



Spring crops



Resistance

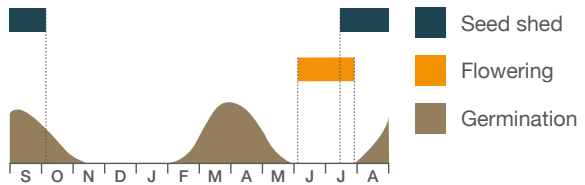


Value to biodiversity

## Seed statistics

Seed weight: 550mg

## Life cycle



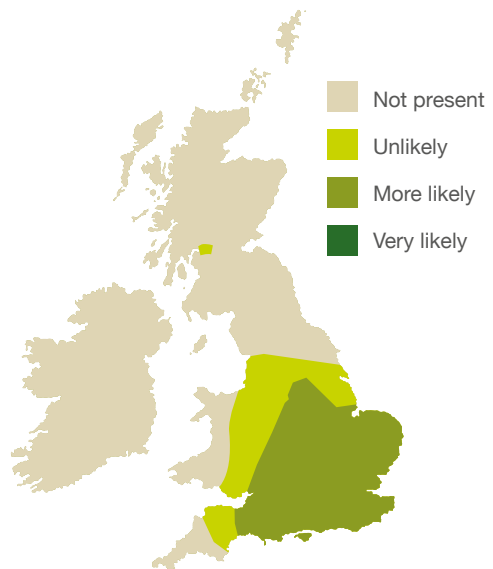
## Location

### Geographic location

Field bean is found in lowland areas in the midlands and south of England and southern Scotland, as a volunteer in arable fields, as a result of previous cropping.

### Soil type

It can grow on any soil type but prefers cultivated rich loams.



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## Description

It is a robust annual dicotyledon, blue green in colour, growing to 2m with two or more stems from the base. The leaves are divided into six large oval leaflets. Flowers are like those of a pea with 5 or more growing in clusters in the leaf axils.

## Key features

**Young plant:** It is very sturdy with no visible cotyledons.

## Biology

Field bean is found as a volunteer in arable fields as a result of previous cropping. It does not persist for long in the seedbank if controlled in the crop. Field bean may germinate in autumn and overwinter. It grows best in moist cool conditions.

## Management

Delaying cultivation allows predation of seeds on the soil surface. Field bean is easily controlled by hormonal herbicides and sulfonylureas in cereals.

Scale: 1 space = 1mm



# Field bindweed

*Convolvulus arvensis*



## Seed statistics

Seed longevity: >5 years  
Germination depth: 6.9cm  
Seed weight: 10mg  
Seeds/flower: 1-4  
Seeds/plant: 550

## Life cycle



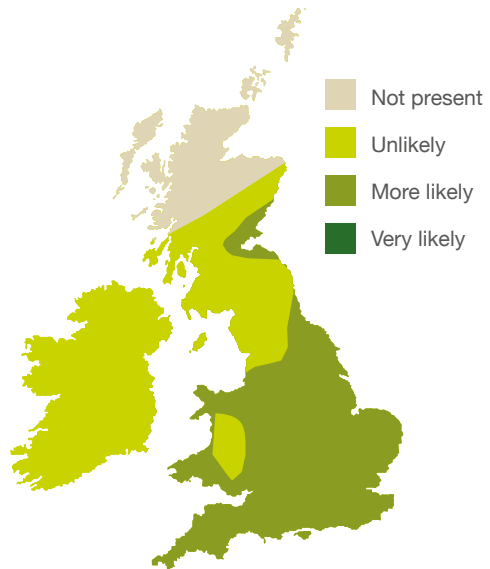
## Location

### Geographic location

Field bindweed is found in a wide variety of lowland habitats including verges, waste tips, and disturbed and arable ground.

### Soil type

It likes dry, warm, nutrient-rich deep and loose loams.





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## Description

It is a perennial dicotyledon, 20–100cm tall, which trails or climbs up other plants. The flowers are trumpet-shaped, usually striped pink and white.

## Key features

**Plant:** The heart-shaped leaves are rounded at the tip and the plant twines to the left, anti-clockwise.

## Lookalikes

Field bindweed may be confused with black-bindweed as young plants.

The difference is in the cotyledons; black-bindweed has long cotyledons with short stalks, while field bindweed has oval cotyledons, notched at the tip.

## Biology

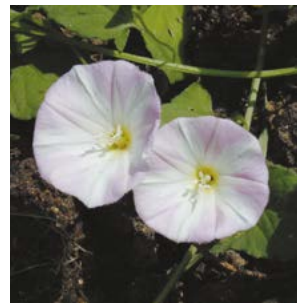
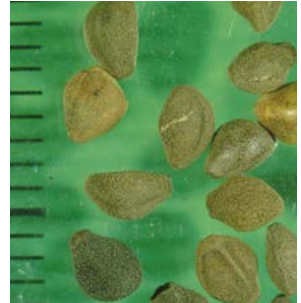
Field bindweed is a persistent and troublesome perennial weed. It can be found both on disturbed arable land and on undisturbed sites such as field margins.

Field bindweed plants die back in autumn. The roots overwinter although they can be susceptible to freezing. The plants can regenerate from fragments of horizontal roots and, though seed set is unlikely in Britain, the long-lived seeds rapidly germinate. Seeds may be dispersed by birds. It can severely reduce crop yield and also cause difficulties with harvesting. Field bindweed does not persist in long grass leys or in grazed or mown land.

## Management

The leaves and stems are difficult to wet with herbicides, but spring herbicides for broadleaved weeds in cereals are effective. It can be controlled in fallow with glyphosate.

Scale: 1 space = 1mm



# Field forget-me-not

*Myosotis arvensis*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

Germination depth: 5cm

Seed weight: 0.29mg

Seeds/flower: 4

Seeds/plant: 0–3,000

## Life cycle



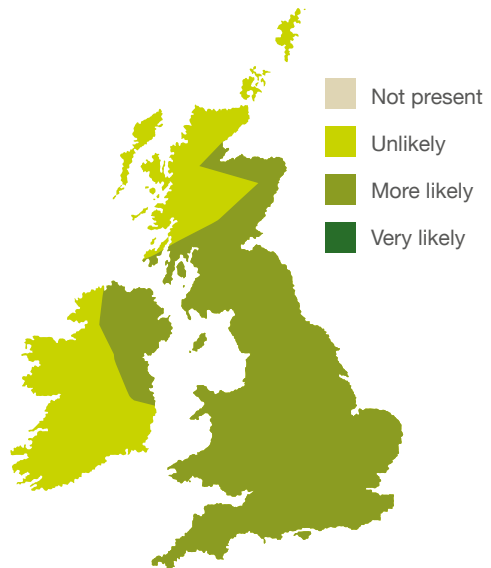
## Location

### Geographic location

Forget-me-not is usually found on arable land or other habitats with bare soils. It can grow above an altitude of 600m.

### Soil type

There is no particular soil type associated with this weed.



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## Description

It is a short, soft-haired annual or biennial, 10–50cm tall with the lower leaves forming a rosette. The flower stalk curves at the end into a scroll with the buds to one side. The small flowers have five blue petals and a yellow tube.

## Lookalikes

Young field forget-me-not plants may be confused with daisy, but daisy has no hairs on the cotyledons.

## Biology

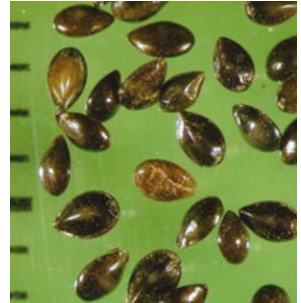
Field forget-me-not is common in winter cereals and winter oilseed rape and can also occur in spring crops. It is generally not very competitive but can occur in very high numbers competing with the young crop.

The mature plant can overwinter as a small rosette and seedlings which germinate in autumn can also survive winter. The plant reproduces by seed. Seeds can be moved by ingestion by animals. Plants may re-sprout and flower when the leaves have been removed.

## Management

It is controlled by a range of residual herbicides and some foliar treatments, but not hormonal herbicides.

Scale: 1 space = 1mm



# Field horsetail

*Equisetum arvense*

Competitive in



WW



WOSR



Spring crops



Resistance

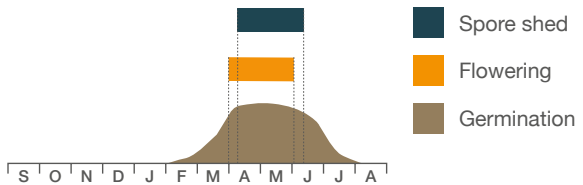


Value to biodiversity

## Seed statistics

Seed information is not relevant to the field horsetail, which reproduces via spores.

## Life cycle



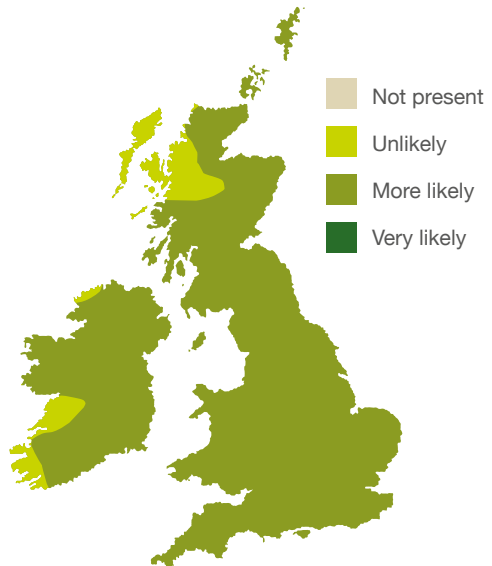
## Location

### Geographic location

Field horsetail is widespread around Britain in many habitats including roadsides, paths, gardens and waste ground up to an altitude of 1,000m.

### Soil type

It can tolerate a wide range of soil moisture and types.



## Description

Horsetails belong to an ancient family of their own and have no closely related existing relatives. The leaves have reduced to scales and the stem is the main photosynthetic organ. Stems contain a large amount of silica. A coarse-looking perennial, it tends to occur in patches. It grows up to 80cm tall and stems are wiry with whorls of needle-like branches. The fertile stem ends in an organ that produces spores (sporangium).

## Key features

**Plant:** The plants have wiry stems which feel gritty when rubbed due to the high silica content. Leaves are like bristles. The rhizomes are black.

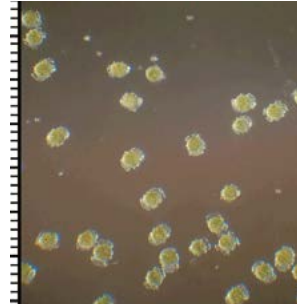
## Biology

Horsetail can be a problem in perennial crops, where it is not readily controlled. The wiry stems interfere with harvesting arable crops. It reproduces mainly from rhizome fragments and also from the short-lived spores. Plants overwinter as rhizomes, producing fertile shoots in April and sterile shoots later.

## Management

It is difficult to control with herbicides, but does not readily persist with routine cultivation.

Scale: 1 space = 1mm



# Field pansy

*Viola arvensis*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

Seed decline: 36% per year

Germination depth: 0.5cm

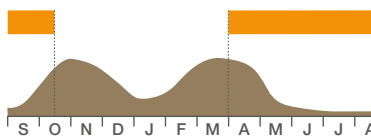
Seed weight: 0.4mg

Seeds/flower: 44–75

Seeds/plant: 2,500

## Life cycle

Unknown



- Seed shed
- Flowering
- Germination

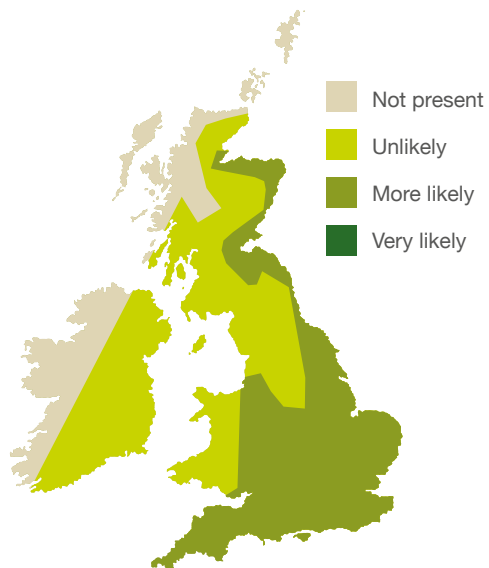
## Location

### Geographic location

Field pansy is a weed of cultivated land or other open lowland habitats.

### Soil type

It is found on all soil types with an open aspect but less frequently on poorly aerated or waterlogged soils.



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## Description

A rather weak semi-upright annual dicotyledon, up to 30cm tall. The pale-green lobed or toothed leaves have deeply divided projections at the base. The typical pansy flowers are cream, possibly tinged with purple, and with a violet projection or spur behind.

## Key features

**Plant:** Field pansy has a less robust appearance than wild pansy.

**Flowers:** It is distinguished from wild pansy by its paler smaller flowers. The petals are shorter than the sepals.

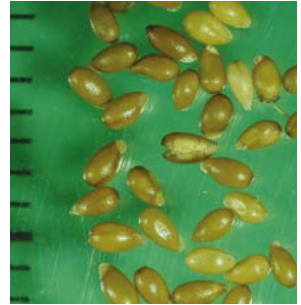
## Biology

Field pansy is very widespread in cereal crops. It may be more common in winter crops but has increased in spring crops, possibly encouraged by winter cropping. Autumn-germinating field pansy can overwinter and these plants will flower early the following year. The seed is dispersed from an explosive seed head. The plant stems can interfere with combine cutter bar operation.

## Management

Residual herbicide treatments are generally effective in autumn- and spring-sown crops.

Scale: 1 space = 1mm



# Fool's parsley

*Aethusa cynapium*

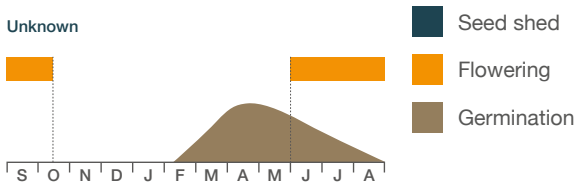
Competitive in

WW	WOSR	Spring crops	Resistance	Value to biodiversity
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## Seed statistics

Seed longevity: >5 years  
Seed weight: 2.5mg  
Seeds/floret: 2  
Seeds/plant: 500

## Life cycle



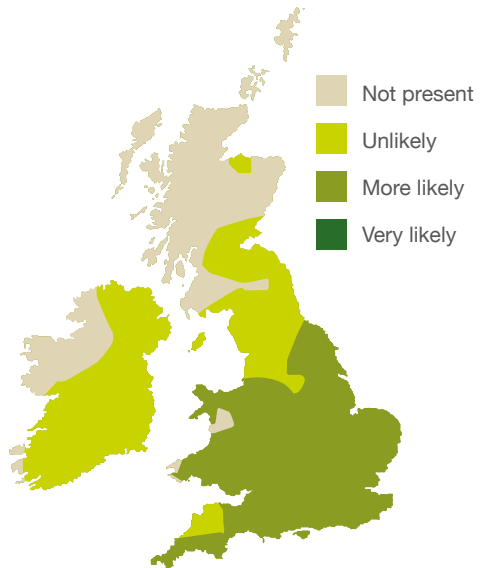
## Location

### Geographic location

Distributed towards the south of Britain, fool's parsley is found on cultivated lands, in undergrowth and water meadows.

### Soil type

It is usually found on nutrient-rich soils, which may be chalky or neutral to alkaline loams.





## Description

It is an annual, very variable in height, up to 50cm tall but usually only about 20cm on arable land. The leaves are repeatedly divided, similar to those of parsley. The small white flowers are in flat-topped flowerheads.

## Key features

**Flowers:** Fool's parsley has downward-pointing projections (bracteoles) under each flower.

## Lookalikes

Fool's parsley can be mistaken for wild carrot at the seedling stage. The cotyledons of fool's parsley are wider and shorter and the first true leaves less finely divided than those of wild carrot.

## Biology

The plants germinate in spring and die back after flowering.

## Management

Fool's parsley can be controlled in arable land by grass breaks of 2–3 years and reduced by growing shading break crops. Seedlings can be successfully harrowed when small. It is not controlled by hormone herbicides. Treat when young with sulfonylureas or contact herbicides in cereals.

Scale: 1 space = 1mm



# Garlic mustard

*Alliaria petiolata*



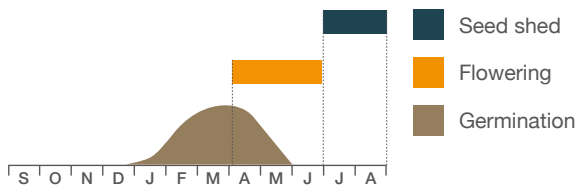
## Seed statistics

Seed longevity: >5 years

Seed weight: 2.5mg

Seeds/flower: 20

## Life cycle



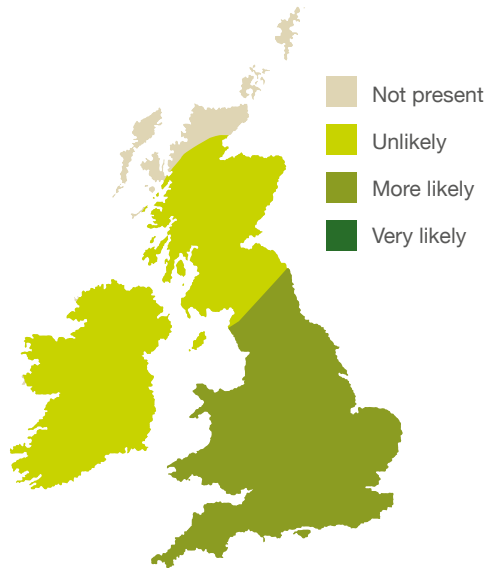
## Location

### Geographic location

Generally a lowland plant, garlic mustard inhabits a wide range of habitats, including hedgerows, waste ground, farmyards and gardens.

### Soil type

It prefers fertile moist soils but can grow on all but the most acidic.



---

## Description

It is a biennial or perennial dicotyledon, 20–120cm tall. The stem is upright and much branched with heart-shaped to triangular, shiny and strongly veined leaves. Up to 30 small white flowers with four petals form at the top of the flower stalk.

## Key features

**Plant:** The leaves smell of garlic when crushed.

## Biology

Garlic mustard grows in field margins and hedgerows and does not tolerate cultivation or crop competition in arable fields. It overwinters as a rosette of small leaves. The seeds may remain dormant for 18 months or longer.

## Management

Care should be taken to reduce seed returning to the seedbank.

Scale: 1 space = 1mm



# Great brome

*Anisantha diandra*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: <1 year

Seed weight: 10mg

## Life cycle

Unknown



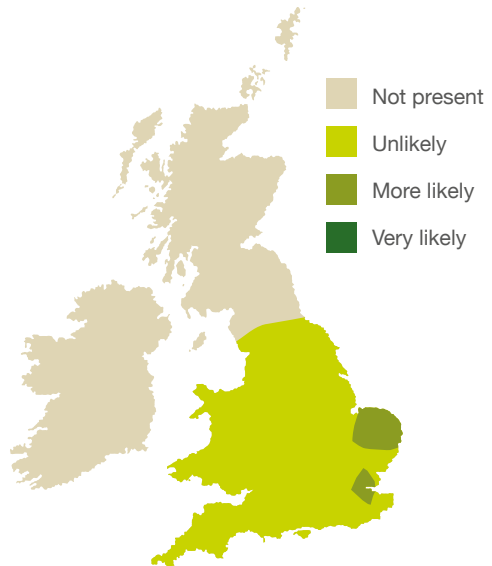
## Location

### Geographic location

Great brome grows generally in the south and east of England, but has spread as far north as southern Scotland. It is found in arable fields, waste ground and roadsides.

### Soil type

It prefers sandy soils and dunes.



---

## Description

It is an annual grass, 35–90cm tall. It is loosely tufted or solitary, usually spreading habit. Leaves are hairy towards the top of the plant. Flowerheads are very open with single spikelets on each branch.

## Key features

Great brome looks like a larger form of barren brome.

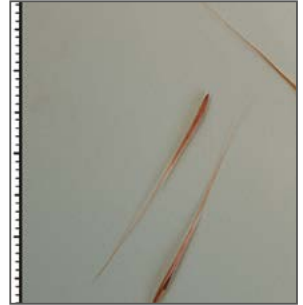
## Biology

Great brome emerges in the autumn and has a relatively short-lived seed.

## Management

Moving to spring cropping reduces the infestation. Mouldboard ploughing to 15cm immediately after harvest assists control.

Scale: 1 space = 1mm



# Green field-speedwell

*Veronica agrestis*

Competitive in

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WW	WOSR	Spring crops	Resistance	Value to biodiversity

## Seed statistics

Seed longevity: >5 years

Seed weight: 0.6mg

Seeds/flower: 8–16

Seeds/plant: 1,000–10,000

## Life cycle



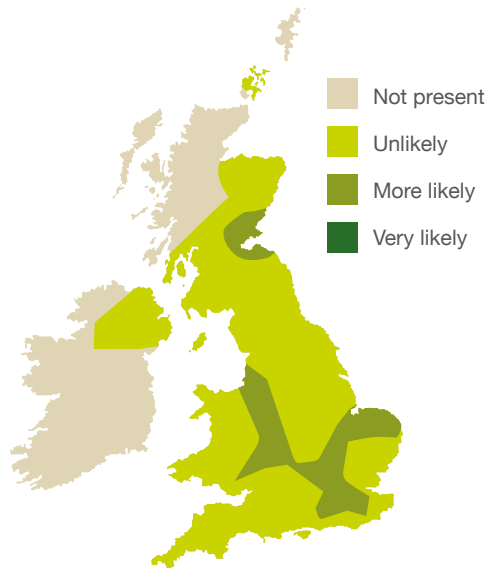
## Location

### Geographic location

Green field-speedwell prefers cultivated land, gardens or allotments, usually below an altitude of 400m.

### Soil type

It prefers well-drained acidic soils, but may be present on chalky soils where there is surface leaching.



---

## Description

It is a creeping hairy annual, 10–30cm tall, forming a loose cushion. It has oval pale green leaves with blunt rounded teeth. The small very pale blue flowers are borne on long stalks growing from the leaf axils.

## Key features

**Fruit:** The two-lobed fruit is longer than it is wide, and is covered in many glandular hairs.

## Biology

Green field-speedwell is found in spring cereals and vegetable crops but is not a very competitive weed in vigorous cereal crops. It germinates mainly in spring although some seeds may germinate in autumn. It needs relatively high temperatures for germination so it germinates later than other species.

## Management

In row crops it can be controlled by harrowing or hoeing if herbicides are not available. It does not persist in grass leys. Wide range of herbicide options, although need to consider resistance implications.

Scale: 1 space = 1mm



# Groundsel

*Senecio vulgaris*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

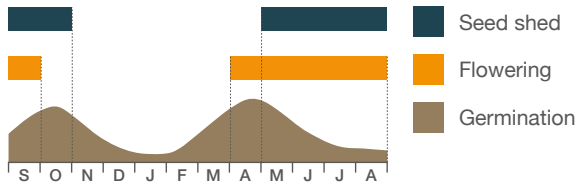
Germination depth: 2cm

Seed weight: 0.29mg

Seeds/head: 40

Seeds/plant: 2,000–3,500

## Life cycle



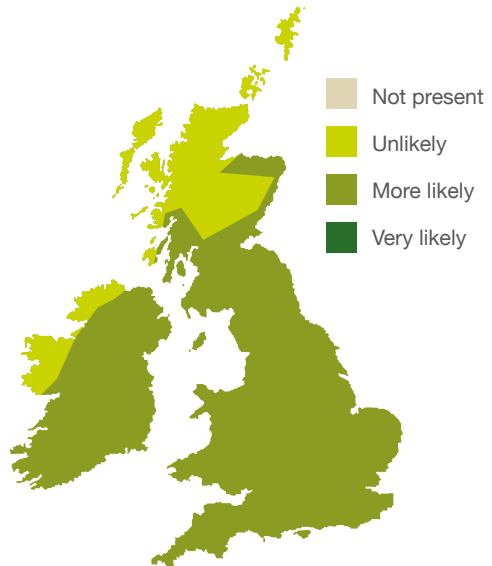
## Location

### Geographic location

Groundsel grows up to an altitude of 500m, in open habitats such as arable soils, waste places and rubbish tips.

### Soil type

It grows best in loose sandy loams, or nutrient-rich sandy soils with a pH usually >6.





## Description

It is a short hairy annual, 10–40cm tall. The stem is upright with loose cut leaves. The flowerhead, which contains a number of daisy-like flowers, may curve over.

## Key features

**Flower:** The sepal-like bracts outside the flowerheads have black tips.

## Biology

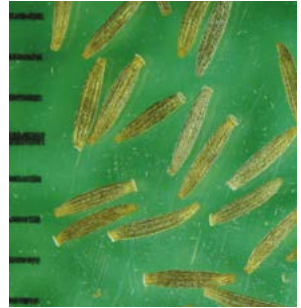
Groundsel is common in arable fields. With a short lifespan it is able to produce several generations in one year. Although increasingly found in autumn and spring arable crops because of its abundance in fallows, it is seldom a major problem. Groundsel may increase in stubble-sown crops, as it successfully colonises firm seedbeds.

Seeds germinate throughout the whole year and in a good year plants shed seeds by early June which can give rise to more than one generation a year. Plants are able to overwinter. The seeds can be dispersed by wind, but the wetted fruits become sticky and can be carried by animals or humans.

## Management

Groundsel is controlled by some residual herbicides but can reappear in open crops in spring, where it is susceptible to a wide range of foliar herbicides. It is a nuisance in perennial crops where herbicides choices are limited.

Scale: 1 space = 1mm



# Hedge mustard

*Sisymbrium officinale*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

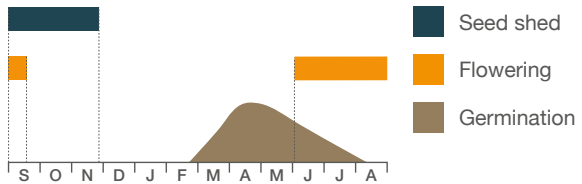
Germination depth: 5cm

Seed weight: 0.14mg

Seeds/head: 9–18

Seeds/plant: 2,700

## Life cycle



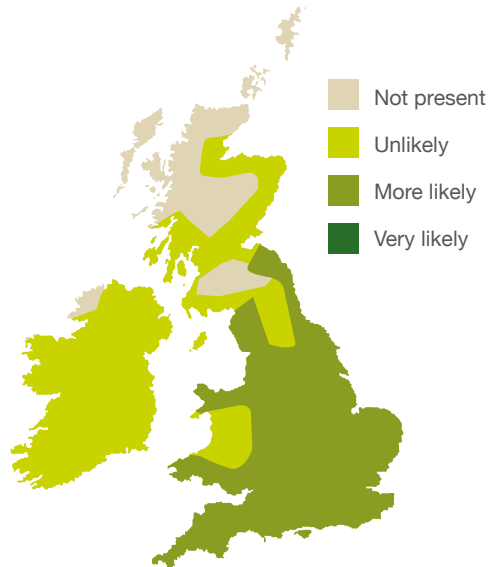
## Location

### Geographic location

Hedge mustard occurs in cultivated ground, hedgerows and waste ground, including field margins, in lowland areas up to an altitude of 350m.

### Soil type

It likes dry, loose, nutrient-rich loams and sandy and stony soils.



---

## Description

It is an annual or over-wintering annual, 30–60cm tall, with almost horizontal branching stems and deeply cut spear-shaped and lobed leaves. The yellow flowers are very small with four petals, in flat-topped flowerheads.

## Key features

**Plant:** It is a much-branched mustard-type plant. The branches are usually parallel to the ground.

## Biology

Hedge mustard appears in spring-sown crops and poorly competitive winter cereals.

The flowers are pollinated by insects. Hedge mustard reproduces only by seed, which is wind-dispersed.

## Management

A stale seed-bed approach may be used to control this species.

Scale: 1 space = 1mm



# Hemlock

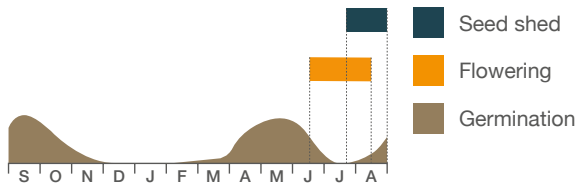
*Conium maculatum*



## Seed statistics

Seed weight: 3.33mg

## Life cycle



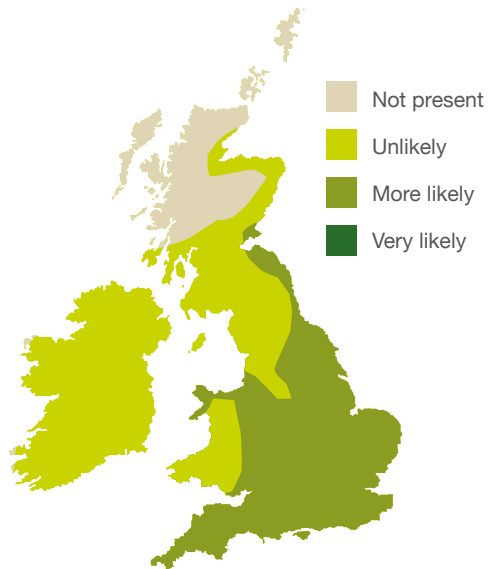
## Location

### Geographic location

Hemlock is generally a lowland plant and usually prefers damper soils on waste tips and roadsides, and in perennial crops.

### Soil type

It prefers damper, nutrient-rich soils.



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## Description

It is a biennial dicotyledon, 50–200cm tall, ferny leaves with angular leaflets and white lacy flowerheads.

## Key features

**Plant:** It has purple-spotted, hairless stems and an unpleasant mouse-like smell. It is extremely poisonous.

## Biology

Hemlock is most often a weed of perennial crops, as it does not persist in regularly cultivated fields. It germinates in autumn and overwinters as a rosette of divided leaves. The plants can live for one or two years.

## Management

Control the plant in arable crops to prevent persistence into grass leys. The weed is very toxic to livestock. Plants should be controlled with glyphosate and all livestock should be excluded until the weed has died back completely.

Scale: 1 space = 1mm



# Henbit dead-nettle

*Lamium amplexicaule*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

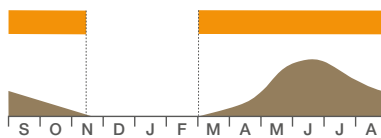
Seed longevity: >5 years

Seed weight: 0.5mg

Seeds/plant: 200

## Life cycle

Unknown



- Seed shed
- Flowering
- Germination

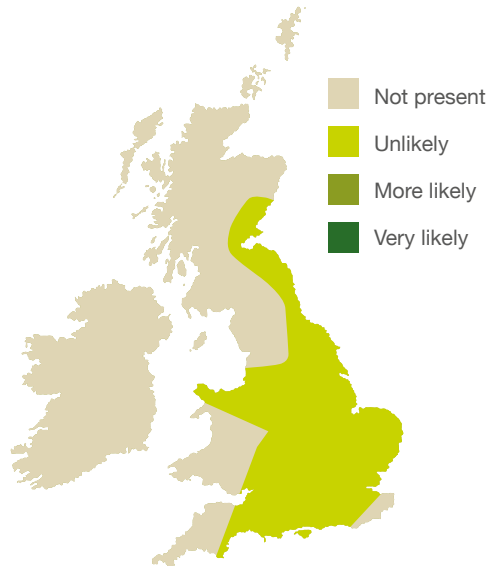
## Location

### Geographic location

Henbit dead-nettle is common on arable and fallow land to the south east of Britain. It grows up to an altitude of 450m.

### Soil type

It prefers light dry humus and sandy loam soils which are nutrient rich.



---

## Description

It is an annual bushy and branched dicotyledon, 25cm tall. The pink flowers are less conspicuous than those of other dead-nettles.

## Key features

**Young plant:** The first true leaves are rounded.

**Plant:** The leaves are rounded with wavy edges and the upper leaves appear to circle the stem.

## Lookalikes

Henbit dead-nettle may be confused with red dead-nettle; the dead-nettles can be difficult to distinguish at the seedling and young plant stages. The first true leaves of henbit dead-nettle are paler than the other dead-nettles.

## Biology

Henbit dead-nettle is common on arable land, where it is most often found in winter crops. Plants are self-fertile and in dull weather can fertilise themselves while in the bud. The seeds germinate in spring and summer and small plants can overwinter.

## Management

It may be controlled by spring cropping and by a range of herbicides suitable for broad-leaved weeds.

Scale: 1 space = 1mm



# Italian rye-grass

*Lolium multiflorum*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

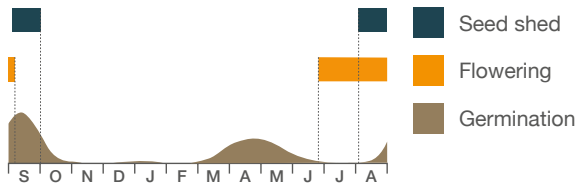
## Seed statistics

Seed longevity: >5 years

Seed weight: 2.5mg

Seeds/head: 100

## Life cycle



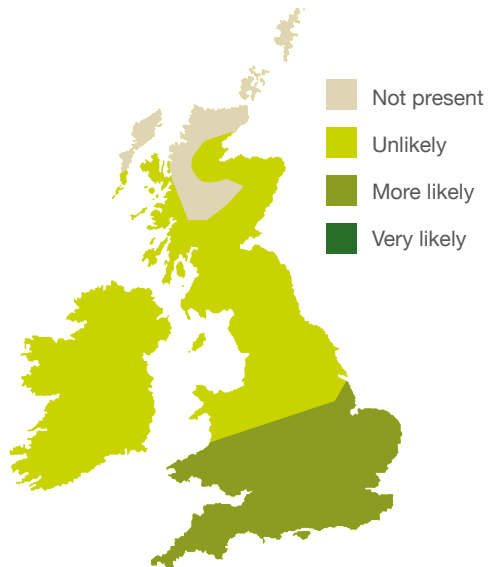
## Location

### Geographic location

Italian rye-grass is mainly found in the south of Britain, on verges and field borders, mainly in lowland areas at altitudes below 400m.

### Soil type

It prefers well-drained soils of a moderate pH and high nitrogen





## Description

It is a leafy annual or biennial grass, 30–100cm tall. The stems are tufted or solitary with an upright or spreading habit and green hairless leaves. Italian rye-grass tends to be larger, stouter and more densely tufted than perennial rye-grass.

## Key features

**Plant:** It is distinguished from perennial rye-grass by the leaves which are rolled in the shoot and the large auricles.

**Flowers:** The lower bract is awned. Flowerheads are arranged at 90 degrees to the flower stem.

## Biology

Italian rye-grass is an economically important forage grass increasing as a weed problem in many areas of the UK. It can grow from seed or vegetatively from badly ploughed-in tufts or rooting stems. Autumn-germinating plants can overwinter. It can become a severe weed in arable crops where pasture forms part of the rotation.

## Management

Use glyphosate in fallows, as a pre-harvest treatment and in break crops. Reducing seed spread by cleaning equipment between fields and avoiding using fields with heavy rye-grass populations will greatly decrease rye-grass problems.

Scale: 1 space = 1mm



# Ivy-leaved speedwell

*Veronica hederifolia*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

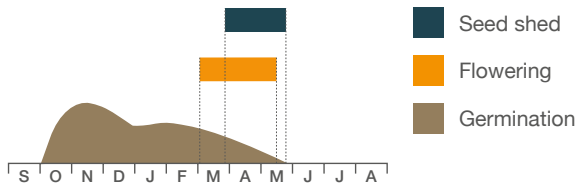
Germination depth: 0.5cm

Seed weight: 3.91mg

Seeds/flower: 2

Seeds/plant: 40–100

## Life cycle



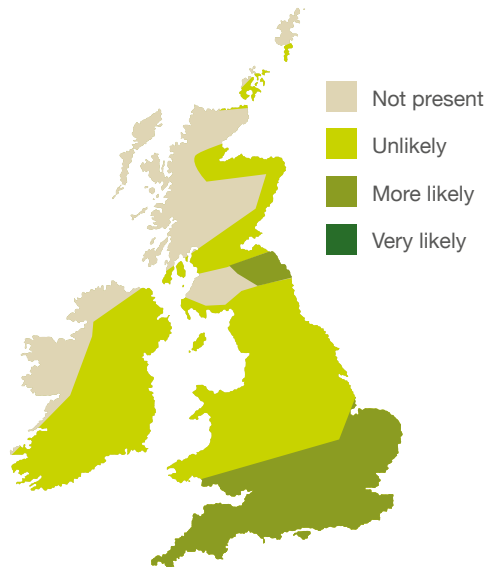
## Location

### Geographic location

Ivy-leaved speedwell is a lowland plant, growing up to an altitude of 380m. It prefers open arable land, gardens and other bare or disturbed soils. It grows particularly in winter cereals, but is increasingly found in spring cereals in the west and north, as populations have been encouraged by winter cropping.

### Soil type

It is found on warm, loose, nutrient-rich mild loam soils.



---

## Description

A creeping hairy branched annual with ivy-shaped five-pointed leaves. The flowers are small, lilac to white in colour and the fruit is three-dimensional, heart-shaped and hairy.

## Key features

**Young plant:** The cotyledons end in a knob.

**Fruit:** The fruit has no lobes and is hairy.

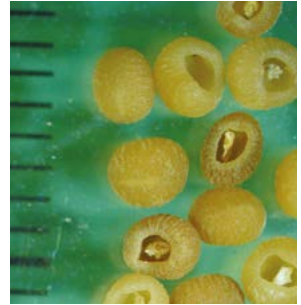
## Biology

Ivy-leaved speedwell reproduces by seed, which germinates in cold conditions in late autumn or early spring.

## Management

Autumn residual herbicides are effective but late-germinating seedlings can escape. Spring foliar treatments based on sulfonylureas plus contact herbicides are effective in cereals.

Scale: 1 space = 1mm



# Knapweed

*Centaurea nigra*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

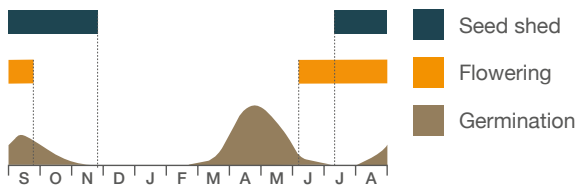
Seed longevity: 1–5 years

Seed weight: 2.5mg

Seeds/flower: 1

Seeds/plant: Up to 1,000

## Life cycle



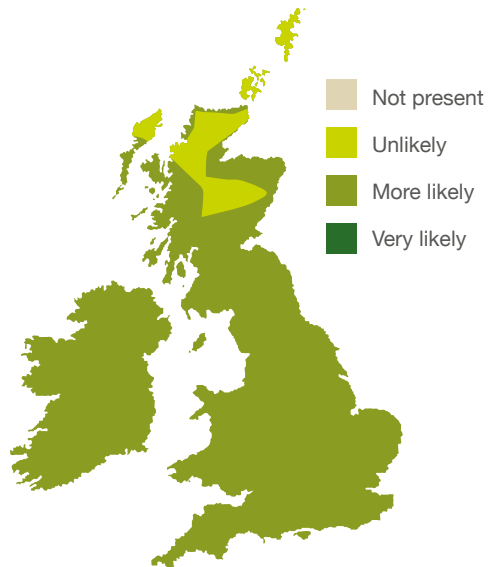
## Location

### Geographic location

Knapweed grows at altitudes of up to 600m in waste ground, field margins and roadsides, meadows and pastures.

### Soil type

It can tolerate a wide range of soils, but prefers unmanured sites.



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## Description

It is a downy, perennial dicotyledon, with upright, tough, usually branched stems, 30–60cm tall. It has a rosette of leaves at the base and purple thistle-like flowerheads.

## Key features

**Young plant:** The first true leaves have a dark colour.

## Biology

Knapweed is more common in older pastures and is usually found on the margins of arable land. Although the plant dies back overwinter it is a perennial. Plants mainly reproduce by seed, which may survive for several years, if they survive predation by insects or small mammals. Plants may reproduce vegetatively if side shoots become detached from the parent plant.

## Management

It does not persist in cultivated soils and is readily controlled with glyphosate in uncropped breaks.

Scale: 1 space = 1mm



# Knot-grass

*Polygonum aviculare*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

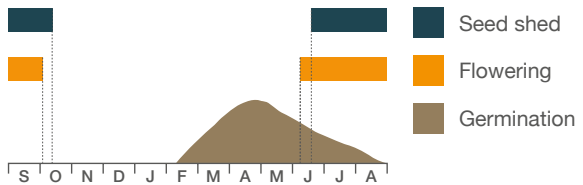
Seed longevity: >5 years

Seed weight: 1.45mg

Seeds/flower: 1

Seeds/plant: Up to 1,000

## Life cycle



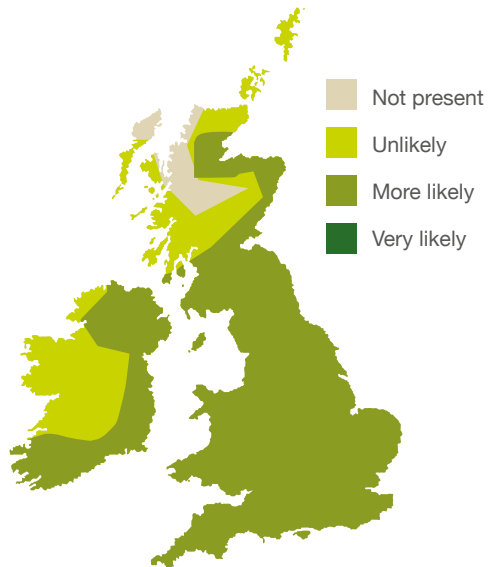
## Location

### Geographic location

Knot-grass is found up to an altitude of 550m in all areas of Britain. It is common on arable and other disturbed or trampled land, demolition sites, soil heaps, manure and waste heaps, paths and tracks but not woodland or very wet habitats.

### Soil type

It is most frequently found on bare fertile soils, but not waterlogged sites.



## Description

It is a low-growing spreading annual, 10–100cm long, with many branched stems; the plants may be creeping or upright and in a cereal crop may have vertical shoots. The leaves are narrow and spear-shaped.

## Key features

**Young plant:** The hypocotyl is long and crimson.

**Plant:** The stems do not end in a flowerhead, as the tiny pink flowers occur in the leaf axils.

## Biology

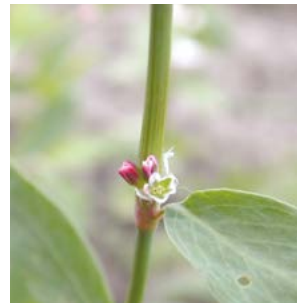
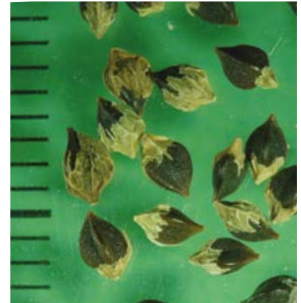
Knot-grass tends to be a worse weed in open and spring-sown crops, e.g. spring beans, sugar beet, kale, linseed and potatoes, than in winter cereals, beans and even wheat crops.

It reproduces from seeds, which can form a persistent seedbank. The seeds are relatively large; they may be dispersed in mud on footwear and on tyre treads and can survive ingestion by stock and by birds. They germinate largely in spring and are returned to a state of secondary dormancy when late spring temperatures rise, so produce only one generation a year. Autumn-germinating seeds do not survive the winter. The vegetative part of the plant can regenerate if cut off during the growing season.

## Management

Dormancy is broken by winter chilling so spring cultivation can increase plant numbers. Shallow burial promotes emergence compared with deep ploughing but ploughing will increase the persistence of seedbanks. In cereals, combinations of hormone, sulfonylurea and contact herbicides are often needed for good control. Control can be variable in spring brassica crops, beet, potatoes and legumes if soil conditions are dry and residual herbicides do not work well.

Scale: 1 space = 1mm



# Linseed

*Linum usitatissimum*

Competitive in



WW



WOSR



Spring crops



Resistance



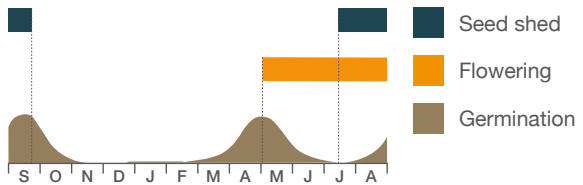
Value to biodiversity

## Seed statistics

Seed weight: 8mg

Seeds/plant: <1 year

## Life cycle



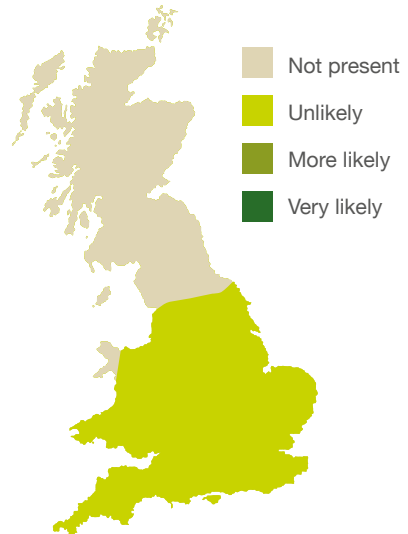
## Location

### Geographic location

Linseed is found in southern Britain as a volunteer from previous crops or the result of scattered bird seed on banks and verges.

### Soil type

It can grow on a wide range of soil types.





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## Description

It is a hairless, annual dicotyledon, up to 75cm tall. The plants have slender stems and spear-shaped leaves. The large, usually blue, flowers have 5 petals.

## Key features

**Young plant:** The three-veined leaves are well spaced and needle-shaped.

**Flowers:** All the sepals are pointed and the petals fall off early in the afternoon.

## Biology

Linseed and flax are different cultivars of *Linum usitatissimum*. The tall form, flax, is rarely grown for linen fibre. The short form linseed is the usual crop grown to produce linseed oil. Both can occur as crop volunteers, generally in the season following the crop. Autumn-germinating plants may be killed by winter frosts.

## Management

Control can be helped by a stale seedbed after the crop is harvested to encourage predation and germination of seeds. Linseed is surprisingly tolerant of a wide range of herbicides but may be controlled with some hormone herbicides.

Scale: 1 space = 1mm



# Long-headed poppy

*Papaver dubium*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

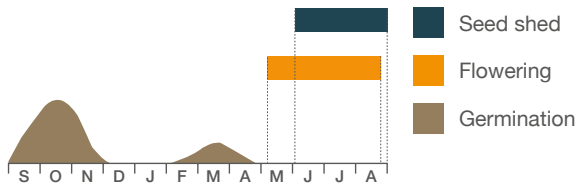
Seed longevity: >5 years

Seed weight: 0.1mg

Seeds/flower: 2,000

Seeds/plant: 18,000

## Life cycle



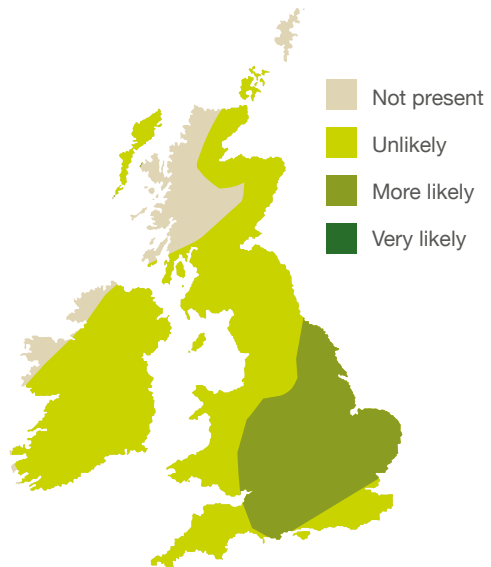
## Location

### Geographic location

Long-headed poppy is a lowland plant found in arable fields, wastelands and gardens. It is now largely restricted to the chalk of southern England, though it does occur on outlying sites in Norfolk, Northamptonshire and Cornwall.

### Soil type

It is found on light or heavy chalky soils.



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## Description

It is an upright, annual 30–60cm tall. The stems are hairy at the base with the hairs parallel to the stem. The leaves at the base form a rosette of divided segments. The broken stem bleeds a white sap. The large flowers have four red petals without blotches. The seedhead is long.

## Key features

**Fruit:** The seedhead is long and smooth.

## Biology

Long-headed poppy occurs as a cereal weed, though it is less frequent on arable land than common poppy. The plants reproduce entirely by seed; autumn-germinating plants can overwinter. The small green seed heads can block combine sieves at harvest and the seeds can contaminate oilseed rape seed samples.

## Management

It is readily controlled in cereal crops and uncropped land with herbicides.

Scale: 1 space = 1mm



# Loose silky bent

*Apera spica-venti*

Competitive in

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WW	WOSR	Spring crops	Resistance	Value to biodiversity

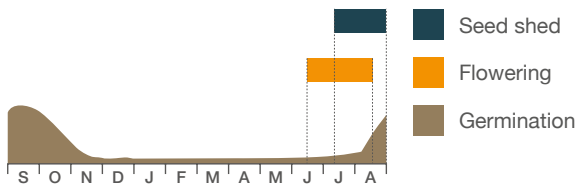
## Seed statistics

Seed longevity: >5 years

Seed weight: 0.067mg

Seeds/plant: Up to 600

## Life cycle



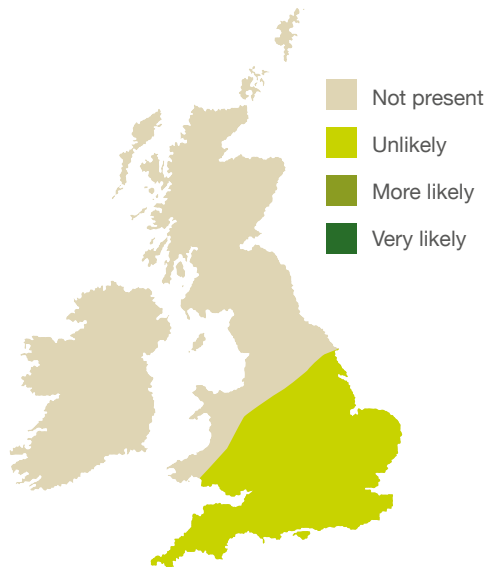
## Location

### Geographic location

Loose silky bent is not widely distributed but found in arable fields, sandy tracks and roadsides up to an altitude of 650m.

### Soil type

It grows in bare ground on light soils such as sand and light loam.



## Description

It is a tufted or solitary annual grass growing to 100cm tall, with stout or slender, green or purple stems. It has a fine appearance with smooth leaf sheaths. The flowerhead is oblong, open and feathery.

## Key features

**Plant:** The plant does not spread by rhizomes or stolons.

**Flowers:** The flowerhead has more-open spreading branches than other bents.

## Lookalikes

Loose silky bent may be confused with black-grass at the young plant stage of development because of the reddish/purple colouring of the leaf sheath. When mature, loose silky bent has more-limited tillering than black-grass, does not produce rhizomes or stolons unlike other bents, and tends to be more upright in later habit.

## Biology

Loose silky bent is occasionally very abundant in cereal fields. It seeds profusely with light seeds which can travel long distances. Seeds usually germinate in autumn and overwinter as young plants. Because seeds have a relatively long survival, germination can be delayed until the conditions are favourable. The seeds can shed and germinate before a crop matures, making control difficult.

## Management

Grass breaks or spring cropping can reduce populations. In reduced tillage situations, allow seedlings to germinate and then cultivate or harrow seedlings when the soil is dry. Wide range of herbicide options. Some resistance to ureas and amides and ALS inhibitors has been found in mainland Europe.

Scale: 1 space = 1mm



# Meadow brome

*Bromus commutatus*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed weight: 5mg

## Life cycle



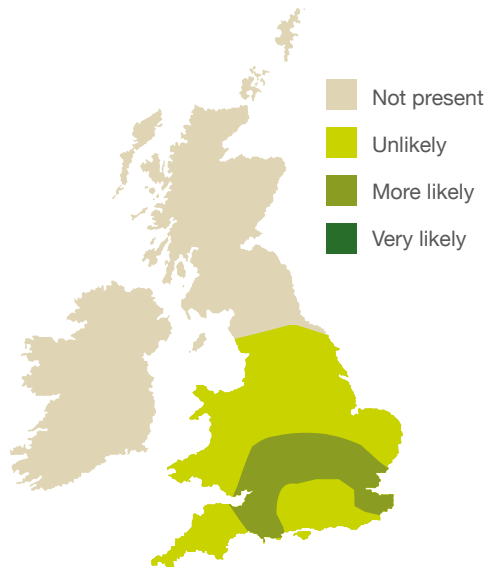
## Location

### Geographic location

Meadow brome is a lowland plant of southern England, growing especially on cultivated land and in rough grassland, damp meadows, verges and track edges.

### Soil type

It is most frequently found on moist, relatively heavy soils.



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## Description

It is an annual or biennial grass, 40–120cm tall. It is loosely tufted or solitary, with slender to moderately stout stems, rough finely pointed leaf blades and tubular splitting sheaths. The flowerhead is loose.

## Key features

**Plant:** The stems are hairy.

**Flowers:** The ripe flowerheads droop to one side.

## Biology

Meadow brome most commonly infests headlands of winter cereal crops and is rarely seen in spring-sown crops. It completes its life cycle within one year and does not reproduce from vegetative fragments.

## Management

Shed seed should be kept on the surface for 4 weeks before cultivation to allow ripening. Plants should be killed with a glyphosate application before sowing subsequent crops. Deep cultivations or mouldboard ploughing, to bury seeds below 20cm, will reduce numbers in following years. Spring cropping is effective for control, as is fallow land, as long as emerging plants are controlled before setting seed. Mow, or spray with glyphosate, before flowering.

Moderate control can be achieved by a variety of herbicides in cereals. Greater control may be achieved in broad-leaved crops.

Scale: 1 space = 1mm



# Nipplewort

*Lapsana communis*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

Seed weight: 2mg

Seeds/head: 30

Seeds/plant: 600–700

## Life cycle



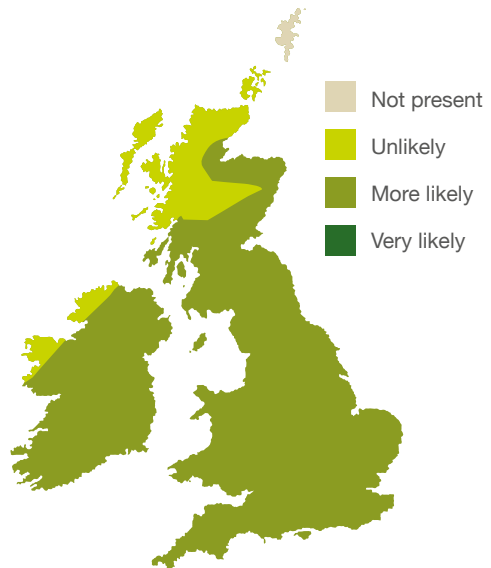
## Location

### Geographic location

Nipplewort is a lowland species found on arable land and other bare disturbed ground up to an altitude of about 300m

### Soil type

It occurs in loams and clays that are nutrient-rich with moderate nitrogen and often damp.





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## Description

It is a hairy, upright, branched, leafy annual or biennial dicotyledon, 30–120cm tall. Basal leaves are oval and toothed but the upper stem leaves are spear-shaped. Flowers are yellow, small and look similar to those of dandelion.

## Key features

**Plant:** The plant has stiff hairs at the base and is smooth above; it is much branched and angular, and fairly loosely rooted.

**Flowers:** The open spikes of yellow dandelion-like flowers are smaller than those of other yellow composites.

## Biology

Nipplewort is common on cultivated land, particularly in cereals, though its population is probably decreasing. Nipplewort is more common in winter cereals, but is also found in spring crops in colder, wetter areas. It has relatively large seeds which may contaminate crop seeds. Autumn-germinating seeds can overwinter as rosettes and become very tall plants. Its form varies widely, depending on location.

## Management

Nipplewort is controlled by a range of herbicides suitable for broad-leaved weeds.

Scale: 1 space = 1mm



# Oat

*Avena sativa*

Competitive in

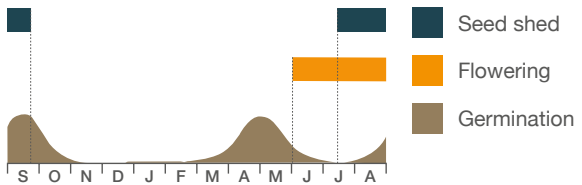
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WW	WOSR	Spring crops	Resistance	Value to biodiversity

## Seed statistics

Seed longevity: <1 year

Seed weight: 66mg

## Life cycle



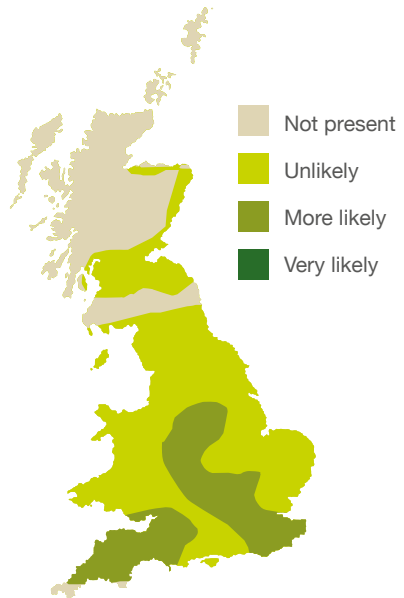
## Location

### Geographic location

Cultivated oat is found in lowland areas around Britain as a volunteer from previous arable crops.

### Soil type

It occurs on conventional arable soils; it is slightly more tolerant of low pH than other grain crops.



---

## Description

It is an annual grass with stems up to 100cm tall. It is generally a soft green colour before ripening. Leaf blades are broad and hairless. The flowering spike is open, with groups of two or three flowers in each spikelet, the lower of which may be awned.

## Key features

**Fruit:** The lemmas are broad with just the tip notched. The grains do not have a tuft of hair at the base.

## Lookalikes

Cultivated oat and wild-oat are difficult to tell apart as plants. The ligule of cultivated oat is shorter and blunter than that of wild-oat. The leaves are hairless. When mature, cultivated oat is generally broader-leaved, paler and more robust than wild-oat species.

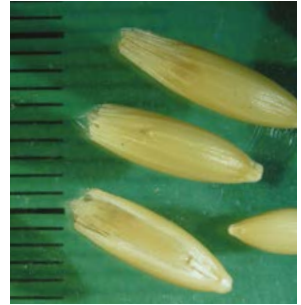
## Biology

Most cereal oats are not very winter-hardy, although volunteers of winter varieties survive after autumn germination in subsequent crops. They do not persist as weeds for more than a couple of years, because the seedbank is less persistent than for wild-oat, and they are not as competitive as wild-oat.

## Management

Use stale seedbed strategies to allow shed seed to germinate. Grass leys of 2–3 years reduce seed populations. Otherwise treat as wild-oat. Herbicides suitable for wild-oat are effective on cultivated oats.

Scale: 1 space = 1mm



# Oilseed rape

*Brassica napus ssp. oleifera*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

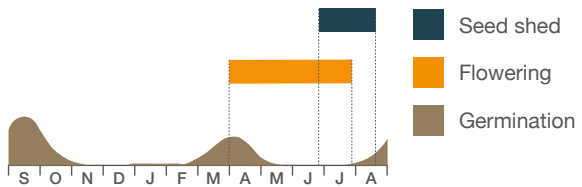
## Seed statistics

Seed longevity: >5 years

Seed weight: 5mg

Seeds/plant: 8,000–10,000

## Life cycle



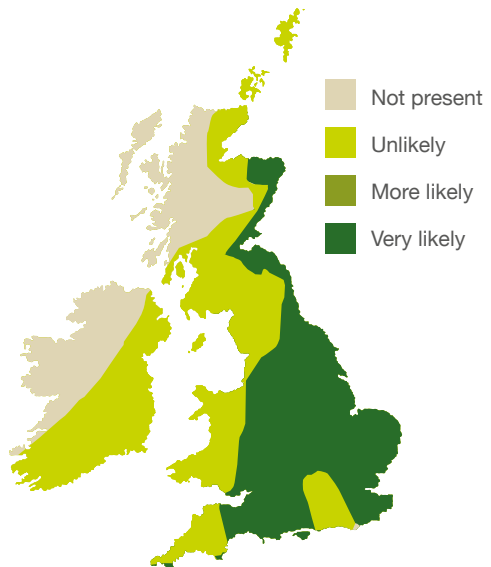
## Location

### Geographic location

Oilseed rape is mainly a lowland plant but has been found at altitudes of up to 420m in Cumbria. It occurs frequently along roadsides, often as a result of falling from lorries.

### Soil type

Oilseed rape prefers disturbed soils.



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## Description

It is an annual or biennial hairless dicotyledon, with a waxy coating giving the indented leaves and stem a blue-grey colour. Leaves clasp the flowering stem. Flowers are usually bright yellow.

## Key features

**Plant:** Leaves are smooth-surfaced and blue-green in colour.

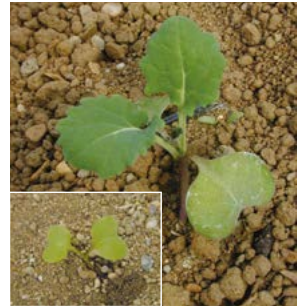
## Biology

Oilseed rape volunteers commonly occur in subsequent crops and can reduce wheat yields significantly. Volunteers of spring rape varieties can be a serious problem in the winter rape crop. Autumn-germinating plants stand well over winter. Growth mainly occurs between mid March and late August. The plant only reproduces by seed.

## Management

After harvest, oilseed rape seeds should be left on the soil surface for as long as possible, at least 2–3 weeks. A high percentage of seed will germinate in the autumn and can then be controlled by cultivations or by herbicides. Soil-incorporated seeds develop induced secondary dormancy and can persist for several years.

Scale: 1 space = 1mm



# Onion couch

*Arrhenatherum elatius*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

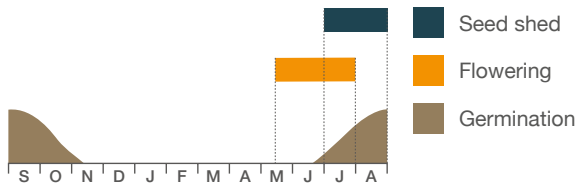
## Seed statistics

Seed longevity: 1–5 years

Seed weight: 3.33mg

Seeds/head: 100

## Life cycle



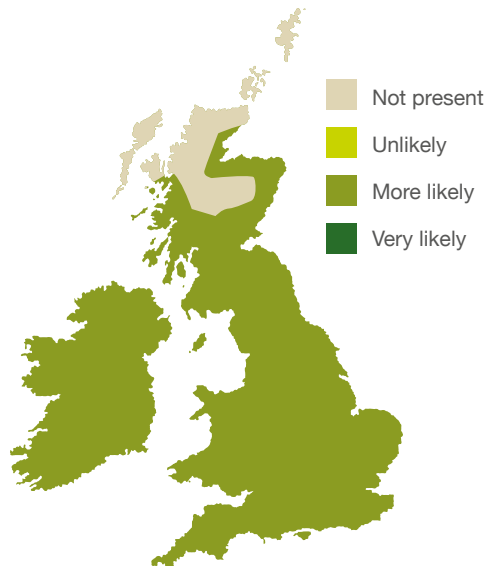
## Location

### Geographic location

The bulbous form of false oat-grass, onion couch is a common arable weed found all over the British Isles except for high ground above an altitude of 550m. It is found in a wide variety of habitats on roadside verges, river banks and other waste ground, and in some arable fields.

### Soil type

It tolerates a wide range of soil pH, from very limey soils and even limestone scree to neutral soils.



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## Description

Onion couch is a very tall, loosely tufted perennial grass, growing to 150cm. A series of bulbous swellings at the base of stem gives the grass its common name of onion couch. Leaf blades are flat and finely pointed. The flowerhead is compact and narrow.

## Key features

**Plant:** Bulbous swellings at the base of the stem and yellowish roots.

**Flowers/fruit:** The spikelets have a single long awn.

## Biology

Onion couch is a troublesome weed and difficult to control on cultivated fields. The plants can overwinter and new shoots are produced from March. The non-bulbous form can grow from stem bases detached during ploughing, but the bulbous form grows only from seed. It is encouraged by direct drilling of arable crops.

## Management

Mouldboard ploughing can bury the stem bases too deep to emerge. Best control will be achieved by herbicides such as glyphosate applied when the grass is actively growing. This can be difficult near and around crops post-emergence and is best done in uncropped land such as summer fallows.

Scale: 1 space = 1mm



# Pale persicaria

*Persicaria lapathifolia*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

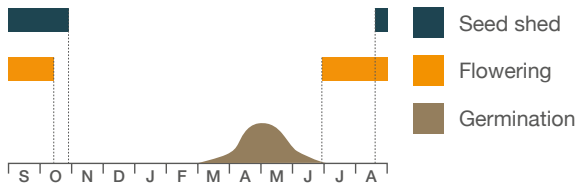
Seed longevity: >5 years

Germination depth: 5.3cm

Seed weight: 3mg

Seeds/plant: 800–850

## Life cycle



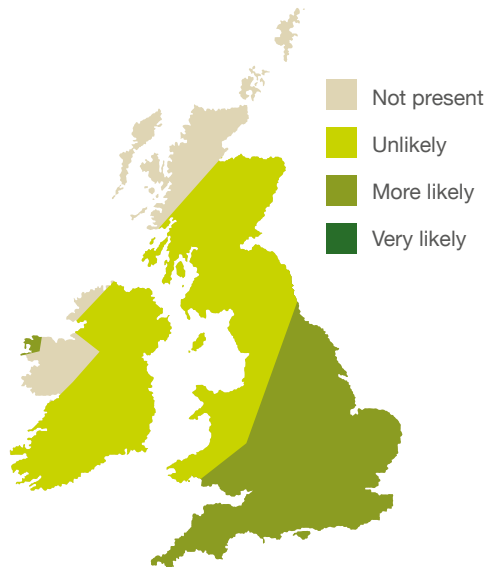
## Location

### Geographic location

Pale persicaria is associated with a wide range of habitats in both open and disturbed sites and in cultivated fields, up to a maximum recorded altitude of 450m. It is less frequent in the north on less organic soils.

### Soil type

It prefers slightly acid soils rich in humus and nutrients, often sandy loams.





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## Description

It is an annual of medium height 30–80cm tall, with slightly hairy, often red stems. Leaves are strap-shaped and may be blotched with black. The flower spike is stout, packed with tiny flowers.

## Key features

**Young plant:** The first true leaves are silvery with short hairs.

**Plant:** The sheath covering the leaf stem base has no hairs and lies loosely against the stem. The flowering stem is hairy.

## Lookalikes

Pale persicaria may be confused with redshank: the first true leaves of pale persicaria are long and narrow and have silvery hairs, which also cover the stem; the first true leaves of redshank are broad and the plant is not hairy.

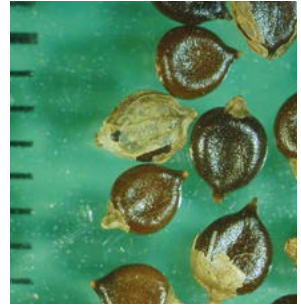
## Biology

Pale persicaria is a common weed in all crops, particularly spring-sown ones. It may occur in open crops of winter wheat, possibly preferring more organic soils than the similar redshank. Flowers are self-pollinated or cross-pollinated by insects. The seeds may germinate in spring only after chilling.

## Management

It is controlled by a wide range of hormone and sulfonylurea herbicides in cereals and by many residual herbicides in most spring-sown broad-leaved crops.

Scale: 1 space = 1mm



# Parsley-piert

*Aphanes arvensis*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

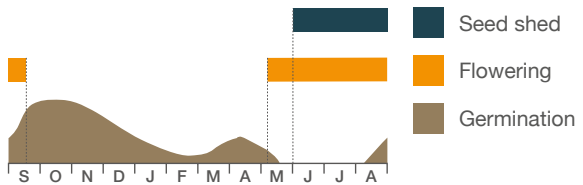
## Seed statistics

Seed longevity: >5 years

Seed weight: 0.67mg

Seeds/flower: 1

## Life cycle



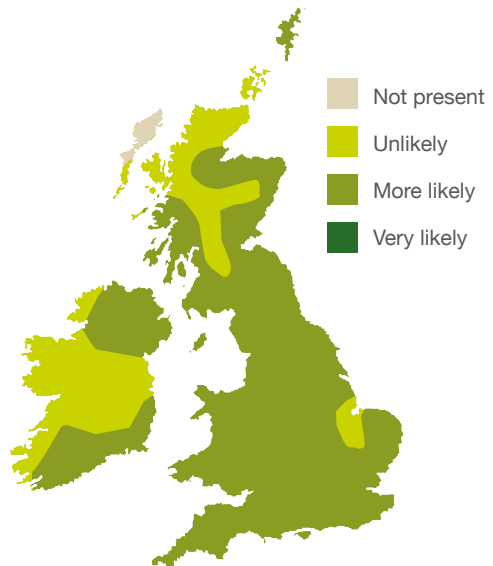
## Location

### Geographic location

Parsley-piert is found on arable land and droughted soils, and on other sites with a large exposure of bare soil, usually in lowland habitats up to an altitude of 300m.

### Soil type

It grows in dry alkaline or acidic soils, but rarely below pH 5.



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## Description

It is a small creeping annual dicotyledon, up to 10cm in size. The leaves have three lobes, each divided further into five to seven parts.

## Key features

**Plant:** The plant appears to have no flowers, as they are green and inconspicuous.

## Biology

Parsley-piert grows before the crop fully establishes and in late summer after harvest. It mainly germinates in autumn from seeds which come from a persistent seedbank. Young plants can overwinter. It is very drought resistant.

## Management

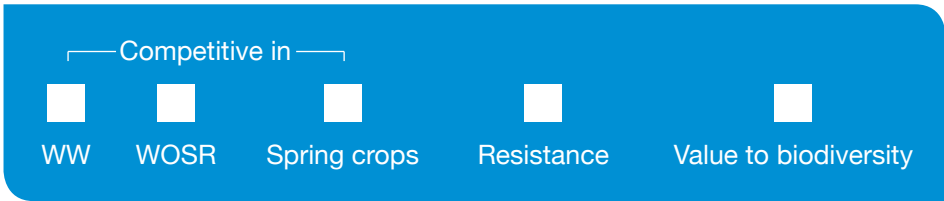
It can be reduced by ploughing and spring cropping. Grass breaks can reduce the seedbank. It is encouraged by fallow, reduced cultivation and direct drilling, so mouldboard ploughs should be used.

Scale: 1 space = 1mm



# Pea

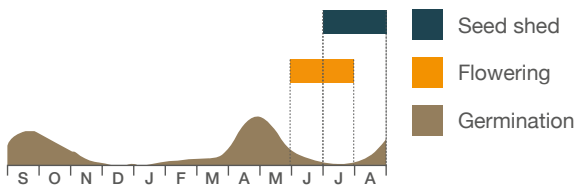
*Pisum sativum*



## Seed statistics

Seed weight: 275mg

## Life cycle



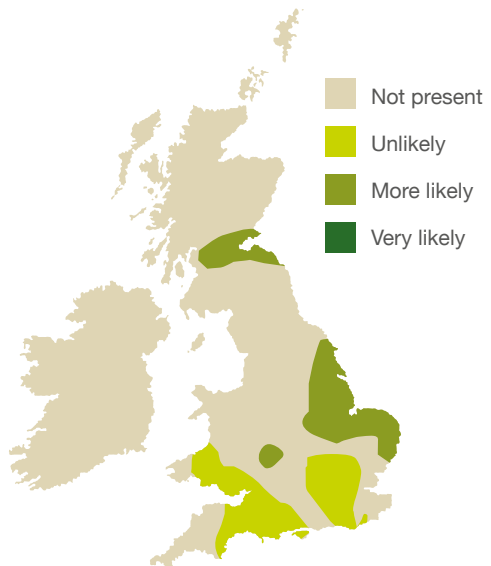
## Location

### Geographic location

Field pea occurs in arable areas in Britain as a volunteer from previous crops and may also occur on waste ground and field margins.

### Soil type

It prefers well drained, highly fertile soils.



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## Description

It is a scrambling dicotyledon up to 1m high, heavily branched, with leaves ending in tendrils or reduced to just tendrils. Pea flowers are large and may be pink or white.

## Key features

**Young plant:** Stiff but small with no visible cotyledons. There is a pair of projections at the base of each leaf.

## Biology

There are a large number of cultivated strains of pea, grown for food and animal fodder. Although plants can germinate in autumn and occasionally withstand heavy frost, they usually germinate in spring. They prefer cool moist growing conditions and are shallow-rooted and therefore susceptible to drought. Seeds can germinate at temperatures above 4.5°C. Although peas emerge and can cause lodging in cereal fields, they do not persist to a second season if controlled.

## Management

Seedlings emerging in autumn or early spring are usually killed by continuous frost. A wide range of herbicides are available to control peas in cereals and grass crops.

Scale: 1 space = 1mm



# Perennial rye-grass

*Lolium perenne*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

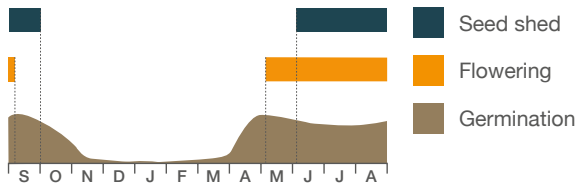
## Seed statistics

Seed longevity: 1–5 years

Seed weight: 2mg

Seed/head or capsule: 100

## Life cycle



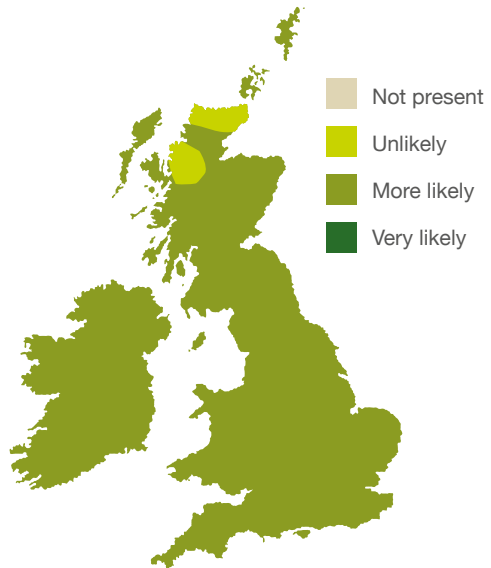
## Location

### Geographic location

Perennial rye-grass is found on a wide range of habitats, which may have been sown for grass, in meadows, pastures and on demolition sites. It does not grow above an altitude of 400m.

### Soil type

It occurs on soils within the pH range 5–8.



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## Description

It is a large, dark-green, glossy, tufted perennial grass, 30–60cm tall producing flowering and sterile shoots.

## Key features

**Young plant:** The backs of the leaves are shiny.

**Fruit:** The spikes have no awns.

## Lookalikes

Perennial rye-grass may be confused with rough-stalked meadow-grass when young. The flowerhead is similar to common couch but the spikelets of rye grasses are at 90 degrees to the stem while couch spikelets lie with their flattened side next to the stem.

## Biology

Perennial rye-grass can become a weed in arable crops where pasture forms part of the rotation. The plants remain green all winter and continue to grow. It flowers in early or late summer. Seeds germinate immediately on shedding, and stems can root.

## Management

Control with glyphosate in fallows, before break crops or as a pre-harvest treatment or with specific herbicides within crops. Clean equipment between fields to reduce seed spread.

Scale: 1 space = 1mm



# Perennial sow-thistle

*Sonchus arvensis*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

Germination depth: 5cm

Seed weight: 0.25mg

Seeds/head: 160

Seeds/plant: 5,000

## Life cycle

Unknown



S O N D J F M A M J J A

Seed shed

Flowering

Germination

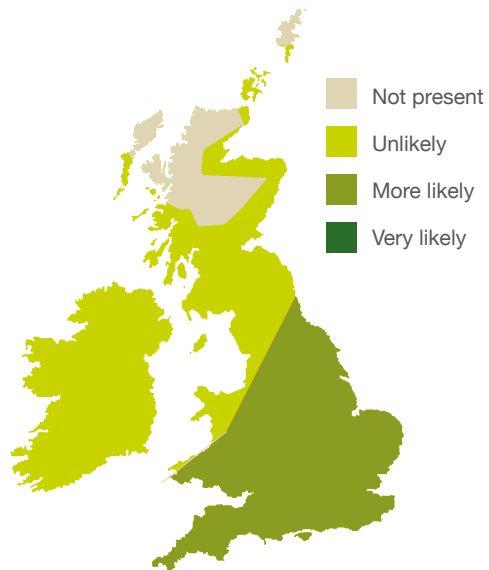
## Location

### Geographic location

Mainly confined to England and the coastal areas of Wales, Scotland and Ireland, perennial sow-thistle is usually found on roadsides and verges and arable field edges.

### Soil type

It prefers damp to wet, heavy deep loams and clays, high in nitrates and humus.





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## Description

It is a tall prickly perennial which can form large clumps, spreading the rhizome. The leaves are shiny, lobed and green, with a narrow finger-shaped lobe at the tip. Flowers are yellow, similar to dandelion flowers, and arranged in umbrella-like groups.

## Key features

**Flower:** Typically, the branches of the flowering shoot and the flowerheads bear tiny yellow glandular hairs.

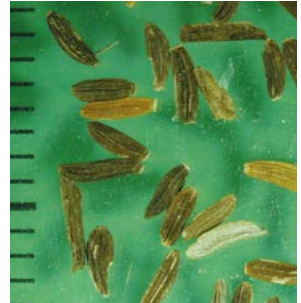
## Biology

Perennial sow-thistle is a weed of field margins but may occur in patches in arable fields; it is most often a nuisance in perennial crops. The flowers are fertilised by insects and can be cross- or self-fertile. Seeds are dispersed by wind and germinate in spring, requiring chilling.

## Management

It is readily controlled in open ground, but can be awkward to control selectively in crops other than cereals and brassicas. As perennial sow-thistle can also spread from fragments of rhizomes, autumn cultivation to weaken rhizomes may assist in control.

Scale: 1 space = 1mm



# Pineappleweed

*Matricaria discoides*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

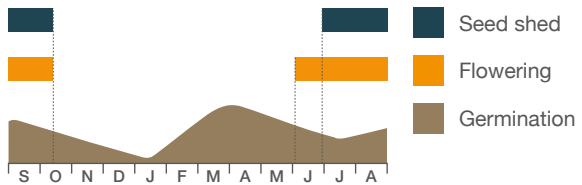
Germination depth: 5cm

Seed weight: 0.18mg

Seeds/head: 50–400

Seeds/plant: 0–6,000

## Life cycle



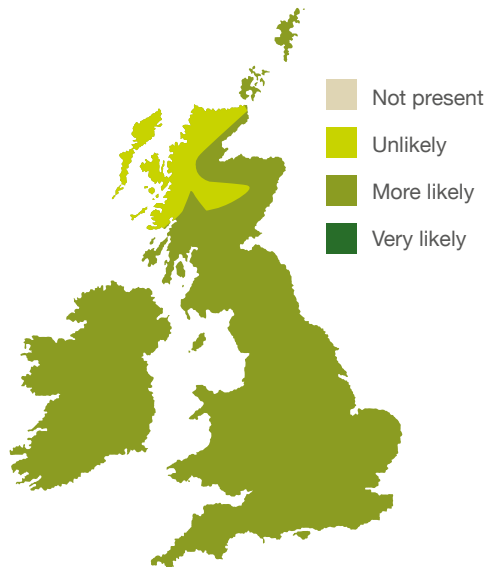
## Location

### Geographic location

Pineappleweed grows in all arable crops and on compacted soil or habitats with a wide proportion of bare ground. It is usually a lowland species but has been found at an altitude of 530m.

### Soil type

It is restricted to damp and nutrient-rich sandy soils and loams, pH >5.



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## Description

It is an upright, stiffly branched, bushy annual dicotyledon, 5–40cm tall. The leaves are finely divided and feathery. Flowers are like other mayweeds but lack the white outer petals.

## Key features

**Plant and flower:** It smells strongly of pineapple when bruised.

## Biology

Pineappleweed is usually found on tracks and in gateways, but also encroaches onto arable land, preferring compacted soils. It is found in both winter and spring crops and can become a nuisance in perennial crops where there is a lot of vehicle movement. Seedlings germinating in autumn can overwinter. Spring-germinating plants can set seed within 40–50 days. Seeds are usually dispersed on boots and tyres.

## Management

It is readily controlled with herbicides and in-crop cultivation.

Scale: 1 space = 1mm



# Potato

*Solanum tuberosum*

Competitive in



WW



WOSR



Spring crops



Resistance

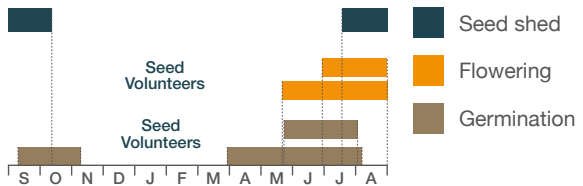


Value to biodiversity

## Seed statistics

Seeds/plant: 50–200

## Life cycle



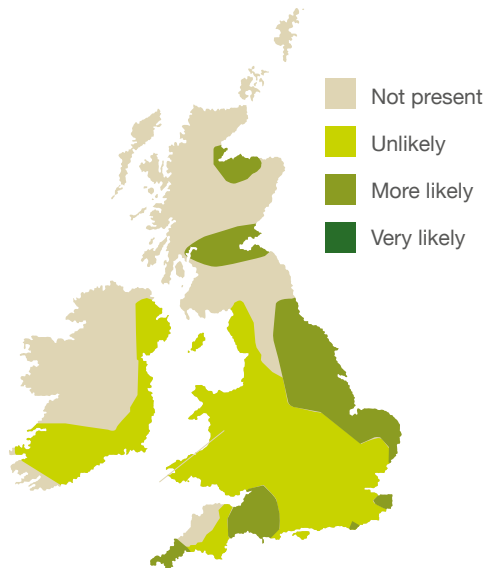
## Location

### Geographic location

Potato usually occurs as volunteers from previous cropping and so is most likely to be found in the arable areas to the east of the British Isles. It also grows in areas where domestic waste has been left.

### Soil type

Potato prefers sandy loams, silt loams, loams and peat soils.



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## Description

It is an upright dicotyledon up to 1m high, with stolons developed into tubers at or just below the soil surface. It is very robust, with leaves divided in oval leaflets. Flowers are white or purple. The plant may develop large spherical poisonous fruits that resemble green tomatoes.

## Key features

It contains the poison solanine, in the green parts of the plant and in tubers exposed to light, which can be fatal to humans and livestock.

## Biology

Volunteer potatoes can be very competitive weeds in subsequent crops. They develop from tubers left in the soil or as seedlings from true seeds in spring.

## Management

The best control is good harvesting practice in potato crops. In cereal crops, sulfonylureas have an effect in reducing further tuber growth. Pre-harvest treatment with glyphosate is effective if the plants are still green. In most vegetable crops, fruit crops and legumes only physical control is possible. Otherwise using glyphosate at or near flowering of potato plants is the most effective chemical treatment. Potatoes do not persist in dense crops such as oilseed rape or grassland.

Scale: 1 space = 1mm



# Prickly sow-thistle

*Sonchus asper*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

Germination depth: 5cm

Seed weight: 0.25mg

Seeds/head: 100

Seeds/plant: 5,000

## Life cycle



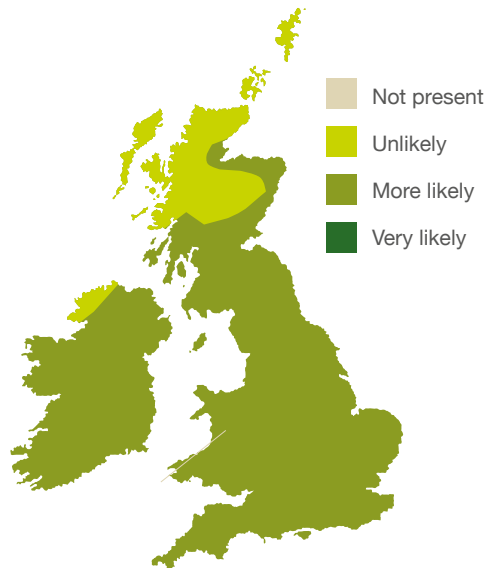
## Location

### Geographic location

Prickly sow-thistle inhabits a wide variety of lowland places including verges, waste ground, railway lines, field margins of arable fields and gardens.

### Soil type

It likes nitrogen-rich loams or nutrient-rich sandy and stony soils which are not too dry.



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## Description

It is an upright annual dicotyledon growing to 120cm. Flowers are pale yellow in loose clusters.

## Key features

**Plant:** The glossy leaves are a rich green and have sharp prickly edges and rounded bases which clasp the stem.

**Leaves:** The petals are red grey underneath.

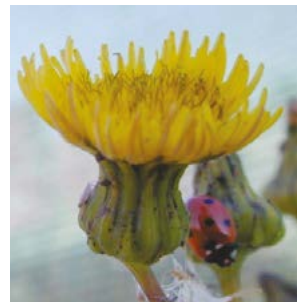
## Biology

Prickly sow-thistle is less common on arable land than it once was. It occurs mainly in vegetable crops, but can be found in cereals and increasingly in other winter crops. Plants which germinate in autumn overwinter as rosettes, producing flowers in May; plants germinating in spring flower in June. The latter can set seed in 10 weeks. Prickly sow-thistle only reproduces by seed and is distributed by wind.

## Management

In row crops, hoeing can be used for control where herbicides are not available. In winter cereals, use fallows to reduce seed production. Prickly sow-thistle does not persist in grassy rotations.

Scale: 1 space = 1mm



# Ragwort

*Senecio jacobaea*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

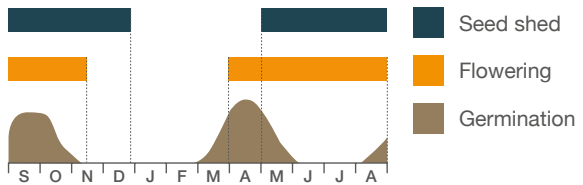
Seed longevity: >5years

Seed weight: 0.2mg

Seeds/head or capsule: 100

Seeds/plant: 50,000–60,000

## Life cycle



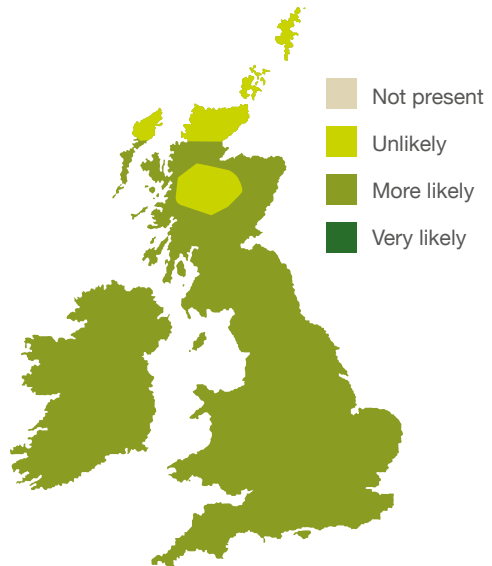
## Location

### Geographic location

Ragwort is commonly found on grasslands and neglected land, headlands and verges. Growing to an altitude of nearly 700m.

### Soil type

It grows in a wide range of soils, between pH 5 and 7.





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## Description

It is a medium-tall, hairless biennial, not very branched, with a basal rosette of grey-green, roundly divided leaves. The flowerhead has groups of yellow daisy-like flowers.

## Key features

**Plant:** The plant contains the poison jacobine, which is fatal to livestock.

## Biology

Ragwort can be abundant in poor pasture and wasteland, particularly on sandy free-draining soils. It is rarely found as an arable weed, but does establish in fallows and field margins. Seedlings germinating in autumn can overwinter as leafy plants. The plant may take more than two years to flower. Seed is not dispersed far from the parent plant, but can survive grazing and can be transported by sheep. The flowering shoots die by winter.

## Management

Dense grass swards which are not over-grazed reduce establishment. In grass, MCPA or 2,4-D may be used at full dose on the rosettes in late spring or early autumn.

Scale: 1 space = 1mm



# Red dead-nettle

*Lamium purpureum*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

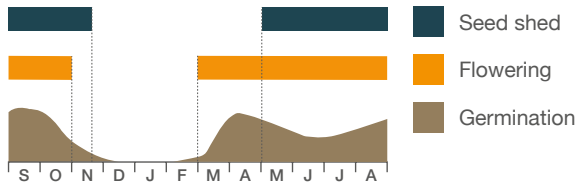
Germination depth: 0.9mg

Seed weight: 0.9mg

Seeds/flower: 4

Seeds/plant: 0–1,000

## Life cycle



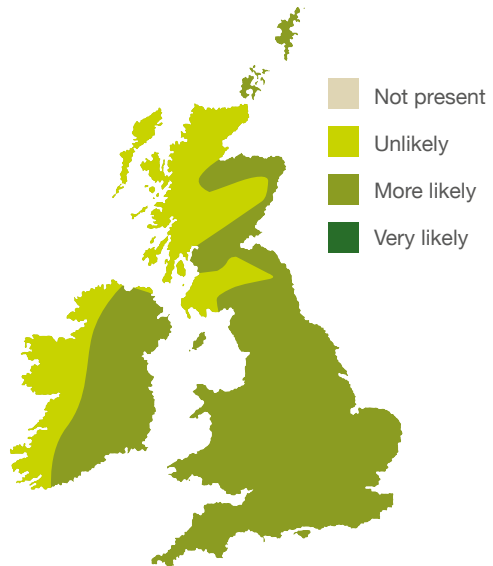
## Location

### Geographic location

Red dead-nettle mainly grows on sites with bare soil, such as arable land, gardens, soil heaps and demolition sites. It is generally a lowland species growing up to an altitude of 300m, but has been found at 600m.

### Soil type

It prefers relatively fertile soils, sandy loams with moderate organic matter and rich in nutrients.



## Description

It is a downy, purplish-tinged bushy annual dicotyledon 10–40cm tall. The leaves are heart-shaped with toothed edges. The flowers are purplish pink and cluster in conspicuous whorls round the stem.

## Key features

**Young plant:** The first true leaves are more triangular than those of henbit dead-nettle.

**Plant:** The foliage is often tinged with purple.

## Lookalikes

Red dead-nettle may be confused with henbit dead-nettle; dead-nettles can be difficult to distinguish at the seedling and young plant stages.

## Biology

Red dead-nettle is common on arable land; it may be encouraged by minimal cultivation techniques. The plants may overwinter with green leaves but it is mainly annual. It can set seed before the canopy is developed. Non-flowering shoot tips can also re-root after spring cultivations and can go on to establish and set seed. Seeds can be locally moved by ants.

## Management

Although it occurs in both winter and spring crops, it is more common in early sown winter crops, suggesting it may be controlled by spring cropping. A large range of herbicides suitable for broad-leaved weeds may be used.

Scale: 1 space = 1mm



# Red fescue

*Festuca rubra*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

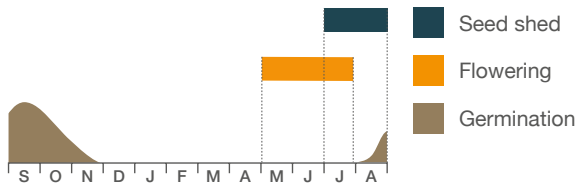
Seed longevity: 1–5 years

Seed weight: 1mg

Seeds/head: 100

Seeds/plant: 10

## Life cycle



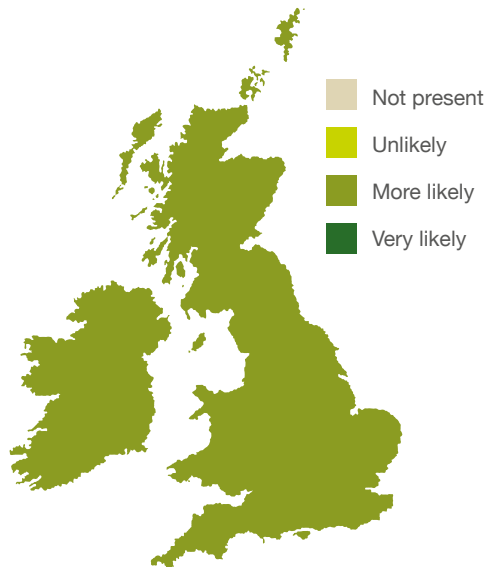
## Location

### Geographic location

Red fescue grows over the whole of the British Isles in many grassy habitats such as road verges, meadows and pastures up to an altitude of 1,080m. It has many varieties.

### Soil type

It grows in alkaline-rich soils and even rocky habitats, but is not usually found where there is a large amount of exposed soils.



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## Description

It is a densely tufted perennial grass, 15–90cm tall. It spreads by rhizomes. The leaves are green or greyish-green and bristle-like. The flowerhead tapers to a point but is rather one-sided.

## Key features

**Plant:** Stems are red at the base.

## Biology

Red fescue can establish in arable land but does not persist with cultivation. It is commonly found in field edges and many other relatively undisturbed habitats. Red fescue grows rapidly in spring after overwintering. It can also reproduce vegetatively when the rhizomes which attach child plants die.

## Management

It is relatively tolerant of foliar-acting herbicides because of its bristle-like leaves reducing uptake, so high doses are generally required.

Scale: 1 space = 1mm



# Redshank

*Persicaria maculosa*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

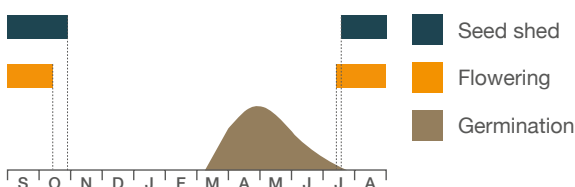
Germination depth: 1.5cm

Seed weight: 2.05mg

Seeds/flower: 2–4

Seeds/plant: 200–800

## Life cycle



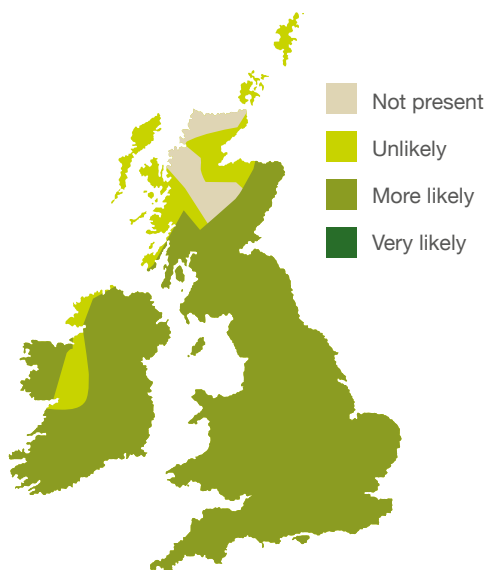
## Location

### Geographic location

Redshank is a lowland weed growing to an altitude of up to 200m. It is found on disturbed bare soils, such as arable land and soil heaps.

### Soil type

It is found on a wide range of soil types but prefers sandy soils rich in nutrients and organic matter and well aerated, in the pH range 5–7.



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## Description

It is a sprawling hairless annual which may have an upright stem. It has dark spotted tapering leaves. The flower spike is small but dense with pink flowers. The loose sheaths over the leaf stem base have long hairs.

## Key features

**Plant:** The stem is hairless and the leaves have a characteristic blotch.

**Flowers:** The flowering spike is less dense than that of pale persicaria.

## Lookalikes

Redshank may be confused with pale persicaria: pale persicaria has silvery hairs on the first true leaves, but redshank is not hairy. The first leaf of redshank is broad but that of pale persicaria is long and narrow.

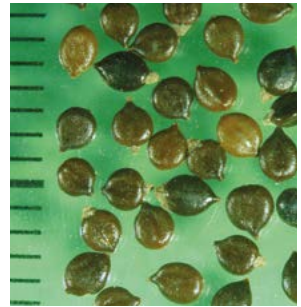
## Biology

Redshank is a common weed of spring crops. Seeds are retained on the plant and can contaminate grain at harvest. During cultivations plant fragments can root at the nodes. Plants are frost susceptible.

## Management

Redshank is controlled by a range of hormonal and sulfonyleurea herbicides in cereals and by many residual herbicides in most spring sown-crops.

Scale: 1 space = 1mm



# Rough-stalked meadow-grass

*Poa trivialis*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

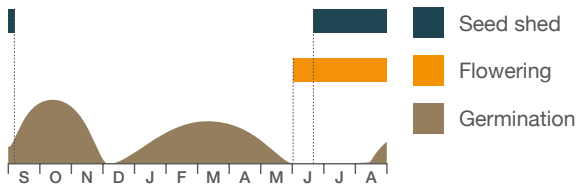
## Seed statistics

Seed longevity: 1–5 years

Seed weight: 0.14mg

Seeds/head: 1–10

## Life cycle



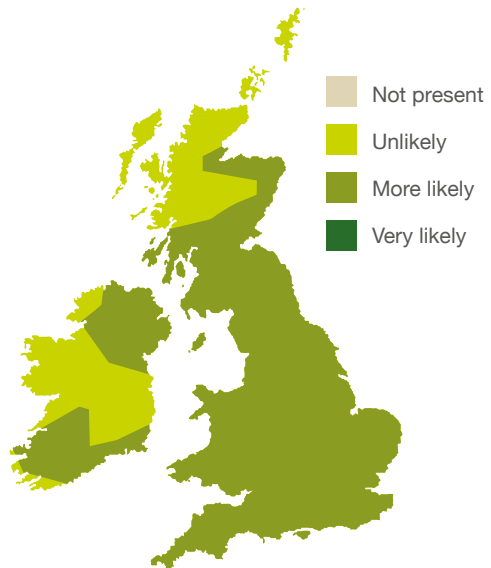
## Location

### Geographic location

Rough-stalked meadow-grass occurs in damp, fertile and sometimes disturbed land with large amounts of bare soil. It is most frequent in lowland areas but has been identified at an altitude of 760m.

### Soil type

It grows on all but the most acidic soils but is usually found at pH > 5. It prefers moisture-retentive soils.





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## Description

It behaves like an annual in cereal crops or can grow as a semi-rosette with creeping leafy stolons. Stems may reach 90cm, but are usually prostrate. The leaf blade is folded with a curved tip. The flowerhead is a conical shape.

## Key features

**Plant:** The leaf sheath is rough and the lower leaf surface is glossy with a prominent ridge.

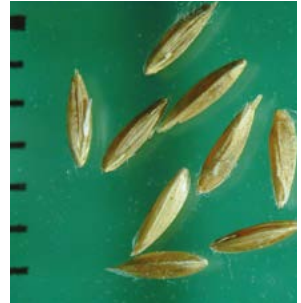
## Biology

Rough-stalked meadow-grass is palatable to stock and is useful for hay. It tends to flower in winter cereals, but spreads by stolons and does not produce flowerheads in spring cereals. Although plants can overwinter they do not grow before April. Growth in spring is fast, but leaves are short-lived. Seedlings generally germinate immediately after seeds are shed, although some remain dormant. Vegetative reproduction can also occur from stolon fragments.

## Management

Ploughing reduces populations so that plants tend to be more frequent in minimum tillage. A wide range of herbicides is available for controlling rough meadow-grass. Although it is harder to control than annual meadowgrass, some residual grass herbicides are reasonably effective. In winter rape, propyzamide and carbetamide are also effective.

Scale: 1 space = 1mm



# Round-leaved fluellen

*Kickxia spuria*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

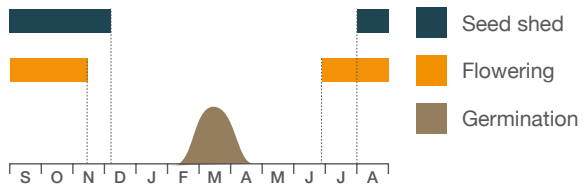
Seed longevity: >5 years

Seed weight: 0.39mg

Seeds/flower: 25

Seeds/plant: 2,000

## Life cycle



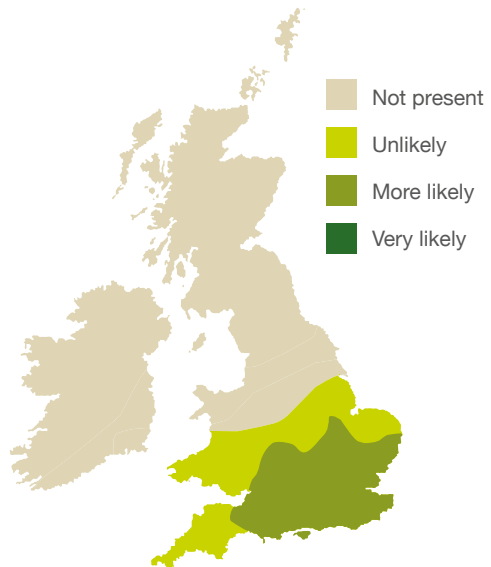
## Location

### Geographic location

Round-leaved fluellen is a lowland species which often grows with the sharp-leaved species in cornfields and other arable fields and gardens.

### Soil type

It likes weakly acid to weakly alkaline soils low in nutrients, including light soils over boulder clay. It prefers light conditions.



## Description

It is a sprawling dicotyledon, growing to 20–40cm, with glandular hairs.

## Key features

**Young plant:** The first true leaves are rounder than those of sharp-leaved fluellen.

**Plant:** The leaves are almost circular.

**Flowers:** The flowers resemble those of snapdragon and are bright yellow with a brown upper lip.

## Lookalikes

Round-leaved fluellen is difficult to distinguish from sharp-leaved fluellen: the cotyledons are smaller and rounder while the first true leaves are also rounder.

## Biology

Round-leaved fluellen needs warmer conditions than sharp-leaved fluellen so it is more common in southern Britain. It is a poorly competitive species found in uncompetitive crops, particularly perennial and row crops. Seeds germinate in spring and set seed usually after harvest. Plants often grow lower than the combine cut, so can set seeds in late-ploughed fields.

## Management

It is readily controlled by cultivation and seldom found in competitive winter crops or grass ley rotations.

Scale: 1 space = 1mm



# Rye brome

*Bromus secalinus*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

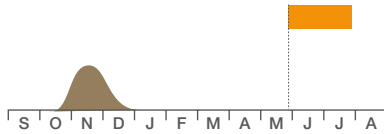
Seed longevity: <1 year

Seed weight: 3.33mg

Seeds/plant: 10–100

## Life cycle

Unknown



- Seed shed
- Flowering
- Germination

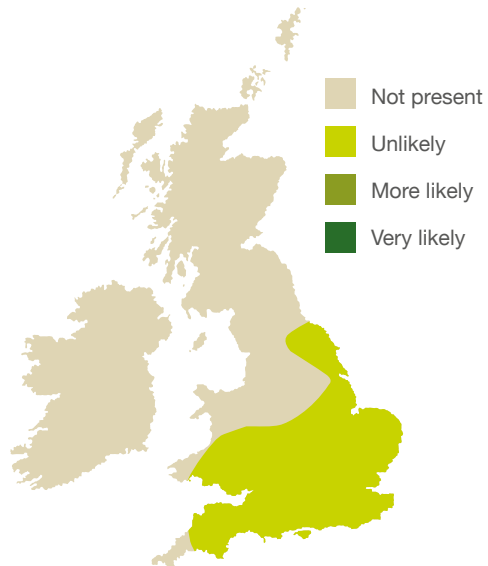
## Location

### Geographic location

Rye brome is a lowland weed, found in cereal fields, and waste ground and some improved leys.

### Soil type

It is usually found in areas on soils with average moisture and reasonable but not high nitrogen, pH about 5.



## Description

It is a rather variable robust annual grass with stems usually 50–100cm tall. Leaf blades have rough surfaces and are pointed.

## Key features

**Flower:** The leaf sheaths are usually hairless or the lower ones can be sparsely hairy.

**Flowers/fruit:** It has flattened spikelets with short awns.

## Biology

Rye brome was most probably introduced to the UK as a contaminant of cereal seeds. It was once grown as a grain crop and was very common as a weed in the past, often dominating fields of wheat. With improved methods of cereal grain cleaning, it is now uncommon to rare, generally found in headlands of winter-sown crops. It propagates only by seed and can be found in large patches.

## Management

Shed seed should be kept on the surface for 4 weeks before cultivation to allow ripening and killed with a glyphosate application before sowing subsequent crops. Deep cultivations or mouldboard ploughing, to bury seeds below 20cm, will reduce numbers in following years. Spring cropping is effective for control, as is fallow land, as long as emerging plants are controlled before setting seed.

Moderate control can be achieved by a variety of herbicides in cereals. Greater control may be achieved in broad-leaved crops.

Scale: 1 space = 1mm



# Scarlet pimpernel

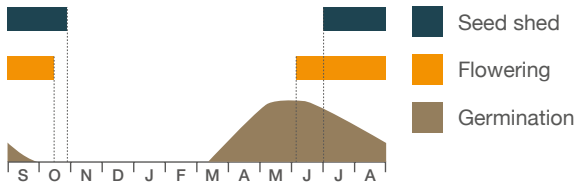
*Anagallis arvensis*



## Seed statistics

Seed longevity: >5 years  
Seed weight: 0.5mg  
Seeds/flower: 12–45  
Seeds/plant: 100–12,000

## Life cycle



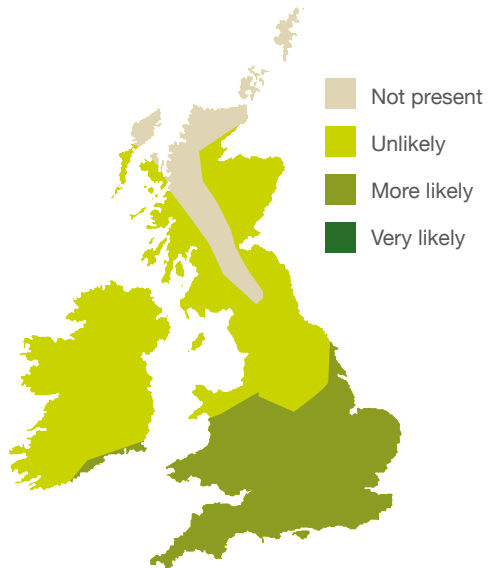
## Location

### Geographic location

Scarlet pimpernel is a common annual weed of cultivated and waste ground with a widespread distribution in arable soils and some semi-natural habitats. The blue form prefers south-facing slopes.

### Soil type

It grows in many soil types with neutral pH in partial shade to sun.



## Description

It is a slender, hairless annual dicotyledon with prostrate, sprawling or upright four-angled stems, 5–50cm long. The flowers are bright scarlet. There is a rare form of scarlet pimpernel with bright blue flowers.

## Key features

**Young plant/plant:** There are tiny brown dots on the undersides of the leaves. All parts are poisonous to poultry and stock.

**Flowers:** The flowers tend to open in full sunlight and remain closed on dull or rainy days.

## Lookalikes

Scarlet pimpernel may be confused with common chickweed: the seedlings are similar but chickweed seedlings have a long hypocotyl. The leaves of chickweed have hairy stalks and are light green, while the underside of scarlet pimpernel leaves is spotted.

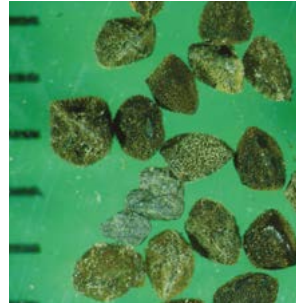
## Biology

Scarlet pimpernel occurs frequently in spring-sown crops. Seed is widely dispersed as a result of agricultural management, particularly as a contaminant of crop seed. Scarlet pimpernel is often associated with rarer arable weeds. Plants regenerate by seed which requires light for germination. Plants can overwinter and summer-shed seeds can give rise to a second generation.

## Management

Control by using a stale seedbed.

Scale: 1 space = 1mm



# Scented mayweed

*Matricaria recutita*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

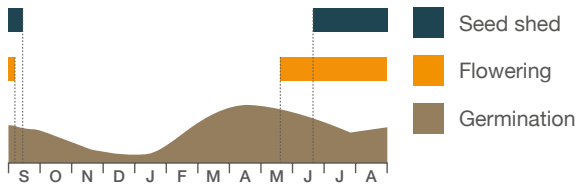
Seed longevity: >5 years

Germination depth: 0.5cm

Seed weight: 0.1mg

Seeds/plant: 5,000

## Life cycle



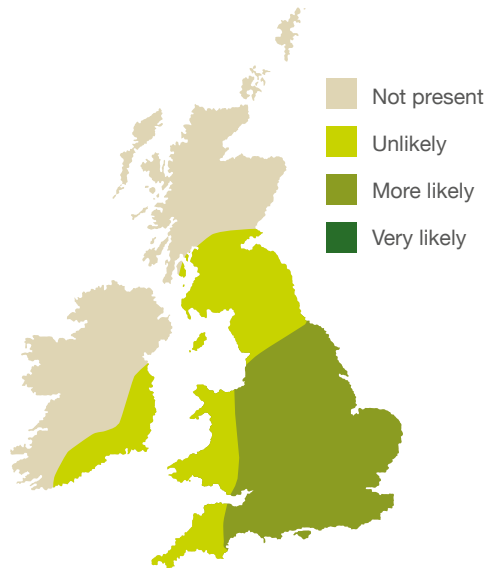
## Location

### Geographic location

Scented mayweed is a lowland plant or arable cereal fields and waste places.

### Soil type

It is usually found on light soils, but also occurs on heavy clays and loams.





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## Description

It is a branching annual dicotyledon, 60cm tall, with feathery finely divided leaves. The flowers resemble those of daisies.

## Key features

**Flowers:** The flowerheads give off a distinctive chamomile smell when crushed. When the flowerhead is split, the end of the stem where the petals are attached is hollow.

## Lookalikes

Scented mayweed may be confused with scentless mayweed. The mayweeds are difficult to distinguish in their nonflowering stages.

## Biology

Scented mayweed is locally abundant on arable land and causes yield loss in cereals and oilseed rape. It emerges in winter and early spring; if germinating in autumn, it overwinters as a rosette. It infests both winter and spring crops, which makes long-term management without herbicide difficult. The seedbank can survive short-term grass leys.

## Management

A wide range of herbicides is available for scented mayweed control in wheat and as yet no herbicide resistance has been identified in this species though it has been suspected in other *Matricaria* species.

Scale: 1 space = 1mm



# Scentless mayweed

*Tripleurospermum inodorum*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

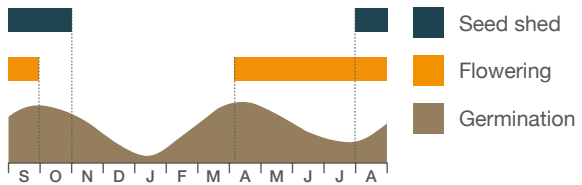
Germination depth: 5cm

Seed weight: 0.3mg

Seeds/flowers: 1

Seeds/plant: 10,000–200,000

## Life cycle



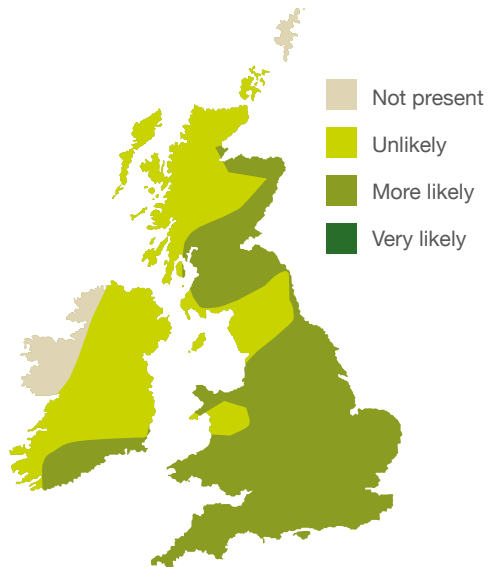
## Location

### Geographic location

Scentless mayweed is mainly a lowland species growing to a maximum altitude of 500m, in open habitats such as arable soils and less frequently other disturbed sites.

### Soil type

It prefers warm, fertile and heavy soils with pH >4.5 and preferably >5.5.



## Description

It is a much-branched annual dicotyledon, 10–80cm tall, with finely divided feathery green leaves. Scentless mayweed often sprawls along the ground but may be more upright when supported by a crop.

## Key features

**Flowers:** Scentless mayweed flowers are flat or convex. When the daisy-like flowerhead is split, the end of the stem to which the petals attach is solid.

## Lookalikes

Scentless mayweed may be confused with scented mayweed: the mayweeds are difficult to distinguish in their non-flowering stages

## Biology

Scentless mayweed is the most widespread of the mayweeds found on arable land. It can be a problem in both winter- and spring-sown crops. It is competitive in wheat and oilseed rape and the seeds can clog sieves and contaminate grain samples.

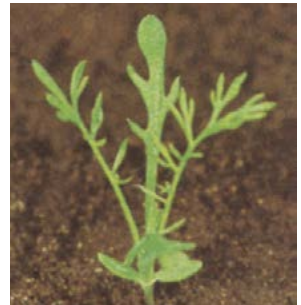
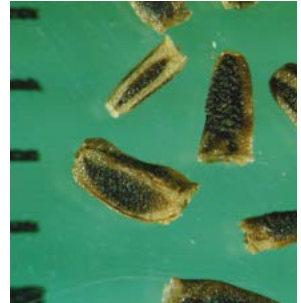
Plants of scentless mayweed can overwinter from later germination. Newly emerged plants are fairly slow-growing. It reproduces from seed moved by humans, birds or stock.

## Management

Scentless mayweed can be controlled by a wide range of herbicides, but because of its long period of emergence it may need repeated treatments.

Populations resistant to 2, 4-D have occurred in cereal crops in the UK.

Scale: 1 space = 1mm



# Sharp-leaved fluellen

*Kickxia elatine*

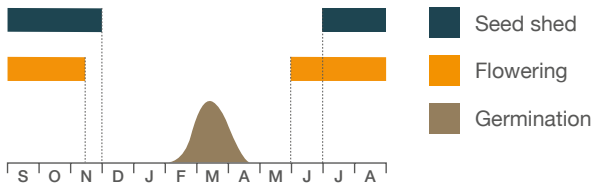
Competitive in

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WW	WOSR	Spring crops	Resistance	Value to biodiversity

## Seed statistics

Seed longevity: >5 years  
Seed weight: 0.4mg  
Seeds/flower: 17  
Seeds/plant: 1,800

## Life cycle



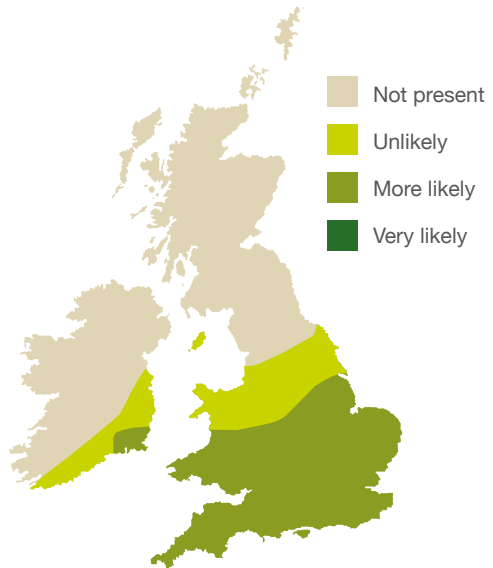
## Location

### Geographic location

Sharp-leaved fluellen is found in arable fields, field margins, gardens and waste ground.

### Soil type

It likes weakly acid to weakly alkaline soils, including light soils, over boulder clay. It can tolerate poorly aerated soils as it is shallow-rooted, but prefers fairly light conditions.



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## Description

It is a hairy, leafy, annual dicotyledon, creeping to 50cm, or weakly upright.

## Key features

**Plant:** The leaves are arrow-shaped with backward-pointing lobes.

**Flower:** The flowers are like small snapdragon flowers, yellow with a purple upper lip.

## Lookalikes

Sharp-leaved fluellen may be confused with round-leaved fluellen, although the cotyledons are more oval and notched at the tip, and the first true leaves end in blunt points.

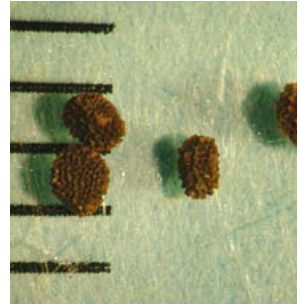
## Biology

Sharp-leaved fluellen is a poorly competitive species found in uncompetitive crops: it is most successful in perennial crops and row crops. It is seldom found in competitive winter crops or grass ley rotations. Seeds germinate in spring and set seed usually after harvest. Plants often grow lower than the combine cut, so can set seeds in late-ploughed fields.

## Management

It is readily controlled by cultivations.

Scale: 1 space = 1mm



# Shepherd's-needle

*Scandix pecten-veneris*

Competitive in



WW



WOSR



Spring crops



Resistance



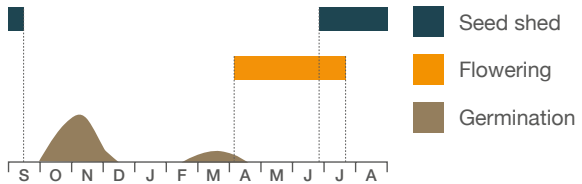
Value to biodiversity

## Seed statistics

Seed longevity: <1 year

Seed weight: 20mg

## Life cycle



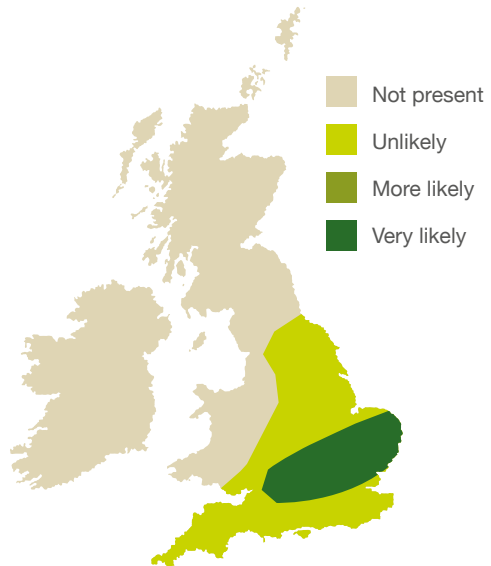
## Location

### Geographic location

Shepherd's-needle is a rare lowland weed, found up to an altitude of 320m, growing in cultivated areas such as old or current arable land and gardens.

### Soil type

It likes warm, preferably chalky clay soils which are dry in summer and nutrient-rich.



## Description

It is a short, almost hairless annual, growing up to 30cm tall, with finely divided and subdivided leaves. When supported by the crop it may grow to 60cm. The flowerheads are groups of up to ten tiny white four-petaled flowers.

## Key features

**Young plant:** The cotyledons are pointed and very long.

**Flowers:** As the fruits mature and extend, the flowers appear to be on top of 'needles'.

## Lookalikes

Shepherd's-needle may be confused with wild carrot as young plants: the first true leaves of wild carrot are hairy and coarser than those of shepherd's-needle, which has few hairs. Shepherd's-needle cotyledons are much longer and thinner than those of wild carrot.

## Biology

Shepherd's-needle is highly competitive in spring cereal crops and open crops of winter wheat, even when high levels of nitrogen are applied. It has re-appeared in some areas of the country in the last few years, preferring light soils. It can reduce combine efficiency when the stems and long seeds can become trapped. Shepherd's-needle reproduces only by seed. Seeds are dispersed mechanically from the parent plant and can also hook onto hair or clothing.

## Management

The re-appearance of shepherd's-needle in cereals may be due to the reduction in the use of 2, 4-D and MCPA at high doses, but combinations of sulfonylureas with contact herbicides and hormones can be effective.

Scale: 1 space = 1mm



# Shepherd's-purse

*Capsella bursa-pastoris*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

Seed decline: 22–36% per year

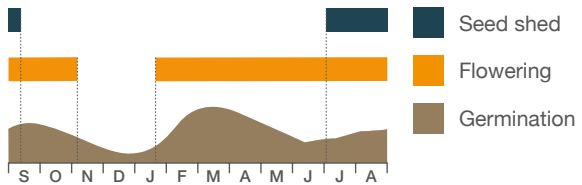
Germination depth: 0.5cm

Seed weight: 0.11mg

Seeds/flower: 30

Seeds/plant: 2,000–40,000

## Life cycle



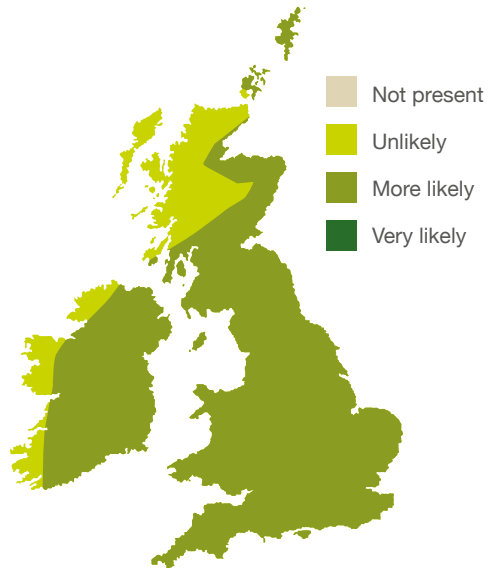
## Location

### Geographic location

Shepherd's-purse is usually a lowland weed but may grow to an altitude of 400m. It is found on disturbed, especially fertile ground, with areas of bare soil and is usually associated with broad-leaved crops rather than cereal crops.

### Soil type

It generally grows in nutrient-rich soils, with pH >5, such as humus-rich loams and nitrate-rich sandy soils. Shepherd's-purse avoids wet soils.





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## Description

It is a very variable annual or biennial dicotyledon, growing to 5–60cm. Most of the leaves grow as a rosette at the base. The flowerhead is covered with small four petalled white flowers, developing into a characteristic heart-shaped seed head.

## Key features

**Young plant:** The hairs on the young leaves are unbranched (a hand lens is required).

## Lookalikes

As it is so variable, shepherd's-purse can resemble several other species, particularly early stages of common poppy. Note the simple unbranched hairs of shepherd's-purse.

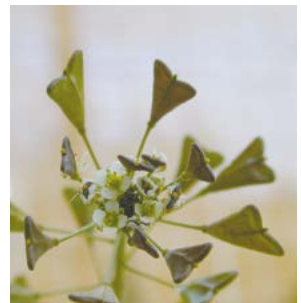
## Biology

Shepherd's purse is widespread in crops in all seasons in the UK and throughout most of the world. It is more of a problem in oilseed rape or other brassica crops, so this weed should be controlled in the cereal crop. Germination can occur throughout the year and plants are able to overwinter. Plants have a short life span. The sticky-coated seeds may be transported on footwear or agricultural machinery.

## Management

It is susceptible to a wide range of herbicides.

Scale: 1 space = 1mm



# Small nettle

*Urtica urens*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

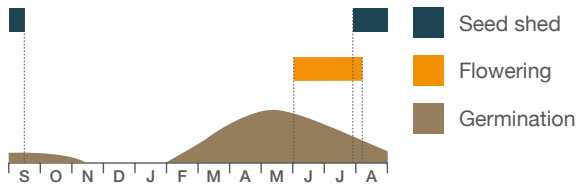
Seed longevity: >5 years

Seed weight: 0.4mg

Seeds/flower: 1

Seeds/plant: 100–1,000

## Life cycle



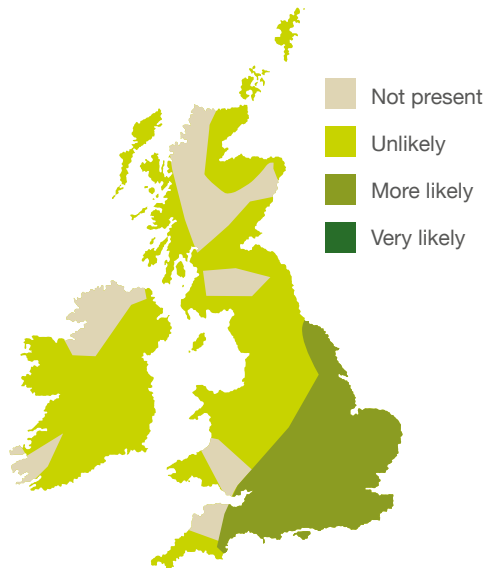
## Location

### Geographic location

Small nettle is found up to an altitude of 500m on well-cultivated arable land, especially in leaf crops as it germinates in spring, and in gardens, farmyards and other cultivated soils.

### Soil type

It likes well-drained neutral soils high in nitrogen.



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## Description

It is an annual dicotyledon, 10–60cm tall. The plant is compact in habit, with dark-green pointed toothed leaves, covered in stinging hairs.

## Key features

**Plant:** The leaves are rounder and more pointed and toothed than those of common nettle.

**Flower:** The male and female flowers are borne on the same plant in little clusters close to the stems.

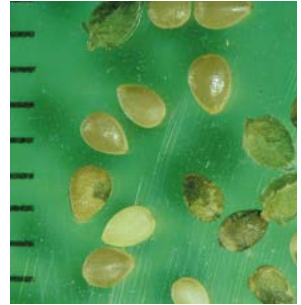
## Biology

Small nettle is more common in broad-leaved crops than in cereals and in spring rather than winter crops. It is poorly competitive in vigorous cereal crops. Plants are susceptible to frost but seeds can germinate at low temperatures and plants can overwinter in sheltered areas. Seeds can be transported by ingestion by animals or in soil. The seedbank is persistent.

## Management

Small nettle can be controlled by a wide range of herbicides in cereal crops. It is susceptible to hoeing in row crops.

Scale: 1 space = 1mm



# Smooth sow-thistle

*Sonchus oleraceus*



## Seed statistics

Seed longevity: >5 years

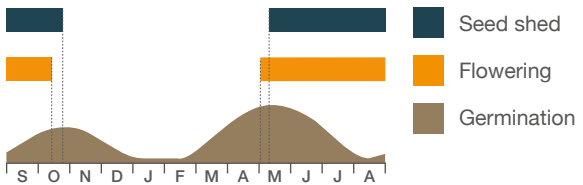
Germination depth: 2cm

Seed weight: 0.22mg

Seeds/head: 100

Seeds/plant: Up to 100,000

## Life cycle



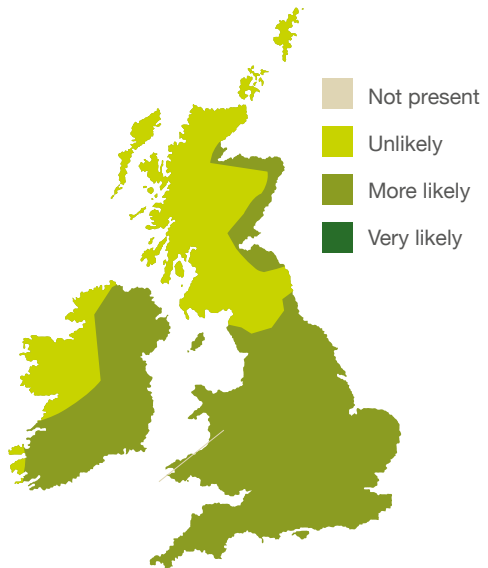
## Location

### Geographic location

Growing to an altitude of 365m, smooth sow-thistle is found on arable fields, verges, roadsides, gardens, waste lands and manure heaps.

### Soil type

It likes nitrogen-rich loams or nutrient-rich sandy and stony soils which are not too dry.



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## Description

It is a branched and upright annual dicotyledon, 30–120cm tall, sometimes tinged with red or purple. The yellow flowers are flask-shaped and grow in loose clusters.

## Key features

**Plant:** The leaves are glossy and softly prickly with a wide triangular lobe at the tip, clasping the stem.

## Biology

Smooth sow-thistle is increasing in arable rotations, particularly in winter crops. Autumn-germinating plants can overwinter as rosettes and flower in May; spring-germinating plants flower in June.

## Management

In row crops, hoeing is an alternative to herbicide use. Control in uncropped land to reduce seed return. Smooth sow-thistle does not persist in grassy rotations. There is a wide range of herbicides available for control in cereal crops.

Scale: 1 space = 1mm



# Soft brome

*Bromus hordeaceus*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed weight: 5mg

Seeds/head: 100

## Life cycle



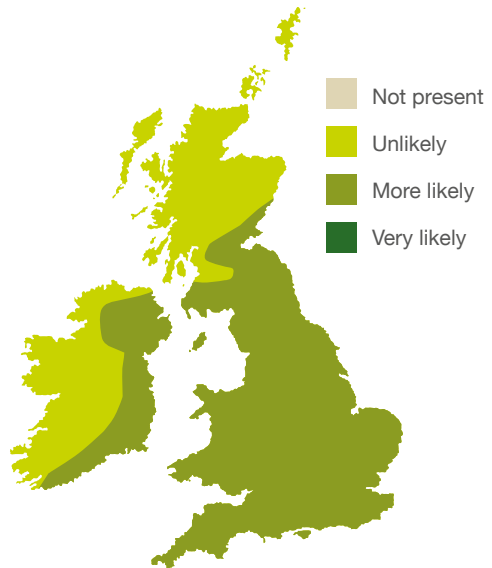
## Location

### Geographic location

Soft brome prefers disturbed, damp and grassy habitats, but is not found in waterlogged ground. It usually grows at altitudes of up to 400m.

### Soil type

Prefers neutral to alkaline soils, pH >5.



## Description

It is a tufted annual grass which hybridises with related species. It grows to a height of 10–100cm. Mature plants have dense soft hairs on the leaf sheaths. The leaf blades are greyish-green and the flowerhead is upright and compact.

## Key features

**Plant:** The stems are very hairy and more upright than those of meadow brome.

## Biology

Soft brome is found in grass and arable crops and field margins and is often a contaminant in rye and fescue seeds. Seeds germinate rapidly in autumn and young plants can grow rapidly in cooler months; plants may remain green over winter. Vegetative growth occurs in autumn and spring. Compact flowerheads occur in early summer.

## Management

Shed seed should be kept on the surface for 4 weeks before cultivation to allow ripening and killed with a glyphosate application before sowing subsequent crops. Deep cultivations or mouldboard ploughing, to bury seeds below 20cm, will reduce numbers in following years. Spring cropping is effective for control, as is fallow land, as long as emerging plants are controlled before setting seed.

Moderate control can be achieved by a variety of herbicides in cereals. Greater control may be achieved in broad-leaved crops.

Scale: 1 space = 1mm



# Spear thistle

*Cirsium vulgare*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

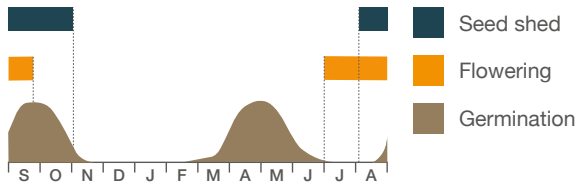
Seed longevity: >5 years

Seed weight: 2.5mg

Seeds/head or capsule: 100

Seeds/plant: 8,000

## Life cycle



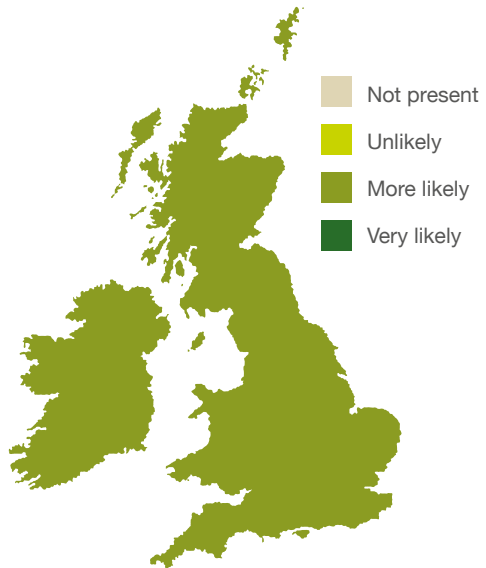
## Location

### Geographic location

Spear thistle is found all over the British Isles up to an altitude of 850m, in many habitats including hedgerows, field margins pastures and arable fields.

### Soil type

It prefers fertile and well-drained disturbed soils.





## Description

It is a biennial dicotyledon, usually 30–150cm tall, though occasionally taller. It is very spiny and has a very deep tap root. The thistle flowers are reddish purple and usually occur singly on the flower stalk.

## Key features

**Plants:** The stems have spiny wings and the young leaves have a hairy upper surface.

## Lookalikes

Spear thistle may be confused with creeping thistle; the young plants of thistles are often difficult to tell apart. Spear thistle has a large and densely hairy leaf second, creeping thistle has fewer marginal spines.

## Biology

Spear thistle is common in arable fields. The plant dies in the autumn after flowering. It reproduces only from seeds, which have little dormancy and germinate in autumn or spring; the immature plants can overwinter as a rosette. Most of the seeds (up to 93%) are eaten by birds or small mammals.

## Management

Being a biennial, it does not persist in arable rotations or routinely cultivated soils, but is encouraged by fallow or grass breaks or perennial crops. Seedlings are controlled by harrowing. Established plants are not easily controlled by mechanical means. MCPA herbicides can be used in cereal crops.

Scale: 1 space = 1mm



# Spreading hedge-parsley

*Torilis arvensis*

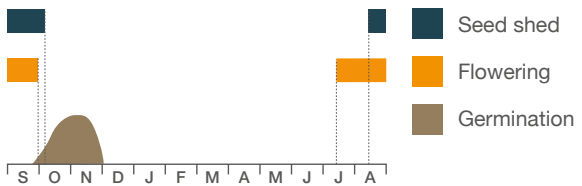
Competitive in

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WW	WOSR	Spring crops	Resistance	Value to biodiversity

## Seed statistics

Seed longevity: Short lived

## Life cycle



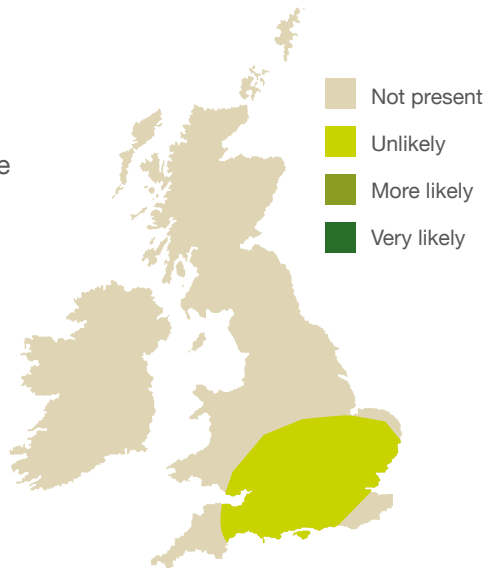
## Location

### Geographic location

Spreading hedge-parsley is found in lowland areas, usually in field margins and late-sown crops or in waste and disturbed ground. It is increasingly rare and geographically isolated in small pockets in the south of England.

### Soil type

It is found on chalky clay soils of low moisture and fertility but can grow on sands and gravels.



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## Description

It is a much-branched hairy annual that grows close to the ground, 10–20cm tall. The leaves are feathery like those of carrot, divided into three separate leaflets which are further divided. The small white flowers are in little clusters of 3 to 5. The fruit is covered with hooked spines.

## Key features

**Young plant:** It is slightly hairy.

**Plant:** The stem is finely grooved.

## Biology

Spreading hedge-parsley germinates in autumn, suggesting that the seed is short-lived. The fruit is transported by hooking on to fur or clothing.

## Management

Spreading hedge-parsley is not competitive to modern crops, and its late flowering disadvantages it in early harvested and early-ploughed crops.

Scale: 1 space = 1mm



# Sugar beet

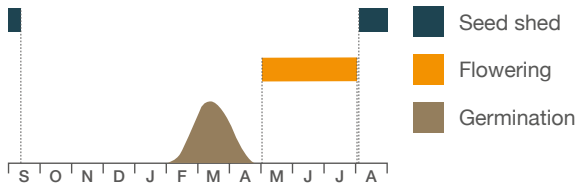
*Beta vulgaris*



## Seed statistics

Seeds/flower: 1  
Seeds/plant: 10,000

## Life cycle



## Location

### Geographic location

Sugar beet is found usually in lowland areas as a volunteer from previous cropping.

### Soil type

It is found on light arable soils

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## Description

It is a large biennial that grows to 1.8m tall, but in the first year has a rosette of large dark-green oval leaves. The cultivated form of beet has a large tap root.

## Key features

**Fruit:** It is distinguished from other beets by thicker leaves and a large bulbous tap root.

## Biology

Weed beet are any unwanted sugar beet growing within and between the rows of sown beet or other crops. They grow from groundkeepers or from seed shed by bolting crop plants or other weed beets. As seedlings, they are indistinguishable from sugar beet. Sugar beet which germinates in spring usually overwinters as a leafy rosette before flowering in the following year. However in some cases the plants flower in the first year (in a crop these beets are known as bolters) and are prolific seed producers.

## Management

Crops containing bolters should be harvested as early as possible to reduce the production of viable seeds. The sulfonylurea group of herbicides is particularly active on weed beet.

Scale: 1 space = 1mm



# Sunflower

*Helianthus annuus*

Competitive in



WW



WOSR



Spring crops



Resistance



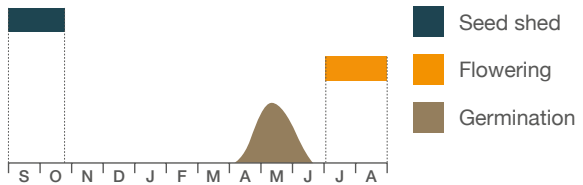
Value to biodiversity

## Seed statistics

Seed weight: 6.67mg

Seeds/plant: <1 year

## Life cycle



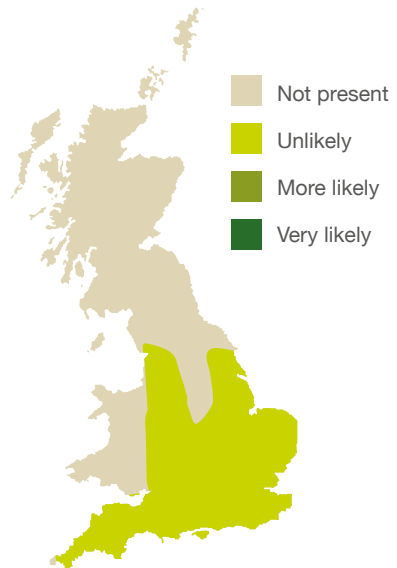
## Location

### Geographic location

Sunflower grows mostly in the Midlands and south of England, mainly as a volunteer from previous sunflower crops, bird-seed etc., on wasteland and banks.

### Soil type

It requires nutrient-rich and moist soils to grow.



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## Description

It is a sturdy annual dicotyledon, growing 1–3m tall. At all stages the plant is very large, with sturdy stems and large bright, yellow flowers.

## Key features

**Flowers:** Flowerheads face the sun and sometimes track it. They dip as they ripen.

## Biology

Sunflower seeds germinate in late spring and plants flower and set seeds in the same growing season. The seeds are eaten by birds and small mammals.

## Management

Although it may occur as a volunteer in the two years following a crop it rarely persists for longer. It is easily cleaned out from most other crop seeds. It is controlled by a range of herbicides suitable for broad-leaved crops.

Scale: 1 space = 1mm



# Timothy

*Phleum pratense*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

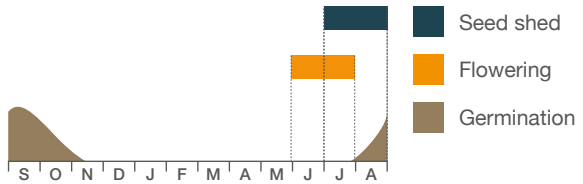
## Seed statistics

Seed longevity: >5 years

Seed weight: 0.5mg

Seeds/flower: 1

## Life cycle



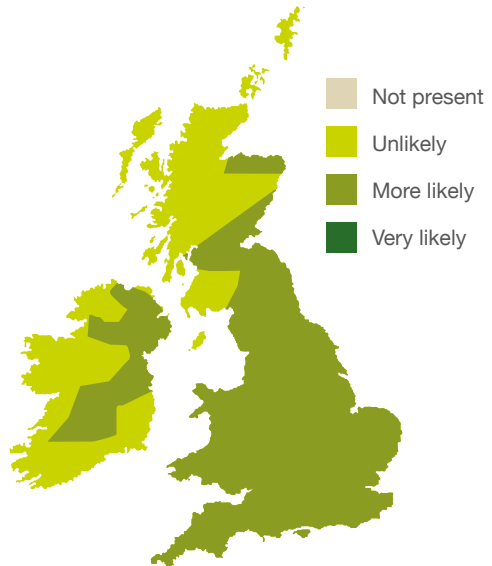
## Location

### Geographic location

Timothy is found in a range of grasslands including meadows and rough grassland up to an altitude of 450m.

### Soil type

It prefers heavy slightly damp soils.





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## Description

It is a coarse tufted grass growing to 150cm tall. Leaves are pale green and pointed. The flowerhead is packed with tiny spikelets so it looks smooth like fur.

## Key features

**Plant:** The plants have an upright habit.

## Biology

Timothy is a common component of pastures and other sown grassland and can be found in cereal crops in grassy rotations. Timothy emerges from both seed and tussock fragments. Tillering occurs in spring and autumn and stems remain green over winter and grow in the spring; a second period of growth may occur in July.

## Management

In winter cereals, some control with herbicides may be possible. It does not persist into spring crop breaks or if soils are routinely cultivated.

Scale: 1 space = 1mm



# Venus's-looking-glass

*Legousia hybrida*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

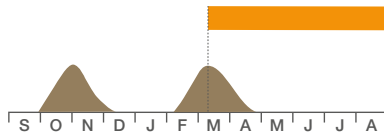
Seed longevity: >5 years

Seed weight: 0.335mg

Seeds/flower: 40

## Life cycle

Unknown



- Seed shed
- Flowering
- Germination

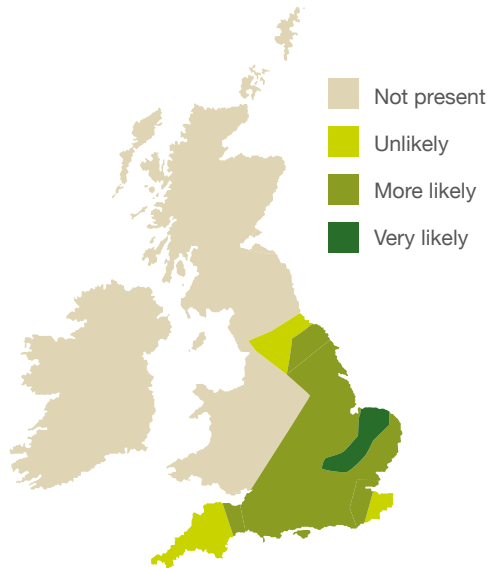
## Location

### Geographic location

Venus's-looking-glass is a lowland weed found in arable fields, or on disturbed soils such as motorway embankments.

### Soil type

It prefers chalky soils and low nitrogen conditions.



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## Description

It is an upright, roughly hairy annual dicotyledon, growing up to 30cm tall. The leaves are wavy with short stalks. It has tubular pink flowers. The ovary starts to extend as the flower becomes fertile and looks like three touching cylinders.

## Key features

**Fruit:** Only two of the three seed head ‘cylinders’ are visible from one side.

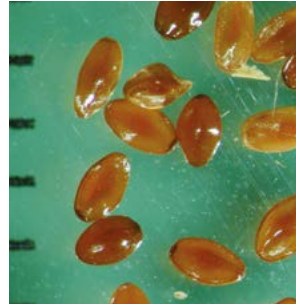
## Biology

Venus’s-looking-glass can germinate from autumn through to spring. It is insect-pollinated. It is rarely a problem in competitive crops but can be found in newly emerged crops.

## Management

It does not persist in winter cropping rotations and is readily controlled in early spring by cultivation.

Scale: 1 space = 1mm



# Wall speedwell

*Veronica arvensis*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

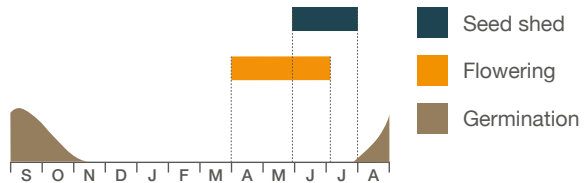
Seed longevity: 1–5 years

Seed weight: 0.25mg

Seeds/flower: 15

Seeds/plant: 0–17,000

## Life cycle



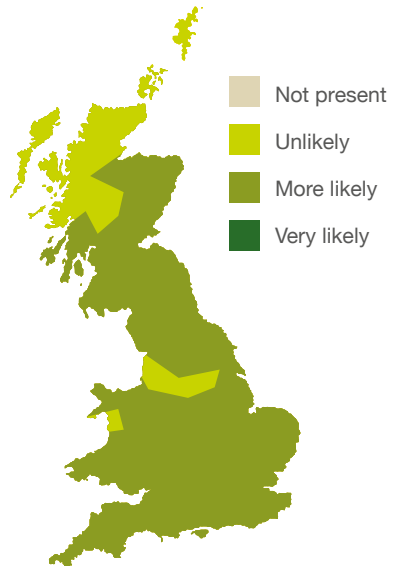
## Location

### Geographic location

Wall speedwell grows to an altitude of 800m and is usually found on arable land, tracks, waste ground, heaths, grasslands and gravelled paths.

### Soil type

It likes nutrient-rich moderately acidic loose loams or sandy loams with some humus.



---

## Description

It is a short plant 3–15cm tall, branched and stiffly upright with small oval leaves. The stem is hairy. The very small, intensely blue flowers are borne on short stalks in the leaf axils.

## Key features

**Plant:** The leaves are small and long, oval in shape.

**Fruit:** It is heart-shaped.

## Biology

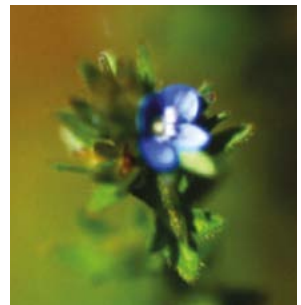
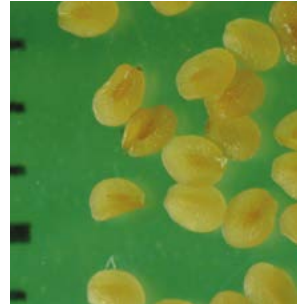
Wall speedwell is very common on arable land, particularly in winter cereals, but is not competitive in vigorous cereal crops. It does not persist in grass leys. Although it can root from stem fragments, this does not occur in the field. Seeds shed in the summer can germinate in the following autumn, giving rise to overwintering plants, or germinate in the following spring. Seeds are moved by humans or cattle or air currents.

## Management

Wall speedwell does not thrive in dense crops. It is not affected by minimum tillage. Cereal crops may be harrowed early in the season and row crops can be hoed.

It can be controlled by a range of herbicides suitable for broad-leaved weeds in cereal crops.

Scale: 1 space = 1mm



# Wheat

*Triticum aestivum*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

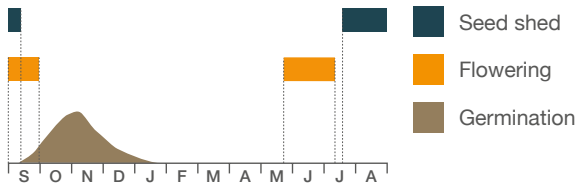
See longevity: 1 year

Seed weight: 55mg

Seeds/ear: 40–50

Seeds/plant: 120–150

## Life cycle



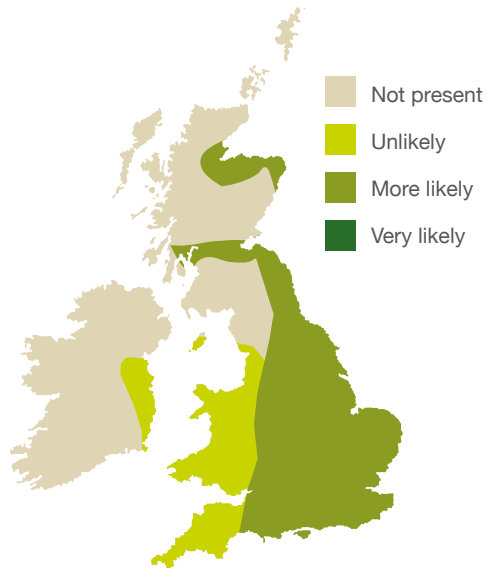
## Location

### Geographic location

Wheat grows as volunteers in subsequent crops, so tends to be found in arable areas.

### Soil type

It prefers a soil which holds together well with good water retention.  
It prefers a high nitrogen input.



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## Description

It is an annual tufted grass which may grow up to 1.2m in short-strawed varieties or 1.8m in long-strawed. It has hollow or pithy stems with flat broad leaves and a stiff appearance. The flower spike appears square in cross section.

## Key features

**Fruit:** It has large grains.

## Biology

Volunteer wheat can occur as a weed in the subsequent crop. It can germinate in early autumn or spring and has one generation a year. It seldom persists for more than one season if controlled; seed buried for two years is unlikely to remain viable.

## Management

Where wheat seeds have been shed during harvest, light harrowing will encourage germination, to allow control before sowing the next crop. Wheat cannot be controlled by herbicides in other cereals but a wide range of herbicides can control wheat in other crops.

Scale: 1 space = 1mm



# White campion

*Silene latifolia*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

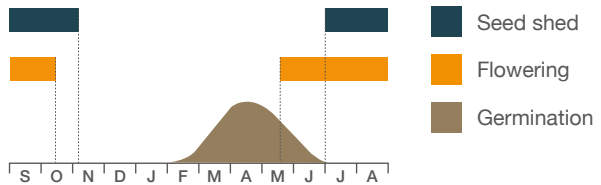
Germination depth: 5cm

Seed weight: 7.3mg

Seeds/flower: 230

Seeds/plant: 6,000

## Life cycle



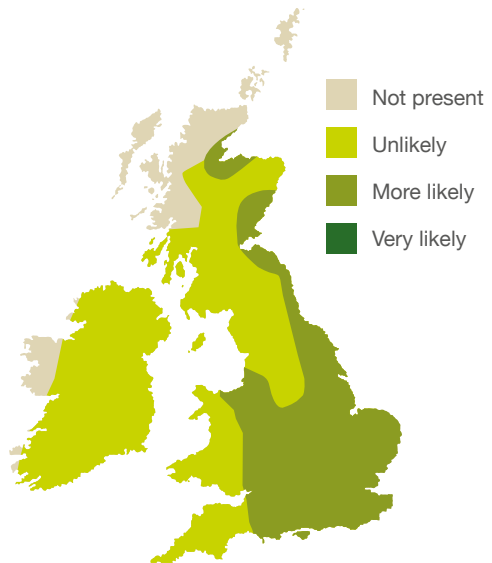
## Location

### Geographic location

White campion grows to an altitude of 425m and is found on arable fields, waste ground and road verges.

### Soil type

It prefers deep well-drained soils.





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## Description

It is a softly hairy, biennial or short-lived perennial dicotyledon, 30–100cm tall. The leaves are pointed and reasonably broad. Male and female flowers are white with five deeply notched petals.

## Key features

**Young plant:** First true leaves are bluntly pointed.

**Flowers:** White, deeply notched petals.

## Biology

White campion is common on arable land, emerging largely in spring crops, but it can persist to produce large plants in perennial/biennial crops. About half of overwintering adult plants can survive a hard winter.

## Management

It is seldom a problem in winter rotations, or where there are grass ley breaks. Large plants can be pulled in some crops or cut before flowering to prevent seeding.

Scale: 1 space = 1mm



# Wild carrot

*Daucus carota*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

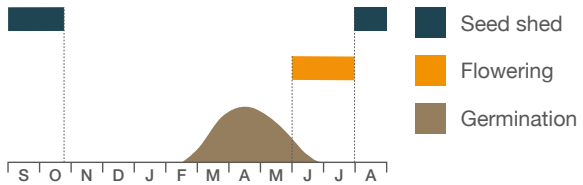
Seed longevity: >5

years Seed weight: 1mg

Seeds/floret: 2

Seeds/plant: 1,000–40,000

## Life cycle



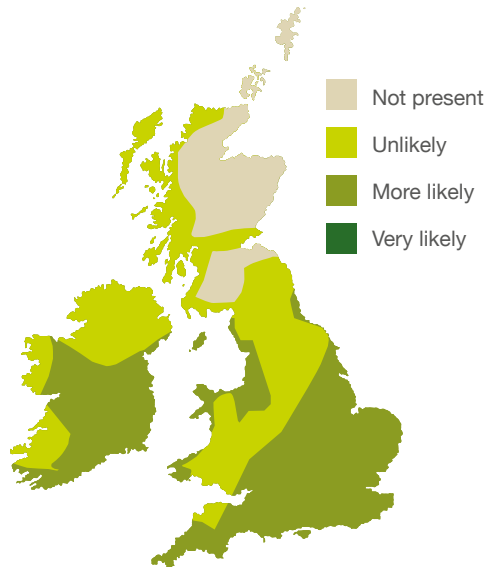
## Location

### Geographic location

Wild carrot is found up to an altitude of 400m in England and the warmer coastal areas of Scotland, Wales and Ireland. It prefers disturbed or waste ground, or open turf on chalky downland.

### Soil type

It prefers infertile but well-drained chalky soils.



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## Description

It is usually a biennial or short-lived perennial dicotyledon, though it can also flower in the first year. It grows up to 80cm tall. The basal rosette leaves are hairy and coarsely divided, with triangular leaf stalks. The flat flowerheads are densely packed with white flowers.

## Key features

**Plant:** It smells of carrot when bruised. The flowering stem appears to zigzag. The buds and dried flowerheads are cup-shaped.

## Lookalikes

Wild carrot may be confused with shepherd's-needle as young plants: the first true leaves of wild carrot are hairy and coarser than shepherd's-needle which has few hairs.

## Biology

Wild carrot is usually found in field margins and seldom encroaches far into arable land, but it can be a problem in perennial crops.

It reproduces by seed. Autumn-germinating plants remain green overwinter. The flowering stem dies in the autumn while often retaining seed. It is capable of interbreeding with cultivated carrot.

## Management

It does not persist where there is routine cultivation. Herbicides are available for use in cereal crops.

Scale: 1 space = 1mm



# Wild-oat

*Avena fatua*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

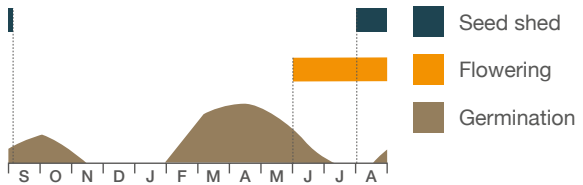
Seed decline: 50% per year

Seed weight: 30mg

Seeds/spikelet: 2

Seeds/plant: Up to 200

## Life cycle



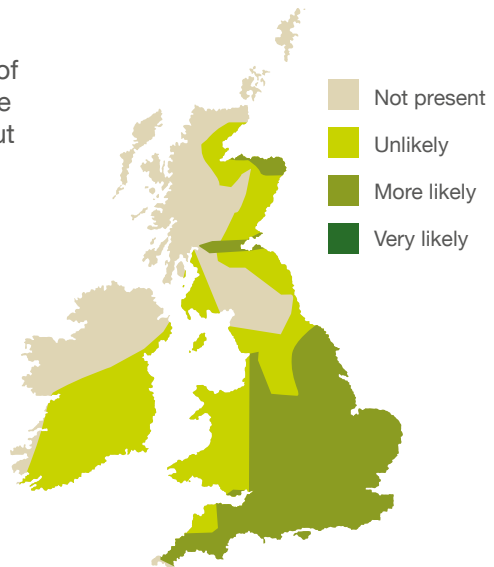
## Location

### Geographic location

Wild-oat is found mainly to the south of Northumberland and in Scottish arable areas. It is a grass of lowland areas but it can grow up to an altitude of 300m.

### Soil type

It prefers highly fertile, moist and weakly acid to weakly alkaline soils.



## Description

It is a tall, stout, annual tufted grass. The leaf blade is broad and flat with an anti-clockwise twist. The flowerhead is spreading with drooping spikelets.

## Key features

**Plant:** The leaf margins are hairy towards the base.

**Fruit:** There is a tuft of tawny hairs at the base, when ripe, the spikelets break apart with visible scars.

## Lookalikes

All the oat species are difficult to tell apart at the seedling stage. It is difficult to tell the different oats apart as plants: winter wild-oat germinates in the autumn while wild-oat usually germinates in spring. The leaf margins of wild-oat are hairier near the base and the spikelets are smaller than those of winter wild-oat. The lemmas of wild-oat are broader than those of winter wild-oat and end in two small teeth. These two species are easiest to tell apart when the fruit is ripe. Wild-oat seeds separate in the spikelet with no scar.

## Biology

Wild-oats reproduce only from seed. Although some germinate in autumn, tiller in early spring and are resistant to frost, most germinate in the spring. One wild-oat plant per square metre can reduce yields by up to 1t/ha in winter cereals and up to 0.6t/ha in spring cereals.

## Management

It is cheaper to control wild-oat in break crops. Delay cultivation as long as possible after harvest to allow mice and birds to eat the freshly shed seeds. Burial will increase seed dormancy. Hand roguing is possible. Clean the combine between fields to prevent seeds being spread.

Scale: 1 space = 1mm



# Wild pansy

*Viola tricolor*

Competitive in



WW



WOSR



Spring crops



Resistance



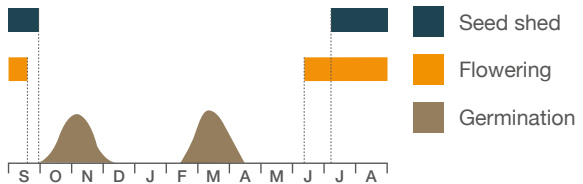
Value to biodiversity

## Seed statistics

Seed longevity: >5 years

Seed weight: 0.4mg

## Life cycle



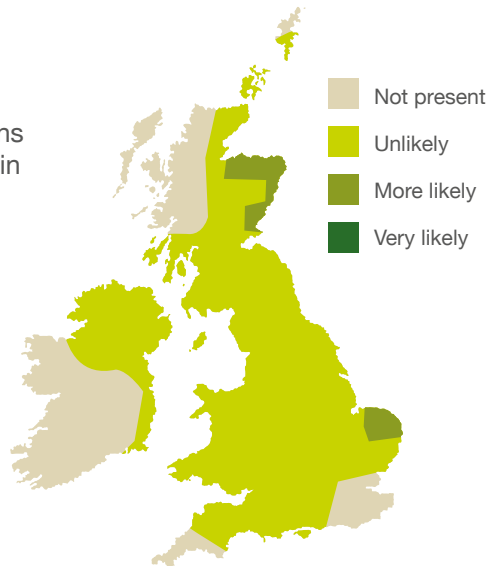
## Location

### Geographic location

Wild pansy can grow to an altitude of 575m and is found in slightly acidic habitats and cultivated ground, gardens and wasteland. It is most often found in damp cool climates.

### Soil type

It grows on sandy, stony and infertile soils, pH range 5–7.



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## Description

It is an annual or perennial dicotyledon, larger and more robust than field pansy. Leaves are oblong, lobed or toothed with projections at the base. The flowers are five-petaled and blue violet with the lower petals flushed with bright yellow.

## Key features

**Plant:** Wild pansy is larger and more robust than field pansy.

**Flowers:** The petals are larger than the sepals.

## Biology

Wild pansy is less commonly seen in fields than field pansy. It is found on stony arable land in both winter and spring crops; seeds may contaminate grain and be difficult to clean. Wild pansy is not as competitive as field pansy, but has a similar life cycle; autumn-germinating plants can overwinter and flower early in the following season. The seeds are dispersed from an exploding seed head.

## Management

Residual herbicide treatments are generally effective in autumn and spring sown crops.



# Wild radish

*Raphanus raphanistrum*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

## Seed statistics

Seed longevity: >5 years

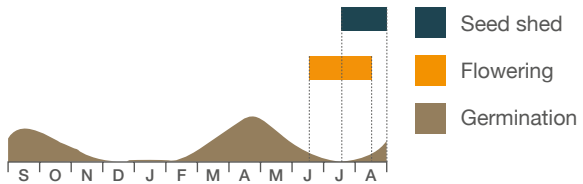
Germination depth: 5cm

Seed weight: 6.67mg

Seeds/head: 3–10

Seeds/plant: 160

## Life cycle



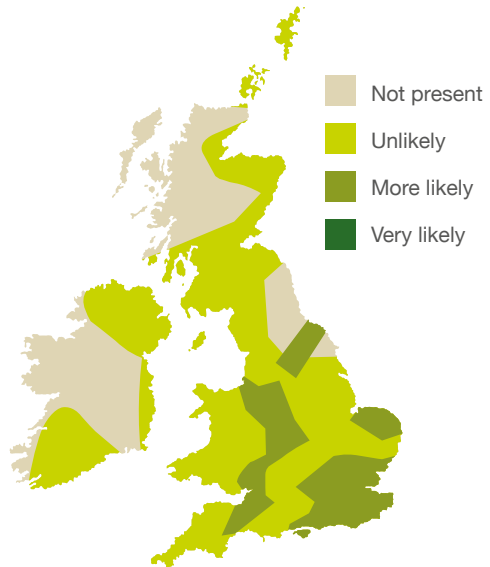
## Location

### Geographic location

Wild radish is found in arable fields, waste ground and paths up to an altitude of 380m.

### Soil type

It prefers lime-free but nutrient-rich sandy and loam soils.





## Description

It is an annual, growing to 1m tall, with roughly hairy stems. The leaves have toothed lobes near the stem and a large lobe at the tip. There is a branched tap root.

## Key features

**Plant:** The teeth on the edges of the upper leaves are blunt.

**Fruit:** The pod appears beaded as it shrinks around the seeds. It has a long beak and breaks easily at the joints.

## Lookalikes

It is similar to charlock, as both have roughly hairy stems.

## Biology

Wild radish, also called runch, is one of the commonest weeds worldwide. It emerges mostly in spring and therefore in spring crops, but it germinates also in early-sown winter oilseed rape. These autumn-germinating seedlings are generally killed by frosts but can persist in a mild winter. The seed can be transported as a seed contaminant and can remain viable in manures. Statutory seed regulations for the UK and for England (2002) specify that the seeds must not be found in cereal grain samples. It is a particular problem in oilseed rape crops where the seed cannot be separated.

## Management

Wild radish is controlled by residual herbicides, hormones and sulfonylureas in cereals and residual herbicides in most spring crops. However it is very difficult to control in brassica crops.

Scale: 1 space = 1mm



# Winter wild-oat

*Avena sterilis*

Competitive in



WW



WOSR



Spring crops



Resistance



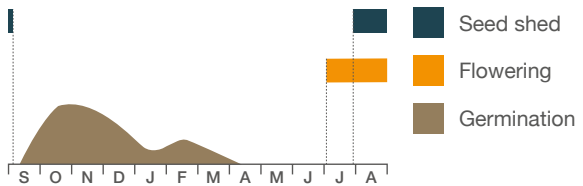
Value to biodiversity

## Seed statistics

Seed longevity: 1–5 years

Seed weight: 66.67mg

## Life cycle



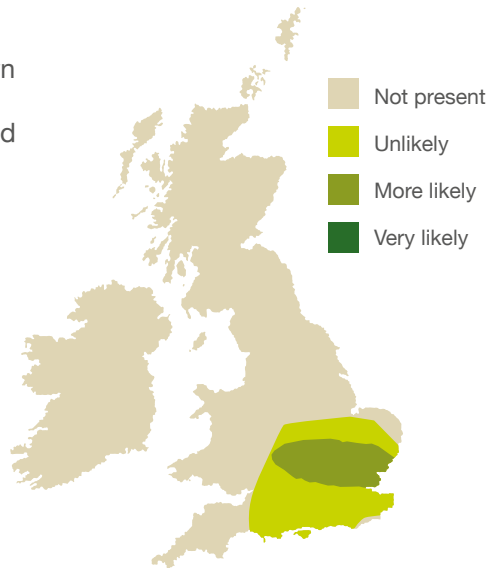
## Location

### Geographic location

The range of winter wild-oat has grown from its focus in Oxfordshire into East Anglia and the Midlands. It is a lowland plant found on waste ground.

### Soil type

It grows on heavy clay soils.



## Description

It is a tall, stout, annual grass similar to cultivated oat. The leaf blade is broad and flat with an anti-clockwise twist. The flowerhead is spreading with drooping spikelets.

## Key features

**Fruit:** Winter wild-oat has a narrower lemma than that of wild-oat and a shorter awn. The seeds are joined in the spikelet and require pressure to prize apart, leaving a scar.

## Lookalikes

All oat species are difficult to tell apart at both seedling and adult stages: winter wild-oat germinates in the autumn whilst wild-oat usually germinates in the spring. Wild-oat differs from winter wild-oat in the following areas; leaf margins are hairier near the base, spikelets are smaller, lemmas are broader and end in two small teeth. The two species are easier to tell apart when ripe, wild-oat seeds separate from the spikelet with no scar.

## Biology

Wild-oat reproduces only by seed; it germinates in autumn and persists over winter. One wild-oat plant per square meter can reduce yields by up to 1t/ha in winter cereals and up to 0.6t/ha in spring cereals.

## Management

Control is cheaper in break crops; use of stale seedbed in autumn or spring will help. Delay cultivation after harvest to allow seed predation. Hand roguing is possible when plants are visible above the crop. Clean the combine between fields to prevent seeds being spread.

Scale: 1 space = 1mm



# Yorkshire-fog

*Holcus lanatus*

Competitive in



WW



WOSR



Spring crops



Resistance



Value to biodiversity

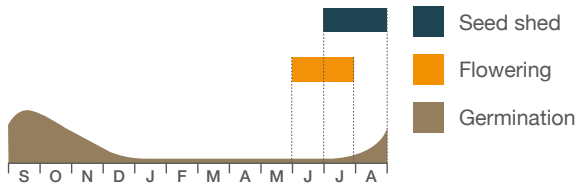
## Seed statistics

Seed longevity: 1–5 years

Seed weight: 0.25mg

Seeds/head: 1–10

## Life cycle



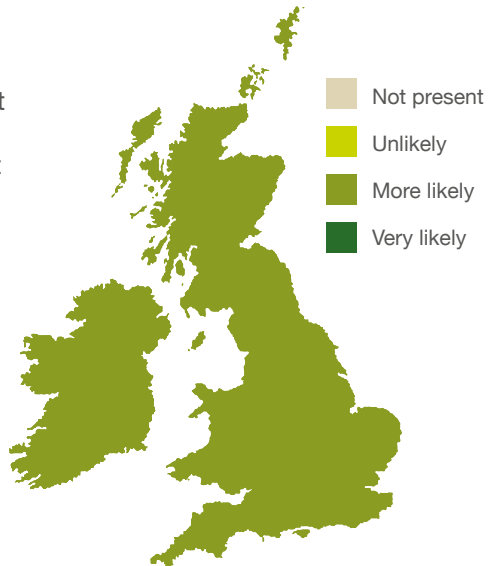
## Location

### Geographic location

Yorkshire-fog occurs as seedling in every type of habitat, with the greatest abundance in meadow and pasture. It can grow at altitudes of up to 600m. It prefers damp sites, shady areas and low ground. In ditches it can become dominant to the extent of excluding other species.

### Soil type

It grows in a wide range of weakly acidic soils, preferring moist conditions and high fertility, in the pH range 5–7.



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## Description

It is a tufted, very hairy, perennial grass, 20–100cm tall, with loose or compactly tufted stems. The plants look velvety with grey-green leaf blades. The flowerheads start tightly packed like artists' brushes, but develop into a conical open shape.

## Key features

**Young plant:** There are red/pink strips at the base of the shoots.

## Biology

Yorkshire-fog is usually found only in or near field margins. Established plants do not grow over winter although the leaves may stay green. New shoots are formed in the spring, but the leaves are short-lived. Reproduction is usually by seed, which can germinate rapidly in a range of temperatures. Yorkshire-fog is a prolific seeder, with individual plants capable of producing up to a quarter of a million seeds each season. As the seed is small and fine it can travel long distances carried by wind. However, seedling vigour is poor and young plants often fail to establish in dense pasture.

## Management

It is seldom a persistent problem within crops and is reduced by spring cropping and ploughing regimes, but is encouraged by grass breaks.

Scale: 1 space = 1mm



## Weed list by EPPO code

EPPO code	Scientific name	Common name	Weed type ID
<b>AETCY</b>	<i>Aethusa cynapium</i>	Fool's parsley	Broad-leaved
<b>AGRRE</b>	<i>Elytrigia repens</i>	Common couch	Grass
<b>AGRST</b>	<i>Agrostis stolonifera</i>	Creeping bent	Grass
<b>AGSGI</b>	<i>Agrostis gigantea</i>	Black bent	Grass
<b>ALAPE</b>	<i>Alliaria petiolata</i>	Garlic mustard	Broad-leaved
<b>ALOMY</b>	<i>Alopercurus myosuroides</i>	Black-grass	Grass
<b>ANGAR</b>	<i>Angallis arvensis</i>	Scarlet pimpernel	Broad-leaved
<b>ANRSY</b>	<i>Anthriscus sylvestris</i>	Cow parsley	Broad-leaved
<b>APESV</b>	<i>Apera spica-venti</i>	Loose silky bent	Grass
<b>APHAR</b>	<i>Aphanes arvensis</i>	Parsley-piert	Broad-leaved
<b>ARREL</b>	<i>Arrhenatherum elatius</i>	Onion Couch	Grass
<b>ATXPA</b>	<i>Atriplex patula</i>	Common orache	Broad-leaved
<b>AVEFA</b>	<i>Avena fatua</i>	Wild-oat	Grass
<b>AVELU</b>	<i>Avena sterilis</i>	Winter wild-oat	Grass
<b>AVESA</b>	<i>Avena sativa</i>	Oat	Grass
<b>BEAVX</b>	<i>Beta vulgaris</i>	Sugar beet	Broad-leaved
<b>BELPE</b>	<i>Bellis perennis</i>	Daisy	Broad-leaved
<b>BRANN</b>	<i>Brassica napus</i> ssp. <i>oleifera</i>	Oilseed rape	Broad-leaved
<b>BROCO</b>	<i>Bromus commutatus</i>	Meadow brome	Grass
<b>BRODI</b>	<i>Anisantha diandra</i>	Great brome	Grass
<b>BROMO</b>	<i>Bromus hordeaceus</i>	Soft brome	Grass
<b>BROSE</b>	<i>Bromus secalinus</i>	Rye brome	Grass
<b>BROST</b>	<i>Anisantha sterilis</i>	Barren brome	Grass
<b>BRSNI</b>	<i>Brassica nigra</i>	Black mustard	Broad-leaved

## Weed list by EPPO code

EPPO code	Scientific name	Common name	Weed type ID
<b>CAPBP</b>	<i>Capsella bursa-pastoris</i>	Shepherd's-purse	Broad-leaved
<b>CENCY</b>	<i>Centaurea cyanus</i>	Cornflower	Broad-leaved
<b>CENNI</b>	<i>Centaurea nigra</i>	Knapweed	Broad-leaved
<b>CERFO</b>	<i>Cerastium fontanum</i>	Common mouse-ear	Broad-leaved
<b>CHEAL</b>	<i>Chenopodium album</i>	Fat hen	Broad-leaved
<b>CIRAR</b>	<i>Cirsium arvense</i>	Creeping thistle	Broad-leaved
<b>CIRVU</b>	<i>Cirsium vulgare</i>	Spear thistle	Broad-leaved
<b>COIMA</b>	<i>Conium maculatum</i>	Hemlock	Broad-leaved
<b>CONAR</b>	<i>Convolvulus arvensis</i>	Field bindweed	Broad-leaved
<b>CYXCR</b>	<i>Cynosurus cristatus</i>	Crested Dog's-tail	Grass
<b>DACGL</b>	<i>Dactylis glomerata</i>	Cock's-foot	Grass
<b>DAUCA</b>	<i>Daucus carota</i>	Wild carrot	Broad-leaved
<b>EQUAR</b>	<i>Equisetum arvense</i>	Field horsetail	Broad-leaved
<b>ERICA</b>	<i>Conyza canadensis</i>	Canadian fleabane	Broad-leaved
<b>FERSU</b>	<i>Festuca rubra</i>	Red fescue	Grass
<b>FUMOF</b>	<i>Fumaria officinalis</i>	Common fumitory	Broad-leaved
<b>GAETE</b>	<i>Galeopsis tetrahit</i>	Common hemp-nettle	Broad-leaved
<b>GALAP</b>	<i>Galium aparine</i>	Cleavers	Broad-leaved
<b>GERDI</b>	<i>Geranium dissectum</i>	Cut-leaved crane's-bill	Broad-leaved
<b>GERMO</b>	<i>Geranium molle</i>	Dove-s-foot crane's-bill	Broad-leaved
<b>HELAN</b>	<i>Helianthus annuus</i>	Sunflower	Broad-leaved
<b>HOLLA</b>	<i>Holcus lanatus</i>	Yorkshire-fog	Grass
<b>HORVX</b>	<i>Hordeum vulgare</i>	Barley	Grass
<b>KICEL</b>	<i>Kickxia elatine</i>	Sharp-leaved fluellen	Broad-leaved
<b>KICSP</b>	<i>Kickxia spuria</i>	Round-leaved fluellen	Broad-leaved

## Weed list by EPPO code

EPPO code	Scientific name	Common name	Weed type ID
LAMAM	<i>Lamium amplexicaule</i>	Henbit dead-nettle	Broad-leaved
LAMPU	<i>Lamium purpureum</i>	Red dead-nettle	Broad-leaved
LAPCO	<i>Lapsana communis</i>	Nipplewort	Broad-leaved
LEGHY	<i>Legousia hybrida</i>	Venus's-looking-glass	Broad-leaved
LIUUT	<i>Linum usitatissimum</i>	Linseed	Broad-leaved
LOLMU	<i>Lolium multiflorum</i>	Italian rye-grass	Grass
LOLPE	<i>Lolium perenne</i>	Perennial rye-grass	Grass
MATCH	<i>Matricaria recutita</i>	Scented mayweed	Broad-leaved
MATIN	<i>Tripleurospermum inodorum</i>	Scentless mayweed	Broad-leaved
MATMT	<i>Matricaria disoides</i>	Pineappleweed	Broad-leaved
MELAL	<i>Silene latifolia</i>	White campion	Broad-leaved
MYOAR	<i>Myosotis arvensis</i>	Field forget-me-not	Broad-leaved
PAPDU	<i>Papaver dubium</i>	Long-headed poppy	Broad-leaved
PAPRH	<i>Papaver rhoeas</i>	Common poppy	Broad-leaved
PHAPA	<i>Phalaris paradoxa</i>	Awned canary-grass	Grass
PHLPR	<i>Phleum pratense</i>	Timothy	Grass
PISSA	<i>Pisum sativum</i>	Pea	Broad-leaved
POAAN	<i>Poa annua</i>	Annual meadow-grass	Grass
POATR	<i>Poa trivialis</i>	Rough-stalked meadow-grass	Grass
POLAV	<i>Polygonum aviculare</i>	Knot-grass	Broad-leaved
POLCO	<i>Fallopia convolvulus</i>	Black-bindweed	Broad-leaved
POLLA	<i>Persicaria lapathifolia</i>	Pale persicaria	Broad-leaved
POLPE	<i>Persicaria maculosa</i>	Redshank	Broad-leaved
RAPRA	<i>Raphanus raphanistrum</i>	Wild radish	Broad-leaved
RUMCR	<i>Rumex crispus</i>	Curled dock	Broad-leaved



## Weed list by EPPO code

EPPO code	Scientific name	Common name	Weed type ID
<b>RUMOB</b>	<i>Rumex obtusifolius</i>	Broad-leaved dock	Broad-leaved
<b>SCAPV</b>	<i>Scandix pecten-veneris</i>	Shepherd's-needle	Broad-leaved
<b>SENJA</b>	<i>Senecio jacobaea</i>	Ragwort	Broad-leaved
<b>SENVU</b>	<i>Senecio vulgaris</i>	Groundsel	Broad-leaved
<b>SINAR</b>	<i>Sinapis arvensis</i>	Charlock	Broad-leaved
<b>SOLNI</b>	<i>Solanum nigrum</i>	Black nightshade	Broad-leaved
<b>SOLTU</b>	<i>Solanum tuberosum</i>	Potato	Broad-leaved
<b>SONAR</b>	<i>Sonchus arvensis</i>	Perennial sow-thistle	Broad-leaved
<b>SONAS</b>	<i>Sonchus asper</i>	Prickly sow-thistle	Broad-leaved
<b>SONOL</b>	<i>Sonchus oleraceus</i>	Smooth sow-thistle	Broad-leaved
<b>SPRAR</b>	<i>Spergula arvensis</i>	Corn spurrey	Broad-leaved
<b>SSYOF</b>	<i>Sisymbrium officinale</i>	Hedge mustard	Broad-leaved
<b>STEME</b>	<i>Stellaria media</i>	Common chickweed	Broad-leaved
<b>TAROF</b>	<i>Taraxacum</i> agg.	Dandelion	Broad-leaved
<b>TORAV</b>	<i>Torilis arvensis</i>	Spreading hedge-parsley	Broad-leaved
<b>TRZAX</b>	<i>Triticum aestivum</i>	Wheat	Grass
<b>URTDI</b>	<i>Urtica dioica</i>	Common nettle	Broad-leaved
<b>URTUR</b>	<i>Urtica urens</i>	Small nettle	Broad-leaved
<b>VERAG</b>	<i>Veronica agrestis</i>	Grield field-speedwell	Broad-leaved
<b>VERAR</b>	<i>Veronica arvensis</i>	Wall speedwell	Broad-leaved
<b>VERHE</b>	<i>Veronica hederifolia</i>	Ivy-leaved speedwell	Broad-leaved
<b>VERPE</b>	<i>Veronica persica</i>	Common field-speedwell	Broad-leaved
<b>VICFX</b>	<i>Vicia faba</i>	Field bean	Broad-leaved
<b>VICSA</b>	<i>Vicia sativa</i>	Common vetch	Broad-leaved
<b>VIOAR</b>	<i>Viola arvensis</i>	Field pansy	Broad-leaved
<b>VIOTR</b>	<i>Viola tricolor</i>	Wild pansy	Broad-leaved

<b>Acidic</b>	(Of soils) with a pH value of <6.5
<b>Alkaline</b>	(Of soils) with a pH value of >7
<b>ALS herbicides</b>	Herbicides containing sulfonylureas
<b>Annual</b>	A plant in which the whole life cycle from germination to seed dispersal and death occurs in one year
<b>Auricle</b>	In grasses, a hook-like projection that wraps around the stem, at the end of the leaf sheath where the leaf blade meets the sheath
<b>Awn</b>	In some grass species, a bristle-like projection at the back or tip of a glume or lemma
<b>Axil</b>	The place where a leaf stalk or leaf blade meets the stem
<b>Basal rosette</b>	A cluster of leaves at the base of the flowering stem
<b>Beak</b>	A long thin extension of the tip of a pod
<b>Biodiversity</b>	The range of species found in a specific area
<b>Biennial</b>	A plant which lives for two years, usually germinating in the first year and then flowering and producing seed in the second year, before dying
<b>Biotype</b>	A group of individuals within a species that are genetically distinct
<b>Blade</b>	The part of a leaf above the sheath the blade is often flat, but can be bristle-like
<b>Bolter</b>	A plant that flowers earlier than others around it
<b>Bract</b>	A modified leaf that is found in a flower or flowerhead. It may be one of a group of bracts surrounding the stem that supports a flowerhead, or it may form part of a conspicuous coloured structure surrounding an insignificant flower in a leaf axil
<b>Bracteole</b>	A small bract
<b>Break</b>	A period between two similar crops when a different crop or no crop is grown
<b>Break crop</b>	A crop grown between two related crops, e.g. oilseed rape grown between two cereal crops
<b>Bristle</b>	A stiff hair, or very fine straight awn

# Glossary

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<b>Broad-leaved</b>	(Of plants) having leaves that are wider than they are long broad-leaved weeds are contrasted with grass weeds
<b>Bulbous</b>	Swelling at the base of the stem, resembling a bulb
<b>Canopy</b>	The parts of a plant, especially the leaves, that receive light from the sun and shade the ground beneath
<b>Clasp</b>	(Of a usually stalkless leaf) to wrap around a stem
<b>Clonal colony or clonal patch</b>	A group of plants that are genetically identical and different from others growing around them
<b>Compact</b>	(Of plants) having a neat growth habit / (Of flowerheads) having the individual flowers tightly packed together
<b>Compacted</b>	(Of soil) compressed by the passage of vehicles
<b>Competitiveness</b>	The ability of a plant to grow successfully in relation to other plants around it. Competition between weeds and crop plants can lead to yield reductions
<b>Composite</b>	A plant that has flat flowers composed of florets arranged around a central structure, for example a daisy, dandelion or sunflower. Composites are dicotyledons
<b>Cotyledon</b>	A green structure resembling a leaf that appears as a seed germinates, before the true leaves appear. Monocotyledons are plants such as grasses that have a single first seed leaf while the first leaves of dicotyledons are in pairs. In broad-leaved plants, the cotyledons are usually a different shape from the first true leaves
<b>Cross-fertile</b>	Fertilised by receiving pollen from another plant. See also self-fertile
<b>Dicotyledon</b>	A plant whose seed produces a pair of seed leaves as it germinates. See also monocotyledon
<b>Distribution</b>	The geographical area through-out which a plant usually grows / The way in which the seeds of a plant are spread

<b>Dormancy</b>	The period during which a seed or bud is not actively developing. Some seeds can develop a further period of dormancy (secondary dormancy) as a result of temperature changes or cultivation practices
<b>Downy</b>	Covered with small soft hairs
<b>Emergence</b>	The germination of a seed, when the cotyledons appear above the ground
<b>Exploit</b>	To spread into or colonise an area
<b>Extend</b>	To grow longer
<b>Floret</b>	A small flower that forms part of a flowerhead
<b>Flowerhead</b>	A group of small flowers on a single main stem
<b>'Fop' and 'dim' herbicides</b>	Herbicides containing chemicals such as diclofop or cycloxydim
<b>Fruit</b>	The part of a mature flower that carries or encloses the seeds. Fruits may be dry seedheads, as in poppy, or fleshy, as in strawberries
<b>Gland</b>	A group of cells that secretes a sticky substance. Glands are found in the sticky hair tips in cut-leaved crane's-bill, or in the swollen or fleshy bracts around flower clusters in spurses
<b>Glandular</b>	Having cells that secrete a sticky substance
<b>Graminicide</b>	A herbicide used for killing grass species
<b>Grass break</b>	See break
<b>Grass ley</b>	See ley
<b>Grass sward</b>	See sward
<b>Groundkeeper</b>	A plant that grows from a storage organ such as a potato tuber or a sugar beet accidentally left in the ground after harvest
<b>Habit</b>	The characteristic way of growing of a specific type of plant
<b>Habitat</b>	The type of environment in which a specific plant grows
<b>HBN herbicides</b>	Herbicides containing the chemical hydroxybenzotrile, such as ioxynil or bromoxynil

<b>Herbicide</b>	A chemical used to kill plants, especially to control weeds. Selective herbicides, for example broad-leaved weed herbicides, are used to target specific types of plants, while non-selective herbicides will kill all plants which are sprayed with them; contact herbicides have an effect only on the plant tissue that they are applied to, while systemic and hormone herbicides work by moving through the plant tissues; foliar acting herbicides are applied to growing plants; residual herbicides are applied to an area of ground and weeds are killed by uptake from soil
<b>Hypocotyl</b>	The stem supporting a cotyledon or pair of cotyledons
<b>Infestation</b>	The uncontrolled spread of weeds in an area
<b>Lateral</b>	Growing at the side, or situated at the side
<b>Leach</b>	(Of nutrients, chemicals etc) to be washed out of the soil by rain or by irrigation
<b>Leaflet</b>	An individual part of a leaf that is divided
<b>Lemma</b>	In grass flowers, the lower of the two parts of a floret the upper part is the palea
<b>Ley</b>	An area of grass sown as part of a system of crop rotation
<b>Ligule</b>	An extension of the leaf sheath, where it joins the leaf-blade. Ligules are one of the most important identification features of a non-flowering grass species
<b>Lip</b>	A projection on the lower part of a tubular flower such as pea or red dead-nettle
<b>Lobe</b>	A rounded division of a structure, eg a section of a divided leaf that is not cut as far as the middle, or part of a fruit
<b>Longevity</b>	See seed longevity
<b>Mealy</b>	Appearing to be spotted with or covered in white powder
<b>Micro-species</b>	A group of plants that differs in its characteristics from other groups and reproduces asexually

<b>Monocotyledon</b>	A plant whose seed produces only one seed leaf as it germinates. See also dicotyledon
<b>Neutral</b>	(Of soils) neither acidic nor alkaline, with a pH value close to 7
<b>Node</b>	A slight swelling on a stem or axis from which a leaf or bract grows
<b>Oblong</b>	Used to describe a flowerhead, leaf or cotyledon that is longer than it is wide with parallel sides
<b>Open</b>	Used to describe a plant or a flowerhead in which the individual branches or flowers are not tightly packed together
<b>Perennial</b>	A plant that lives for more than two years, flowering each year
<b>Persistent</b>	Remaining or growing for several years
<b>Petal</b>	One of the often coloured parts of a flower, surrounding the male and female reproductive organs
<b>Pollination</b>	The process of transferring pollen from anther to stigma in a flower. This may occur within the flowers of a single plant (self pollination) or between plants (cross pollination)
<b>Post-emergence</b>	The period after the cotyledons have appeared
<b>Predation</b>	The eating of seeds that have fallen to the ground by small mammals, birds, etc
<b>Prostrate</b>	Growing flat along the ground
<b>Regenerate</b>	To regrow
<b>Rhizome</b>	An underground stem that is covered with scale-like leaves and can root at the nodes. Rhizomes usually grow horizontally and may store starch
<b>Rogueing</b>	The removal of plants, usually by hand, that are different from the required standard of the rest of the crop
<b>Rosette</b>	A circular arrangement of leaves, all at one height, usually at the base of the plant on the ground

<b>Rotation</b>	A system of cultivation in which crops that have different nutrient requirements or are affected by different diseases are either grown one after the other or are interspersed with periods when no crop is grown
<b>Row crop</b>	A crop that is planted in separated rows, for example onion, lettuce or maize
<b>Secondary dormancy</b>	See dormancy
<b>Seed bank</b>	The quantity of seed remaining in the soil that is able to germinate
<b>Seed longevity</b>	The length of time for which seed remains able to germinate
<b>Seed rain</b>	The quantity of seed shed from a plant
<b>Seed set</b>	The production of seeds
<b>Self-fertile</b>	(Of a plant) able to be fertilised with its own pollen. See also cross-fertile
<b>Sepal</b>	The outer, usually green, leaves surrounding a flower
<b>Set seed</b>	To produce seeds
<b>Sheath</b>	The lower part of a leaf surrounding the leaf stem
<b>Shed</b>	To release seed / To lose leaves
<b>Solitary</b>	(of a grass plant) having a single stem, rather than a group of stems
<b>Species</b>	A group of plants that can interbreed and have fertile offspring
<b>Spike</b>	An unbranched stalk of individual flowers, or groups of flowers (spikelets)
<b>Spikelet</b>	In grasses, a group of flowers, generally made up of two dry bracts (glumes) and one or more flowers
<b>Stale seedbed</b>	The technique of allowing weed or crop volunteer seeds to germinate so they can be removed before drilling. See also stubble cultivation
<b>Stamen</b>	A single male part of a flower, consisting of an anther containing pollen and its stalk (filament)

<b>Stolon</b>	A stem that grows along the ground and produces roots and shoots at the nodes
<b>Stout</b>	(Of plants) strong or robust
<b>Strap-shaped</b>	Used to describe a leaf or petal that has parallel sides but is very much longer than it is wide
<b>Stubble cultivation</b>	Shallow cultivations after harvest to create favourable conditions for the germination of the seeds of weeds and crop volunteers which can then be removed before or at planting. See also stale seedbed
<b>Sward</b>	An area of grassland
<b>Taproot</b>	A thick main root growing downwards into the soil, with much smaller roots branching off it
<b>Tendrils</b>	A thin clasping structure, developed from a stem, leaf or leaf stalk, that allows a plant to climb
<b>Tiller</b>	A stem of a cereal or other grass plant/To produce multiple stems
<b>Tillering</b>	The stage at which a cereal or other grass plant produces multiple stems
<b>Toothed</b>	(Of a leaf) having indentations along the edges
<b>True leaves</b>	The first leaves that are formed after the cotyledon leaves have appeared from the seed
<b>Tuber</b>	A swollen part of a root or underground stem, which is used to store food for a plant and from which new plants may grow
<b>Tuft</b>	A group of several stems of a grass plant, which may be closely or loosely clumped together
<b>Tussock</b>	A dense raised clump of grass
<b>Umbellifer</b>	A plant with a flat-topped flowerhead (umbel) in which all the main flower stalks join at a central point, like the spokes of an umbrella
<b>Unwinged</b>	(Of a stem) having no outgrowth along its length
<b>Vegetative</b>	Used to describe reproduction from plant parts such as tubers or rhizomes



# Glossary

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<b>Veined</b>	(Of a leaf or leaflet) having thickened and prominent vessels that transport food and water
<b>Vigour</b>	The rate at which seeds germinate and seedlings grow
<b>Vigorous</b>	Growing strongly
<b>Volunteer</b>	A plant that has not been deliberately sown or planted
<b>Whorl</b>	A set of three or more leaves growing from the same stem node and arranged in a circle
<b>Wing</b>	An outgrowth on a stem or seed case

- 88 *Aethusa cynapium*  
14 *Agrostis gigantea*  
60 *Agrostis stolonifera*  
90 *Alliaria petiolata*  
18 *Alopecurus myosuroides*  
158 *Anagallis arvensis*  
92 *Anisantha diandra*  
12 *Anisantha sterilis*  
6 Annual meadow-grass  
58 *Anthriscus sylvestris*  
116 *Apera spica-venti*  
130 *Aphanes arvensis*  
126 *Arrhenatherum elatius*  
48 *Atriplex patula*  
196 *Avena fatua*  
122 *Avena sativa*  
202 *Avena sterilis*  
8 Awned canary-grass  
10 Barley  
12 Barren brome  
70 *Bellis perennis*  
180 *Beta vulgaris*  
14 Black bent  
16 Black-bindweed  
18 Black-grass  
20 Black mustard  
22 Black nightshade  
124 *Brassica napus* ssp *oleifera*  
20 *Brassica nigra*  
24 Broad-leaved dock  
118 *Bromus commutatus*  
174 *Bromus hordeaceus*  
156 *Bromus secalinus*  
12 *Bromus sterilis* (see *Anisantha sterilis*)  
26 Canadian fleabane  
168 *Capsella bursa-pastoris*  
56 *Centaurea cyanus*  
108 *Centaurea nigra*  
44 *Cerastium fontanum*  
28 Charlock  
76 *Chenopodium album*  
62 *Cirsium arvense*  
176 *Cirsium vulgare*  
30 Cleavers  
32 Cock's-foot  
34 Common chickweed  
36 Common couch  
38 Common field-speedwell  
40 Common fumitory  
42 Common hemp-nettle  
44 Common mouse-ear  
46 Common nettle  
48 Common orache  
50 Common poppy  
52 Common vetch  
100 *Conium maculatum*

- 80 *Convolvulus arvensis*  
26 *Conyza canadensis*  
54 Corn spurrey  
56 Cornflower  
58 Cow parsley  
60 Creeping bent  
62 Creeping thistle  
64 Crested dog's-tail  
66 Curled dock  
68 Cut-leaved crane's-bill  
64 *Cynosurus cristatus*  
32 *Dactylis glomerata*  
70 Daisy  
72 Dandelion  
194 *Daucus carota*  
74 Dove's-foot crane's-bill  
36 *Elytrigia repens*  
84 *Equisetum arvense*  
16 *Fallopia convolvulus*  
76 Fat hen  
148 *Festuca rubra*  
78 Field bean  
80 Field bindweed  
82 Field forget-me-not  
84 Field horsetail  
86 Field pansy  
88 Fool's parsley  
40 *Fumaria officinalis*  
42 *Galeopsis tetrahit*  
30 *Galium aparine*  
90 Garlic mustard  
68 *Geranium dissectum*  
74 *Geranium molle*  
92 Great brome  
94 Green field-speedwell  
96 Groundsel  
98 Hedge mustard  
182 *Helianthus annuus*  
100 Hemlock  
102 Henbit dead-nettle  
204 *Holcus lanatus*  
10 *Hordeum vulgare*  
104 Italian rye-grass  
106 Ivy-leaved speedwell  
164 *Kickxia elatine*  
154 *Kickxia spuria*  
108 Knapweed  
110 Knot-grass  
102 *Lamium amplexicaule*  
146 *Lamium purpureum*  
120 *Lapsana communis*  
186 *Legousia hybrida*  
112 Linseed  
112 *Linum usitatissimum*  
104 *Lolium multiflorum*  
134 *Lolium perenne*

- 114 Long-headed poppy  
116 Loose silky bent  
138 *Matricaria discoidea*  
160 *Matricaria recutita*  
118 Meadow brome  
82 *Myosotis arvensis*  
120 Nipplewort  
122 Oat  
124 Oilseed rape  
126 Onion couch  
128 Pale persicaria  
114 *Papaver dubium*  
50 *Papaver rhoeas*  
130 Parsley-piert  
132 Pea  
134 Perennial rye-grass  
136 Perennial sow-thistle  
128 *Persicaria lapathifolia*  
150 *Persicaria maculosa*  
8 *Phalaris paradoxa*  
184 *Phleum pratense*  
138 Pineappleweed  
132 *Pisum sativum*  
6 *Poa annua*  
152 *Poa trivialis*  
110 *Polygonum aviculare*  
140 Potato  
142 Prickly sow-thistle  
144 Ragwort  
200 *Raphanus raphanistrum*  
146 Red dead-nettle  
148 Red fescue  
150 Redshank  
152 Rough-stalked meadow-grass  
154 Round-leaved fluellen  
66 *Rumex crispus*  
24 *Rumex obtusifolius*  
156 Rye brome  
166 *Scandix pecten-veneris*  
158 Scarlet pimpernel  
160 Scented mayweed  
162 Scentless mayweed  
144 *Senecio jacobaea*  
96 *Senecio vulgaris*  
164 Sharp-leaved fluellen  
166 Shepherd's-needle  
168 Shepherd's-purse  
192 *Silene latifolia*  
28 *Sinapis arvensis*  
98 *Sisymbrium officinale*  
170 Small nettle  
172 Smooth sow-thistle  
174 Soft brome  
22 *Solanum nigrum*  
140 *Solanum tuberosum*  
136 *Sonchus arvensis*

- 142 *Sonchus asper*  
172 *Sonchus oleraceus*  
176 Spear thistle  
54 *Spergula arvensis*  
178 Spreading hedge-parsley  
34 *Stellaria media*  
180 Sugar beet  
182 Sunflower  
72 *Taraxacum* agg.  
184 Timothy  
178 *Torilis arvensis*  
162 *Tripleurospermum inodorum*  
190 *Triticum aestivum*  
46 *Urtica dioica*  
170 *Urtica urens*  
186 Venus's-looking-glass  
94 *Veronica agrestis*  
188 *Veronica arvensis*  
106 *Veronica hederifolia*  
38 *Veronica persica*  
78 *Vicia faba*  
52 *Vicia sativa*  
86 *Viola arvensis*  
198 *Viola tricolor*  
188 Wall speedwell  
190 Wheat  
192 White campion  
194 Wild carrot  
196 Wild-oat  
198 Wild pansy  
200 Wild radish  
202 Winter wild-oat  
204 Yorkshire-fog

# Further information

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Available at [ahdb.org.uk/knowledge-library](http://ahdb.org.uk/knowledge-library)

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