

OILSEED RAPE PESTS



Peach-potato aphid

Myzus persicae

The peach-potato aphid feeds on oilseed rape, many other field and protected crops as well as weeds. Individuals may be green, yellow or light red. Like cabbage aphids, they are found under leaves.

Economic importance

Only very heavy aphid infestations cause direct damage. Numbers may increase after serious outbreaks of insecticide-resistant aphids on potatoes.

Aphids transmit the beet western yellow virus, which causes temporary reddening of infected plants in spring. Virus infections have been low in recent years.

Risk factors

Earlier-sown winter crops tend to be at greatest risk during warm autumns. Later-sown

spring crops tend to be at greatest risk after mild winters.

Chemical control

Aphids that colonise crops in autumn may have survived through many generations on treated crops. This may lead to high levels of insecticide resistance restricting insecticide choice.

Three forms of insecticide resistance occur:

- ▼ Kdr resistance to pyrethroids
- ▼ MACE resistance to pirimicarb

▼ E4 strains resistant to pyrethroids, pirimicarb and OPs.

Seek expert advice on alternative insecticides if control is poor. Neonicotinoid seed treatments, such as Chinook, currently control all resistant forms for several weeks following emergence.

Life cycle

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
Asexual females overwinter. Cold weather reduces survival.		Adults infest other crops.						Adults infest crops and transfer virus in mild autumns.			Asexual females overwinter.	



Cabbage aphid

Brevicoryne brassicae

This aphid is covered by grey, waxy scales. It is found under leaves and causes puckering and yellowing. Later infestations move on to developing flowers and pods.

Economic importance

The cabbage aphid carries turnip mosaic virus and cauliflower mosaic virus. Spring rape can become

severely infested after mild winters and allow infestations on winter rape to increase to damaging levels.

Action thresholds

Cabbage aphid may cause direct damage in spring if over 13% of winter rape plants or over 4% of

spring rape plants are infested before petal fall.

Chemical control

A waxy covering protects cabbage aphid from contact insecticides, which can limit choice.

Pyrethroid insecticides may not control cabbage aphid. Consider using a higher rate of pirimicarb plus added wetter.

Natural enemies

The parasitoid, *Diaeretiella rapae* normally provides good control.

Life cycle

Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July
Infests winter rape.		Overwinters on brassica plants.					Multiplies rapidly when mild and may cause direct damage.				



Cabbage stem flea beetle

Psylliodes chrysocephala

Adult beetles, 3–4.5 mm long, blue-black or light brown in colour, are sometimes seen crawling across the top of trailer loads of grain at harvest.

The adults return to crops just after emergence and chew ragged holes in cotyledons and early true leaves. Eggs are laid. On hatching, larvae bore into petioles and continue feeding close under the surface. These are distinguished from larvae of other pests by their black head and black plate at the tail end. Later, larvae move into the main stem to feed under the growing point.



Economic importance

Large numbers of adults feeding in the autumn kill plants, occasionally causing total crop failure. The pest originally attacked mustard and brassica

seed crops in East Anglia. It now covers England and Wales and is spreading in Scotland. Crushers may reject contaminated seed.

Risk factors

Earlier-sown crops often attract most cabbage stem flea beetle.

Warmer autumns favour egg-laying and earlier hatch of larvae.

Natural enemies

The main natural enemy is the wasp *Tersilochus microgaster*, which parasitises larvae in spring. All parasitoids may be vulnerable to pyrethroids.

Parasitoids remain as pupae in the soil until the next crop, and may be damaged by ploughing. Minimum cultivation after rape favours parasitoid survival.

Cultural control

Delaying sowing reduces the numbers of adults attracted and of eggs laid.

Chemical control

Chinook seed treatment reduces adult feeding and numbers of eggs laid.

A pyrethroid spray should control feeding adults and larvae that have not entered the main stem. Treatments persist well through the winter. One spray usually suffices.

If no adult spray applied, apply treatments to control larvae if:

- ▼ over 5 larvae/plant
- ▼ over 50% petioles damaged.

Action thresholds

Consider applying an early pyrethroid spray if adults have eaten:

- ▼ over 25% of the leaf area at the 1–2 true leaf growth stage or
- ▼ over 50% of the leaf area at the 3–4 true leaf stage
- ▼ the crop is growing more slowly than it is being destroyed.



Life cycle

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
				Larvae pupate in soil.				Adults move to new crop, mate and eat leaves for a week or so.	Eggs laid at the base of plants if mild.	Eggs hatch.	
		Larvae continue to hatch if mild and feed in petioles.			Adults emerge and feed on foliage.		Adults 'rest' in moist, sheltered places.			Larvae continue to hatch if mild and feed in petioles.	
		Larvae feed on main stem behind growing point.									

Other flea beetles

Wessex flea beetle
Psylliodes luteola



Attacks crops in the autumn.

Turnip flea beetles
Phyllotreta cruciferae,
Phyllotreta nigripes, etc



Attack crops in autumn and spring.

Large striped flea beetle
Phyllotreta nemorum



Attacks crops in spring.

These beetles are smaller than cabbage stem flea beetle. Adults jump away when disturbed.

Economic importance

The Wessex flea beetle is of increasing importance in southern England. An initial outbreak in Wiltshire has spread to other areas. Crops can be severely checked.

Turnip and striped flea beetles are principally pests of spring brassicas.

Crop damage has increased following the withdrawal of lindane.



Risk factors

Wessex flea beetle is most likely to damage earlier sown crops, especially if slow to grow away in September.

Later sown spring crops are

most susceptible to turnip and striped flea beetles. Any crops may be at risk if growth is checked by sunny, dry weather.

Natural enemies

There are some wasp parasitoids.

Cultural control

Delay sowing autumn crops and sow in a well consolidated seedbed to improve seed-to-soil contact and germination.

Sow spring crops as early as soil conditions and weather allow.

Chemical control

Chinook seed treatment may be used on winter, but not yet on spring, crops.

Pyrethroid sprays on growing crops only provide 3-4 days respite, but may help a crop survive until wetter weather returns.

Base spray decisions on same criteria as for cabbage stem flea beetle.

Action thresholds

No thresholds for treatment exist.

Life cycles

The life cycle of the Wessex flea beetle is not fully understood. Adults appear and cause damage in September.

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Turnip and large striped flea beetles											
Hibernation		Migrate to crops and feed on leaves. Lay eggs at plant base.				Larvae feed on roots.		Adults emerge from late July. Direct feeding can damage crops.		Hibernation	



Pollen beetle

Meligethes aeneus

These small, shiny, black beetles may arrive from the green bud stage onwards. They lay their eggs in the buds. Larvae later feed mainly on pollen in the flowers. Larvae have a head capsule and six legs.



Economic importance

Loss of pod sites from pollen beetle damage, albeit sometimes severe, rarely reduces winter oilseed rape yields. Crops usually compensate for earlier losses, producing more and larger seeds on lower racemes.

Varietal associations and restored hybrids may lose more yield because male fertile plants are attacked and cross-pollination is reduced. Spring crops are much more vulnerable than winter crops.

Risk factors

Pigeon and frost-damaged winter crops that remain at the green and yellow bud stages for longer are susceptible.

Varietal associations, restored hybrids and later-sown spring crops may also be at greater risk.

The use of 'canopy management' to optimise potential pod number may increase susceptibility to pollen beetle.

After all buds on winter crops have opened beetles migrate to other egg-laying sites, causing a second flush of migration to spring crops.

Spring crops are less able to compensate for damage than winter crops and so often justify treatment.

Natural enemies

Three wasp parasitoids commonly attack the larvae: *Pbradis interstitialis*, *Pbradis morionellus* and *Tersilochus heterocerus*.

Minimum cultivation after oilseed rape will enhance wasp survival.

Cultural control

- ▼ Sow spring crops as early as possible.

Chemical control

Resistant strains of beetles have appeared in France and Sweden. Investigate control failures to establish the level of resistance of the population.

- ▼ Only use pyrethroid sprays during green to yellow bud stages if thresholds are exceeded.

Action thresholds

Apply chemical control measures if the thresholds are exceeded:

Winter oilseed rape

- ▼ over 15/plant at green-yellow bud
- ▼ over 5/plant for backward crops
- ▼ over 2/plant for varietal associations.

Spring oilseed rape

- ▼ over 3/plant at green bud. (In Scotland 1/plant at green bud stage.)



Larvae feeding in flower

Life cycle

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Hibernation		Adults migrate at over 15°C. Feed on pollen inside buds or in open flowers on oilseed rape plants.				Adult beetles hatch and feed on a variety of plants.		Hibernation			
			Eggs laid in buds.								
				Larvae and then pupae.							



Cabbage seed weevil

Ceutorhynchus assimilis

This small black weevil with a curved snout lays its eggs into developing oilseed rape pods during flowering. A brown scar indicates the egg-laying puncture, usually causing a kink in the pod. One white larva with a brown head capsule develops inside the pod, eating the seeds.

Economic importance

Numbers rarely exceed damaging levels on winter oilseed rape. The pest is important in allowing entry of brassica pod midge. It may be more important on spring oilseed rape.

Risk factors

Cabbage seed weevil tends to be of greater importance in the northern Britain.

Natural enemies

The parasitoids *Trichomalus perfectus*, *Mesopalobus morys* and *Stenomalina gracilis* generally keep numbers in check.

Cultural control

Delaying sowing of spring crops reduces numbers of adults attracted and of eggs laid.

Chemical control

▼ Apply a pyrethroid spray approved for use during flowering if the threshold is exceeded. This should be applied by petal fall and before too many eggs are laid.

Action thresholds

- ▼ over 0.5/plant in northern Britain
- ▼ 1/plant elsewhere.



Life cycle

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Overwinters as adults that fly into oilseed rape crops soon after flowers open.			The weevils lay eggs directly into the pod, chemically marking pods to deter any further egg-laying.			Larva develops within the pod, eating 3–4 seeds before burrowing out and dropping to the soil to pupate.		Adult weevils hatch in August and hibernate in non-crop situations.			



Brassica pod midge

Dasineura brassicae

These small, dark orange midges appear during flowering. They lay eggs through holes left by seed weevils in developing pods. Many small, white larvae with no obvious head occur in each affected pod. They cause swelling and eventually pod burst.

Economic importance

With damage greatest on headlands and affected pods very conspicuous, this pest can be over-rated.

However, spring oilseed rape yields can be severely reduced.

Risk factors

As the adult midge is a weak flyer, crops on headlands are more exposed to immigrant midges; thus largest yield losses often occur in small narrow fields.

Natural enemies

Several wasp parasitoids, including *Omphale clypealis* and *Platygaster subuliformis* may attack pod midge, killing up to 75% of larvae.

Cultural control

▼ Block oilseed rape fields and rotate the crop around the farm to reduce the impact of immigrant pests.

Chemical control

Sprays for seed weevil provide incidental control of pod midge by reducing egg-laying sites.

Action thresholds

No thresholds for treatment exist.

Life cycle

Larvae can hatch over a three-year period after rape. In June and July partial 2nd or 3rd generations attack late winter and spring rape.

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Larvae overwinter in cocoons in soil.		Adults emerge.		Adults mate. Fly to oilseed rape. Lay eggs in cabbage seed weevil holes or plant damage.			Larvae overwinter in cocoons in soil.				
						Larvae feed. Pods swell and burst. Larvae drop to soil. Some develop to give 2nd and 3rd generations of adults.					