



Issued: 4th July 2023



IN BRIEF

A much-needed growth surge following recent rain with many crops now meeting across row and with more than 12-leaves.

Despite a season of variable aphid numbers in crops, green wingless numbers appear to be in decline and possibly past the peak. Keep checking in crops or fields with large areas of crop with fewer than 12-leaves.

Large numbers of black been aphids continue to be reported. These aphids can transmit BYV (but not BMYV or BChV). Historical data suggests that their control is only necessary if a crop is backward or under drought stress.

Monitoring of adult beet moth numbers has shown local variation. Without the benefit of historic data sets this may be normal. On sites with high adult numbers and where there has been previous history of damage, there are no reports yet of feeding damage. It is essential to identify caterpillar feeding activity in the heart leaves of plant before taking any action.

Aphid predators, especially ladybird, lacewing and hoverfly larvae are currently very active in crops. The use of a foliar pyrethroid insecticide to control beet moth caterpillars will affect aphid predators and should be avoided if possible.

Weed beet and bolters continue to increase in crops. Control at the pre-flowering stage reduces the risk of seed return and roguing may be easier as stems can be broken and left in crop.

No reports of foliar disease but crops need to be monitored closely. There have been no recorded instances of high-risk conditions for cercospora development. Be careful not to confuse cercospora and bacterial leaf spot at this stage of the season.

Immature female cysts of BCN will now be visible on roots. Check any backward areas or patches in fields.

First report of tortoise beetles in Norfolk.

If you have been following our Weed Control trial, a further video has been released.



ADVISORY

Aphid monitoring

Despite a season of variable aphid numbers, green wingless numbers appear to be in decline and possibly past the peak.

Large numbers of black been aphid continue to be reported. These are less significant in terms of virus spread but may need controlling if direct feeding damage is affecting crops.

The BBRO aphid monitoring network provides a guide to the number of aphids in your area. Wingless aphids are being counted on plants at 46 sites. (Please refer to the BBRO website for latest information [Aphid Survey Dashboard - BBRO](#)).

- Grey map point = no data received
- Green map point = data received; no aphids found
- Amber map point = data received with aphids found but below spray threshold
- Red map point = data received with green wingless aphids found and spray threshold reached.

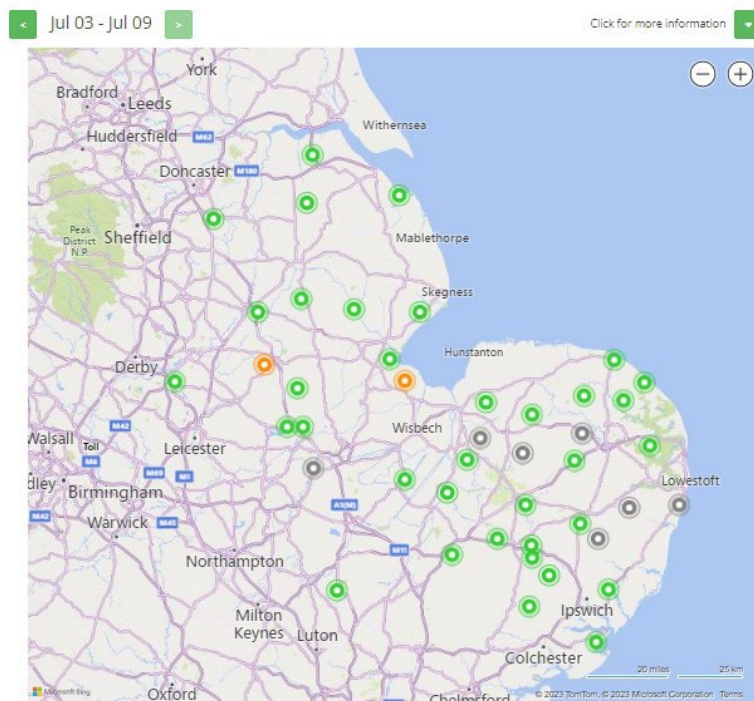


Fig 1: BBRO aphid monitoring map on 4th July

From the 12-leaf stage and certainly by the 14-16-leaf stage, the crop becomes more resistant to acquiring the virus but remember the change to mature plant resistance is gradual and not a switch. It is important to keep checking for green wingless aphid numbers in crops, or fields with large areas of crop that have less than 12-leaves.

For crops with less than 12-leaves the threshold for aphicide is 1 green wingless aphid per 4 plants (5 green wingless aphids per 20 plants). Where crops are at the 12-leaf and beyond, the threshold is 1 green wingless aphid per plant.

Beet Moth

BBRO are monitoring adult beet moth numbers on each of the 12 main monitoring sites. The moth traps use a pheromone to attract adult beet moths but as this is an emerging pest in the UK, we don't have historic data to help us make decisions about critical numbers and how accurate the traps are in attracting the adults. However, we have identified adult moths in traps over the last few weeks and will continue to monitor numbers. Where identified, we will monitor closely for caterpillars feeding in the canopy. If caterpillar damage develops (leaf shredding or loss of new leaves in the crown) control may need to be considered.

Do not use adult numbers as a basis for applying an insecticide.



Fig 2: Adult beet moth (left) Fig 2a: The adult beet is very small (right).

Adults are most active in the evening, night, and morning hours. They are small (micro) moths with a wingspan of 12-14mm. Forewings of the moth are narrow, pointed, grey-brown, with a yellow pattern and small black spots. Hindwings are light grey, with a fringe of long cilia (feather like 'hair'). Their appearance can be similar to other UK micromoths. Eggs are oval, white, with an iridescent tint and 0.5 mm in length. Females lay typically 2-3 eggs on both sides of beet leaves and on the petioles.

The caterpillars emerge approximately 5–10 days after eggs are laid and tend to feed on lower leaves in the canopy to avoid predation and where they are protected from extreme heat and rain. The caterpillars can vary in colour including cream with a pinkish-tint (Fig 5a) grey-brown (Fig 5 b) and in some cases may have reddish-brown transverse markings (Fig 5 c). The head is usually light to dark brown. They often feed at the base of petioles, sometimes braiding the edges of young leaflets, and feeding within this (Fig 5d) Typically, they develop to adults in 20-30 days, passing 5 instars before pupating. At final instar caterpillars are 10-12 mm long and grey-green in colour.



Fig 5a: Larvae with pinkish tinge



Fig 5b: Grey-brown larvae



Fig 5c: larvae with side markings



Fig 5d: Larvae braiding leaf edge

Caterpillars typically pupate in the soil at a depth of 2-5 cm within small oblong cocoons covered with soil particles. Moths of the new generation can appear within 10-20 days depending on conditions.

Damage is caused by the caterpillars (larvae) not the adults. It is important to identify signs of damage by checking at the base of the petioles of heart leaves. The presence of black frass will indicate feeding damage but check for presence of active caterpillars before deciding on the need for control.



Fig 6: Shredded heart leaves and black frass indicative of feeding damage

There is little experience of the use of foliar pyrethroid insecticides to control beet moth caterpillars in the UK, but experience in other countries indicates limited efficacy. There is no precise caterpillar threshold established in the UK for controlling beet moth. Treatment before caterpillar populations become too large, and using high water volume to ensure sufficient insecticide penetrates the central heart leaves, is likely to be key.

Cythrin 500 EC is approved for control of caterpillars in sugar beet. It is a pyrethroid and requires a high-water volume (min 600l/ha) to be effective. A maximum of two applications of Cythrin 500 EC can be made. However, the identity of the target pest is not part of the conditions of use specifically stated on the authorisation and there is no reason why an alternative pyrethroid insecticide approved for use on sugar beet cannot be used against beet moth. However, all conditions of use and any other specific requirements on the label or within the authorisation must be complied with. This for instance covers maximum dose, crop, timing, buffer zones and harvest interval etc. Be aware that where a pest is not specified on the label then there is no guarantee of efficacy, and it will be at grower's own risk.

Remember use of a foliar pyrethroid insecticide will reduce aphid predators at a time where their activity is greatest. Retaining an option for control later in the season may be prudent, especially if there is a severe summer drought and the canopy is significantly desiccated and new canopy re-growth needs protecting.

Weed beet and bolters.

Both weed beet and bolters are now established in crops and competing with the crop for light, water and nutrients. Weed beet may also host foliar diseases. Remember that on average 1,500 viable weed beet seeds are produced per weed beet plant. Tractor hoeing is effective up to the 4-6 leaf stage, as the chance of resetting is lower but most weed beet and bolters are beyond this stage now and need removing. Hand pulling is the most effective method, if the plants are pre-flowering, the stems can be broken and left in the crop. If they have flowered, plants will have potentially set seed and need removing from the field. Remember **'if in doubt, carry them out'**.

If you have ALS tolerant varieties, it is important to check carefully for bolters and remove from the crop before they set seed to avoid creating a problem of herbicide resistant weed beet.



Fig 7: Pre-flowering weed beet

Beet Cyst nematode

The wet conditions earlier in the season created ideal conditions for nematode activity. The beet cyst nematode invades the roots of sugar beet to feed and then produces a cyst which contain hundreds of eggs. In June and July the immature female can be seen as a white immature cyst on the roots. This is a transient stage before turning brown and becoming less visible on the root. If you have areas or patches of field or stunted plants, especially where associated with poor root systems, have a closer inspection to confirm



Fig 8: White immature cysts of BCN

the presence of white immature cysts on the root. These are visible to the naked eye. If positive, you need to consider soil sampling to confirm numbers and distribution as well as the use of BCN-tolerant varieties in future.

Weed Control

Following last month's video of the BBRO herbicide trial, Dr Simon Bowen returns with Pam Chambers (British Sugar) to view the impact of actives and weed control programmes.

[\(Click below to view\)](#)



BBRO Herbicide trial

June 2023 update with Dr Simon Bowen & Pam Chambers (British Sugar)



EVENTS

BEATING THE CHALLENGE
2023 SUMMER
BeetField events

Supporting growers to push the
crop and gain rewards

JULY 2023 - 1 hour visits

18th- Morley, Norfolk 8:30 and 10:00
18th - Yaxley, Suffolk 14:00 and 15:15
20th - Bracebridge 8:30 and 10:00
20th - Fotheringhay 14:00 and 15:15

- 2024 Varieties in action
- On-farm monitoring - Beet moth, cercospora and more
- Foliar diseases and fungicide programmes

Book: www.bbro.co.uk/events

RESERVE YOUR PLACE

[Morley](#)

[Yaxley](#)

[Bracebridge](#)

[Fotheringhay](#)



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BASIS POINTS

Two BASIS points in total (not per bulletin) have been allocated for the period between 01/06/23 and 31/05/24 reference CP/126447/2324/g. To claim these points please email cpd@basis-reg.co.uk

Two NRoSO points in total (not per bulletin) have been allocated between From 1st June 2023 to 31st August 2023 - NO500858f and from 1st September 2023 to 31st August 2024 - NO500860f. To claim these points please email [nrso@basis-reg.co.uk](mailto:nroso@basis-reg.co.uk).