British Beet BBRO Research Organisation Advisory Bulletin

Issue 5 - 23rd May 2025

IN BRIEF

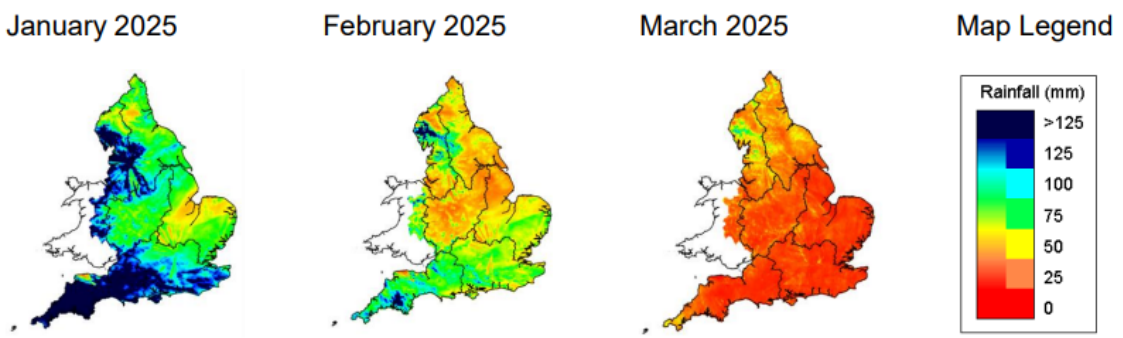
- Soil moisture deficit – increased deficit seen across the area, although ground water levels are stable.
- BBRO Aphid Watch now live, with reports of threshold being reached in several areas. Data are collated from in-field aphid counts across 20 plants.
- Variable numbers of winged *Myzus persicae* and *Macrosiphum euphorbiae* found in BBRO yellow water pans. Of 376 aphids caught to date all have tested negative for BMYV and BChV.
- Change to Sivanto Prime label, now available to 9+ leaf stage. Providing longer access to three aphicide sprays, but only one application of each active ingredient.
- Correct identification of aphids remains critical; in several instances globular springtails have been confused with aphids. Please check and seek advice if unsure – BBRO aphid and beneficials ID guide
- First moths and their caterpillars are being found in several crops, particularly south Suffolk/Cambridgeshire. Activity is being favoured by the recent warm, dry conditions. Please advise BBRO of any observations to help determine species and identify extent of pest.
- Funding Productivity items and specifications - Farming Equipment and Technology Fund (FETF) 2025 - GOV.UK
- Weed control support for Conviso and regular crops.
- BeetCast May – Impacts of water use

ADVISORY

Soil moisture deficit and recharge (information provided by Environment Agency)

April rainfall across East Anglia ranged from 30% to 70% of the long-term average for the month. With a dry April following an exceptionally dry March, the soil moisture deficit for East Anglia increased to 66mm, which is considered notably high for the time of year. Groundwater levels at all sites for which data was available have shown receding levels through March and April, although levels at the majority of report sites remain normal for the time of year. There is little variation in SMD values across the area, with the majority of East Anglian catchments having SMD values in the range of 64mm to 74mm.

Figure 1: Maps show the level of rainfall from January to the end of March. Whilst April's data is not currently available it is expected to be similar to that of March.



Irrigation and limiting soil moisture deficits (SMD) (excerpt from Cranfield Irrigation project 2018 (available here)).

Based on previous sugar beet studies, the recommended SMD at which to irrigate sugar beet in England (according to crop-stage and soil texture) are summarised in the table below. These previous studies found no economic benefit from irrigating sugar beet in April and May, but early irrigation to aid establishment can be beneficial in exceptionally dry springs. The net benefit of irrigating depends on the weather. In all but a "very dry" summer the increase in sugar yield has not been sufficient to cover the cost of irrigating.

Table 1. Soil Moisture Deficit (SMD, mm) at which to irrigate sugar beet in England according to crop stage and soil texture. After Draycott (2006); Qi & Jaggard (2006); Jaggard, et al. (1995); Bailey 1990.

Crop stage	Soil texture			
	Coarse sand	Loamy sand	Sandy loam	Clay loam
Mid-June	25	30	35	50
Mid-July	35	40	50	100
Mid-August	50	60	75	125
Mid-September	65	75	125	150

Aphid Watch

Please keep an eye on the Aphid Watch website to keep up to date with aphid migration [Aphids Site Map - BBRO](). Many of the areas previously showing as at threshold have now been sprayed and have therefore returned to green. Access the live site and then click on a circle to see details.

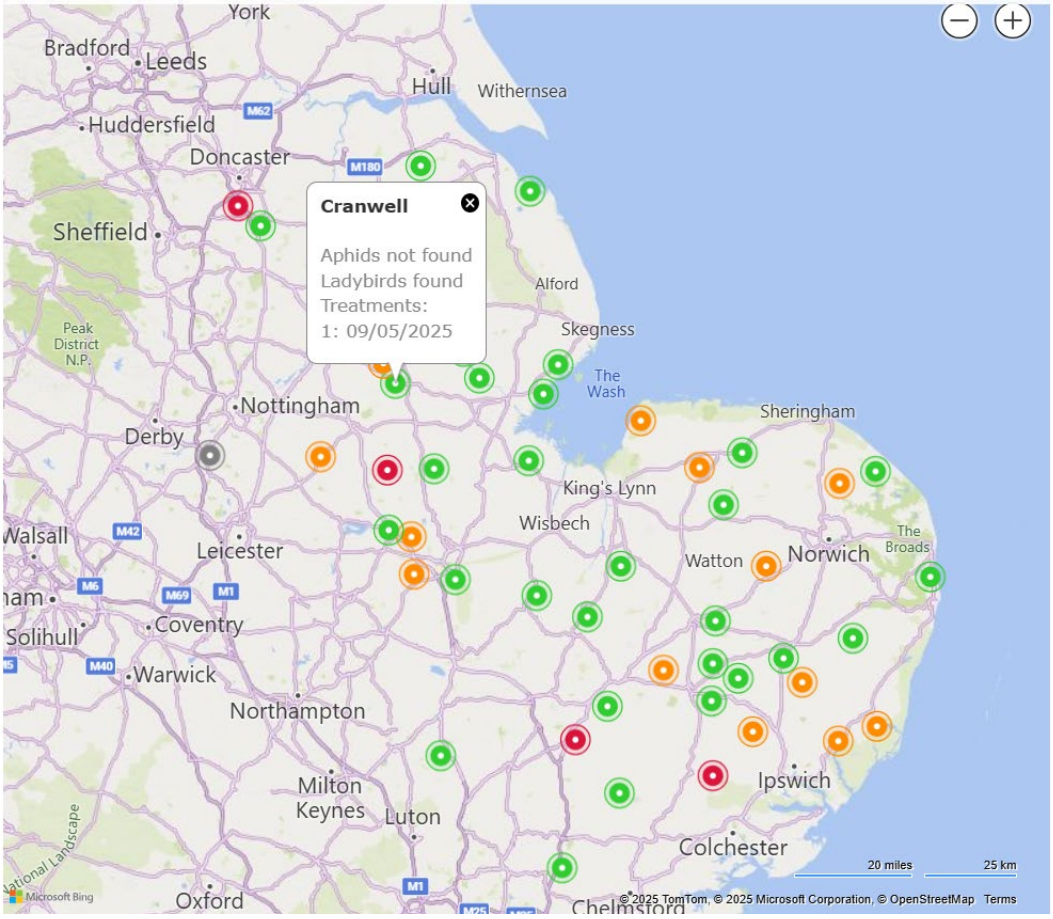


Figure 2: Screen shot of Aphid Watch May 22nd.

The Yellow Water Pan network commenced later this year due to the predicted later arrival of the first winged aphids compared to 2024. As seen from below graph, aphids were caught from late April onwards but in comparison to 2024 the overall numbers to date are lower. Many of the early aphids were *M. euphorbiae* rather than *M. persicae*. Both species can transmit the yellowing viruses but to date none of those caught have been found to be carrying viruses.

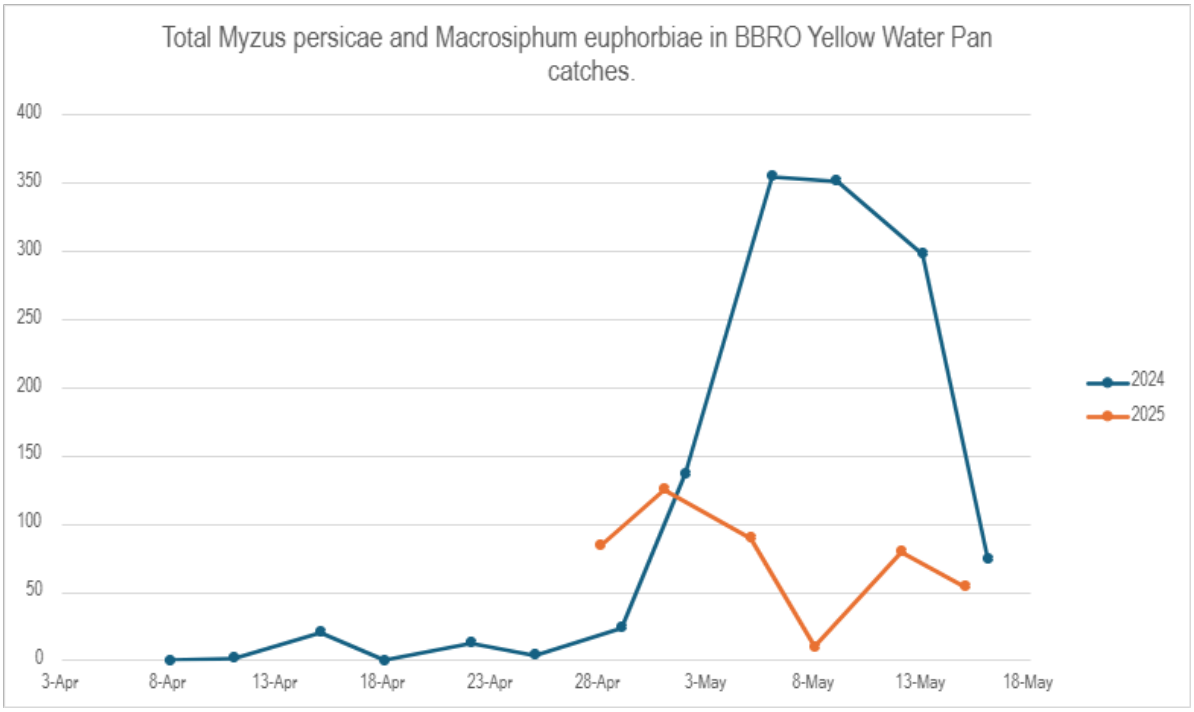


Figure 3: Graph showing a comparison of 2024 to 2025 aphid catches

However, we must not be complacent as the situation can still change quickly given the ongoing warm dry conditions. Increasing observations of black aphids (Aphis fabae) are being recorded, again being encouraged by the dry weather, and beneficial insect numbers are responding positively too.

There are 3 products available for aphid control (should you reach threshold), with the new Bayer insecticide product, Sivanto Prime receiving an updated label allowing use past the 9+ leaf stage. The options are:

- acetamiprid (Insyst). Mode of action: through contact and ingestion
- flonicamid (either Teppeki or Afinto – but not both). Mode of action: affects digestive system
- flupyradifurone (Sivanto Prime). Mode of action: through contact, affects central nervous system. Sivanto Prime – 9 or more leaves unfolded (BBCH19)

Thresholds for use remain 1 green wingless aphid per four plants up to 12 true leaves. 1 aphid per plant 12-16 true leaves.

Avoid using pyrethroids, such as Hallmark, where at all possible, especially in the early phases of crop growth. Not only are aphids highly resistant to pyrethroids (95%+), but their use will also negatively impact on the build of beneficials such as lacewing and ladybird larvae.

Moths and caterpillars

We are seeing the first signs of caterpillars in the crop. There is a high likelihood that these are Beet moth as they are predominantly being found in areas previously affected. The current dry, warm weather is favourable for the development of these pests. As beet moth is a relatively new pest problem, we are still learning about this species but anticipate two generations, the first clearly encouraged by current conditions and starting now and areas previously prone to the problem, and then a later generation potentially starting in July into September.

Figure 4: Silver Y Caterpillar

Figure 5 (right): Silver Y moth

Figure 6 (below): Beet moth caterpillar

Figure 7 (right): Beet moth. A rather non-descript mottled brown moth.

Symptom progression of Beet Moth

Symptoms begin as the caterpillars start to eat and develop within the centre heart leaves of the beet plant, these symptoms can resemble boron deficiency or downy mildew. On closer inspection the caterpillars (in various colours) can be found within the damaged area of the heart leaves.

The caterpillars continue to cause damage as more of the heart is affected and the caterpillars may become increasingly hard to find. The extent of damage will depend on

the number of caterpillars and in many cases, plants will continue to produce new leaves. Where damage is more severe, the affected crown may be killed and lateral growing points stimulated to produce leaves, resulting in multi-crowning.

Beet Moth Control

Heavy rainfall or irrigation will give some control. Currently, pyrethroids (e.g. Cythrin 500) are the only chemical option, but timing is crucial as for best effect the spray needs contact with the target; high water volumes will be beneficial too to penetrate the canopy. Efficacy will be reduced once the caterpillar burrows into the root. However, please be aware Cythrin is a pyrethroid and will reduce beneficial numbers; BBRO are currently investigating alternative products and ultimately their availability for commercial use.

Potential funding 2025

Productivity items and specifications - Farming Equipment and Technology Fund (FETF)

DEFRA has announced the Farming Equipment and Technology Fund (FETF) 2025 will open on the 29th May.

There is funding available that can support technology and equipment relevant to sugar beet production.

Grants range from £1,000 to £25,000 depending on what you are looking to purchase, with a percentage of the cost paid by the applicant.

Some great opportunities relevant to sugar beet are:

- **FETF212 - Liquid fertiliser applicator for seed drills/planters 6m**
- **FETF214 - Soil health monitor package**
- **FETF422 - Tractor powered electric desiccator for weed and plant control**
- **FETF425 - Camera guided spot sprayer 24m**
- **FETF7 - Inter row hoe 6m**
- **FETF217 - Camera guided inter row sprayer 6m**
- **FETF218 - Robotic drill and guided hoe**
- **FETF51 - Retro fitted yield monitoring for combines and crop harvesters**
- **FETF421 - Onboard weighing system for agricultural trailers**
- **FETF109 - Central tyre inflation system**

These are just some of the available options with the full list available at:

Productivity items and specifications - Farming Equipment and Technology Fund (FETF) 2025 - GOV.UK

If you are interested in applying for a grant you can apply via the RPA farming investment fund service.

Weed Control – info supplied by Pam Chambers, British Sugar

Conviso One – is a conventional herbicide 'follow up' spray required

A number of sugar beet crops this season have had variable crop and weed emergence making it difficult to apply herbicides at the optimum timing to get satisfactory control of the *chenopodium* weed species (fat-hen, orache, fig leaved goosefoot). The ideal time to apply Conviso One to these species is when they are at the 2-4 true leaf stage. In situations where Conviso One has been on for more than 7-10 days, and these 'trigger weeds' are not dying then a follow up spray of a conventional herbicide should be considered. Weeds that are very susceptible to Conviso One e.g., black-bindweed are being controlled well. Phenmedipham + ethofumesate + oil should be used, the inclusion of metamitron may be useful if the crop is still open and rain occurs before canopy closure. Use robust rates of phenmedipham, ethofumesate and oil as the weeds will now be difficult to kill.

Metamitron

As a residual metamitron is absorbed by the roots, as a post-emergence application it is essential that it is absorbed into the plant through leaves quickly. It is absorbed far more rapidly and transmitted throughout a plant which is not suffering drought conditions. High adjuvant oil rates are essential when weeds are difficult to control and are waxed up.

Phenmedipham

Phenmedipham is a purely contact material and very little is taken up into the plant unlike metamitron. It is selective and weeds such as mayweed and knotgrass are fairly resistant to this active. In drought conditions use higher rates and make sure intervals between sprays are not too long.

Black bindweed control in 2025

The BBRO weed control site at Navenby, Lincs has a high population of black bindweed and differences between programmes is very obvious. Although assessments have not been completed the programme below has given good results. The addition of lenacil at the second and third timings improved the bindweed control. An alternative to lenacil would be clopyralid which will also have activity on bindweed and is useful where volunteer potatoes need controlling.

- phenmedipham 320g a.i. + ethofumesate 150 g a.i. metamitron 700 g a.i.
- phenmedipham 320g a.i. + ethofumesate 150 g a.i. metamitron 700 g a.i. + lenacil 100 g a.i.
- phenmedipham 320g a.i. + ethofumesate 150 g a.i. metamitron 700 g a.i. + lenacil 200 g a.i.

The crop was sown on the 26.03.25 and sprays applied on 17.04.25, 28.04.25 and the 07.05.25 intervals of 11 and 10 days between applications. A vegetable oil was included at 0.5 l/ha at each timing. Vary the rates of oil according to weather conditions and also consider the use of a mineral oil if you are in a 'firebrigade' situation.

Tractor hoeing

Tractor hoeing is giving good results this season, and in some situations the only option where weeds have gone past the susceptible stage for herbicides. At the Yaxley, Suffolk, weed control demonstration site, hoeing is working well, the crop was drilled on the 28.03.25, the first hoe pass was on the 07.05.25 and the next is planned for 26.05.25. If possible, on later hoe passes, using finger wheels should allow better control of weeds that are in the row. Using these too early, can damage the crop.

EVENTS

Join us at Morley Innovation Day 19 June 2025 - The Morley Agriculture Foundation

or watch out for the BBRO Team at NFU Sugar Hour, Cereals 2025.

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BASIS POINTS

Two BASIS points in total (not per bulletin) have been allocated for the period between 01/06/2024 – 31/05/2025 - CP/138145/2425/g. To claim these points please email cpd@basis-reg.co.uk
Two NRoSO points in total (not per bulletin) have been allocated from 01/9/2024 – 31/05/2025 NO503154f. To claim these points please email nroso@basis-reg.co.uk.