British Beet BBRO Research Organisation

Advisory Bulletin

Issued: 1st June 2023

Typically, at this time of year BBRO staff are frequently approached by growers and agronomists by email with an attached photograph for assistance in identifying a problem in a crop. This is a very busy period for us all and BBRO staff may not be able to respond immediately. Additionally, we sometimes do not receive enough supporting information to help with a diagnosis. We would request that all enquiries are sent to the BBRO Plant Clinic and importantly, the Plant Clinic form is completed for all enquiries. This will allow us to ensure the enquiry (with relevant information), can get to the right person and be dealt with as quickly as possible.

IN BRIEF

- Aphid numbers continue to rise steadily with a slight east-west divide, probably due to cooler windier weather conditions in the east moderating population development.
- Wingless aphid thresholds are being reached in some non-Cruiser crops and these must remain the priority for checking.
- In general, Cruiser seed treatment appears to be holding aphid populations. Expect Cruiser treatment to be effective for 8-10 weeks from drilling.
- Some Cruiser-treated crops may have been in the ground for more than 8 weeks post drilling now. These crops need close checking now as well.
- Crop development is a little variable across the beet area. More advanced crops are at 8-12 leaves, but many are at the 4-leaf stage (relatively small). Colder soil types and poorer soil conditions, along with a lack of warmth and sun is holding back leaf production and expansion in some crops. Foliar nutrition will help slower crops.
- Pest (bird, mammal & invertebrate) grazing and damage continue to affect crops. We have also seen some cases of suspected free-living nematode damage at the BBRO Plant Clinic.
- Some indications of herbicide damage reported both from applications to the beet crop but also incidences of residual herbicide damage from previous crops.

ADVISORY

Aphid monitoring

The BBRO monitoring network (wingless aphid threshold/plant) continues to show a steady increase in overall aphid numbers. This is also showing higher aphid numbers and thresholds being reached more frequently (1 wingless aphid per 4 plants or 5 green wingless aphids per 20 plants) in the west. However, the recent cloudy, cool, and windy conditions in eastern Norfolk and Suffolk appear to be holding back aphid population development.

The BBRO website 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]).

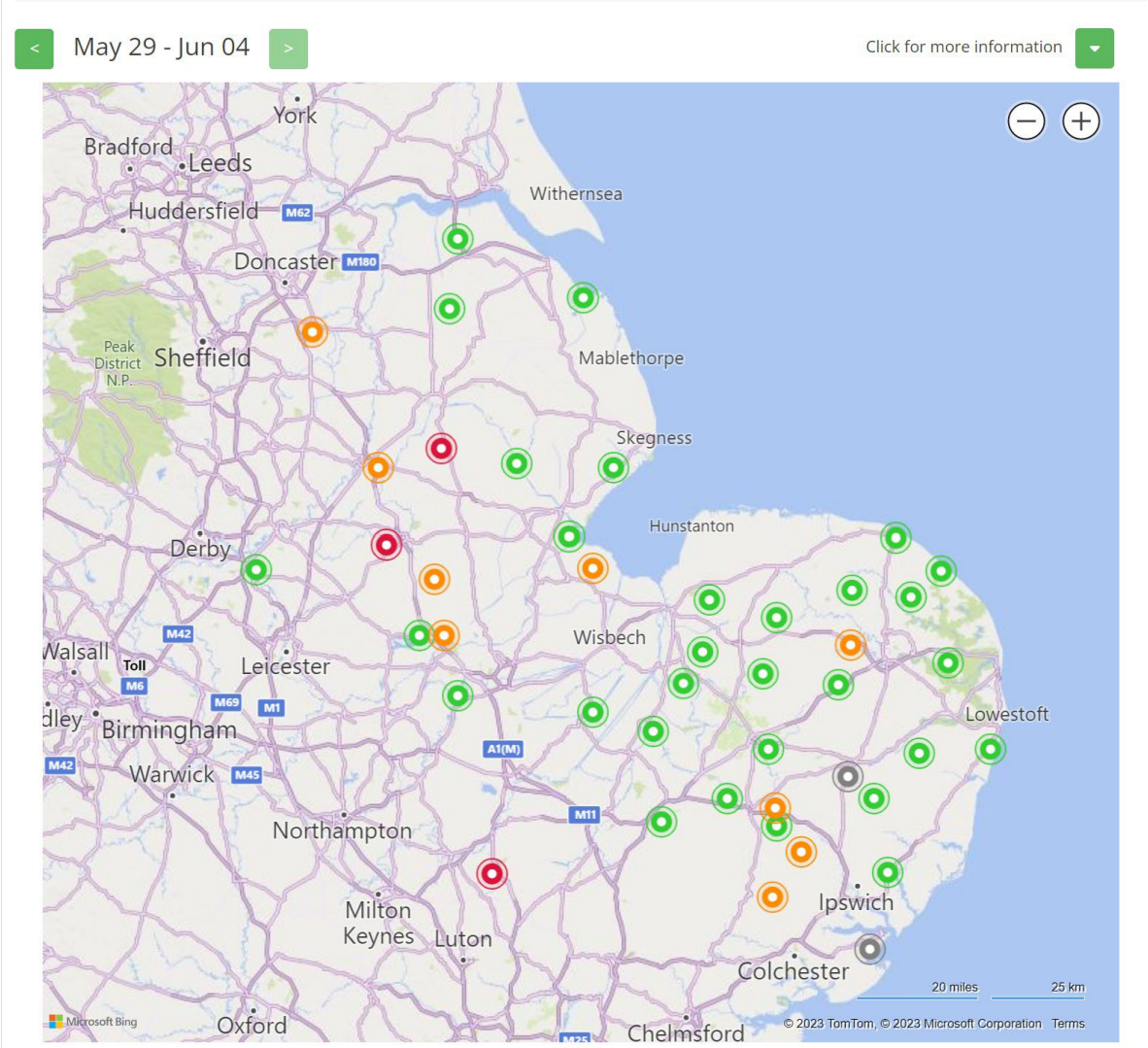


Fig 1: Aphid monitoring map as of 1st June 2023

It is essential to check non-Cruiser treated crops for aphids. To date, there has been a lot of diversity in the species of aphids being found in crops. With regards to virus transmission in sugar beet, there are three species that can be vectors: the peach-potato aphid (*Myzus persicae*) the potato aphid (*Macrosiphum euphorbiae*) and the black bean aphid (*Aphis fabae*). **However, *Myzus persicae* is the key species as a vector of virus.**

For more info on aphid identification see https://www.bbro.co.uk/media/50728/aphid-id-home-print.pdf

Remember that the BBRO network is a general guide to aphid numbers. We know that these can vary massively between fields. It is essential therefore that you assess your individual crops for aphids.

You need to do this at several locations across each field to gain a good average for the field. Because of the prolonged drilling season, you may have fields at various stages of emergence and early canopy growth. Finding a single common application date for all fields

may be a challenge and going either too early or too late for some crops may compromise efficacy and the number of foliar applications you can make.

Be careful to make sure you check for aphids on the heart leaves, within the folds at leaf margins and on the underside of leaves.

Aphids are not evenly distributed across fields. When checking for aphids in crops, check sheltered field margins, especially the leeward (downwind) of shelter belts and the leeward side of any hills and in hollows. This is where aphids can often be found in greater numbers.

Where oilseed rape grown in proximity to the sugar beet crop, this is linked to higher number of aphids. Make sure you check these crops.

Triggering the use of foliar insecticides

At this stage of the season the threshold trigger for spraying is 1 green wingless aphid per 4 plants (5 green wingless aphids per 20 plants).

Available aphicides include: InSyst and Teppeki or Afinto (only one application of either flonicamid-based product is permissible) and Movento. Where a foliar insecticide is required in non-Cruiser crops, we recommend starting with InSyst for faster knockdown and then using Teppeki/Afinto as a second spray. Movento must be used as your third spray option.

Remember Cruiser-treated crops should be protected for up to 8-10 weeks from drilling so may not require a foliar insecticide at this stage. Make sure you have the drilling date of each crop recorded so you are clear on where aphid monitoring is a priority.

Late drilling/re-drilling Cruiser SB-treated sugar beet seed

Please remember that it is a condition of the EA that **no** Cruiser SB-treated seed can be used after **1st June 2023**. Additionally, **no** Cruiser SB-treated seed may be used on the same field area for 46 months from the date of sowing treated sugar beet seed in 2023. This means no re-drilling with Cruiser SB-treated seed.

Herbicide disorders -Courtesy of Pam Chambers, British Sugar

The risk of seeing disorders related to herbicides are increased where the crop is put under extreme stress, this season with heavy rainfall, hail and wind damage more symptoms related to herbicides are showing up. Crops drilled around the middle of April and on lighter soils are perhaps more impacted, but spray timings and tank mixes all have an impact. Below is not an exhaustive list of some of the issues occurring this season.

Ethofumesate (e.g. Efeckt)

Every season we see symptoms in beet that are caused by excess uptake of ethofumesate (Photo 1) the crop with time will grow out of it. Typical signs are stunting, crinkled and fused leaves, sometimes thickened leaves.

Triflusulfuron-methyl (e.g. Debut)

It is common to see mottling after triflusulfuron-methyl has been applied to the crop (Photo 2) and this can sometimes be confused with nutrient disorders e.g. manganese.

Occasionally sugar beet chlorosis and stunting can be seen following high dose applications of triflusulfuron-methyl especially where plants are stressed, lacking in nutrients and combined with cooler weather at application. Some tank mixes can exasperate this e.g. by adding in clopyralid (e.g. Vivendi 200) when the beet is very small. Younger leaves tend to be a pale yellow, beet will grow out of it when temperatures improve and the plants get established.

Herbicide residuals from previous crops

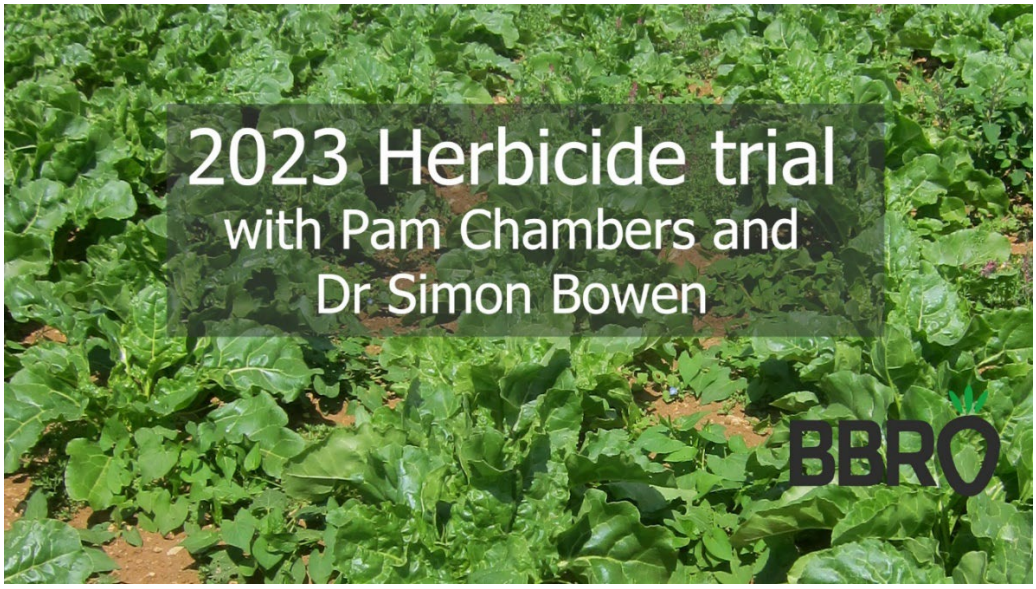
A number of instances have been reported this season where diflufenican (DFF) residual effects have been seen in the beet, this can be traced back to high doses of DFF being used in previous crops. Signs of excess DFF in the soil are shown by bleaching of the leaves. It is also useful to look at the weeds, they will often show similar symptoms. Crops should grow away from this, check on DFF rates going forward and associated cultivations prior to a beet crop.

Sprayer contamination

Where spray contamination has occurred due to insufficient care with washout, then adverse symptoms on the crop are seen where the sprayer has entered the field and then decreases as you get further in. Generally the crop will grow away from this or crop loss will be limited to the field entrance, obviously it will depend on what the contaminant is. Application of foliar nutrients will often help with recovery.

Wrong spray included in the tank

Where an incorrect spray has been added that doesn't 'suit' the beet then all the spray area covered by that particular mix will exhibit symptoms (Photo 3). Often it is possible to find an area where the spray has missed somewhere in the field, i.e. corners, around pylons and trees etc, the beet in that area will be healthy and will be a good indication on how much the crop has suffered. Identification of what has been added will give an indication as to whether the crop will survive or not.



Click image to access weed control information.

Crop development and nutrition

Whilst some of the earlier drilled crops that went into good soil and seedbed conditions are now rapidly developing canopies, some of the later sown crops, drilled into wetter conditions and where there has been significant rainfall are slow to develop leaf canopy. A range of pests are grazing on crops, including some free-living nematodes feeding on roots which are also contributing to some slow and backward growth. Aphanomyces remains evident in some fields too.

It is important to optimise the supply of nutrients to crops to assist with leaf growth:

- If you have had a large amount of rainfall, some of the applied nitrogen may have been lost from the rooting zone of young plants. Plants may appear stunted with small pale leaves (with little progressive growth after period of warmth) and may show reddening of the petioles.
- Applying a small additional amount of nitrogen 10-20 kg N/ha will ensure availability in the topsoil profile Be mindful to keep within the limits of N-Max (120kgN/ha) Undertaking a SMN test may help identify an issue. Sample the top 0-15cm and 15-30 cm profile as a check. Laboratories can usually report results within a week.
- Apply manganese and magnesium as **foliar** sprays as soon as there is sufficient canopy (4-6 leaf stage). Don't delay and do not wait until symptoms appear.
- Where crops appear persistently backwards, check the potential cause by investigating roots but consider applying some foliar nitrogen and phosphorus with the manganese and magnesium as a **foliar** treatment. This will provide the **essential** nutrients to 'kick start' growth. Your manganese and magnesium products are also likely to provide some sulphur. If not, consider applying some sulphur. Boron and zinc may also be low in crops on sandy, thin, and higher pH soils but unlikely to be essential to many crops at this stage.
- If applying foliar nutrients, target a programme of application of 1-3 kg/ha of each nutrient at each application. Remember, foliar feeding is best undertaken as a 'little but often' approach. Avoid applying foliar nutrients to plants in hot sunny conditions.

For more info on the topics covered listen to the June edition of BeetCast which features Mark and Simon's presentations at our May grower events.

EVENTS

BBRO will be attending:
Cereals 13th June (NFU Sugar Hour)
Morley Innovation Day. 22nd June. Book via: niab.com/morley-innovation-day-east-anglia-22-june-23
Royal Norfolk Show – 28th and 29th June (Innovation Hub)

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BASIS POINTS

Two BASIS points in total (not per bulletin) have been allocated for the period between 01/06/22 and 31/05/23 reference **CP/120094/2223/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 nroso@basis-reg.co.uk. New points for BASIS 2023 will be issued shortly.