



Issued: 28th May 2020



IN BRIEF

- Crops are finding it extremely challenging in the very dry conditions, but recent warmth has resulted in some growth, especially where roots are finding moisture at depth.
- Some late germination and emergence have resulted in very variable crops with growth stages varying between the 2-4 leaf and the 10-12 leaf-stage in many crops.
- Aphids are being recorded in almost unprecedented numbers and the risk of virus transmission is very high. Numbers are greatly exceeding the threshold of 1 green wingless aphid per 4 plants, with 10's of wingless aphids being recorded on some individual plants.
- There is a lot of leaf growth on old clamp sites and spoil heaps. Beet ground keepers are also present in some fields. All of these will be potential sources of virus for surrounding beet crops and it is vital that this growth is destroyed.
- Dry soils are reducing activity of residual herbicides, later germinating weeds and weed beet are developing and may need additional treatment.
- Leaf miner damage is being widely reported. The foliar insecticides Biscaya and Insyst, when used for aphid control, will give incidental control of this pest. Avoid the use of pyrethroids for their control wherever possible.
- Some early signs of nutritional deficiencies have been observed and may warrant action.



ADVISORY

Aphid control

The high numbers of aphids being found in crops are a serious ongoing challenge to controlling virus effectively this season. We have received many questions about the situation and have tried to address as many of these as possible by the FAQs below:

Q: Why do the foliar insecticides appear not to be controlling aphids effectively this season?

A: *Part of the problem is the sheer number of aphids. The ongoing warm conditions have resulted in a continual movement of large numbers of winged aphids and their subsequent progeny moving into and through crops which insecticides are struggling to control. Additionally, dry conditions may be reducing the systemic action of insecticides. However, in most situations insecticides are giving some level of control.*

Q: Is Biscaya less persistent at the 0.3l/ha rate approved in the EA?

A: *BBRO has seen good control from the 0.3 l/ha rate for up to 4 days post application, but the sheer pressure from aphid numbers is leading to rapid re-infection of crops.*

Q: Are all the aphids being recorded *Myzus persicae*, or are there other non-virus aphid vectors being found?

A: *The vast majority of aphids being found on sugar beet are peach-potato aphids (Myzus persicae) with some potato aphids. Several other species have been identified such as the sycamore aphid and the willow carrot aphid, but we believe that at least 95% of aphids counted in fields at present are peach-potato aphids, the main virus yellows vectors, and therefore this warrants control when above threshold.*

Q: Why can I find live aphids on leaves shortly after spraying?

A: *Remember that Teppeki works by affecting the mouthparts of the aphids ultimately preventing them from feeding. Aphids may still be present for up to 72 hours post application although they should not be spreading the virus further. Biscaya and Insyst should have a more direct and quicker effect on aphid mortality.*



Pic 1: Aphids are being found in large numbers across the region.

Q: What level of virus is being found in aphids this season and if the level is low, do we need to apply insecticides?

A: *BBRO has currently tested approximately 1,000 winged *M. persicae* collected from across the four factory areas. As found in recent years the percentage carrying virus is low and currently 0.4% of the population tested. However, winged aphids can move between plants causing primary infection and their progeny, if not controlled, then cause secondary spread. With so many winged aphids being found this year the virus pressure will be high. Please continue to follow the current spray thresholds.*

Q: How long between infection and the first signs of virus?

A: *Initial virus symptoms will take up to 2-4 weeks to show for Beet yellows virus (BYV) and 4-6 weeks for Beet mild yellowing virus (BMYV) and Beet chlorosis virus (BChV). The first symptoms of another aphid transmitted virus (Beet mosaic virus (BtMV)) are just starting to be seen this week.*

Q: Can I stop applying insecticides at the 12-leaf stage and what if I have part of a field at the 6-leaf stage and the rest at the 12-leaf stage?

A: *Sprays should be applied up until the 16-leaf stage when aphids are found at threshold, although the threshold changes to **one green wingless per plant above the 12-leaf stage**. However, with variable plant sizes being reported in some fields, keep monitoring, and in such fields treat at the lower threshold value until all plants are 12 leaves and above, i.e., **one green wingless per four plants**.*

Q: Why have the numbers of ladybirds been so low this season?

A: *There are far fewer ladybirds present in crops compared to 2019, although evidence over recent days suggests their numbers are building. It is not clear why this is the case, but the wet winter may have had an impact and/or their lifecycle is out of synchronisation with the rapid build-up of aphids this year. The good news is that other predators are also now being found.*

Dry conditions and weed control

Keep a close watch on weed control as residuals may be slow to act in dry soils. There will be an element of re-activation following rain but don't let weeds such as fat hen and weed beet get too large. You may need to consider a follow up spray sooner rather than later.

Foliar Feeds (manganese and magnesium)

When crops are stressed, there is a temptation to apply foliar feeds to support growth. However, remember that leaf uptake of nutrients will be limited if the leaf is not growing actively and particularly when leaf is stressed and/or in full sunshine.

Routine manganese and magnesium (on low magnesium sites) will help support rapid canopy leaf growth at this stage of the season, but by applying products when leaves are actively growing, humidity is higher and temperatures cooler will be more effective.

Other micronutrients may also be required. Use the chart below as a guide to typical deficiency situations:

Nutrients & early canopy growth	Typical deficiency situation where early applications could be considered.
Manganese	Organic & sandy soils, high pH, after liming, fluffy seedbeds. Cold, wet conditions. High OM Rapid growing crops require high levels of manganese
Phosphate	Low organic matter, acid & very calcareous soils. Low P soils. High iron levels. Cold & wet soils poorly rooted crops even where soils levels are good. Phosphate is essential for early rooting and leaf growth.
Magnesium	Sandy & acid soils. High K levels, High applied P & Zn. Cold & wet conditions. Moisture stress
Sulphur	Acid soils, light sands. low organic matters. Poorly aerated, waterlogged soils
Boron	Sandy & calcareous soils. Low OM. High nitrogen & calcium soils. Drought, cold & wet conditions.

Biostimulants

A three-year series of BBRO trials on the use of biostimulants has shown that there were no consistent yield responses to a range of different biostimulants. This was across a range of soil types, locations, and varieties.

Irrigation

If irrigation is an option, crops will respond well. Brooms Barn/BBRO work has shown that irrigation in June and July will be more effective than later irrigation. Early irrigation will help with canopy growth, crop cover and light interception. Typically, plants with >50% crop cover will use between 1 mm per day on dull days to 3 mm per day on bright sunny days (average = 2mm per day). Most crops will have a SMD of >25mm, the trigger point for irrigation. Applying 25mm will allow a good period of growth.



EVENTS

BeetField20 – Virtually Live! 6th – 10th July

Watch-out for our programme of short presentations being released as of the 6th July, culminating with a live webinar with Prof Mark Stevens, Dr Simon Bowen and the wider BBRO team on Friday 10th July – all streamed directly to a screen near you!

Monday 6th July: RL 2021 varieties and Conviso technology

Presented by Mike May (RL Board Chairman) and Daniel Godsmark (BBRO)

Tuesday 7th July: Varietal traits: Pest & disease resistance and drought tolerance

Presented by Dr Alistair Wright (BBRO) and Georgina Barratt (PhD student with University of Nottingham)

Wednesday 8th July: Soil Management; variable drilling, drill testing results and nutrition

Presented by Dr Simon Bowen (BBRO) and Stephen Aldis (BBRO)

Thursday 9th July: Putting the ABC (Aphids-Beneficials-Control) into IPM

Presented by: Prof Mark Stevens (BBRO)

Friday 10th July: Beeting Change with BBRO

Join us via our website link to speak to the team and hear growers' questions.



CONTACTS

British Beet Research Organisation, Innovation Centre, Norwich Research Park, Colney Lane, Norwich, NR4 7GJ

Dr Mark Stevens mark.stevens@bbro.co.uk 07712 822194

Dr Simon Bowen simon.bowen@bbro.co.uk 07718 422717

Stephen Aldis stephen.aldis@bbro.co.uk 07867 141705

General Enquiries info@bbro.co.uk



BASIS POINTS

Two BASIS points in total (not per bulletin) have been allocated for the period between 01/06/19 and 31/05/20 reference **CP/84954/1920/g**. To claim these points please email michele@basis-reg.co.uk

Two NRoSO points in total (not per bulletin) have been allocated between 01/06/2019 and 31/05/2020 reference **NO466952f**. To claim these points please email NRoSOCPD@cityandguilds.com