



Issued: 14th September 2022



IN BRIEF

- With rainfall now experienced in many areas, albeit variable amounts, many crops have had a chance to start to recover from the drought. These crops are producing new leaf growth and are visibly 'greening up'. As plants take up moisture, roots re-hydrate and start to produce new leaves; sugar levels may decrease in the short term. However, as the new leaves become established and increase their photosynthetic capacity, there will be some re-balancing of sugar levels over the next few weeks.
- Unfortunately, there are increasing reports of feeding damage to the growing point and inner petioles of plants. This is due to the caterpillar of the beet moth. Symptoms include blackening of the crown and the loss of some new leaves. Reports initially suggested that incidence was localised in areas of Norfolk, Suffolk, and Essex but reports of incidence are beginning to become more widespread. There are limited control and mitigation actions. More information on the beet moth is provided below.
- With a change to cooler and wetter conditions, foliar disease is expected to increase. Powdery mildew has been the most prominent disease to-date due to the earlier warm dry conditions, but the change in weather will result in more development of rust and potentially cercospora. It is vital to keep checking crops for foliar diseases and to ensure fungicide programmes are up-to-date and in line with disease development. New growth will need protecting against disease, especially where later harvest dates are planned.
- The cercospora early alert system has not been triggered for a number of days. Previous high-risk periods were quite transitory. However, the in-crop sensor network is beginning to highlight more frequent high-risk periods, especially as soils are rewetted and the humidity within canopies increases. It is important to check leaves within the canopy and not just the top leaves for symptoms of cercospora.
- Remember that canopy re-growth will need protecting against foliar disease, especially if it is more than 21 days since the last application. In some cases, where canopy re-growth is rapid, symptoms of manganese deficiency are visible. If the timing of your next fungicide coincides with rapid new leaf growth, the inclusion of manganese and magnesium, with the fungicide, may assist with crop recovery.



Beet moth information

Description

The beet moth (*Scrobipalpa ocellatella*) is not recorded as a regular pest in the UK, but adult moths are trapped and reported in the UK by entomologists. It is known to be more problematic in Mediterranean areas where its incidence and reports of damage are usually associated with warmer and drier climates. Unfortunately, we have limited information on its life cycle in UK sugar beet crops, but it is likely that adults can both over-winter and/or migrate into crops in the spring and after depositing eggs in the crown of crops, caterpillars (larvae) will hatch and feed on the leaves and crown. These will develop to adults and produce further generations, but it is not clear how many generations are completed, although this to a greater degree, will be weather related.

Symptoms and symptom progression

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 adult moths may also be seen in amongst the canopies.

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. Unfortunately, in some cases all the growing points may be affected.

As the damage progresses you may find a second generation has started with numerous moths flying around the canopy again and more damage done to the heart as well as the surface layer of the taproot.



Fig 1: Adult moth



Fig 2: Caterpillar (larvae)



Fig 3: Damage to growing point can be quite severe



Fig 4 and 5: Damage to growing point can be clearly seen in-field.

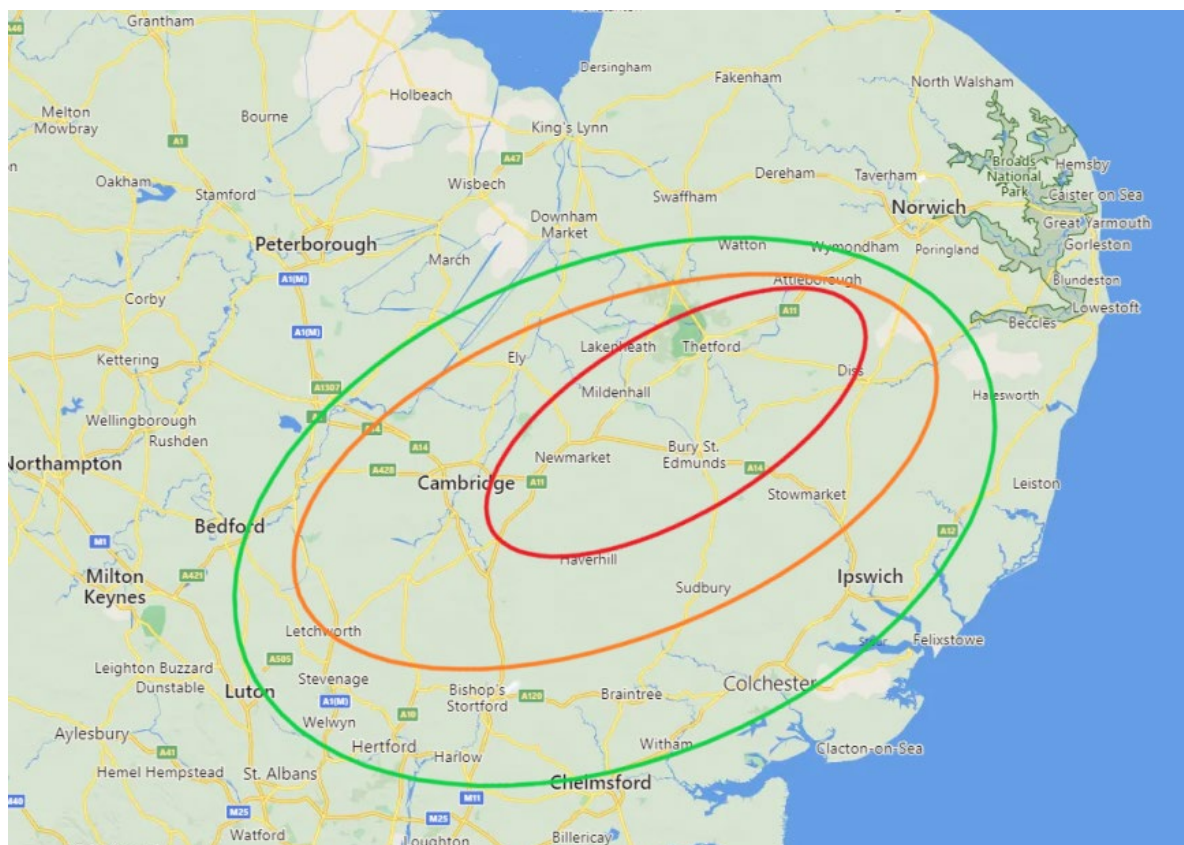


Fig 6: Dissecting the inner and lower petioles and part of the crown may reveal the caterpillars

Incidence

Starting from an initial small area between Cambridge and Stowmarket along the A14 corridor the symptoms have been spreading out from this central zone. Sporadic caterpillar damage has been as far north as Sutton Bonington, Leicestershire and although no

caterpillar damage was observed at Bracebridge (13th September) several adult moths were observed in the canopy.



Risk Factors

Continued warm dry autumn conditions will benefit the spread and development of the moth into early October. A wet, unsettled, and cool autumn will help to hinder the development of the pest. However, if the tap root is damaged this could result in infection by secondary pathogens and further deterioration of the tap root leading to localised rotting.

The plant may recover from the damage to the heart leaves by forming multiple crowns around the damaged centre. However, there is also the risk that a hollow crown results from the damage and that could lead to further tap root damage from water settling or from frost later in the winter.

Management and Mitigation

Cool, wet weather usually deters beet moth development, and heavy rain events and/or irrigation usually drowns the caterpillars.

Ploughing down beet remnants that have been impacted by beet moth may well help to decrease the risk for 2023.

There is the potential for a foliar applied insecticide to be used but this will require large water volumes to penetrate the canopy. Therefore, results may well be variable as it is the caterpillar within the heart leaves that the insecticide needs to target. Experiences with pyrethroids in the UK to date are variable and limited; this re-enforces comments from Europe too. Use of pyrethroids will also impact any beneficial insects.

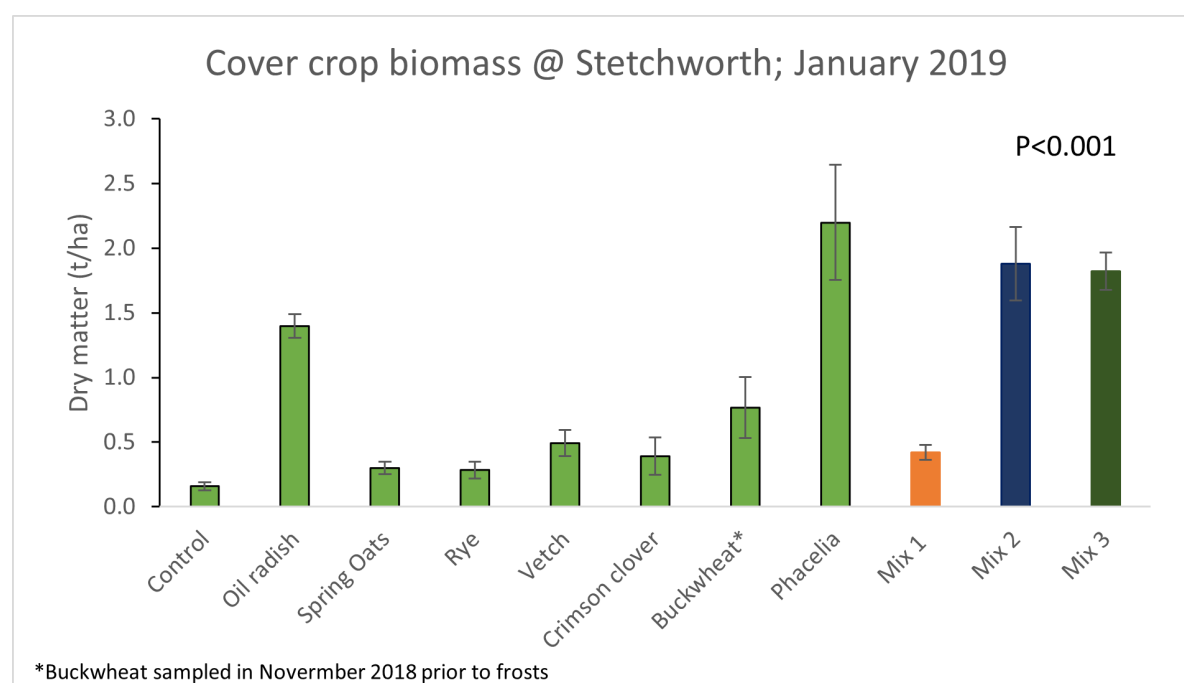
There are a few products (e.g., Cythrin) that have general caterpillar control on their label. It is important that you follow the recommendations on the label. In many cases, this includes the use of high-water volumes.

It is important to keep all remaining and future leaves as green and healthy as possible for as long as possible to mitigate the impact of beet moth damage. Ensure disease control is as robust as it can be and consider the use of Mn & Mg to support canopy recovery.

Please check your crops, especially in the Bury factory area, monitor symptoms and review against planned harvest date. Limited or late damage on early lifted crops will have little risk or impact on yield. More serious damage or later lifted crops will become increasingly at risk of yield and quality damage, suggesting earlier harvesting than planned could be advisable. Please discuss this with your British Sugar Account Manager to aid with decision making and planning.

Beet Review article error:

Unfortunately, in the September edition of Beet Review, there is an error in the article 'Cover crops- can they be alternative and cheaper sources of nitrogen'. The graph labelled as **Fig 4 Dry weight biomass** shows sugar beet yields and not the intended cover crop dry matter biomass. The correct graph is as follows and the on-line version has now been corrected.



We apologise for this error. Some 'eagle eyed' readers have spotted this but have also commented on the different sugar beet yields shown. However, it is important to draw attention to the fact that none of the differences between the treatments were statistically significant as the yields of the sugar beet plots were very variable, due to this trial being about cover crops and not about sugar beet establishment.



EVENTS

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BBRO BeetTech23 dates confirmed (details to follow):

7th February – Newark Showground

9th February – Newmarket Racecourse



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