British Beet BBRO Research Organisation Advisory Bulletin

Issued: June 30th, 2021

IN BRIEF

- Crop canopies have continued to develop well over the last 10 days with many now meeting across drills and generally looking very healthy with a good yield potential.

- Aphid numbers have declined in many areas, especially where use of a foliar insecticide was triggered; the indication is that the peak of aphid migration has passed.

- From the 12th-leaf stage, sugar beet becomes an increasingly poor host for aphids and the number of progeny/young produced by winged adults' declines. This reduces secondary spread of virus within the field. Many crops have now reached this growth stage. However, remember that this is a gradual process and not a 'switch'. Also be mindful of checking slower developing and gappy areas of the crop for aphids.

- Continue to monitor crops that are just at or just past the 12-leaf stage as these may still need protecting. In particular, check crops that have not already been sprayed or, are more than 15 days after their first spray. **The threshold for treatment at the 12-leaf stage onwards is one green wingless aphid per plant.**

- Maintaining a healthy canopy is key to realising the crop's yield potential so it is important that you now start monitoring crops closely for foliar disease. Remember, do not apply fungicides too early, wait for the first symptoms to show.

- From July onwards, BBRO will be providing regular information on the risks of cercospora development in crops. This is based on a temperature /humidity model which is used to trigger a high-risk alert. Warm temperatures (>25^{o}C) and high humidity (>90%) provide ideal conditions for rapid spread of this disease. A network of met stations are monitoring conditions across the sugar beet growing region. There have been no alerts triggered so far for cercospora.

Fig 1: Watch out for this cercospora warning for in-field updates

- Bolters and weed beet are beginning to show in some crops. Remember, just one weed beet or bolter per square metre, could reduce crop yields by 11% and on average 1,500 seeds are produced per weed beet or bolter. At this stage, most weed beet and bolters will be at the pre-flowering stage and can be pulled, have the stem broken close to the root and left on top of the crop to die.

Fig 2: Pre-flowering bolter found on BBRO Demonstration Farm

- There remains occasional incidence of leaf-miner in crops, and some reports of bacterial leaf spot following the recent cool wet weather.

ADVISORY

Foliar diseases

The most common foliar fungal diseases usually found in crops include:

Downy mildew (Fig 3)

When: Early spring, potentially recurring in autumn

Symptoms: Heart leaves thicken and become distorted. Undersides of leaves become covered with purple/grey downy spores. This spreads to upper leaf surfaces in wet conditions

Risk: Cool, wet conditions. Optimum temperature of 7-15°C, humidity >60

Cercospora leaf spot (Fig 4)

When: Mid July to October

Symptoms: Circular spots 3-5mm in diameter with necrotic, tan-grey coloured centres and reddish-brown border. Spots coalesce, leading to severe defoliation.

Risk: Warm wet weather, with temperatures above 25°C

Powdery mildew (Fig 5)

When: July to early autumn

Symptoms: Grey mould on crop, starting on outer leaves

Risk: Mild winters, dry and warm conditions. Low resistance variety

Rust (Fig 6)

When: July onwards

Symptoms: Small orange/brown pustules on leaf surface, later defoliation can occur after frost

Risk: Damp conditions and temperatures between 15-22°C. Low resistance variety

Other foliar diseases which are occasionally important include Ramularia, Alternaria, Phoma & Stemphylium.

Bacterial leaf spot

We have seen some samples of bacterial leaf spot this season. This could be confused with cercospora leaf spot but tends to develop earlier during cool rainy weather, whereas cercospora prefers warm humid conditions. Bacterial leaf spot usually develops in young plants and before canopy closure. Leaf symptoms tend to be more irregular shaped spots with larger darker brown/black borders compared to cercospora. Spots are often associated with some leaf yellowing.

Bacterial leaf spot rarely has a significant effect on yield and as this is a bacterial infection, fungicides will not be effective.

Fig 7: Bacterial leaf spot

Fig 8 & 9: Cercospora leaf spot

EVENTS

Watch out for our video shorts relating to the recent BeetField21 events which will be posted on our website shortly.

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