Carrot *Sclerotinia* Monitoring

23 July 2015

Overview

In the past week, warm and sunny weather in general has encouraged some canopy growth. There has been limited rain, so many crops are being irrigated, e.g., at the Nottinghamshire site, there was only 4 – 5 mm rain in the past week and crops are being fully irrigated with approximately 25 mm of water every seven days. The Cambridgeshire site crop is still at 6 leaves, but the Nottinghamshire site at 7-8 leaves. Fungicides are being applied to carrot crops for both sclerotinia and alternaria prevention and insecticides will start to be applied next week to control second generation carrot fly adults.

Despite irrigation, there is still no germination of sclerotia of the pathogen *Sclerotinia sclerotiorum* at the two BASF carrot monitor fields. Where soil surfaces remain moist, sclerotial germination will occur in winter cereals and other arable crops as well as carrots. The combined factors of warm weather, sometimes humid conditions and also crop canopy closure means that there could be a risk of infection by sclerotinia in the monitor crop carrots. Protectant fungicide applied prior to canopy closure should prevent infection.

Weather conditions and carrot growth stages

The weather over the next fortnight looks set to remain unsettled, with both showers and sunny spells forecast for all parts of the UK. The rainfall is likely to be concentrated in Scotland and the north west of England, with drier and brighter conditions predicted for eastern and southern regions as we go into main crop harvest.

In general, main crop carrots have now reached canopy closure at least within rows. Soil temperatures are warm enough for germination of sclerotia. Rain showers are again likely in the next week, but sclerotial germination requires soil surfaces to be moist for several consecutive days.

Regions

Cambridgeshire and East Anglia

The carrots are still at the 6 leaf stage with ground cover about 70% between rows, but touching within rows (Fig 1). Senescent leaves at the bases of plants will be susceptible to infection by airborne spores of sclerotinia, and invasion by other fungi, most commonly mildew and alternaria. But there is no germination yet of sclerotia buried on 11 May in the crop, nor in the nearby sclerotia grid in winter cereals (sclerotia buried December 2014). Fig 1 shows the field on 20 July, and Fig 2 is a close-up showing the 6 leaf stage on that date.

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Nottinghamshire and E. Midlands

These carrots have continued to grow rapidly in the generally warm sunny conditions over the past week. With limited rainfall, irrigation has been applied weekly. The monitored crop now has 7-8 leaves but there is still no sclerotinia emergence to report.

Even with the recent irrigation, there is no germination yet of sclerotia buried on 8 May in the crop, nor in the nearby sclerotia grid in winter cereals (sclerotia buried December 2014). Fig 3 shows the crop on 20 July; Fig 4 is a close-up photo on this date, showing the 7-8 leaf stage.

Photos



Fig. 1. 20 July, Cambridgeshire site carrot growth, cv. Nairobi sown 1 May 2015: 6 leaf stage.



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Fig. 2. 20 July, Cambridgeshire site carrot growth, cv. Nairobi sown 1 May 2015: 6 leaf stage.



Fig. 3. 20 July, Nottinghamshire site carrot growth, cv. Nairobi sown 21 April 2015: 7-8 leaf stage.

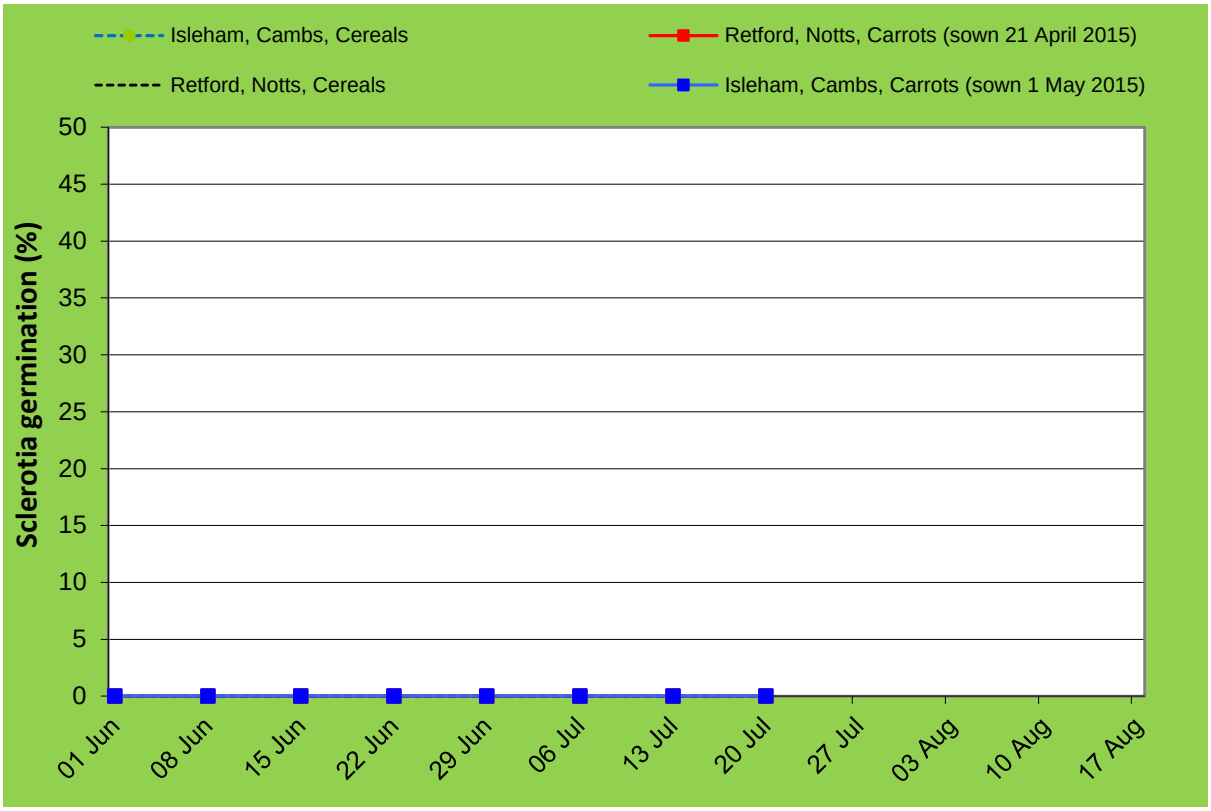


Fig. 4. 20 July, Nottinghamshire site carrot growth, cv. Nairobi sown 21 April 2015: 7-8 leaf stage.

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Sclerotia Germination (refer to website map for exact locations)

Depots of carrot sclerotia are being monitored near Retford, Notts and Isleham, Cambs. At both of the sites, depots of carrot sclerotia are being monitored in winter cereals and in main crop carrots. This allows the effect of spring cultivations on sclerotial germination timing to be taken into account.



Key points

No germination of carrot sclerotia is evident in winter cereals or carrots. Where there has been recent rain, sclerotial germination is likely to occur at the monitoring sites and/or elsewhere. Rain or irrigation, warmer weather and canopy closure means that sclerotinia infection cannot be ruled out.

Actions

- Many main crop canopies are now nearly meeting across rows within beds, and where soils are moist, sclerotial germination is likely, which will result in airborne ascospores. Fungicide applications are advised, to protect the leaves and bases of plants.
- Sclerotina will infect dying or damaged leaves, and so if the crop has senescent cotyledons or canopy damage, a protectant fungicide treatment may be needed.
- Additional fungicide applications will be needed at 2-3 week intervals after the pre-canopy closure treatment, to continue protection of foliage. Ensure that products with different modes of action are used, to reduce the risk of development of resistance of sclerotinia to the active ingredients.

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