Carrot *Sclerotinia* Monitoring

5 August 2015

Overview

In the past week, conditions have ranged from fairly wet at the end of July to much drier in the first few days of August, but with average rain being overall low (6mm), and irrigation continuing on sme carrot crops. High sunshine hours have encouraged canopy growth, with the Cambridgeshire site now at 8 leaves, and the Nottinghamshire site at 9 leaves. Fungicides are being applied to carrot crops for both sclerotinia and alternaria prevention.

Unusually, despite moist soils, 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 combination of warmth, humidity and crop canopy closure means that infection of the monitor crop carrots by sclerotinia is possible. Protectant fungicide applied prior to canopy closure should prevent infection.

Weather conditions and carrot growth stages

The weather over the next fortnight is predicted to turn be unsettled, with showers or longer spells of rain interspersed with drier conditions. The rainfall is likely to be heaviest and most frequent in the north and west, with any prolonged dry and sunny weather more likely in the south and east. Temperatures are likely to be cool, although warmer temperatures are likely where sunshine hours are longer.

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

Ground cover is about 80-90% 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. 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). Figs 1 and 2 show the crop on 3 August, at the 8 leaf stage.

Nottinghamshire and E. Midlands

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The crop is now at 100% ground cover, helped by high sunshine hours in the past week. The monitored crop has 9 leaves but there is still no sclerotinia emergence at the site to report.

Even with the 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). Figs 3 and 4 show the crop on 4 August, at the 9 leaf stage.

Photos



Fig. 1. 3 August, Cambridgeshire site carrot growth, cv. Nairobi sown 1 May 2015: 8 leaf stage.



Fig. 2. 3 August, Cambridgeshire site carrot growth, cv. Nairobi sown 1 May 2015: 8 leaf stage.

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Fig. 3. 3 August, Nottinghamshire site carrot growth, cv. Nairobi sown 21 April 2015: 9 leaf stage.

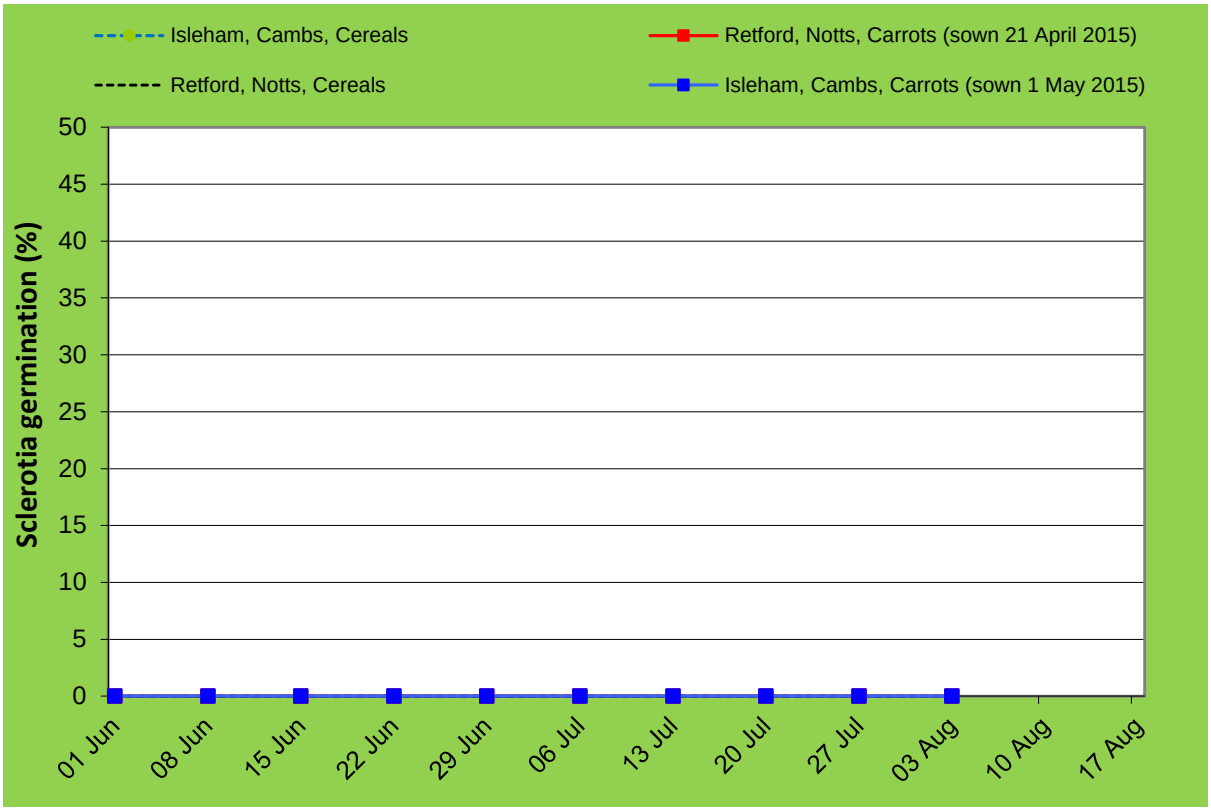


Fig. 4. 3 August, Nottinghamshire site carrot growth, cv. Nairobi sown 21 April 2015: 9 leaf stage.

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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. Where soils are moist, sclerotial germination is likely, which will produce airborne ascospores. Sclerotinia will infect dying or damaged leaves, and so if the crop has senescent cotyledons or canopy damage, untreated crops are at risk of infection.

Actions

- Fungicide applications should have been made pre-canopy closure, but additional sprays are then be needed at 2-3 week intervals, to continue protection of foliage.
- Ensure that fungicide products with different modes of action are used, to reduce the risk of development of resistance of sclerotinia to the active ingredients.
- Check crops for signs of sclerotinia, as it is possible that infection may have occured by now in some crops. Infection is most likely to be seen first along edges of beds, in lodged or senescent leaves, or in crops which may have been damaged by heavy rain. If there are signs if infection, it may be worth mowing off the edges of beds to restrict the spread of sclerotinia fungal growth.

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