

Managing Black Dot

Potatoes

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The temperamental spring weather put a lot of stress on plants, for example in the Mallee and Riverland regions of SA temperatures it was 30°C one day and then would fall to 12°C the next. This brings to mind some of the questions I get asked around managing black dot (*Colletotrichum coccodes*).

Is black dot seed-borne or soil-borne?

Black dot is generally introduced into soil by infected seed pieces or tubers, however, once introduced, it will remain there for years, surviving in the form of sclerotia on and within the tubers, and also in plant debris in the field and on host weeds. Under the right growing conditions the black dot sclerotia produces masses of spores that are readily moved within and between paddocks, as the spores are easily carried by air currents, windblown soil particles, splashing rain and irrigation water.

When are the tubers susceptible to infection?

Infection of the tubers can occur at all stages of development, but formation of sclerotia on the tuber surface is more prevalent late in the season when soil temperatures are at their highest.

When I desiccate my potato crop there does not appear to be a high level of black dot infection, but after leaving them in the ground for a period of time appears to make the tuber infection worse, is this the case?

After you desiccate the potato plant the spores present in the foliage are released by decaying plant material and progress downward through the soil to infect the tubers, which increases the black dot infection level.

What weeds host black dot?

Black dot has numerous host plants, such as solanacea crops, fat hen, black nightshade, skeleton weed, heliotrope and legumes.

I have heard you use the term “weak” pathogen, what does this mean?

Black dot is considered a ‘weak’ plant pathogen, meaning that the potato plant has to be weakened or stressed by something in order to be susceptible to the disease.

What are some of the stresses that can increase the risk of black dot infection?

There are many stress factors that can increase the risk of infection, these include waterlogging, wind damage, mechanical damage of poor nutrition status. All of these factors can increase the risk of infection in potato plants.

What are some of the ways I can try to manage black dot infections?

1. Increasing the interval between potato crops and weed hosts reduces soil-borne inoculum. The most recent recommendations suggest cropping for five years with non-host plants before

planting potatoes in a previously infected area.

2. Potato seed with visible infections of black dot should be avoided.
3. Reducing plant stress is an important management tactic for black dot.
4. A balanced plant nutrition program is important in reducing the effects of black dot on plant growth.
5. Over-irrigation compaction should be avoided. Not only does water-saturated soil favor spread and development of *Colletotrichum coccodes*, but oxygen is displaced in the soil, which is needed for oxidative respiration by roots.
6. Protecting young plants from blowing sand, which may increase the incidence of foliar infections, should be avoided.
7. As black dot is a weak pathogen (needs some form of damage / stress to successfully infect) the management of other diseases is important in managing black dot.