

Foliar Disease

Minor foliar diseases

Introduction

Minor foliar diseases can still contribute to canopy damage and in some seasons, impact yield potential. However, in most years the level of impact does not require treatment, although regular crop monitoring remains important.

Alternaria

When: Summer- Autumn

Symptoms: Black necrotic tissue between veins, usually starting from the leaf margin

Risk: Only really occurs on plants following virus yellows infection or severe nutrient deficiency

Severity: Not significant

Advice: Control measures are not required



Photo 1: Alternaria

Bacterial leaf spot (image bottom right)

When: Early summer

Symptoms: Dark brown/black spots on leaves, particularly close to leaf margins or areas of damaged leaf

Risk: Warm, wet conditions

Severity: Not significant

Advice: No control measures available. Crop will grow away from any damage during the summer

Downy mildew

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%

Severity: Usually low, although heavy losses have been reported

Advice: Selecting appropriate varieties has been shown to be effective. No fungicides are available to treat Downy Mildew.



Photo 2: Downy mildew



Photo 3: Bacterial leaf spot

Ramularia

When: Mid to late autumn

Symptoms: Angular leaf spots with central silvery cells and sometimes a dark outer margin on older leaves. Spots are larger than those of cercospora

Risk: Cooler (17-20°C) and wet conditions

Severity: Usually very low

Advice: Rarely worth applying fungicides against ramularia alone, but if it is part of a multiple infection then control can be achieved by the use of triazole or triazole plus strobilurin fungicides



Photo 4: Ramularia

Silvering disease (image bottom right)

When: May to August

Symptoms: Blue-grey matt colour with increasing silvering of the leaf surface as the leaf grows. Leaf can be seen to crack (similar to hailstone or Silver Y moth caterpillar damage). Occasional yellowing of vein leaves

Risk: Disease caused by a bacterium which appears to be associated with seed. Low number of cases seen in the UK

Severity: Single plants affected, at a low level in-field. Infected beet could yield up to 50% less

Advice: Contact the BBRO Plant Clinic if silvering disease is suspected

Stemphylium

When: July to September

Symptoms: Disease starts with small, discrete, irregular yellow spots (0.5-2mm across). The spots begin to die from the centre forming brown spots 1-3mm across. Heavily infested leaves die and more yellow spots appear on new leaves. Progressive leaf loss follows in August to September with subsequent yield loss

Risk: Wet summers (high humidity) and other stress factors (eg BCN or low pH)

Severity: 22-42% yield loss shown in Dutch trials

Advice: Send leaf samples to the BBRO Plant Clinic for identification. If stemphylium is confirmed in your crop, assess the extent of the disease before deciding if appropriate to spray



Photo 5: Stemphylium



Photo 6: Silvering disease