

A comparison of the biology and epidemiology of powdery mildew, downy mildew and botrytis

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ABSTRACT

Vines are susceptible to a number of fungal diseases, and several of them can seriously affect yield and fruit quality. In recent years, the most problematic diseases in the UK have been powdery mildew (*Erysiphe necator*, formerly *Uncinula necator*), downy mildew (*Plasmopara viticola*) then botrytis (*Botrytis cinerea*), although relative importance varies according to seasonal conditions. Successful control of these diseases requires an integrated approach incorporating cultural practices, fungicides and increasingly, alternatives to conventional fungicides (e.g. foliar feeds). An understanding of disease biology and epidemiology can provide a sound basis for rational and sustainable management. Key aspects to be considered include for example, sources of inoculum, infection processes and survival of fungal pathogens between growing seasons. Information of this type can help to target control measures more appropriately, for example by knowing environmental conditions that are high risk for development of a specific disease, such that spray applications with appropriate fungicides may be warranted. Drawing on information both from vine production and also recent research on comparable diseases of other crops, the presentation will compare important features of the major UK vine diseases and implications for control.