Grower Summary

PO 011b

Monitoring metalaxyl-M sensitivity of Downy Mildew infections of Impatiens

Annual 2014

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Use of pesticides

Only officially approved pesticides may be used in the UK. Approvals are normally granted only in relation to individual products and for specified uses. It is an offence to use non-approved products or to use approved products in a manner that does not comply with the statutory conditions of use, except where the crop or situation is the subject of an off-label extension of use.

Before using all pesticides check the approval status and conditions of use.

Read the label before use: use pesticides safely.

Further information

If you would like a copy of this report, please email the HDC office (hdc@hdc.ahdb.org.uk), quoting your HDC number, alternatively contact the HDC at the address below.

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Project Title:	Monitoring metalaxyl-M sensitivity of Downy Mildew infections of Impatiens
Project Leader:	Dr Philip Jennings The Food and Environment Research Agency
Contractor:	The Food and Environment Research Agency
Industry Representative:	Mr Mike Smith W D Smith and Son
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GROWER SUMMARY

Headline

Metalaxyl-M resistant downy mildew has been detected in 2014 samples from impatiens for the first time since 2011.

Background

Impatiens downy mildew (IDM), caused by *Plasmopara obducens*, is a foliar disease specific to impatiens. During early 2011, a metalaxyl-M resistant strain of *P. obducens* was introduced into commercial impatiens production resulting in widespread downy mildew infections which were difficult to control. To try and minimise the risk posed by the resistant strain, pro-active action was taken by the industry to restrict impatiens production from cuttings. This action appeared to have been successful as no IDM infections, caused by the resistant strain, were detected during monitoring in 2012 (PO 011) or 2013 (PO 011a); in 2013 no downy mildew infections of impatiens were reported at all. However, the risk of infection by the resistant strain still remains, particularly in areas where infection has occurred previously.

This small scale project aims to continue the monitoring work undertaken during 2012 and 2013 to provide growers with:

1. An early warning system for identifying the presence of metalaxyl-M resistance, in order to assist with decisions on suitable spray programmes.
2. Guidance as to the prevalence, persistence and geographical distribution of the metalaxyl-M resistance compared to metalaxyl-M sensitivity in the wider environment.

Summary

Resistance testing consists of washing sporangia from downy mildew impatiens samples sent to Fera and inoculating three replicate impatiens plants treated with a Subdue (metalaxyl-M) soil drench prior to inoculation. An additional three plants, drenched with an equivalent volume of water, are also inoculated as untreated controls. Inoculated plants are then grown at 20ºC until symptoms develop on the controls (8-10 days) at which point the metalaxyl-M sensitivity of the inoculated isolate can be determined based on the pattern of infection; resistant isolates infect both the treated and control plants whereas sensitive isolates only infect the control plants.

In 2014, five samples were received from four locations (one nursery and three private gardens), with the first sample arriving late July and the last mid-September. The detection of disease late in the season suggests that the disease had not established from the plant material but from other inoculum sources. The locations of samples ranged from West Sussex in the south east of England to North Yorkshire in the north of England.

Metalaxyl-M resistant isolates of *P. obducens* were present on samples sent in from two sites (the nursery and a garden in Warwickshire). The garden sites in North Yorkshire and West Sussex were both infected by metalaxyl-M sensitive isolates.

This contrasts with previous monitoring (2012 and 2013) where no metalaxyl-M resistant isolates were detected.

Financial Benefits

In the UK, the annual retail value of the impatiens crop before 2008 was estimated to be £40 million; however the onset of impatiens downy mildew has considerably reduced this value. The outbreak of downy mildew in 2011 demonstrated that the disease has potential to destroy whole site annual production as well as undermine consumer confidence in this commercially important bedding plant/pot plant product.

Prompt (up to 10 days after sample receipt) and widespread (sample originator and the wider network of growers) reporting of the metalaxyl-M resistance status of any infections occurring in 2012 and beyond will allow growers to ensure that any spray programmes adopted are effective in minimising losses that may result from any outbreaks.

Action Points

- Where possible grow impatiens from seed not vegetative cuttings.
- Apply a protectant fungicide programme to seed-raised crops during the production phase.
- Monitor crops carefully for signs of the disease, provide good levels of ventilation and don’t water crops late at night.
- Send infected plants to Fera for metalaxyl-M sensitivity testing.
- Dispose of infected plant material into sealed bags or bins.