



Agriculture & Horticulture
DEVELOPMENT BOARD



New Project

PO 012

Evaluation of the efficacy of non-metalaxyl-M based fungicides/programmes against metalaxyl-M resistant strains of *Plasmopara obducens*

Project Number: PO 012

Project Title: Evaluation of the efficacy of non-metalaxyl-M based fungicides/programmes against metalaxyl-M resistant strains of *Plasmopara obducens*

Project Leader: Dr Philip Jennings

Contractor: Food and Environment Research Agency

Industry Representative: Russell Woodcock – Bordon Hill Nurseries Ltd
Mike Smith – WD Smith & Son

Start Date: 01 July 2012

End Date: 30 June 2013

Project Cost: £19,808

Project Summary:

The early and widespread introduction of a metalaxyl-M resistant strain of *P. obducens*, the pathogen responsible for downy mildew in impatiens, in commercial production during 2011 meant the main weapon in the grower's fungicide armoury was ineffective. The loss of metalaxyl-M, combined with the lack of good eradicant fungicide activity, led to the industry facing major difficulties in controlling the disease and significant economic crop loss occurred.

This work aims to provide the evidence base required by growers to ensure that alternative active ingredients and fungicide programmes will provide the best possible control against impatiens downy mildew, whether caused by the metalaxyl-M resistant strain or not. This will be achieved through an initial small-scale screen of fungicides (not containing metalaxyl-M and shown to be effective against a metalaxyl-M sensitive isolate) using a metalaxyl-M resistant isolate. This test will indicate any cross sensitivity issues that may be masked during testing of fungicide programmes. These tests will be followed-up by a full scale trial to evaluate the most effective fungicides in different fungicide programme scenarios.

Previous work has shown that the majority of fungicides tested to date have been crop safe for use on young impatiens plants (4-6 week old). To address concerns over crop safety on younger plants a trial will be undertaken to test crop safety of any recommended fungicides towards impatiens seedlings.

Aims & Objectives:

(i) Project aim(s):

Provide evidence to the industry that fungicide active ingredients & fungicide programmes, previously shown to have activity against the causal agent of Impatiens downy mildew but excluding those containing metalaxyl-M, are still active against the metalaxyl-M resistant strain which appeared in 2011.

(ii) Project objective(s):

- a) Evaluate the efficacy of fungicides (small-scale pot trials), previously shown to have activity against downy mildew of impatiens (excluding those containing metalaxyl-M), to the metalaxyl-M resistant strain isolated in 2011.
- b) Evaluate fungicide programmes (not containing metalaxyl-M) in large-scale 'commercial' trials for efficacy against the metalaxyl-M resistant strain of *P. obducens*.
- c) Evaluate the safety of fungicides & programmes for use on impatiens seedlings.

Benefits to industry

In the UK, the annual retail value of the impatiens crop is estimated to be £40m. The introduction of a metalaxyl-M resistant strain in 2011 demonstrated how a breakdown in control of this disease has the potential to destroy whole site annual production as well as undermine consumer confidence in this commercially important product.

Establishing the suitability of fungicide programmes to control the newly introduced metalaxyl-M resistant strain of impatiens downy mildew would ensure growers have available to them (subject to product approval) the most effective currently available fungicides and spray programmes to minimise losses that may result from any future outbreaks.

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