



Agriculture & Horticulture
DEVELOPMENT BOARD



New Project

PE 001a

Cucumber : Improving Control of
Gummy Stem Blight caused by
Mycosphaerella melonis (Didymella
bryoniae)

Project Number: PE 001a

Title: Cucumber : Improving Control of Gummy Stem Blight caused by *Mycosphaerella melonis* (*Didymella bryoniae*)

Start and end dates: 1st May 2011 to 30th April 2013

Project Leader: Dr Martin McPherson, Stockbridge Technology Centre

Industry Representative: Mr D Hargreaves, CGA

Location: Main Site : Stockbridge Technology Centre, Cawood, Selby, North Yorkshire, YO8 3TZ.

Additional Research Sites :

University of Worcester (for immunoassay aspects) Charles Darwin Building, University of Worcester, Henwick Rd, WR2 6AJ.
Contact : Dr Roy Kennedy, Research Leader

ADAS-Boxworth (for resistance tests, disinfection studies, immunoassay validation in a commercial crop & consultancy) Battlegate Road, Boxworth, Cambridgeshire, CB23 4NN.
Contact : Dr T M O'Neill, Principal Research Scientist

HDC Cost: £125,480

Project Summary:

Black stem rot of cucumber caused by *Mycosphaerella melonis* syn. *Phoma cucurbitacearum* (syn. *Didymella bryoniae*) is an economically damaging fungal pathogen of cucumber & other cucurbits. It causes extensive stem & leaf infections which when severe can debilitate or even kill plants. Air-borne infection of flowers & developing fruit leads to fruit end rot sometimes not visible until the fruit is marketed. This leads to rejection and reduced retailer & consumer confidence in the product. Effective control of the disease is difficult in intensive production systems and likely to be made worse by recent changes to EU pesticide legislation which will effectively prohibit some of the existing fungicides.

Phase 1 (PE 001) of the work comprised a desk study to determine 'state of the art' with respect to research on *Mycosphaerella* and its control in cucumber. Studies were undertaken to determine the sensitivity of isolates of *M. melonis* to fungicides, an investigation of the possibility of seed-borne infection and the potential for using an immunoassay detection system for air-borne spores as an early warning for control actions.

Phase 2 of the project will continue to develop and validate an immunoassay detection system for air-borne spores of *M. melonis*, a range of alternative fungicides and bio-control products will be screened for potential efficacy and crop safety against *M. melonis* in in vitro and in vivo tests, disinfectants will be screened for efficacy, the potential for systemic infection will be examined and an integrated strategy will be developed utilising the knowledge generated throughout the project.

Further information

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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