



Agriculture & Horticulture  
DEVELOPMENT BOARD



# New Project

---

## **FV/PE 410**

Lettuce: Further development of  
'Best Practice' for disease control in  
protected and outdoor crops

<b>Project Number:</b>	FV/PE 410
<b>Project Title:</b>	Lettuce: Further development of 'Best Practice' for disease control in protected and outdoor crops
<b>Project Leader:</b>	Dr G. M. McPherson
<b>Contractor:</b>	STC Research Foundation
<b>Industry Representative:</b>	David Norman & Colin Bloomfield
<b>Start Date:</b>	01 August 2012
<b>End Date:</b>	30 November 2015
<b>Project Cost:</b>	£121,891

#### **Project Summary:**

A range of new products have been approved for use on protected and outdoor lettuce over recent years. Whilst the newly approved products are being used by the majority of lettuce growers there is a need to better understand whether the same products have broader spectrum activity. It is also becoming more important to understand how and when to use the various products in programmes to optimise overall efficacy, whilst minimising residue levels at harvest.

The primary purpose of this project is to optimise the use of approved fungicides and bio-pesticides in programmes on both outdoor & protected lettuce crops. At the same time, it provides an opportunity to develop new products that offer potential for disease control in this crop. This will be done by using both small-and large-scale studies to investigate the efficacy of both approved and novel seed treatments, fungicides and biopesticides to provide better guidance for growers. Attention will be focused on the development of programmes which offer the most cost effective, crop safe control of the stated pathogens whilst aiming to reduce pesticide applications, minimise the risk of the development of fungicide resistance issues in the pathogen and ensuring growers can achieve their goal in terms of residue levels.

## **Aims & Objectives:**

### Project aim(s)

To carry out an evaluation of the broader efficacy of various approved and novel seed treatments, fungicides and bio-pesticides on both protected and outdoor lettuce in order to formulate a series of disease control programmes and strategies for the control of the most important pathogens of lettuce e.g. *Bremia lactucae*, *Botrytis cinerea*, *Rhizoctonia solani* and *Sclerotinia sclerotiorum*.

### Project objective(s):

- 1.To conduct in vitro & in vivo (in planta) studies to screen new experimental products for the control of *Sclerotinia*, *Botrytis*, *Rhizoctonia* & *Bremia*. Select those most effective for in vivo screening in replicated field & glasshouse trials.
- 2.To carry out replicated trials in both field and glasshouse lettuce to a. evaluate the activity of the short-listed novel products against the primary pathogen targets and b. to compare a range of integrated fungicide/bio-control programmes designed to investigate and optimise their broader efficacy and crop safety.
- 3.To validate the integrated programmes not only in terms of efficacy and crop safety but also with respect to residue levels through a series of multi-residue analyses at harvest to ensure retailer and consumer acceptance of the optimised programmes.
- 4.Prepare Annual & Final Reports, including HDC article and updated Factsheet to effectively communicate new knowledge to industry

The development of suitable levels of disease development is always a challenge when carrying out studies in crops; however every effort will be employed to ensure the success of the trials and, where appropriate (in non-commercial trial areas), this will be done through artificial inoculation. In commercial crops, effort will be made to select suitable sites with a history of disease, to undertake the work at the appropriate time of the year when disease pressure is likely to be high and to choose susceptible cultivars to increase risk where possible.

## **Benefits to industry**

The information gathered during the study will potentially provide significant economic, social and environmental benefits for the industry by ensuring a greater level of clarity regarding activity of both current and novel fungicides and bio-control products thus allowing their more efficient and optimised use. By identifying the broader spectrum of activity of the various existing and new products it will help growers to select the most appropriate products for particular crop protection scenarios and, at the same time, help growers achieve and hopefully improve on pesticide minimisation targets.

## **Disclaimer**

*AHDB, operating through its HDC division seeks to ensure that the information contained within this document is accurate at the time of printing. No warranty is given in respect thereof and, to the maximum extent permitted by law the Agriculture and Horticulture Development Board accepts no liability for loss, damage or injury howsoever caused (including that caused by negligence) or suffered directly or indirectly in relation to information and opinions contained in or omitted from this document.*

*No part of this publication may be reproduced in any material form (including by photocopy or storage in any medium by electronic means) or any copy or adaptation stored, published or distributed (by physical, electronic or other means) without the prior permission in writing of the Agriculture and Horticulture Development Board, other than by reproduction in an unmodified form for the sole purpose of use as an information resource when the Agriculture and Horticulture Development Board or HDC is clearly acknowledged as the source, or in accordance with the provisions of the Copyright, Designs and Patents Act 1988. All rights reserved.*

*AHDB (logo) is a registered trademark of the Agriculture and Horticulture Development Board. HDC is a registered trademark of the Agriculture and Horticulture Development Board, for use by its HDC division. All other trademarks, logos and brand names contained in this publication are the trademarks of their respective holders. No rights are granted without the prior written permission of the relevant owners.*

## **Further information**

Email the HDC office ([hdc@hdc.ahdb.org.uk](mailto:hdc@hdc.ahdb.org.uk)), quoting your HDC number, alternatively contact the HDC at the address below:

HDC  
AHDB  
Stoneleigh Park  
Kenilworth  
Warwickshire  
CV8 2TL

Tel – 0247 669 2051

HDC is a division of the Agriculture and Horticulture Development Board.