



# New Project

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## **FV 392**

Onions: Relationship between disease incidence in stored bulb onions and first year sets

<b>Project Number:</b>	FV 392
<b>Title:</b>	Onions: Relationship between disease incidence in stored bulb onions and first year sets
<b>Start and end dates:</b>	1st April 2011 to 31st March 2012
<b>Project Leaders:</b>	Dr Steven Roberts and Dr John Clarkson
<b>Industry Representative:</b>	R Oldershaw, Glebe Farm
<b>Location:</b>	Warwick Crop Centre, School of life Sciences, Wellesbourne Campus, University of Warwick, Wellesbourne, Warwick, CV35 9EF Laboratory, controlled environment and glasshouse facilities.
<b>HDC Cost:</b>	£53,348

### **Project Summary:**

There is a perception that the risk of certain onion diseases may be increased when crops are grown from sets. The major diseases of concern to the industry are: bacterial rots thought to be caused mainly by *Burkholderia gladioli* pv. *allii* (Bga; particularly in heat-treated red Rijnsburger type onions), neck rot caused primarily by *Botrytis allii* and *Fusarium* basal rot caused by *Fusarium oxysporum* fsp *cepae*. One possibility is that the necessary heat treatment of some cultivars may lead to increased risk of disease. This project represents a first step to address these issues by determining the incidence of the major bacterial and fungal onion pathogens thought to be associated with sets of different types and establish if there is a relationship between disease incidence in sets and subsequent problems in the harvested bulb onion crop. It is anticipated that, based on these initial results, a follow-on project will investigate way of reducing the impact of any disease problems associated with sets.

### **Aims & Objectives:**

#### *(i) Project aim(s):*

To determine the incidence and identify current disease problems associated with onion sets and relate these to storage rots in the harvested bulbs.

#### *(ii) Project objective(s):*

1. Determine the incidence of the major bacterial and fungal onion pathogens associated with sets
2. Isolate and confirm identity of pathogens (particularly bacteria).
3. Determine if there is a relationship between the incidence of different set diseases at planting with those causing problems subsequently in the stored bulb onion crop.

This work is intended to be a preliminary project that will set the scene for a future follow-up project which will investigate ways of reducing the impact of onion set diseases such as:

- Understanding the impact of 'first year' set drying/curing/heat-treatments on onion diseases and potentially optimising these regimes.
- Understanding the relative importance of diseased onion sets in transmission / spread in different field environments and their impact on subsequent problems of bulb onions in store.
- Developing appropriate tests for sets to assess disease levels and determine the likelihood of subsequent problems in field and store.
- Testing onion set and in-field treatments which may reduce onion bulb storage diseases.

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