



Horticultural  
Development  
Company

# New Project

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## HNS 173

Epidemiology and prediction of  
rose downy mildew

**Project Number:** HNS 173

**Title:** Epidemiology and prediction of rose downy mildew

**Start and end dates:** 1 April 2009 to 31 March 2012

**Project Leader:** Dr Xiangming Xu, EMR

**Project Co-ordinator:** Mr David Edge, Forest Edge Nurseries

**Location:** BHGA office and RHS Hampton Court Palace Show

## Background and project objectives

Downy mildew (*Peronospora sparsa*) is a highly destructive disease on roses, causing severe and rapid defoliation. Intensive fungicide usage can result in unjustified applications and potential environmental pollution, does not always control the disease satisfactorily due to poor timing or choice of fungicides, and may accelerate the selection of fungal strains that are resistant to fungicides. Infected plants, particularly those with severe leaf abscission, are usually discarded because of possible infection of stems and hence the risk of diseased growth the following year. This not only results in production losses but also additional waste, which is an increasingly important issue for a number of reasons. All rose cultivars are considered to be susceptible to this pathogen although they can greatly differ in their sensitivity.

Recent research at EMR and other institutes has demonstrated a supervised disease control approach to be successful on several crops although operating such a system may place some extra demand on producers. EMR has already obtained some quantitative data on rose downy mildew development from an un-replicated experiment; another similar set of data was recently obtained in California. Currently, EMR is developing a rose powdery mildew prediction scheme with HDC funding. Thus, it is cost-effective to combine the prediction schemes for powdery and downy mildews on rose. The overall aim of this project is to improve management of rose downy mildew with minimal input of fungicides. It has three specific objectives of:

1. Synthesising all published information on conditions for disease development in the form of a forecasting system and obtaining new independent data sets to validate such a system,
2. Determining the relationship of disease development and inoculum dose,
3. Organising workshops to demonstrate and train growers on the practical use of forecasting systems.

This project will lead to improved management of downy mildew with minimal chemical input and may enable growers to adopt management practices to prevent conditions conducive to mildew from occurring.

Further information

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

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