



Horticultural  
Development  
Company

# New Project

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## M 51

Developing an accurate,  
quantitative and predictive test  
for Mushroom Virus X

**Project Number:** M 51

**Title:** Developing an accurate, quantitative and predictive test for Mushroom Virus X

**Start and end dates:** 1 October 2009 to 30 June 2010 (9 months)

**Project Leader:** Dr Kerry Burton, WHRI

**Project Co-ordinator:** Richard Gaze, ADAS

**Location:** WHRI & Teagasc, Dublin

### **Background and project objectives**

MVX is a serious and recurring disease often spread by contaminated compost. A reliable and quick method which can detect early virus infection is necessary to minimise losses and provide better disease control. MVX is caused by a non-encapsidated double-stranded RNA virus so its detection inevitably involves molecular methods. Control of MVX is hindered by current MVX test (gel-based ds-RNA separation) which is slow, ambiguous to interpret and has low sensitivity.

A more sensitive method to detect the MVX in spawn-run compost would predict future disease outbreaks and inform the grower to take advance action. The development of a new massively-sensitive PCR-based test is highly feasible due to two recent findings by the applicants

- Identification of 27 genes which show statistically significant increases in their associated RNA upon MVX infection in mushrooms. This increase is massive, up to 3 million fold higher levels in infected compared with non-infected mushrooms.
- Development of a new method to extract and purify RNA from compost and casing which is of high quality and non-degraded.

The project aim is to develop the new test by examining the RNA levels of these up-regulated genes in infected mycelium of compost, casing and spawn as well as in mushrooms. This could be used for advanced warning and prediction of outbreaks and may lead to certification procedures of Phase III compost as MVX-free.

## 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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