New Project

FV 386

PhD Studentship: Use of gaseous ozone to prevent microbial post-harvest spoilage and reduce pesticide residue levels

Project Number:	FV 386
Title:	PhD Studentship: Use of gaseous ozone to prevent microbial post-harvest spoilage and reduce pesticide residue levels
Start and end dates:	1st October 2011 to 30th September 2014
Project Leader:	Ian Singleton, University of Newcaslte
Industry Representative(s):	Thane Goodrich, Intercrop Ltd
	Steve Rothwell, Vitacress Salads Ltd
Location:	Main site: School of Biology, Newcastle University
	Biofresh Ltd (ozone crop storage equipment), INEX Business Centre, Newcastle University campus
HDC Cost:	£83,150

SUBJECT TO CONTRACT

Project Summary:

Previous work by the applicants has demonstrated that ozone exposure reduces fungal spoilage in a variety of fresh produce types and that ozone also reduces residues of selected field-applied pesticides on stored crops. Importantly, ozone does not leave a detectable residue on produce which is a major health benefit to consumers and a positive marketing tool for growers. This project will focus on the use of ozone gas exposure during storage to reduce post harvest contamination and spoilage in selected products (vegetables). Initial work will involve laboratory and pilot scale optimisation of ozone exposure levels and duration to reduce spoilage to find ozone levels that are beneficial but do not damage produce. Optimised ozone levels will be used to determine the effect of ozone on produce quality and to determine if ozone is able to reduce residue levels of field applied pesticides. Finally commercial trials will be progressed to test the efficacy of the technology in a commercial environment.

Aims & Objectives:

Overall aim:

To develop a commercial method of applying ozone to reduce post harvest fungal spoilage and minimise pesticide residue levels on selected produce

Specific objectives:

- Optimise ozone concentrations and exposure durations to achieve maximum reduction in post-harvest spoilage and microbial loads in selected produce (lettuce, spinach and herbs),
- Determine the effect of ozone exposure on produce quality
- Assess the effect of ozone exposure on field applied pesticide residue levels on produce surfaces
- Design and evaluate potentially viable commercial exposure techniques
- Undertake commercial trials of the optimised technique

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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