ACERA Project 0907

1. **Project Title**: Development of a method to evaluate the systems based approach for managing plant pests

2. **Theme**: Risk analysis methods

3. **Rationale**:

Modular process risk models (MPRM) have been used within the food safety setting to estimate the probability and level of contamination throughout the food chain and as such evaluate different risk management strategies[1]. The concept behind MPRM is that in any food pathway, all the steps in the pathway can be classified as one of six basic processes (modules) relating to microbial activity (i.e. growth and inactivation) or product handling (i.e. mixing, partitioning, removal and cross contamination). Once the modeling techniques for the six processes are established, every food pathway can be modeled by dividing the food pathway into a series of processing steps or modules.

We propose extending the MPRM for food safety to assess the quarantine risk associated with plant pests. While, some of the processes in the pathway will be the same as those in the MPRM for modeling pathogens in the food supply (e.g. removal and inactivation) there will also likely be different processes to consider. Furthermore, it may also be necessary to develop different methods for modeling the basic processes in the field-to-fork pathway. Therefore, the proposed project will require the development of new methodology.

The proposed project will provide a tool for import risk assessment that is of both national and international importance. Project personnel will communicate with people in government and the wider community during the two stages of the project. Initially, stakeholders will participate in a two-day workshop to determine the final scope of the project. Secondly, the outcomes from the project will also be communicated to people in government and others engaged in risk analysis at a training session that will be held at the end of the project. The proposed project also addresses the centre's objective of engaging a range of skills and scientists as it will involve people working in a wide range of areas including statistics, entomology, epidemiology and veterinary public health.

4. **Outputs**

The project has three deliverables: (i) workshop with stakeholders; (ii) a final report; and (iii) a training session. The workshop with stakeholders will be held at the beginning of the study (i.e. June 2008) and will be used to identify key issues and case studies to be considered further. The final report will include a list of issues, potential solutions, describe the MPRM for plant pests and illustrate MPRM with a case study. The third outcome from this project, that is the training session, will be held at the end of the proposed project and provide an opportunity for the

[1] M.J. Nauta (2002). "Modelling bacterial growth in quantitative microbiological risk assessment: is it possible?" *International Journal of Food Microbiology* 73 (2002) 297– 304
Clough HE, Clancy D, French NP. Vero-cytotoxigenic Escherichia coli O157 in pasteurized milk containers at the point of retail: a qualitative approach to exposure assessment. *Risk Analysis* 26, 1291-309, 2006

researchers to explain the tools to those people in government and the wider community engaged in risk analysis. This training session will also be an opportunity for the researchers to seek feedback prior to submitting the final report.

5. **Time frame:** Commencing: June 2008; finishing: May 2009

6. Project leader(s)

Title	First name	Surname	Location	Organisation	% Time per year[a]
Dr	Naomi	Cogger	New Zealand	Massey University	80

[a] Percentage of individuals year that will be spent contributing to this project

7. Resources

A. Funds

Financial years of requested funding	06/07	07/08	08/09
Project Total			**$40,000**

B. Funds obtained from other sources for this project
(Participant, Industry or Third Party support (cash or in-kind)

Financial years of requested funding	**07/08**	**08/09**
Total		**$30,000 to $40,000**

8. End Users

The outcomes of this project will be of interest to individuals in government and the wider community engaged in risk analysis for plant pest in Australia and overseas. The techniques may also assist in the prioritization of future research.