Meta-barcoding for assessment of risks posed by genetically modified crops to farmland arthropods

By

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A thesis submitted for the partial fulfilment of the requirements of the Master of Biotechnology (Plant Biotechnology)

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2014

Declaration

I declare that this thesis is a record of original work and contains no material which has been accepted for the award of any other degree or diploma in any university. To the best of my knowledge and belief, this thesis contains no material previously published or written by another person, except where due reference is made in the text.

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Preface

This research has been performed during the past 10 months as part of the requirements of the Master of Biotechnology (Plant Biotechnology) degree. In accordance with the requirements of the program, the research is presented in the format of a manuscript for submission to a peer-reviewed scientific journal. I have chosen to follow the format of the PLos One journal. My co-authors for the manuscript are Prof. Mike Keller, Dr. Otim Michael and Dr. Adam Croxford. Prof. Keller advised on the scope of the research and the experimental design. He advised about the analysis of results and reviewed the draft and final manuscript. Dr. Michael provided field supervision and consultation on the practical aspects of conducting an insect collection survey. Dr. Croxford provided technical assistance and direction in the molecular laboratory in order to generate and analyse both the reference and meta-barcoding sequence datasets used in this experiment. The manuscript in this thesis is intended as the first draft of a manuscript for future publication. The word count for the manuscript is 7500. Appendix A contains an alignment output of *Ceratitis anonae* and *Ceratitis rosa* extracted from an NCBI output. Appendix B of this thesis contains a summary table of the output from the Miseq sequencing run showing the quality of the run.