Chapter 1

Gene expression responses to interactive stressors of diet quality and viral infection in *Apis mellifera*

1.1 Introduction

- Despite interest in these factors, there have to date been little to no experimental studies exploring the interaction of diet diversity and viral infection in honey bees. - We found that high quality diets (polyfloral pollen and high quality single-source pollen) have the potential to reduce mortality in the face of infection with Israeli acute paralysis virus (IAPV) - There was a significant interaction between diet and virus infection on mortality, with associated differences in bee virus titers, suggesting good diets can help bees keep viral infection levels down - Further, we found that extreme stress in the form of pollen starvation and IAPV infection increase exiting behavior from small experimental hives, somewhat mimicking one of the hallmarks of colony collapse disorder

1.2 Methods

1.3 Results

1.4 Discussion

Rutter et al. 2015

Bibliography

L. Rutter, S. Vanderplas, and D. Cook. *ggenealogy: Visualization Tools for Genealogical Data*, 2015. URL https://CRAN.R-project.org/package=ggenealogy. R package version 0.1.0.