

## **A metagenomic survey of the invasive yellow crazy ant *Anoplolepis gracilipes* suggests candidates for population regulation**

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Eligible for student prize

Invasive species often experience rapid increases in population size when introduced to a new range, followed by population stabilisation. However, declines of large populations of invasive species are occasionally observed, sometimes to the point of local extinction. Although the causes of these declines are difficult to ascertain, disease is often assumed. Our metagenomic study used Illumina GAIIx short-read sequencing to investigate endosymbiont diversity of the invasive yellow crazy ant *Anoplolepis gracilipes*. Although the prevalence of many bacterial groups did not differ among *A. gracilipes* populations, bacterial diversity varied among our samples. A population known to have low ant abundance also had the lowest number of matches to bacterial sequences (i.e., the lowest bacterial prevalence). Compared to other populations, this low abundance population also had more bacterial orders that are proposed to have beneficial relationships with ants, particularly involving antibiotic activity. This study has identified a range of bacteria that were previously unknown in *A. gracilipes*. Several of these are candidates for further research, which may shed light on the effects of endogenous parasites and symbionts on the population dynamics of the species.

