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Title: Probing the Unfolded Protein Response: mRNA knockdowns in *Acyrtosiphon pisum*

Abstract:

Pea aphids, (*Acyrtosiphon pisum*), one of 2000 species of aphids, are a significant agricultural pest and are the model organism of aphid species. Current management of *A. pisum* includes use of insecticides and the introduction of natural predators, neither of which is ideal. The utilization of RNA Interference (RNAi) presents an alternative, pest specific targeting method. The introduction of double-stranded RNA (dsRNA) complementary to each of the target genes of the Unfolded Protein Response (UPR) in the pea aphid, coupled with a carrier, has shown significant changes in expression of gene products and subsequently has shown decreased survivorship and reduced fecundity in the organism. Here we will demonstrate that our preliminary research shows promise in insect mitigation as well as insights into other knockdown projects ongoing within the research group.