

**Effects of Floral Resource Availability on *Anagyrus pseudococci*'s Longevity,
Fecundity, and Parasitism Rates of Vine Mealybug (*Planococcus ficus*)**

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ABSTRACT

Vine mealybugs (*Planococcus ficus*) are major pests in California's vineyards. *Anagyrus pseudococci* is a primary parasitoid of the vine mealybug and has potential to control pest populations. Floral resources may be beneficial for parasitoids by providing alternative resources and may lead to an increase in pest suppression. In a laboratory study I tested two research questions: (1) What flower species are the most effective in increasing longevity of *A. pseudococci*? And (2) What flower species are the most effective in increasing *A. pseudococci*'s fecundity and parasitism rates of vine mealybug? I found that all flower species, except *P. tanacetifolia*, showed a higher mean longevity than the control. *Phacelia tanacetifolia* resulted in a reduced longevity compared to *A. majus*, *F. esculentum*, *D. carota*, and honey solution. Provisioning of honey solution resulted in a significantly enhanced longevity compared to control. Average daily fecundity and parasitism rates per individual varied minimally between treatments. However, total lifetime fecundity varied significantly between treatments and cumulative fecundity continued to increase over time. These results suggest that enhanced longevity affects lifetime fecundity and potentially *A. pseudococci*'s ability to control vine mealybug populations in the field.

KEYWORDS

Conservation biological control, agriculture, viticulture, parasitoid, natural enemy