

The feeding rate of *Anystis baccarum* on Bramley apple pests

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Introduction

With ever increasing concern over the use of pesticides within agricultural systems, much attention is now being placed on the role of natural enemies in regulating pest species. Surveys conducted within local orchards by DARD indicate that pest damage is normally inconsequential, even though, pest numbers regularly exceed recommended spray thresholds. It is thought that natural enemy fauna within the orchards may be capable of limiting pest populations during times when damage is likely. In England, much research has focused on the impact of the predatory mite *Typhlodromus pyri* ('Typhs') in helping to control red spider mite (*Panonychus ulmi*) and apple rust mite (*Aculus schlechtendali*), both economically important pests on apple trees. This predatory mite (*T. pyri*) also occurs in Ulster's Bramley orchards. However, another predatory mite that is common in local orchards is *Anystis baccarum* (Cuthbertson and Murchie, 2004a,b; Cuthbertson, 2005; Cuthbertson and Murchie, 2005). This mite is a voracious generalist predator feeding on any prey it can overpower. Work in Russia has shown it to be capable of controlling pest mites on black currant plants. It may therefore contribute to biological control of invertebrate pest species within local Bramley orchards. The aim of this research was to investigate the feeding rate of *A. baccarum* on invertebrate pest species that occur in the Bramley orchards.

Materials & Methods

In the laboratory, three pests of apple; red spider mite, apple-brown mite (*Bryobia rubrioculus*) and apple-grass aphid (*Rhopalosiphum insertum*) were offered to starved adult *A. baccharum* within petri dishes. Ten prey individuals were offered to a starved individual *A. baccharum* per day. The number dehydrated (*A. baccharum* is a fluid feeder) in 24 hours was recorded and the same amount replaced. This was carried out over a three-week period.

Results

On average, *A. baccharum* dehydrated 6.2 red spider mites, 4.9 apple-brown mites, or 1.2 apple-grass aphid per day (Figure 1). *Anystis baccharum* was also observed to feed on apple rust mite adults and readily consume red spider mite eggs (Cuthbertson and Murchie, 2004b).

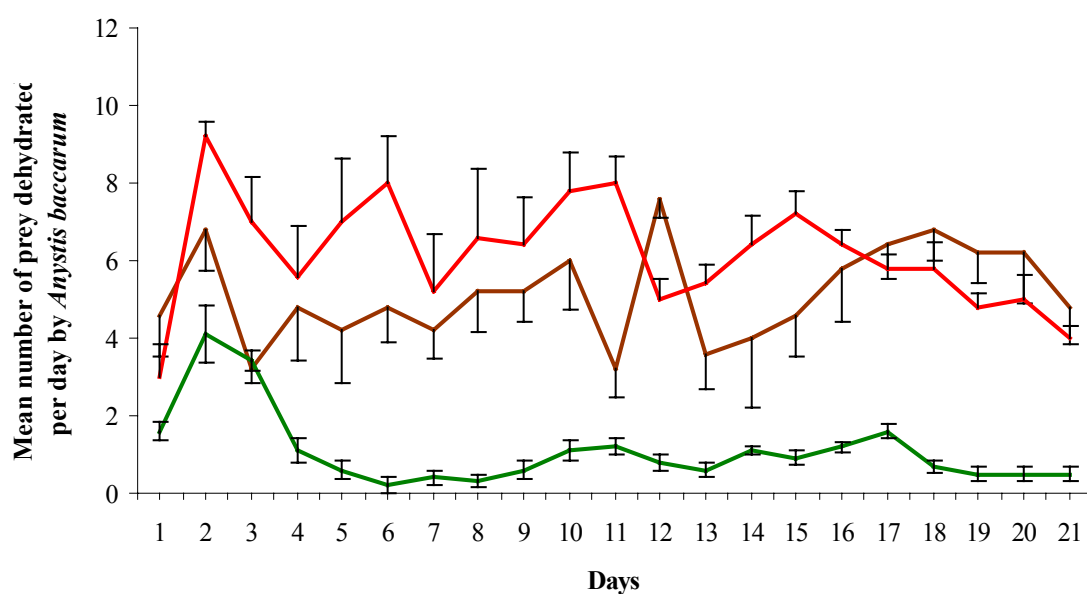


Figure 1. Feeding rate of *Anystis baccharum* on different orchard pest species. — red spider mite; — apple-brown mite; — apple-grass aphid. Bars are standard errors of the mean (only shown one way for clarity).

Discussion

This laboratory feeding trial has proved that *A. baccharum* can and will feed on the economically important invertebrate pest species occurring in the Bramley orchards. The presence of *A. baccharum* along with other predatory species such as the 'Typhs' may well play a significant role in biological control of pests in the orchards (Cuthbertson *et al.*, 2003a,b; Cuthbertson and Murchie, 2005). *Anystis baccharum* is not known to cause any feeding damage to either fruit or foliage unlike *T. pyri* (Sengonca *et al.*, 2004). Therefore, with further research, along with increased fruit grower awareness (Cuthbertson, 2004), *A. baccharum* may well prove to be more beneficial to local apple growers than the longstanding favourable relationship that has occurred between growers and 'Typhs'.

References / further reading

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