

Antipredator responses of aphids to parasitoids change as a function of aphid physiological state

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Under predation risk, prey may prioritize antipredator behaviours and sacrifice feeding. However, energetically constrained animals may choose to sacrifice or change antipredator responses and accept relatively greater risk in order to secure food. In this last case, the antipredator tactics chosen must balance safety and feeding in such a way that costs are minimized and benefits maximized. We studied the antipredator behaviour of pea aphid, *Acyrtosiphon pisum* (Harris) (Hemiptera: Aphididae) subjected to different periods of food deprivation, against the parasitoid *Aphidius ervi* (Hymenoptera: Braconidae). As the energetic internal stress of aphids increased, the predominant antipredator response changed from walking away and dropping to kicking behaviour, and parasitization avoidance decreased. Parasitoids did not show preference between food-deprived and nonfood-deprived aphids. Dropping and walking away reduced parasitization from 50 to 33%. These results support the hypothesis tha