PARASITISM BEHAVIOUR OF FEMALE DIAERETIELLA RAPAE IN COMPETITION

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INTRODUCTION

While foraging haplodiploid parasitoids have a choice between oviposition and mating (Kant et al., 2012a). They encounter hosts of varying densities and can also face competition from conspecifics and other species.

When two or more females exploit the same host patch it results in intraspecific competition and interference (Kant et al., 2012b). In response females can manipulate their parasitism rate and sex allocation strategies. Here we examined the oviposition strategies of the parasitic wasp Diaeretiella rapae which is a sole parasitoid of cabbage aphid Brevicoryne brassicae.

RESULTS

The number of hosts parasitised by female D. rapae increased with the number of available hosts when D. rapae females foraged alone (P < 0.001) (Figure 1). However, the proportion of hosts parasitised by a foraging female decreased as host density increased (P < 0.001) (Figure 1).

Increase in the number of D. rapae females foraging together increased the total amount of parasitism, but the relative contribution of each female (i.e. number of nymphs parasitised) decreased (P = 0.024) (Figure 2).

A smaller proportion of parasitoid offspring were females when D. rapae mothers were competing for the same hosts than when females foraged alone (P < 0.001) (Figure 2).

CONCLUSIONS

Reproductive strategies play an important role in the pest suppression ability of parasitoids (Kant et al., 2012c). The results of this study indicate that female D. rapae adjust their reproductive strategies in response to changes in host and foundress densities. Females reduce the parasitism rate and allocation of fertilised eggs in competition. This might be a strategy to save the sperm and eggs for future oviposition; otherwise, these eggs and sperm (when ovipositing fertilised eggs) may be lost through superparasitism.

REFERENCES:


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http://evolves.massey.ac.nz/Rashmi.htm