

EFFECT OF NUTRITION ON THE LONGEVITY OF *BRACON
BREVICORNIS* WESMAEL (HYMENOPTERA: BRACONIDAE)
A LARVAL PARASITOID OF THE COCONUT CATERPILLAR
NEPHANTIS SERINOPA MEYRICK

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ABSTRACT

Bracon brevicornis Wesmael (Braconidae) is one of the important indigenous larval parasitoid of *Nephantis serinopa* Meyrick, a serious pest of the coconut palm in India. The adult parasitoids are usually fed on diluted honey in the laboratory. The present study assesses the efficacy of different sugars such as xylose, dextrose, sorbose, mannose, mannitol, sucrose and raffinose in comparison with honey and distilled water in increasing longevity of *B. brevicornis*. The parasitoids were fed daily with 20% solutions of sugars and honey and distilled water as droplets on wax - coated paper. Data revealed that honey is the best food for promoting longer life of the parasitoid, the mean longevity being 10.4 days for males and 30.1 days for females. This was followed by sucrose and dextrose in the order of efficacy. The others are not superior to distilled water. Between males and females, the latter had a significantly longer life span in all cases and more so with honey and sucrose.

INTRODUCTION

Bracon brevicornis Wesm. (Braconidae) is an important indigenous larval parasitoid of *Nephantis serinopa* Meyrick, a serious pest of the coconut palm in India. George *et al.* (1977) reported that 0.8% of *Nephantis* larvae were parasitised by *B. brevicornis* in the field. For breeding the parasitoid in the laboratory, the adults are usually fed on diluted honey, and multiplied on *Nephantis* larvae or on alternate hosts like *Corcyra cephalonica* caterpillars for liberation in the pest infested coconut plantations. The present study assesses the efficacy of different sugars in comparison with honey and distilled water on increasing longevity of *B. brevicornis*.

MATERIALS AND METHODS

Laboratory bred parasitoids immediately on emergence were caged in pairs in glass vials, 7.5 × 2.5 cm. These parasitoids were fed with 20% xylose, dextrose, sorbose, mannose, mannitol, sucrose, raffinose, honey and distilled water. Food was offered as droplets on wax-coated paper, daily in the morning. There were altogether ten replications having ten pairs of insects in each replication, which included one with no food. The trial was carried out in the laboratory under a temperature range of 28° C to 30° C and r.h. range of 75 to 79%. Data on longevity of male and female parasitoids were recorded at 24h intervals.

The data collected from these experiments were statistically analysed and the results summarised in Table 1.

Table 1. Effect of nutrition on the longevity of *Bracon brevicornis* Wesmael (Hymenoptera : Braconidae).

Mean longevity (in days)			
S.No.	Treatments	Males	Females
1.	Xylose	4.4	7.4
2.	Dextrose	7.5	22.7
3.	Sorbose	5.5	10.3
4.	Mannose	5.2	8.7
5.	Mannitol	5.6	10.9
6.	Sucrose	9.1	24.1
7.	Raffinose	6.8	11.2
8.	Honey	10.4	30.1
9.	Distilled water	5.2	8.1
10.	Starving	3.7	4.9
	G.mean	6.34	13.84
	S.E./plot	4.123	8.95
	C.V.%	65.23	64.69
	C.D.	3.7	8.0

RESULTS AND DISCUSSION

Diluted honey was proved to be the best food for promoting longer life of the parasitoid, the mean longevity being 10.4 days for males and 30.1 days for females. It was followed by sucrose (disaccharide) for which the mean longevity was 9.1 and 24.1 for males and females respectively. Dextrose (monosaccharide) is next in efficacy to sucrose. Raffinose (trisaccharide), mannitol (sugar alcohol), xylose, sorbose and monnose (manosaccharide) were not at all superior to distilled water. However, between males and females, the latter had a significantly longer life span in all cases more so with honey and sucrose.

REFERENCE

- GEORGE, T.G., SAHARSRANAMAM, K.N. AND GEORGE, M.V.
1977. Note on natural parasitism of *Nephantis serinopa* Meyr. *Curr. Res.* 6: 27-28.