

THE BIOLOGY AND ECOLOGY OF SAWFLY Athalia vollenhoveni
GRIBODE (TENTHREDINIDAE: HYMENOPTERA), WITH SPECIAL
REFERENCE TO OILSEED RAPE

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DECLARATION BY THE STUDENT

This thesis is my original work and has not been presented for a degree in any other University.

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DECLARATION BY THE SUPERVISORS

This thesis has been submitted for examination with our approval as University supervisors.

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ABSTRACT

Sawfly Athalia vollenhoveni Gribode larvae reared in the laboratory or collected from the field were fed on fresh tender leaves of two oilseed rape varieties namely Torpe and Turgot in enclosed glass cages in order to study lifecycle.

Resistance of four brassica cultivars (Torpe, Turgot, Kale and Cabbage) to A. vollenhoveni was tested by comparing quantity of plant material consumed, intensity of infestation, and preference for oviposition between different cultivars when they were equally exposed to the pest.

The sawfly A. vollenhoveni took a period of 46 to 74 days to develop from egg to adult at temperature $17 \pm 3.7^{\circ}\text{C}$ and relative humidity of $56 \pm 7\%$ when fed on rape leaves. The egg takes 6 to 7 days to hatch at temperatures above 21°C and 9 to 11 days at lower temperatures of about 13°C . The larval period ranges from 21 to 33 days. The larva grows through six successive instars with increase in the width of the head capsule by a growth factor of 1.225 x. Pupal period ranges from 20 to 30 days,

Different diets used in the laboratory experiment did not affect the life span of males while such diets considerably affected female life span and oviposition capacity.

Both field and laboratory studies on susceptibility of four different cultivars to sawfly revealed that Torpe and Turgot were more susceptible to the sawfly attack compared to Cabbage and Kale. Torpe was preferred for both feeding and oviposition than Turgot, Kale and Cabbage.

Two wild crucifers Capsella bursa-pastoris L. and Raphanus raphanistrum L. sustained the sawfly as alternative host plants. Other host plants were Amaranthus spp. and Galinsoga parviflora Cav. on which sawfly larvae fed sparingly, but the adult never oviposited on them.

A parasitic ichneumon wasp Idechthis canescens Grav. was observed attacking sawfly larvae.