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**LIFE HISTORY OF THE CUCURBIT APHID (APHIS
GOSSYPHII GLOVER)**

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SUMMARY

On young cotton plants, the adult stage was reached in $7\frac{1}{2}$ days, longevity of adults was approximately 16 days, and number of nymphs produced per adult was over 50.

The cucurbit aphid (*Aphis gossypii* Glover) infests a wide variety of cultivated plants and weeds in most parts of Queensland. Economic loss in cucurbit crops is not uncommon. Relatively high populations are regularly encountered on cotton seedlings in southern Queensland, where malformations on the young leaves in some crops are recorded almost every season. Studies on the life history, adult longevity and reproductive potential of this species on cotton seedlings were made under insectary conditions at Toowoomba in 1965.

Mean daily minimum and maximum insectary temperatures during the period of investigation from August 30 to October 27 were $61.34 \pm 0.16^{\circ}\text{F}$ and $78.65 \pm 0.17^{\circ}\text{F}$ respectively. The cotton seedlings were grown individually in plastic cylinders 3 in. high and $1\frac{3}{8}$ in. in diameter. Only healthy, vigorous plants were used.

The cucurbit aphid is viviparous. Life history studies therefore were commenced with newly deposited nymphs from colonies developed on young cotton plants. One nymph was placed on each plant and development from one stage to another recorded by cast skins. The data are based on 29 individuals. Each passed through four nymphal stages. All individuals except one were

apterous in the adult stage. The mean developmental periods for the various stages, the mean period of longevity and the mean number of nymphs produced per adult are as follows:

First instar development period	..	1.9 ± 0.16 days
Second instar development period	..	2.2 ± 0.11 days
Third instar development period	..	1.9 ± 0.13 days
Fourth instar development period	..	1.7 ± 0.11 days
Total development period	7.6 ± 0.29 days
Adult longevity	16.5 ± 2.80 days
Nymphs produced per adult	52.6 ± 10.20

The data show that the cucurbit aphid has a comparatively brief life cycle, with each instar requiring approximately 2 days for development and the adult stage being reached in $7\frac{1}{2}$ days from the time the nymph was born. The maximum period of adult life was 46 days and the maximum number of nymphs produced by one adult was 166.

This investigation demonstrated that with a brief life cycle and a mean reproductive capacity of more than 50, the cucurbit aphid is capable of making rapid population increases on cotton seedlings.

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