

been later than in *Wyeomyia*. Ovipositional patterns in *Wyeomyia* seem heretofore unreported. Diurnal oviposition may allow *W. mitchellii* and *W. vanduzeei*, to a greater extent than in *Kerteszia* and other nocturnally active mosquitoes, to use visual cues in locating oviposition sites.

Biting by *W. mitchellii*, as judged by collections in baited traps, seems to be limited to daylight hours and shows an activity peak in late afternoon (Edman and Haeger 1977). Vision may be important in finding hosts as well as oviposition sites.

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SOYBEAN: A LARVAL HOST FOR THE SOUTHERN CORN ROOTWORM (COLEOPTERA: CHRYSOMELIDAE)

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Little is known about soybean as a larval host for the southern corn rootworm (SCR), *Diabrotica undecimpunctata howardi* Barber. Mayse et al. (1975) documented that SCR females oviposit in soybean fields. Petty (1966) reported that SCR larvae were "collected in numbers from one soybean field," but did not establish if soybean was the larval host. Turnipseed (1973) mentioned that SCR larvae may occasionally damage seed, roots or nodules of soybeans. Newsom et al. (1980) list SCR larvae as a minor

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pest of soybean roots and nodules. Data presented below are to our knowledge the first documentation that the SCR can develop from egg to adult on soybean in the greenhouse and the field.

SCR phenology and ovipositional ecology were studied in several crops at the Tidewater Research Station, Plymouth, NC during 1982. Gravid SCR females were released into field cages (1.8 x 3.7 x 7.3 ml) placed over Forrest soybeans on 29 June 1982. Cages were removed after one week and plastic cups (0.472 liters), used as emergence cages, were placed upsidedown on the soil surface next to each soybean row. Plots were kept free of weeds and cups were checked weekly for emerged SCR.

Eleven adults emerged from 5 to 18 August 1982 (9 on 12 August). Developmental time from egg to adult was ca. 5 weeks on R1-R5 stage soybeans. A SCR 3rd-instar larva was found feeding on soybean roots in the plots on 29 July 1982.

A greenhouse study was conducted during 1983 to compare development of SCR larvae when reared on cucumber, corn and soybean. Marketmore 70 cucumbers (initial bloom stage), DeKalb XL71 corn (stage 2.5-3.0), and Forrest soybean (V8 and R3 stages) were utilized as host plants. Plants were reared in 36 x 30 x 14-cm plastic tubs. Soil consisted of a 1:1:1 ratio of spagnum peat, Metro Mix®, and a sandy loam. Enough plants were grown in each tub to ensure a fairly uniform root mass throughout the entire soil volume.

A randomized block design was used for the experiment (2 blocks, 3 reps of each treatment per block, 1 tub = 1 rep.). Each tub was inoculated with 50 neonate SCR larvae and the soil was kept moist (ca. 18% water by weight) throughout the experiment. Greenhouse maximum and minimum ambient air temperatures were $28.6 \pm 1.2^{\circ}\text{C}$ and $21.4 \pm 2.1^{\circ}\text{C}$, respectively, during the experiment. Above-ground plant parts were removed after 24 days and screen cages were placed over the tubs to catch emerging beetles.

Larval survival was low in all crops, but adult emergence was significantly greater in corn than in the other three treatments (ANOVA, $p < 0.01$; LSD separation). Some beetles did emerge from both soybean treatments. Developmental times and size (dorsal length x width) of emerged beetles were utilized as further indices of host suitability.

Since no significant block or sex effects existed for developmental time or size, both sexes and blocks were pooled. Additionally, no significant differences existed between soybean stages used, so data from both stages were pooled.

Results are presented in Table 1. Beetle developmental time was significantly longer (ANOVA, $p < 0.01$; LSD separation) on cucumber than on the other two crops. Corn produced significantly larger (ANOVA, $p < 0.01$; LSD separation) individuals than cucumber or soybean. This may have been in part an artifact of the greenhouse environment since some large beetles did emerge from soybean in the field. Even though all growth stages of crops tested were not included in the experiment, the results do support Isely's (1929) observations that SCR larval survival is greater and growth rate faster on corn than on cucurbits.

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TABLE 1. RELATIONSHIP OF HOSTS TO SOUTHERN CORN ROOTWORM LARVAL DEVELOPMENT IN THE GREENHOUSE.

Crop	Mean no. days (\pm SEM) until adult emergence	Mean dorsal area ¹ (mm ²)	No. of emerged adults
Corn	31.8 \pm 0.4	23.1 \pm 0.4	36
Soybean	32.6 \pm 1.3	16.5 \pm 2.1	9
Cucumber	38.0 \pm 2.0	16.4 \pm 0.6	4

¹Area = beetle length x width.

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EFFECT OF DIET ON THE EFFICACY OF HOUSE FLY CHEMOSTERILANTS

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Chemosterilants are routinely checked for activity against house flies, *Musca domestica*, at the USDA Insects Affecting Man and Animals Laboratory (Fye and LaBrecque 1967, and LaBrecque and Gouck 1963). Test compounds are formulated at various concentrations in a diet of sucrose, non-fat dry milk and powdered egg yolk (6:6:1). Flies of mixed sexes are fed on the diet for 5 days at which time the females are allowed to oviposit. If the eggs are nonfertile, the males are removed and caged with