

FOOD SOURCES OF *CULEX QUINQUEFASCIATUS* SAY, 1823 (DIPTERA: CULICIDAE) IN MACHURRUCUTU LOCALITY, HAVANA PROVINCE, CUBA

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Culex quinquefasciatus, is a mosquito closely linked to human settlement, and is widely distributed in Cuba (I. García Avila, 1977, Ed. Dirección de Publicaciones de la ACC, 84 p.), but no reference is available on feeding habits or possible food sources of this species in the area or elsewhere in the country.

The study area is a rural town surrounded by grazing ground in the vicinity of which there is a dairy farm. The resting sites of Culicidae where fed adults were collected, consisted of open cellars in two buildings from the town and one warehouse from the dairy farm.

Specimens captured from February to July, 1987, were transported alive to the laboratory where they were frozen at -20°C . Subsequently, fed mosquitoes were classified by their abdominal appearance (WHO, 1975, Offset Publication, 191 p.) being their abdomens compressed individually on filter paper (Whatman No. 1) and kept at 4°C before processing.

In the analysis of specimens we used the gel double-immunodiffusion method, considering the works of L. Guerrero & J. V. Scorza (1981, *Bol. Dir. Malar. San. Amb.*, 21: 129-139) and R. T. Collins et al. (1983, WHO/VBC/83.873, 11 p.) with some modifications. To prepare the gel, we used 1% agar in phosphate buffer pH 7.4, adding 3 ml of it to each plate (2.5 x 7.5 cm). Six perforated 2 mm-diameter plates of 5 μl were placed at a distance of 2 mm from a central plate.

Dilution of ingested blood was prepared with 0.5 ml of 0.85% sodium chloride solution, and was first opposed to wide reaction immuno-

sera (anti-birds and anti-mammals). Those with positive reaction to mammals were opposed to different specific immunosera within the type.

Wide reaction immunosera: anti-birds and anti-mammals were prepared in rabbits according to G. S. Gill (1984, *Trans. R. Soc. Trop. Med. Hyg.*, 78: 233-234) and specific immunosera were prepared in chickens as described by C. H. Tempelis & M. F. Lofy (1963, *Amer. J. Trop. Med. Hyg.*, 28: 408-421).

Table shows that *Culex quinquefasciatus* fed more frequently on mammals than on birds, although in February and March no significant differences were reported for feeding on either of them ($p < 0.05$). This was not so during the remaining months, in which feeding on mammals increased considerably while decreasing on birds. Negative results reported in table corresponded mostly to females with advanced blood digestion status (half-gravid, sub-gravid and gravid), 94.2% of mosquitoes fed on birds were collected in cellars.

Mosquitoes with previous identification of feeding on mammals when opposed to available specific antisera showed that those captured in cellars had a higher host variation than those collected in the dairy farm; in the latter mosquitoes fed more frequently in cattle (85.1%), while in cellars they fed more commonly on humans (34.6%) and dogs (20.1%) than on cattle (10.1%). Also, a lower feeding rate was reported in cattle (10.1%), horse (4.7%) and cat (1.6%). Low degree combined feeding was reported between different species of mammals and between birds and mammals. The most commonly found was cattle-birds in the dairy farm and human-dogs in cellars.

In our results, this species showed an opportunistic feeding pattern with variations according available and nearest hosts.

TABLE

Food sources of *Culex quinquefasciatus* in Machurrucutu, Havana Province, Cuba

Months	Birds		Mammals		Birds-Mammals		Negative		Total
	No.	%	No.	%	No.	%	No.	%	
February (4)	118	31	132	39.2	29	8.6	58	17.2	337
March (1)	24	40	29	48.3	3	5	4	6.7	60
April (3)	26	16.9	120	75.9	9	5.7	3	1.9	158
May (2)	17	9.9	142	83	11	6.4	1	0.6	171
June (3)	26	15.3	142	83.5	1	0.6	1	0.6	170
July (2)	12	26.7	31	68.9	0	—	2	4.4	45
Total	223	23.7	596	63.3	53	5.6	69	7.3	941

() Numbers of captures.