PEST CONTROL

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Many flies may superficially resemble each other, but they might differ greatly in biology and habits. The most common flies may be identified with simplified "identification keys." For identification of others, seek assistance from experts in your own area, such as college or university entomologists, extension service entomologists, county agents, sanitarians assigned to fly work, or entomologists working for state agencies. If no other help is available, send specimens to the U. S. National Museum, Washington 25, D. C. for identification.

FLY CONTROL—

Is Species Important?

by DR. ARTHUR C. SMITH

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A MYTHICAL Joe Jones of the XYZ Pest Control Company answered an urgent call from the ABC Dairy. Flies were everywhere—milk barn, feeding barn, hay-loft, house, garage, etc. The flies were promptly "knocked down" with an aerosol spray and a good residual spray was applied in accordance with the best current recommendations. The residual spray should have kept the flies under control for many weeks. The dairyman was asked to move and spread in the fields a large manure pile which was assumed to be the source of the flies. He complied that same day.

The very next day, the dairyman was on the phone again. His complaint? "Flies everywhere again. More than before!" The pest control operator returned, sprayed again with an aerosol, and hoped that the residual spray would show better results soon. When the phone rang the third day, Joe Jones suspected the worst. He was right. In spite of the fact that there were dead flies everywhere, the living flies were back again in full force.

This required a new approach. This time the flies were collected and subsequently identified as the lesser house fly, **Fannia canicularis.** This species does not ordinarily breed on dairies (for an unusual exception, see **California Vector Views,** Vol. 5, p. 63, "High Protein Feed Wastes as a Source of Lesser House Fly"), but is found very commonly breeding in chicken manure. About one-quarter of a mile down the road, there was a commercial poultry farm operated by the dairyman's brother-in-law. This family relationship made it easy for the dairyman and the PCO to visit the poultry operation. It was found that the poultry manure on this farm was producing literally millions of **Fannia canicularis.** The poultryman, surprisingly enough, had fewer adult flies on his premises than was the case at the dairy and he privately suspected his brother-in-law of causing his fly nuisance! With better fly control measures (in this case easily arranged by an agreement between brothers-in-law) at the poultry farm, spraying at the dairy became worthwhile. In this case continued spraying at the dairy could have resulted in nothing but unhappiness and dissatisfaction with pest control services. This particular species of fly found many ideal hovering and resting spots in the large buildings of the dairy, but relatively few at the poultry farm. Flies were being produced at the poultry farm in such large numbers that even continued daily spraying could not have brought about control. For each fly killed there were many others to take its place. Until the fly species was identified and the knowledge of its habits and biology put to use, there was no foundation on which to base a reasonable recommendation.

The basic principles involved in choosing a method for bringing about the control of flies are relatively simple and can be applied broadly throughout the field of fly control. They can be briefly summarized as follows:

1. Collect and identify samples of the adult flies which are actually causing the problem (see "Common Flies of Public Health Importance — Identification Key to Adult Forms", page 36).

2. Check on the life history and habits of the fly species involved. Note particularly the preferred larval habitats (see **Pest Control,** April, 1958, p. 31, "The Relationship Between Fly Production and Solid Organic Materials").

3. Locate larval sources.

4. Identify fly larvae.

5. Continue your search for fly larval sources until you find the closest sources producing comparable numbers of flies of the same species as the adult flies causing the problem.

6. Take into account these sources in planning your control program.

In cases where the fly source lies outside the premises you are serving, it may be necessary to obtain the cooperation of others in order to render satisfactory

Common Flies of Public Health Importance - Identification Key to Adult Forms

1 SMALL GNATS: brown to dark brown, attracted to fruit, fruit waste and fermenting vegetable waste.

DROSOPHILA SPP.
The Pomace Fly

2 

SHINY FLIES: blue, blue-black, green or bronzy, often with a "metallic" sheen or iridescence, at least on the abdomen.

3 

DULL, DARK-COLORED FLIES: gray, grayish-black, brownish or blackish with gray markings. Without a sheen or luster.

4 LARGE BROWN FLIES: like honey bees, fuzzy. Hover about, buzz, come to liquid manure or septic effluent.

TUBIFERA SPP.
The Drone Fly (Adult of Rat-tailed Maggot)

5 

Only the abdomen shiny. "Blue-tailed" flies with a dark blue abdomen but with a dull black thorax. Heavy-bodied, usually large.

CALLIPHORA SPP.
The Blue Blow Fly or Blue Bottle Fly

6 

Both thorax and abdomen shiny and of same general color.

Thorax with or without darker stripes.

7 

Without a long beak and so not blood-sucking. Only a spongy pad on a short stalk for mouth parts.

With various colors and stripes.

8 

With a long forward projecting leg-like beak for blood-sucking.

Fly often rests at an angle with a surface, and with wings well apart.

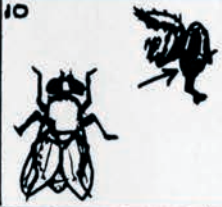
Abdomen gray and brown mottled.

STOMOXYS CALCITRANS
The Biting Stable Fly.

9 

Three dark stripes on thorax, cheeks yellowish below.
Bright green flies.

CALLITROGA MACELLARIA
The Secondary Screwworm Fly

10 

Thorax without stripes, cheeks dark below, not yellowish.

Bluish-black, green, bronzy, or black flies.

11 

Heavy-bodied flies, not slender, their wings less than twice as long as the length of the fly's abdomen.

12 

Slender flies with long wings, the length of wings about twice the length of the fly's abdomen. Fly in hovering zig-zag pattern (usually the males).

FANNIA SPP.
The Lesser House Fly
The Latrine Fly

13 

Small, often slender, black flies, very shiny, even on their legs.

Wings may be held flat and one over the other rather than apart.

OPHYRA SPP.
The Black Garbage Fly

14 

Heavy-bodied flies often large: green, bronzy, or bluish-black flies.

15 

Scutellum (on back between the wing bases) without a lighter color.

Abdomen and thorax with distinct patterns, not all blackish in color.

16 Scutellum (on back between wing bases) pale-colored.
Without distinct pattern, color blackish.

Usually larger, more robust than house fly and wings held wide apart.

MUSCINA SPP.
The False Stable Fly

17 

Bright green, yellow-green or bronzy flies with easily-seen bristles on the thorax.

Wings held wide apart.

PHAENICIA SPP.
The Green Blow Fly or Green Bottle Fly

18 

Bluish-black flies with bristles on thorax hard to see.
Wings often held flat and one over the other rather than apart.

PHORMIA REGINA
The Black Blow Fly

19 

Thorax with 4 dark stripes.

Abdomen with yellowish-brown at sides and below.

MUSCA DOMESTICA
The House Fly

20 Thorax with 3 dark stripes. Abdomen checkered with black and gray.
Often large flies with reddish tip of abdomen.

Lay living larvae, not eggs.

SARCOPHAGA SPP.
The Flesh Fly