SPECIAL PROJECTS

A Testing Kit

FOR USE IN FIELD INVESTIGATIONS OF FAILURE OF DDT RESIDUAL SPRAYS

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Questions resulting from apparent or alleged failure of DDT to control houseflies frequently require entomological tests to determine the cause of the difficulty. It has been considered that field equipment for testing wild-caught houseflies against operationally sprayed surfaces, in comparison with laboratory-prepared panels, could be used to determine the cause of failure of DDT spray treatments. A field testing kit has been designed and developed in order that the materials and equipment necessary for entomological tests may be made available in a compact mailable package.

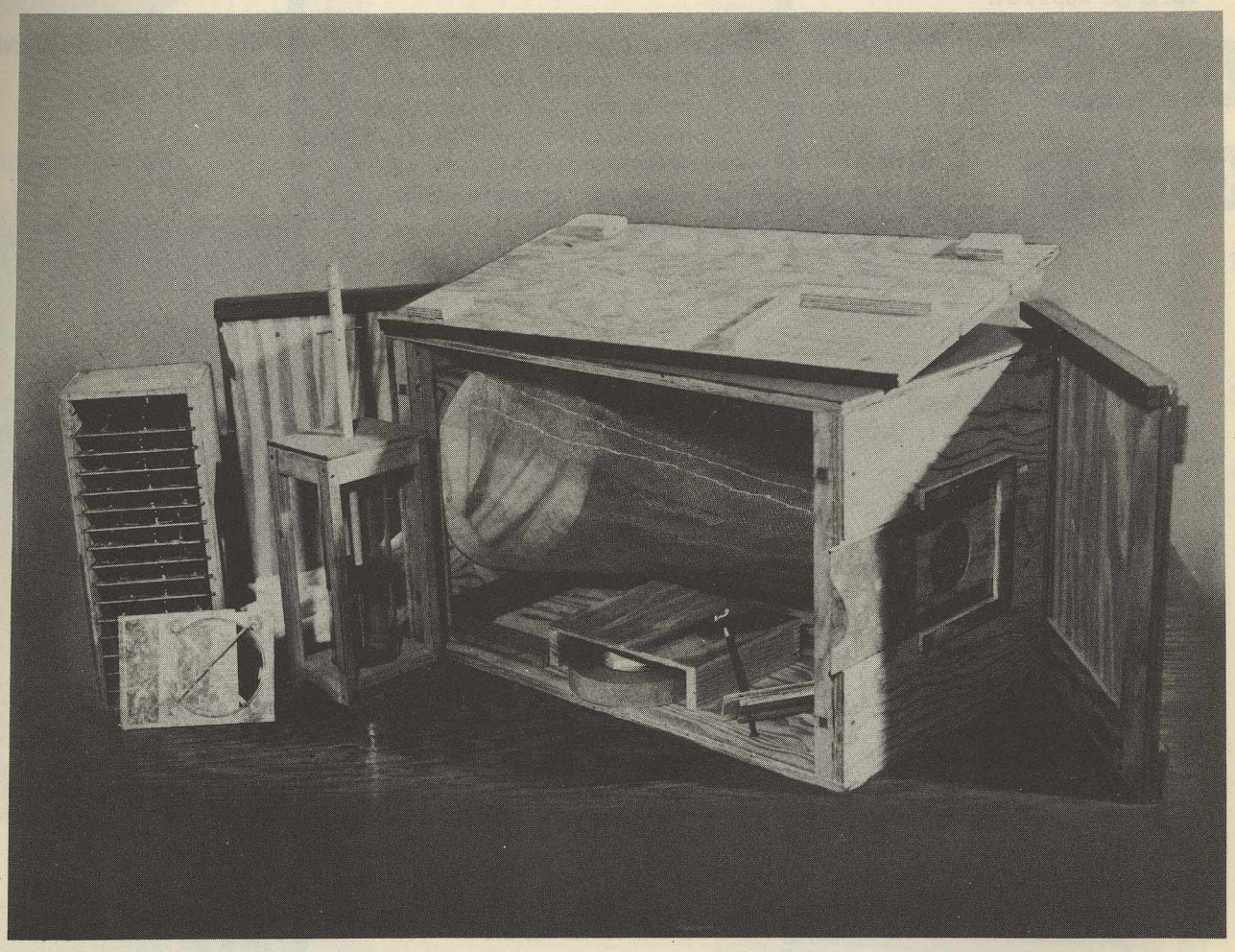
The kit is contained in a rectangular plywood box which measures over-all 24 x 14 x 14 inches. A conical plastic screen-wire cage, for holding flies preliminary to testing, is built into the box in such a way that the box takes the place of a supporting frame. The small end of the cage is closed by a sliding metal door, the large end by an 18-inch cloth sleeve. The kit also includes a plunger to be used for transferring flies, a slotted box containing 16 Petri-dish cages, and a roll of masking tape to be used in holding the test cages against vertical surfaces. These items are held firmly within the kit when the lid is in place and the ends are secured for shipment.

In use, the kit is carried to the site of the complaint where adult houseflies are collected with an insect net as near as possible to the actual premises. After sufficient flies have been placed in the holding cages, about 20 are transferred with the plunger to the Petri-dish cages to be exposed to the treated surfaces in question. These cages are held in place against treated walls with masking tape or other means until a complete knock-down has occurred, or for an hour if total knock-down fails to occur within that time. The time required to obtain 100 percent knock-down (or the knock-down at the end of 1 hour) is noted and compared to similar data obtained simultaneously by exposing the same flies to DDT-treated (200 milligrams per square foot) plywood panels, of known age, prepared and supplied by the Technical Development Division.

Similar tests are made periodically at

the Technical Development Division laboratory using insectary-reared houseflies against panels retained from the lot prepared for distribution to the field. In this manner data are obtained which are made available to field personnel for comparison with their own test results. By making comparative exposure tests between operationally treated surfaces and prepared panels of known history, a check is obtained on the relative effectiveness of the surface in question. A further comparison between data obtained from wild houseflies exposed to standard treated panels in the field and information from tests made with insectary-reared houseflies at the Technical Development Division should reveal whether the houseflies collected at the site of complaint show resistance to DDT.

It is hoped that use of this technique will be useful to field personnel in distinguishing between the presence of DDT-resistant populations of houseflies and the effect of faulty DDT residues.



The field testing kit shown disassembled includes a box containing 16 Petri-dish wall cages, a plunger for transferring flies, a roll of masking tape for fastening the cages to the wall, and a large conical cage for holding the supply of test flies.