

THE INEFFECTIVENESS OF REPELLENTS AGAINST THE MIDGE, *TENDIPES PLUMOSUS* (DIPTERA: TENDIPEDIDAE)¹

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Every year large numbers of *Tendipes plumosus* (L.) and other midges of the family Tendipedidae (=Chironomidae) emerge from Lake Winnebago, Wisconsin and other lakes. One of the problems created is the disfigurement of boats and buildings by the deposition of eggs and feces. Several repellents and insecticides were tested to determine whether they would prevent flies from defacing a treated surface.

MATERIALS AND METHODS. Several cylindrical 1-gallon ice cream cartons were painted with white enamel after the tops and bottoms had been removed. Each of 4 cartons was sprayed thoroughly with one of the following materials:

Hercules 7199 (Pentachlorophenyl N-phenylcarbamate), 2.5% in acetone;
Sevin (1-naphthyl N-methylcarbamate), 5% in water;

diazinon, 5% emulsion in water;
ronnel, 5% emulsion in water;

Geigy 30494 (O,O-dimethyl S-2,5-dichlorophenylmercaptomethyl phosphorodithioate), 5% emulsion in water;

butoxy polypropylene glycol, 50% in acetone;

MGK 326 (di-n-propyl isocinchomerate) and MGK 264 (N-(2-ethylhexyl)-bicyclo 2,2,1-hept-5-ene-2,3-dicarboxamide), 5% of each in acetone;

MGK 1207 (3-chloropropyl n-octyl sulfoxide) and MGK 264, 5% of each in acetone;

butyl ethyl propanediol, 50% in acetone;
butyl acetanilide, 50% in acetone.

Four hours after treatment, the treated

cartons and 4 untreated cartons were placed 6 inches above the ground on metal legs in a shoreline area of Lake Winnebago where *T. plumosus* were abundant. The cartons were arranged in 4 rows of 11, and spaced about 4 feet apart in a completely random design. There were 4 replicates of each treatment. Fecal deposits on the cartons were counted after 4 days.

RESULTS AND DISCUSSION. An analysis of variance (Table 1) shows no significant

TABLE 1.—The mean number of fecal deposits from *T. plumosus* and other midges on treated containers after 4 days exposure.

Material	Mean number of fecal deposits
Ronnel	809.25
Hercules 7199	678.50
MGK 1207 and MGK 264	618.00
MGK 326 and MGK 264	601.50
Diazinon	583.25
Control	511.50
Butoxy polypropylene glycol	432.25
Geigy 30494	399.00
Sevin	326.75
Butyl acetanilide	321.00
Butyl ethyl propanediol	295.25

Any two means not flanked by the same line are significantly different at the 1 percent level.

difference from the control at the 1 percent level. That none of the materials gave effective repellency was obvious from the appearance of the treated containers. Butyl ethyl propanediol had the added disadvantage that it remained very sticky and trapped many insects. Butoxy polypropylene glycol and butyl acetanilide also remained sticky. Light rain on the second and third day of the test may have affected the results, but materials affected by light rain would be of no value for protecting houses and boats from midges.

¹ Approved for publication by the Director of the Wisconsin Agricultural Experiment Station. Research supported in part by a grant from Winnebago Lake Fly Research Inc. and Public Health Service Research Grant WP-00209.