RESULTS OF TESTS WITH DURSaban® AND FENTHIon FOR
THE CONTROL OF MOSQUITO LARVAE IN LOG
PONDS OF WESTERN OREGON

LEYBURN F. LEWIS, D. M. CHRISTENSON AND GAINES W. EDDY
Entomology Research Division, Agr. Res. Serv., USDA, Corvallis, Oregon

Timber processing is the chief industry in the Willamette Valley of Oregon. Log ponds are an integral part of this activity, and usually one or more log ponds are found adjacent to or within the corporate limits of most urban communities in the area. Many logs are dumped into the ponds daily, and each log contributes surprising quantities of pollutants to the water in the form of moss, lichens, bark, and other materials. Also, hordes of mosquitoes are often produced by these ponds. When one considers the number and location of these polluted impoundments in relation to residential areas, the need for mosquito control is obvious.

Mosquito resistance to insecticides in Oregon was first suspected by Buehler (1955, 1956) and established by Eddy et al. (1958). Although it is not too critical or widespread in Oregon, substitute larvicides are needed in certain areas. We therefore tested fenthion (Baytex®) and Abate®, O,O-dimethyl phosphorothioate O,O-diester with 44-thiophenol, in 1964 (Lewis et al., 1965). Dursban® (O,O-diethyl O-35,6-trichloro-2-pyridyl phosphorothioate), a new and promising insecticide (Kenaga et al. 1965) was compared with fenthion in 1965; the results are reported herein.

Materials and Methods. The test formulations were prepared from commercial emulsion concentrates. The fenthion and Dursban® preparations contained 4 lb. and 2 lb. active ingredient/gal. respectively. The desired amount of the concentrate was incorporated in fuel oil, and 1 qt. of the finished product was applied to 1 surface acre of water with a pump oil can while we walked on the logs in the ponds. Most ponds treated had a surface area of about 2 acres. The treatments were applied during July, August, and September.

Usually the ponds contained 4 species of mosquito larvae. Culex pipiens pipiens L. was the predominant species but large numbers of Culiseta incidens Thomas were present in some ponds. Culex peus Speiser was less abundant, and there were even fewer C. tarsalis (Coq.). The relative abundance of the species thus was unlike that reported by Lewis and Eddy (1955).

Larvicidal effectiveness was estimated by comparing the number of larvae taken in a minimum of 20 dips in each pond before treatment with those taken in a like num-

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Table 1.—Results of tests with Dursban® and fenthion for the control of mosquito larvae in log ponds of Western Oregon.

<table>
<thead>
<tr>
<th>Insecticide</th>
<th>No. of Treatments</th>
<th>Concentration (lb./acre)</th>
<th>Average mortality (%) after indicated hr.</th>
<th>Residual effectiveness (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Dursban</td>
<td>2</td>
<td>0.025</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>.95</td>
<td>100</td>
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<td></td>
<td>3</td>
<td>.975</td>
<td>100</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>.1</td>
<td>100</td>
<td>23</td>
</tr>
<tr>
<td>Fenthion</td>
<td>4</td>
<td>.1</td>
<td>100</td>
<td>14</td>
</tr>
</tbody>
</table>
ber of dips made 24 and 48 hr. after treatment. Control was judged to have ceased when reinfesting larvae reached the 4th instar.

Results. The results are presented in Table 1. Both Dursban and fenthion gave excellent results. However, Dursban appeared to be somewhat more effective since it gave longer residual effect at 0.05 or 0.075 lb./acre than fenthion at 0.1 lb./acre. Dursban obviously warrants further testing in log ponds as well as in other larval habitats of the mosquito.

One of the significant aspects of Dursban in these tests was its long residual effectiveness. In habitats where residues of this compound could be tolerated, this feature might save considerable work and expense.

References Cited

Buehler, M. H. 1955. Third annual report Lane County mosquito control program. Lane County Health Dept., Eugene, Ore.
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EVALUATION OF FIVE FORMULATIONS OF ABATE AGAINST Aedes aegypti, Savannah, Georgia, 1965

G. D. Brooks, H. F. Schoof and E. A. Smith

Limited field trials with granular formulations of various insecticides against Aedes aegypti breeding in water storage drums (Brooks et al. 1965) showed Abate to possess excellent larvicidal qualities when applied in this type container. Early applications of several formulations for residual effectiveness indicated the granule to be satisfactory for an acceptable period but superior results were obtainable with emulsifiable concentrates. Unfortunately, in operational use, the available emulsifiable concentrate formulations clouded the water to an extent unacceptable by the public. An interest in finding an acceptable formulation for general use stimulated a comparative study of the residual effectiveness of several granular and liquid Abate formulations.

Materials and Methods. Seventy 55-gallon steel drums, as described by Brooks and Schoof (1965), were assembled as test containers. Treatment levels selected were based on application rates used in earlier field and simulated field studies (Brooks et al. 1965). The formulations em-


2 Present address: 111 Farley Drive, Rio Del Mar, California.

3 Use of trade names is for identification purposes only and does not constitute endorsement by the Public Health Service or the U. S. Department of Health, Education, and Welfare.

4 Furnished through the courtesy of American Cyanamid Company, Princeton, New Jersey. (Abate: O.O,O'-tetramethyl O,O'-dihydro-p-phenylene phosphorothioate.)