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

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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 4,4-thiophenol, in 1964 (Lewis *et al.*, 1965). Dursban® (*O,O*-diethyl *O*-3,5,6-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 (1959).

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-

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

Insecticide	No. of Treatments	Concentration (lb./acre)	Average mortality (%) after indicated hr.		Residual effectiveness (days)
			24	48	
Dursban	2	0.025	90	95	..
	4	.05	100	..	18
	3	.075	100	..	19
	2	.1	100	..	23
Fenthion	4	.1	100	..	14

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.

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