

Run	Larvicide	Parts larvicide per 100 parts EPDM	Percent mortality/exposure number
1.....	None (control).....	0	0
2.....	Octachloro-2,3,3a,4,7,7a-hexahydro-4,7-methanoindene, trade name (Chlordane).	5.7	0/1 0/2 0/3 20/4
3.....	O,O,O',O'-tetramethyl O,O'-thiodi-p-phenylene phosphorothioate trade name (Abate).	5.7	0/5-10 100/1-22
4.....	O,O,O',O'-tetramethyl O,O'-thiodi-p-phenylene phosphorothioate.....	7.0	100/1-22
5.....	O,O,O',O'-tetramethyl O,O'-thiodi-p-phenylene phosphorothioate.....	8.3	100/1-22

The composition of the invention is the only one to kill 100% of the larvae through twenty-two seventy-two hour water changes alternated with 24 hour drying periods. Time required for 100% mortality actually decreased in later water changes.

When Chlordane (Run 2), a known larvicide is used in place of Abate (Runs 3, 4, 5) in the floating EPDM combination of the invention, it is ineffective. In Run 2 no larvae are killed in the first three water changes, only 20% are killed in the fourth change and none are killed in any change from 5 through 10. Many conventional larvicides are applied to a water pool or water course in such a fashion that they sink, generally to the bottom. This type of application requires a large dose of toxicant for the water volume being treated. The larvicide of the invention is applied in a form that floats at or near the water surface, although toxicant is applied only to the surface area and an insignificant depth beneath that area. Since the larvae must invade the treated water area at the surface in order to survive, they are invariably exposed to lethal concentrations of the larvicide when they do rise to the surface.

Example 2

The procedure of Example 1 is followed except that in place of low specific gravity (0.85-0.88) EPDM, a high specific gravity (1.23) elastomer, neoprene (Run 7) and a 20/80 acrylonitrile-butadiene rubber, compounded sp. gr. (1.25) (Run 8) are used. The discs of these compositions sink to the bottom of the water.

Run	Larvicide	Parts larvicide per 100 parts elastomer	Percent mortality/exposure number
7.....	O,O,O',O'-tetramethyl O,O'-thiodi-p-phenylene phosphorothioate.....	8.4	15/1 40/2 0/3 15/4
8.....	O,O,O',O'-tetramethyl O,O'-thiodi-p-phenylene phosphorothioate.....	5.1	0/5-10 0/1-10

When the effective toxicant of the floating compositions of Example 1 is compounded into compositions with specific gravity greater than 1.0, and with a similar release rate, its effectiveness against larvae at the surface and immediate subsurface water zone is reduced or destroyed.

Example 3

The procedure of Example 1 is followed with the larvicide composition of Run 4. The composition is run through 26 complete water changes and is still achieving 100% kill of larvae when the tests are discontinued.

Example 4

Fifteen grams of commercial polystyrene foam are soaked for one week in liquid larvicide Abate. In this period the foam picks up by adsorption over twice its own weight of larvicide (32.5 grams). When the treated foam is placed in water it floats, but the larvicide is al-

most completely released in two weeks. At twenty four hour intervals twenty of the *Culex pipiens pipiens* L. larvae described in Example I are added. Larvae kills of 100% are recorded for 14 days; then the mortality rate falls off to zero by the 28th day.

Example 5

Fifteen grams of pellets of the composition of Run 4, Example 1, but 1/8" in diameter by 1/32" thick, are placed in 10 fifty-five gallon drums containing 10, 20, 30, 40 and 50 gallons of water which stand to simulate rain water collection barrels as used in many areas of the world. Twenty larvae of the type described in Example 1 are added to each barrel at weekly intervals and observed at 12 and 24 hours of residence in the water. After 18 weeks mortality in each barrel is still 100% within twenty four hours. After 16 weeks the concentration of the larvicide in the water is analyzed and in every one of the ten barrels is found to be less than one part per million of water, hence the water is safe for consumption.

We claim:

1. In a method for killing water-spawned disease-transmitting larvae of mosquitos comprising floating on infested infraneutral zone water having only slight to intermittent flow or current, and wherein water changes subject the larvae to alternating drying periods, a larvicidal, buoyant elastomer composition, the improvement which comprises effecting larvae mortality by employing chunks, discs, pellets, strips or tapes of vulcanized EPDM

elastomer composition containing O,O,O',O' (tetramethyl), O,O'-dithio-p-phenylene phosphorothioate as toxicant dispersed therein said toxicant being only slightly soluble in the water, said toxicant progressively transferring from the said elastomer into the surface and immediate subsurface zones of the infested water over an extended period of time.

2. A larvicidal EPDM elastomeric composition having a specific gravity at 25° C. less than 1.0 and comprising a vulcanized elastomeric matrix containing EPDM elastomer, from about 3.0 to about 20.0 parts by weight per 100 parts by weight of said elastomer in said matrix of O,O,O',O' (tetramethyl), O,O'-dithio-p-phenylene phosphorothioate larvicidal toxicant dissolved in said matrix and from 2 to about 7 parts by weight of a carbon black per 100 parts by weight of said elastomer, said matrix being cured for 40 to 60 minutes at 300-280° F. and the proportion of said carbon black in the range