After you have transformed the above values into feet and inches and into gallons, for a particular tank's diameter, they should be plotted on a rectangular coordinate chart, using feet and inches for the abscissas and gallons for the ordinates, and then drawing in the curve. The chart should be about 30 inches tall by about 20 inches wide. If you know an engineering draftsman perhaps he can be persuaded to draw the chart for you, and thus you could get a more accurate curve and a neater drawing. If desired, from this curve you can make up a table of volumes for each inch of depth.

The basic figures given are for a cylindrical tank with flat ends. If the tank has dished ends, it will be necessary to multiply the cross-sectional area of the tank by the varying lengths at the different depths. For example, if a tank which is 12 feet long has ends dished out 6 inches, the length at mid-depth will be 13 feet, and will be about 12 feet 6 inches long at about 30 percent and 70 percent of the depth. In this case it will be advisable to draw the curve in pencil as if it had flat ends, and then plot the volumes at 30 percent, 50 percent and 70 percent, and then redraw the final curve through these points and approximately parallel to the flat end curve.

Too great an attempt at mathematical accuracy is not justified, as a cylindrical tank lying on its side, whether in the ground or above ground, will be distorted slightly from a true circle by either its own weight or the varying weight of its contents if above ground, or by earth pressure if below ground.

DIELDRIN CEMENT BRIQUETTES IN CONTROLLING *Aedes aegypti* IN FIRE BARRELS

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This study deals with testing the effectiveness of dieldrin cement briquettes for *Aedes aegypti* (Linn.) control in fire barrels under field conditions.

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Elliot (1955) found that briquettes of sand and cement mixed with 50 percent water wettable dieldrin controlled *aegypti* in water jars in Africa for up to a year.

The Communicable Disease Center, Public Health Service, in its report on "Public Health Pesticides" for 1960, suggests the use of dieldrin briquettes as a possible technique for controlling *aegypti* and *Culex quinquefasciatus* Say in fire barrels.

METHODS AND MATERIALS. Dieldrin briquettes were made according to Elliot's formula of sand and cement (5:1) mixed with 50 percent water wettable dieldrin (2:1). Five grams of briquette (16.6 percent dieldrin) were added for each one gallon of water (Anon. 1960), or 275 grams for a 55-gallon fire barrel.

Aegypti were breeding heavily in 18 fire barrels located in a cotton warehouse along the waterfront in New Orleans. Ten of these barrels were selected at random for treatment with briquettes; eight were untreated and used as controls. The barrels, except the controls, were treated on July 21, 1959, and inspected at intervals for 150 days. All of the barrels contained waste cotton and organic refuse.

When inspections were made for the *aegypti* larvae, an additional check of the residual effectiveness of the insecticide was made by taking a 50 ml. sample of water from each barrel. The water sample was taken to the laboratory and placed in a bowl. Ten *aegypti* larvae, from the untreated barrels at the warehouse, were added to each bowl of water. The percent mortality was recorded after 24 hours. Immobile larvae or those unable to surface were considered dead.

RESULTS. The results of the fire barrel inspections are as follows:

No live *aegypti* larvae were recovered from treated barrels after the first day. *Aegypti* larvae were recovered from untreated control barrels from July through December 7, 1959, after which the weather became very cold. Contrariwise, *quinquefasciatus* continued to breed in control and treated barrels. Fire barrels having a mixed population of *aegypti* and *quinquefasciatus* had a complete mortality of *aegypti* 24 hours after treatment, but there was no apparent effect upon *quinquefasciatus*.

Water samples were taken from each barrel at 30-day intervals to test for insecticide content in

TABLE 1.—Percent of fire barrels positive for *A. aegypti* larvae in days after treatment

Treatment	No. of fire barrels	Average percent of barrels positive by days								
		0	1	10	20	30	60	90	120	150
Dieldrin	10	100	0	0	0	0	0	0	0	0
Control	8	100	100	75	87	87	75	75	25	0

TABLE 2.—Percent mortality of 10 *A. aegypti* larvae after 24 hrs. in a 50 ml. sample from each barrel in days after treatment

Treatment	No. of fire barrels	Average percent mortality by days				
		30	60	90	120	150
Dieldrin	10	95	45	32	24	21
Control	8	10	11	0	3	1

the water. Toxicity in the water seemed to drop sharply after 2 months, with a more gradual decrease following this period. The high organic content of the water in the barrels may have been responsible for reducing the effectiveness of the briquettes.

SUMMARY. All *Aedes aegypti* larvae in the fire barrels were dead 24 hours following treatment with dieldrin briquettes, and no *aegypti* were recovered from the treated barrels during the 150 day inspectional period. However, 2 months after treatment, the water from the treated barrels was no longer capable of giving a satisfactory mortality in the laboratory. Possibly the high organic content in the water reduced the effectiveness of the insecticide at the dosage used. The dieldrin briquettes were completely ineffective in controlling *Culex quinquefasciatus*.

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