A MODIFICATION OF SCRAP AUTOMOBILE TIRES FOR FIELD STUDIES OF ARTIFICIAL CONTAINER-BREEDING MOSQUITOES

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Larvae of several important mosquito species develop in discarded tires. Tires are sufficiently abundant in many urban areas that the resultant mosquitoes pose a nuisance and health threat. The recognized importance of this artificial habitat has prompted numerous workers to conduct field studies using tires as mosquito production sites. The recent introduction of *Aedes albopictus* (Skuse) into the western hemisphere has generated a renewed interest in scrap tires.

One problem encountered by the field worker concerns the difficulty of sampling immature stages from tire contents. Several methods have been used to enhance sampling. Focks et al. (1980) secured tires vertically to the sides of trees. A wooden stick was positioned between the beads immediately above the water surface to spread the tire, enhancing observation. Focks et al. (1980) and F. S. Willis (personal communication, 1989) and others provided a hole and stopper in the tire tread to permit drainage of tire contents for sampling. This note reports on a tire modification designed to further enhance sampling.

Figure 1 shows one of 72 automobile tires the authors modified for a field experiment directed towards evaluating the effect of a fungal pathogen upon mosquito larvae. Tires were positioned in the field at an angle of 25° to 30° as shown. The lid, comprising one-half of the upper side of the tire, is the essential feature. When hinged open, the entire crescent-shaped water pool is well illuminated and readily accessible for observation and sampling.

The lid was constructed as follows. One side of the bead of a tire was severed at two points 180° apart. This procedure required a large bolt-cutter (1 m long) because the steel wires in the beads are extremely resilient. The remainder of the cutting shown was accomplished with a sharp stout knife. Frequent sharpening of the knife greatly facilitated the operation. (A jigsaw and a hacksaw were found to be ineffective for cutting tires.) Two 25-mm sections on the sidewall were left intact to serve as hinges. The overflow hole noted in Fig. 1 permits adjusting (via rotating) tires to standardize the maximum water-holding capacity. The hole (25 × 25 mm) was cut into the lower sidewall directly below one of the hinges.

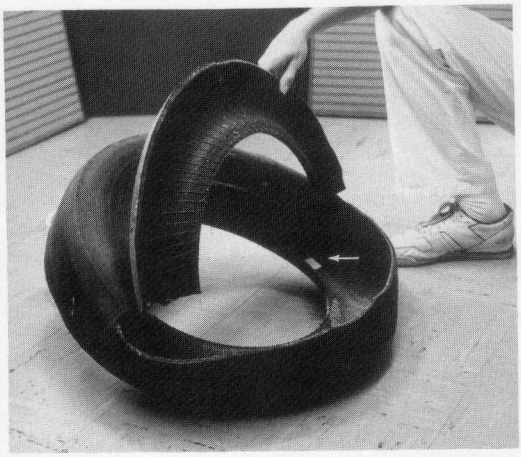

Fig. 1. Automobile tire modified for sampling immature mosquitoes. Arrow denotes overflow hole.

These modifications involve a significant amount of labor, but after some experimentation, it was possible to process a tire in approximately 10 min. The resultant ease in sampling and replication permits the researcher to sample more efficiently and with minimal disturbance to the contents. This tire modification should not be attempted with steel-belted tires.

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REFERENCE CITED

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