

PROBLEMS IN THE USE OF ULV SPRAYS FOR THE CONTROL OF *Aedes aegypti*, AN URBAN MOSQUITO

PAUL REITER

Centers for Disease Control and Prevention
Division of Vector-borne Infectious Diseases, Dengue Branch
2 Calle Casia, San Juan, Puerto Rico 00921-3200

Throughout most of its range, *Aedes aegypti* is an urban mosquito, intimately associated with the domestic environment. It is the principal urban vector of two important viral diseases, yellow fever and dengue. Over the past twenty years, ultra low volume (ULV) sprays applied from road vehicles or aircraft have been widely adopted for *Ae.aegypti* control, particularly during epidemics. However, although early studies in Southeast Asia indicated that ULV treatments were highly effective, recent evaluations in the Caribbean and Latin America have consistently demonstrated less than satisfactory results. The problem appears to stem from the behaviour of the mosquito, which favours heavily sheltered indoor sites when it is not feeding or ovipositing. For this reason, attempts to control it by outdoor ULV applications are essentially drift spraying operations directed from the street or the sky into the home. To understand the mechanics of this drift, we must consider airflow around and into buildings. The mechanics of such airflow are complex, but predictable. We can expect great variation in the efficacy of outdoor applications, depending on local architecture, and the efficacy of ULV in any area can only be known with certainty if careful evaluations are made *in situ*. It is likely that the method is unsuitable for use in many modern urbanizations.