Retention and efficacy of ultra-low volume pesticide applications on *Culex quinquefasciatus* (Diptera: Culicidae)

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Supplementary Material

Figures below show photographs taken with fluorescent microscope in Study 4. Droplets appear blue due to fluorescence of dye. A) Deposit on full mosquito, B) Deposit on antenna and C) Deposit on wing.

A. Full body. White scale bar=1000 µm

B. Antenna. White scale bar=100 µm
Videos: A sample of videos obtained with high sped camera used in study 5 is shown below. The camera was operated at 2000 frames per second, but for each frame there were five pulses of a laser light. This gives the appearance of five drops in a sequence when droplets are moving through the air. The size of droplets can be measured from these images and the distance between the five separate droplets in a frame can be used to give impact velocity.

**Video 1:** Shows droplets bouncing off leg and lower surface of wing when sprayed with water with a VMD approximately 100µm

**Video 2:** Shows water droplets with a VMD approximately 100µm impacting the upper surface of a mosquito
**Video 3:** Shows water droplets with a VMD approximately 100µm impacting the lower surface of a mosquito.

**Video 4:** Shows water droplets with a VMD approximately 30µm impacting a mosquito. Droplets on hairs can be seen. A camera fault resulted in the vertical lines.

**Video 5:** Shows oil droplets with a VMD approximately 20µm impacting a mosquito. Droplets on hairs can be seen. A camera fault resulted in the vertical lines.

**Video 6:** Shows oil droplets with a VMD approximately 20µm impacting a mosquito. A large oil droplet can be seen moving down hair. A camera fault resulted in the vertical lines.