

The Effects of Attractant Volume on Mosquito Collection Success Using Gravid Traps - Mike Hutchinson

- 1) Hypotheses
 - a) High volume -
 - i) Suction effect
 - ii) Larger odor plume
 - b) Low volume - better chance mosquito will get below the collection pipe
- 2) Design
 - a) Compared 4 volumes
 - b) Used the Reiter/Cummings gravid trap
 - c) Volumes
 - i) 2 liters - ½ gallon
 - ii) 4 liters - 1 gallon
 - iii) 6 liters - 1½ gallons
 - iv) 8 liters - 2 gallons
 - d) Used attractant of same age
 - e) Used new traps
 - f) Used sites with homogeneous habitat
 - g) Omitted trap data when it rained
 - h) Set traps at dusk
- 3) Attractant
 - a) 5lbs hay
 - b) ½ cup lactalbumin on the first round
 - c) Used about ½ cup of old solution when making new
 - d) Let sit for 2 weeks
 - e) Replaced hay every 2-3 weeks
- 4) Study site
 - a) 6 locations
 - b) Primarily sewage treatment plants
 - c) Set traps randomly
 - d) Rotated traps clockwise
- 5) Initial tests
 - a) High volume hypothesis
 - i) Suction
 - (1) Used probes to measure intake of air up the pipe
 - (2) Air velocity increases as volume of water increases
 - (3) Statistically significant
 - (4) Functionally significant???
 - ii) Odor plume increase - didn't check
 - b) Low volume hypothesis - lots of room to get under trap
- 6) Results
 - a) *Culex pipiens*
 - i) 2 liters worked best
 - ii) 8 liters was the worst
 - b) Similar results seen with *Culex restuans*
 - c) Increased suction was not a factor

(1) Combination of high levels of attractant and suction rippled the water which may have effected desire to oviposit

ii) Conclusions

(1) Using just 2 liters increases trap effectiveness by at least 30%

(2) Less work operationally

(3) Why - maybe mosquitoes fly back and forth before they land to oviposit

iii) Unanswered question - How low can you go?