

# Failure of a “Repellent” Wristband to Repel Mosquitoes

by Lawrence J Hribar

Sometimes you know what is going to happen even before you do something, but you find yourself doing it anyway. This was the case as I stood in line waiting to check out of a local drug store. As I looked at the products placed alongside the line – the better to encourage impulse purchases – I noticed a box full of yellow plastic bracelets, similar to the ones collected by the girls in the local elementary school. This one was different. It promised 200 hours of protection from mosquito bites. Since it only cost about a dollar, I bought one; see Figure 1.



Figure 1: Superband wristband.

I did a web search on Superband™ and found out that Revay *et al* (2013) had evaluated this product against *Aedes albopictus* and *Culex quinquefasciatus* and found it useless and less than useless, respectively, against those species. I knew I had to evaluate its performance against *Ae aegypti*.

I maintain a cage of locally-collected *Ae aegypti* mosquitoes in the Florida Keys Mosquito Control District's laboratory in Marathon, FL, so I had plenty

of test animals with which to work. I placed my left hand in the cage of *Ae aegypti* and with my right hand I activated the stopwatch function on my cell phone. I counted the number of mosquitoes that landed on my hand during a 15 second period. After 15 seconds I shook off any mosquitoes and withdrew my hand from the cage. This procedure was repeated twice more for a total of three trials. Then I made three more counts, but this time I wore the Superband. Upon opening the wrapper I noted the pleasant aroma of “Indonesian Lemongrass” (5%), with undertones of Phillipine (sic) geraniol oil (15%) and citronella oil (5%). I put the bracelet on my left wrist and placed my hand in the cage three more times, for 15 seconds each time, counting the number of mosquitoes landing during each trial. Data are presented in Table 1. In this “quick and dirty” test there was apparently no difference in landing rates, as Revay *et al* (2013) found.

	Control	Superband
Trial 1	15	11
Trial 2	8	17
Trial 3	14	10
Total	37	38
Mean	12.33	12.67

Table 1: 15-second landing rate counts of *Aedes aegypti* with and without Superband wristband.

Citronella oil, lemongrass oil, and geraniol are repellent to insects (Müller *et al* 2009; Patel *et al* 2012), but wrist bands and bracelets that contain these ingredients and purport to provide protection from mosquito bites are little better than useless (Fradin and Day 2002; Revay *et al* 2013). Given the low cost of these items and the fact that they probably do not do any harm in and of themselves, the temptation is

to ignore them. However, with dengue, chikungunya, and West Nile viruses circulating in Florida, there is the distinct possibility that people could rely on these items and neglect to take correct protective actions. That we cannot ignore.

## REFERENCES CITED

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Lawrence J Hribar

Entomologist

[lhribar@keysmosquito.org](mailto:lhribar@keysmosquito.org)

Florida Keys Mosquito

Control District

503 107th Street Gulf

Marathon, FL 33050

305-289-3705