Abstract

Twelve volunteers, using one leg for repellent application and the other leg as a control, field-tested 5 insect repellent formulations--Avon's (New York, NY) SS220 Spray, SS220 Lotion, and Bayrepel Lotion, and SC Johnson's (Racine, Wisconsin) Autan Bayrepel Lotion--against the standard N,N-diethyl-3-methyl-benzamide (deet) in a rice-growing district near Kisumu, western Kenya, in 2 trials in May and June 2004. In addition to a control leg for each volunteer, an additional control was introduced into the study by the use of a sixth repellent, a "null repellent," which was literally a treatment application of no repellent at all. The 5 active repellent formulations were uniformly applied at the maximum Environmental Protection Agency recommended dose of 1.5 g per 600 cm2 in the first trial and half that dose in the second trial, and none of them failed during the nightly 12-hour test period over 6 consecutive days, May 19 through May 24, 2004, and June 14 through June 19, 2004. However, the repellent control legs demonstrated a statistically significant increased landing rate compared to both the null repellent and the null repellent control leg. This suggests that, in this approach, active repellents increased the capture rate on an adjacent control leg compared to null controls. A single human volunteer can act as his/her own control provided null treatment controls are included.