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Subject: Field Methods— Alternative for mosquito repellents containing DEET

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The Centers for Disease Control (CDC) has released updated guidelines for mosquito repellents, and added two new repellents that offer long-lasting protection similar to DEET (N, N-diethyl-3-methylbenzamide), <http://www.cdc.gov/ncidod/dvbid/westnile/RepellentUpdates.htm>. The new repellents contain either 1-(1-methylpropoxycarbonyl)-2-(2-hydroxyethyl)piperidine (picaridin; KBR 3023; bayrepel) or p-menthane 3,8-diol derived from lemon eucalyptus. These updated guidelines are important for water-quality studies because DEET is an analyte in National Water Quality Laboratory (NWQL) schedule 1433 and lab code 8033.

DEET also can cause interference, leading to raised reporting levels for some analytes in other methods if present at high concentrations. Although DEET is detected frequently in streams (Sandstrom and others, 2005), it has recently been identified in field blanks, especially when DEET is used by field personnel when collecting and processing samples.

Avoidance of DEET and use of alternative mosquito repellents might improve the reliability of analytical results for DEET by reducing the potential for contamination during sample collection and processing. One of the alternatives, *Repel Lemon Eucalyptus*, which contains the active ingredient p-menthane-3, 8-diol, was tested during a study to determine potential for contamination during sample processing, and it was found to have no adverse effects on samples analyzed by schedule 1433.

Repel Lemon Eucalyptus is available as a lotion and a spray. It may be ordered online from sites like www.drugstore.com and may also be available at local drugstores and sporting goods stores.

For more information, refer to the upcoming July 2005 issue of the National Water Quality Laboratory Newsletter, WaterLogs <http://nwql.usgs.gov/Public/news/news.html>

Reference:

Sandstrom, M.W., Kolpin, D.W., Zaugg, S.D., and Thurman, E.M., 2005, Widespread detection of N, N-, diethyl-m-toluamide in U.S. streams: Comparison with concentrations of pesticides, personal care products, and other organic wastewater compounds: *Environmental Toxicology and Chemistry*, v. 24, no. 5, p. 1029-1034.

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