

US EPA ARCHIVE DOCUMENT

EFFICACY STUDY REVIEW

by Kevin J. Sweeney, Entomologist - IB

To: Joe Tavano

Date: August 6, 2003

EPA Reg. No. or File Symbol: 1021-1600

Product Name: MGK Insect Repellent Spray 2559

Registrant: MGK

PM 10

Action: 305

Submission No. S09149 DP #: D288908

Chemical: 25% DEET; 5.0% MGK 264; and 2.5% MGK 326 Type: skin-applied repellent

OPPTS Guideline: 10.3300

GLP?: No

Action requested: Review submitted studies in support of the new label claim: "Repels mosquitoes which may carry diseases such as West Nile virus, encephalitis, and dengue."

Entomologist's Comments and Recommendations:

- 1. The submitted data supports the new label claim.

Reviews of submitted studies:

MRID 45851401 MGK Insect Repellent Spray 2559 Product Performance Report

This volume contains five studies (unpublished and published) to support new label claims for this product. In the studies, the vectors of West Nile virus (causes encephalitis), Yellow Fever, and dengue were tested.

#1: Evaluation of Two Mosquito Repellents Against *Culex quinquefasciatus* Mosquitoes by ICR.

This was a laboratory study (arm in cage) with four test subjects and a control. Two test cages were used and more mosquitoes were added during the study. Biting pressure was about one per second in the control. A 20% DEET alcohol formulation served as the positive control.

The test showed that the subject repellent provided repellency against the vector of the West Nile virus, *Culex quinquefasciatus*, for up to eight hours based on the results of the First Confirmed Bite Test.

#2 Published article from the New England Journal of Medicine: Comparative Efficacy of Insect Repellents Against Mosquito Bites Mark Fradin and Jon Day.

Data related to the current action showed that a 23% DEET formulation provided more than 4 hours of protection against mosquito bites.

#3 Personal Repellency - Mosquitoes by MGK.

Study demonstrated that a 25% DEET alcohol based formulation provided 4 hours of protection from *Aedes aegypti* mosquito bites. The cream based formulation tested in this study had DEET and the other active ingredients on the subject label but the cream/lotion data can not be bridged to spray-on products due to significant formulation differences.

#4 Personal Repellency - Mosquitoes by MGK

This study showed that a 25% DEET formulation provided about 6 hours of protection against *Aedes aegypti* mosquitoes.

#5 Personal Repellency - Mosquitoes by MGK.

This study also showed that a 25% DEET formulation provided about 4 hours of protection from *Aedes aegypti* mosquitoes.