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THE AMERICAN MOSQUITO CONTROL ASSOCIATION

Individuals enhancing the health and quality of life through the suppression of mosquitoes, other vectors and pests of public health importance.

AMERICAN MOSQUITO CONTROL ASSOCIATION
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16 October 2015

Ms. Esther Barajas-Ochoa
Office of Environmental Health Hazard Assessment
P.O. Box 4010, MS-19B
Sacramento, California 95812-4010

Re: Notice of Intent to List (NOIL) Malathion by the Labor Code Mechanism as a Compound Known to the State of California to Cause Cancer Under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)

Dear Ms. Barajas-Ochoa:

On behalf of the American Mosquito Control Association, a professional association of public health officials, researchers academicians, students and mosquito control personnel, I am writing to comment on the California Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA) Notice of Intent to List malathion as a chemical known to the State of California to cause cancer pursuant to the "Labor Code" listing mechanism, Health and Safety Code section 25249.8(a) and Title 27, Cal. Code of Regs, section 25904.

Malathion remains a frontline mosquito adulticide needed for control of mosquito-borne disease in California and elsewhere in the United States. In California, removal of crop tolerances from the label has limited its use to an extant, with public health use of malathion generally fluctuating from two thousand to six thousand pounds active ingredient per year. This represents percentages in the range of 0.7% - 1.4% of total malathion applied in the state on an annual basis. While therefore seemingly a minor contributor to vector control, malathion price level makes it a prime candidate for programs not able to afford the more expensive pyrethroids or aerial applications of naled. More importantly, malthion occupies a critical role in resistance management programs throughout the state. In areas where vector control agencies have identified resistance to pyrethroids, malathion remains the only available control agent in programs using truck-mounted Ultra Low Volume sprayers in their disease prevention/control strategy. It simply must be available, not only when mosquito-borne disease has been documented, but even more so in the prevention of mosquito-borne disease – a core function of public health. A listing of malathion as a human carcinogen would effectively make the classification available as a means for activist groups to prevent adulticiding operations that have demonstrably reduced or prevented West Nile Virus transmission in several California counties in recent years. All else being equal, mosquito-borne disease rates could be expected to rise if malathion was eliminated from our control inventory resulting from misinterpretation of

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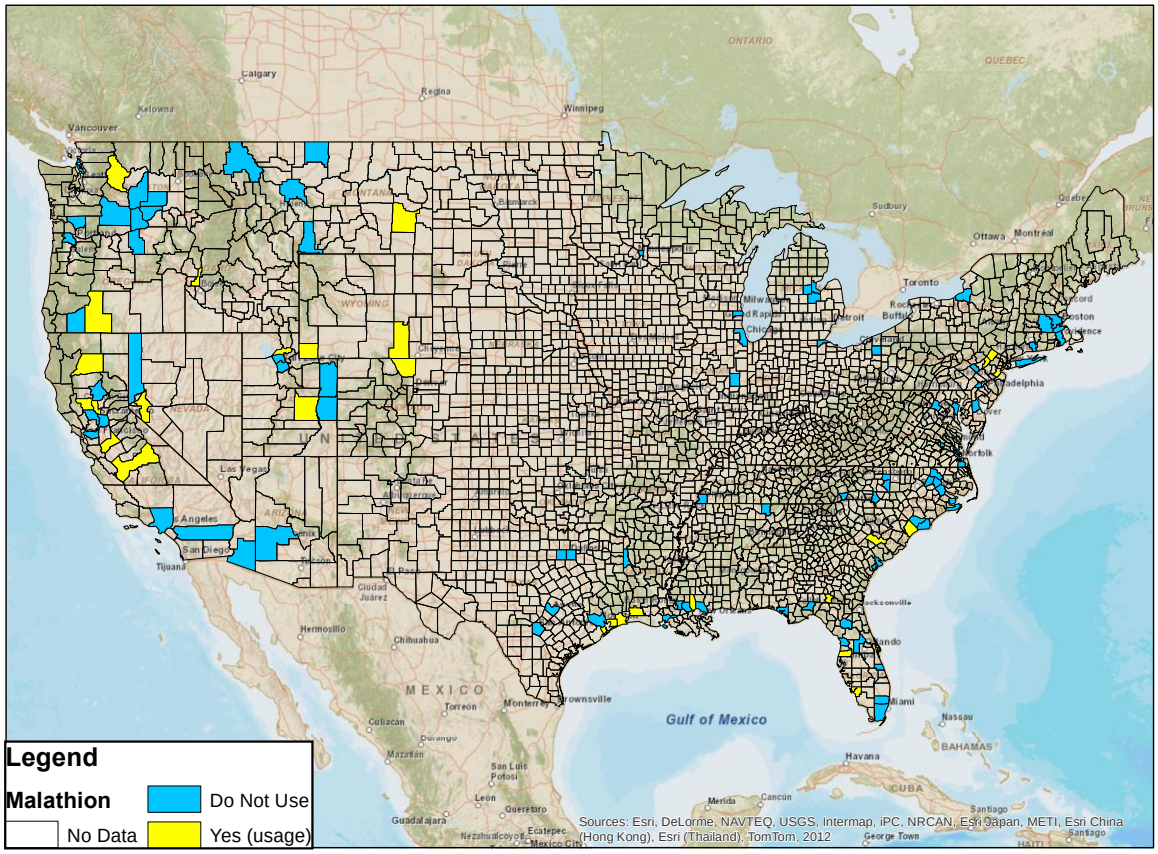
malathion's actual carcinogenic profile based on validated human exposures to mosquito control applications.

The map below delineates those counties where malathion is utilized in vector control programs nationwide. Where utilized, it used for a valid reason, be it resistance management, cost, or efficacy. Each of these districts (even those outside of California) would be adversely affected by the adverse publicity attendant to malathion's listing – placing their citizens at increased risk from vector-borne disease. These risks are known and not extrapolated from laboratory studies using proxies.



The carcinogenic potential of malathion was reviewed by the FIFRA Scientific Advisory Panel (SAP) on August 17-18, 2000 - 'A Consultation on the EPA Health Effects Division's Proposed Classification of the Human Carcinogenic Potential of Malathion,' dated December 14, 2000. In addition, several studies, including those by National Institutes of Health (1978, 1979) Daly (1996), Ricci et al (1980), Seely (1991) and Slauter (1994) have failed to demonstrate mutagenicity or carcinogenicity for malathion. The EPA considered these and the SAP recommendations prior to publishing the Residential Exposure Assessment for the Reregistration Eligibility Decision Document of 31 July, 2006. In it, malathion is classified as having "suggestive evidence of carcinogenicity." This qualitative statement has been frequently and unfortunately misinterpreted by members of the public as a statement of cancer risk to humans regardless of exposure parameters. Potential human exposures relevant to this statement occur

only in scenarios involving Boll Weevil (BWEP) application parameters. Aggregate risks involving Public Health Mosquito Control fall far below the Agency's Level of Concern according to analyses by Peterson et al (2006) and Preftakes et al (2011.) Indeed, in the most robust epidemiological study of cancer and agricultural applicator exposure to malathion to date, Bonner et al. (2007) reported that the risk of non Hodgkin's lymphoma was not associated with malathion use nor was the risk of melanoma. In summary, malathion exposure was not clearly associated with cancer at any of the sites examined. The fact remains that the weight of scientific evidence does not support a contention that malathion as carcinogenic. This is particularly true when exposures to mosquito control applications, which are several orders of magnitude less than those encountered in agricultural operations, are taken into consideration (USEPA 2009.)

Of note, a quantitative cancer dose-response assessment is not indicated for pesticides in the "suggestive" category. The classification is based on: 1) the occurrence of liver tumors in mice and rats only at doses orders of magnitude more than those encountered in field mosquito control operations; 2) the occurrence of rare tumors in rats, the cause of which cannot be definitively derived as either due to malathion treatment protocols or random probability; 3) malaoxon, a structurally related chemical, is not carcinogenic in rats.

The AMCA finds the use of the IARC listing as a basis for policy singularly problematic in this instance in that it involves hazard assessment only, not evaluating exposure and therefore, actual risk. The carcinogenic classification thus becomes meaningless except in a "precautionary" sense. It is certainly not inconceivable that, based on this listing, malathion would eventually be removed from vector control inventories due to public pressure arising from its listing. Ironically, the public health of California's citizenry would thus be placed at higher risk from a measure ostensibly deemed to eliminate a possible, but vanishingly small, risk. It is in the public's interest that this be fully taken into account in OEHHA policy contexts.

It is clear that malathion, as utilized by vector control districts in the protection of public health, does not meet the requirements for listing as a carcinogen pursuant to California statute. The AMCA thus requests that OEHHA cancel its Notice of Intent to list malathion as a known carcinogen, as it does not meet that threshold when used in conjunction with label directives as a mosquito adulticide.

Highest regards,

Joseph M Conlon
Technical Advisor
American Mosquito Control Association

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