



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

VIA ELECTRONIC MAIL

September 4, 2020

American Mosquito Control Association and their Membership
Ary Faraji, Ph.D., President of American Mosquito Control Association

Subject: Naled Aerial Mosquito Control Application Parameters

Dear Dr. Faraji,

As part of its ongoing pesticide reevaluation program, the U.S. Environmental Protection Agency (EPA) recently completed the naled draft human health risk assessment for all uses, including the aerial mosquito adulticide use. This draft assessment is based on the current state of science, available exposure and toxicity data, current labeled maximum application rates and parameters for naled, and more typical application parameters described to EPA by AMCA and the U.S. Centers for Disease Control and Prevention (CDC)¹. The draft human health risk assessment is intentionally conservative to be protective of the most sensitive population, which in this case is children from one to two years old. In other words, naled's use patterns, including aerial mosquitocide applications, were evaluated considering high exposures within the most sensitive sub-population. For mosquito control uses, the draft assessment shows that the estimated exposures from aerial applications may exceed EPA's level of concern for residents living in treated areas for up to four hours after an application is made, if the maximum application rate and other application parameters that can cause higher deposition are used.

Providing recommendations to address the potential risk concerns identified in a draft assessment at this stage of registration review is atypical. However, considering the importance of naled for control of mosquito-borne pathogens throughout the United States and territories, the agency believes that it is prudent to advise applicators on how aerial applications of naled can be modified to better protect residents.

EPA has evaluated how the aerial mosquitocide use of naled can be modified to result in lower exposures and limit potential safety concerns. Lowering exposure can be achieved by making slight modifications to currently labeled application practices that result in less ground deposition while maintaining efficacy and effectiveness. EPA recognizes that aerial mosquitocide applications of naled are intended to stay airborne, however, EPA's modeling shows some deposition on the ground. In general, aerial applications completed with smaller droplet sizes (e.g., 40-70 micrometers), higher release heights (e.g., 300 feet versus 200 feet), higher wind speeds (e.g., 10 versus 5 miles per hour) and lower application rates (e.g., 0.05 lb/ai acre) result in less exposure, largely as a result of less ground deposition, and therefore lower potential risks of concern. The agency evaluated combinations of release heights, droplet sizes, wind speeds, and application rates that are within the typical range previously described to EPA by AMCA and CDC¹ and which would reduce exposure and thus limit potential safety concerns.

¹ Discussed at meeting between EPA and AMCA on February 23, 2017, and during a meeting between EPA and CDC on March 21, 2017.

EPA is aware that aerial application parameters can vary widely across the United States. Regarding application rate, input from mosquito control applicators indicates that efficacious and effective naled applications can be achieved at rates as low as 0.05 lb/ai acre, which is 50 percent of the maximum product application rate of 0.1 lb ai/acre. EPA therefore evaluated additional application scenarios at alternative rates that will reduce exposure to naled and reduce potential safety concerns. If applicators choose to apply the product at lower rates (i.e., 0.075 or 0.05 lb/ai acre) in combination with smaller droplet sizes, higher release heights, and higher wind speeds, the application would lead to less deposition, less exposure and fewer risks of concern. The table below demonstrates this effect, showing lower risk estimates (higher Margins of Exposure (MOE)) for smaller droplets, higher release heights, higher wind speeds, and lower application rates.

Table 1. Naled Aerial Application Parameters Resulting in Less Deposition¹					
Droplet Size (µm)		Release Height (ft)	Wind Speed (mph)	App Rate (lb. a.i./A)	Total ² MOE for Children (1 < 2 years) ^{3, 4}
DV ₅₀	DV ₉₀				
40	77	300	10	0.1	530
				0.075	700
				0.05	1040
60	115	200	5	0.1	200
				0.075	270
				0.05	410

¹ This table presents risk estimates based on turf transferable residue (TTR) measured in a study following applications in Mississippi. Results for two other TTR studies are presented in Section 9 of the *Naled: Draft Human Health Risk Assessment for Registration Review*. While the Mississippi data set has been selected to demonstrate the effect of different application parameters, the MOEs shown do not represent the full range of MOEs based on available data.

² Total MOE incorporates Dermal + Incidental Oral Exposure

³ MOE at 95th percentile exposure

⁴ LOC = 1,000

In order to present health-protective risk assessments, the agency routinely assumes exposure occurs immediately following application. However, as time elapses and surface residue dissipates, the potential for exposure and risk is reduced. In the case of naled and its degradate DDVP, both of which dissipate very rapidly, safe levels of exposure occur between approximately 5 minutes and 3.4 hours after application, depending on application parameters such as application rate, release height, wind speed, and droplet size. As presented in Table 1 and discussed above, lower application rates, smaller droplet sizes, higher release height, and higher wind speeds result in safer levels of exposure. EPA is aware that under actual use conditions, the exposure encountered by a child is likely lower than that estimated in the draft risk assessment. Furthermore, EPA is aware that certain mosquito control districts already implement measures that likely result in lower exposure (e.g., smaller droplet sizes, higher release heights, lower rates, application in the evening, etc.).

In addition to the recommendations provided above, risk can be diminished by limiting and/or avoiding residential bystander exposure to naled aerial mosquitocide applications. EPA strongly encourages all Mosquito Control Districts to notify residents if spraying will occur in their neighborhood at least 24 hours prior, which is considered a best practice when any pesticide spraying that could affect bystanders is implemented. Furthermore, EPA is recommending that the following recommendations for reducing exposure are included with any such notifications:

- Stay indoors with the windows closed during spraying.
- Do not allow children to play outdoors for four hours following spraying.

- If you are outdoors when spraying takes place and come in contact with the chemical, rinse your skin and eyes with water.
- Wash fruits and vegetables from your garden before storing, cooking, or eating. This is a good habit, regardless of whether mosquito spraying has occurred.
- Cover outside items like furniture and grills before the spraying takes place. Bring pets and items like pet food dishes and children's toys indoors. Rinse any uncovered items left outside during spraying.
- If you think you have had a reaction to the spraying of naled, talk to your doctor or call the regional Poison Control Center at 1-800-222-1222.

Early next week, the naled draft human health risk assessment will be published to the federal docket for public comment at www.regulations.gov in docket [EPA-HQ-OPP-2009-0053](https://www.regulations.gov/document/EPA-HQ-OPP-2009-0053). If the AMCA has specific comments or additional information that may inform the naled draft risk assessment, we encourage you to submit any such comments to the docket. After consideration of public comments, EPA will propose any necessary risk mitigation decisions and associated label changes in a Proposed Interim Decision (PID). EPA expects to reach a final interim decision in 2022. In addition to AMCA, this letter will be posted to the public docket along with the draft naled risk assessments.

If you have any questions, please contact Anna Romanovsky of my staff. She may be reached by email (romanovsky.anna@epa.gov) or phone (703-347-0203).

Sincerely,

A handwritten signature in blue ink, appearing to read "Mary Elissa Reaves".

Elissa Reaves, Ph.D.
Acting Director
Pesticide Re-evaluation Division (PRD)
Office of Pesticide Programs
Office of Chemical Safety and Pollution Prevention