

MOSQUITO FOGGING PROPOSAL: A PROACTIVE APPROACH

SAFE * EFFECTIVE * NECESSARY * AFFORDABLE

WHAT ARE WE FOGGING AND HOW IS IT APPLIED?

Permethrin: an insecticide in the pyrethroid family. It is synthesized from the chrysanthemum flower.

How is Permethrin sprayed?

- Permethrin is sprayed from a motor attached to a truck. The motor pushes out a superfine mist, called Ultra Low Velocity (ULV) spray. The mist is composed of millions of tiny droplets, smaller than the width of the human hairⁱ.

What is the dosage of the spray?

- The amount of Permethrin in the fog is the equivalent to applying a Tylenol in a football field. This is a very small amount! The mist that is seen is the chemical mixed with either water or mineral oil, to help the Permethrin to stay in the air long enough to kill the mosquitoesⁱⁱ.

How long is the mist in the air?

- The mist is in the air for approximately 15 minutes to an hourⁱⁱⁱ.
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MOSQUITO FOGGING IS SAFE

Mosquito fogging is safe for humans and pets.

- Permethrin does not absorb well on the skin of humans or pets^{iv}. It is so safe that it's used in flea & lice shampoos!
- The amount of permethrin in the mosquito spray is so small that it is not a concern for humans and pets^v.

Mosquito fogging is safe for beneficial insects (butterflies, honeybees, lizards).

- We spray after dusk, when other insects are dormant.
 - A 2017 study found that the EXACT chemical that our neighborhood sprays does not impact honeybees^{vi}.
 - Scientists have found that flying insects that are larger than a mosquito are NOT harmed by permethrin^{vii}.
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MOSQUITO FOGGING IS EFFECTIVE

Mosquito fogging is effective even when sprayed at night.

- A study in 2012 found that fogging at night is effective^{viii}. Though this is not necessarily the most ideal time to spray, it is the best time to spray because people, pets, and beneficial insects aren't out.

Mosquito fogging is especially effective in the front yard.

- A study in 2012 found that 95.5% of mosquitoes in the front yard were killed^{ix}.

Mosquito fogging is partially effective in the back yard.

- A study in 2012 found that 49% of mosquitoes in the backyard were killed^x.
 - Another study found that 29-34% of mosquitoes in the backyard were killed^{xi}.
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MOSQUITO FOGGING IS NECESSARY

Mosquito fogging reduces your risk of West Nile Virus.

- According to the Texas Department of Health and Human Services^{xii}, so far this year there have been 120 cases of West Nile and 2 deaths from West Nile in the state of Texas. Of those, 28 cases have been reported in Harris County.
- 1009 West Nile Virus Positive mosquito pools have been reported in Texas. Harris County reported 310 West Nile Virus Positive mosquito pools. **This is 31% of all of the infected mosquito pools in the entire state.**

Other mosquito borne diseases are on the rise in Texas.

- According to the Texas Dept of Health and Human Services, so far this year in Texas there have been^{xiii}:
 - 7 human cases of Chikungunya
 - 12 human cases of Dengue, including 3 people in Harris County
 - 3 human cases of Zika
 - 2 mosquito pools that tested positive for St. Louis Encephalitis

By controlling the mosquito population, we reduce our risk of outbreak.

MOSQUITO FOGGING IS AFFORDABLE

In the past, the cost for mosquito fogging to the Spring Shadows Association was only \$3.94 a house.

- Other nearby neighborhoods charge between \$10 and \$25 a house for neighborhood fogging, and a private contractor for individual home fogging costs far more than that!

Mosquito fogging will not cause dues to increase.

- Mosquito fogging has been accounted for in the 2019 SSCA budget and there will be no dues increase.

ⁱ Presentation by Harris County Public Health Vector Control to the Spring Shadows Civic Association Mosquito Committee. *Presentation by Harris County Public Health Vector Control to the Spring Shadows Civic Association Mosquito Committee*. September 2018.

ⁱⁱ Ibid.

ⁱⁱⁱ Ibid.

^{iv} Peterson RK, Macedo PA, Davis RS. A human-health risk assessment for West Nile virus and insecticides used in mosquito management. *Environ Health Perspect*. 2005;114(3):366-72.

^v Preftakes CJ, Schleier JJ, Peterson RK. Bystander exposure to ultra-low-volume insecticide applications used for adult mosquito management. *Int J Environ Res Public Health*. 2011;8(6):2142-52.

^{vi} Rinkevich, F., Margotta, J., Pokhrel, V., Walker, T., Vaeth, R., Hoffman, W., . . . Healy, K. (2017). Limited impacts of truck-based ultra-low-volume applications of mosquito adulticides on mortality in honey bees (*Apis mellifera*). *Bulletin of Entomological Research*, 107(6), 724-733. doi:10.1017/S0007485317000347

^{vii} Schleier, Jerome & K D Peterson, Robert. (2010). Toxicity and risk of permethrin and naled to non-target insects after adult mosquito management. *Ecotoxicology* (London, England). 19. 1140-6. 10.1007/s10646-010-0497-9.

^{viii} Farajollahi A, Healy SP, Unlu I, Gaugler R, Fonseca DM (2012) Effectiveness of Ultra-Low Volume Nighttime Applications of an Adulticide against Diurnal *Aedes albopictus*, a Critical Vector of Dengue and Chikungunya Viruses. *PLOS ONE* 7(11): e49181. <https://doi.org/10.1371/journal.pone.0049181>

^{ix} Ibid.

^x Ibid.

^{xi} 1: Barber JA, Greer M, Coughlin J. Field tests of malathion and permethrin applied via a truck-mounted cold fogger to both open and vegetated habitats. *J Am Mosq Control Assoc*. 2007 Mar;23(1):55-9.

^{xii} DSHS Arbovirus Weekly Activity Reports

Texas Department of State Health Services - <http://dshs.texas.gov/idcu/disease/arboviral/westNile/reports/weekly/>

^{xiii} NB: This information was obtained from the Texas Department of State Health Services weekly report as of 11/27/2018. In the data that THHS releases, they do not differentiate between travel and endemic cases of mosquito-borne diseases.