



Are you spraying at the right time?



Controlling biting midges



Biting midges

- Biting midges are small blood-feeding flies.
- There are more than 150 species of biting midges in the United States
- Some biting midge species in the United States can carry viruses that are dangerous for deer, sheep, and other ruminants.
- Some biting midges can transmit epizootic hemorrhagic disease virus (EHDV) and bluetongue virus (BTV), which cause great morbidity and mortality in deer.

A survey of Florida deer farmers indicate that farmers rely on insecticides for biting midge control

- In Florida deer farms, biting midges are typically managed using ultra-low volume (ULV) spray applications, commonly known as “fogging” or “spraying”.
- Deer farmers generally apply permethrin-based products against biting midges. Some examples include Permanone 30-30, Perm-X, and PermaSease 4-4. Although the product name varies, all of them are made with permethrin as the main ingredient for killing midges.

What is the best time for spraying?

- Pyrethroid insecticides such as permethrin, applied as ULV do not last a long time in the environment. Therefore, sprays should take place at the time of day when the target insect (biting midges) are most active, to ensure that the insecticide finds and kills the insect.
- Deer farmers generally spray during dusk and dawn, under the assumption that this is the time of day when biting midges come out (like most mosquitoes). However, we recently found out this is not the case.
- Trapping conducted in Florida deer farms showed that biting midges that transmit EHDV and BTV are most active late at night.
- We recommend deer farmers to spray **between 9 pm and 4 am** (during the dark period of the night) to maximize the effectiveness of permethrin-applications.

Additional considerations

- “The label is the law”. Please follow the product label for instructions in how to use the product safely.

Additional resources

- Pest Information Office
<https://pested.ifas.ufl.edu>
- CHeRI educational resources
<https://wec.ifas.ufl.edu/cheri/additional-resources/>

Contact us for more information:

 wec.ifas.ufl.edu/cheri

 @vilmalikesflies

 @UF_IFAS_CHERI

 vilma.montenegro@ufl.edu

