



Lowcountry Master Gardener Association

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They Come, They Conquer, They Die!

By Annette DiPietre Girard

It's Spring, and along with the smell of fresh flowers, barbeques, fishing trips, and yes, some allergies, it is also the return of the Ceratopogonide – biting midges, gnats, sand flies, punkies and my least favorite, the no-see-ums or, as referred to by many – “#XX0l#0!!” In Spain, they got it right by referring to no-see-ums as “Flying Teeth”. This very small fly with clear spotted wings has been known for abruptly ending outdoor cookouts, gardening, and a leisurely stroll through the neighborhood by feeding on the blood of mammals, birds, reptiles, amphibians and even fish!

When John and I moved to South Carolina, we totally understood why just about every home included a porch with very fine screening. We were told it is essential to keep the no-see-ums out! And although it was interesting to learn that a local museum was giving a presentation on no-see-ums, we were both eager to register and alarmed that two full hours was being dedicated on how to protect yourself from this nuisance. Were their teeth bigger in the south?

A little life history: The egg, larval and pupa stages are semi-aquatic (in wet soil). The larval development (found in damp locations such as under bark, rotten wood, compost, mud or on water holding plants) requires two to three weeks and the pupa stage lasts three to four days. Adults generally occur within one to three miles of salt marshes which makes living at the shore a prime breeding and feeding location. Adults mate shortly after emerging with males emerging first. Adult activity is limited to twilight periods or very still and humid days. Only females feed on vertebrate blood and lay several egg batches. Both males and females feed on plant nectar. Adults live only a few days to a few weeks. They come, they conquer, they die!



Although there have been many attempts to rid areas of no-see-ums, the most effective strategy is personal protection. Baited trap-out systems and pesticide applications are short term (some only lasting 24 hours). It is expensive and not practical if your neighbors are not following suit. Since it is nearly impossible to colonize no-see-ums in the lab, their feeding behavior has not been well studied.



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No-see-ums generally travel less than one mile from their breeding habitat. Adults may be carried inland by sea breezes but they seldom fly when winds are strong – one of the reasons for twilight activity (when winds are calmer and humidity is higher). And that was precisely the time John and I would go for a walk on the OC boardwalk. Strangely, he would come back bitten many times and I would escape untouched. I told him he was my personal protection. Turns out, there is truth in that statement. About one in ten adults are more attractive than other people and a few are quite unattractive. The basis for this super attraction and natural repellency is not well understood, but related to the differences in the chemicals emanating from the skin and breath of various people. It's about heat and chemistry. CO₂ is a critical long-range attractant for most blood-feeding insects. All vertebrates produce carbon dioxide and heat as well as specific steroids, alcohols and fatty acids which form a warm, down-wind odor emanating from the host that is detectable by the sensory organs of upwind flying or resting mosquitoes and no-see-ums up to 150 feet. Host size, shape, color, visual contrast with background habitat and movement also play a role in attraction.

Severe annoyance and pain, inflammation, and itching are normal reactions to a bite. In fact, one no-see-um may bite a dozen times in a small area. Unlike a mosquito bite, no-see-um bites are painful immediately. Usually a small red welt will form in hours; the itching will last for days and scratching will make it worse. Scratching can lead to a secondary bacterial infection of the skin. I have tried many times to just ignore the itching sensation – mind over matter and all that. I've literally counted to see how long I will go without giving in. I haven't gotten beyond "7" and end up taking an antihistamine when persistent or using a topical analgesic such as cortisone.

This is one battle you will not win. So rather than become their prisoners, there are a few steps you can take to deter their attack other than mummifying yourself!

- Do not plan outdoor activities during peak biting periods (twilight for no-see-ums and many mosquitoes)
- Wear light colored, protective clothing.
- Use repellents with DEET or Picaridin. Skin-So-Soft Bug Guard and lemon eucalyptus oil are good alternatives. Oils of citronella, lemon grass, soy bean are safe but less effective. Also less effective are electronic repellents, pocket devices, night lights and candles.
- If adding a screen to your porch, use #16 mesh or treat screen with safe residual pesticides. This will deter no-see-ums from entering windows, doors and outdoor enclosures.
- Turn off indoor lights and use yellow bug-lights on porches to avoid attracting no-see-ums.
- Operate large, high speed fans on your patio or porch. They won't fly into the wind.
- Be aware that drinking alcohol may increase your attractiveness to mosquitoes and no-see-ums. As for eating garlic, vitamin B, vanilla, and avoiding bananas – this does little to repel the little pests.
- Find that one person that no-see-ums find "super attractive" and bring them along for a stroll.



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