

FUNGUS GNAT ATTRACTION TO GROWING MEDIA

Fungus gnats and shore flies are the two common flies that spend part of their lifecycle in the growing medium of containerized plants. Fungus gnat larvae eat fungi and sometimes algae found in the growing medium, but can also eat roots and simultaneously vector disease. One wonders why one growing operation has few fungus gnats while another has a lot. Often the growing medium is singled out as the source. A recent study done by John Sanderson, Neil Mattson and Elizabeth Lamb at Cornell University (seen in *Greenhouse Grower*, June 2014) looked into the relationship between fungus gnats and their preference to growing media.

Growing Medium Attractiveness to Fungus Gnats. In their experiment, there were four groups of growing media: standard peat growing media, organic peat growing media, organic bark growing medium and organic compost growing media. The study found that the number of adults visiting each category of growing media did not vary, but the number adults emerging from the females' egg laying activity did. The number of adults that emerged from the growing media in order from fewest to most is: standard peat growing media, then organic peat growing media, organic bark growing medium and finally organic compost growing media. In fact, there were three times as many adults that emerged from the organic compost growing media vs. the standard peat growing media.

Since the number of adults that originally visited each growing medium was similar, the type of growing medium was not a significant consideration where females laid their eggs. So either the adult females laid more eggs per visit in compost growing media or compost growing media were more hospitable for fungus gnat larvae survival since they contain high levels of fungi which fungus gnats use for food.

Growing Medium Water Retention. In general, the growing media with the highest water retention (and took longer to dry between waterings) had the highest fungus gnat emergence. Although the type of growing medium was not important, the moisture content was significant as it influenced the number of fungus gnats that made it to adulthood. Organic compost growing media naturally have more fungi as opposed to peat growing media, but a very moist peat growing medium could eventually have fungi growing in it. Research has shown that growing medium that is constantly overwatered has reduced fungus gnat populations, but crop quality suffers.

Conclusions. They type of growing medium has little influence on female fungus gnat egg laying activity. Compost growing media support higher fungus gnat populations perhaps because they have more natural fungi or they maintain high fungi populations due to their slow dry down rates. Even peat growing media can attract fungus gnats if it is not allowed to dry out properly. The best way to reduce fungus gnat populations is not to discontinue using your existing growing medium; it is to encourage rapid dry down of the growing medium and to grow dry, especially in the winter.