



## Eastern NC Nursery News

June 2019

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### Red Headed Flea Beetle Lifecycle and Research Update



Adult RHFB foliar insecticide demonstration.

Adult red headed flea beetles are winding down their first generation in most of eastern NC. As of June 14 we have accumulated the following GDD at these general locations:

Raleigh: 1587 GDD  
Tarboro: 1626 GDD  
Smithfield: 1642 GDD  
Wilson/Rocky Mount: 1666 GDD  
Elizabeth City: 1777 GDD  
Greenville: 1808 GDD  
Fayetteville: 1955 GDD

Second generation larvae begin activity as early as 1800 GDD and as late as 2200 GDD based on my observations across the eastern region of NC depending on whether plants were overwintered in structures or outdoors. Second generation adult emergence can occur as early as 2100 GDD if plants overwintered in structures and as late as 2700 GDD if

not. In central eastern NC we normally see second generation adults by early July. Keep in mind that even if pressure has been relatively low, don't skip scouting for this insect. Once the second generation adults emerge than they will be here to stay through fall with overlapping future generations.

If you want to monitor GDD yourself try one of these sites:

<http://uspest.org/cgi-bin/ddmodel.us>

<http://www.greencastonline.com/growing-degree-days/home>

I have posted links to several informational resources about RHFB on my [website](#).

### **RESEARCH UPDATE:**



RHFB larvae harvested from containers.

I completed treatment and harvest of two larvae trials this spring. The first trial focused on using products to control larvae in containers applied before egg hatch applied at approximately 200 GDD. The second focused on targeting larvae in containers once they were hatched and active in the root system. The data for these two studies has not been analyzed yet but the raw numbers and past research findings show that there is promise for biological insecticides, systemic insecticides, contact insecticides, and beneficial nematodes related to reducing numbers of first generation larvae in containers. I also completed a preliminary study this

spring that shows promise related to incorporating or topdressing certain products. That preliminary study is being repeated as a replicated research trial along with some other treatments applied to liners before potting or to plants after potting. It was just recently potted. Data will be collected on foliar damage this summer and larvae will be harvested and counted next spring to confirm effectiveness of these strategies. Once data is analyzed later this year and next year, I will share the details of products and timings proven to be most effective.

I currently have a small demonstration project working with spray applied systemic foliar products in combination with contact insecticides that is being treated and rated every two weeks this summer for foliar damage. The demonstration is comparing cyantraniliprole, imidacloprid, dinotefuran, and thiamethoxam pre-adult emergence foliar treatments with a contact foliar rotation of chlorpyrifos, carbaryl, acephatete, and bifenthrin. There are also treatments with a combination of each systemic and the contact rotation. Every treatment has unacceptable damage at this point (it is of course possible that weekly applications would have provided better control). Based on this I hope to repeat as a replicated trial next year using systemic drench treatments (which will provide better foliage protection) prior to adult emergence in combination with weekly applications which should provide better results. This seems to be more evidence toward the thought that adult insecticide sprays alone (no matter the active ingredient or mode of action) are not a thorough enough management strategy for this pest. Time and continued trials will tell...



Soil emergence trap over white clover.

I have also been monitoring a couple of patches of white clover (one of the red headed flea beetle's listed host plants) that grows near container production pads for about a month with soil emergence traps. I have not had any adult red headed flea beetles emerge from these areas to date. I have, of course, had container plants placed in the same type of emergence traps with adults emerging.

If you have questions about controlling RHFB, need help getting started monitoring GDD, or want to develop an Integrated Pest Management Plan for this insect, contact me and we can work on a management plan for your situation.

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The Eastern Region Nursery and Greenhouse Program at NC Cooperative Extension is your source for research-based production information for greenhouse and nursery crops in Eastern North Carolina.

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