– IMPORTANT NURSERY NOTICE –

Systemic and contact material control of Redheaded Flea Beetle - *now*

Redheaded flea beetle - life stage predictions for South, Central, and Northern New Jersey with material considerations

WE R HERE WHEN YOU NEED US

Calendar date predictions for target range as of 4/26/2021

Information compiled by Dr. Timothy J. Waller - Rutgers Cooperative Extension (2021)

Growth Stage	Gen.	GDD50 TARGET RANGE -LOW-	GDD50 TARGET RANGE -HIGH-	SOUTH Upper Deerfield (NJ50) LOW (DATE)	SOUTH Upper Deerfield (NJ50) HIGH (DATE)	CENTRAL Howell (NJ10) LOW (DATE)	CENTRAL Howell (NJ10) HIGH (DATE)	NORTH High Point (NJ59) LOW (DATE)	NORTH High Point (NJ59) HIGH (DATE)	NOTES *Systemic (S) - Contact (C) - Biologicals (B) - Herbicides (H)*	Material / Compound Considerations (*Examples = no endorsements implied*) [IRAC GROUP #]
Egg hatch - larvae	1st	242	600	**2-May**	29-May	**10-May**	6-Jun	**24-May**	21-Jun	**(S) Initiate systemic treatments 1-month prior to adult activity** **(C) Contact materials may be used to knock-down larvae** **(B) Some bio-rational / logicals are effective on larvae** - Look for larval activity on the outside of root balls - Larvae may be active prior to this GDD50 timeframe	**SYSTEMIC** **Cyantraniliprole [28]** (Mainspring) **Chlorantraniliprole [28]** (Acelepryn) **Neonicotinoids [4A]** Dinotefuran (Safari 20SC) ; Thiomethoxam (Flagship 25 WG) ; Imidacloprid (Imidacloprid 2F, Marathon 1G, Marathon II) ; cyfuthrin [3A] + imidicloprid (Discus) **Organophosphates [1B]** Acephate (Orthene, Acephate 97UP)
Adults (feeding / laying eggs)	1st	517	1028	**24-May**	20-Jun	**1-Jun**	27-Jun	**16-Jun**	14-Jul	**(S/C/B) Start adult contact sprays - continue systemic treatments** **(H) Control weeds - adults will hide-in and feed-on them** - Adult feeding damage will be apparent - Scout to determine best time for applications - Use of agitator compounds may drive adults from hiding	
				POTENTIAL OVERLAP OF GENERATIONS / STAGES							
Egg hatch - larvae	2nd	1570	1860	**10-Jul**	21-Jul	**17-Jul**	29-Jul	**11-Aug**	27-Aug	**(S) Continue systemic treatments** **(C/B) Contact materials to target larvae *AND* adults** - Potential for considerable overlap of larvae - adult stages **(H) Control weeds - adults will hide in and feed on them**	**CONTACT** **Bifenthrin** [3A] (UP Star SC, Talstar Select) **Carbamates** [1A] - Carbaryl (Sevin SL) **Tolfenpyrad** [21A] (Hachi-Hachi SC) **Cyclaniliprole** [28] + **Flonicamid** [29] (Pradia)
Adults (feeding / laying eggs)	2nd	1878	2318	**22-Jul**	7-Aug	**30-Jul**	16-Aug	**28-Aug**	1-Oct	**(C/B) Adult contact sprays** **(S) * If pest pressure is high *** - continue systemic materials **(H) Control weeds - adults will hide-in and feed-on them** - Adult feeding damage will be apparent - Use of agitator compounds may drive adults from hiding	**BIOLOGICAL / BIORATIONAL** **Azadirachtin** (Aza-Direct, Azatin-O) **Beneficial nematodes** (Millennium) **Entomopathogenic fungi** (Ancora, BotaniGuard) **Agitator** (Captiva Prime)

*** A third generation of larvae and feeding adults is possible in the southern and central regions ***

Estimated using USPEST.org, 3.5-month CFSv2 based seasonal climate forecast, simple average growing degree-days, min temp: 50F, max temp: 95F.

Insect development growing degree-day ranges based on trials by Dr. Kunkel - Extension Specialist - University of Delaware

Redheaded Flea Beetle (RHFB) Considerations

Ideally when controlling high-density populations of RHFB, fall applications of long-lasting systemic materials can provide a strong knock-down of larvae populations destined to emerge in the following spring. Establishing a reserve of systemic materials in the soil and root zone late-season or early this season will greatly increase control efforts made later and can reduce the number of overall applications made specifically for RHFB. A two-pronged approach of **systemic** and **contact** insecticides can manage active adults and larvae throughout the season. For current season control: systemic insecticide drench or 'sprench' (**consider backpack units*) near planting / potting-up, **or a month prior to adult emergence (*now for southern NJ*)**, will provide the reserve of systemic activity required to reduce larvae and adult populations later. Contact material applications should also be considered for adult and larval treatments but must be made at sufficient volumes to guarantee 'contact'. Contact-only driven spray regimes can provide good results, however the need to protect new growth will be ever present. When choosing materials, also consider the other pests targeted by that compound to maximize the value of your investment. **Targeting the larval stage will reduce the number of adults present to lay the next generation of eggs.**

1st generation larvae: 242-600 GDD_{50}

Observation of larval activity on the outside of root balls occurs during this timeframe, meaning they may be active earlier

Systemic treatments should be initiated late fall **or immediately on susceptible hosts (southern NJ)**to guard plants from adult feeding later this season.

Materials containing neonicotinoids [4A] and cyantraniliprole [28] (Mainspring) are considered particularly fast and effective, however lack the staying power of similar chemistries such as Chlorantraniliprole [28] (Acelepryn) that takes longer to translocate from soil reserves.

Organophosphates (1B) Acephate (Orthene, Acephate 97UP) are also a systemic options.

During larval development **contact materials** containing bifenthrin, azadirachtin, tolfenpyrad, cyclaniliprole + flonicamid, entomopathogenic fungi (*Beauveria bassiana)* or beneficial nematodes should be seriously considered when attempting to knock-down forthcoming adult populations.

1st generation adults: 517-1028 GDD_{50}

Feeding damages will be apparent on susceptible hosts, scout to determine best time of day for applications, materials such as Captiva Prime or another agitator may be useful in driving the beetles out of hiding (**which they do EXTREMELY well**).

Continuation of systemic materials, use contact materials to directly target the adults.

Keep weed populations to a minimum, adults may feed on nearby weed species such as dog fennel, pigweed, and knotweed, thus avoiding pest control efforts on susceptible crops

2nd gen. larvae: 1570-1860 GDD_{50}

Potential for considerable overlap of larval-adult developmental stages

Continuation of systemic materials, use contact materials to directly target the **larvae and adults.**

2nd gen. adults: 1878-2318 GDD_{50}

Continuation of systemic materials, use contact materials to directly target the **larvae and adults.**

Keep weed populations to a minimum

A third generation is suspected to be possible in the southern and central regions of New Jersey

Are you concerned with RHFB?

Please take this brief survey

Scan or visit:

https://go.rutgers.edu/f413rsv4

IT IS CRITICAL TO ROTATE AS MUCH AS POSSIBLE BETWEEN IRAC GROUPS DUE TO THE NUMBER OF POTENTIAL APPLICATIONS

*DISCLAIMER: **Always refer to the label, it is the law.** Production and pesticide information are for private/commercial pesticide applicators. Trade-names listed do not imply endorsement and are used as examples only. Please contact Tim Waller - twaller@njaes.rutgers.edu – for more information*