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Dr. Areta Wowk, NJDEP
Bureau of Licensing and Pesticide Operations
401 East State Street, 4th Floor
Trenton, NJ 08625

Dear Dr. Wowk:

This is a summary report on the use of bifenthrin products, Bifenture® and Brigade® in tree fruit crops (apples and peaches) in New Jersey during 2017.

Use and acreage treated: This information was compiled from grower pesticide use surveys for 2017 for Bifenture EC, Bifenture DF (UPI), and Brigade WSB (FMC), and from distributer sales. Because the label permitting process came too late in the growing season, NJ peach, nectarine and apple growers did not have bifenthrin products available to them. No bifenthrin use was recorded for these crops and no sales were made for use on these crops. Brown marmorated stink bug populations were moderate, and caused severe damage, particularly to late season peach and apple crops. During 2015 the products were used only on late harvested (14 day PHI) apples (due to the lateness of the label). Bifenture EC use totaled 83 gal, used over 1320 acres, while Brigade WSB use totaled 130 lb of formulated product, used on 149 acres. No Bifenture DF was used on tree fruit. Total use covered 1469 acres of applied material with an average of 1 application during the peak of stink bug activity.

Bifenthrin is the most effective material we have for brown marmorated stink bug (BMSB) control. Data from the USDA/ARS (Leskey) showed that bifenthrin was the most effective pyrethroid available for BMSB management as seen below (Leskey, 2011). Use by NJ orchardists has shown good control when the label was available in NJ.

USDA-ARS-Appalachian Fruit Research Station **BMSB Lethality (Dry Residue, Glass)** **Pyrethroids**

Chemical Name	Horizontal Mobility Distance (cm ± SE) 0.0h	1.5h	3.0h	4.5h	Horizontal Mobility Duration (s ± SE) 0.0h	1.5h	3.0h	4.5h
Esfenvalerate	118.3 ± 22.4	30.7 ± 7.9	35.6 ± 10.6	14.4 ± 5.8	141.9 ± 22.7	47.4 ± 12.6	62.4 ± 18.0	28.9 ± 9.2
Cyfluthrin	61.6 ± 10.5	3.8 ± 3.0	0.0 ± 0.0	1.1 ± 1.2	91.9 ± 17.1	8.4 ± 6.6	0.0 ± 0.0	2.6 ± 2.8
Zeta-cypermethrin	201.8 ± 26.7	0.1 ± 0.0	1.6 ± 0.3	1.0 ± 0.6	196.1 ± 20.7	0.3 ± 0.2	2.6 ± 0.5	0.3 ± 0.1
Lambda-cyhalothrin	37.4 ± 7.5	12.7 ± 8.0	2.4 ± 1.7	4.6 ± 2.3	53.2 ± 11.8	20.6 ± 12.5	5.3 ± 3.1	7.5 ± 4.1
Gamma-cyhalothrin	140.2 ± 19.6	2.8 ± 2.7	1.2 ± 1.1	1.3 ± 1.1	159.4 ± 18.8	4.3 ± 4.2	1.7 ± 1.7	2.3 ± 1.9
Beta-cyfluthrin	149.6 ± 25.2	0.0 ± 0.0	0.0 ± 0.0	0.2 ± 0.2	172.0 ± 21.4	0.0 ± 0.0	0.0 ± 0.0	0.7 ± 0.5
Fenpropathrin	344.6 ± 27.3	0.1 ± 0.0	0.1 ± 0.0	0.2 ± 0.1	315.6 ± 16.5	0.1 ± 0.0	0.0 ± 0.0	0.2 ± 0.1
Permethrin	390.3 ± 31.0	4.0 ± 3.9	0.6 ± 0.6	0.7 ± 0.6	365.0 ± 14.1	13.0 ± 12.9	0.1 ± 0.1	0.6 ± 0.4
Bifenthrin	60.7 ± 12.2	18.1 ± 11.9	0.0 ± 0.0	0.0 ± 0.0	73.8 ± 15.7	23.8 ± 14.0	0.0 ± 0.0	0.0 ± 0.0
Water	*39.8 ± 15.3*	*36.3 ± 17.5*	*34.8 ± 11.3*	*64.9 ± 24.2*	*53.0 ± 20.7*	*42.2 ± 18.8*	*47.7 ± 17.3*	*78.1 ± 26.4*

Chemical Name	Vertical Mobility (cm ± SE) 4.5h	7d
Esfenvalerate	10.3 ± 6.8	65.9 ± 21.9
Cyfluthrin	0.0 ± 0.0	15.8 ± 7.6
Zeta-cypermethrin	0.0 ± 0.0	25.0 ± 11.3
Lambda-cyhalothrin	2.4 ± 1.7	45.0 ± 19.2
Gamma-cyhalothrin	0.0 ± 0.0	0.0 ± 0.0
Beta-cyfluthrin	0.0 ± 0.0	23.5 ± 10.5
Fenpropathrin	0.0 ± 0.0	0.0 ± 0.0
Permethrin	0.0 ± 0.0	0.0 ± 0.0
Bifenthrin	0.0 ± 0.0	0.0 ± 0.0
Water	*211.0 ± 17.3*	*116.7 ± 15.3*

Sincerely,

Dean Polk

Dean Polk
Professor and Statewide Fruit IPM Agent

Cooperating Agencies: Rutgers, The State University of New Jersey, U.S. Department of Agriculture, and County Boards of Chosen Freeholders. Rutgers Cooperative Extension, a unit of the Rutgers New Jersey Agricultural Experiment Station, is an equal opportunity program provider and employer.