scaffolds FRUIT JOURNAL

Update on Pest Management and Crop Development

August 24, 2015 VOLUME 24, No. 23 Geneva,

INSECTS

ON AVERAGE

WINGBEATS (Dave Kain & Art Agnello, Entomology, Geneva)

❖❖ We're rounding out another in a series of slightly irregular insect seasons, as it seems that many of our longstanding pheromone trap regulars were on the low side this year, a situation that was almost certainly weather related — either from the low temperatures during the winter, or else the extended rainy periods of the early summer. At any rate, we can only call them as we see them, so following are summarized comparative listings of some of the pest events (for the "usual" species) and crop development stages that occurred this season (in Geneva) with calendar and degree-day normals. The values and dates are given +/- one standard deviation; i.e., events should occur within the stated range approximately 7 years out of 10.❖❖

	DATE		DEGREE DAYS (BASE 43 °F)	
EVENT	Normal (+/-days)	2015	Normal (+/-DD)	2015
APPLE MAGGOT				
1st catch	2-Jul(+/-9)	1-Jul	1456(+/-207)	1374
AMERICAN PLUM BORER				
1st catch	16-May(+/-6)	18-May	453(+/-63)	503
2nd flight begins	16-Jul(+/-11)	13-Aug	1850(+/-290)	2452
CODLING MOTH				
1st catch	18-May(+/-8)	13-May	483(+/-85)	421
1st flight peak	2-Jun(+/-12)	29-May	767(+/-210)	712
1st flight subsides	5-Jul(+/-13)	29-Jun	1539(+/-285)	1329
2nd flight start	20-Jul(+/-14)	24-Jul	1908(+/-337)	1932
2nd flight peak	6-Aug(+/-14)	3-Aug	2334(+/-375)	2220

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EVENT	DATE Normal (+/-days)	2015	DEGREE DAYS (BASE 43 °F) Normal (+/-DD)	2015
DOGWOOD BORER				
1st catch	14-Jun(+/-10)	29-May	1016(+/-245)	712
Peak	10-Jul(+/-10)	6-Jul	1670(+/-208)	1484
GREEN FRUITWORM				
1st catch	6-Apr(+/-7)	13-Apr	98(+/-51)	41
Peak	17-Apr(+/-8)	23-Apr	153(+/-56)	125
Flight subsides	8-May(+/-10)	13-May	362(+/-98)	421
LESSER APPLEWORM				
1st catch	12-May(+/-12)	11-May	418(+/-147)	378
1st flight peak	21-May(+/-13)	13-May	563(+/-209)	421
1st flight subsides	25-Jun(+/-11)	19-Jun	1252(+/-263)	1112
2nd flight begins	14-Jul(+/-12)	13-Jul	1751(+/-339)	1658
LESSER PEACHTREE BORER				
1st catch	24-May(+/-9)	18-May	578(+/-98)	503
OBLIQUEBANDED LEAFROLLER				
1st catch	9-Jun(+/-7)	1-Jun	893(+/-88)	750
1st flight peak	16-Jun(+/-7)	11-Jun	1026(+/-193)	915
1st flight subsides	16-Jul(+/-7)	27-Jul	1832(+/-213)	2011
2nd flight begins	8-Aug(+/-9)	4-Aug	2431(+/-203)	2107

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Dept. of Entomology
NYSAES, Barton Laboratory
Geneva, NY 14456-1371
Phone: 315-787-2341 FAX: 315-787-2326
E-mail: ama4@cornell.edu

Editors: A. Agnello, D. Kain

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EVENT	DATE Normal (+/-days)	2015	DEGREE DAYS (BASE 43 °F) Normal (+/-DD)	2015
ORIENTAL FRUIT MOTH				
1st catch	2-May(+/-8)	4-May	274(+/-52)	209
1st flight peak	14-May(+/-11)	11-May	434(+/-103)	378
1st flight subsides	12-Jun(+/-8)	4-Jun	970(+/-141)	777
2nd flight begins	29-Jun(+/-5)	25-Jun	1382(+/-118)	1254
2nd flight peak	10-Jul(+/-9)	6-Jul	1702(+/-258)	1484
2nd flight subsides	1-Aug(+/-7)	4-Aug	2307(+/-241)	2266
3rd flight begins	11-Aug(+/-9)	18-Aug	2566(+/-278)	2587
PANDEMIS LEAFROLLER				
1st catch	5-Jun(+/-6)	29-May	827(+/-69)	712
Peak	14-Jun(+/-8)	22-Jun	1043(+/-152)	1174
Flight subsides	5-Jul(+/-6)	13-Jul	1564(+/-129)	1658
PEACHTREE BORER				
1st catch	16-Jun(+/-11)	8-Jun	1065(+/-266)	847
REDBANDED LEAFROLLER				
1st catch	17-Apr(+/-9)	30-Apr	145(+/-32)	151
1st flight peak	3-May(+/-10)	11-May	305(+/-75)	378
1st flight subsides	1-Jun(+/-8)	1-Jun	746(+/-148)	750
2nd flight begins	29-Jun(+/-6)	22-Jun	1393(+/-174)	1174
2nd flight peak	14-Jul(+/-8)	2-Jul	1757(+/-229)	1396
2nd flight subsides	8-Aug(+/-11)	30-Jul	2441(+/-280)	2107
3rd flight begins	20-Aug(+/-9)	6-Aug	2755(+/-212)	2292
SPOTTED TENTIFORM LEAFMINER				
1st catch	19-Apr(+/-9)	30-Apr	165(+/-50)	151
1st flight peak	7-May(+/-8)	11-May	339(+/-70)	378
1st flight subsides	5-Jun(+/-9)	4-Jun	809(+/-137)	777
2nd flight begins	16-Jun(+/-7)	15-Jun	1078(+/-85)	1013
2nd flight peak	7-Jul(+/-9)	6-Jul	1585(+/-204)	1484
2nd flight subsides	28-Jul(+/-8)	3-Aug	2181(+/-183)	2220
3rd flight begins	7-Aug(+/-8)	6-Aug	2450(+/-191)	2292
3rd flight peak	20-Aug(+/-9)	17-Aug	2786(+/-223)	2563

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CROP	DATE		DEGREE DAYS(BASE 43 °F)	
PHENOLOGY	Normal (+/-days)	2015	Normal (+/-DD)	2015
APPLE (MCINTOSH)				
Silver tip	9-Apr(+/-6)	16-Apr	84(+/-23)	70
Green tip	13-Apr(+/-8)	20-Apr	121(+/-24)	110
Half-inch green	20-Apr(+/-8)	23-Apr	173(+/-25)	125
Tight cluster	28-Apr(+/-8)	4-May	232(+/-26)	209
Pink	3-May(+/-7)	6-May	292(+/-24)	252
Bloom	10-May(+/-6)	11-May	381(+/-35)	378
Petal fall	18-May(+/-6)	18-May	486(+/-38)	503
Fruit set	22-May(+/-6)	22-May	555(+/-43)	563
APPLE (RED DELICIOUS)				
Silver tip	11-Apr(+/-6)	20-Apr	97(+/-17)	110
Half-inch green	20-Apr(+/-10)	30-Apr	190(+/-25)	151
Tight cluster	26-Apr(+/-11)	4-May	248(+/-29)	209
Pink	5-May(+/-8)	8-May	329(+/-37)	290
Bloom	13-May(+/-7)	11-May	422(+/-46)	378
Petal fall	21-May(+/-8)	18-May	534(+/-63)	503
Fruit set	23-May(+/-6)	22-May	577(+/-46)	563
APPLE (EMPIRE)				
Silver tip	9-Apr(+/-6)	16-Apr	89(+/-12)	70
Green tip	17-Apr(+/-2)	20-Apr	108(+/-8)	110
Half-inch green	18-Apr(+/-11)	23-Apr	166(+/-28)	125
Tight cluster	25-Apr(+/-12)	4-May	223(+/-29)	209
Pink	30-Apr(+/-9)	6-May	287(+/-27)	252
King Bloom	2-May(+/-8)	8-May	334(+/-25)	290
Bloom	9-May(+/-6)	11-May	381(+/-32)	378
Petal fall	18-May(+/-6)	18-May	492(+/-35)	503
Fruit set	22-May(+/-6)	22-May	547(+/-36)	563
PEACH				
Swollen bud	12-Apr(+/-8)	20-Apr	113(+/-30)	110
Bud burst	19-Apr(+/-11)	30-Apr	158(+/-34)	151
Pink	27-Apr(+/-10)	4-May	229(+/-30)	209
Bloom	2-May(+/-9)	8-May	292(+/-35)	290
Petal fall	13-May(+/-7)	20-May	415(+/-50)	547
SWEET CHERRY				
Swollen bud	10-Apr(+/-8)	20-Apr	105(+/-29)	110
Bud burst	19-Apr(+/-9)	27-Apr	165(+/-25)	129
White bud	27-Apr(+/-8)	4-May	222(+/-26)	209
Bloom	2-May(+/-8)	8-May	280(+/-23)	290
Petal fall	10-May(+/-6)	13-May	389(+/-33)	421

CHEM NEWS

SPARE THE ROD

ENTRUST ORGANIC INSECTICIDE FOR SWD – DON'T OVERUSE!
(Julie Carroll, NYS IPM Program, Geneva; jec3@cornell.edu)

❖❖ An important warning from Dow AgroSciences, the manufacturer and distributor of the organic-approved insecticide, Entrust SC, about the use patterns of this product for control of SWD - ***don't overuse it, follow label directions and rotate with a different active ingredient.*** (Excerpts from their letter are in quotes. Bold emphasis added.)

It is crucially important to follow the "labeled resistance management restrictions for Entrust SC in organic cropping systems in the Northeastern United States targeting Spotted Wing Drosophila." In New York, Entrust is under a 2ee registration and you must have the 2ee in your possession when applying this insecticide; ask your supplier.

"Entrust SC Insecticide is a solution for control of economically important arthropods across many different crops. This product is registered for organic use and is OMRI-certified. The active ingredient spinosad is an IRAC Group 5 insecticide, which offers a unique mode of action. Dow AgroSciences is proud to offer a unique class of chemistry for organic growers."

Insecticide rotation to different IRAC groups

"At Dow AgroSciences we take (insecticide) resistance very seriously and investigate all situations we are aware of in which non-compliance may be occurring or where performance is in question. We strive to make sure our products are stewarded correctly in the market to follow label language with regards to use patterns. Specifically, our labels include **Resistance Management directions which state that rotation to other insecticide classes should occur after two consecutive applications.**" For many fruit crops, only three total applications of Entrust may be applied per season—read and follow label directions.

Organic insecticide rotation guidelines

For organic management of SWD, rotate to a different insecticide active ingredient after applying one, no more than two or three (depending on the crop label) Entrust (Group 5 insecticide) sprays. Options for rotation partners include the active ingredients azadirachtin (Group UN insecticide) and pyganic (Group 3A insecticide). While spinosad (Entrust) has good to excellent activity against SWD, azadirachtin and pyrethrin have fair to poor activity against SWD. Save Entrust applications for when SWD populations are high and fruit is at high risk.

Azadirachtin is the active ingredient derived from neem oil. Trade names include, but are not limited to, AzaSol, Aza-Direct, AzaGuard, Aza-Max, and Azatrol EC. These insecticides may not be labeled on all fruit crops, so read the label carefully before purchasing and using this insecticide. Group UN - mode of action is unknown or uncertain.

Pyrethrins are active ingredients derived from the plant Chrysanthemum cinerariifolium. Pyrethrin insecticides are highly toxic to bees, so don't use these when pollinators are active. Trade names include PyGanic EC 1.4 and PyGanic EC 5.0. These insecticides may not be labeled on all fruit crops, so read the label carefully before purchasing and using this insecticide.

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Insecticide application frequency and amounts per season

Dow AgroSciences has also "been made aware that Entrust SC is allegedly being used at a greater frequency than the label allows per crop. Dow AgroSciences is closely monitoring this situation to understand if these are isolated cases or more widespread occurrences." Entrust is typically limited to 3–5 applications per season, depending on the fruit crop, and always no more than a cumulative total of 9 oz per acre per season.

When an insecticide is applied too often and at higher cumulative rates than research on the chemistry warrants, a sensitivity shift in the target insects can occur over the course of a growing season. Over several growing seasons, SWD individuals with reduced Entrust SC (spinosad) sensitivity could make up the majority of the SWD population in organic cropping systems. We are very concerned about this and work is ongoing to identify more effective insecticides for rotation partners in organic systems.

If resistance to Entrust SC (spinosad) is selected in organic systems, due to overuse and lack of rotation, IPM growers using the Group 5 insecticide Delegate WG (spinetoram) could lose this insecticide due to Group 5 insecticide sensitivity shifts in the SWD population. Spinetoram is the chemically synthesized spinosad active ingredient and it, currently, has excellent activity against SWD — it, too, should not be overused. Likewise, if IPM growers overuse Delegate, this could have negative repercussions on the activity of Entrust in organic production systems.

Let's keep Entrust in the Northeast!

"...if non-compliance continues then Dow AgroSciences will pursue corrective action, which could include withdrawal of Entrust SC from the Northeastern United States. If you have any questions, please contact your local Dow AgroSciences partner." Take the time to learn about resistance management and follow the label directions that are designed to help prevent this from occurring. ❖❖

GENERAL INFO

FRUIT TOUR EVENT ANNOUNCEMENTS

CORNELL FRUIT PEST CONTROL FIELD DAYS

❖❖ The N.Y. Fruit Pest Control Field Days will take place during Labor Day week on Sept. 9 and 10 this year, with the Geneva portion taking place first (Wednesday Sept. 9), and the Hudson Valley installment on the second day (Thursday Sept. 10). Activities will commence in Geneva on the 9th, with registration, coffee, etc., in the lobby of Barton Lab at 8:30 am. The tour will proceed to the orchards to view plots and preliminary data from field trials involving new fungicides, bactericides,miticides, and insecticides on tree fruits and grapes. It is anticipated that the tour of field plots will be completed by noon. On the 10th, participants will register at the Hudson Valley Laboratory starting at 8:30, after which they will view and discuss results from field trials on apples and other fruit crops. No pre-registration is required for either event. ❖❖

INSECT TRAP CATCHES (Number/Trap/Day)

Geneva, NY

	8/17	8/20	8/24
Redbanded leafroller	1.5	7.5	6.1
Spotted tentiform leafminer	23.6	12.3	13.9
Oriental fruit moth	0.4	2.3	1.6
Lesser appleworm	0.0	0.0	0.0
Codling moth	0.5	5.0	0.5
American plum borer	0.0	0.0	0.0
Lesser peachtree borer	0.4	0.2	0.8
Peachtree borer	0.0	0.0	0.0
Dogwood borer	1.1	0.0	0.3
Obliquebanded leafroller	0.0	0.0	0.3
Apple maggot	1.8	1.5	2.3

Highland, NY

	8/17	8/24
Redbanded leafroller	1.1	4.4
Lesser appleworm	1.3	2.0
Oriental fruit moth	0.6	1.8
Codling moth	4.2	5.5
Spotted tentiform leafminer	11.4	12.7
San Jose scale	16.8	1.3
Dogwood borer	0.9	1.1
Obliquebanded leafroller	0.0	0.3
Tufted apple budmoth	0.1	0.1
Apple maggot	0.3	0.3
Sparganothis fruitworm	0.1	0.1
Variegated leafroller	–	0.4

* first catch

UPCOMING PEST EVENTS

	43°F	50°F
Current DD* accumulations (Geneva 1/1–8/24/15):	2753	1898
(Geneva 1/1–8/24/2014):	2728	1858
(Geneva "Normal"):	2940	1957
(Geneva 1/1–8/31, predicted):	2824	2020
(Highland 1/1–8/24/15):	3320	2387

Coming Events	Ranges (Normal ±StDev):	
American plum borer 2nd flight peak	2005–2575	1351–1777
Comstock mealybug 2nd gen. crawlers subside	2735–2771	1794–1958
Codling moth 2nd flight peak	1956–2722	1298–1884
Codling moth 2nd flight subsides	2846–3462	1923–2447
Redbanded leafroller 3rd flight peak	2714–3190	1875–2213
Spotted tentiform leafminer 3rd flight peak	2570–3016	1749–2105
Spotted tentiform leafminer 3rd flight subsides	3244–3480	2258–2462
Apple maggot flight peak	2115–2655	1417–1837
Obliquebanded leafroller 2nd flight peak	2605–3019	1767–2101
San Jose scale 2nd gen. crawlers emerge	2746–2852	1916–2104
Lesser appleworm 2nd flight peak	2154–3098	1440–2150
Oriental fruit moth 3rd flight peak	2645–3209	1818–2222
Peachtree borer flight subsides	2478–3126	1672–2180

*[all DDs are Baskerville-Emin (B.E.)]

NOTE: Every effort has been made to provide correct, complete and up-to-date pesticide recommendations. Nevertheless, changes in pesticide regulations occur constantly, and human errors are possible. These recommendations are not a substitute for pesticide labelling. Please read the label before applying any pesticide.

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