New York Berry News

CORNELL UNIVERSITY

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What's Inside

Strawberries are now in full swing! According to Dr. Marvin Pritts, the berry forecast is bright for this year. "The mild winter was beneficial, and a dry May allowed for good bee flight and pollination. Recent rains and relatively cool weather allowed plants and fruit to develop extremely well, with very little stress. Rains ended last week just as berries began ripening in upstate areas. An excellent crop of strawberries is expected overall."

Our June issue, short but sweet, includes news briefs, food for thought for the upcoming raspberry season by way of raspberry fruit rot, cane botrytis, and fruitworm control, strategies for organic blueberry production, and managing black vine weevil in newly planted strawberries. Also included in this issue are weekly weather reports.

UPCOMING MEETINGS

August 10-13, 2006- Northeast Organic Farming Association (NOFA) Summer Conference, Amherst, Massachusetts. For more information: http://www.nofa.org/conference/index.php.

August 22-23, 2006- North American Strawberry Growers Summer Tour, Portland Maine. For more information: http://www.nasga.org .

October 6-7, 2006- U.S. Highbush Blueberry Council Fall Meeting, Regency, Bar Harbor, Maine. For more information: 207-288-9723.

December 5-7, 2006- Great Lakes Fruit, Vegetable and Farm Market Expo, DeVos Place, Grand Rapids, Michigan. For more information: http://www.glexpo.com .

December 11-13, 2006- New England Vegetable and Berry Conference. For more information: www.nevbc.org .

BERRY SECTION OF CORNELL FRUIT PAGE NOW OFFERS SO MUCH MORE!

June 15, 2006. Cornell's Fruit Resources Page takes on a new look today with the launch of its updated and improved berry section, found at http://www.fruit.cornell.edu/berry.html.

The former single-page berry section, now extensively re-organized and expanded, includes fourteen new menu pages linking to comprehensive content in both webpage and print-friendly PDF formats.

Much of the new content comes from the "Berry Crops, Culture and Management" course taught by Dr. Marvin Pritts at Cornell University, not previously accessible to the general public. Other content includes articles from *The New York Berry News*, an online berry newsletter and a direct link to Cornell's *Pest Management Guidelines for Berry Crops*.

Sidebars include links to the Cornell berry team, county- or regionally-based small fruit programs, the pest management guidelines for berry crops, a small fruit nursery guide, upcoming small fruit-related events and product label alerts. The site also provides links to small fruit grower organizations and newsletters.

The new berry pages facilitate access to a wide variety of berry information. They include general production and Integrated Pest Management (IPM) pages that provide information that apply to most small fruit crops. You'll find information about site and soil requirements, pollination, maintaining drip irrigation systems, nutrient and soil analysis and more on the production page. The general IPM page details environmentally sound pest management practices and other topics such as sprayer selection and maintenance

New commodity pages bring together information on both production and integrated pest management (IPM) focused on specific crops – strawberries, blueberries, brambles and other berries and small fruit. Topics include site preparation, cover crops, cultivar selection, pruning, soil, nutrient, and water management, and organic production. Specialized IPM pages provide information to help you manage diseases, insects, and weeds.

New sections of the site feature information on business, marketing, and labor management, and post-harvest handling and food safety. Links to Cornell small fruit-related programs and services are included in the pages, as well as links to small fruit resources from other states.

Cornell Fruit Resources page, originally conceived and developed in 2002, met communications needs identified by the Cornell Fruit Program Work Team (Fruit PWT). Juliet Carroll, Fruit IPM coordinator, served as Fruit PWT Web committee chair. Juliet, along with Craig Cramer, Communication Specialist, Dept. of Horticulture, worked with Fruit PWT members in gathering Cornell-based fruit resources and information beginning in August 2002. Other web site committee members included Art Agnello, Bob Pool, Debbie Breth, Lori Bushway, Marvin Pritts, Tim Weigle and Bill Turechek. Bob Pool was assigned responsibility for the grape commodity page, Lori Bushway the berry page, and Bill Turechek the tree fruit page. The Cornell Fruit Resources page launched for the first time in January 2003. The web site brought together in one location all Cornell-based fruit resources.

Cathy Heidenreich, under the direction of Marvin Pritts, revised and expanded the berry section beginning in July 2005. Craig Cramer, who is responsible for the Cornell Fruit Resources home page and serves as the site's web master, proved invaluable in helping make the new berry section a reality. Many thanks all those who contributed to the revised berry section: Marvin Pritts who initiated the project and provided the funding and Juliet Carroll and Craig Cramer, who served as advisors for the project. Thanks also to Cornell fruit faculty and Extension staff that provided links and resources featured on the revised pages.

BERRY PRODUCTION: WHY DOES THE NORTHEAST LAG BEHIND THE NORTHWEST?

Steven McKay, Extension Educator, Hudson Valley Commercial Fruit Program, Columbia County Cooperative Extension, Hudson, NY 12534

People often ask me the question, "Why does the Northeast lag behind the Northwest in production of berries?". I'll tackle the question by taking a look at climatic, infrastructure, and social factors. Obviously some barriers to production do exist, but grower cooperation, technology, and special production practices can help the Northeast to gain a better share of the market. Growers are also coming together to see what can be done to improve infrastructure and the image of berries from the Northeast.

Climate is of course a major barrier. Our extreme cold in the winter can damage or kill entire plants. Frost conditions in the spring can kill flowers and reduce or eliminate crop, while early frosts in the fall limit the growing season by destroying fruit before it is harvested. The extreme cold can be managed partially by cultural practices that provide protection. Mulch and floating row covers made of a special plastic provide one option. Also, vines can be trained and trellised close to the ground where they can be easily mulched. High tunnels (or plastic greenhouses with no heat) are a more expensive option that can be considered for the high value crops. The tunnels can also extend the growing season by preventing frost damage in the winter and fall. An added benefit is protection from damage by rain, wind, or direct sun. Selection of cultivars that are more cold hardy, or have flowering and harvest dates that avoid frost is another useful practice.

Infrastructure is another important factor; many resources for large-scale production are missing. These resources will have to be developed along-side the industry. (As an example, it would be uneconomical to build a large CA storage facility until enough production exists to fill it.) Some call this the chicken and egg concept, but it can be overcome when growers come together and do some medium and long-term planning. Examples of infrastructure that is currently missing include:

- Mechanical harvesting~ machines that can harvest the crop to avoid tedious hand harvest of berries destined for processing.
- Post harvest handling~ cold storage facilities are important since berries are so perishable. Days of shelf life can be added if berries are kept at near freezing temperatures, and weeks or months added with controlled atmosphere.
- Processing~ freezing, freeze-dry, and juice/concentrate facilities are needed for dealing with excess or damaged fruit, or even fruit specially grown for processing.
- Marketing~ packaging, promotion, and getting product to local distributors in quantity, on time, and with good quality fruit.
- Value-added products~ producers can develop value-added products from the berries which will increase consumption and further improve the economy.
- All of these needs can be addressed at the scale necessary to accommodate production, and facilities and services can grow with the industry.

Social factors inhibiting large-scale production can also be overcome with education of the public and growers. The Pride of New York program can help educate consumers to buy locally. Their demand for local product will push distributors to look for product. Customers are recognizing for example, that local strawberries although not as pretty as the imported ones may taste better and have better texture. Besides consumer education, we must consider other social factors more directly related to growers.

Growers need to cooperate~ through a grower organization; planning and cooperation in projects can take place which will make development possible. Packaging and promotion programs can be developed.

Training programs~ growers need to see the value in, and participate in training programs to learn how to produce and handle an improved quality product.

Supporting variety improvement programs~ large companies in the west have their own breeding programs to develop protected varieties that they control. Our breeding programs need to be supported to make competitive varieties available to our industry.

The challenge to increase berry production is before us, but with more education and cooperation, our Northeast industry can grow. Cornell Cooperative Extension will be available as a resource to facilitate the process. Look for courses and special workshops during the year.

HALTING BLACK RASPBERRY DECLINE

Laura McGinnis, Public Affairs Specialist, USDA-ARS, Beltsville, MD, 20705

June 1, 2006. A new virus associated with black raspberry decline has been identified by Agricultural Research Service (ARS) scientists in Oregon, the nation's primary producer of black raspberries.

According to research leader and plant pathologist Robert Martin, with the ARS Horticultural Crops Research Unit at Corvallis, Ore., decline is generally a symptom of a virus complex. However, plants infected with the newly identified black raspberry decline-associated virus (BRDaV) will show symptoms even if the plant has no other diseases.

Black raspberries are a delicious source of ellagic acid, vitamin C, antioxidants, anthocyanins and other important nutrients. In affected plants, BRDaV causes yellow, puckered and spotted leaves, yield reduction and cane dieback—the gradual death of shoots, branches and roots, from the tip inward.

Decline shortens a plant's life expectancy from several decades to three to four years, with severe economic repercussions. Identifying BRDaV as a cause of decline is an important step towards controlling the disease. Martin and his colleagues have obtained genetic information on 17 berry viruses, including BRDaV.

The team learned that BRDaV hitches a ride on the raspberry aphid *Amphorophora agathonica*. In fact, spread rates appear to be directly related to aphid numbers. This suggests that controlling the aphid population could slow the disease's proliferation.

The Corvallis researchers also learned that BRDaV can infect other commercial and native *Rubus* berry plants—such as blackberry and raspberry—without triggering symptoms, making isolation from other commercial berry plantings an important part of any disease-control strategy.

Read more about the research in the June 2006 issue of *Agricultural Research* magazine. ARS is the U.S. Department of Agriculture's chief scientific research agency.

PROPOSED PHASEOUT OF PESTICIDE AZINPHOS-METHYL ON BLUEBERRIES

June 9, 2006. To increase protection for farm workers and the environment, EPA is proposing to phase out the remaining uses of azinphos-methyl (AZM). Use on almonds, Brussels sprouts, pistachios, walnuts, and nursery stock will be phased out by 2007, and use on apples, blueberries, cherries, parsley, and pears by 2010.

During the phaseout, EPA is proposing additional restrictions, including reduced annual application rates, additional worker monitoring, and larger buffer zones to help minimize risks. The Agency expects growers of these crops to successfully adopt and transition to the available safer alternatives. All other uses of this pesticide have been voluntarily cancelled by the manufacturer.

SURVEY OF NEW YORK FARMERS TO BEGIN SOON

As a primary source of information, the June Agricultural Survey is one of the largest and most important conducted by the U.S. Department of Agriculture's National Agricultural Statistics Service (NASS). Farmers will be contacted during early June to take part in this nationwide survey of American agriculture. The resulting information will be used to make reliable State, regional, and national estimates of crop acreage, grain stocks, and livestock inventories. The New York Agricultural Statistical Service in Albany is handling the New York portion of the survey.

This survey is particularly vital. It will provide the first clear indications of the potential production of major crops for 2006.

Producers themselves rely on the data to reach valid production, marketing, and investment decisions. Congresspersons and regulators use the information to produce better regulations and farm programs. Industry analysts, extension agents, farm organizations, and agricultural lenders need the information for a variety of reasons.

It is therefore important for farmers to participate in the survey to ensure that local agriculture is accurately portrayed. Most producers selected for interviews will soon be notified by mail.

"We safeguard the confidentiality of all survey responses," Steve Ropel, State Statistician, said. "Data about individual operations are used only in conjunction with information from other producers."

All agricultural statistics published by NASS are available at *www.usda.gov/nass/.* For more information, call 800-821-1276.

RASPBERRY FRUIT ROT AND CANE BOTRYTIS

Sonia Schloemann, University of Massachusetts Extension, Amherst, MA

The fungus *Botrytis cinerea*, causes blossom blight, preharvest rot, postharvest rot, and cane infections in raspberries. It overwinters on canes, in dead leaves and as mummified fruit. Spores are produced in spring and begin a new infection cycle. A moist, humid environment is ideal for spore production and spread. All flower parts except sepals are very susceptible to infection by spores that land on flowers although these infections are latent; or dormant, until fruit ripens. In other words, no symptoms are visible at first. Because of this, growers must be aware of when their fields are in a susceptible growth stage and take measures to protect them from infection during that time. Other plant parts, as mentioned above, are also susceptible to infection and can cause cane leaf blights.

Wet weather or a lot of overhead irrigation is also necessary for high levels of infection to occur. Therefore, air circulation within the canopy, especially in the fruit zone, is very important. This is accomplished through good pruning practices in the dormant season. If significant wetting periods occur during bloom, the likelihood of infection by Botrytis is very high, and control measures may be needed.

Symptoms.
Rotted fruit, usually with tufts of gray fungus growing on surface. Pale brown lesions may appear on primocane leaves in mid- to late summer. Cane infections appear as tan to brown lesions often encompassing more than one node. These lesions can girdle the cane causing eventual cane collapse. Cane lesions exhibit typical concentric "watermark" patterns from fall through late winter.

Cultural control.
Create an open plant canopy to promote optimal air circulation and drying conditions by using good pruning practices. 2. Avoid excessive nitrogen fertilization, which can promote excessive vegetative growth, and control weeds. These practices also improve air circulation, increase light penetration, and speed drying of plant surfaces after irrigation and rain. 3. Pick fruit in the coolest part of the day. Keep harvested fruit in shade while in the field, then move to cold storage as soon as possible. 4. Irrigate in early morning whenever possible so plants dry quickly. Switch from overhead to drip/trickle irrigation.

Chemical control
Spray first at 5% bloom and then again 7 to 10 days later. More applications during the growing season aid control in wet weather. Thorough coverage and canopy penetration are essential. Fungicide options are listed below (alphabetically, not in order of efficacy).

1. **Captan 80 WDG** at 2.5 lb/A. Do not apply within 3 days of harvest. 72-hr reentry.
2. . **Elevate 50 WDG** at 1.5 lb/A. Do not use more than 6 lb/A/season. Can be used up to and including the day of harvest. 12-hr reentry.
3. 3. **Pristine** at 18.5 to 23 oz/A. Do not use more than 2 consecutive applications or more than 4 times/year. Can be used day of harvest. 24-hr reentry.
4. 4. **Rovral 4 Flowable** at 1 to 2 pint/A plus another fungicide with a different mode of activity. Can apply the day of harvest. Fungal pathogens have shown resistance to the action of Rovral when used exclusively. Alternate or tank-mix with other registered fungicides. Also limit to two applications per year. 24-hr reentry.
5. 5. **Switch 62.5 WG** at 11 to 14 oz/A. May be used up to and including the day of harvest. Do not apply more than twice sequentially or use more than 56 oz/A/season. 12-hr reentry.

(Reprinted from Massachusetts Berry Notes, Volume 18, No. 8, June 1, 2006)

EXCLUSION BARRIERS FOR MANAGEMENT OF BLACK VINE WEEVIL, *OTIORHYNCHUS SULCATUS*, IN FIRST YEAR STRAWBERRIES

J.H. Tolman, Agriculture and Agri-Food Canada/London; P. Fisher Berry Crop Specialist/OMAFAR; K. MacKenzie, Agriculture and Agri-Food Canada/Kentville, NS; T.A. Sawinski, Agriculture and Agri-Food Canada/London; K. Butt Agriculture and Agri-Food Canada/London; R. Tromp, Agriculture and Agri-Food Canada/London

Introduction

Black vine weevil (BVW), *Otiorhynchus sulcatus* (F), thought to be a native of northern Europe but known in North America since 1835, feeds on a tremendously varied number of different plant species, including strawberry. While adults, feeding mainly at night, cut characteristic notches in leaf margins, economic injury is due to feeding by larvae on roots. Small larvae feed mainly on smaller roots while larger larvae move to larger roots which may be girdled when BVW populations are high. Severely damaged plants wilt and may even die, thinning strawberry stands and ultimately reducing yields. In Ontario, the profitable life-span of strawberry fields heavily infested with BVW may decline from 3-4 years to two years or less.

Objective

Adult BVW cannot fly but are very active walkers, moving readily from hedgerows or infested fields into newly planted strawberries. During the summer of 2005, a research project initiated by Agriculture and Agri-Food Canada under the Risk Reduction Strategies Initiative investigated the potential of exclusion barriers to reduce BVW immigration into newly planted fields in Ontario.

Methods

In early July exclusion barriers of two designs (Figure 3a) were established near Campbellville, ON, between an infested plantation scheduled for destruction and a block of strawberries (cv. Jewel) planted in May 2005. "Vernon" barriers consisted of linked 3 m lengths of extruded black plastic designed to capture BVW. "Sheet" barriers consisted of a 30 cm sheet of plastic (Polytarp - supersix® with one edge buried 5-10 cm in the soil and the remainder supported vertically by stapling to 2 x 4.5 cm x 50 cm tall wooden stakes spaced 2 m apart down the length of the barrier. Collection pails (4 L ice cream pails), containing 2 L of saturated saline + 4 ml liquid soap, were located at both ends of each barrier. Captured BVW were collected and counted each week.

Observations

Not until the 3rd collection after disking were significant numbers of BVW captured moving into the new strawberry planting. BVW numbers thereafter rose steadily until mid Sept. (Figure 1). By 19 Sept a total of 737 adult BVW had been collected moving around the "Sheet" barriers, an average of 20 BVW/m barrier. "Vernon" barriers were not as effective as "Sheet" barriers and tended to warp and lift from the soil due to solar heating.

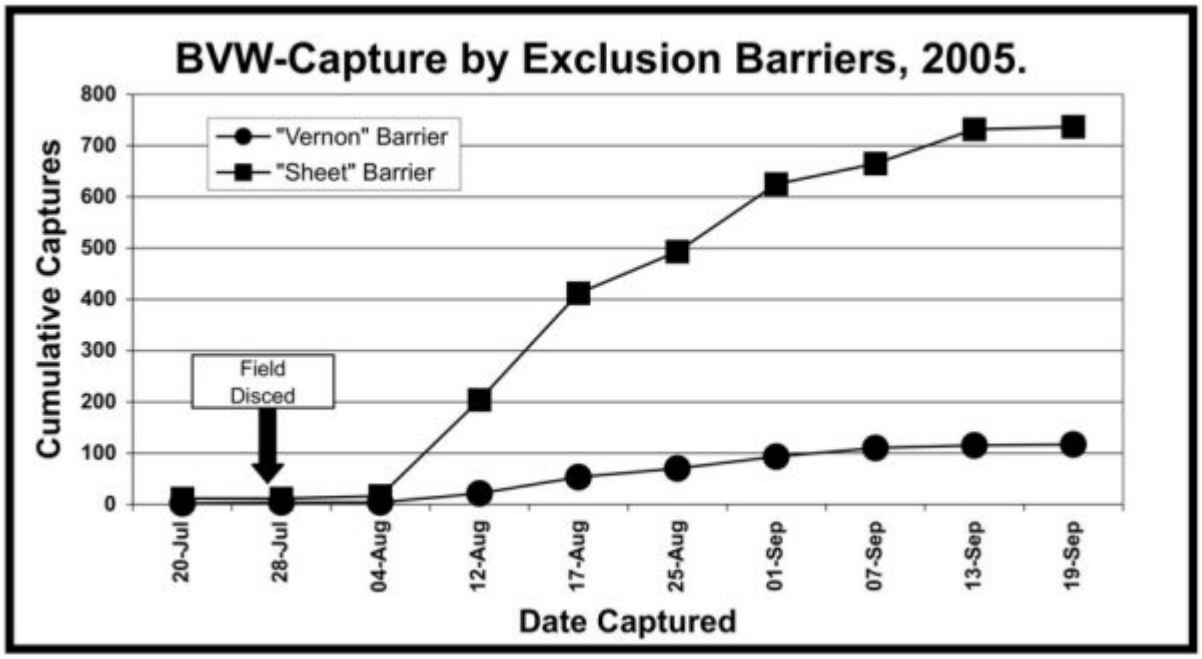

Figure 1: Cumulative capture of immigrating, adult black vine weevils by exclusion barriers, Campbellville, ON 2005.

Recommendation

Growers unable to plant new blocks of strawberries >500 m from a planting heavily infested with BVW should establish an maintain a continuous "Sheet' barrier between the infested field and the new block (Figure 5). While all immigrating BVW will not be excluded from the new block, each intercepted BVW represents a reduction of as many as 500 eggs in the new plantation.

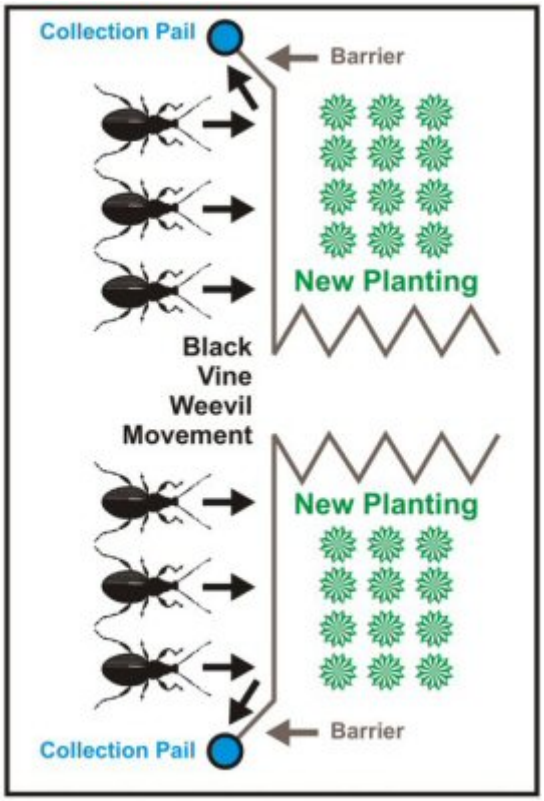

Figure 5: Suggested placement of exclusion barrier to manage adult black vine weevil immigrating into new strawberry planting.

(Reprinted with permission from: The Ontario Berry Grower, Vol. 3, May 2006.)

STRATEGIES SUPPORTIVE OF ORGANIC BLUEBERRY PRODUCTION

Kevin Iungerman, Extension Associate, Cornell Cooperative Extension Northeastern NY Commercial Fruit Program, Ballston Spa NY

There is great interest on the part of many producers to shift some, or all of their blueberry operation, over to organic practices provided that they can do this economically. Of all the small fruit, the blueberry is a logical strong candidate for such a shift, as blueberries are not subject to a major pantheon of pests as are strawberries or summer raspberries. Earlier this season, Dr. Cesar Rrodriguez Saona and Dean Polk of Rutgers offered a template of approved cultural, behavioral, and chemical insect control strategies, which they believed would be supportive of organic blueberry production in NJ. At points, I will interject some minor caveats, mainly to emphasize climatic and other differences between southern Jersey and our region that might mitigate or otherwise influence adoption here.

1) Regular pruning. Faithful removal of old canes removes overwintering sites of Putnam scale (as well as fungal disease cankers and spores). Adult female scale overwinter under the bark of such canes. (Should be a standard practice for all.)

2) Practice clean cultivation to suppress weeds in and around blueberry fields. It is such ground cover (weeds) that functions as suitable overwintering habitats for cranberry weevil, plum curculio, and other pests. Regular disking and cultivation between blueberry rows will expose both overwintering and active stages of the pests to their natural enemies and also high summer temperatures and suppress weeds. However, even shallow cultivation invites injury to blueberries, which are a very shallow rooted plant, and cultivation pretty well eliminates mulching. Mulch and between row sod helps to mitigate temperature extremes that are less a problem on Jersey's Delmarva soils, which also to not enjoy the slopes -- and erosion concerns -- as we do. Sod can also take up late season moisture and nitrates that otherwise slow wood maturation and hardening off prior to winter. On balance, I think clean cultivation here is a negative.

3) Make use of earlier varieties. Depending upon cultivar bloom date as mediated by its potential but also heat unit accumulation, earlier maturing varieties may nearly escape the broader blueberry maggot infestation window opening to later maturing varieties, whose ripening periods are more in synch with the flies' egg-laying period. Blueberry maggot flies

in New Jersey typically begin laying eggs around the 20-22 June. By this date, their early varieties, such as Weymouth, Bluetta, and Earlyblue, have been harvested two or more times, significantly escaping infestation. However, as the name of the game is to stretch the customer season, and because we do have a narrower growing season, I think that early cultivars are a less viable option here. (Although raised hoop houses with screening could potentially provide a double benefit here: expanded market and maggot deterrent.)

4) Use pheromone traps to monitor cranberry fruitworm, redbanded leafroller, and obliquebanded leafroller populations. Pheromone traps are very useful for timing (and limiting) insecticide applications in all management systems, organic or otherwise. Refer to the 2006 Cornell Pest Management Guidelines for pheromone and baited trap thresholds (Pgs 25 - 29.)

5) Make use of approved pesticides if needed.

- Entrust is reported to have activity against caterpillars, such as cranberry fruitworm and leafrollers, blueberry maggot, and thrips. Entrust is a contact and stomach poison formulation that is a mixture of Spinosyn A and D molecule toxicants from a species of Actinomycete bacteria; it approved for use on organic blueberries by the Organic Materials Review Institute (OMRI).
- Insecticides based on *Bacillus thuringiensis* (Bts) are effective against caterpillar pests.
- Azadirachtin (a botanical, or plant extract) of the neem plant is the basis of Aza-Direct, Agroneem, and Neemix, and are more broad-spectrum than the Bts. They are used against aphids, leafhoppers, thrips, and caterpillar pests.
- Products containing natural pyrethrum (e.g. Pyganic) are effective against blueberry maggot, the most important pest of highbush blueberries. Note that not all pyrethrum products are the same as regards organic usage. Some are not approved because they also contain a synergist, piperonyl butoxide, or are formulated with petroleum-based carriers.

6) Be vigilant of, and control as needed, Leafhopper and Aphid vectors of Blueberry scorch and blueberry stunt viruses. Blueberry scorch phytoplasma is spread by the feeding activity of several aphids and blueberry stunt is transmitted by sharpnosed leafhoppers. Effective chemical control and aggressive rouging of symptomatic plants are the only viable control strategies at this time. In New Jersey, the botanical pesticide sabadilla and insecticidal soap (e.g. M-Pede) can be effective against leafhoppers (and the soap for aphids), Surround can be used for processing blueberries only, and Neemix is also registered for leafhopper control. Aphids have several natural enemies such as lady beetles, lacewings, syrphid flies, and parasitic wasps. Populations of these natural enemies can keep this as well as other pests below economic thresholds. Insecticidal soap can be effective against aphids. Fortunately in our region, we rarely deal with virus disease; unfortunately, we do not have the same range of "organic" chemicals available to us.

7) Keep abreast of applied research innovation. Rrodriguez-Saona and Polk are currently investigating border spray applications of GF-120, a bait formulation of spinosad, which has proteins and sugars known to enhance feeding by adult blueberry maggots. It is registered in NJ exclusively for managing blueberry maggot.

Sources "Insect Management for Organic Highbush Blueberries", Dr. CesarRrodriguez-Saona, Extension Specialist in blueberry entomology, Rutgers University, Mr. Dean Polk, IPM agent – fruit, Rutgers Blueberry Bulletin Vol. XXIII NO11, June 14, 2006.

(Reprinted with permission from: The Northeast Fruitlet, Vol. 10 No. 5, June 2006)

RASPBERRY FRUITWORM

Sonia Schloemann, University of Massachusetts Extension, Amherst, MA

With the raspberry fruitworm, it is the worms or larvae that usually cause the most damage. However, the adult beetles are also capable of causing considerable injury to unopened buds and unfolding leaves and open flowers. The raspberry fruitworm prefers red and purple raspberries.

Symptoms.

To the unsuspecting, the first evidence of a problem may be the presence of small yellowish-white worms adhering to harvested fruit. However, there are actually numerous signs earlier in the season that can lead to detection. Infestations in early season are to be suspected if longitudinal holes in the foliage give leaves a tattered appearance. Such foliage injury is caused by adults feeding on unfolding leaves, often skeletonizing them. As blossom buds appear, they are attacked by the adult beetles feeding on the inside. Numerous beetles may destroy the entire cluster of buds. Fruitworms attack raspberry receptacles and, at times, the carpels of the berry. In tunneling through the receptacles, the larvae cause extensive damage, often loosening berries to the extent that they may fall off. In some plantings, more than half of the berries are infested with larvae. With such heavy infestations, some of the wormy berries arrive at the market or processing plant with noticeable presence of worms, leading to rejection of fruit.

Seasonal History and Habits
Adult beetles emerge from the soil during late April and early May, about the time the first leaves of raspberries are beginning to unfold. They begin to feed along the midrib of partially folded leaves and are found on the midrib of young leaves. Beetles later seek protection between the blossom buds where they attack the soft tissues of the supporting pedicles. As buds begin to separate, the insects attack the blossom buds, making large entrance holes to feed on floral parts. The females deposit their eggs most commonly on swollen, unopened blossom buds. However, at times eggs may be laid inside buds or on developing fruit. The grayish white eggs (about 1 mm [1/25- inch] long) hatch after a few days, and the larvae commonly bore through the bud and enter the receptacle where they begin to tunnel. As the larvae increase in size, the tunnels are made larger, ultimately becoming grooves in the receptacle adjacent to 8 the berry. When infested fruit is picked, the larvae may become displaced and remain attached to the cuplike interior and thus are transferred to the harvesting basket. Those that remain on the receptacle soon drop to the ground where they pupate and remain over winter.

Description The fully grown worm is slender, 5.75 to 6 mm (1/4 inch) in length, 0.53 mm (1/50 inch) wide, nearly cylindrical, tapering towards either end. Each segment has two transverse rows of sparse, light-colored stiff hairs.

Control It is helpful to maintain good weed control. Time chemical control applications to when fruiting buds first form and just before blossoms open.

(Reprinted from Massachusetts Berry Notes, Volume 18, No. 8, June 1, 2006. ***Source****: Brambles - Production Management and Marketing, Bulletin 782-99)*

Check out the NYSAES Tree Fruit and Berry Pathology web site at:
www.nysaes.cornell.edu/pp/extension/tfabp

Questions or Comments about the New York Berry News?

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WEATHER REPORTS OF TEMPERATURES AND PRECIPITATION THROUGHOUT NEW YORK STATE FOR WEEK ENDING SUNDAY 8:00am, May 28th, 2006

	Temperature				Growing Degree Days (*Base 50*)			Precipitation (*inches*)			
	High	***Low***	***Avg***	***DFN[1]***	***Week***	***YTD[2]***	***DFN***	***Week***	***DFN***	***YTD***	***DFN***
Hudson Valley											
Albany	81	41	58	-3	63	319	73	0.77	-0.03	9.26	3.22
Glens Falls	78	35	56	-4	48	207	15	0.4	-0.44	8.23	1.99
Poughkeepsie	80	40	58	-4	61	348	64	0.49	-0.49	9.92	2.52
Mohawk Valley											
Utica	79	37	55	-5	49	240	22	1.71	0.87	6.37	-0.47
Champlain Valley											
Plattsburgh	80	40	57	-3	55	246	52	0.24	-0.44	6.58	1.21
St. Lawrence Valley											
Canton	78	37	56	-3	51	226	62	0.33	-0.37	5.85	0.32
Massena	79	40	57	-2	52	246	61	0.2	-0.38	6.37	1.46
Great Lakes											
Buffalo	73	39	57	-3	59	333	106	0.49	-0.25	4.04	-1.64
Colden	71	31	52	-6	39	190	24	0.38	-0.46	4.82	-2.17
Niagara Falls	76	35	56	-5	54	271	28	0.17	-0.53	3.84	-1.96
Rochester	74	39	57	-4	58	305	57	0.23	-0.4	4	-1.05
Watertown	77	39	56	-2	49	226	58	0.44	-0.19	4.68	-0.25
Central Lakes											
Dansville	74	32	55	-6	47	239	9	0.65	-0.04	4.01	-1.38
Geneva	72	37	55	-5	47	222	5	0.62	-0.1	4.17	-1.41
Honeoye	73	34	54	-6	47	237	14	0.52	-0.15	2.87	-2.62
Ithaca	72	36	53	-6	37	183	-5	0.92	0.14	4.29	-1.57
Penn Yan	73	38	56	-4	53	253	36	0.51	-0.21	3.4	-2.18
Syracuse	79	40	57	-4	54	290	40	0.42	-0.35	6.14	-0.14
Warsaw	71	34	51	-6	33	161	13	0.55	-0.28	5.57	-0.94
Western Plateau											
Alfred	72	30	51	-6	35	127	-19	0.41	-0.35	4.62	-0.78
Elmira	72	32	54	-5	42	179	-28	0.36	-0.41	4.81	-0.73
Franklinville	72	29	51	-5	31	123	6	0.79	-0.05	5.82	-0.61
Sinclairville	77	30	54	-4	45	190	42	0.42	-0.51	5.66	-1.56
Eastern Plateau											
Binghamton	72	35	54	-5	43	228	30	0.44	-0.33	4.66	-1.5
Cobleskill	80	38	54	-4	44	172	-4	1.48	0.61	8.14	1.59
Morrisville	75	33	52	-6	38	155	-10	1.01	0.12	8	1.59
Norwich	77	34	53	-6	40	176	-5	1.02	0.15	7.22	0.49
Oneonta	77	36	55	-2	43	242	84	0.99	0.01	6.13	-1.22
Coastal											
Bridgehampton	81	44	61	2	79	278	82	0.07	-0.77	9.73	2.31
New York	83	48	66	2	110	587	183	0.17	-0.67	9.83	2.58

1. *D*eparture *from N*ormal
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WEATHER REPORTS OF TEMPERATURES AND PRECIPITATION THROUGHOUT NEW YORK STATE FOR WEEK ENDING SUNDAY 8:00am, June 4th, 2006

	Temperature				Growing Degree Days (*Base 50*)			Precipitation (*inches*)			
	High	***Low***	***Avg***	***DFN[1]***	***Week***	***YTD[2]***	***DFN***	***Week***	***DFN***	***YTD***	***DFN***
Hudson Valley											
Albany	89	55	69	7	137	456	121	3.03	2.19	12.29	5.41
Glens Falls	86	55	68	8	127	334	66	2.41	162	10.64	3.61
Poughkeepsie	88	54	70	7	138	486	107	2.42	1.47	12.34	3.99
Mohawk Valley											
Utica	91	54	70	9	141	381	85	1.07	0.16	7.44	-0.31
Champlain Valley											
Plattsburgh	81	53	68	7	125	371	100	2.4	1.7	8.98	2.91
St. Lawrence Valley											
Canton	88	48	68	9	128	354	123	1.49	0.77	7.34	1.09
Massena	88	50	68	8	127	373	117	1.7	1.05	8.07	2.51
Great Lakes											
Buffalo	91	56	72	11	153	486	175	0.66	-0.15	4.7	-1.79
Colden	88	53	68	10	130	320	88	1.38	0.46	6.2	-1.71
Niagara Falls	91	54	71	9	146	417	89	0.39	-0.36	4.23	-2.32
Rochester	93	56	73	12	159	464	135	1.01	0.33	5.01	-0.72
Watertown	85	50	68	10	130	356	122	1.75	1.11	6.43	0.86
Central Lakes											
Dansville	95	53	71	10	148	387	75	1.63	0.82	5.64	-0.56
Geneva	93	54	70	10	141	363	66	1.71	0.92	5.88	-0.49
Honeoye	94	53	71	10	147	384	78	1.3	0.52	4.17	-2.1
Ithaca	91	50	68	9	129	312	51	2.7	1.86	6.99	0.29
Penn Yan	92	54	71	10	150	403	106	1.61	0.82	5.01	-1.36
Syracuse	92	55	71	10	148	438	105	1.46	0.66	7.6	0.52
Warsaw	87	50	68	10	126	287	79	1.35	0.42	6.92	-0.52
Western Plateau											
Alfred	92	51	68	10	126	253	48	1.32	0.4	5.94	-0.38
Elmira	92	50	69	9	137	316	32	1.94	1.11	6.75	0.38
Franklinville	90	52	68	12	129	252	82	0.48	-0.45	6.3	-1.06
Sinclairville	91	53	69	12	138	328	118	0.41	-0.59	6.07	-2.15
Eastern Plateau											
Binghamton	88	51	68	7	125	353	81	2.61	1.8	7.27	0.3
Cobleskill	89	50	66	7	116	288	43	4.06	3.11	12.2	4.7
Morrisville	87	50	68	9	125	280	50	2.24	1.33	10.24	2.92
Norwich	91	50	68	8	125	301	52	1.71	0.8	8.93	1.29
Oneonta	88	53	68	10	129	370	150	3.42	2.42	9.55	1.2
Coastal											
Bridgehampton	79	53	66	5	112	390	115	0.97	0.11	10.7	2.42
New York	89	58	73	6	161	748	225	3.81	2.97	13.64	5.55

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WEATHER REPORTS OF TEMPERATURES AND PRECIPITATION THROUGHOUT NEW YORK STATE FOR WEEK ENDING SUNDAY 8:00am, June 11th, 2006

	Temperature				Growing Degree Days (*Base 50*)			Precipitation (*inches*)			
	High	***Low***	***Avg***	***DFN[1]***	***Week***	***YTD[2]***	***DFN***	***Week***	***DFN***	***YTD***	***DFN***
Hudson Valley											
Albany	77	50	61	-5	76	532	93	1.64	0.78	13.93	6.19
Glens Falls	74	48	59	-4	67	401	43	1.11	0.34	11.75	3.95
Poughkeepsie	77	48	60	-6	75	555	68	1.74	0.83	13.88	4.62
Mohawk Valley											
Utica	76	45	58	-6	62	443	56	1.15	0.2	8.59	-0.11
Champlain Valley											
Plattsburgh	82	45	60	-4	69	440	76	0.63	-0.08	9.61	2.83
St. Lawrence Valley											
Canton	83	44	59	-3	66	420	109	0.86	0.09	8.2	1.18
Massena	82	43	59	-4	67	440	99	0.99	0.29	9.06	2.8
Great Lakes											
Buffalo	83	48	65	2	107	593	184	0.15	-0.69	4.85	-2.48
Colden	77	42	59	-3	67	387	77	0.11	-0.87	6.31	-2.58
Niagara Falls	82	42	63	-2	94	511	84	0.16	-0.64	4.39	-2.96
Rochester	81	48	64	0	96	560	137	0.55	-0.15	5.56	-0.87
Watertown	80	45	60	-2	71	427	116	1.01	0.31	7.44	1.17
Central Lakes											
Dansville	81	41	61	-3	78	465	57	0.69	-0.21	6.33	-0.77
Geneva	77	45	60	-5	68	431	40	0.42	-0.44	6.3	-0.93
Honeoye	79	44	61	-4	76	460	57	0.48	-0.38	4.65	-2.48
Ithaca	74	43	57	-5	54	366	19	0.83	-0.04	7.82	0.25
Penn Yan	77	47	60	-4	71	474	83	0.58	-0.28	5.59	-1.64
Syracuse	78	47	61	-4	75	513	85	0.45	-0.4	8.05	0.12
Warsaw	75	39	58	-3	59	346	65	0.75	-0.24	7.67	-0.76
Western Plateau											
Alfred	80	37	58	-3	57	310	35	0.14	-0.93	6.08	-1.31
Elmira	77	36	58	-5	59	375	1	0.14	-0.72	6.89	-0.34
Franklinville	79	39	58	-2	59	311	76	0.08	-0.9	6.38	-1.96
Sinclairville	81	37	60	-1	72	400	116	0	-1.05	6.07	-3.2
Eastern Plateau											
Binghamton	72	43	57	-6	51	404	44	0.41	-0.43	7.68	-0.13
Cobleskill	74	44	56	-7	46	334	8	2.42	1.44	14.62	6.14
Morrisville	75	43	56	-6	47	327	22	1.54	0.57	11.78	3.49
Norwich	75	45	58	-4	56	357	28	0.81	-0.17	9.74	1.12
Oneonta	76	48	59	-2	66	436	142	1.4	0.42	10.95	1.62
Coastal											
Bridgehampton	71	54	62	-2	86	476	107	2.42	1.54	13.12	3.96
New York	78	55	65	-5	105	853	196	1.72	0.91	15.36	6.46

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