

Nectarine Pox and the Factors that Influence its Incidence from One Year to the Next

Dr. Tara Baugher, Penn State Tree Fruit Extension Educator

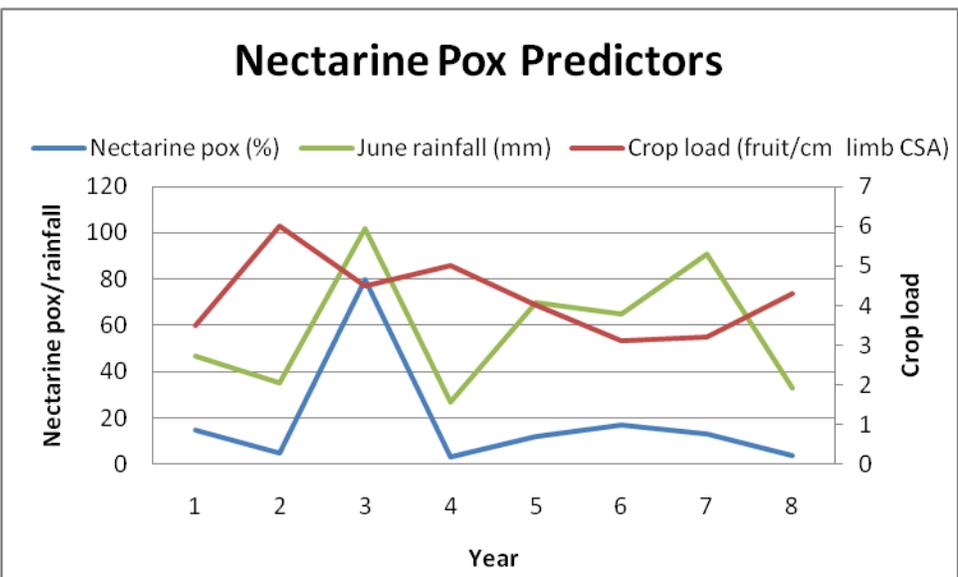
Growers reported a higher incidence of nectarine pox than usual last season, and in most cases the cool spring and rainy June were the prevailing factors. Let's review what causes this physiological disorder and ways you can manage orchard conditions to reduce its occurrence.

Background on Nectarine Pox

The unprotected surface of nectarines makes them more susceptible than peaches to fruit blemishes. In addition to the lack of pubescence, nectarines have only a slight tendency to form flakes of wax, and there are no wax platelets such as those observed on Delicious apple. USDA scientists Harold Fogle and Michael Faust (1975, 1976) conducted studies in the early 1970s that helped explain the morphology of

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superficial disorders of nectarines. They reported that nectarine growth does not follow the three-phase sigmoid curve typical of peaches and that occasionally the skin does not grow at the same rate as the flesh. Also, they studied fruit surfaces with scanning electron microscopy and suggested that clonal differences in surface conformation (ridging, stomatal cracking, stomatal suberization) may explain varying susceptibilities to skin disorders.

Following a high incidence of nectarine pox in the 1980s, Penn State scientists Larry Hull and George Greene conducted studies on possible management strategies (personal communication, 1999). Hull caged limbs to isolate insect damage symptoms and found no insects associated with nectarine pox. Greene tested calcium treatments but found no effects on nectarine pox incidence.

Data combined from WV and PA trials show consistent effects of June rainfall and reduced crop load on nectarine pox incidence.

Nectarine Pox, continued on page 2

Growing Season Models and Alerts:
<http://frec.cas.psu.edu>





Superficial warty outgrowths associated with nectarine pox.

First Description of the Disorder

Nectarine pox was first described in the literature in 1991 (Auxt Baugher and Miller, 1991a). The disorder is characterized by superficial warty outgrowths and in some years may occur on 20 to 80 percent of the fruit in an orchard block. The symptoms at harvest are similar to beady wart (caused by aphid feeding) but in early stages are distinct eruptions of the epidermis rather than sunken depressions associated with insect feeding. Studies conducted in West Virginia (Auxt Baugher and Miller, 1991b) showed that nectarine pox incidence is positively correlated to June rainfall, terminal shoot length and fruit flesh nitrogen level and that root pruning two weeks after full bloom reduces the disorder.

Research Conducted in Pennsylvania Orchards

David Rice, Rice Fruit Company, suggested that further studies be conducted following a high incidence of nectarine pox in 1996. With the cooperation of four growers, we ruled out virus as a causal factor and corroborated the importance of managing tree vigor. Bill Howell (National Clean Plant Network, Washington State University, Prosser) and Ruth Welliver (Pennsylvania Department of Agriculture) screened symptomatic Firebrite and Summer Beaut nectarine trees for viruses and only Peach Latent Mosaic Viroid (PLMVd) was detected. PLMVd is widely distributed in “clean stock” and is latent in most situations.

Shoot length, leaf nutrient levels, fruit peel nutrient levels, crop load, soil pH, environmental conditions and nectarine pox incidence were tracked in 11 orchard blocks over three years (Auxt Baugher, 1999). In Years 1 and 2, nectarine pox initially appeared after shuck fall and gradually increased through the season, with the most severe symptoms developing one to two weeks prior to harvest. In Year 3, some early nectarine pox symptoms appeared to be associated with shuck constriction, and new symptoms did not appear until final swell.

During each year of the study, nectarine pox incidence was positively correlated to percent leaf nitrogen, leaf potassium and peel nitrogen. Two out of three years, nectarine pox was positively correlated to terminal shoot growth and percent peel potassium and magnesium. One out of three years, nectarine pox was positively correlated to percent leaf phosphorus and magnesium and percent peel phosphorus and negatively correlated to crop load, percent leaf boron and percent peel calcium. In the third year, an additional tissue nutritional analysis was conducted in May, and percent leaf boron was highly correlated with nectarine pox incidence.

Analyses conducted across the three years of data revealed an inverse correlation between nectarine pox, crop load and average temperature in May and positive correlations between nectarine pox incidence and percent leaf nitrogen, percent peel nitrogen and June rainfall. These data are consistent with the relationships reported in a five-year comparison conducted in West Virginia (Baugher and Miller, 1991a). Cool May temperatures inhibit uptake of boron and sometimes reduce crop load. June rainfall may cause growth spurts at a susceptible developmental stage.

Practical Suggestions for Managing Nectarine Pox

Based on studies in Pennsylvania and West Virginia orchards, nectarine producers should:

- ◆ Avoid practices that encourage excessive shoot growth (especially spurts of growth in late May/early June or before harvest)
- ◆ Utilize management tools that encourage even growth over the season (such as regularly scheduled irrigation)
- ◆ Maintain nitrogen, phosphorus, potassium and magnesium at moderate levels, and
- ◆ Maintain calcium and boron at optimum levels.

To assess most nutrient levels, leaves should be sampled in mid-July to mid-August, but boron is best assessed in May. Research and grower observations indicate that nectarine pox is similar to cork spot on apples in that it is associated with any factor that contributes to an irregular rate of fruit growth. Conditions that appear to predispose trees to nectarine pox include high nitrogen (and other macronutrients), uneven moisture and physical constriction. As with cork spot, it also is important to maintain optimum boron and calcium levels.

Special thanks to cooperating fruit producers: Ronald Slonaker, West Virginia, and Mark Rice, Jim Lott, Jim Lerew, Joe Lerew, John Lerew, and Doug Lott, Pennsylvania

Literature Cited

- Auxt Baugher, T. and S. S. Miller. 1991a. Nectarine pox: a disorder of nectarine fruit. HortScience 26:310.
Auxt Baugher, T. and S. S. Miller. 1991b. Growth suppression as a control for nectarine pox. HortScience 26:1268-1270.
Auxt Baugher, T. 2000. Factors that influence the incidence of nectarine pox. 1999-2000 Research Progress Report prepared for Rice Fruit Company.
Fogle, H. W. and M. Faust. 1975. Ultrastructure of nectarine fruit surfaces. Proc. Amer. Soc. Hort. Sci. 100:74-77.
Fogle, H. W. and M. Faust. 1976. Fruit growth and cracking in nectarines. J. Amer. Soc. Hort. Sci. 101:434-439.

New Online Tool to Connect Produce Buyers and Sellers

Dr. Jeffrey Hyde, Penn State Ag Economics/Farm Entrepreneur Extension Specialist

I am excited to announce that Penn State Cooperative Extension is partnering with several organizations to launch **Pennsylvania MarketMaker**, an online tool to connect buyers and sellers within the food industry. The tool provides access to free, in-depth marketing information to help farm and food business owners find markets for their products throughout



Pennsylvania and other participating states. It also helps those businesses who wish to buy locally-produced foods to do so. Registration and use is completely **free of charge**. The registration site is at: <http://pa.foodmarketmaker.com>.

MarketMaker Can Work For You

Pennsylvania MarketMaker will provide users with a rich source of demographic and business data to help buyers and sellers find each other. Here's what users will be able to do with Pennsylvania MarketMaker:

Access demographic profiles of target markets – MarketMaker incorporates a map-based tool to help users assess several key demographic characteristics within a state. This functionality is very useful for those targeting markets by income level, household type (children or not, for example), race/ethnicity, etc.

Locate buyers and sellers – All businesses within the food industry are eligible to be included in MarketMaker. Using a map-based tool, a seller (farmer, wholesaler, etc.) can search for some other business that may be interested in their product. This may be a retailer, processor, etc. Likewise, a buyer can seek out products that meet their needs. MarketMaker will provide a two-way street for buying and selling food products within Pennsylvania.

Connect with thousands of buyers and sellers quickly – The Buy & Sell Forum in MarketMaker makes it possible to place an ad that is immediately viewable by any site user. These often generate a lot of traffic. For example, on June 7 of this year, a farm in Texas posted that they wanted to purchase grains for cattle feed. That post was viewed almost 8,000 times within 3 weeks. Likewise, a post indicating farm-fresh eggs for sale was posted on June 23 and received over 6,400 views within 48 hours.

There are a number of online tools that farmers can use to sell products. Most of those tools are designed to provide an online presence for farmers should consumers want to find locally-produced foods. MarketMaker is different in that its main audience is not consumers, but rather other buyers in the food industry such as wholesalers, brokers, retailers, processors and restaurants. Of course, consumers may use the system and find local farm markets, farmers' markets or other venues.

Another strength is that MarketMaker serves as a fantastic market research tool. Savvy farmers and other direct marketers can learn a lot about the businesses and consumers within the target geographic region. Because all businesses may develop their own profiles, a seller can get more information than simply what might be listed in a phone book, for example. This helps the farmer (or other seller) to develop a targeted marketing program.

Beyond Pennsylvania

Pennsylvania MarketMaker is part of a growing national network of MarketMaker sites. Currently, there are 13 live MarketMaker sites with three others (including Pennsylvania's) in development. With this strength in numbers, the national MarketMaker system is being promoted to national restaurant, grocery and other retail/wholesale associations. This promotion will benefit our producers who choose to register their businesses.

It's important to note that not only can anyone in Pennsylvania find your business in MarketMaker, businesses in other states can too! Searches can be performed across the entire system, meaning that you could generate sales to several other states if you are registered in MarketMaker. Additionally, the Buy & Sell Forum is not limited to individual states. Anyone can use those tools.

Learn More

To better understand MarketMaker's functionality, you may want to visit one or more state sites. Find them at <http://national.marketmaker.uiuc.edu/>. For a demo, see: http://ny.marketmaker.uiuc.edu/content/all/tutorials/Mapping_tutorial1.html. Also, we have scheduled two web-based trainings to help users learn more about it through demonstrations. These are scheduled for **July 19 at 2:00 PM** as well as **July 29 at 10:00 AM**. You may join us at <https://breeze.psu.edu/marketmaker>. (To access the site, you will need to follow a very short process to obtain a Friends of Penn State account, allowing you to log in to the presentation.)

Register Today

Remember, registration is free of charge. (In fact, any use of MarketMaker is free of charge.) If this is something that will benefit your business, take a few minutes to register today. As a reminder, the registration site is <http://pa.foodmarketmaker.com>.

Thanks to Our Partners

Pennsylvania MarketMaker is supported by a large number of organizations within Pennsylvania. These partners believe in MarketMaker's potential to help their members and other farm/food producers in Pennsylvania. Thanks to the following for working alongside Penn State in this effort.

- ◆ Fair Food
- ◆ Farm to City
- ◆ Pennsylvania Association for Sustainable Agriculture
- ◆ Pennsylvania Department of Agriculture
- ◆ Pennsylvania Farm Bureau
- ◆ Pennsylvania Retail Farm Market Association

Plum Pox Virus Survey Report

Dr. Ruth Welliver, Pennsylvania Department of Agriculture Virologist

In 2010, we have officially entered the “monitoring and recovery” phase of our plum pox virus (PPV) survey program in Pennsylvania – survey intensity is lighter than in past years when we were working toward eradication, but we still plan to sample all commercial orchards in the Adams, Cumberland, Franklin and York County area, as well as several other key production areas in the state. Some survey is likely to continue until all nursery quarantine restrictions are lifted, and until PPV is eliminated from North America.

The Pennsylvania PPV survey teams continue activity in nursery, homeowner and orchard settings. All survey activity has been completed for Cumberland County. Crews continue survey work in Adams, Erie, Franklin, Snyder and York Counties. The laboratory is running smoothly. No RT-PCR has been done yet this season.

	For week ending 6/18	Cumulative 2010
Number of Orchard Samples Collected	5,220	25,686
Number of Orchard Blocks Completed	67	229
Number of Lab Samples Processed	4,310	21,677
Homeowner Properties Visited	256	1160
Homeowner Samples Collected	52	298

No positives have been identified.



An invitation to YGA members from your partners in Washington State....

We are all in this together and anytime we can all be in the same room, bus or field – the better. A great opportunity is right around the corner and we hope you will join us for a very important discussion: **Engineering Solutions for Specialty Crops**. This discussion will take shape in the form of interactive presentations, field trips, open mike sessions, social gatherings and an industry wide field day. Themes for this year’s workshop are *Paths to Commercialization, Electric Vehicles, and You Cannot Manage What You Cannot Measure (what data does the grower need to make informed decisions on a daily basis)*. The specialty crop research initiative (SCRI) program has significantly bolstered our joint ability to research, develop and commercialize useful technologies for the producers of horticultural crops. To that end, we will begin the workshop with an update on relevant

specialty crop research projects. These are new times and we must create opportunities for grower participation and input and we must seek out collaborations and leverage funding.

While traveling from Pasco to Wenatchee we will make 3 stops to discuss engineering solutions with local producers – stops include a blueberry operation, tree fruit nursery and wine grape vineyard. This van trip will travel through the Columbia Basin, home to 67 commercial crops including 52,000 acres of tree fruit, 13,000 acres of wine grapes, 6,000 acres of cherries and... among others, alfalfa hay, vegetable seed, potatoes, onions, tree fruit nursery and irrigated grains.

The final day of the workshop will begin with the WSU Sunrise Orchard Field Day. Demonstrations and discussion topics will include platform use and ergonomics, mechanical thinning, pest management tools, network sensors and cover crops.

The workshop is designed for ongoing interaction. Meals are communal and evening social events are meant to be fun and provide time for building relationships. Your participation would be most welcomed. The organizing committee will do whatever we can to make your time in Washington a valuable experience. Meals and bus transportation are included in the registration fee. Tara Baugher has reserved a limited number of hotel rooms, so please email tab36@psu.edu about lodging.

To register, visit www.pnwengsols.com and click on the 2010 conference tab.

Karen Lewis, Gwen Hoheisel, Qin Zhang, Jim McFerson, Clark Seavert
Washington State and Oregon State Universities, Washington Tree Fruit Research Commission

Leaf Analysis Time

Dr. Rob Crassweller, Penn State Department of Horticulture

Mid-July begins the most stable nutrient period in fruit trees. The flush of spring growth has slowed and the fruit crop load has stabilized. The time for collecting leaves for nutrient analysis runs from this period until the middle of August. Long term research at many of the Land Grant Institutions in the 1940s and 1950s determined that analysis of the leaf tissue at this time can give a snapshot of the nutritional status of an orchard. This snapshot can then be used to determine what, if any, fertilizer will be needed for the coming year. Unlike agronomic crops, the perennial nature of fruit trees means that trees can absorb nutrients from the soil whenever the conditions are favorable. There is considerable recycling of nutrients as leaves fall to the ground in the fall. Nutrients in the wood from pruning can also be recycled if they are flail chopped in the spring.

In recent years the cost of nitrogen fertilizer has literally gone through the roof. The over application of nitrogen is not only harmful to the environment but can be quite expensive. If you do not know the nitrogen status of your trees then you can run the risk of mis-applying nitrogen. Potassium is the one nutrient that is not recycled as much since much of that nutrient is removed with the harvest of the fruit. Calcium is also required in relatively large quantities. Calcium levels will influence overall fruit quality and storage life. Low calcium leads to bitter pit and/or corking and can lead to storage disorders. Therefore it pays to monitor the nutritional status of your orchards.



Sample leaves from the mid-section of current season growth, S. Miller.

Table 1-5. General indices for judging nitrogen status of fruit trees.

Index	Low N	Normal N	Excessive N
Shoot growth	Bearing: small diam. <8 inches long Nonbearing: <10 inches	Avg. 12–18 inches Avg. 18–24 inches	Avg. 18–24 inches Avg. 24–40 inches
Leaf size	Small, thin	Medium to average	Large, thick, often puckering at tip
Leaf color	Pale yellow green	Normal green	Very dark green
Fall leaf drop	Early, leaves show red in veins	Normal, leaves green to light green	Late, leaves dark green until frost
Bark color	Light brown to red brown	Gray to dark gray brown	Green gray to gray
Fruit set	Poor, heavy June drop	Normal, 1–3 fruits per cluster	Little or no effect or reduction
Fruit overcolor	Highly colored often earlier than normal	Average color	Poor color
Fruit undercolor	Yellow earlier than normal	Yellow green at maturity	Green to green yellow at harvest
Fruit maturity	Earlier than normal	Normal	5–10 days later than normal

Adapted from G. Cahoon, Fertilizing Fruit Crops (Ohio Cooperative Extension Service).

Of course, if a sample is incorrectly gathered or gathered at the wrong time it will not provide an adequate picture of the nutrient status. Samples should consist of a single cultivar from a single rootstock. Mixing cultivars and rootstocks does not provide an accurate picture of an orchard. Different cultivars respond differently to different nitrogen levels.

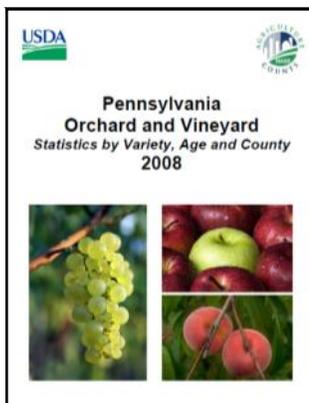
Table 1-3. Recommended leaf nitrogen levels for apple cultivars by bearing habit.

Cultivar ^a	Nonbearing	Early bearing	Mature
Paulared, McIntosh, Empire, Golden Delicious, Gala, Jonagold, Mutsu	2.4–2.6	2.0–2.4	1.8–2.1
Delicious, Fuji, Braeburn	2.4–2.6	2.2–2.4	2.2–2.25
York Imperial, Rome Beauty, Stayman	2.4–2.6	2.2–2.6	2.2–2.4

a. Fruit destined for fresh market will have better color and firmness if N levels are reduced by 0.2 percent, but high N levels are associated with maximum tonnage. Note: N levels may be lower on light-cropping trees.

Plant analysis kits can be obtained by contacting the Penn State Agricultural Analytical Services Laboratory at 814-863-0841 or on the web at <http://www.aasl.psu.edu/>. The cost per sample is \$24.00. A new feature added last year was the ability to email the results as Adobe Reader files provided a grower includes an email address. I look at all the test results and make my comments directly on the document.

Tables from the 2010-11 Tree Fruit Production Guide.



Pennsylvania Orchard and Vineyard Survey Now Available

The 2008 Pennsylvania Orchard and Vineyard Statistics Survey Report is now available at http://www.nass.usda.gov/Statistics_by_State/Pennsylvania/Publications/Orchard_and_Vineyard/2008/Final%20OV%20Release.pdf. Apple, tart cherry and nectarine acreage has remained constant since the previous survey conducted in 2002, and peach, pear and grape acreage has increased. The number of apple farms increased from 295 to 566, and apple tree density increased by 51%.

Insect Bytes

Drs. Greg Krawczyk and Larry Hull, Penn State FREC Entomologists

July Update—Intensive Monitoring will Save Time and Money

~The first generation larvae of Oriental fruit moth (OFM), codling moth (CM), tufted apple bud moth (TABM) and obliquebanded leafroller (OBLR) should be well controlled and hopefully no additional treatments will be required until later in the summer.

~ Mid-summer pests such as the green/spirea aphids, leafhoppers (potato, white apple and rose) or leafminers are the pests to watch during the month of July. If any or all of these pests are present, they can be controlled with effective application(s) of one of the neonicotinoid insecticides (i.e., Actara, Assail, Calypso or Provado).

~ Japanese beetle (JB) already started to appear in some parts of Pennsylvania. All products mentioned above should help with at least partial control of this pest. Carbaryl (Sevin) is also highly effective against JB.

~ Aerial colonies of wooly apple aphids (WAA) have become visible in some orchards. Products such as Diazinon (at 1.5-2.0 lb/acre) or Movento (still legal to use if available) should provide excellent control of WAA (or scales).

~ Phytophagous mites such as European red mite or twospotted mite are beginning to stir with the hot summer temperatures and can be controlled with a wide assortment of summer acaricides: Envidor (IRAC Group 23), Kanemite (IRAC Group 20B), Nexter (IRAC Group 21A) Portal (IRAC Group 21A) or Zeal (IRAC Group 10B). When deciding which products to use, please remember about resistance management and do not use products from the same IRAC group during two consecutive seasons.

~ Increased populations of stink bugs (mostly brown marmorated stink bug but also other SB species) were observed in some stone fruit orchards, especially in the eastern parts of Pennsylvania. To prevent injuries from this group of pests applications of broad-spectrum insecticides may be necessary. With continuous, season long pressure, a visual, vigilant scouting of orchards is the only effective method to detect the presence of this pest(s). No pheromones or attractants are currently commercially available to help with monitoring of our most common species.

~ Although apple maggot is still not one of the dominant pests in our Pennsylvania orchards and in most situations does not require rigorous insecticide treatments, intensive monitoring is required to accurately assess potential problems.

And even though there is not a single pest control recommendation that “fits all” needs, July is usually that time of the season when “knowing your enemies” (i.e., intensive monitoring) could not only save time, but also a lot of money.

Insect Pest Seasonalities

2010 season weekly capture of adult moths in pheromone traps located at Penn State FREC, Biglerville, PA (Adams County):

Species	5/06	5/13	5/20	5/27	6/03	6/10	6/17	6/24
RBLR	1	0	0	0	4	11	40	56
STLM	10	0	2	29	328	136	129	95
OFM	24	4	4	17	12	4	6	6
CM	50	18	33	87	49	42	10	5
TABM	14	18	20	20	20	9	2	1
LPTB	6	1	0	1	4	1	2	2
OBLR	-	0	0	10	7	1	0	0
DWB	-	2	5	4	6	9	11	17
PTB	-	-	0	0	0	0	0	1

Key to acronyms: RBLR - redbanded leafroller; STLM - spotted tentiform leafminer; OFM - Oriental fruit moth; CM – codling moth; TABM – tufted apple bud moth; OBLR – obliquebanded leafroller; LPTB – lesser peach tree borer; DWB – dogwood borer; PTB – peach tree borer.



G. Hamilton, Rutgers

Brown marmorated stink bug nymphs and adult on crabapple.

Insect Bytes and Disease Infection Updates go out once a week, so please check your email messages once a day for the latest information from Penn State Tree Fruit Specialists.

Insect Bytes, continued on page 7

Degree-Day Table

Accumulated degree-days base 43° F from Jan 01 for each reported year (courtesy of SkyBit, Inc.). The accumulated degree-days for the last date of the current year (July 01) mentioned in the table are based on the weather forecast.

Site/Date	5/27	6/03	6/10	6/17	6/24	7/01
Biglerville, 2010	1117	1331	1517	1729	1967	2200
Biglerville, 2009	968	1126	1290	1474	1671	1874
Biglerville, 2008	865	1021	1267	1483	1660	1873
Biglerville, 2007	942	1150	1335	1512	1708	1922
Biglerville, 2006	947	1152	1302	1455	1679	1886
Biglerville, 2005	791	930	1138	1369	1538	1782
Rock Spring, 2010	946	1139	1296	1488	1696	1889
Rock Spring, 2009	789	911	1058	1213	1388	1561
Rock Spring, 2008	665	797	1027	1219	1364	1547
Rock Spring, 2007	788	978	1134	1295	1465	1650
Rock Spring, 2006	765	953	1086	1215	1408	1583
Rock Spring, 2005	621	733	933	1136	1284	1508

Predictive Egg Hatch Models

Listed below is the present and forecasted egg hatch status for five major fruit pests in the Biglerville area based on developmental models provided by SkyBit, Inc. This insect phenology forecast is based on biofix and weather data taken at the Penn State Fruit Research and Extension Center in Biglerville. Growers are advised to use local moth capture in pheromone traps and accumulated degree-days from their own sites in order to make proper pesticide application decisions. The percentages of egg hatch for the last day (July 03) mentioned in the table are based on the weather forecast.

Species	Biofix	5/29	6/05	6/12	6/19	6/26	7/03
STLM	4/03	1	4	15	48	87	97
OEM	4/03	0	0	3	44	97	100
CM	4/30	40	76	89	0	1	4
TABM	5/02	2	27	75	97	0	0
OBLR	5/23	0	8	56	91	100	0



European red mite, courtesy D. Pfeiffer, Virginia Tech.

Peach Variety Showcase and FREC Open House



Thursday, August 26, 2010, 3:00—5:30 pm
 Penn State Fruit Research and Extension Center,
 Biglerville, PA

- ◆ Showcase of Peach Varieties Under Trial in the Mid-Atlantic Region
- ◆ Advanced Peach Rootstock Selections
- ◆ Peach Systems Trials
- ◆ Advanced Integrated Pest Management
- ◆ Engineering Solutions for Specialty Crops



Funding provided by PA Peach and Nectarine Board and USDA Specialty Crop Research Initiative. Special Guest—Jerry Frecon, Rutgers University

Orchard Meetings and Tours

Viticulture Road Show with Dr. Kevin Ker, Brock University, Ontario

Monday, July 5 – Northeast Region, contact
Bill Pencek, 570-836-3196
Wednesday, July 7 – North Central Region, contact
Bill Waltman, 814-274-8540
Thursday, July 8 – Erie Region, contact
Andy Muza, 814-825-0900
Friday, July 9 – Southwest Region, contact
Lee Young, 724-228-6881

Maryland/Pennsylvania Orchard and Farm Market Tour

Thursday, July 8 – Strite, Brown, and Flinchbaugh Orchards and Farm Markets, contact Susan Barnes, 301-432-2767, ext. 301

Pacific Northwest Engineering Solutions Workshop

July 27-29, 2010 – Interactive presentations, field trips, open mike sessions, social gatherings and an industry wide field day. Young Grower Alliance Tour planned in conjunction with this event, contact Katie Ellis, kag298@psu.edu

Peach Variety Showcase and FREC Open House

Thursday, August 26, 2010, 3:00-5:30 p.m., Penn State FREC, Biglerville, PA
Showcase of peach varieties under trial in the Mid-Atlantic region, advanced peach rootstock selections, peach systems trials and innovative peach production technologies. Contact Tara Baugher, tab36@psu.edu

Pennsylvania Growers Invited to Join Maryland Growers for Tour

The Maryland State Horticultural Society and University of Maryland Extension are co-sponsoring a tour of three progressive Pennsylvania orchards on July 8, 2010. Beginning with Strite's Orchard, the tour group will see drip irrigated vegetables on raised beds, Christmas trees for a choose-and-cut operation and an innovative market and bakery. The next stop is Brown's Orchard and Farm Market that will feature a high density U-Pick orchard, blueberries and a market offering a diverse array of farm products. The tour concludes at Flinchbaugh's Orchard where we will see a high density NRCS Conservation Innovation Grant planting, perpendicular V peaches and a new market established with the support of the Pennsylvania First Industries Program. There are two convenient bus pick-up locations – Catocin Mountain Orchard, Thurmont, MD and Walmart, Gettysburg, PA. A charge of \$40 per person includes transportation, lunch and beverages. There are only 55 spaces available, so reserve your space early by calling 301-432-2767, ext. 301.

View *Fruit Times* on the web at:

<http://fruittimes.cas.psu.edu>

Fruit Times is brought to you by Penn State College of Agriculture Faculty and Extension Educators:

Horticulture

Rob Crassweller, Pomology, rmc7@psu.edu
Jim Schupp, Horticulture, jrs42@psu.edu
Kathy Demchak, Small Fruit, efz@psu.edu
Kathy Kelley, Horticulture, kmk17@psu.edu
Rich Marini, Horticulture, rpm12@psu.edu

Entomology

Greg Krawczyk, Tree Fruit, gkx13@psu.edu (Content Editor)
Larry Hull, Tree Fruit, lah4@psu.edu

Plant Pathology

Henry Ngugi, Plant Pathology, hkn3@psu.edu
John Halbrecht, Nematology, jmh23@psu.edu

Food Science - Luke Laborde, lf5@psu.edu

Ag Economics - Jayson Harper, jharper@psu.edu;
Lynn Kime, lfk4@psu.edu

Extension Educators

Tara Baugher, Adams, tab36@psu.edu (Production Editor)
Andy Beck, Berks and Schuylkill, awb123@psu.edu
Tim Elkner, Lancaster, tee2@psu.edu
John Esslinger, Montour, cje2@psu.edu
Katie Ellis, Specialty Crop Innovations, kag298@psu.edu
Thomas Ford, Blair, tgf2@psu.edu
Thomas Murphy, Lycoming, tbm1@psu.edu
Andy Muza, Erie, ajm4@psu.edu
Eric Oesterling, Westmoreland, reo1@psu.edu
William Pencek, Wyoming, wgp1@psu.edu
Robert Pollock, Indiana, rcp3@psu.edu
Jim Remcheck, Ag Economics/Marketing, jar5006@psu.edu
Lee Young, Washington, ljs32@psu.edu



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