

Kentucky Fruit Facts

Apr-May 2011 (4-5/2011)

Fruit Facts can be found on the web at: <http://www.ca.uky.edu/fruitfacts/>

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Fruit Crop News

By John Strang, U.K. Extension Fruit Specialist

This spring has been an exceedingly difficult one in which to apply sprays, thin, and even get the tractor into the orchard. Unfortunately some orchards will be dealing with deep ruts for the rest of the season. Diseases will be prominent on all fruit crops due to the high number of infection periods. The bright



Figure 1. Winter die back injury to thornless blackberry

spot has been that the excessive rain and cloudy weather has protected us from spring frost events. Fruit set has been fairly good to excellent on most fruit crops. Growers that I have talked with have been fairly positive about their apple thinning spray effectiveness even though the temperatures have generally been too low, it has been too windy, and there have only been short stretches between rain events.

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In travels around the central portion of the state I have noted considerably more winter injury to thornless blackberries than I expected from a relatively mild winter (Figure 1). This is most likely a response to the extremely dry fall and poor winter hardiness development caused by stress. Growers should expect some collapse of canes and new growth as the weather heats up and water conduction does not keep up with plant need.

Some, but not all blueberry plantings have experienced a light bloom. I attribute this to last year's hot summer and dry conditions during flower initiation for this year's crop. Expect another year of phytophthora root rot losses due to wet soil conditions on sites that are not quite well drained.

Strawberry growers are experiencing a challenging season. Harvest is considerably earlier than last year. I have seen some excellent plantings with tremendous bloom displays that were irrigated last summer and are on well drained sites. A few plantings have been underwater and drowned out. The high rainfall has increased anthracnose problems particularly on plasticulture plantings. Severe leather rot and

botrytis fruit rot are also showing up and slugs will need to be controlled.

It looks like we have about reached the end of the plum curculio egg laying period on apples. Now growers should focus on first generation codling moth control,

The U.S. Apple Association reported that Mid-Atlantic apple growers lost \$37 million last year due to the brown marmorated stink bug (BMSB). Dr. Bessin indicates that in Kentucky based on the number of degree days required to produce a generation we will have one generation in normal summers and possibly two generations in hot summers. This pest has been found in several locations across the state particularly along interstates and the Ohio River, but is not at levels to cause the severe injury experienced on the east coast. This is a pest that growers should watch for. Brown marmorated stink bugs have two white areas on each antenna. A USDA task force is working to coordinate research efforts to control the BMSB. A preponderance of brown stink bugs were found in the state last year and these do not have white areas on their antennae.

The beneficial aspects of apples keep accumulating. Recently the Lexington HeraldLeader noted that a Los Angeles study in which older women that consumed 2/3 cup of dried apples daily for a six month period experienced a 23 percent drop in their low-density lipoprotein cholesterol (bad LDL cholesterol) and a 4 percent increase in their high-density lipoprotein cholesterol (good HDL). They also lost 3.3 pounds on average and had a decrease in C-reactive protein, which is a measure of potentially dangerous inflammation.

If you are planting to attend the Fruit Grower Orchard Meeting on May 19, don't forget to bring a sample of the water that you use for spraying to get the pH measured.

Upcoming Meetings

May 19 - Fruit Grower Orchard Meeting, Reid's Orchard, Owensboro, KY. Meeting program and directions follow. Contact John Strang Phone: 859-257-5685; email: jstrang@uky.edu

Jun. 13 Food Preservation, UK Robinson Center for Appalachian Resource Sustainability, 2011 Mountain Monday Series, RC Auditorium,

Quicksand, KY. Presentation by Martha Yount, 6:30 p.m. Contact Jackie 606-666-2428 X 285; Website: <https://www2.ca.uky.edu/rcars/>

Jun. 26 - Kentucky Vineyard Society Summer Field Day, Acres of Land Winery, 2285 Barnes Mill Rd., Richmond, KY 40475-9798 Web site: <http://www.acresoflandwinery.com/> Phone: 859-328-3000. Contact Patsy Wilson Phone: 859-257-1332; email: patsy.wilson@uky.edu

July 21 - UKREC Field Day, Princeton, KY

Sept. 9-10 - Pawpaw: Its Past, Present and Future, 3rd International Pawpaw Conference, Frankfort, KY. The Conference will be limited to 180 attendees. Registration \$175 per person, preregistration deadline is August 1, 2011. The Conference will be sponsored by the Kentucky State University Land Grant Program, the Ohio Pawpaw Growers Association and the PawPaw Foundation. The Conference will feature "Pawpaws Around the World" (a discussion of national and international pawpaw variety trials), pawpaw processing and marketing advances, as well as talks and poster sessions about pawpaw research, extension, and entrepreneurial activities. The Conference will include a "Pawpaw Culinary Extravaganza" featuring pawpaw menu items from chefs, as well as other unique Kentucky cuisine. This Conference will be a unique experience for scientists, nurserymen, entrepreneurs, and enthusiasts to share information about the production and uses of pawpaw.

In addition to presentations on pawpaw, the Conference will also offer an opportunity to taste pawpaw fruit and tour the Kentucky State University pawpaw orchards. The Conference will have a number of invited speakers; however, there will also be a poster session and show-and-tell session about pawpaw for participants

For registration information and conference updates see the website: <http://www.pawpaw.kysu.edu/3rdinternationalpawpawconference.htm> or write Dr. Kirk Pomper, Kentucky State University, 129 Atwood Research Facility, Frankfort, KY 40601, or call 502-597-6174.

Jan. 5-6, 2012 Kentucky Fruit and Vegetable Conference, Embassy Suites Hotel, 1801 Newtown Pike, Lexington, KY. Contact John Strang, 859-257-5685 office; 859-396-9311 mobile; email: jstrang@uky.edu OR Tim Coolong 859-257-3374 office; or 859-421-5973 mobile; email: tcool2@uky.edu.

Fruit Grower Orchard Meeting

Thursday, May 19

Reid's Orchard

4818 Hwy 144

Owensboro, KY 42303

Mkt. phone: 270-685-2444

Website: <http://www.reidorchard.com/>

Directions:

Upon entering the Owensboro area, take US 60 By Pass to the right (east). The By Pass ends at US 60 East. Turn right and take US 60 East to the east. After approximately one mile take KY 144 which Y's off to the right. Reid's Orchard is on the right in ½ mile. They have a new entrance.

Program:

All times CDT

- 10:00 am Registration & Tour of Reid's Orchard & Farm Market
– Billy, Katie, Brad and Valorie Reid
- 11:00 Mid-Season Fruit Diseases and Mesonet Applications
- John Hartman
- 11:30 Mid-Season Insect Management
- Ric Bessin
- 12:00 pm Lunch,
Apple Grower Round Table Discussion
- Larry Ayres, moderator,

Lunch will be available at cost for those that preregister. Preregister for lunch by calling Mary Ann Kelley at 270/365-7541 Ext. 216 between 8:00 a.m. and 4:30 p.m. CDT weekdays by Tuesday May 17 and give her a count for the Fruit Grower Meeting at Reid's Orchard.

- 1:30 pm Flooding and its Ramifications
– John Strang
- 2:00 Fruit Marketing
– Tim Woods
- 2:30 pm Fruit Tree Budding and Nut Tree Grafting
– John Strang

We will be set up for measuring spray water pH and conductivity, so bring a sample of your spray water and we will evaluate it. This will be available throughout the day.

Scab Infections Are Likely On Apple and Crabapple

By John Hartman, U.K. Extension

Plant Pathologist

Apple scab, caused by the fungus *Venturia inaequalis*, is the most common and destructive disease of Kentucky apples. Apple scab affects several different hosts including: apples and flowering crabapples (*Malus* spp.), hawthorn (*Crataegus* spp.), mountain ash (*Sorbus* spp.), firethorn (*Pyracantha* spp.), and loquat (*Eriobotrya japonica*).

Pear (*Pyrus* spp.) is infected by a related fungus, *Venturia pirina*, which causes nearly identical symptoms.

Infections occur on leaves, fruits, and blossoms and

first appear as velvety brown to olive colored spore-filled lesions that turn black with age (Figure 2).

Infected apple leaves eventually turn yellow and drop

(Figure 3). Fruit scab lesions develop a corky appearance (Figure 4).

Overwintering apple leaves provide the spores that initiate primary infections on new growth in early spring. For newly emerging leaves to become infected, spores on the leaf surface must

be bathed in a film of moisture produced by rain or dew

for enough time as is necessary for the spores to germinate and penetrate the leaf. The length of time needed depends on the temperature.

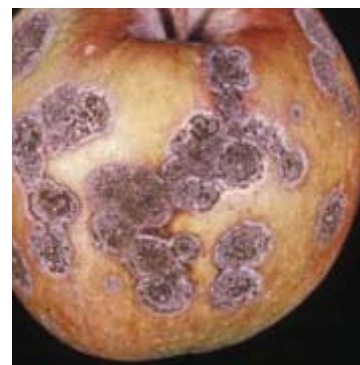
Figure 4. Fruit scab



Figure 2. New scab lesions on flowering crabapple leaves. Note that lesions are often positioned along the veins where leaves remain wet for the longest time.



Figure 3. Scab-infected apple



The temperature and leaf wetness relationship to heavy infection levels is presented in the following table, sometimes referred to as Mills table.

Approximate minimum number of hours of leaf wetting required for a heavy apple scab infection at various temperatures (Mills table, modified).

Average temperature (F)	Leaf wetness hours	Lesions visible (days)
78	26	-
63-75	18	9
60	20	11
57	22	13
54	24	14
51	27	16
48	30	17
45	41	17
42	60	17

In April 2011, there were several prolonged leaf wetness events. Using data collected from mesonet weather stations located in almost half of Kentucky's counties, heavy scab infection likely occurred on susceptible unsprayed trees at least once and in some locations, up to three times during the period of April 8-18. The wettest periods appeared to be April 9-10, April 11-13, and April 15-17. Although temperatures were mainly in the 50's leaf wetness duration often continued for well over 24 hours. Leaf wetness duration estimated times of 27, 30, 32, or even 41 hours were found at some locations. Scab threats during this time were highest throughout eastern Kentucky and gradually diminished at weather stations farther west.

After primary infections occur in early spring, scab lesions develop and conidia are produced in the lesions, providing secondary inoculum for continued infections of new leaves. Leaf wetness and temperature relationships for secondary scab infection are similar to the primary infection values presented in Mills table. Scab lesions appeared (source of secondary inoculum) on susceptible and unsprayed apples and crabapples about April 21 or 22.

Fruit Disease Forecasting Using Kentucky Mesonet Weather Data

By Paul Vincelli, Extension Plant Pathologist

John Hartman, Extension Plant Pathologist

Tom Priddy, Extension Agricultural Meteorologist

John Strang, Extension Horticulturalist

For a number of years, the University of Kentucky's Agricultural Weather Center has offered weather-based disease prediction models for the benefit of apple and grape producers in making disease management decisions. Until this year, predictions of disease models for fruit crops have been based on weather data available from fifteen National Weather Service (NWS) stations located throughout Kentucky. However, disease predictions that have a greater geographic "reach" throughout the commonwealth are now possible. This is because of the growth in recent years of Kentucky's Mesonet Weather System.

The Kentucky mesonet is a research grade network of automated weather and climate monitoring stations being developed by the Kentucky Climate Center at Western Kentucky University (<http://www.kymesonet.org/>). The Kentucky mesonet currently includes 56 weather stations, with more expected as funding permits. If we base fruit disease predictions on mesonet-based data instead of NWS data, we can use all 56 mesonet weather stations to feed into the models. Using the data in all these mesonet stations should result in improved disease prediction for fruit producers, since there are more likely to be nearby weather stations in the mesonet network than the NWS network.

However, before switching our disease predictions to mesonet-based data, we wanted some assurance that the weather data feeding into the models would be similar between the two systems. We conducted a series of analyses, but we'll only present two here for the sake of brevity. In both cases, we focused our analyses on estimating the duration of leaf wetness periods, for the following reasons:

1. Wetness of surfaces of leaves, flowers, and fruit is essential for infection by many plant pathogenic fungi and bacteria. Many, many disease models for crops all over the world are based in some way on estimating leaf wetness duration, including the models we make available to apple and grape growers through the UK Cooperative Extension Service.

2. Estimating leaf wetness duration is notoriously difficult and imprecise, much more difficult than measuring air temperature or rainfall.

For our analysis, we gathered weather data for the period 8 Apr to 2 Oct 2010 at UK's Research and Extension Center at Princeton. We used data collected by three weather stations at the same site: the NWS station, the mesonet station, and a Spectrum Technologies WatchDog weather station. (Periodically, during the past dozen years, three WatchDog units--located in Quicksand, Lexington, and Princeton--have provided weather data used to generate fruit disease forecasts issued by Dr. Hartman.) Results of the two analyses selected for inclusion in this article are shown in Figures 8-9.

In Figure 1, it is clear that estimates of leaf wetness using Mesonet data correlate to those obtained using the NWS station. Variance is clearly present in those estimations, and in some instances the difference in estimated duration of leaf wetness is substantial. However, there is no evidence of a significant systematic bias in the estimation of leaf wetness between those data sources.

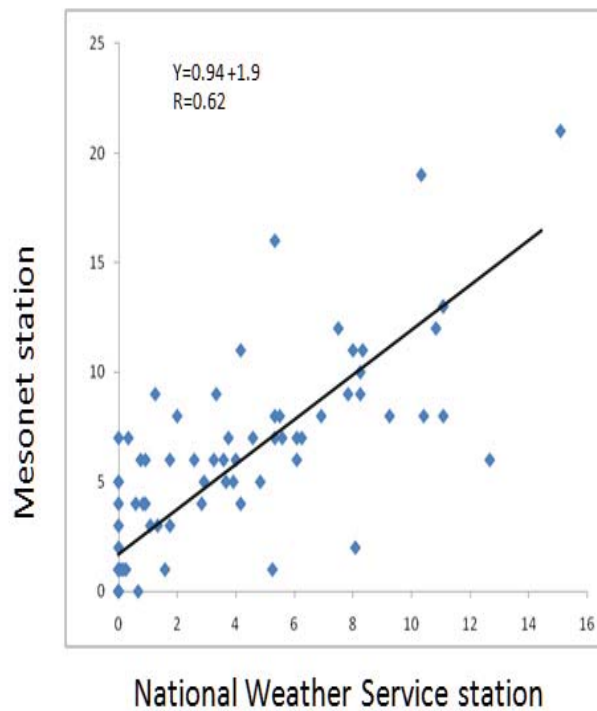


Figure 1. Comparison of estimates of leaf wetness duration obtained using data from two nearby weather stations. These estimates were calculated based on an algorithm employed by the UK Ag Weather Center.

In Figure 2, one can see that leaf wetness estimates correlated well between the two data sources used in this analysis. The mesonet data showed a slight tendency to underestimate periods

of leaf wetness at values, especially below 5 hr of leaf wetness, but this difference was not large and probably wouldn't be epidemiologically significant for most disease outbreaks.

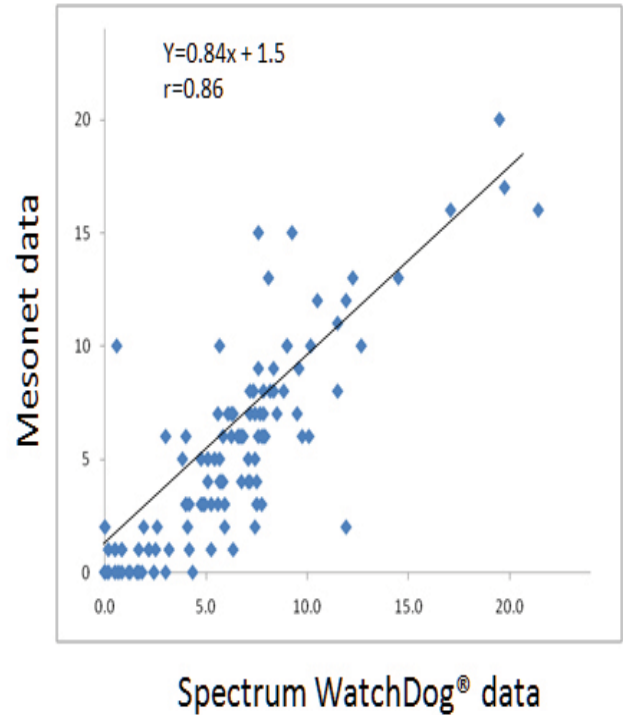


Figure 2. Comparison of estimates of leaf wetness duration obtained using Mesonet data and a Spectrum WatchDog unit. These were calculated using similar algorithms (although the algorithm used on mesonet data included wind speed, data which were not available in the WatchDog unit).

Conclusion

The growth of the Kentucky mesonet network provides a more comprehensive weather network for prediction of crop diseases than has been previously available. Our analyses suggest that disease forecasts based on these data should be useful to fruit producers. Given the increasing coverage of the mesonet network (with currently 56 stations statewide), we expect that the mesonet system will provide more local, fine-scale resolution than can be obtained with either Spectrum WatchDog units located on UK research stations or NWS weather stations (which currently number 15 statewide). Disease models incorporating mesonet data are available <http://www.wagwx.ca.uky.edu/kymesonet2.html>.

KyFarmStart: Kentucky's Beginning Farmer Program

By Lee Meyer, Ani Katchova, Jennifer Hunter, U. K. Agricultural Economics

Kentucky's beginning farmer program started with a lot of attention when it was funded by the USDA in the fall of 2009 under its Beginning Farmer and Rancher Development program. The program, a joint effort of the UK College of Agriculture and Kentucky State University, was designed to provide a basic foundation of production, marketing, management and networking skills to help beginning farmers succeed.

The broad base of publicity received by the project attracted new clientele to extension offices. Beginning farmers, perhaps because they didn't have agricultural traditions, often knew little about the Cooperative Extension Service. So, an unintended benefit of the project was to bring new clientele to extension.

In the first project year, starting in early 2010, agents from 19 counties organized four groups. One in the Green River Area (Henderson/Davies and surrounding counties), the second in the Lake Cumberland area, the third with six counties centered on Mercer Co./Ky River area and the fourth group included Scott, Harrison and Bourbon Counties. There were about 120 farmers in the four groups.

Our program includes extensive, outcomes-based evaluation. We are using the evaluation findings to help us improve the project and in our reporting to the USDA. Prior to participating in KyFarmStart, 30% of participants were not involved in their farm business, 27% were somewhat involved, 15% rated themselves as involved and 20% were very involved. However, after participating in the program the percentage of participants not involved in their farming operation decreased to 6%, the percentage of participants somewhat involved remained constant at 27%, the percentage of people involved doubled to 30% while the percentage of participants very involved in their farming operation increased to 36%.

Here are some other interesting results from the program:

□ The KyFarmStart Program met the expectations of 97% of participants with the other 3% remaining neutral.

□ The average KyFarmStart participant had a farming operation with 94 acres and 7 years experience.

□ Limited resource farmers with gross farm sales not exceeding \$150,000 and a household income of less than \$25,000 represented 12% of survey respondents.

□ Thirty-nine percent of respondents are female.

□ Among the KyFarmStart participants 6% have received some high school education, 9% expressed high school graduate as their education level, 27% pursued some college education and 55% are college graduates.

□ Fifty-five percent of KyFarmStart participants define themselves as part-time, while 33% work full-time on their farming operation.

The program design is being improved to better meet the needs of the participants. The goal of finishing the program with a farm plan is being emphasized. This is being done by introducing whole farm planning early in the program, including farm goals, mission statements, and enterprise selection. After a session on soils, the program emphasizes production practices, typically enterprises of particular interest to each group.

Mentoring is being stressed, but we are working to find the most effective model. About half of the program participants asked us to help identify mentors. The Kentucky Cattlemen's Association and Kentucky Women in Ag have been helping. One model which the Harrison/Scott/Bourbon counties group is using is a group model, with visits to the home farm of the leading farmer/mentor in each of three specialty areas (row crops, livestock, commercial horticulture).

Currently, there are four active groups with two more planning to start in the fall. The first to start in this cycle were Mammoth Cave west and Boyd/Lawrence Counties. A group serving the refugee community in Louisville is focusing on urban gardening. Wilderness Trail is just beginning. Anyone with an interest in participating or agents interested in starting a group may check out the project website: <http://www.ca.uky.edu/kyfarmstart/> which also has online resources.

Fertilizer Price Update

By Greg Halich, U.K. Farm Management Economics

Fertilizer is the single biggest input cost for grain farmers and one of the largest for livestock farmers. There has been unprecedented volatility in fertilizer prices during the last few years. In late 2008 / early 2009, retail prices hit all time highs. Prices then dropped dramatically in late 2009 and early 2010. However, retail prices have increased substantially since mid-summer and early fall 2010. The following are estimated increases in retail prices:

DAP - increased over \$150/ton since July
 Anhydrous - increased over \$200/ton since July
 Potash - increased almost \$100/ton since September

An important question that many producers have been asking is where are fertilizer prices headed, espe-

cially when they are ready to plant this spring? Since there are no futures markets for fertilizer products, it is hard for the market to answer this question far in advance. We can however, look at wholesale prices to help answer this question. Wholesale prices are quoted at port entry, and normally take weeks before these products make it to the retail level. Thus retail price trends tend to lag wholesale prices for fertilizer to some degree.

Wholesale fertilizer prices for the various products have leveled off in the last 1-2 months. Given this, we would expect retail prices to finally be leveling off and it does appear that retail prices have stabilized in the last few weeks. Table 1 and Table 2 show fertilizer prices in the Midwest. Table 1 shows prices for Iowa, Indiana, Illinois, and Ohio (fairly representative of Kentucky) using a subset of a weekly survey conducted by DTN Online. Table 2 shows Illinois prices surveyed by the USDA. Both are highly consistent and provide useful information on fertilizer price trends.

Table 1
Fertilizer Prices from Midwest Retailers (Per Ton)
January 12, 2011

	POTASH	UREA	MAP	DAP	ANHYD	10-34-0	UAN32	UAN28	
	Per Ton								
Max	\$600	\$595	\$735	\$708	\$825	\$650	\$411	\$385	
Median	\$568	\$488	\$690	\$665	\$740	\$620	\$411	\$351	
Min	\$480	\$460	\$675	\$610	\$650	\$585	\$245	\$320	
	Per Unit								
Max	\$0.50	\$0.65	\$0.61	\$0.59	\$0.50	\$0.82	\$0.64	\$0.69	
Median	\$0.47	\$0.53	\$0.57	\$0.55	\$0.45	\$0.78	\$0.64	\$0.63	
Min	\$0.40	\$0.50	\$0.55	\$0.49	\$0.40	\$0.73	\$0.38	\$0.57	

Raw Data Source: DTN weekly summary of Midwestern fertilizer prices with a selected subset for Iowa, Indiana, Illinois, and Ohio (most representative of Kentucky). N subtracted out of MAP and DAP assuming Median Anhydrous Prices.

Table 2 Illinois Production Cost Report (Bi-weekly) USDA-IL Dept of Ag Market News 1-20-11

Product	Range	Average	Change
Anhydrous Ammonia	\$770-810	\$780	Up \$2
Urea 46-0-0	\$475-525	\$491	-
Liquid Nitrogen	\$315-350	\$338	Up \$2
DAP	\$640-710	\$670	Down \$2
MAP	\$685-730	\$708	Up \$7
Potash	\$535-598	\$567	Up \$1
Farm Diesel (per gal)	\$2.91-3.15	\$3.03	-

Note: Production costs items state wide, cash prices bulk, FOB distributor, per ton unless otherwise stated.

Average retail prices are roughly: \$760/ton for anhydrous; \$490/ton for urea; \$670/ton for DAP; \$570/ton for potash. More importantly, these prices are largely unchanged from the previous surveys in both cases (see the “Change” column for the USDA survey). So it appears, at least for the moment, that retail fertilizer prices have finally leveled off. This does not mean that these prices will remain constant. Much could happen in the fertilizer market in the next few months. Of special concern are the historically high commodity prices for corn, soybeans, and wheat coming into the planting season. If these prices continue, expect grain farmers to use more fertilizer this spring, especially nitrogen for corn and spring wheat (unless farmers believe in a linear-plateau production response). This of course will increase demand for these products and increase price.

Walnut Bunch Disease

by John Hartman (U.K. Extension Plant Pathologist) and John Strang (U.K. Extension Horticulturist)

Bunchy shoots (witches brooms) with proliferating and deformed branches, twigs and leaves were observed on a 12-year-old ‘Frank’ heartnut. ‘Heartnut’ is a variety of Japanese walnut *Juglans ailanthifolia* var. *cordiformis*, grown by commercial nut producers and hobbyists in Kentucky. Heartnut fruits are consumed for their good taste and health benefits and they are said to be high in antioxidants, fiber, and protein. Heartnut shells, when split open are heart-shaped (Figure 1).



Figure 1. Japanese walnut, note the heart-shaped nuts meats.



Figure 2. Japanese walnut tree with walnut bunch-infected shoots. Witches brooms are present in the top middle and top right of the tree.

Symptoms. Mature infected Japanese walnut trees may at first produce brooms on scattered limbs (Figure 2), but the disease can spread throughout the tree. Small trees may be completely consumed



Figure 3. Walnut bunch disease with smaller leaves, shoot proliferation, and abnormal growth compared to normal foliage, lower left and right.

by the disease. Leaflets in brooms are smaller than normal (Figure 3) and are abnormally narrow, curled, or cupped and often chlorotic (Figure 4). Fruits fall from diseased trees prematurely or nuts fail to fill out and have shriveled and blackened kernels. Leaves on infected shoots often senesce



Figure 4. Chlorotic, deformed, and cupped Japanese walnut leaves infected with walnut bunch disease.

earlier in the fall (figure 5). Infected black walnuts often show no symptoms, but may grow more slowly.

Cause. Bunch disease of walnut is caused by a phytoplasma. A phytoplasma is an insect-transmitted organism similar to a bacterium, lacking a cell wall and typically inhabiting plant phloem cells. The walnut phytoplasma strain is related to the Prunus X-disease pathogen. Black walnut, *J. nigra*, is susceptible to walnut bunch, but is very tolerant to infections and suffers little damage. Japanese walnut, *J. ailanthifolia*, is also susceptible, but is intolerant to infection and infected trees can be severely damaged.

Nut growers who observe this disease in Heartnut will want to prune out infected limbs at the first opportunity. If the disease is widespread in the tree, complete removal may be needed. The insect vectors for walnut bunch are unknown.



Figure 5. Early fall senescence of walnut bunch disease infected leaves.

Monsanto's New Gambit: Fruits and Veggies

At the store this morning, you finally ditched the old “thump test” and picked out a perfectly ripe melon based on color alone. The broccoli in your fridge will supercharge the level of antioxidants your body produces, helping repel disease. And now, you’re tearlessly chopping away at an onion while making your famous chili. Fantasyland?

Not for long, according to Saint Louis based agri-business giant Monsanto, which is throwing its considerable weight behind developing new varieties of produce with added benefits for consumers. “We’re definitely at the first wave,” said David Stark, a vice president at Monsanto who oversees the company’s push into the checkout aisle.

With a catalog of seeds that now spans 4,000 vegetable and fruit varieties across 20 species, Monsanto researchers and executives said the potential to replicate desired traits goes well beyond what it could do in the past. The tearless EverMild onion and SweetPeak melon that turns light orange when it’s ripe are just the opening acts. Tim Lloyd, <http://harvestpublicmedia.org>

Receiving Fruit Facts Electronically on the Internet

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New subscription requests and requests to unsubscribe should be addressed as follows.

To subscribe type "ListServer,l-s-v" in the To: line of your e-mail message.

Please enter a subject in the Subject: line -- the system needs for the Subject line not to be empty (blank).

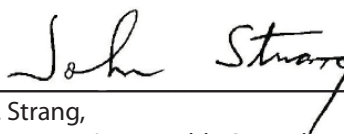
In the message body, enter the following two lines (nothing more!):

subscribe KY-FRUITFACTS

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unsubscribe KY-FRUITFACTS

You should receive confirmation by return e-mail. If you have a problem, or if you wish to communicate with a person about "fruitfacts", the owner's address (the To: line of the message) is: owner-ky-fruitfacts@lsv.uky.edu



John G. Strang,
Extension Fruit & Vegetable Specialist