PURDUE UNIVERSITY
PURDUE EXTENSION
FACTS FOR Fancy Fruit
Issue: 16-12
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Crop Conditions

(Peter M Hirst, hirst@purdue.edu, (765) 494-1323) & (Bruce Bordelon, bordelon@purdue.edu, (765) 494-8212)

Chambourcin near harvest

Pixie Crunch harvesting winding down

Primocane fruiting blackberry harvest continues

End of season thoughts on rots

(Janna L Beckerman, jbeckerm@purdue.edu, (765) 494-4628)

Fig. 3 Black rot cankers happily producing millions of spores.

Fig. 1 Fruitlet mummies left over from thinning provide an excellent reservoir for pathogens to infect developing fruit

Fig. 2 Brown marmorated stink bug found in association with a lot of rot. Correlation or Causality?

"During the past few years considerable complaint has been made in this state of the loss of apples through rotting." George P. Clinton, 1902.

It's been quite a season for rot. High temperatures, coupled with regular rains created a perfect storm of summer rots. If you were one of the orchards with problems, you need to start thinking about what you are going to do differently next year.

Black Rot: One square inch of cankered wood can produce over two million spores. 2,000,000! No protective or thorough spray can compensate for poor sanitation practices! These cankers appear on dying wood (2016 fire blight infections, opportunistic infection due to wind damage, or herbicide injury). Another great source of inoculum are windfalls, and mummies—even little mummies of thinned fruit! Black rot inoculum can be found on buds as early as October(!), just waiting for next spring. With the primary source of inoculum for bud infestation already in the tree, good sanitation is essential for effective management for next year.

White Rot: One of the worst outbreaks ever described on apples occurred in southern Indiana, in 1951. White rot seems to be of increasing importance in the last few years. Wounding plays a major role in this disease, although infection through lenticels may also be an issue. Temperature plays a role as well, with higher incidence of disease when temps exceed 85 degrees F. Most reports have been on Honeycrisp; other cultivars reported to be experiencing upticks in white rot include Blondee and Pristine. I am curious if brown marmorated stinkbug might be exacerbating the white rot incidence, or if this year's outbreak is due to the weather alone.

Bitter Rot: Historically, this was thought to be a southern disease of apples. Changes in climate has increased both the incidence and the severity of this disease in Indiana. The bitter rot fungus can also infect leaves and cause cankers on the tree; the fungus survives the winter in dead wood and in mummified fruit that hangs on the tree. There are no estimates as to how many spores can be found in an inch of wood. My onageristic estimate is millions to billions.

To manage all the summer rots in your orchard, remove windfalls, remove old fire blight cankers and all dead wood from your orchard. This needs to be disposed of, burned, or at the very least, flail-mowed into oblivion (or less than 1.25" long). More important (and just as difficult) is removing apple mummies from the tree from the previous season. The infected limbs, branches and twigs, along with the mummies serve as a primary inoculum source to start this cycle all over again next year, if environmental conditions are conducive. All of these rots are best managed by applying mancozeb with the early sprays until the last possible time permitted by pre-harvest intervals; after, Keith Yoder demonstrated excellent rot control using ziram 76DF+captan80WDG at 3lbs+30 oz . Apply fungicides as needed, which may be more often if rains are frequent, or exceed more than 2". The fungicides Pristine, Merivon, and Luna Sensation (all

are FRAC Groups 7 + 11) are excellent for controlling bitter rot and offer protection against black and white rot. To reduce the risk of resistance, alternating a fungicide with another FRAC Group is encouraged, namely captan or ziram. Summer fungicide applications should not be extended beyond 14-day intervals. This is a disease that must be controlled in the field; postharvest fungicides will not prevent or delay rot from infections that occurred in the field.

It's important to recognize that there are certain things that we can't control, like heavy rains and heat stress. By focusing on what you can (timely fungicide applications, good sanitation, good tree architecture to allow good fungicide coverage) you can reduce disease incidence, even when environmental conditions are conducive to summer rots. Working on proper sanitation and pruning to open the canopy over the winter months will reduce inoculum, improve coverage and most importantly, provide better quality and yields for next year's harvest.

Pixy Crunch apple

(Peter M Hirst, hirst@purdue.edu, (765) 494-1323)

We have just finished harvesting Pixie crunch from our plantings at the Purdue Meigs farm and the more I see this apple, the more I like it.

Although we think of this as a relatively new apple, the original cross was made 45 years ago at Rutgers University and it was selected from a planting in West Lafayette, Indiana. Before being named Pixie Crunch, it was tested as Co-op 33. It resulted from a cross of two numbered apple selections but has both Golden Delicious and Rome in it's pedigree.

The Pixie Crunch tree is spreading and precocious. Our three year-old trees at the Meigs farm had about 80 apples per tree this year (Fig 1).

Fig. 1

Fruit size is just a little smaller than Gala and fruit finish is a dark red blush over a yellow background (Fig 2). With open trees, most fruit will have over 75% color.

Fig. 2

What stands out most about Pixy Crunch is its eating quality. Fruit are very crisp (close to Honeycrisp crispness) and stay crisp on the tree over a long period. Fruit drop is not usually a problem. These factors give Pixie Crunch a very wide harvest window, at least 3 weeks with fruit still in very good condition on the tree. Because of this, and the very good eating quality, Pixy Crunch is a no-brainer for retail farm markets, although fruit may be too small for the wholesale market.

Upcoming Events

(Peter M Hirst, hirst@purdue.edu, (765) 494-1323) & *(Bruce Bordelon, bordelon@purdue.edu, (765) 494-8212)*

Purdue Wine Grape Team Fall Workshop, October 6, 2016 9 am to 4 pm

Dear Indiana Wine Friends,
There is still time to register for our **Fall Workshop** on **Thursday, October 6** at Purdue University. This year's Fall Workshop is designed for novice and seasoned wine growers and makers alike, and will provide an update on the most proficient production practices in the vineyard and winery. We will discuss topics ranging from sustainable post-harvest vineyard management to economical wine stabilization and aging practices. Participants will stop by the team's pilot winery to discuss winemaking equipment, visit the enology lab to review must and wine analyses, and tour our research vineyard. You should plan to arrive at the Purdue Meigs Farm at 9:00am EST for registration, coffee and donuts. A shuttle bus will provide round-trip transportation from Meigs to the West Lafayette Purdue campus. Lunch will be provided. Dress casual and bring a bottle of wine to share. **Registration Form**

Indiana Horticultural Congress at the NEW LOCATION January 10-12, 2017
Indianapolis Marriott East Hotel, 7202 East 21st Street, Indianapolis, IN 46219.

> Home

Message from Amanda Deering, Clinical Assistant Professor
Request for Assistance with FSMA Needs Assessment
I am Amanda Deering, the Indiana Leader for the North Central Region Center for Food Safety Modernization Act (FSMA) Training, Extension and Technical Assistance. As the state leader, I am responsible for identifying and notifying partner organizations, businesses, and agencies in our state that can assist with communicating and disseminating information about FSMA to fruit and vegetable producers. We are not requesting your mailing list, but rather would appreciate if you would assist us in sending an email to your clients or members with a link to a brief survey. This survey is anonymous and the information gathered will help us identify and meet their educational needs with regards to compliance with FSMA. For more information on NCR FSMA, go to our website: https://ncrfsma.org

To save time, below is an email that you can cut and paste or modify to send to your clients or members requesting their participation in the survey. Feel free to attach the NCR FSMA statement graphic in this email.

[YOUR ORGANIZATION OR BUSINESS HERE] has been asked by the newly developed North Central Regional Center for Food Safety Modernization Act (FSMA) Training, Extension and Technical Assistance to introduce you to the Center and request that you complete a brief, anonymous survey. The survey will take about 15 minutes to complete and will help you determine if you will be required to comply with the FSMA Produce Rules. It will also help the Center determine fruit and vegetable producers' level of knowledge on food safety and determine their top educational needs in our region. The survey can be found at http://qeasttrial.co1.qualtrics.com/jfe/form/SV_8FWKOX9AYADrWqF.

They recognize your time is valuable so as a token of appreciation, they will hold a drawing and award three participants a $50 gift card. Note entry in the drawing will require that you provide your name and contact information in another link found at the end of the survey. It is NOT tied to your survey responses.

The deadline for completing the survey is September 30, 2016. For more information on NCR FSMA and additional food safety news and resources, go to the Center's website at **https://ncrfsma.org.**
Thank you for partnering with us on this important issue.

Fruit Growers Meeting, November 4, 2016
Purdue Extension-Lake County Office, 880 East 99th

Court, Suite A, Crown Point, Indiana 46307.
Make reservations by calling the Purdue Extension-Lake County at 219-755-3240 or go online to **http://tinyurl.com/2016FruitMeeting**
Reservations are due by Friday, October 28 as space is limited!

Agenda: 12:30 – 1:00 Registration

1:00 – 1:45 Weed Management Strategies for Grapes and Berries by Dr. Bruce Bordelon, Purdue Small Fruits Specialist
1:45 – 2:30 Managing Spotted Winged Drosophila & Other Insects by Rick Foster, Purdue Entomology Specialist
2:30 – 3:15 Managing Diseases with Your Apples, Grapes, and Peaches by Janna Beckerman, Purdue Plant Pathology Specialist
3:15 – 4:00 Are You Measuring Chemicals Right? & Drift Watch: Bee Safety by Nikky Witkowski, Purdue Extension Educator
4:00 Adjourn

Producers whose Private Pesticide Applicator Permit expires in 2016 – 2020 can receive credit by attending the half-day program and paying the $10 fee toward re-certification. **Please remember to bring your private applicator card and photo ID for registration.**

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