



PAWPAW PICKIN'S



State Chapter:
Ohio Pawpaw Growers
Association

Contact the pawpaw discussion group:
<http://groups.yahoo.com/group/Ohiopawpaw>

NAPGA Facebook page:
<http://www.facebook.com/NorthAmericanPawpawGrowers>

Fall 2015

Volume 15, Issue 2

President's Patch by *Ron*

This is to be the spring issue of 2016. Fusarium, Part 2, will be in a later issue due to the length of the article. Be sure to send me your pictures and comments. I do enjoy hearing from you.

We are looking for a new web master to redesign our web site and keep it updated. My daughter is no longer able to work on the web site. She has a new baby. There was some discussion as to dropping the web site and using Face Book. This may be a viable option because of the flexibility of adding new material to the Face Book Page.



Hosted by the
Judd's

MD's first Annual
Pawpaw Festival.

LONG CREEK HOME-
STEAD / FREDERICK,
MD

SEPTEMBER 17TH, 1-5 PM

Tastings / Ice Cream Making

Orchard Tours / Local Arts & Wares / Kids Games & Activities

Paw Paws & Other Selected Fruits

Fall Fun For ALL AGES!

www.ecologiaDESIGN.com



Join Us for Ohio's Favorite Festival!
The 18th Ohio Pawpaw Festival, September 16-17-18, 2016. Lake Snowden, Albany, OHIO.

Friday 4 pm—12 am
Sat. 10 am—12 am
Sun. 10 am—5 pm

Ohiopawpawfest.com

NAPGA & OPGA past newsletters are archived at
Ohio State University, Piketon, Ohio

<http://southcenters.osu.edu/horticulture/publications/newsletters/Ohio-pawpaw-growers-association-newsletters>

Mission Statement

NAPGA

is an organization of pawpaw enthusiasts, backyard and commercial pawpaw growers, small and large, dedicated to promoting the superior traits of the pawpaw plant and fruit, developing a pawpaw industry and marketing plan, preserving and studying the wild pawpaw genetics.

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Please check with Ron (Botrytis@fuse.net) regarding your membership status.

Pawpaw Peduncle Borer: Feeding on More than the Peduncle!

by

Ron Powell and Neal Peterson

There was a time when the Pawpaw Peduncle Borer (*Talponia plummeriana*) life cycle was thought to be much simpler and could primarily be found only in the peduncle of the flower. The peduncle is the stalk of a solitary flower or of an inflorescence. Recently the larvae have been found more frequently feeding on the roots, stem and fruit. The borer may have always been feeding but the feeding is becoming more evident to us.

In April, concurrent with the blooming of *Asimina triloba*, the adults of *T. plummeriana* emerge (first generation) from their cocoons inside the twigs and stems (last year's growth), where they have overwintered. The adult moths do not have



chewing mouth parts but that is not an impediment to them for their escape from the twigs. The larvae prior to pupating have eaten the xylem and phloem right up to the level of the external "parchment" bark. There is a little circular escape hatch with a tiny excision along the lower edge of the circle in the shape of a small, almost invisible crescent. The adult moth merely pushes forcefully



against this little hatch and the hatch hinges up and allows the adult moth to exit. I have been told that this escape hatch is always next to a bud. The adults mate and the female flies away looking for flowers of pawpaw. The larvae also feed on the roots of small seedlings and feed up the stem. They emerge in April/May and their pupal cases can be seen on the stem.

The female pawpaw peduncle borer lays the eggs on the receptacle of anthers during the "hard" ball of undeveloped anthers in the female flower stage. The receptacle is that portion of the pedicel upon which the flower parts are borne.



The little voracious larvae hatch and devour the nutritious tissue of the anthers and eat their way down the peduncle, and then down the twigs into the larger diameter twigs. Their feeding becomes evident when the stem is used for scion wood. The larvae feed on the pith of the stem.



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Pawpaw Peduncle Borer: Feeding on More than the Peduncle! Cont.

Neal Peterson states that he has not seen the summer (second) generation adults emerge but is sure that they complete their life cycle just like the spring brood. The scion wood and the pruned branches done in February may be infected with *T. plummeriana*. "I find the cocoons; I find the pupae; I find the channels of black frass which I can trace upwards, up the branches and twigs. When I traced the channels of frass, I found that it always led to a petiole scar, and when I examined the surface of the petiole scar closely I saw a small tiny white hole where a vascular bundle should be. The *Talponia* egg was laid on the midrib (the underside, I am sure) of the leaf and the small larvae ate its way downward into the twig, and then down, down, down."



The borer also feeds on the pawpaw fruit. Feeding on the fruit would lead us to believe that this insect has at least three generations. Not much is known about the life cycles of *T. plummeriana*. Most of what we know about the third generation is from observations. The borer feeds on and around the seed and leaves a black frass trail where it has been feeding, usually outside the pulp sac. A small exit hole and sometimes a brown pupa case can be observed where the borer has exited as an adult. We still do not know when the fruit becomes infected.



A moderate death of the flowers is not an injury to fruit production since the fruit should be thinned anyway. The injury to the twigs is more of a concern because the distribution of scion wood across the United States and around the world may be unwillingly spreading *T. plummeriana* to areas of the world where no predators of *Talponia* are known to exist. However most scions are less than 12 inches long, which means the frass tunnel is lower in the stem. In any case, all scions should be closely inspected for possible *Talponia*. I have observed that 1 to 2 percent of the fruit harvested at our farm is infested with *T. plummeriana* but the level of infestation doesn't appear to be increasing.

Resources:

- (1) Personal communications with Neal Peterson. Email correspondence 2010, 2016, and personal communication 2016.
- (2) Gilligan, Todd M., Wright, Donald J., and Gibson, Loran D. "Olethreutine Moths of the Midwestern United States." *Bulletin of the Ohio Biological Survey*, May 2008, Vol. XVI, No. 2, page 172.
- (3) Harris, James G. and Harris, Melinda Woolf. "Plant Identification Terminology." Spring Lake Publishing, 1994.
- (4) Pictures were provided by Kentucky State University, Neal Peterson, Colleen Anderson, Cliff England, and Ron Powell

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The Big Ones

by Terry Powell

Eventually we pawpaw hunters and growers stumble upon a prize—a really huge pawpaw, or a cluster of several nice sized fruits growing tightly together in a bunch, reminiscent of the growth habit of bananas. The largest cluster I have ever encountered had 9 fruits and each was about 12 oz. It is really more common than not for the fruit to grow this way since pawpaw is considered a berry. Clusters present a challenge though. Not all the fruits in the cluster ripen at the same time. Sometimes when we remove one fruit, one or more are inadvertently knocked off. If they are unripe, they will be useless. Some of us like to visit a large fruit or cluster daily to check on the ripening progress. So do the animals! It is disappointing to find that overnight the prize pawpaw has been sampled, or several from a nice cluster have been knocked off or eaten.

I have discovered a simple way to protect fruit and clusters. Collect some soft mesh produce bags that

large safety pins. Don't get these at dollar store but a sewing store. Simply wrap the bag around the cluster and pin over the top of the branch with several safety pins. Don't leave an opening for paws. You will still need to check it daily but any fruit which falls from the branch will be safely contained in the bag. Just remove it and re-pin the bag. Animals outsmarted!



contained potatoes or apples (not the stiff plastic kind). The red colored bags are easier to see in the tree. Leave the tab on the bag because you can use the blank side to write the name of the cultivar if desired. If you need a larger bag for a monster cluster, you can get a nylon mesh bag (used for washing lingerie) at a dollar store. Get a package of good quality



Greg Hoertt and Tony Russell replanting a NA pawpaw at Gwynne Conservation Area, London, OH

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The Fourth International Pawpaw Conference

"100 years of pawpaw"

September 1-3, 2016
Frankfort, Kentucky

Registration Form

Name: _____

Address: _____

City: _____ State/province: _____

ZIP/postal code _____

Country: _____

University or Company Affiliation _____

Phone: Day (_____) _____ Evening (_____) _____

Email: _____ Number of guests attending: _____

Name you would like on name tag: _____

Guest's name on tag, if attending: _____

Registration for one person	\$90.00
Additional Guest Registration	\$80.00
Total tendered:	

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Pre-Registration is required before the meeting and must be paid by August 1, 2016. Mail this form and check made payable to The Ohio Pawpaw Growers Association (do not send cash) to: Blair Hess/Conference Registration, Cooperative Extension Building, Kentucky State University, Frankfort, KY 40601

The registration fee covers: abstract book, conference proceedings, conference gift items, coffee breaks/continental breakfast, lunches and Friday and Saturday night dinners. Call Blair Hess at 502-597-5120 if you have questions. There are 40 rooms (\$89 per night) being held at the Capital Plaza Hotel in Frankfort until August 1, 2016 for the conference. You must call the Capital Plaza Hotel (502-227-5100) and make your own reservations on your own credit card before this date. The rooms are blocked under "KSU Pawpaw." Information on other Frankfort accommodations is available at: <http://www.visitfrankfort.com>

Schedule of Events

Thursday, September 1st, 2016

Pawpaw Tour

8:30 am Depart Frankfort

10:30 am Arrive at England's Orchard and Nursery, McKee, KY for nursery and orchard tour

1:00 pm Depart England's Orchard and Nursery
Lunch

2:45 pm Arrive Cove Spring Park in Frankfort

3:45 pm Depart Park

4:00 pm Return to Frankfort

Dinner on your own

Friday, September 2nd, 2016

Campus Presentations, Kentucky State University Extension Building

8:00 am Registration and Continental Breakfast and Entries for Best Pawpaw Contest Submitted

9:00 am Welcome, President Thompson (KSU), Kirk Pomper (KSU), and Ron Powell (Ohio Pawpaw Growers Association)

9:15 am Recognition of the 100th Anniversary of the 1916 American Genetics Best pawpaw Contest, Neal Peterson (Peterson Pawpaws)

Pawpaw Around the World

10:00 am Pawpaws in Romania, Florin Stanica, University of Agronomic Sciences and Veterinary Medicine, Bucuresti, Romania

10:30 am The Indiana Banana, Helmut Pirc, Austria

11:00 am Break

11:10 am Propagation of Pawpaw and All Year Grafting. Marko

Viher, Slovenia

11:40 am Propagation of Pawpaw, Stephan von Rundstedt, Bock Bio Science

12:10 pm Lunch

1:00 pm Pawpaw in Japan, Hideka Kobayashi (KSU)
New Topics in Pawpaw

1:30 pm Pawpaw: Production/Market Research and Outreach to Advance the Development of this Unique Native Specialty Crop Michael A Gold and Zhen Cai (University of Missouri Center for Agroforestry)

2:00 pm Ohio Pawpaw Festival: 18 years of Celebrating The Pawpaw, Chris Chmiel (Integration Acres)

2:30 pm Understanding Controls on Fruit Production in Wild Pawpaw Patches, G. Matt Davies*, Liberty Brigner & Brad Bergefurd (Ohio State University)

3:00 pm Break

3:15 pm A Decade of Pawpaw Fruit Research: A Food Scientist's Perspective, Rob Brannan (University of Ohio)

3:45 pm Effects Of Hot Water and Acidic Electrolyzed Water on Microbial Load and Quality Characteristics of Pawpaw Fruits, Changzheng Wang*, Gidgett Taylor, Lingyu Huang, Cheri Crabtree, Jeremy Lowe, Kirk Pomper, and Cecil Butler (KSU)

4:00 pm Selecting a Better Pawpaw, Jerry Lehman (Indiana Nut Growers Association)

4:30 pm Acetogenin Update, Kirk Pomper (KSU)

5:00 pm Break and Networking

6:00 pm Dinner in the KSU Student Center Ball Room (Show and Tell Session and State Reports)

Saturday, September 3rd, 2016

Farm Presentations and Roundtables

KSU Harold R. Benson Research and Demonstration Farm

9:00 am Pawpaw 101, Kirk Pomper (KSU)

9:30 am Pests and Diseases of Pawpaw, Jeremy Lowe (KSU)

9:50 am Processing Pawpaw, Sheri Crabtree (KSU)

10:10 am Bark inlay Grafting and SARE project, Neal Peterson (Peterson Pawpaws)

10:40 am Break

10:50 am Growing Pawpaw in Ohio, Ron Powell (Ohio Pawpaw Growers Association)

11:10 am Grower Round Tables and Discussion, Moderator: Ron Powell (Ohio Pawpaw Growers Association)

12:10 pm Lunch

1:00 pm Pawpaw Marketing Roundtable

1:30 pm Orchard Tours, Propagation Demonstration, and Processing Demonstration

3:00 pm Introduction of KSU-Benson™

3:15 pm Pawpaw Tasting, Networking, and Poster Viewing

5:30 pm Best Pawpaw Competition Winners

6:00 pm Dinner with Featured Speaker Mr. Andy Moore

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WHITE CHOCOLATE PAWPAW BARS WITH VANILLA BROWNED BUTTER GLAZE

The bars have the texture of moist, fudgy brownies with zero traces of cakiness. The browned butter glaze is worth making. If using frozen pawpaw, be sure it is still yellow in color or it could be bitter.

YIELD: one 8x8 pan, 9 to 12 generous squares

PREP TIME: 15 minutes

COOK TIME: about 33 minutes

TOTAL TIME: about 3 hours, for cooling & glaze setting up



Bars Ingredients

3/4 cup white chocolate chips

1/2 cup unsalted butter (1 stick), melted

1 large egg

1/2 cup granulated sugar

2 teaspoons vanilla extract

1 cup mashed fresh pawpaw

1 3/4 cups all-purpose flour

pinch salt, optional and to taste

1. Preheat oven to 350° F. Line an 8-by-8-inch baking pan with aluminum foil, spray with cooking spray like Pam; set aside.

2. In a large, microwave-safe bowl add the white chocolate, butter, and heat to melt, about 2 minutes on high power. Stop to check and stir after 1 minute, and then heat in 20-second bursts, stopping to stir after each burst, until mixture can be stirred smooth. White chocolate is very prone to scorching and seizing up, so watch it carefully and don't over heat.

3. Wait for butter to cool a bit before adding the egg so you don't cook the egg. Add the egg, sugar, vanilla, and whisk until combined.

4. Stir in the pawpaw until well-combined.

5. Add the flour, optional salt, and stir until just combined; don't over mix.

6. Turn batter out into prepared pan, smoothing the top lightly with a spatula.

7. Bake for about 32 to 33 minutes, or until a toothpick inserted in the center comes out mostly clean, or with a few moist crumbs, but no batter. In the last 15 minutes of baking, make the glaze.

Glaze Ingredients

1/4 cup unsalted butter (see how to brown butter below)

1 heaping cup confectioners' sugar

2 teaspoons vanilla extract

pinch salt, optional and to taste

add about 1/4 cup cream or milk, as necessary for consistency

1. Cook butter over medium-high heat in a small saucepan until it's amber to brown in color, about 5 minutes depending on pan size, but watch it closely so you don't burn it. I swirl the pan in the last minute or so to make sure I can really see the color changes. Butter will go through stages of hissing, sputtering, and making noise until the water cooks off at which point the browning occurs. Butter will smell nutty and aromatic.

2. Transfer butter, including brown bits at the bottom of the pan to large mixing bowl which stops any carryover cooking.

3. Add the confectioners' sugar, vanilla, optional salt, and slowly add the milk, whisking until smooth or beat with a handheld electric mixer. As necessary, add additional cream (or confectioners' sugar) to reach desired glaze consistency. Glaze should be of medium thickness and easily pourable.

4. Evenly pour glaze over bars (they don't have to be cooled first), smoothing it lightly with a spatula if necessary, but glaze will likely just slide into place.

Allow bars to cool in pan uncovered for at least 2 to 3 hours, (or overnight and cover with a sheet of foil) before slicing and serving so glaze can set up. Bars will keep airtight at room temperature for up to 1 week, or in the freezer for up to 6 months.

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9th annual NC Pawpaw festival

Will be held on Saturday August 27th from 10 to 1 in Winston-Salem.

This is a free event and is held at the Forsyth county agriculture building which is located at 1450 Fairchild road.

A few of the events planned this year are pawpaw orchard tours, cooking with pawpaw featuring a local chef, and lectures given by pawpaw experts covering everything pawpaw from folklore, growing a couple backyard trees to setting up a commercial orchard and marketing fruit.

Chef and cookbook author Sara Bir from OH is expected to give demonstrations on processing.

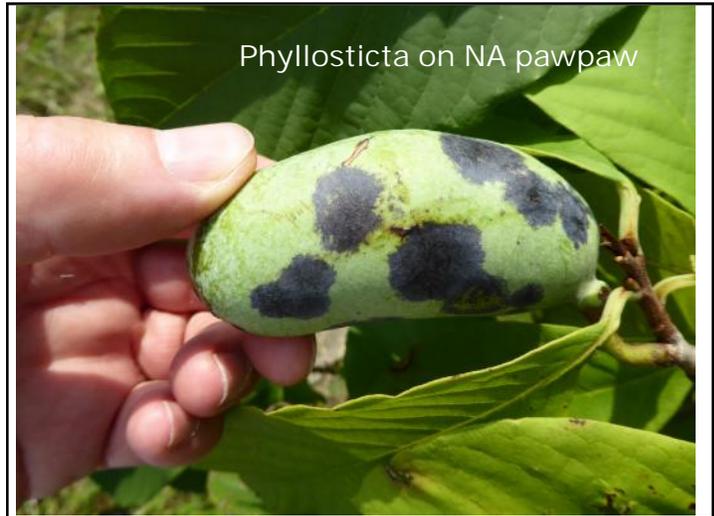
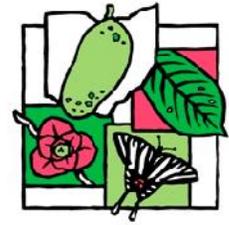
Children can learn about local butterflies and get their faces painted.

Vendors are expected with pawpaw fruit and trees for sale as well as other ornamental and edible plants.

And free food will be available, all made with pawpaw as long as it lasts. Pawpaw ice cream is a perennial favorite.

Please join us. For more information please contact Derek Morris or Mary Jac Brennan at [336-703-2850](tel:336-703-2850).

Facebook page: NC pawpaw festival
www.facebook.com/ncpawpaw/?fref=ts&ref=br_tf



NAPGA/OPGA Dues

Please check with Ron (Botrytis@fuse.net) regarding your dues status or be sure to read the reminder in your email correspondence. Your membership dues are now collected on your anniversary date.

Please renew your membership in NAPGA/OPGA to show your support. Your continued support is needed to further the education and the promotion of North American pawpaws.

Go to www.Ohiopawpaw.com, for a membership form.

Membership dues are: **\$20.00 — family membership**
\$5.00 — student membership

Send dues to: **NAPGA / OPGA, Dr. Ron Powell**
6549 Amelia Dr., Cincinnati, OH 45241

NAPGA/OPGA Editor

visit us at our web sites:

www.NAPGA.com

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Pawpaw Pickin's is published bi-annually by the NAPGA/OPGA, organizations dedicated to advancing the education and knowledge of North American pawpaw culture, encouraging the planting of pawpaws, the management of native pawpaws, and perpetuating the utilization of all N. A. pawpaw products.

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