NARBA Starts New Facebook Group
Recognizing NARBA’s ongoing quest reach out to and serve the larger berry growing community, foster communication among growers, and build interest in NARBA, several of our members suggested that NARBA start a Facebook Group. So, in June, the group “Growing Raspberries and Blackberries” was started. The group is open to any Facebook user with an interest in the topic, whether commercial growers, wannabe growers, gardeners, or others.

As this newsletter goes to press, the group has about 140 members, and four or five seem to join each week. While the group includes many NARBA members, there are also many, many unfamiliar names.

Posts have ranged from quizzes (Guess what variety this plant is?) to information-seeking queries (Anyone have experience with this variety?) to problems (Anyone have any idea what is causing these symptoms?) to simple sharing (Look how many blackberries my plants have!) There was a great three-way conversation between Mississippi grower and NARBA member Bob Hays, Oregon caneberry breeder Chad Finn, and a grower in Kentucky about the merits of different varieties. Several people post frequently and no one has posted anything inappropriate or off topic. We’re keeping an eye on it.

We are very pleased with how this Group is developing and hope it will continue to grow. If you are a Facebook user, check it out! The link is www.facebook.com/groups/growingraspberriesblackberries Please also share this networking resource with others.

Conference Update
Be sure to mark your calendar for our 2015 conference: Feb. 24-27, 2015 in Fayetteville, Arkansas. The conference will start with a reception on Tuesday, Feb. 24, followed by a full-day tour, and a day and a half of educational sessions and trade show, winding up Friday Feb. 27 mid-day.

Planning is well underway. The stops for the tour have been confirmed:
• Boston Mountain Nursery, a long-standing local blackberry nursery.
• The University of Arkansas Research Station in Clarksville, where Dr. John Clark conducts his blackberry breeding program (and also works with blueberries, peaches, and grapes).
• Post Familie Vineyard, established in 1880, where we’ll also have a chance to sample their products. We’ve also lined up several post- and pre-conference tours, which will be held on the afternoons of Tuesday, Feb. 24 or Friday, Feb. 27 or both. These include:
  • The University of Arkansas Nanotechnology Center. Think VERY small stuff, very fancy equipment, and very cool images.

• The University of Arkansas Food Science Labs and Research Farm, a few miles from the main campus.
• Crystal Bridges Art Museum, in nearby Bentonville, a new world-class museum funded by the Walton family.
• Attending the Mid-America Strawberry Growers Conference in Branson, Missouri, scheduled for the weekend after our conference, may also interest some attendees.

NARBA staff and the Conference planning committee held conference call on August 18 and are working on the speakers and topics for the program. Expect some great sessions!

Thank you to the companies and organizations that have already committed to be sponsors of this conference. These include host sponsor Naturipe Farms, along with the Southern Region Small Fruit Consortium, Nourse Farms, Sun Belle, and Giumarra. Sponsorships help us bring in good speakers and keep registration fees down. We know other sponsors will be joining them in supporting this conference.

A conference preview and sponsorship forms are now posted on our website; find the link at the home page.

**EVENTS**

Visit www.raspberryblackberry.com for our most complete and up-to-date list of events.

**October 12 - NC Blackberry Field Day**
At Kildeer Farm (Ervin Lineberger), in Kings Mountain, NC. Sponsored by the NC Commercial Blackberry & Raspberry Growers Association. For more information, contact Daniel Shires, dlshires@ncsu.edu.

**December 4-5 - Washington Small Fruit Conference**, Lynden, WA. For more information, visit http://whatcom.wsu.edu/ag/edu/sfc/.

**January 8-11, 2015 - Southeast Regional Fruit & Vegetable Conference**, Savannah, GA. Caneberry sessions organized by NARBA. (See page 3) More info and online registration at www.seregionalconference.com.


**June 18-25, 2015 - 11th International Rubus & Ribes Symposium**, with pre-conference tours to farms and research sites. June 18-20 and the main Symposium in Asheville, NC, June 21-25. This is the first time this International Society for Horticultural Science meeting has been held in the U.S. for more than 30 years. It occurs every four years and the last ones were in Serbia and Chile. Sign on now to become a sponsor – NARBA is already one. Registration is now open. For more info about the Symposium, visit www.rubusribes2015.com or contact gina_fernandez@ncsu.edu.

Contact the NARBA office to list meetings, workshops, conferences, or other events of interest to our members or the caneberry-loving public for posting here and on our website.

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**Briefly Speaking...**

**Intrinsic Value** - A term hated by accountants, but loved by stockbrokers. Accountants hate it because they need to be able to assign a numerical value to the product in question. Stockbrokers love it, because their point is that the product has greater unseen value than can be realized at this moment. In the Book of Proverbs, the wisest man, King Solomon gave us a great mental picture of intrinsic value. He spoke of the right words having the value of solid gold apples that were coated over with silver, meaning that the recipient of the words did not realize the full value of them at the moment they received them. That wisdom of your father that you only began to understand later in life? You cannot assign a numerical value to it.

The North American Raspberry & Blackberry Association is a work in the continual mode of progress, being shaped by its members and board. It is not possible to assign a true value to NARBA because it is foundationally building from the past, to the present, and for the future. Please allow me to give you a condensed list of what NARBA has done, is doing, and will be doing!

-Continual education to growers and consumers
-Contributing to research for pressing problems that face growers
-Compiling up-to-date materials (relating to the industry, marketing, and legislation)
-Organizing growers conferences and educational sessions
-Promoting research and promoting caneberry health benefits
-And more.....

I am one of several board members who donate their time and efforts to the building of this great organization. I have seen NARBA now from the inside and outside. There is no way to assign a dollar value to the association if you invest and receive all it offers.

I, personally, desire to update NARBA website to make it more accessible and user-friendly for mobile users. I have acquired a QR code that could be place as a sticker on all containers of berries. Consumers using a QR reader app on their phones can scan it, and it will take them to the page at NARBA website that contains the nutritional and health benefits of berries. I hope we can have this up and running by next harvest season.

My dad planted trees on his farms that he knew he would never reap the benefit of. I will get some of the benefits but his grandchildren will reap most of them. Many would ask the question Why? My dad understood intrinsic value and he knew that it was impossible to put a price tag on tomorrow! As growers of blackberries and raspberries, let us invest into the intrinsic value of the future with NARBA. You can't put a price tag on tomorrow!

- Marvin Williams
NARBA Executive Council member for Region 5
NARBA in Savannah

NARBA is again responsible for organizing the caneberry sessions at the Southeast Regional Fruit and Vegetable Conference in Savannah, GA. This is an excellent conference which also includes a large trade show and sessions on blueberries, peaches, vegetables, and many other topics. Here are caneberry sessions in brief:

**Thursday, January 8 8:00 am - 5:00 pm**
- Understanding the Annual Growth Cycle of the Blackberry
- Assessing and Managing Cold Damage
- Trellising Systems for Canesberries: Options & economics
- Using Shade Cloth on Blackberries
- Pruning & Trellis Innovations at Hays Berry Farm

**Friday, January 9 8:30 am - 4:00 pm**
- Breeding Innovations on Fruit Firmness in the Arkansas Blackberry Breeding Program
- Where and When Do I Need to Manage SWD?
- Caneberry Disease Update
- Effects of in-row herbicide strip width on established blackberry growth, yield, berry quality, and winter hardiness
- Grower Spotlight: Marvin Williams, Williams Farm, Enigma, GA
- Bringing Global Perspectives and Research to the Southeast
- Perspectives on the Status and Future of the SE Blackberry Industry: Panel discussion of growers, marketers, and buyers
- New Initiatives from NARBA

Grower Bob Hays of Dumus, Mississippi, pictured above, will be speaking at the conference in Savannah and will also be a Grower Spotlight speaker at our Annual Conference in Arkansas.

For hotel and more schedule information and to register, visit www.seregionalconference.com. We will also post full schedule and speakers on our website. Be sure to get your hotel reservations early, host hotels fill up quickly.

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Ten Ways to Work With and Be Involved in NARBA

- Spread the message with consumers. Hand out NARBA’s brochures. Publicize links to our Facebook group, Facebook page, and website.
- Encourage other growers, researchers, or suppliers to join NARBA or attend our conference. (We will soon have a nice membership brochure you can distribute.)
- Call up the NARBA office or an Executive Council member (see back page of the newsletter) and volunteer to help with a committee or project.
- Promote the caneberry industry/NARBA when you talk to the media.
- Attend the conference – and volunteer to help with conference tasks.
- Use NARBA’s E-Forum or Facebook page to share your knowledge or experiences with other members.
- Write or send an article, pictures, or notice for the newsletter. Post on our Facebook page.
- Contribute to the NABG Research Foundation or volunteer to help raise funds for the Foundation.
- Organize a farm tour or local meeting as a NARBA event for members and other growers in your area.
- Let NARBA know if you can offer legal, graphic design, PR, policy, web, or financial skills to help build our organization.

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**Request for Proposals – and Your Research Priorities**

The North American Bramble Growers Research Foundation (NABGRF) is now seeking proposals for raspberry and blackberry research for the year 2015. All bramble/caneberry proposals will be considered. As it begins the 2015 grant process, the NABGRF Research Committee is developing a list of high-priority areas and seeks input. Please send your comments and suggestions of research priorities to the NARBA office by October 15. This list will be posted on our website.

Since 1999, NABGRF has funded a total of 76 proposals totaling $184,572. In 2014, the Foundation approved funding for six proposals for a total of $17,219. In general, funding for individual projects is expected to be in the range of $2,000 to $5,000.

The primary source of funds for the Foundation is NABGRF’s Nursery Contribution Program. Donors in 2013/2014 included Nourse Farms, Indiana Berry & Plant Co., Norcal Nursery, Northwest Plants, North American Berry, and Doyle’s Thornless Blackberry. In addition, 25% of all grower dues to NARBA is allocated directly to the Research Foundation. Other donations are also welcome.

Proposals will be reviewed by the Research Committee of NABGRF at NARBA’s conference in Fayetteville, AR. The Research Committee forwards its recommendation to the NABGRF Board of Trustees, which makes the final funding decisions. Awards will be announced in March 2015.

The deadline for proposals is December 20, 2014. To submit a proposal, follow the instructions in the “Research Foundation” section of the NARBA website (www.raspberry-blackberry.com).

To make a donation: If you would like to make a donation to the NABG Research Foundation, send your check made out to NABGRF to 1138 Rock Rest Rd., Pittsboro, NC 27312. All donations are tax deductible.
Autumn Caneberry Chores

This list was developed by Dr. Gina Fernandez, Small Fruit Specialist at NC State University, and reviewed and revised with the assistance of Dr. Marvin Pritts at Cornell. Chores and timing may be somewhat different in your area or for your cropping system. For recommendations for the Pacific Northwest, subscribe to the Small Fruit Update (email smallfruitupdate@peerbolt.com).

Plant growth and development
- Primocanes continue to grow but slow down.
- Flower buds start to form in leaf axils on summer-fruiting types.
- Carbohydrates and nutrients in canes begin to move into the roots.
- Primocane fruiting types begin to flower in late summer/early fall and fruit matures until frost in fall.
- Primocane leaves senesce late fall.

Harvest
- Harvest primocane fruiting raspberries.
- Harvest primocane fruiting blackberries.

Pruning, trellising, tunnels
- Remove spent floricanes as soon as possible.
- While optimal time to prune is after the coldest part of the winter is over, pruning can start in late fall if plantings are large (late winter for smaller plantings).
- Start trellis repairs after plants have defoliated.
- Remove coverings on three-season high tunnels.

Weed management
- Many spring and summer weed problems can be best managed with fall- and winter-applied preemergent herbicides. Determine what weeds have been or could be a problem in your area.
- Check with your state’s agricultural chemical manual and local extension agent for the best labeled chemicals to control these weeds.

Insect and disease scouting
- Continue scouting for insects and diseases and treat with pesticides if necessary (follow recommendations for your state).
- If harvesting, maintain SWD spray schedule.
- Remove damaged canes from field as soon as possible to lessen the impact of pests.

Planting
- Growers in southern areas can plant in the fall.
- In cooler areas, prepare list of cultivars for next spring’s new plantings and plan your order. Find a commercial small fruit nursery list at www.fruit.cornell.edu/berry/nurseries/

Nutrient management
- Take soil tests to determine fertility needs for new spring plantings.
- Non-nitrogenous fertilizers are best applied in the fall to established plantings.
- If soil is bare, plant an overwintering cover crop (e.g. rye) to build organic matter and slow soil erosion.

Marketing and miscellaneous
- Order containers for next season.
- Make contacts for selling fruit next season.

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Broad Mites Damaging Blackberries
By Dr. Donn T. Johnson (Department of Entomology, University of Arkansas,
The broad mite, Polyphagotarsonemus latus, is found worldwide. In 1904, it was described on terminal buds of mango in a greenhouse in Washington, D.C. In 2007 and 2009, malformed leaves were observed on Arkansas blackberry ‘APF-46’ in Fayetteville, AR and in southwest North Carolina. In 2014, blackberry plantings in Arkansas, California, and North and South Carolina began showing damage by broad mites. It is uncertain where and when broad mites got on blackberries or how they spread. Mite outbreaks may be occurring now after a year or two of elimination of broad mite natural enemies by multiple insecticide sprays preventing spotted wing drosophila infestation of ripening berries.

Damage: Broad mite-infested plants have stunted and curled terminal leaves and aborted floral buds that eventually die (see pictures below). These symptoms may appear on cuttings growing in the greenhouse in the spring or in field plantings as early as late June.

Identification: Adult: length of 0.1 mm (male) to 0.2 mm (female), eight

Leaves stunted and curled by broad mites.
legs, and translucent white to light amber. Nymph: is smaller with six legs. Egg: 0.08 mm long, oval and covered by 29 or more whitish bumps.

**Biology:** Males carry a mature nymph female in order to mate when she molts to an adult. Females disperse to other host plants on the male broad mite, aphid, thrips or whitefly. Female broad mites lay 30 to 76 eggs on the leaf surface over an 8- to 13-day oviposition period.

**Hosts:** Broad mites were reported to damage many other crops: beans, bitter-melon, chrysanthemum, cucumber, eggplant, gourds, guava, macadamia, mango, papaya, passion fruit, pepper, ground cherry, pumpkin, and tomato.

**Detection:** Weekly from early June to September, use hand lens (10X magnification) to scan underside of terminal leaves of blackberry primocanes for presence of broad mites.

**Management:** Biological control: Predatory mites (*Neoseiulus californicus*) reduced broad mite on peppers in greenhouses when released at ratio of one predatory mite to 10-20 broad mites per plant.

**Chemical Control:** No products are labeled specifically to control broad mites on blackberry. However, *Kumulus* (wettable sulfur) is labeled against broad mite only on citrus and for powdery mildew on blackberries. It is suggested that a grower could restrict sprays to only broad mite-infested blackberry plants with one of these miticides recommended for spider mites on blackberry:

- Acrobat (bifenazate; 1 day PHI; 2 sprays allowed per season; 30 days between applications);
- Savey (hexythiazox; 3 day PHI; 1 application allowed per year);
- Zeal (etoxazole; 0 day PHI; 1 application allowed per year) and
- *Kumulus* (OMRI; Micronized Wettable Sulfur; 0 day PHI; do not apply if within 21 days of an oil application or if temperatures are expected to exceed 90°F in three days of application);
- Aza-Direct (OMRI; azadirachtin; 0 day PHI; 2-3 applications made at 7-10 day intervals; buffer tank water to 5.5-7 pH);
- Future studies may prove that the miticides above or insecticidal oils or soaps below are adequately reduce broad mites on blackberry:

**Note:** Spraying oils or sulfur should be limited to cooler nighttime or daytime periods to minimize phytotoxicity.

**Note:** Remember to read and follow the recommendations of all product labels before using any pesticide. The listing of a product does not imply endorsement by the authors. ☝️
Awald Farms at 100
This year, NARBA member Awald Farms marks a major milestone, the farm’s 100th anniversary – plus Ed and Millie Awald’s 50th wedding anniversary. A dd to that close to 20 years of membership in NARBA, and Ed and Millie have a long story to tell.

Awald Farms is located in western New York, about 25 miles southwest of Buffalo in North Collins, NY. It was established by Ed’s grandfather, Edward Geiger in 1914. He and his son worked the farm as a mixed truck farm, generally wholesaling their crops. After they both died in 1960, the farm passed into the hands of Ed’s mother and her husband. Ed and Millie rented it from them starting in 1975, and then bought it from them in 1983.

Ed grew up working on the farm. As an adult, he also had a job as an Ag Inspector for the NY Dept. of Ag and Markets for many years. His father and grandfather grew raspberries to take to market, and in the 1960s, Ed convinced them to get into blueberries as well. In the 1970s, they started selling PYO. Says Ed, “My father also sold many raspberry plants, and after his death, we decided to expand as a nursery.”

Besides berries, Awald Farms raises pumpkins and a bit of summer produce, and their nursery offerings include grapes and currants as well as caneberrys. The farm has three locations, all about a mile apart: their nursery, their PYO fruit operations, and their fall pumpkin patch. The combination of nursery, fresh berries, and pumpkins means that the Awalds are busy year-round. They start the PYO season with strawberries in June, then summer raspberries and blueberries, then fall raspberries and pumpkins. Nursery plants are dug in the fall, before cold weather sets in, and put in refrigerated storage. During the winter, they go through the plants, grade them, and bundle them up, using mostly local high school students as labor. Inquiries and orders start coming in the fall, and packing and shipping take place during the fall. “Nursery busy is a different kind of busy from selling fruit,” says Millie. “There’s a lot of bookwork and phone calls.”

Each year, they get new nursery planting stock for their caneberrys, starting with tissue-cultured plugs or sometimes “nursery mature” plants, field grown one year after tissue culture. They grade the plants based on the American Nursery and Landscape Association grading standards. Their main outlet is wholesale nurseries, and other catalog nurseries but they also sell to commercial growers and home gardeners.

In their raspberry PYO plantings, Ed says they try to grow varieties that are the most hardy, productive, and have good...
plants picked – dedicated customers will even pick in the rain, says Millie.

PYO red raspberries sell for $2.60/lb and purple/black raspberries for $2.90/lb; strawberries are $2.00/lb and blueberries go for $1.50/lb. They generally sell ready-picked raspberries as a box with four half-pint baskets for $9.00 ($10.00/box for black raspberries). Ready-picked blueberries get sold in 5 lb. handle baskets for $13.00.

Many of their customers come a long way, often from the suburban areas and small towns around Buffalo. Many customers note that they loved coming to Awald Farms as children, and now they're bringing their children and grandchildren back. PR and advertising efforts this year have highlighted the 100th anniversary.

Five years ago, the Awalds built a handsome retail market at the PYO location. Daughter-in-law Jamie is the primary manager, and they hire local help to operate it. Besides their berries, the market offers jarred and packaged products, crafts, baked goods, groceries, drinks, ice cream, and a grill with hot foods (like hot dogs and hamburgers). The market is open June through August, the period when their berries are ripe. Millie and Jamie both make crafts for the market, and the jams and jellies are made for them locally.

Millie Awald has a bad back these days, so she is the power behind the phone and concentrates on the office work. Her favorite crop is the pumpkins, and it's her personal project. She's the one who chooses the varieties and starts the seeds in the greenhouse. The Awalds grow lots of different kinds: regular jack-o'-lantern pumpkins, 200-300 lb giants, mini pumpkins, white pumpkins, gourds, and “Snack Jack” pumpkins, grown primarily for their edible shell-less seeds.

All seven of their children have worked on the farm in some capacity, either doing field work or helping sell produce in the farm market. Sons Allan and Wayne took care of the everyday farm work when Ed was busy with his job as an Ag Inspector. Allan, the oldest, went to Cornell in the Ag & Life Science program and he and his wife Debra are currently living in Washington state. Says Millie. "He was the one that suggested we go to direct mail instead of ads in our local newspapers. We now do postcard mailings 3 times a year to a growing list of 7,500 customers." Allan also encouraged the Awalds to purchase a blueberry harvester and sorting equipment to minimize crop loss and increase sales. His wife, Debra, developed the Awald's first website.

Their son Wes and his wife Jamie both work on the farm and are instrumental in managing the PYO operation and farm market. In the fall, they have a corn maze and a U-pick pumpkin patch on their own nearby farm, welcoming the public and catering to school and group tours.

Chris and his wife have their own farm nearby. Chris has developed a pumpkin cultivar with a very thick, long, green stem called the "Wolf" pumpkin. He now sells the "Wolf" seeds to numerous seed companies. Wayne, Laurie, and Joe and their spouses are scattered around New York State in other careers, while Becky, the youngest, who resides with her husband in the area, serves as the farm's graphic designer, social media expert, and website

Continued on page 13
Early Detection and Management of Spotted Wing Drosophila in Raspberry

By Greg Loeb and Stephen Hesler, Dept. of Entomology, Cornell University

Berry growers are facing numerous challenges with regards to SWD. An effective monitoring program that provides early warning of imminent infestation is of paramount importance. The standard adult monitoring tool, using a deli cup with apple cider vinegar as the attractant, eventually captures many SWD and other fruit flies. However, our 2012 results, as well as the results of other investigators, indicate that adult flies are often first caught after infestation has already occurred. In the absence of a better early warning system, growers are probably better off to initiate insecticide treatments as soon as fruit begins to ripen, even though this could result in unnecessary costs (economic and environmental). Therefore, for the second year of this project we focused on assessing the effectiveness and practicality of new lures and/or lure placement as an early warning of impending infestation.

Controlling SWD is problematic. As internal feeders, immature life stages are well protected within fruit from pesticides. Adult flies appear fairly susceptible to a number of insecticides. However, the flies continually emerge or immigrate into a planting, therefore requiring repeated applications (weekly or biweekly) through the harvest period to maintain clean fruit. In addition to the economic costs of these repeated insecticide applications, many of the compounds are detrimental to beneficial insects. Growers need both improved monitoring and effective insecticides that provide residual control and have short days-to-harvest restrictions.

Most efficacy work has been conducted in the West and/or under laboratory conditions. In 2012, with funding from NARBA [year 1 funding], we established a new fall raspberry planting at the NY State Agricultural Experiment Station to be used for insecticide efficacy trials in 2013.

Objective 1: Evaluate relationship between first adult SWD capture and fruit infestation for different lures and trap placement in berry plantings.

Two sites with a history of SWD infestation were included in this study. Site 1 was a mixed planting that included June-bearing strawberries, floricanes-fruiting raspberries, and various stone fruits. Site 2 was an isolated blueberry planting bordered by woods and soybeans. A deli cup with apple cider vinegar-ethanol drowning solution, and a deli cup baited with one of five lure treatments: apple cider vinegar attractant that also served as drowning solution, apple cider vinegar-ethanol drowning solution, DroskiDrink (apple cider vinegar-red wine-raw sugar mixture) that also served as a drowning solution, and a water control. At site 2 a sixth synthetic lure treatment was included. This prototype lure (Trice) was not commercially available in 2013 but is available for 2014. When the respective crops began to ripen, fruit samples were collected from each trap location with crops, as well as from randomly selected non-trap associated locations.

Objective 2: Efficacy of labeled and unregistered insecticides against SWD in raspberry.

Three trials were included in an effort to evaluate effectiveness of labeled and unregistered insecticides.

Trial 1 was a broad evaluation of labeled and unlabeled insecticides, including the at the time experimental insecticide HG W 86 SE, with the active ingredient cyazypyr, with or without an additional feeding stimulant [sugar which is a feeding stimulant for flies]. Now known by its trade name as Exirel, this new DuPont product has recently been labeled on blueberries for control of various pests, including SWD. The company plans to expand the label to include additional berry crops in the near future. A non ionic surfactant (LI 700) was added to cyazypyr to improve coverage. These trials were conducted on individual fruiting canes in a commercial raspberry planting of primocane raspberries. To assess efficacy of the different materials, we exposed treated fruit 1 day, 3 days, and 7 days after application to adult SWD under lab conditions and recorded mortality after 48 hours.

Trial 2 was an evaluation of the efficacy of different rates of cyazypyr on SWD infestations under field conditions. We used a two-year-old planting of the primocane raspberry variety Caroline planted at the NY State Ag. Experiment Station in Geneva, NY, in the summer of 2012.

Trial 3 was a trial in primocane raspberry assessing season-long efficacy of reduced risk insecticides (Delegate and Assail) with and without a feeding stimulant (sugar) and a third treatment that tested the efficacy of rotating compounds across different modes of action (spinosyn, neonicotinoid, organophosphate, and pyrethroid). A commercial planting was used for this study.

Results by Objective

Objective 1: Evaluate relationship between first adult SWD capture and fruit infestation for different lures and trap placement in berry plantings.

The seasonal occurrence of SWD followed a similar pattern as observed during 2012. Results comparing differ-
ent lures indicates that the fermenting bait + apple cider vinegar lure provided the first capture at both sites, and generally captured the most flies during each sampling interval. In weeks that the synthetic lure was deployed at site 2, captures were comparable, and sometimes surpassed, total captures in fermenting dough + apple cider vinegar baited traps. Other baits consistently captured fewer flies than either the fermenting bait + apple cider vinegar or synthetic baited traps. Date for first trap catch and first reared SWD from raspberry fruit for site 1 occurred in the same week. Date for first trap catch at site 2 was on 11-Jun, from a woods trap (Figure 1). First trap catch from traps in the crop occurred the week of 15-Jul. First reared SWD from blueberry fruit for site 2 occurred the week of 22-Jul.

Objective 2: Efficacy of labeled and unregistered insecticides against SWD in raspberry

Trial 1: Mustang Max resulted in the highest proportion of dead adult SWD at all days post application (Figure 2). Products tested with the addition of sugar exhibited a trend toward increased mortality and a prolonged period of efficacy, although there was a lot of variation among replicates. The one exception was data for HGW 86 SE that did not indicate any benefit from addition of sugar. Proportion of SWD mortality for each product declined between 3d and 7d post application.

Trial 2: HGW 86 SE provided a level of control for spotted wing drosophila that was not different from the local standard Delegate WG. Adding sugar to HGW did not seem to make a measurable difference in HGW 86 SE efficacy. Data also indicate that HGW 86 SE has longer residual activity (3 weeks) than the standard (1 week) used in this trial.

Trial 3: Data for trial 3 did not indicate a significant difference between the three different treatment rotations. Infestation rates were relatively high across all treatments.

continued on page 13

Figure 2. Evaluation of insecticides conducted on individual fruiting canes in a commercial primocane raspberry planting. Treated raspberry fruit with attached receptacles were brought back to the lab 1d, 3d and 7d after application. Adult SWD were confined under laboratory conditions to the treated fruit and adult mortality was recorded after 24h and 48h. Geneva, NY, Summer-2013.
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Berries in Scotland
By Debby Wechsler, NARBA Exec Sec.

What vacation is complete without looking at berries? My husband and I were vacationing in Scotland during the first half of September, and took the opportunity to visit the small fruit breeding program of the James Hutton Institute in Invergowrie, near Dundee. We also made a point of sampling the raspberries in the stores and picking wild blackberries whenever we saw them along the country roads and paths. Here’s some of what I learned:

In many supermarkets, raspberries and strawberries are labeled both by country of origin and by variety. This helps promote the local product and creates discriminating consumers—which can, of course, be both a benefit and a challenge for growers and marketers.

Raspberries in supermarkets come in vented plastic “punnets,” with a labeled transparent film top glued on. I was struck by how much empty space there was in the containers, unlike the snug packing we see in clamshells. It looked like berries would get tumbled around, but then, these berries were being marketed within 50-100 miles of where they were grown, so perhaps that is less of an issue.

Wild blackberries in the U.K. are called “brambles” and we saw and ate a lot of them. The berries are small and taste pretty good if fully ripe, but the canes are viciously thorny. Mercifully, they don’t have chiggers, the bane of wild blackberry picking here in the southeastern U.S.

Scotland’s small fruit industry is on the east side of the country, in the low hills and valleys near Perth and Dundee, north of Edinburgh. Berries are not a huge part of the economy, but are very significant in the areas where they are grown, and they have been a proud part of the region’s identity for many years. In a small, local museum we saw pictures from the 1930s of fruit picking “travelers” (kind of non-Roman gypsies), living in ramshackle tents at the farms. Later, farms would bus in pickers from Dundee and other more urban areas, but now farm workers are mostly from eastern Europe, especially Poland.

Back in the early 1980s, Scotland grew 2,593 hectares (6407 acres) of raspberries, mostly for processing. Then, under pressure from cheap imports from eastern Europe, berry production declined dramatically, even after switching to machine harvesting. By ten years ago, there were only 519 ha in raspberries and now there are only 186 ha. However, the industry has re-created itself for fresh market production, primarily under high tunnels, and the total value and productivity of the crop has actually increased as acreage decreased this last ten years. In 1997, 3% of raspberries were under tunnels and by 2007, 80% were covered. Plantings are generally covered in March, and the covers protect against the frequent rains, improve quality, and make the crop earlier.

Now, 85-90% of raspberries are sold fresh market, and the remainder goes into processing. Strawberries have had a similar transition to a tunnel-raised crop. The Scottish blackberry industry is quite small, but consumers are beginning to discover them for their health benefits. (Black currants continue to be field grown, machine harvested, and used for processing.)

Prices tend to be down when the Scottish crop overlaps with England’s larger crop, but stores switch from winter sources (usually Spain) and English berries when the local crop is available and proudly advertise “Scottish raspberries.” Most growers are part of a large marketing group such as Berry Garden, Berry World, or Angus Soft Fruits.

There is almost no direct marketing of berries in Scotland. Except for a few high-tunnel strawberry farms which had signs advertising strawberries, we saw no PYO or roadside stands anywhere we travelled, though there are “farm stores” that sell produce direct from the farms. Indeed most of the farming we saw, traveling mostly in northern areas, was barley and sheep. We also saw just-harvested potatoes and some fields of kale or other cole crops in the richer valley soils.

Berry Breeding Program
The James Hutton Institute, formed in 2011 by the merger of the Scottish Crop Research Institute (SCRI) and the Macaulay Land Use Research Institute, is the latest incarnation of a long-standing Scot-Continued on next page
tish horticultural breeding program. The research center we visited near Dundee works with small fruits (currants, strawberries, raspberries, and blackberries) as well as brassicas, potatoes, and barley. Also part of the research partnership is the Center’s commercial affiliate Mylnefield Research Services, responsible for marketing, variety protection, and propagation licensing for the new varieties.

The small fruit breeding program has been underway since the 1950s. It is currently supported in part by the Scottish government and by a consortium of industry partners, mostly marketers and nurseries. A five-year consortium agreement recently expired this spring, and a new one is being pulled together, this time inviting international partners as well as U.K. companies.

We visited with Nikki Jennings, who has been the raspberry breeder for 18 years, replacing Rick Harrison, who now works for Driscoll’s in California. The goals of the breeding program include fruit size, flavor, and phytophthora resistance. With the rapid shift from the type of berry needed for processing to selection fresh-market has caused the breeding program to shift rapidly as well—a challenge when varieties take as long as 18 years to bring to commercial use. A long with traditional breeding, the Center is now using marker-assisted genomics, which can shorten variety development by several years. Like other breeding programs, hers starts with thousands of seedling plants. These are grown for two years for evaluation, then a few of these, perhaps 40-50 from 5000 plants, are selected for further evaluation; only a very few progress on.

The program cooperates with other breeding programs when possible—for example, several Dutch varieties among the plantings. Nikki noted that the Oregon variety Tulameen, quite popular with growers for several years, is considered a high standard for flavor, but lacks shelf life.

Names of raspberry varieties from the program all start with “Glen”, blackberries with “Loch”, and black currants with “Ben”. Glen Ample (which we saw in the stores) was released in 1996. It is the most widely grown raspberry in the U.K. and is known for yield, flavor, and size. Glen Lyon has proven to be very successful in Spain’s production system and climate, where it is grown in a long cane system—after one year of growth plants are pulled up from the soil, put in storage for chilling, and then replanted for fruiting.

Glen Fyne is a new variety with an excellent, sweet flavor. Glen Dee, their newest variety, is now in grower trials in the U.K. It is very productive, comes in about two weeks later than Glen Ample, and the supermarkets like it. Mylnefield is now in the process of obtaining Plant Variety Protection for Glen Dee and the variety will have to go through several years of screening and quarantine before it can be trialed in the U.S. Scottish blackberries include Loch Ness and Loch Tay, a sweeter variety; their newest release, Loch Maree, with pink double blossoms and sweet fruit, is aimed mostly at home gardeners.

Many thanks to Dr. Rex Brennan, leader of the soft fruit breeding group, raspberry breeder Nikki Jennings, and Lesley Beaton from Mylnefield, for taking the time to talk with us and show us around. We may see them and their colleagues at the Rubus and Ribes Symposium in North Carolina next summer!
Early Detection and Management of SWD

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Discussion

Early season monitoring with various lure treatments provided some important information about our interest in using monitoring as an early warning for SWD infestation. Fermenting bait + ACV-ETOH drowning solution and the synthetic lure provided higher rates of SWD capture than other baits assessed in this trial. At site 1 trap catch in the crop and woods preceded measured fruit infestation by three days. At Site 2 trap catch in the crop preceded measured fruit infestation by 7 days and trap catch in the woods preceded infestation by over a month. Despite trap captures in crops and infestations occurring within one week of each other, the level of infestation early in the fruiting season was relatively low (4 to 17 berries per 1000) and could be tolerable under some circumstances. This may give the grower enough advance notice of significant infestation to provide an indication to begin treatment. Its important to note, however, that we only had two sites in this study and more data over several years is necessary before making any definitive recommendations. Related to this caveat, this work was carried out in central NY and therefore, is not necessarily relevant to other areas.

Insecticide trial 1 provided some insight as to the “knock down” effect of the different products tested on adult flies. These data will be more meaningful once SWD biology is better understood. If a commercial planting is persistently re-infested by SWD over the timeframe of a week following an application, products like M uang M ax could provide superior control than those that have poorer residual effect. Note that pyrethroids such as M uang M ax are very toxic to beneficial insects such as pollinators. The experimental product HG W 86 SE deserves particular mention in regards to persistence in that although it did not perform particularly well in trial 1, it did demonstrate a level of control comparable to the standard in trial 2. In addition it seemed to have a residual effect for up to three weeks. It is difficult to draw any conclusions from trial 3, in which different product rotations were compared. One possible explanation for the very high rates of infestation in this trial was the fact that there was a considerable area of the planting that was untreated throughout the experiment. Moreover, the trial was not initiated until several weeks after ripe fruit was present in the field. While the experimental plots were relatively large (20m), the untreated area may have provided a refuge for SWD that increased re-infestation pressure on our experimental plots that would not have existed if a whole planting were being treated.

Great strides have been made during the summer of 2013 to better understand some of the monitoring and management strategies available for SWD. A reas of future research related to monitoring and trap design include continued development of an optimal lure, better understanding of SWD overwintering biology, and the possibility of using the trap itself as a management tool. Current practices and recommendations for insecticide treatment for SWD include a spray interval of seven days or less. Based on these results, further research is necessary to assess whether some of these products could provide longer intervals of protection. This is a critical area of research that has implications ranging from resistance management to the environmental sustainability of growing crops impacted by SWD.

This research was funded in part by a grant from the North American Raspberry Blackberry Association. We also want to especially thank the farm owners we worked with in this study for allowing us to work on their property, for donating fruit for laboratory assessment of SWD, and their time and cooperation.

Awald Farms

Continued from page 7

manager, “I think several of the boys may come back to the farm someday,” says Millie.

Ed says the biggest challenge in the last few years has just been the regular efforts of trying to make a living. With his many years of experience, his focus on the day-to-day must be formidable! We wish Awald Farms much success as they enter the next hundred years.

See their website (and nursery catalog) at www.awalfarms.com and Facebook page www.facebook.com/AwaldFarms.

Welcome to Our Recent New Members!

You may wish to clip this and fasten it to your printed copy of the directory. The most up-to-date membership directory may also always be found in the Members Only section of www.raspberryblackberry.com.

Georgia & Spencer Carmichael
Carmichael Agricultural Ventures
427 Riley Fuzzel Rd.
Spring, TX 77372
713-817-7055 c
gtarmacmichael@gmail.com,
spencer.carmichael@gmail.com

Sandra Howell & Jimmy Horrell
Sugar Shack Farms
402 Island Creek Drive
Wilmington, NC 28411
910-540-8806 c
sanhow5@gmail.com

Alice Lenaghan
Tourello Berry Farm
11790 Napoleon-Zion Station Rd.
Dry Ridge, KY 41035
859-428-1104 f 916-929-6775 h
tourelloberryfarm@gmail.com
www.TourelloBerryFarm.com
current mailing address: 3186 Doroteo Way,
Sacramento, CA 41035

Gaetano J Matro
Matro Family Farms
407 Spring Rd, P.O. Box 13
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609-561-8495 609-820-7711
matrofamilyfarms.com

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Micanopy, FL 32667
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The Bramble: Newsletter of the North American Raspberry & Blackberry Association, Autumn 2014
Caneberry planting stock types

Raspberry and blackberry nursery plants are available in a number of different plant types. The chart to rigintates what types each nursery sells in the column “Types of Plants”. Note that these descriptions are by necessity brief and incomplete, and that both plant and fruit production methods and terminology vary nursery to nursery and region to region. Buyers will want to inquire more fully of the nursery to learn more and determine what suits their needs.

Plugs: grown from small tissue cultured plants, they have green tops and a rootball in a growing medium. Sold in trays by number of plugs/tray, these are the most cost-effective way to cover the ground, but plants won’t be as consistent.


Order early to assure availability of the varieties you want. Inspect plants on arrival to see if they are healthy looking and up to the standard grade. Contact the nursery if you have questions or see problems.

From top left: A bare root cane, process of creating tissue culture plugs, a box of raspberry roots.
<table>
<thead>
<tr>
<th>Nursery Name</th>
<th>Types of sales</th>
<th>Types of plants</th>
<th>Blackberry Cultivars</th>
<th>Raspberry Cultivars</th>
<th>Other nursery offerings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agri-Starts, Inc.</td>
<td>Wholesale only. Web catalog</td>
<td>Plugs (72-cell liners)</td>
<td>Apache, Arapaho, Brazos, Chester, Kiowa, Natchez, Osage, Ouachita, Prime-Ark 45, Prime Jim, Prime Jan</td>
<td>Red: Caroline, Glencoe, Mysore</td>
<td>Tropical plants, tropical fruits, blueberries</td>
</tr>
<tr>
<td>Berries Unlimited</td>
<td>Wholesale, commercial growers, gardeners. Web catalog</td>
<td>Plugs; Pot-ted plants</td>
<td>Black Satin, Brazos, Chester, Hull, Kiowa, Natchez, Navajo, Osage, Ouachita, Prime-Ark 45, Triple Crown, Tupy Hybrid: Boysen</td>
<td>Red: Autumn Bliss, Boyd, Caroline, Crimson Giant, Crimson Night; Encore, Heritage, Killarney, Latham, Prelude Purple, Royalty Gold; Double Gold, Fall Gold; Black: Bristol, Jewel, Mac Black</td>
<td>Blueberries, honeyberries, exotic fruit</td>
</tr>
<tr>
<td>Doyle’s Thornless Blackberry</td>
<td>Commercial growers, gardeners. Web catalog</td>
<td>Potted plants</td>
<td>Doyle’s Thornless</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indiana Berry &amp; Plant Co.</td>
<td>Commercial growers, gardeners. Web/print catalogs</td>
<td>Bare root plants</td>
<td>Arapaho, Chester, Hull, Illini Hardy, Natchez, Navajo, Osage, Ouachita, Prime-Ark 45, Prime Jim, Shawnee, Triple Crown, Von</td>
<td>Autumn Bliss, Boyd, Canby, Caroline, Encore, Heritage, K-81-6, Killarney, Laurent, Nantahala, Nova, Polana, Prelude, Taylor Purple, Brandywine, Royalty Gold; Anne, Fall Gold Black: Bristol, Jewel, Mac Black</td>
<td>Strawberries, currants, grapes, blueberries, rhubarb, asparagus, more</td>
</tr>
<tr>
<td>Island Grove Ag Products</td>
<td>Commercial growers, wholesale. Web catalog</td>
<td>Plugs, 1 gal. pots</td>
<td>Natchez, Osage, Ouachita</td>
<td></td>
<td>Blueberries, figs, tree fruit, ornaments</td>
</tr>
<tr>
<td>Jones Farms</td>
<td>Commercial growers, gardeners. Web/catalog</td>
<td>Potted plants</td>
<td>Arapaho, Chester, Kiowa, Natchez, Navajo, Osage, Ouachita, Von</td>
<td></td>
<td>Sweet potatoes</td>
</tr>
<tr>
<td>Northwest Plant Company</td>
<td>Commercial growers; grown to order only. Web catalog</td>
<td>BB: Plugs; RR: roots, bare root canes, plugs</td>
<td>Black Diamond, Columbia Star, Marion, Metolius, Obsidian, Onyx, Wild Treasure</td>
<td>Red: Cascade Harvest, Chemainus, Meeker, Saanich, Squamish, Willamette, Wakefield</td>
<td>Strawberries, blueberries, currants, gooseberries, rhubarb, more</td>
</tr>
</tbody>
</table>

Please note: Availability of specific varieties may change. Updates, corrections, comments, and additional nursery listings are welcome.
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