



Request for Proposals

The North American Bramble Growers Research Foundation (NABGRF) is seeking proposals for bramble research for the year 2006. Since 1999, NABGRF has funded a total of 26 proposals, totaling \$50,146.

All bramble proposals will be considered, however preference will be given to proposals related to:

- cultivar development and testing
- pest management strategies
- cultural management strategies to improve yield, quality and profitability
- identification of beneficial compounds in bramble fruit and their effects on human health

Funding for individual projects is expected to range from \$1,500 to \$3,000. In 2005, NABGRF funded six proposals, for a total of \$7,385. Three proposals were funded through a cooperative arrangement with the IR-4 program, which supplemented NABGA's contribution to fully fund these proposals.

Proposals will be reviewed by NABGA's Research Committee at the Association's meeting in Savannah, Georgia in January 2006. Awards will be sent out shortly after the meeting, well before the 2006 growing season. Deadline for proposals is December 1, 2005. ❖

Guidelines for proposals may be found at www.raspberryblackberry.com/Webdocs/2006%20NABGA%20RFP.pdf or may be requested from the NABGA office.

It's Membership Renewal Time

A membership renewal form (colored paper) is tucked into this issue of your newsletter. Please renew today!

NABGA's membership year runs October 1 through September 30. (If you joined in the last few months, yours is a 2006 membership, and you do not need to renew.)

***** NABGA Annual Meeting & Conference *****

January 5-6, 2006 – Savannah, Georgia

Our 2006 Annual Meeting will be held in association with the Georgia Fruit and Vegetable Growers Association's Southeast Fruit and Vegetable Conference (SFVC) in Savannah, Georgia. We hope to see you there! Watch your mailbox and e-mail for registration details and accommodations information.

To register for NABGA's meeting, you will simply register for the SFVC. This conference has a very large trade show and extensive sessions on blueberries, peaches, and vegetable crops January 6-8. Fees are very reasonable and both one-day and three-day registrations are available. The North American Strawberry Growers Association (NASGA) will be meeting here (as the "North American Berry Conference"), on January 4-6, with educational sessions on the 4th, a tour on January 5, and general sessions the morning of the 6th. A forum on the National Berry Crops Initiative Strategic Plan for the Berry Industry (see pages 8-9) is planned for Saturday, January 7. This concentration and combination of opportunities is well worth the trip. And Savannah is a beautiful, historic city and a great winter getaway all by itself!

Here's the schedule at this point; the committee is still firming up some details.

Thursday, January 5

1:00-4:00 pm Blackberry ABCs: The basics of blackberry production for potential growers and those in their first year or two of production – or a refresher course for more experienced growers. A basic understanding of the blackberry's life cycle, needs, and preferences, and discussion of varieties, establishment, trellising, pruning, problem diagnosis and management, and marketing decisions. Includes growers sharing experiences from their own first years. The fee for this session is \$25. Enrollment is limited and must be pre-registered.

Friday, January 6

- 8:00 Current Production Issues (cane dieback, viruses, etc.)
- 8:45 The Primocane-Fruiting Blackberry Story: Progress and Prospects
- 9:45 Tracking the New Bramble Rust
- 10:15 Learning from Setbacks, Finding Successes: A Grower Panel
- 11:30 Bramble Research Update
- 12:00 Lunch, visit exhibits
- 1:30 Blackberry Nutrition Management
- 2:00 The Changing Climate of Bramble Marketing: Panel Discussion with Leading Buyers and Marketers
- 3:30 NABGA Annual Meeting
- 4:00 *What I Really Want to Know...* Q&A Panel with All Speakers
- 6:30 Bramble Growers Dinner: Town meeting-style discussion and Dutch-treat dinner (at a restaurant within walking distance; location TBA)

Confirmed speakers for the conference include John Clark, University of Arkansas; David Lockwood, University of Tennessee; Gina Fernandez, North Carolina State University; Phil Brannen, University of Georgia; Mike Bruerton and Keith Mixon, SunnyRidge Farms; Tom Peerbolt, NW IPM & Peerbolt Crop Management; Chuck & Ann Geyer, Westmoreland Berry Farm; Danny Shelton, Shelton Farms; Gary Suckow, G&N Berry Farm.

The full conference program and registration brochure will be mailed to you in October and posted on our website. ❖

EVENTS

October 20, 2005 — **Raspberry High Tunnel Open House**, 1 to 4 pm at Cornell's East Ithaca Farm. For more information contact Cathy Heidenreich, mcm4@cornell.edu or 315-787-2367.

October 25, 26 – **National Berry Crop Initiative Strategic Planning Workshop** in Geneva, New York. See pages 8-9. For registration info, visit the "Events" section of our website or contact NABGA.

December 1-2 — **Northwest Center for Small Fruits Research annual conference**, in Portland. For more information contact Philip Gütt at (541) 758-4043 or philip@oregon-berries.com.

January 5-6, 2006 – **NABGA Annual Meeting and Conference**. See page 1.

January 9-10, 2006 — **57th Western Small Fruit Pest Conference** at Washington State University's Mt. Vernon Research and Extension Center. For more information contact Tom Walters at 360-848-6143 or twwalters@wsu.edu.

February 15-16, 2006 – **NABGA Regional Meeting**, Syracuse, New York. See box to right.

IDEA CORNER

Picking LOTS of Berries

On August 8, NABGA member The Happy Berry (Walker Miller) in Six Mile, SC, announced the first world record for pounds of rabbiteye blueberries picked per hour. According to *Guinness World Records*, the only previous category was for most blueberries picked in eight hours by an individual, and there is no current record holder. The Happy Berry felt that eight hours was so long a time that only commercial pickers would be likely to attempt to set a record. To encourage more participation, they designed a picking contest to measure the pounds picked per hour, and lobbied *Guinness World Records* to add this category to their books. For more information visit www.TheHappyBerry.com.

Even if you don't want to get into the *Guinness Book of World Records*, you might want to consider holding picking

NABGA Regional Meeting

February 15-16, 2006 – Syracuse, New York

NABGA will hold a Regional Meeting in cooperation with the New York State Berry Growers Association as part of the Empire State Fruit and Vegetable Expo. NABGA will sponsor an intensive workshop on the "ABCs of Raspberry Production" on Thursday, February 15 and an expanded program of bramble sessions and discussions on February 15 and 16. Speakers will include small fruit breeder Courtney Weber and Extension Specialist Marvin Pritts, both from Cornell. The New York State Berry Growers Association meeting on Friday, February 16 will also include sessions on blueberries and strawberries. The Empire State Fruit and Vegetable Expo covers many commodities and has a large trade show.

There's still time to make suggestions of topics you'd like included in the program. If you've got some ideas, contact Executive Council members Nate Nourse 9413-665-2658 or info@noursefarms.com) or Dena Fiacchino (315-963-7286 ext 203, or dcf25@cornell.edu)

Hope to see you there!

contests at your own farm. One grower we know holds a picking contest as part of a weekend strawberry festival and gives prizes (gift certificates to the local Home Depot) to the winners. Prizes are awarded for most berries picked by an individual and by a family. Participants have all weekend to make their totals, and each participant's cumulative totals are posted on a whiteboard at the weighing and checkout station.

A contest like this adds fun and an element of competition – and gets a lot of berries picked!

Do We Have A Problem?

Recently, NABGA received the following email from a consumer in Texas:

There appears to be quite a bit of information on the Internet about the various molds and diseases that can affect raspberries (and any other plant), but almost no information about the edibility of affected fruit.

If washed with water, are the grey spot-bearing raspberries safe to eat?

We responded that raspberries are very perishable and get moldy easily and that washing off the mold really didn't get rid of it. Though it wouldn't hurt you to eat the mold, the fruit wouldn't taste good. We suggested that the best options were to seek out stores that took particular pride in fresh, high quality fruit and

rotated stock frequently, to refrigerate what they bought and use it quickly, and to find a local farm where they could get fresh-picked berries.

It certainly doesn't make the industry look good if consumers think that moldy raspberries are to be expected. How would YOU respond to that question? How do YOU assure the quality of what you sell? Can handling be improved in the wholesale/retail process?

If you have comments, send them to NABGA via phone, email, mail or fax!

Follow-up: Nourse Farms reports that the Jaclyn variety, mentioned in the last issue of *The Bramble*, is now available through the Nourse catalog.

The BRAMBLE is a quarterly publication of the North American Bramble Growers Association (NABGA) and is a benefit of membership in the association. For sample copy, reprint permission, membership information, and advertising rates, contact

NABGA

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The Bramble © NABGA 2005

NABGA Wants YOU...

...to nominate someone to the NABGA Executive Council or volunteer to run yourself. If you have a little time and a willingness to help *your* organization or know someone else who does, please contact any of the current Executive Council members (see back page) or the NABGA office by December 1.

NABGA's Executive Council, made up of representatives from eight regions, plus officers (elected by the council from its membership), is its board of directors. The Council meets just before the conference and works via phone, email, and letter throughout the year. Representatives serve two-year terms and may serve up to two consecutive terms. The following seats are currently open:

Region 1 (Represents all of Canada)

Region 2 (Represents CT, NH, MA, ME, RI & VT) Currently held by Nate Nourse, who is eligible for re-election.

***Region 4** (Represents DE, MD, OH, & WV) Currently held by Sue Loomis, who has served two terms and is not eligible to serve again.

Region 6 (Represents AR, IN, IL, KS, KY, MN, MO, ND, OK, SD, NE, TN & WI) Currently held by Bob Blain, who has served two terms and is not eligible to serve again.

Region 8 (Represents AK, AZ, CA, CO, ID, HA, MT, NM, OR, UT, WA, WY, Mexico, Central & South America). Currently held by Tom Walters, who continues on as NABGA Vice President; he can continue to represent this region or a new representative may be elected.

Dole Foods to Open Plants in North Carolina

Dole Foods is planning to build two processing plants and a fruit- and vegetable-oriented biotechnology research center in North Carolina.

Dole subsidiary Bud Antle, Inc. will open a \$54 million vegetable-processing plant and employ 525 workers within three years on the outskirts of Bessemer City, NC. The second packaging plant would handle fruits, especially blueberries. According to the NC Department of Agriculture, Dole Food is interested in

Briefly Speaking...

When NABGA President Ervin Lineberger has asked me to take a turn at the "Briefly Speaking" column in this issue of the newsletter, it was easy to think of something to say. I've been working for NABGA now for 18 months and it's been a pleasure.

I'm pleased with the growth in our association, especially in the Pacific Northwest – if you look at the "New Member" list on page 13, you'll see three new members from the Northwest. Two of these, Tom Peerbolt and Henry Bierlink, are members, as are Ervin and I, of the Berry Crops Initiative Steering Committee. Tom & Anna Peerbolt's weekly NW IPM newsletter is a great source of information (you'll see it acknowledged as a source many times in *The Bramble*) and is also helping let people know about NABGA. Henry Bierlink is Executive Secretary of the Washington Red Raspberry Commission. The networking effectiveness of this Initiative is already considerable! With NABGA Vice President Tom Walters also working in Washington state, I think NABGA will continue to build relationships in this leading bramble-producing region. Please continue to help NABGA grow by telling others about the organization and directing them to our website. I'm always glad to send out sample newsletters, too.

In late June, I attended a two-day meeting of fruit and vegetable executive secretaries in Ohio, sponsored by Meister Media, the publisher of *American Fruit Grower* magazine, among others. Also attending were representatives from Ohio, Michigan, New York, Illinois, Pennsylvania, US Apple, and Great American Publishing (publishers of *Fruit Grower News*). It was a great opportunity to meet our counterparts, share information, and compare ways our organizations handled things like newsletters, conferences, and membership. I thank NABGA (and the NC Strawberry Association) for sending me.

Recently, I've been on the phone a lot to members, talking to prospective speakers for the conference or researching articles for the newsletter. It would be even better if I could visit everyone's farm, but talking on the phone comes in a pretty good second best. I felt like I hit the jackpot when I called Art Summerfield in California for the "Grower Profile" in this newsletter (pages 6-7).

I look forward to meeting many more members in person at the annual conference and regional meeting this winter. Please call or send me an e-mail if there is anything I can do for you!

Debby Wechsler
NABGA Executive Secretary

purchasing many of the fruit and vegetable crops grown in North Carolina, including apples, blackberries, blueberries, melons, peaches and strawberries.

"North Carolina's agricultural diversity has been a strong selling point for Dole's frozen-fruits plant," said NC Commissioner of Agriculture Steve Troxler. "The volume of product that Dole will need for this plant is just mind-boggling."

Dole Foods has approached officials at N.C. State University, the University of North Carolina, and Duke University about helping create the biotechnology

research center in Kannapolis, NC, where David Murdock, head of Dole Foods, bought a closed textile plant in downtown Kannapolis last year.

According to a memo sent to the University of North Carolina's Board of Governors by system President Molly Broad (reported in the *Salisbury Post*), Dole's plan has three components: a "biopolis", construction of the two Dole Foods plants, and contracting to buy "all the berries North Carolina can grow."

The *Post* said plans for the biopolis include:

Continued on page 4

Update on New Rust Disease

Earlier this year it became evident that many Evergreen blackberry fields in Oregon were being infected with a previously unknown rust disease, now identified as *Phragmidium violaceum*. This is an organism being used as a biocontrol agent for Himalayan blackberry in Australia, New Zealand and Chile, where it is considered a noxious weed. The Oregon Department of Agriculture discovered it on Himalayan blackberry in southern Oregon earlier this year. It has subsequently been found infecting specific biotypes of Himalayan blackberry throughout the Willamette Valley and southwest Washington as well as infecting commercial Evergreen blackberries.

The rust disease does not kill the plant completely but can weaken it over time and significantly reduce fruit production. Wine-colored spots appear on the top of infected leaves. Directly under these spots, on the bottom of these leaves there will be circular patches of

cream to yellow spore masses surrounded by a violet tinge. Advanced stages of the disease will also have black spores mixed in with the yellow spores. Older leaves close to the canes are the first infected and can eventually die. Defoliation of entire canes has been seen in severe cases. Spores can also often be found on the blossoms and unripened fruit. All green portions of both primocanes and floricanes can be infected. Information and images of this rust can be found online at: www.nwipm.info/blkrust-05.htm

Researchers from OSU and USDA are planning projects and fungicide trials to help understand and control this disease, working with the Oregon Department of Agriculture to evaluating its impact and minimize the potential economic threat.

In the absence of specific information, control recommendations are being based on similar diseases in this and other crops, integrating multiple cultural and chemical tactics based on their performance in other systems. Detailed current recommendations are available from OSU and at www.nwipm.com/blkrust-05.htm.

controlled with fungicides, and that pathologists in Oregon and Washington will likely have figured out how to manage the disease if and when it gets into the eastern U.S.

From a Northwest IPM report (www.nwipm.info/blkrust-05.htm) and a New York Berry News e-newsletter.

Fire Blight in Brambles

While fire blight is most common in pears and apples, it also affects raspberries and blackberries. Certain varieties are particularly susceptible. Losses result from berry necrosis and from tip dieback of primocanes. Fruit losses of 65 percent or more have been reported on thornless blackberries in Illinois.

Symptoms: The most obvious and striking symptom are blackened cane tips, which bend over and die, resulting in a "shepherd's crook" appearance. Infections may proceed down the cane for up to eight inches and may produce cream-colored bacterial ooze under high moisture conditions. As the disease progresses down the cane, the veins of leaf veins and portions of the leaf surrounding the midvein turn black.

Entire leaves may wither and die. Typically, discoloration and dieback is limited to succulent young growth. In addition, the disease can affect fruit clusters. Infected peduncles (the stalks of fruit clusters) turn black and the young developing berries become brown, dry and very hard. Entire fruit clusters may be infected, but generally a few berries in each cluster remain healthy.

Cause: Fire blight is caused by the bacterium *Erwinia amylovora*. Although this is the same organism that causes fire blight on pear and apple, it is a different strain. Thus the strain that attacks raspberries and blackberries will not infect apple or pear and vice versa. 'Boyne' raspberries can be infected by the apple strain, but this is an exception. The bacteria are likely spread from plant to plant by insects, wind and splashing water. Rain, high humidity, and warm temperatures favor disease development. It is not known how and where the bacteria overwinter, although they likely survive in infected canes.

continued on page 7

Produce Promotions **DISPLAY BANNERS**

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According to Dr. Marvin Pritts of Cornell University, most of the varieties grown in California, Washington and Oregon are not closely related to the susceptible varieties; however, many eastern varieties have susceptible species in their parental background. It is possible that this rust disease could spread to eastern plantings in the next couple of years. It is not yet known which varieties are susceptible, but screening will be underway shortly.

Dr. Pritts reassures Eastern producers that this rust should be able to be

Dole Foods

continued from page 3

- A Dole-NCSU Institute for Advanced Fruit and Vegetable Science, which would try to improve the nutritional content of fruits and vegetables.
- A UNC Nutrition Institute, led by UNC-Chapel Hill officials, examining the relationship between nutrition and the brain, obesity and cancer.
- A state-of-the-art Dole analytical laboratory, a fermentation facility, a possible research center directed by Duke, an incubator for start-up companies and a science high school for girls.

David Murdoch has owned Dole Foods for 23 years, has owned a home in NC for the past 24 years, and previously was the owner of Cannon Mills. According to Murdoch, speaking to interested growers at a meeting in Raleigh, Dole operates in 94 countries and is the "world's largest farmer in fresh fruit/vegetables." Total sales last year were estimated at \$5 billion.

Dole entered the frozen market in June 2004 when they purchased JR Wood Co. based in Atwater, CA (San Joaquin/Central Valley). JR Wood is the largest IQF (individual quick freeze) plant in the US. Seven bagging lines enable them to process 1.5 million pounds of packaged (primarily fruit) products each week. Currently they buy about 2 million pounds of NC blueberries annually. Strawberries are the No. 1 frozen fruit for Wood with 46% of volume. Blueberries are currently 15-18%, while peaches are about 14% and apples about 13%. In January 2005, they launched the Dole brand in frozen fruit. Dole Foods sees frozen fruit and juices as a tremendous opportunity for company growth and is interested in purchasing Southeastern blackberries as well.

While it's not yet clear whether Dole's processing plant will open up good markets for small fruit growers, their enthusiasm for fresh fruits and their willingness to invest in research efforts certainly are certainly positive. ❖

We plan to have a Dole representative speak in the "Changing Climate of Berry Marketing" session at the conference.



Fall Bramble 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.

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 leaves senesce late fall.
- Primocane fruiting types begin to flower in late summer/early fall and fruit matures until frost in fall.

Harvest

- Harvest primocane fruiting raspberries.

Pruning and trellising

- Spent floricanes should be removed as soon as possible.
- Optimal time to prune is after the coldest part of the winter is over. However pruning can start in late fall if plantings are large (late winter for smaller plantings).
- Start trellis repairs after plants have defoliated.

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 in your state).
- Remove damaged canes from field as soon as possible to lessen the impact of the pest.

Planting

- Growers in southern areas can plant in the fall.
- In cooler areas, prepare list of cultivars for next spring's new plantings. Find the commercial small fruit nursery list at www.smallfruits.org

Nutrient management

- Take soil tests to determine fertility needs for spring 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.
- Plan on attending NABGA's annual meeting in Savannah (January) or the region meeting in Syracuse (February).

Chemicals Update

- The EPA has cancelled all uses of Guthion (Azinphos-methyl) in caneberreries. Distribution or sale is permitted until March 31, 2006. The use of existing stocks is permitted until September 30, 2006.
- The manufacturers of the following five Diazinon products have requested that all berry uses be removed from their labels: Micro-Flo's Diazinon AG-500; Micro-Flo's Diazinon 50W; Loveland's Clean Crop Diazinon 500-AG; Loveland's Diazinon AG500 Insecticide; Gowan's Diazinon 4E.
- The manufacturers of the following Carbaryl (Sevin) products have requested that strawberry uses be removed from their labels: Loveland's Clean Crop Carbaryl Bait; Loveland's Sevin 5 Bait; Wilbur-Ellis' Sevin 5 Dust.
- Verdicon's Sevin 5G manufacturer has requested that all berry uses be removed from their label.

This list comes from the Pacific NW. Some of these products were not registered in other states. The Federal Register Online at www.gpoaccess.gov/fr/index.html, for DOCID:fr17au05-78, is the source. To see manufacturers which still have valid labels of these or related products, visit www.nwipm.info/labels9-05.htm.

GROWER PROFILE

Berries in the Sierras

California bramble grower and longtime NABGA member Art Summerfield is a long way from most NABGA members, but he's got a good bit in common with many of our members: he's a pick-your-own grower, not one of the big California shipper-growers, and he raises several eastern varieties because of his climate and market.

California's primary growing region for fresh market raspberries runs in an arc near the coast between Watsonville and Santa Cruz, where conditions are cool and foggy in the summer. Art's farm, however, is outside this region, 50 miles east of Sacramento, in the foothills of the Sierras. "We have snowy winters and roasting summers," he says, "but without the humidity you have back east." Winter temperatures rarely go below 20 degrees.

Art's original intent was to go into viticulture. After getting an agricultural degree at Santa Rosa College in the early

1990s, he worked briefly as a spray applicator for a grape grower in Santa Rosa. However, he says, he "got bit by the berry bug" when he became acquainted with a nearby grower successfully raising raspberries and blueberries and making jams.

He leased his own property in Camino, near Placerville, in 1993, cleared off the old pear and apple trees growing on it, terraced the land, and put in five acres of brambles, mostly red raspberries. But blackberries worked out better than raspberries. "For us global warming is a reality," says Art. "Our summer temperatures have gone up over 5 degrees F. over the last 15 years." He converted 3½ acres to western trailing blackberries (similar to Eastern dewberries) and kept 1½ acres of raspberries for fall production only.

The farm raises Boysen, Marion, and Olallie trailing blackberries, using an elaborate ten-wire trellis for their long, thin canes. "For PYO, you really need to have the fruit right in the customer's face," says Art. He estimates that pruning and trellising take about 30 hours a year

for each 250-foot row. Heritage has become his main raspberry variety, because it is tolerant to tomato ring spot virus. Vast tracts of wild blackberries nearby make it impossible to control the virus, explains Art, since it's transmitted by pollen and by nematodes. "The virus still stunts Heritage, and the yield drop to about 2,000 lbs/acre, but that's an acceptable yield for pick-your-own," observes Art. He gets about three or four years of production from a raspberry planting but a decade or more for blackberries.

While Summerfield Berry Farm's market is 80% pick-your-own, the rest of the harvest goes to production of gourmet preserves and a bit of fresh-market sale at their on-farm store.

Art makes about 500 cases a year of high quality, low sugar preserves primarily for sale to gourmet stores in northern California. "I started making jam as a little boy," Art recalls. "I grew up in Michigan and there were a lot of wild berries growing nearby. I was always bugging my mom to make jam, so finally she taught me how to do it myself."



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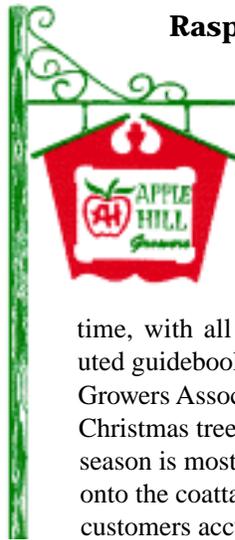
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He uses some of his own fruit but also buys a lot of Boysenberries, Loganberries, Marionberries, and raspberries from other growers in California, Oregon, and Washington. He rents a commercial kitchen on a nearby commercial vineyard, sharing the rental with another grower. He makes most of the jam in the winter, but can't make it too far in advance, because the low-sugar jams don't keep a long time.

Art's schooling gave him some background in microbiology, so he's able to run his own plate tests for the occasional (but rare) occurrence of fermentation yeasts that affect the flavor of batches of preserves. He waits about a month after the batch is made, and then spot-tests—though, he says, he can just about catch a problem by taste as well as he can running the formal tests. As a wholesale processor, Summerfield Berry Farm is subject to state processing facility and quality control inspections, as well as county processing facility inspections as a retail marketer. A store in the barn, about 1500 square feet, sells their preserves, some local produce from other farmers, and a lot of frozen fruit—bought at the same time as he buys for his own processing.

The farm's primary customer base is the Sacramento metropolitan area, about an hour away. Like most PYO farms, his main customers are "active housewives with kids." He has developed a mailing list of about 6000 names and sends out postcards announcing the start of the season. "We have unpredictable spring weather, so the postcards are important—our ripening dates can vary year to year by several weeks," says Art.

PYO customers are encouraged to pick into flats that each hold 12 half-pint unvented polystyrene tills. The farm provides custom-made, long-legged carriers that fit the flats. "We've tried a lot of things," says Art, "but these half-pint tills are the only way to keep the Boysenberries and Marionberries from getting squished. The top load of berries is only about three deep, and the sides of the tills take off the side load much better than open flats." When customers are through picking, they bring in their berries and the farm staff weigh them,



Raspberries on Apple Hill

Art Summerfield located his farm in Camino because it was of one of the nation's largest direct-marketing regions in the country, known as Apple Hill™. According to Art, the area was originally a major pear production center, but then turned to apples. When growers found they could not compete successfully in wholesale markets with Washington state apples, in the 1960s, they began to develop the area as a direct market destination during apple harvest

time, with all kinds of activities and entertainment and a widely distributed guidebook. The original group of 16 orchards in the Apple Hill Growers Association has grown to over 50 and now includes wineries, Christmas tree growers, and berry growers. Even though the berry harvest season is mostly before the apple harvest, Art says his strategy of tagging onto the coattails of Apple Hill has worked—the area has over a million customers accustomed to coming in the fall, and many of them will come in summer too.

put on the vented lids and bag the containers into custom kraft paper bags that can hold eight tills, stacked two across and four high. He charges ten cents deposit on each till and encourages customers to bring them back to be washed, sterilized, and used again. Since 85% of his customers are repeats, response to this kind of recycling is good. People who are just picking for jam and don't mind squashed berries can pick into buckets and save the ten cents. Customers pay \$4.00/pound for both raspberries and blackberries. The lidding, bagging, and washing of containers take extra labor, but Art thinks it is well worth it; customers appreciate the extra service and don't mind the price.

A big surprise for him has been demand for black raspberries. "The demand for black raspberries has gone up tenfold in the last year," he says. He had planted a few rows mostly for making jams, and for years couldn't give them away. Now, they are in hot demand among consumers who are aware of their health benefit. Though flavorful, in his climate the fruit tend to be dry. His best varieties are Jewel and Bristol—eastern cultivars again; the West Coast variety Munger is his least productive. Art has also been experimenting with a few rows of currants. "They are hard to start," he says, "but if you can get them started they tolerate the heat, though we have to put them under shade cloth." He sees opportunities for market growth in both

currants and black raspberries, because of their nutraceutical reputations, and is watching East Coast breeding efforts hoping for development of red raspberries more suited to his climate. ♦

Art Summerfield may be contacted at P.O. Box 489, Camino, CA 95709.

Fire Blight in Brambles

continued from page 5

Cultivar resistance: Fire blight affects both red and black raspberries and blackberries. The susceptibility of purple raspberries is unknown. While there has been no thorough study of resistance to fire blight among commercially available cultivars, Latham, Boyne, K81-6 and Fallgold raspberries are known to be susceptible.

Control: No specific control measures have been developed because of the sporadic nature of the disease. However, the following practices will limit establishment and spread. Purchase and plant only certified, disease-free plants from reliable nurseries. Practice good sanitation. Remove and destroy diseased canes from the planting as soon as you see them. Pruning is best done during dry weather to avoid spread of the disease. Disinfest pruning shears in a 10 percent household bleach solution (containing one part bleach and nine parts water) between each cut to avoid transmitting bacteria to healthy canes. Isopropyl

continued on back page

The National Berry Crop Initiative

The National Berry Crop Initiative (NBCI) is a partnership of grower groups, academia and government formed to develop a strategic research and Extension plan for the continued growth and sustainability of berry crop production in the United States. NABGA President Ervin Lineberger and Executive Secretary Debby Wechsler are representing our association on the steering committee for the NBCI. Also on the steering committee are NABGA member Anne Geyer, from Oak Grove, VA (as Vice President of the North American Strawberry Growers Association) and representatives of the Washington Red Raspberry Commission and the Oregon Raspberry and Blackberry Commission. Others represent organizations for strawberries, blueberry, cranberry, and Ribes (currant and gooseberry), and the ag experiment stations around the country. The group is led by Tom Bewick, National Program Leader for Horticulture at USDA/CSREES.

The group has been meeting via conference call for several months and the collaborative interaction is already leading to increased communication between groups and the recognition that we have many things in common and shared goals towards which we can work together. For example, ALL the berry crops have very clear health benefits that can be promoted to consumers to increase consumption. This plan will be a vital tool as we go to Congress, to USDA, and to state and regional funders of small fruit research and extension in both production and marketing.

The group has developed a draft strategic plan that lists assumptions about the future, goals, and objectives, and is in the process of drafting a matrix of strategic research priorities and action steps. The model for this has been the strategic plan adopted in 2004 by the California Strawberry Commission, which has generously shared its plan with the group.

Vision Statement

By 2020, the American berry crop industry will triple consumer use of berry

Please Comment on the Draft Plan!

The next steps are to get feedback on the draft so far and to develop specific priorities and action steps within this framework. Let us know what YOUR priorities and needs are for research and extension. Please look at the summary below; let me, or any of us on the steering committee, know if you think these are appropriate assumptions, goals, and objectives. If you'd like to see the matrix of strategic priorities and action steps, I can send you the Excel file or a printout.

Strategic Planning Workshops

A Strategic Planning Workshop will be held October 24-26 at the New York State Agricultural Experiment Station in Geneva, NY. If you'd like to be involved in this process to develop a plan for the future of the berry industry, please plan to attend. For more information contact NABGA or tbewick@csrees.usda.gov or see the "Events" section of www.raspberrylblackberry.com.

Another Planning Workshop is planned to take place at the Southeast Fruit and Vegetable Expo in Savannah in January, 2006, immediately after our annual conference; let me know if you are interested in participating. —*Debby Wechsler*

crops while increasing the current market share against international sources. Increased berry consumption will contribute to improvement in human health and nutrition, prosperity for rural communities and sustainability of the berry crop industry.

Mission Statement

In order to achieve our vision, the National Berry Crop Initiative will insure outcome-based funding for prioritized, world-class research and Extension programs in human health aspects of berry crops, crop production and product utilization. NBCI will become a world leader in identifying and responding to trends that affect the sustainability of the berry crop industries. Leadership and funding will be provided through creative public-private partnerships among government, academic, nonprofit and private sector partners accountable for research, development and adoption of business, environmental and socially responsible best practices in the American berry crop industry.

Assumptions

Social and Cultural Environment

1. Consumers will continue to demonstrate strong interest in minimizing chemical pesticide use in food crop production.
2. National initiatives to combat obesity and other human health problems will lead to increased demand for and

consumption of fruits and vegetables by U.S. consumers.

3. The "baby-boom" generation is increasingly interested in consuming foods that are nutrient and neutraceutically dense, and this interest will result in increased demand for berry crops.
4. Consumers will increasingly demand year-round access to berry crops, which might open U.S. markets to foreign competition.
5. Consumers will demand that products they consume be produced in a way that does not endanger wildlife.
6. Trends toward healthful convenience foods and slow food/gourmet food are potential opportunities for the berry crop industries.

Governmental/Political Environment

1. Some segments of the berry crops industries will continue to be affected by federal immigration and guest worker policy.
2. Regulation of production and environmental issues will contribute to the further consolidation of farming.
3. Foreign production of berry crops, particularly in China, has the potential to negatively impact the berry crop industries.
4. Agricultural water users and urban/suburban communities will likely seek legal recourse to address water pollution concerns.
5. Agriculture will forge alliances with

groups outside the industry to improve the environment.

6. Government funding to support human health and nutrition research on fruits and vegetables will increase.

Economic and Business Factors

1. To be sustainable, a processing industry for berry crops is needed.

2. Significant increases in sales from year to year will require strategic relationships within the berry crop industries.

3. The cost of land in urbanizing areas will force berry crop producers into growing regions with less than ideal climatic conditions.

4. Increasing labor costs will impact the industries.

5. Direct marketing and the development of value-added products will continue to increase in importance, especially for smaller producers and producers near urban areas.

Science and Technology

1. New technologies will continue to increase productivity.

2. For the potential increase in productivity to be realized and sustainable, Extension and technology transfer are essential.

3. Information will be delivered through the internet and other electronic formats.

4. The largest challenges facing the industry today have solutions in research and Extension.

5. New technologies will be expensive but must be cost effective.

6. Consumers will be more sensitive to environmental stewardship that reduces the use of synthetic chemicals.

Agricultural

1. New insects, diseases and weeds will continue to interfere with efficient berry crop production.

2. New limitations will be placed on the tools currently available for pest management.

3. Increased competition from foreign imports will require U.S. producers to be more efficient for the industry to remain sustainable.

4. There will be increasing competition for resources, such as land, water and capital, with the non-agricultural sector.



Goals and Objectives

1. Human Health, Consumer Insights and Community Issues

1.1. To obtain a certified FDA health claim for berry crops by fully documenting the human health benefits of berry consumption.

1.2. To promote consumer awareness and understanding of the health and nutritional benefits of berries, leading to increased consumption of berry crops.

1.3. To promote awareness and understanding of the health and nutritional benefits of berries among health professionals, who in turn can impact the behavior of consumers.

1.4. To understand consumer preferences to secure increased market share and sustainability.

1.5. To characterize and improve the contribution by the berry crop industries to the quality of life in rural communities.

2. Sustainable Production of High Quality Berry Crops and Berry Crop Products.

2.1. To optimize the interaction of the genotype, cultural practices and the environment to optimize yield and

nutritional and nutraceutical content of the product.

2.2. To define, improve and optimize berry crop production efficiency.

2.3. To manage the water cycle in a sustainable manner in production fields and in processing facilities.

2.4. To manage the nutrient/mineral cycle and soil health and quality in a sustainable manner.

2.5. To manage energy flow through production fields and processing facilities in a sustainable manner.

2.6. To understand and enhance the ecosystem function of berry crop production fields and the interaction of the berry crop industries with the community to contribute to improved quality of life in rural communities.

3. Policy Decisions Based on Communication, Sound Science and Fiscal Realities

3.1. To insure that research and Extension for Specialty Crops are addressed in farm bill legislation.

3.2. To insure that USDA programs are available for and understood by berry crop producers.

3.3. To insure that berry crop producers have tools to help them manage risk.

3.4. To insure trade policies that are fair and consistent.

3.5. To insure federal immigration policies conducive to a consistent labor supply. ❖

Please comment on this draft plan and let us know YOUR priorities and needs for the berry industry! See box on facing page.

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Blackberry Trends in Trentino, Italy

By Lara Giongo

A lack of information on the production trends in minor areas is very often, from the outside, a cause of misunderstanding of the reality; when we talk about minor crops the misunderstanding is amplified.

Following a few requests, I tried to draw a survey of the blackberry production in the area where we operate. The region Trentino is characterized by definite areas that are particularly adapted to blackberry culture, that people started managing in the late 1970s. This mountain region is characterized by a strong topological diversity that has contributed to an exploitation of different altitudes, allowing growers to schedule their product offerings and maintain better incomes.

Another remarkable aspect is related to the high degree of fractioning of the landed property: what is a significant barrier for the development of major crops has allowed the increase in produc-



tion of labor-intensive soft fruit crops.

Blackberry production season starts in June continuing until November, with Chester and Lochness the two blackberry cultivars currently grown. The wide use of Italian tunnels not only prolongs the harvest and contains diseases attacks, but also improves fruit quality.

The average farm size in Trentino is small scale (1000 m²). The growers – more than 1500 in the Province – are usually organized within cooperatives that have been operating for the past twenty years and have gradually in-

creased their total area under cultivation to about 26 hectares.

The co-ops have a long production history and often provide a range of services both to consumers and to associated growers: sale of fruit, fruit processing, cool storage facilities, technical support for each fruit species and nursery.

The product is hand harvested in the early morning and delivered once

a day to the packing houses, where it is immediately cooled, packaged for supermarkets (60%) or for traditional markets (40% including restaurants and traditional retailers), and then distributed the same night.

From 1984 blackberry production in Trentino has increased at an average yearly rate of 16.5%. This positive trend is significantly due to consumers awareness of the health benefits related to soft fruit (blueberries, blackberries, raspberries and currants). The total production

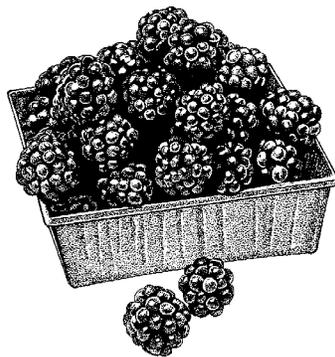
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in 2004 was of 467,83 tons, more than 98% directed to fresh market and only a residual part for processing.

The production systems have gone through evident changes in the last decade. The most important introduction was tunnel use, together with the choice of cultivars focused on the fresh market. The use of ice packs in the field, wide use of controlled atmosphere storage, and packing technology are others. No or very little blackberry is produced organically. Usually the plants have a distance of 100-120 cm on the row, with two rows/tunnel in a tunnel of 5 m. Plants are trained to a vertical trellis with two or three support wires.

Blackberry here is highly susceptible to downy mildew, while virus diseases are not so common. Common pests include the red berry mite. However, the major problem for blackberry production is cold hardiness.

Fruit safety and traceability along the whole market chain are of great importance. The main growers' co-ops strictly follow a few common IPM protocols for the different berries as a guaranty of what they offer to the market. ❖

25th Anniversary of the Polish Raspberry and Blackberry Breeding Programme

In the 1960s and 1970s there was a great increase in Polish raspberry production. Due to the lack of Polish varieties, raspberry production had included only foreign breeds. The Polish breeding raspberry and blackberry programme, run by Dr. Jan Danek., began in 1979. It has been located in the Fruit Experiment Station, Brzezna (south Poland). Currently, the programme has the following three main goals:

- Adaptation of new releases suited to the Polish climate.
- Breeding for good fruit quality.
- Breeding for better plant health.

The programme includes both floriculture and primocane raspberries and it is based on traditional techniques of crossing with the most suitable parental material. The Fruit Experiment Station in



Both the articles here are edited from articles in the July 2005 issue of the European newsletter *Interberry Gazette*, of the Istituto Agrario di San Michele All'Adige in Trento, Italy, published in both Italian and English. Near as we can tell, the Interberry project is a cooperative effort of a number in institutions working with small fruits in this region. The full newsletter and additional information are at www.interberry.iasma.it.

Brzezna co-operates with the department of Fruit Storage and Processing of the Research Institute of Pomology and Floriculture in Skierniewice where fruit chemistry and shelf life are also investigated. The Polish breeding programme has also gained an advantage from new biotechnological opportunities with cooperation with the Fruit Plant Breeding Department of the Institute in Skierniewice. So far 1,386 crosses have been carried out; in addition, 100,000 seedlings selections have been identified. New releases include the following:

Floriculture Raspberries

Beskid: High bushes, straight shoots with residual thorns. Fruiting shoots are long, with high productivity. It is a late cultivar with a long period of fruit ripening. Fruit are large or medium size, elongated in shape, dark red color, glossy, compact, with a slightly acid taste. It is mainly a processing cultivar.

Laszka: Early floriculture cultivar. Plants produce average numbers or many young shoots, medium high, straight with short internodes. Two-year shoots produce lots of lateral shoots of average length. Fruits are situated equally on the fruiting shoot. Fruit are large, elongated, compact, firm, slightly red with little pubescence, sweet, and with good flavor.

Primocane Raspberries:

Polana: Medium early primocane

cultivar. Medium growth of plant. The bushes produce uniform shoots, about 1.5 m. high. Shoots are covered by residual thorns. Fruits are big or average size, wide cone shape, red intensive color, glossy, compact, with good taste. In Polish condition fruiting period is until autumn but the taste of late fruit is not as good. It is a processing cultivar. In advantageous condition several tons/ha can be harvested. *[This variety is available from Nourse Farm; Polana and other Polish varieties may also be available from other North American sources.]*

Polka: Currently, the most outstanding release, whose production in 2003 (its first year on the official register) was estimated as 32.7% of all raspberry production in Poland. It was patented January 2003. Currently 'Polka' is already cultivated in many European countries and seems to have become the main dessert primocane raspberry propagated in Europe: this is also confirmed by the increasing number of European producers interested in buying rights for the propagation of this variety. Polka's fruit mature during the end of July and beginning of August and can continue three months in both field and tunnel system. Fruits maintain good shape after refrigeration and are characterized by a convincing "raspberry" aroma. The accent is on their wealth of ellagic acid and ascorbic acid. Fruits also have outstanding shelf life.

Pocusa: Medium early primocane cultivar. Plants produce an average number of uniform, medium-size shoots. Some of them can grow to 2 m. Fruits are very big, with a slightly elongated or globe shape, intensive red color, with

Continued on page 13



RESEARCH REPORT

Raspberry Cultivar Development for the Upper Midwest

By Brian Smith. UW-River Falls. Edited for this newsletter; full report available from NABGA.

A 3-replicate, 29-genotype, floricanes/primocane bramble performance trial was established at UW-River Falls in 2003. Establishment specifics are as follows:

Climate: USDA Hardiness Zone 3B (-4° guaranteed, -25° minimum average, -42°F possible). Average annual rainfall 29.95", Average snowfall - 48", Average growing season-120 days. Soil Type: Sparta Sandy Loam, 2.2% o.m., pH = 7.1

Planting was by bare root or tissue-cultured plants set June 16, 2003 at 2' x 8' within and between rows, respectively, 6 plants per plot. Plant density is 2,733 plants/acre.

Harvest season: Primocane-fruiting 8/18/04-9/30/04. Floricane fruiting genotypes put on insufficient growth for 2004 harvest, but the following were established:

Primocane – fruiting: Alice (OAY-F1), Anne, Autumn Bliss, Autumn Britten, Autumn Byrd, Caroline, Dinkum, Heritage, Himbo Top, Jaclyn (QEG-F1), Joan J, Kiwi Gold, Polana, Prelude PF/FF, Ruby, Summit

Floricane-fruiting: Boyne, Encore, Esta, Festival, K81-6, Killarney, NY 253, NY 258, NY 283, Nova, OAM – W2, PCS – 1, PCS – 2, Prelude FF/PF, Royalty (purple), MacBlack (black), Cancanska (blackberry)

Observational plots were also established for ten advanced selections.

A second replicated raspberry performance trial was established in Spring 2004; characterized by 12 ft. plots (6 plants/plot) and 3 replications of each genotype. The following genotypes were planted:

Primocane-fruiting: Anne, Autumn Bliss, Autumn Byrd, Caroline, Dinkum, Golden Harvest, Golden, Summit, Heritage, Josephine, Kiwigold, Magana, Polana

2004 Raspberry Primocane-fruiting Trial Results

Cultivar	Yield (lbs/acre)	Fruit Size 1 st Harvest (gms)	Fruit Size Avg all harvests (gms)	1st Harvest Date	% Crop by Avg Frost Date (9/18)	Avg Height (in.)
Autumn Bliss	4,929	4.0	3.4	9/3	40	46
Autumn Britten (Nursery 1)	2,290	4.5	4.0	9/3	76	43
Autumn Britten (Nursery 2)	3,898	4.3	4.0	9/3	73	44
Autumn Byrd	4,796	3.7	3.1	9/3	54	47
Caroline (TC; Nursery)	5,348	4.0	3.9	9/10	52	66
Caroline (Nursery 2)	2,481	4.1	3.5	9/10	44	64
Dinkum	3,810	4.0	3.4	9/3	60	51
Heritage	2,183	3.0	2.6	9/10	28	60
Himbo Top	1,208	3.9	3.6	9/18	46	66
Joan J (TC)	2,828	4.5	3.8	9/10	64	61
Jaclyn (QEG)	2,537	4.0	3.5	9/3	66	54
Polana (Nursery 1)	5,221	3.7	3.0	9/3	32	40
Polana (Nursery 2)	4,461	4.1	3.3	9/3	74	39
Ruby	3,548	3.9	3.7	9/10	13	56
Summit	9,970	3.0	2.3	8/18	52	48
RF 01-99-12-27	4,934	3.4	3.1	8/18	72	61

Floricane-fruiting: Boyne, Encore, Esquimalt (BC89-2-89), K81-6, Killarney, Latham, Lauren, Nova, Reveille, Tulameen, WSU 1068

Black Raspberries: Blackhawk,

Bristol, Jewel

In addition to the above, single plots were established of the 20 raspberry selections made at UW-River Falls for 2003. ❖

RESEARCH REPORT

Evaluation of Raspberry Seedling Progenies for Heat Tolerance, Resistance to Variable Winter Temperatures, and Horticultural Characteristics

By Dr. James R. Ballington, Horticultural Science Dept, NCSU

The \$2500 in funding that was received from NABGA for 2004 was used in part for travel and associated expenses to the Sandhills Research Station, Jackson Springs, NC, and the Mountain Horticultural Crops Research Station, Fletcher, NC, to evaluate BC₁ and BC₂ raspberry seedling progenies involving red rasp-

berry and *Rubus parvifolius* for heat tolerance, resistance to variable winter temperatures, plant habit, superior yield and size, firmness, and flavor, and parent potential. Identified 30 promising BC₁ selections between both locations. The majority of these appear more promising as parents than as potential cultivars, and are being propagated by cuttings for further evaluation. The cross {NC 498 [NC 357(RUB 1663 OP – *R. parvifolius*) x Tulameen] x Qualicum} was outstanding from the standpoint of promising BC₁s identified. Fifteen BC₂ selections were identified across locations, with the majority being identified at Fletcher. The majority of the BC₂ selections show promise as potential future cultivars, and these will be meristemmed and multiplied in tissue culture for further evaluation. The most promising BC₂ cross was

Mandarin x Tulameen. In addition, four BC₁ selections were identified in the cross {Willamette Spine-free x NC 428 [NC 177(*R. innominatus*) x Glen Prosen]} as potential parents, five in the F₁ progeny [OR/US 1650-2422(*R. niveus*) x Willamette Spine-free], six in the F₁ progeny [NC 402 (RUB 1663 OP – *R. parvifolius*) x Tulameen], and three in the F₁ progeny (NC 402 x Autumn Bliss). The remainder of the funds were used for supplies for trellising the seedlings from the half diallel cross study among red raspberry genotypes to determine the heritability of heat tolerance and resistance to variable winter temperatures. ❖

Each research project funded by the NABG Research Foundation submits a progress report to the Foundation at the end of the year. Reports on all projects are printed in *The Bramble* over the course of the year. These are the lasat of the reports received in December 2004 for projects funded in February 2004. Starting with the next issue of *The Bramble*, reports from 2005 projects will be published

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Polish Raspberry and Blackberry Breeding

Continued from page 11

little coat. It could be used for fresh consumption and for processing.

Poranna Rosa: Plants produce several strong, straight shoots, increasing to 1.5 m. high. Shoots are covered by plenty of thorns. It fruits on one-year shoots, fruiting situated one-third away from shoot end. Fruit are big, similar globe shape, yellow color, compact, with a good taste. Productivity is medium. It is a cultivar for fresh fruit consumption.

Polesie: Early primocane cultivar. Plants produce an average number of young, straight shoots. Fruits are big, elongated, dark red color. Fruiting on one-year shoots, early autumn. It does not need support.

Blackberries

Orkan: Strong plant growth. It is a thorn-free cultivar; shoots are not entirely straight, ends of shoots twist in arches.

Membership Directory Additions – Clip & Save

Please welcome these members who have joined or renewed their memberships in NABGA since the last newsletter. The list above is formatted so you can clip or photocopy the page and fasten it into your membership directory.

Plants do not produce root suckers. Fruits are large or very large, cylindrical, black, glossy, acid in taste.

Gazda: Plant growth is medium. It is



a cultivar with a small number of small thorns. Plants are propagated by root suckers. Fruit shoots are short, with a lot of fruit. Fruits are medium sized or small, similar to globe, black and glossy, compact, firm, and with a very good taste.

The raspberry breeding programme has boosted Polish yearly fruit production, now estimated at 40,000 tons, from which 80% is exported to the EU market. The most significant fact is that within only a few years since the first primocane raspberry, 'Polana' was released; Polish autumn raspberries from this program have become dominant and are currently estimated at 60% of total production. ❖

NABGA 2005 Officers and Executive Council

The regions represented by the members of the Executive Council were redefined at the Association's annual meeting on February 18, 2005. Those districts that are new or changed are marked with an asterisk.

President- Ervin Lineberger, Killdeer Farm, 300 Goforth Rd, Kings Mountain, NC 28086, phone 704-739-6602, e-mail fruitgrower@netzero.net.

Vice President- Tom Walters, Northwest Washington Research and Extension Center, 16550 State Rte 536, Mount Vernon, WA 98273, phone 360-848-6124, e-mail twwalters@wsu.edu.

Executive Secretary & Treasurer- Debby Wechsler, 1138 Rock Rest Rd. Pittsboro, NC 27312, phone 919-542-3687, fax 919-548-4037, e-mail nabga@mindspring.com.

Research Committee Chair-Gina Fernandez, NCSU Dept. of Horticultural Science, Box 7609, Raleigh, NC 27695, phone 919-513-7416, e-mail Gina.Fernandez@ncsu.edu.

Bramble Editor- Debby Wechsler, 1138 Rock Rest Rd. Pittsboro, NC 27312, phone 919-542-3687, fax 919-548-4037, e-mail nabga@mindspring.com.

Regional Representatives

Region 1 (Represents all of Canada). Open seat. To nominate someone or volunteer for this position, contact NABGA.

Region 2 (Represents CT, NH, MA, ME, RI & VT) **Nate Nourse**, Nourse Farms, 41 River Rd., South Deerfield, MA 01373, phone 413-665-2658, e-mail info@noursefarms.com.

***Region 3** (Represents MI, NJ, NY, PA, Europe, and South Africa), **Dena Fiacchino**, Cornell Cooperative Extension, 3288 Main St. Mexico, NY 13114, 315-963-7286 ext 203, e-mail: dcf25@cornell.edu

***Region 4** (Represents DE, MD, OH, & WV) **Sue Loomis**, D&S Farm, P.O. Box 272, Charlotte Hall, MD 20622, phone 301-290-1179, e-mail sueloomis@erols.com.

***Region 5** (Represents AL, GA, FL, LA, MS, & TX). **Stanley Scarborough**, SunnyRidge Farm, P.O. Box 3036, Winter Haven, FL, 33885 phone 863-294-8856, e-mail stanley.scarborough@sunnyridge.com.

Region 6 (Represents AR, IN, IL, KS, KY, MN, MO, ND, OK, SD, NE, TN & WI) **Bob Blain**, Riverfront Berry Farm, 2799 N. 1700 East Rd., Martinton, IL 60951, phone 815-428-7382, e-mail BOCO@dlogue.net.

***Region 7** (Represents DC, NC, SC, & VA) **Milton Parker**, Coastal Plains Horticultural Enterprises, 622 Wedgewood Drive, Whiteville, NC 27472, phone 910-640-1791, e-mail yamman552002@yahoo.com.

Region 8 (Represents AK, AZ, CA, CO, ID, HA, MT, NM, OR, UT, WA, WY, Mexico, Central & South America)

Fire Blight in Brambles

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alcohol (70%) or quaternary ammonia may also be used, but the bleach solution is more effective. Manage insect pests to avoid a possible means of moving the bacteria from plant to plant. Avoid over-fertilization. Vigorous, succulent growth is very susceptible to the disease. Orient rows and prune and thin plants to maximize air circulation. This will help lower the relative humidity within the plant canopy. Destroy wild or abandoned brambles growing nearby. These plants may serve as inoculum sources for fire blight and other pathogens, particularly viruses. Apply copper as a preventative material, starting before or as soon as the first symptoms appear. ❖

(*Source: Michigan Fruit Crop Advisory Team Alert, Vol. 20, No.16, August 23, 2005*), in Massachusetts Berry Notes.

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