



FALL 2002

BERRY COMMISSIONS

NEWS

A grower newsletter for the Oregon Raspberry & Blackberry Commission and the Oregon Strawberry Commission



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INSIDE

Wei Yang's Trip to China

- By Wei Q. Yang, NWREC -

From October 8th to 17th, 2002, I took a group of eight people to tour the strawberry, caneberry and blueberry industries in China. The purpose of the trip was to explore and learn how the berry crops are produced, processed and marketed there. Our group consisted of berry growers, processors and salesmen from Oregon and Washington. The trip was financially supported by three Oregon berry commissions and those who were on the trip. The Chinese hosts were the Small Fruit Research Institute of Jinlin Agriculture University, Daliang Import and Export Company, Dandong Strawberry Research and Development Center, and Xi'an Science and Technology Bureau.

During our ten-day trip, we visited some major strawberry, raspberry and blueberry growing regions in four Northeast provinces (states) and one Northwest province. The most important part of the trip, I think, was we were able to actually talk with local berry growers in their fields. We also visited some berry-processing plants located at the heart of the commercial berry production areas. At the end of the trip, we did some sight-seeing highlighted by terracotta warriors and the Great Wall. The whole trip was a real adventure filled with field visits, cultural activities and many surprises. I think we learned and found out a lot more than we had expected about the berry industries in China.

I will present the China Berry Trip in detail to the three berry commissions (ORBC, OSC and OBC) during the Oregon Horticultural Society Annual Meeting to be held in January 2003. The trip presentation will include berry production related details such as berry cultivars, cultural practices and climate conditions. I will also provide analysis on future berry production trends and market structure in China. So stay tuned for the upcoming OHS meeting.

Projects Currently Underway in the Berry Research Program at the North Willamette Research and Extension Center



- By Bernadine Strik, Professor, Extension Berry Crops, Berry Research Leader, OSU & Gil Buller, Research Assistant -



We are presently working on, or are in the process of writing up reports, on the following projects. If you would like more information on any of these projects, please contact Bernadine Strik. Thanks so much for the industry support on many of these studies!

Blackberries:

Alternative production systems in Marion: We are looking at various combinations of in-row spacing and primocane management to improve yield, cold hardiness, reduce thorn contamination, and potentially facilitate machine training in the "off year".

Minimizing thorn contamination in machine-harvested Marion: See article in the caneberry section. We are continuing to search for defoliant that could be used to effectively remove thorny leaf petioles in the fall as a "clean up" operation for machine-harvested fields.

No prune system in Marion: Training primocanes of 'Marion' over dead floricanes (without removing/cutting off dead canes) may improve yield — however, results have been inconsistent. This training system should not be machine harvested as it

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Northwest Berry Growers Seek USDA Sale

- By Jan-Marie Schroeder, Berry Works, Inc. -

The ORBC joined forces this fall with the Washington Red Raspberry Commission to request a USDA surplus sale of Northwest berries. After conducting a series of confidential interviews with Northwest processors, the commissions estimated that a surplus of Northwest berries exists. A request from the two commissions was sent to USDA in September, outlining the need for a sale of the following:

- **500,000 pounds of IQF Red Raspberries**
- **500,000 pounds of IQF Marionberries**
- **750,000 pounds of IQF Evergreen Blackberries**
- **800,000 pounds of seedless Red Raspberry puree**

The USDA has received the request and is processing it. The commissions have also contacted interested commodity processors in hopes of increasing options for the schools to use the berries. Commodity processors will arrange with schools to take their allotment and manufacture food items that the schools can use without further labor, such as yogurt with berry fillings, turnovers or fruit leather.

NCSFR Annual Conference

The Northwest Center for Small Fruits Research (NCSFR) is holding their annual conference in Portland, Oregon, at the Doubletree Hotel Lloyd Center. The main conference day is Tuesday, December 3rd, 2002, from 9:00 am to 9:00 pm. The cost to attend the conference this year is \$75 before Friday, November 8th and \$80 thereafter.

Attendees of the NCSFR Annual Conference will have the opportunity to hear research presentations and reports from five technical working groups (genetics, berry & grape processing, wine, production/physiology and pest management), participate in round table discussions, and help set research priorities for the Center, which will be used for special research grant considerations next year.

Dr. Mary Ann Lila, Professor of Plant Physiology and Department Head for the Department of Natural Resources & Environmental Sciences at the University of Illinois, will be the keynote speaker for this year's NCSFR Annual Conference. Her talk, "'Hot' berries - what we know now about berry fruits and human health protection", will provide an overview of her important nutraceutical research.

If you are interested in attending the research conference, would like more information, and/or would like to add your name to the NCSFR mailing list, please contact Rachel at the Pacific Northwest Administration office: Phone #541-758-4043 or e-mail: rachel@oregon-berries.com.

Free Pollination For Your Berries

Willamette Valley beekeeper is looking for a location to keep extra hives. Would like to trade pollination service, for a place to keep hives for part of the year.

(503) 283-8730
Ask for Scott Hansen



2002 Census of Agriculture

- By Janice A. Goodwin, State Statistician -

The 2002 Census of Agriculture is coming! The Census of Agriculture is conducted nationwide every five years, by law, in years ending in a "2" or a "7", by the National Agricultural Statistics Service (NASS), an agency within the U.S. Department of Agriculture. The Oregon Agricultural Statistics Service (OASS), based in Portland, is responsible for all of the agricultural statistics for Oregon and will be conducting the upcoming Census in this State.

The Census of Agriculture is the most detailed, comprehensive source of agricultural information available down to the county level for the State of Oregon. It is widely used by farm organizations, commodity groups, agribusinesses, Extension agents, universities, the Oregon Department of Agriculture, municipal organizations, State and U.S. policymakers, public and private analysts, and producers like yourselves. It is useful to anyone who is in need of accurate information to help them make decisions which directly affect those involved in agriculture. Census information is used in the decisionmaking process in more ways than you can imagine, from the allocation of research and grant monies to determinations of land use.

So watch for the 2002 Census of Agriculture questionnaire to arrive in your mailbox in mid-December. Save taxpayers' dollars by filling it out right away and mailing it back in. By law, all information collected by NASS is kept confidential and is never shared with anyone and individually reported information can never be deduced from the information published either. Please call Janice Goodwin, State Statistician, OASS, at #1-800-338-2157 if you have any questions and visit the NASS website (www.nass.usda.gov) for more details about the Census, including the questionnaires used, schedule, frequently asked questions, and other information. If you do not received a Census questionnaire by January 2003, and you annually produce, or could produce \$1,000 or more of agricultural products, please call #1-888-4AG-STAT to make sure you are counted. *Let's make sure Oregon's berry industry is accurately represented in the detailed snapshot of Oregon's agricultural picture, which will be published in February 2004.*

Berry Commissions News

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Raspberry & Blackberry News



ORBC Shines in National Media in 2002

- By Cat McKenzie, Berry Works, Inc. -

The ORBC has been busy this year keeping up with the demand for information on the health benefits of Oregon caneberries, as well as developing new and delicious recipes for national distribution. A second major FSMIP grant was awarded to the ORBC in 2002 to research nutritional properties and market opportunities of caneberry seeds and seed oil.

Major Media Coverage

This was another exceptional year for media coverage of Oregon raspberries and blackberries. Word has spread that berries provide significant nutritional benefits in a small and delicious package and editors are eager to include this information in their articles.

The most significant article was published in *Newsweek* magazine this summer. The story stressed the importance of consuming berries to prevent cancer, heart disease and age related decline. The article entitled *So Berry Good for You* is available on the commission's website; be sure to visit and download a copy. *Victoria* magazine

published a three-page article on Marionberries, with stunning photography and wonderful recipes supplied by the ORBC. Other articles on Oregon berries were in the following national magazines: *Ladies Home Journal*, *Glamour*, *Food Product Design*, *Dairy Foods* and *Better Nutrition*. Articles in *Prevention* and *Country Decorating* will be coming out in the next few months.

Television Coverage

Oregon raspberries and blackberries were the star of two prominent nationally syndicated shows: *Sara's Secrets* on the Food TV Network and *Epicurious* on the Travel Channel. *Sara's Secrets* used photography and recipes from the ORBC in a half hour show completely on berries. *Epicurious* filmed a story on ORBC's chairman, Julieann Schedeen, and will feature a recipe using Marionberries as well.

Oregon television stations featured several spots on the importance of black raspberries and the role of Oregon growers and processors in bringing these berries to the public. A tape of these Oregon news clips is available and can be ordered for \$50 from MOBA, a Portland firm. Contact the ORBC office for details.

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ORBC & OSC Annual Meetings to be Held at the Oregon Horticultural Society Annual Meeting

The Oregon Horticultural Society (OHS) Annual Meeting will take place at the DoubleTree Columbia River in Portland, Oregon on January 28, 29 and 30, 2003. The meeting is held in conjunction with the Northwest Ag Show, which takes place at the nearby Expo Center. A complimentary shuttle service between hotel and show is provided. The OHS meeting consists of five program sections, some held in conjunction with their respective commodity commission meetings. Credit hours will be awarded as approved by the Oregon and Washington Departments of Agriculture. Most sessions begin at 9:00 a.m. and end at 3:30 p.m. The OHS will hold its annual luncheon on Tuesday with guest speaker John Brigotti, member of the Oregon Delegation of the Northwest Power Planning Council. For more details please contact Kristina McNitt at the Oregon Horticultural Society # 503-763-1833.

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ORBC Shines in National Media in 2002

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Newspaper Food Editor Campaign

For Valentines Day 2002, the Associated Press distributed our recipe and photograph of Heart Shaped Raspberry Ice Cream Cake, which featured IQF red raspberries. Over 600 nationwide food editors received PhotoFax mailings, which offered them two recipe choices, Jeweled Heart Cookies and Molded Mascarpone Hearts with Red Raspberry Sauce.

For the Summer 2002 promotion, the Associated press distributed Smoothie recipes featuring Marionberry Honeydew Smoothie. Nationwide food editors were offered a press kit featuring Fourth of July Tower of Stars and Low Fat Raspberry/Blackberry Trifle.

Nutraceutical Messages

A new nutraceutical message on the health benefits of black raspberries was distributed to 900 Research & Development, manufacturing and nutraceutical companies, the nutraceutical press and to Oregon print media and television stations. One direct result of this mailing was an article on the website of the American Cancer Society. The full message is available on the commission's website.

FSMIP Grant

Research into the properties of Oregon caneberry seeds and seed oils has been completed. The research shows that our seeds are high in polyunsaturated oils, higher than grape seeds, rich in tocopherols and high in omega 3 fatty acids. All of these attributes give the seeds a great potential to be developed into a value-added crop for the berry industry.

A market research survey that assesses the marketability of caneberry seeds and seed oil, by Michael Perman of San Francisco, was done in conjunction with the analysis. Both studies are now available on the commission's website. Several nutraceutical companies have already shown interest in seeing the results of this work and the commission will forward copies of the studies to them.

For new information about continuing research and promotion see our website at www.oregonberries.com.

ORBC & OSC Annual Meetings to be....

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Oregon Horticultural Society Day Schedule

Tuesday, January 28:

Stone Fruit Section Co-Chairs: Jeff Olsen, Stuart Olson

Pome Fruit Section: Co-Chairs: Philip Van Buskirk, Kirk Van Leuven

Wine Grape Section: Co-Chairs: Anne Connolly, and grower to be named

Wednesday, January 29:

Strawberry/Caneberry Section Co-Chairs: Bernadine Strik and Julieann Schedeen.

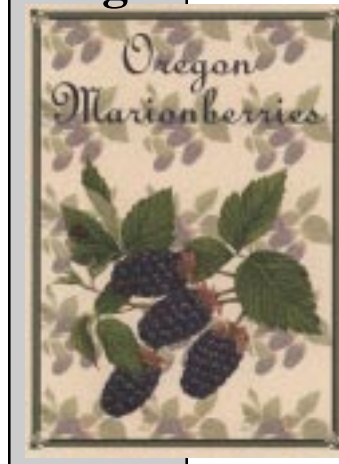
This section held in conjunction with the Oregon Raspberry and Blackberry Commission and the Oregon Strawberry Commission.

Thursday, January 30:

Blueberry Section Co-Chairs: Wei Yang, Roy Malenski

The Annual OHS Membership is \$25 if preregistered and \$30 for on-site registration. Membership includes admission to all section meetings, shuttle service to and from the NW Ag Show, admission to the NW Ag Show, and a copy of the OHS Annual Proceedings book, which is published after the meetings and contains most of the material covered in the sessions.

Oregon Marionberry Cards



The Oregon Marionberry (full color) Greeting Cards pictured to the left are available at \$5.00 for a package of 10 cards and 10 envelopes. If you would like to purchase these cards, please make your check payable to the Oregon Raspberry & Blackberry Commission (ORBC) and send to:

4845 B SW Dresden Ave., Corvallis, OR 97333.

Be sure to state that you are requesting the Marionberry cards, indicate how many packages you would like and include your name and address for shipping purposes.

2002-2003 Oregon Raspberry & Blackberry Commission Commissioner List

* King Bredenkamp, 7510 SE Altman Rd Gresham, OR 97080	(503) 663-3434(w) (503) 663-7095(fx)	First Term Expires 6/30/05
*George Crispin, PO Box 6109 Salem, OR 97304	(503) 363-4293(w) (503) 585-4657(fx)	First Term Expires 6/30/03
Steven Hoffman, PO Box 605 Beavercreek, OR 97004	(503) 632-3571(w) (503) 632-3458(fx)	Second Term Expires 6/30/03
Scott Miller, 14593 French Pr. Rd. Woodburn, OR 97071	(503) 930-1503(w) (503) 792-5743(fx)	Second Term Expires 6/30/03
Julieann Schedeen, PO Box 172 Boring, OR 97009	(503) 658-5769(w) (503) 658-5769(fx)	Second Term Expires 6/30/05
Jim Steele, 24070 SW Rowell Road Hillsboro, OR 97123	(503) 628-0431(w) (503) 628-2063(fx)	Second Term Expires 6/30/04
Donald Sturm, PO Box 245 Corbett, OR 97019-0245	(503) 695-2743(w) (503) 492-0501(fx)	Second Term Expires 6/30/04
Bob Underwood, 34500 SE Hwy 211 Boring, OR 97009	(503) 668-4525(w) (503) 668-8813 (fx)	First Term Expires 6/30/04
Tony Wurdinger, 1035 Tierra Lynn Dr. Woodburn, OR 97071	(503) 981-4029(w) (503) 981-6959(fx)	First Term Expires 6/30/04

Chairman – Julieann Schedeen **Vice-chairman** – Don Sturm **Sec./Treasurer** – Scott Miller

* = Processor Representatives

2002-2003 ORBC Committee List

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Tony Wurdinger
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Legislative/Labor/Education Committee

Tony Wurdinger, Chair
George Crispin
Don Sturm
Bob Underwood

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George Crispin, Chair
King Bredenkamp
Scott Miller
Julie Schedeen

Research Committee

Don Sturm, Chair
Jim Steele
Steve Hoffman
Julie Schedeen

Can you Reduce the Incidence of Thorn "Bramble" Contaminants in Machine-Harvested 'Marion' Fruit?

- By Bernadine Strik, NWREC -

The research that we've done over the past several years has showed promise for using a machine harvester in the late winter to remove old leaf debris from 'Marion' fields and thus reduce potential for thorn contamination.

How did we come about developing such a technique? This project has been a great example of what happens when some involved industry people get together with research and Extension to discuss a problem and how it might be solved. Individuals who deserve a lot of credit for being a part of developing this procedure are: Rufus LaLone (Smuckers, Inc.), Norm Johnson (Littau Harvesters), Bob Conroy, and Brent LaFollette. Thank you to these and other industry people for sharing ideas, fields for research and donating time/technology, and to the ORBC and the NCSFR for supporting this research.

After conducting an industry survey and from talking to processors, we determined that the most important contaminant of machine-harvested 'Marion' is the thorny petiole of last year's cane – it does not normally senesce in the winter preceding the fruiting season; this is especially a problem in a mild winter. This discovery led to many discussions on how we might try to remove these "old" leaf stems before harvest. A research program was started to address this in 2000.

The effectiveness of using a rotary machine harvester equipped with standard heads or modified brushing heads in February to remove debris was evaluated at a grower cooperator site (AY and EY) in 2000-01 using 100' row sections. In a "nutshell", the rotary harvester followed by brushing reduced thorny petioles per plot by 66% compared to the untreated control in the AY field. The effect was less pronounced in the EY field probably because the canopy (cane density) is so much less in EY than in AY fields. There was no negative effect of brushing on yield (note however, there is a risk if you do it too late – see below). In 2001, when we used a machine equipped with brushing heads in an AY field, we were not able to reduce the level of thorny petioles per plot. However, again, there was no negative effect on yield. Thus, our results have been variable, perhaps due to environmental or year

effects. We have not yet had any success finding a chemical defoliant that will remove leaves at the petiole cane juncture in the fall – leaves tend to fall off at the leaf blade, leaving the petiole there.

In short, we recommend using a rotary machine harvester and one equipped with brushes to "clean up" your vigorous 'Marion' fields in the winter. Why and with what qualifications?

- The machine will remove old petioles (leaf stems) in winter, thus reducing the potential number of contaminants for the upcoming fruiting season. We have found no adverse effect on this type of "clean up" on yield however,....
- This technique *must* be done well before bud break in the late winter. I suggest early to mid-February. If you do it too early, you won't have the benefit of "mother nature" removing as many as possible.
- Debris removal is most effective if it is done when the canes are totally dry (dew is off) and the weather has been dry for several days.
- If you've noticed a leaf roller problem, you can collect the leaf debris to help reduce over-wintering populations!
- Keep in mind that the best method of reducing "bramble" contaminants is to have good sorters on the machine harvester!

If you have any questions, please contact me, Bernadine Strik, at the NWREC #503-678-1264 ext. 27 or by e-mail strikb@bcc.orst.edu. Thanks!



Strawberry News



OSC Regional Partnerships

- By Cat McKenzie, Berry Works, Inc. -

The Oregon Strawberry Commission (OSC) was awarded a \$50,000 grant from the ODA in May to promote Oregon strawberries in partnership with two regional companies. The grant was part of a federal program. The Commission partnered with two regional companies, Burgerville and Tillamook Country Creamery Association, to promote Oregon strawberries in June and July.

The Burgerville promotion included using the OSC logo "Sweeter, Redder, Simply Better" on cups, tray liners and various point of sale materials. Burgerville promoted Oregon strawberries in strawberry shortcake, milkshakes and smoothies on radio, television and billboards.

As part of the media relations and promotion campaign, the OSC and Burgerville sponsored a strawberry essay contest for school children grades 1-6. The essay was to be written to answer the question "Why are Oregon strawberries sweeter, redder, simply better?" The contest flyer was sent to school districts as well as to private schools in early May with a deadline of May 30th. Each student who entered won a coupon for strawberry shortcake at Burgerville during the month of June. Grand Prize winners in each grade group won a year's worth of strawberries and a basket of strawberry products. The contest was promoted through newspaper articles and the OSC website.

For the TCAA partnership, shelf talkers and static clings were created using the "Sweeter, Redder, Simply Better" logo and distributed to stores in the Northwest. The logo appeared in advertising from several major grocery chains in the state including Albertson's, Thriftway and Safeway. TCAA has not issued its final reports on sales, but the association went through inventory at a much greater rate than expected.

Final sales numbers from both companies are forthcoming and will be posted on the OSC website.



OSC Essay Contest

The Oregon Strawberry Commission and Burgerville are proud to announce the winners of the 2002 Strawberry Essay contest.

- 224 entries from school children in grades 1-6 were submitted to the commission,
- 98 came from grades 1 & 2,
- 68 were received from grades 3 & 4, and
- 58 were from grades 5 & 6.

The high quality of all the essays made the judging challenging, but rewarding. The entries were narrowed down to 24 finalists in each grade level. Grand prize winners from each of the three grade categories were chosen based on content, grammar and spelling, research quality, artwork, originality and creativity.

The three grand prize winners are:

Grades 1-2

Aimee Virvillo of West Linn, OR



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2002-2003 OSC Commissioner List

Michael Christensen, 35981 Santiam Hwy Albany, OR 97321	(541) 928-2540 (w)	Second Term Expires 6/30/03
*Ronald Fujii, 6000 SW Minter Bridge Road PO Box 132 Hillsboro, OR 97123	(503) 640-2313 (w) (503) 640-0874 (fx)	Second Term Expires 6/30/05
Arne Goddik, 18265 SE Neck Road Dayton, OR 97114	(503) 864-3882 (w) (503) 864-3882 (h)	Second Term Expires 6/30/04
Stan Herr, 9631 Selah Springs Rd Silverton, OR 97383	(503) 873-8063 (w) (503) 874-0704 (fx)	First Term Expires 6/30/04
*Dave Ralls, 12415 Parrish Gap Turner, OR 97392	(503) 393-4221 (w) (503) 769-1268 (fx)	First Term Expires 6/30/03
Ron Vandecoevering, 11607 Baron Rd Mt. Angel, OR 97362	(503) 845-9490 (w) (503) 845-9490 (h)	Second Term Expires 6/30/05
Ken Kraemer, 12614 Dominic Road Mt. Angel, OR 97362	(503) 845-2489 (w) (503) 845-6474 (fx)	First Term Expires 6/30/04

Chairman – Ron Fujii

Vice-Chairman – Stan Herr

Sec./Treasurer – Arne Goddik

* = Processor Representatives

2002-2003 OSC Committee List

BUDGET

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Arne Goddik
Ron Fujii

RESEARCH

Arne Goddik, Chair
Dave Ralls
Ron Vandecoevering

LEGISLATIVE

Michael Christensen, Chair
Stan Herr
Arne Goddik

EDUCATION/PROMOTION

Ron Fujii, Chair
Stan Herr
Ken Kraemer

Projects currently underway....

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increases thorn content in harvested fruit. Training primocanes over dead floricanes has increased incidence of cane disease. Work is completed, paper in progress [with J. Fisher and W. MaHaffee].

Raspberry Bushy Dwarf Virus: (RBDV) was discovered in 'Marion' blackberry at the NWREC. RBDV had no effect on cane growth or fruit number, but reduced yield (40 to 50%), fruit weight (23 to 40%), and drupelet number per fruit (36 to 39%) compared to uninfected plants. In 2000, we surveyed 32 commercial fields to test for the presence of RBDV using ELISA. Three grower fields tested positive for RBDV [with R. Martin].

Blueberries:

Nitrogen uptake and distribution: A graduate student (Pilar Banados) is evaluating the effect of rate and timing of N fertilizer application (labeled N¹⁵ fertilizer) on yield, fruit size, and uptake, storage and partitioning of N in new and mature plantings of 'Bluecrop'. We are also evaluating the effect of a late N application and how N is stored in the plant. [with T. Righetti]

Early cropping: In 'Bluecrop' we found that plants cropped in 1994 and 1995 had a significantly higher yield/plant than those in which blossoms were removed with early-cropped plants producing 14% and 21% greater yield at the 1.5' and 4' spacings, respectively. This "surprise" led us to establish a new planting in 1999 to look at the effect of early cropping (no blossom removal the first two years) on subsequent yield of 'Duke', 'Elliott', and 'Bluecrop' at 1.5' and 4' spacing. Early cropping (year one and two after planting) reduced plant size in February, 2002 in all cultivars. In year 3 (blossom removed treatments cropped for the first time), total yield per plot, picking efficiency and berry weight were significantly affected by cultivar, in-row spacing, and early cropping. Early cropping reduced yield in year three (2002) by 18% in 'Bluecrop', 26% in 'Duke', and 54% in 'Elliott'. Yield was much higher at 1.5' in-row spacing than at 4' spacing. We will collect data in year four (2003) and then write up the project. We are also evaluating the effect of cultivar and in-row spacing on the population of mycorrhizae [with W. Yang and C Scagel]

In-row spacing and trellising on machine-harvested yield of Bluecrop: This eight-year study has just been completed. Cumulative yield (1996-01) was 106% higher at the 1.5' spacing (41 tons/a) and 46% greater (29 tons/a) at the 3' spacing than the 4' spacing (20 tons/a). In-row spacing had no effect on percent of total yield lost on the ground during machine harvest. Losses to machine harvest in un-trellised plots averaged 12 to 24% of total yield. Trellising improved machine harvest efficiency by as much as 7.8% of total yield.

Pruning has taken as much as 98% longer at the high density. An economic analysis and paper is in the works.

Pruning of blueberries: We studied pruning method/severity in mature 'Bluecrop' and 'Berkeley': 1) "conventional" pruning with removal of unproductive canes, thinning of one-year-old shoots at the base of the bush, and removal of any unproductive wood or thinning of excessive fruiting wood near the top of the bush, as required; 2) "speed" pruning involving removal of one or two of the most unproductive canes at the base of the bush; and 3) "un-pruned" where no pruning was done for 5 years. Un-pruned plants had greater yield than conventionally pruned plants while speed pruning resulted in intermediate yields. Un-pruned and speed-pruned plants produced berries that were 19 to 27% smaller than conventionally pruned plants. The harvest season of un-pruned plants began 3 to 5 days later and lasted a week longer than that of conventionally pruned plants. The harvest efficiency of un-pruned plants was reduced as much as 51% in the later years of this study and was most closely correlated with berry weight. Conventionally pruned plants had a significantly higher percentage of the above-ground dry weight allocated to one-year-old wood and crown than un-pruned plants [with E. Hellman]

Raspberries:

Nitrogen uptake and distribution: A graduate student (Hannah Rempel) is evaluating the effect of "labeled" N fertilizer application (N¹⁵; rate and timing) on yield, fruit size, and N uptake, storage and partitioning in red raspberry, 'Meeker'. [with T. Righetti]

Strawberries:

Pre-plant options in strawberry: We are looking at various pre-plant options for strawberry: fallow; meadowfoam grown until bloom and incorporated; meadowfoam grown until seed set and incorporated; and peas grown for an early crop. We are looking at impact on plant growth, yield and various pests. We were able to harvest a commercial pea crop before planting 'Totem' in 2001. No yield or pest effects were found in the first fruiting season. [with D. Hemphill]

Nitrogen management in 'Totem': We just finished studying the uptake, remobilization and storage of nitrogen using N¹⁵. Treatments included foliar applications of urea-N¹⁵ at various stages of development of 'Totem' and granular fertilizer (Ammonium nitrate-N¹⁵) applied in spring or at renovation. Treatments were imposed in 1999. We also repeated some labeled treatments in 2000 to compare uptake to an unfertilized control. Data analysis is in progress. [with T. Righetti]

Deblossoming 'Totem' in the planting year had no significant effect on yield, berry weight, or plant yield and vegetative components in the first and second fruiting seasons. Late planting of 'Totem' (on flat ground) decreased yield in the first fruiting season, but not the second fruiting season. Berry weight was greater with later planting dates in both fruiting

seasons. Production system had no effect on yield. Paper in progress.

Annual production systems: Late planting in annual systems increased populations of the two-spotted mite (*Tetranychus urticae*) the following spring. Populations then dropped due to suppression by the predatory mite, *Neoseiulus fallacis*. Late planting of 'Totem' on raised beds did not reduce yield the following season. Second year perennial plots of 'Totem' had a higher yield than all annual treatments except those plots fumigated and planted in August of 1997. Data comparing annual plots to a third year perennial were collected in 1999; an economic analysis is planned [with R. Rosetta]. Paper in progress

Cooperative Strawberry, Caneberry Breeding and Blueberry Evaluation Programs

We are working very closely with Chad Finn, geneticist, at the USDA/ARS in evaluation of new breeding material to develop new commercial cultivars for the Pacific Northwest [with C. Finn and C. Pace]

Kiwifruit:

Fruit thinning: The effect of three severities of fruit thinning at pre- or post-bloom on yield and fruit size of 'Ananasnaya' were compared in a commercial vineyard. **Pescie, M. and B.**

Strik, 200_. Effect of time and severity of thinning on fruit quality and yield of hardy kiwifruit (*Actinidia arguta*). *NZ J. Crop and Hort. Sci.* (submitted)

Effects of shading: The effect of time of shading (50%) on current season yield/quality and flower number, fruit number, seed number, yield and fruit size the following season in 'Ananasnaya' was studied in a commercial vineyard. **Tiyayon, C. and B. Strik. 200_.** Effect of overhead shading on yield and fruit quality of hardy kiwifruit (*Actinidia arguta*). *NZ J. Crop and Hort. Sci.* (submitted)

Morphology of hardy kiwifruit: Described the growth and fruiting pattern of hardy kiwifruit. **Tiyayon, C. and B. Strik. 2002.** Effect of fruiting cane origin on fruitfulness of hardy kiwifruit (*Actinidia arguta*). *NZ J. Crop and Hort. Sci.*, (accepted)

Aronia:

Cultivar evaluation: Evaluated *Aronia melanocarpa* ('Albigowa', 'Darbrowice', 'Egerta', 'Kutno', 'Nero', and 'Nowa Wies') planted in 1997. Yield in 1999 ranged from 4.4 to 12.4 kg/plant with 'Nero' having highest yield. Plants were pruned for the first time in winter 2000/01. In 2001, 'Nero' produced the highest yield (24.1 kg/plant) and 'Egerta' the lowest (13.1 kg/plant). Berries were 2.0 to 2.8 g. [with C. Finn and R. Wrolstad].

OSC Essay Contest

- Continued from Page 8 -

Grades 3-4

Tyler Lantz of North Plains, OR



Grades 5-6

Alexander Kenney, Portland, OR



The grand prize winners each received a year's worth of Oregon Strawberries and a gift basket of Oregon Strawberry products. All children who entered received a coupon from Burgerville for one free Oregon Strawberry Shortcake at any Burgerville restaurant during the month of June. Burgerville, based in the Pacific Northwest, featured fresh Oregon Strawberry products during the month of June.

The Oregon Strawberry Commission wishes to thank all the children who submitted essays and offers our congratulations to the three grand prize winners. To see color, high resolution images of the winners entries, go to our web page: www.oregon-strawberries.org.

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