UTAH BERRY GROWERS ASSOCIATION NEWSLETTER

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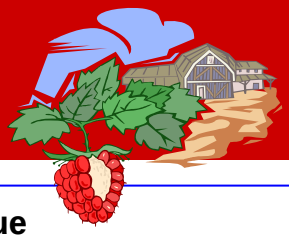


Inside This Issue

MARK YOUR CALENDARS

UBGA Annual Winter Meeting
January 23, 2008, 1:00 to 5:00 p.m.

We will be meeting in Provo, in conjunction with the Utah State Horticultural Association (http://utahhort.org)

Featured Speakers:

Dr. Bob Martin, USDA Small Fruit Virologist.
Dr. Martin diagnosed the Raspberry Bushy Dwarf outbreak in Bear Lake several years ago, and will be talking about viruses of small fruits and how to spot them.

Dr. Chad Finn, USDA Small Fruit Geneticist.
Dr. Finn runs a breeding program for blackberry, raspberry, strawberry and blueberry, and will be discussing the latest in small fruit varieties.

Dr. Chrislyn Particka, Director of Res. for Sakuma Brothers Farms
Dr. Particka grew up on a blackberry farm in Arkansas, and now conducts research for one of the largest berry companies in the Pacific Northwest. She will be talking about blackberry management.

We will also hear updates from several USU Extension Specialists.

This promises to be a world-class program that you won't want to miss.

National Berry Conference set for Hershey, Pennsylvania

The next annual meeting of the **North American Strawberry Growers** and the **National American Bramble Growers Associations** will be held in conjunction with the **Mid Atlantic Fruit and Vegetable Convention**, will be held January 29-31, 2008. For more information on these national organizations and their joint annual meeting, visit their websites: www.nasga.org and www.raspberryblackberry.com.

LOOKING BACK OVER THE BERRY NICE TOUR

Adrian Hinton, Utah Co. Hort. Extension Agent

On August 22 the fruit growers in Central Utah gathered for a special on-site berry visit to Vern Stratton's farm in Orem, Utah. Vern has been in the business for many years and has many new ideas that he was able to share with us. We enjoyed seeing and tasting many of the fruits of his labors.

Also Brent Black organized a cadre of USU Specialists who gave outstanding presentations during the course of this farm tour. The Specialists presented updated topics on fruit production that were very beneficial to all attendees. Hopefully we will be able to put this information to use on our farms and fields and increase our profitability in the coming seasons.

We appreciate Brent Black's great work since he has joined us here in Utah as our Fruit Specialist. Brent has been especially helpful in getting the berry growers organized and motivated to greater productive heights.

We look forward to many more tours, classes, and programs in the future. Utah County is always excited to have Brent and other USU Specialists help us with our various fruit production activities.

Bear Lake Raspberry Farm Tour

Britney Hunter, USU undergraduate student intern
Dr. Brent Black, Extension Fruit Specialist

The threat of rain didn't scare anyone away from the Rich County berry farm tour on July 26. Our first stop was Roger and Sylvia Earley's farm west of Laketown. Dr. Brent Black, USU Extension Fruit Specialist led a tour of the Rich County site for the USU Extension raspberry variety trial, consisting of a side-by-side comparison of 15 varieties. An abnormally cold season caused widespread winter injury, however the plants are still too young to accurately compare differences in cold hardiness among varieties. Dr. Black then demonstrated an irrigation scheduling technique using a low cost resistance block to measures soil moisture. He also showed the group an evapotranspiration meter that can approximate how much water plants are loosing in a given day. The combination of these two technologies can be extremely valuable in determining ideal irrigation scheduling. More information on cane berry irrigation can be found at https://extension.usu.edu/htm/ publications/publication=8405.

The next speaker was Grant Cardon who focused on soil fertility for raspberries, and stressed the importance of soil testing. Techniques on taking a good soil sample were discussed including the importance of collecting a composite sample. Dr. Cardon also discussed the services offered by Utah State University's soil testing lab. For more information, visit http://www.usual.usu.edu.

Our second stop was Chad's Berry Patch, owned and operated by Craig Floyd and his family. Craig generously provided samples of his delicious homemade raspberry ice cream. While tour participants enjoyed the ice cream, Dr. Diane Alston, USU Extension Entomologist, spoke about insect pests of raspberry. The raspberry horn tail, which infests young raspberry canes, was the main focus of discussion. She noted that pruning at the first sign of flagging on vegetative stems was the best form of control. Other insects mentioned included the rose stem girdler and the stink bug. Dr. Kent Evans, USU Extension Plant Pathologist, spoke briefly about an unusual outbreak of fire blight in Raspberries. Fire blight is not typically seen in raspberries in Utah and damages rarely reach economic levels, but instances were observed this past season. Dr. Evans also discussed tomato ring virus and the raspberry bushy dwarf virus. The best thing a grower can do to avoid these viruses is to purchase quality virus free stock plants. For more information on insect and disease pests of raspberries visit http://utahpests.usu.edu/.

The grand finale of the tour was a demonstration of Craig Floyd's mechanical raspberry harvester. Although the machine can lose or miss up to 1/3 of the fruit, Craig said that savings in labor costs more than compensate for the lost fruit, and the general fruit quality appeared to be very good.

THE RESULTS ARE IN . . .

Brent Black, USU Extension Fruit Specialist

During the 2006 season, the Utah Field Office of the of the USDA's National Agricultural Statistics Service (NASS) conducted a survey of Utah fruit and berry growers in conjunction with Utah State University (USU) and the Utah Department of Agriculture and Food (UDAF). Although a similar fruit industry survey has been carried out in past decades, this is the first one since 1993. More significantly, this is the first time ever that berry crops were included. The results of this survey were published earlier this year. Those of you that participated in the survey should have received a printed copy of the report. You can also view the report online at:

Table 1b. Berries & Grapes: Number of Operations, Number of Acres, Percent of Acres and Plants per Acre by Type

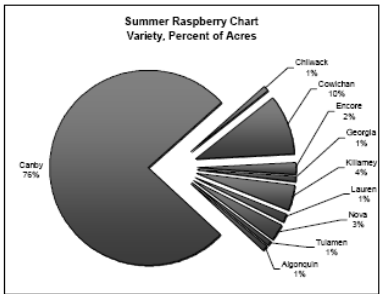
Type	Operations [1]	Acres		Plants per Acre
	Number	*Number*	*Percent*	*Number*
Blackberries	10	12	9	514
Grapes	23	23	18	567
Raspberries	38	76	60	1,241
Strawberries	6	3	2	6,982
Other [2]	3	13	11	1,713
Total	64	127	100	1,230

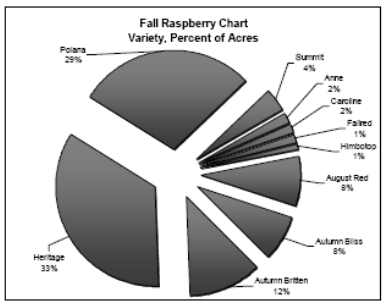
[1] The number of operations column does not add to the total because operations may have more than one berry type.
[2] Blueberries and Currants.

Table 7. Fruit, Berries, & Grapes: Percent of Acres by Marketing Method

Method	Apples	Apricots	Peaches	Pears	Sweet Cherries	Tart Cherries	Other Fruits [1]	Berries & Grapes [2]
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Pre-Picked Direct Sales	30	29	43	57	38	1	44	79
Pick-Your-Own Sales	11	30	10	11	6	1	15	7
Wholesale for Fresh Market	55	15	40	31	56	20	6	10
Wholesale for Processing Market		25	5			76	20	
On-Farm Processing	3		1	1		1	13	4
Other	1	1	1			1	2	

[1] Nectarines and Plums/Prunes
[2] Raspberries, Strawberries, Blackberries, Blueberries, Grapes, Currants





http://www.nass.usda.gov/Statistics_by__State/Utah/Publications/UTFruitSurveyPubLetter.pdf, or by searching on Google for "Utah Fruit and Berry Survey."

The survey included results from 64 different commercial small fruit operations and reported acreage for blackberries, grapes, raspberries, strawberries and "other," which included blueberries and currants. Raspberries represented the most acreage of the small fruit crops, followed by grapes. The reported raspberry acreage was nearly equally divided between summer and fall-bearing varieties. Canby was the predominant summer bearing raspberry with 75% of the reported summer-bearing acreage. Heritage was the predominant fall-bearing variety but with only slightly more acreage than Polana.

One component of the survey was a section on method of marketing. Nearly 80 percent of the reported small fruit acreage was marketed through "pre-picked direct sales" with only 7% as "pick-your-own" sales. Interestingly, this represents a higher percentage of pre-picked direct sales and less pick-your-own sales than was reported for the tree fruit crops (apple, apricot, peach and pear).

Although acreage of the small fruit crops is still only a fraction of tree fruit acreage, it is important that data on the industry be collected. Government agencies look to these types of surveys when dealing with disaster claims, for example. Numbers on the scope and diversity of the industry are also useful to the Cooperative Extension Service, NRCS, and other agencies that plan and implement programs in support of Utah agriculture. Thank you to those of you that participated. If you weren't able to participate but are receiving this newsletter, we'll include you next time.

Strawberry Variety Review: Head-to-Head Comparisons

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Strawberries are one of the most variable and temperamental of the fruit crops and the choice of varieties is extensive because individual varieties are often adapted to a relatively small growing region. The most commonly grown varieties in north-central and northeastern North America are June-bearing types and many new varieties have been released in recent years. Most varieties have weaknesses so growers are advised to try new ones on a limited scale to determine how they will perform in each situation. As part of the small fruits breeding program at Cornell University, strawberry yield trials are planted to compare older, standard varieties with new releases. Three trials have been performed recently, the first in 2002-04 comparing 10 varieties, and the second in 2003-04 comparing 7 varieties and the third in 2004-05 comparing 14 varieties.

All of the trials were replicated with three 25 ft. plots for each variety in a completely randomized design. They were established in 2001, 2002, and 2003 in Geneva, NY. A perennial matted row growing system was used (Pritts and Handley, 1988) with an initial plant density of 7,260 plants per acre. Bare root plants were planted at 18 in. spacing within rows and 48 in. between rows. Napropamide (Devrinol) was applied at the labeled rate in the establishment year for weed control followed by supplemental hand weeding later in the season. During the harvest seasons weed control was accomplished using napropamide and sethoxydim (Poast) in the spring and 2,4-D at renovation and in the late autumn after dormancy had set following Cornell Pest Management Guidelines (website). This was supplemented with hand weeding as necessary. No fungicides or insecticides were used during the trials except in 2003 when endosulfan (Thiodan) was used for control of cyclamen mites. Overhead irrigation was used at renovation only.

The soil type in the plots was Honeoye fine sandy loam with approximately 2% slope. After the establishment year, calcium nitrate was applied at the rate of 125 lb per ac in April. During renovation, ammonium nitrate was applied at 180 lb per ac, and SulPoMag (22%K_2O-11%Mg-22%S) with 70 lb per t of 15% borate was applied at 225 lb per ac was applied in late autumn.

The plots were harvested three times per week during the harvest period and total yield per acre was extrapolated based on plot totals. Harvest of each variety ended when the average fruit weight on a harvest day fell below 8 g per berry. In the first trial, samples of 10 fruit were taken from 6 of the varieties during the 2003 season for storage trials **(Table 3)** and 5 varieties were included in a blind taste test with growers during a field day in Geneva **(Table 4)**. In all years, total yield, percent unmarketable yield, and average fruit weight over the season were calculated **(Table 1, 5, 7).** Average harvest dates from were recorded **(Table 2,**

6, 8), and results from the storage test and taste test are in Tables 3 and 4.

Table 1: Trial 1-Total yield, percent marketable yield and mean fruit weight for 10 strawberry varieties in Geneva, NY. Fruit was harvested until the mean weight was below 8g/berry. Unmarketable fruit included deformed and rotted fruit. Yield was extrapolated from three 25 ft. plots planted at an initial density of 7,260 plants per acre in a matted row system

Variety	Total Yield (lb/ac)			Unmarketable Fruit (%)			Mean Fruit Weight (g)		
	2002	2003	2004	2002	2003	2004	2002	2003	2004
Cabot	29,070	17,380	32	21	24	23	17.7	15.5	10.9
Brunswick	20,060	21,690	15,940	34	27	28	10.8	12.2	12.6
Darselect	23,530	16,120	8,290	26	24	21	11.5	12.0	12.4
Clancy	15,240	18,680	380	22	15	30	12.3	13.9	10.9
Honeoye	18,280	14,470	7,310	30	16	18	10.7	12.4	10.3
Jewel	20,250	11,650	970	23	13	22	10.5	12.9	12.3
L'Amour	15,930	14,950	9,210	20	23	11	12.3	11.4	11.4
Eros	22,340	6,680	640	23	32	33	12.6	10.9	11.7
Sable	12,650	10,330	2,560	49	25	12	8.7	10.2	10.3
Earliglow	13,040	8,160	1,650	40	25	11	8.6	10.2	11.6

Trial 1

Initial yields in the first trial were very high with Cabot topping 29,000 lb per acre in estimated yield in 2002 and Brunswick, Darselect, Jewel and Eros also over 20,000 lb per acre **(Table 1).** In 2003, yields decreased significantly for most varieties but Clancy and Brunswick increased their yields and L'Amour recorded only a 6% decrease. The remaining varieties decreased in yield between 17% (Sable) and 70% (Eros) **(Table 1)**. In 2004, yields again decreased significantly for most of the varieties with acceptable yields only in Brunswick and L'Amour and marginal yields in Honeoye and Darselect **(Table 1)**. The remaining varieties produced very small yields.

Average fruit weight did not vary widely within varieties over the seasons. Cabot was the highest in 2 of 3 seasons and Earliglow and Sable generally the lowest **(Table 1).** This is common for early varieties to have smaller fruit. The remaining varieties were similar in average weight over 3 seasons. Marketable yield did vary widely among the varieties and from year to year. L'Amour and Jewel had the fewest culls on average with over 80% marketable yield during the trial **(Table 1)**. Eros and Brunswick had the highest cull rate with only 70% average marketable yield over the trial **(Table 1)**.

Harvest dates could be used to group the varieties into early season (Earliglow, Sable, Honeoye, Brunswick), mid-season (L'Amour, Jewel, Darselect) and late season (Eros, Clancy, Cabot) varieties **(Table 2).** The average harvest season length varied from 9 days in Earliglow and Sable to 17 days for Clancy **(Table 2).**

Overall appearance ratings after 6 days of storage were best for L'Amour and Jewel at 4 on a scale of 5 and worst for Darselect and Earliglow at 2.5 and 2.3, respectively **(Table 3)**. A rating of 3 was considered marketable. Firmness, bruising, and sepal appearance all contributed to the overall appearance rating. Cabot, Eros, Sable, and Brunswick were not rated due to logistical problems. Taste test results indicated that Earliglow was the best tasting variety followed by Jewel and L'Amour. However, in overall preference ranking, L'Amour ranked highest followed by Jewel **(Table 4)**. Texture, color and overall appearance contributed to this ranking.

Table 2: Trial 1-Average harvest dates for 2002-04 for 10 strawberry varieties in Geneva, NY.

Variety	First Harvest Date	50% Harvest Date	Final Harvest Date	Harvest Length (days)
Earliglow	June 10	June 15	June 18	9
Sable	June 10	June 15	June 18	9
Honeoye	June 12	June 17	June 21	10
Brunswick	June 12	June 19	June 25	14
L'Amour (NY1829)	June 14	June 21	June 26	14
Jewel	June 15	June 20	June 24	10
Darselect	June 14	June 21	June 29	15
Eros	June 19	June 24	June 28	10
Clancy (NYUS304B)	June 17	June 25	June 30	17
Cabot	June 19	June 29	June 29	11

Overall the first trial showcased the potential of several new varieties compared to the standard varieties of Earliglow, Honeoye and Jewel. As a whole, L'Amour exhibited the greatest potential of the new varieties in overall performance with good yields, large fruit with good storage capacity, and high grower ratings for taste and appearance. Darselect and Cabot show good potential but have some significant drawbacks. Darselect stores poorly and may renovate poorly when water management is not perfect. Cabot often has fruit deformities in the primary berries but makes up for this in total yield. Unfortunately, severe susceptibility to cyclamen mites nearly eliminated the plots by the third season. Brunswick showed very good yields all three seasons and

Table 3: Trial 1-Mean storage ratings for 5 strawberry varieties in Geneva, NY. Ten fruit samples were taken at 3 harvest dates during the 2003 season and stored for 6 days at 1°C. (Scale 1-5; 5=best)

Variety	Firmness		Bruising		Sepal Appearance		Overall Appearance	
	Day 1	Day 6	Day 1	Day 6	Day 1	Day 6	Day 1	Day 6
Honeoye	3.7	2.7	3.7	2.3	4.0	3.7	4.0	3.0
L'Amour (NY1829)	5.0	3.7	4.7	4.0	4.7	3.7	4.7	4.0
Jewel	4.0	3.2	5.0	4.3	3.7	3.2	4.7	4.0
Darselect	4.0	2.0	3.5	2.5	3.0	3.0	3.5	2.5
Earliglow	4.7	2.7	3.7	2.7	3.0	2.7	3.7	2.3
Clancy (NYUS304B)	5.0	4.3	4.7	3.7	4.0	2.8	3.7	3.0

was very vigorous but had high cull rates and dark, soft fruit that may not be suitable for many markets. Clancy performed well in the first 2 seasons but crashed due to poor water management at renovation in 2003. The fruit of Clancy is large and stores adequately but may be a bit dark and is not the classic heart shaped berry that is desired. It does have potential as a late season variety because there are few options.

Table 4. Blind taste test results from 11 growers attending a field meeting on 6/24/03 in Geneva, NY. (Scale 1-10; 10=best). (Average rank is in order of preference overall.)

Cultivar	Flavor	Texture	Exterior Color	Interior Color	Appearance	Average Rank
L'Amour (NY1829)	6.5	8.2	8.4	8.2	8.1	2.6
Jewel	6.7	8.3	8.5	8.0	8.2	2.8
Darselect	6.3	7.9	7.9	7.6	7.8	3.1
Clancy (NYUS304B)	5.3	6.9	7.7	7.8	7.2	3.6
Earliglow	7.0	7.1	7.9	7.9	7.1	3.8

Sable did not offer any advantages over Earliglow and had softer fruit. Eros only performed adequately in the first season and went down quickly due to poor renovation and cyclamen mite problems. Its fruit quality was also poor being light and not particularly attractive.

Table 5: Trial 2-Total yield, percent marketable yield and mean fruit weight for 7 strawberry varieties in Geneva, NY. Fruit was harvested until the mean weight was below 8g/berry. Unmarketable fruit included deformed and rotting fruit. Yield was extrapolated from three 25 ft. plots planted at an initial density of 7,260 plants per acre in a matted row system.

Variety	Total Yield (1b/acre)		Unmarketable Fruit (%)		Fruit Weight (g)	
Year	2003	2004	2003	2004	2003	2004
Ovation	6,230	6,110	30	8	10.4	10.0
L'Amour	6,640	9,880	23	8	11.9	11.6
Clancy	7,920	2,110	25	0	11.7	17.6
Annapolis	8,260	7,430	16	11	12.1	11.2
Itasca (MNUS 138)	10,440	6,970	17	16	14.2	12.1
Jewel	10,450	7,250	18	6	10.9	11.6
Honeoye	10,990	10,720	13	13	13.2	9.4

Trial 2

This trial had the first look at Itasca (MNUS 138) and it performed very well, being high yielding and early season with large fruit. Honeoye and Jewel performed as standards are expected to. L'Amour did not perform as well as hoped but did much better in the second harvest season. Commercial sources of plant material should even out the performance L'Amour (Plants for this trial were produced on site which is not ideal.) Ovation performed relatively poorly **(Table 5).** It has been reported to do better in a plasticulture system. The matted row system does produce fruit later in the season compared to plasticulture systems thus pushing production into a hotter time frame. This reduces yields in later varieties in many cases as seen with Ovation and Clancy in this trial.

For fruit size, Clancy had the largest fruit with Itasca second **(Table 6).** Honeoye had very good fruit size, 13.2, in 2003 but it dropped off considerably in 2004. L'Amour, Annapolis, and Jewel had similar fruit size. Ovation had the smallest fruit in the trial.

Trial 3

This trial had several of the newest varieties to the U.S. Elsanta has been the standard variety in Europe for 10 years or more but has just recently been available to U.S. growers. Sapphire and Serenity are the newest varieties out of Ontario and Evangeline is relatively new from Nova Scotia. Serenity performed very well with the highest yield by far in 2004 **(Table 7)** and large fruit. Darselect and Honeoye also had high yields in 2004. Evangeline performed the most poorly in both seasons, generally because the majority of its fruit did not reach a commercially acceptable size, 8g **(Table 7)**. The remaining varieties were similar in yield to each other **(Table 7)**.

The season in 2005 was particularly short and harsh. A late freeze in the third week of May destroyed the entire crop of the early varieties, Earliglow, Evangeline, Honeoye, and Northeaster. Their first harvest was below the minimum 8g average size to be considered marketable and so had zero yield

Table 6: Trial 2-Average harvest dates for 2003-04 for 7 strawberry varieties in Geneva, NY.

Variety	First Harvest Date	50% Harvest Date	Final Harvest Date	Harvest Length (days)
Annapolis	June 10	June 15	June 18	9
Itasca (MNUS138)	June 10	June 16	June 18	9
Honeoye	June 12	June 17	June 21	10
L'Amour	June 11	June 19	June 24	14
Jewel	June 14	June 18	June 23	10
Clancy	June 20	June 23	June 26	7
Ovation	June 23	June 28	July 2	10

(Table 7). The later maturing varieties **(Table 8)** performed much better but many of them had reduced yield as well **(Table 7)**. Allstar and Darselect were the top producers followed by Cabot and Serenity **(Table 7)**.

Conclusions

Overall, some newer varieties show very good promise based on the trial data. L'Amour produced moderate yields but had very high fruit quality. Serenity produced very good yields in the late season, which is a relatively difficult slot to fill. Clancy also shows promise in the late season with very large fruit but may need to be
planted at a higher density. A trial in plasticulture may also be warranted. Itasca from Minnesota shows very good promise for the early season with good yields of large good-quality fruit. Darselect also shows good promise with high yields but has some disease susceptibility and storage problems. The standards, Earliglow, Honeoye and Jewel, performed as expected and will continue to be planted for years to come.

Literature Cited

Pritts, M. and D. Handley (eds.). 1988. Strawberry production guide. N.E. Region. Agric. Eng. Ser. Bul. NRAES-35. Cornell Univ., Ithaca, N.Y.

The following variety descriptions are based on published reports and trials at Cornell University's New York State Agricultural Experiment Station in Geneva, NY. They are organized by harvest season.

Early Season

Annapolis (Nova Scotia) is a large fruited early season variety. The fruit is pale red and soft with good flavor. Suitable for local retail. It yields well. It is susceptible to powdery mildew and Verticillium wilt.

Earliglow (USDA, MD) is still considered the best tasting berry around. Primary berries are large and attractive and are suitable for retail or wholesale. Berry weight drops off quickly after the primary berries and yields are relatively low. Susceptible to powdery mildew after harvest.

Evangeline (Nova Scotia) fruit is long conical in shape with a pronounced neck. The interior is white and it is susceptible to red stele. The fruiting laterals are stiff and upright which keeps the fruit off the ground and clean.

Honeoye (Cornell University, NY) has reigned as the yield king for many years and produces an abundance of large, attractive, firm, berries that are suitable for all markets. Closer to an early mid-season, the look of this berry sells it, but taste is the major drawback as it can be tart and can develop disagreeable aftertastes when over ripe or in heavy soils. It is susceptible to red stele disease but is manageable.

Itasca (MNUS 138, University of Minnesota) is a cross between Seneca and Allstar. It fruits early to early-midseason in Minnesota or early-midseason in Massachusetts. In Minnesota, fruit was larger than that of Annapolis, medium large in size, conic to blunt wedge shaped. Fruit flesh is orange-red with a classic flavor. Itasca is resistant to five races of red stele, and its foliage is highly resistant to mildew.

Northeaster (USDA, MD) was billed as a replacement for Earliglow and out performs it in all ways except flavor. Yield is higher and fruit size and attractiveness are equal to Earliglow but the flavor is unusual. The grape Kool-Aid like aftertaste can be a turn off to many customers.
or Cabot or if you want to see the latest thing, L'Amour

Table 7: Trial 3- Total yield, percent marketable yield and mean fruit weight for 14 strawberry varieties in Geneva, NY. Fruit was harvested until the mean weight was below 8g/berry. Unmarketable fruit included deformed and rotting fruit. Yield was extrapolated from three 25 ft. plots planted at an initial density of 7,260 plants per acre in a matted row system

Variety	Total Yield (1b/acre)		Unmarketable Fruit (%)		Fruit Weight (g)	
Year	2004	2005	2004	2005	2004	2005
Evangeline	1,440	0	1	n/a	15.0	6.8
Jewel	6,820	6,200	3	18	13.1	11.7
Northeaster	6,430	0	4	n/a	12.6	7.6
Allstar	7,210	9,060	14	36	12.1	11.2
Cabot	8,210	7,890	12	38	20.9	15.8
Earliglow	8,220	0	8	n/a	11.3	5.9
Sapphire	8,410	3,290	6	17	10.0	8.5
Elsanta	8,520	5,420	8	33	12.1	9.3
Winona	9,100	6,210	13	43	13.9	9.2
Raritan	9,120	2,370	7	11	9.9	8.0
Kent	9,370	5,490	12	28	11.7	8.7
Honeoye	10,870	0	7	n/a	11.7	7.1
Darselect	11,403	8,570	8	17	14.2	9.9
Serenity	19,580	7,320	15	56	12.2	11.6

(NY1829) and Clancy (NYUS304B) are new releases from Cornell.

Sable (Nova Scotia) is slightly earlier than Earliglow and is equal or better in flavor. Unfortunately it lacks fruit size and firmness. This variety is only suitable for direct retail and u-pick operations. Frost damage can be a problem because the flowers open very early.

Table 8: Trial 3-Average harvest dates for 2004-05 for 14 strawberry varieties in Geneva, NY

Variety	First Harvest Date	50% Harvest Date	Final Harvest Date	Harvest Length (days)
Evangeline	June 4	June 6	June 7	4
Earliglow	June 4	June 7	June 9	6
Northeaster	June 4	June 10	June 14	11
Honeoye	June 7	June 11	June 14	8
Raritan	June 11	June 13	June 15	5
Kent	June 11	June 14	June 16	6
Allstar	June 11	June 15	June 19	9
Darselect	June 11	June 18	June 24	14
Jewel	June 12	June 16	June 18	7
Sapphire	June 12	June 16	June 18	7
Elsanta	June 12	June 16	June 19	8
Winona	June 12	June 16	June 19	8
Cabot	June 15	June 19	June 24	10
Serenity	June 16	June 22	June 26	11

Mid Season

Brunswick (Nova Scotia) has fruit weight and yield similar to Honeoye. However, it has a squat, round shape and tend to be dark and bruise easily. The flavor is good but can be tart when under ripe.

Cavendish (Nova Scotia)is a high yielding, high quality berry in a good year. However, high temperatures during ripening can cause uneven ripening that can be a real problem.

Canoga (Cornell University, NY) was reintroduced in 2005 for plasticulture and ribbon row plantings where drip irrigation is practiced. The berries are very large, firm, bright red in color, with a shiny appearance and good flavor. Plants are vigorous and form branch crowns well in plasticulture. Plants do not runner as freely as most varieties.

Chandler (University of California) is a standard southern variety grown for wholesale markets in plasticulture. High yields have been experienced throughout the Carolinas and California. Not well suited for planting north of the mid-Atlantic region due to lack of winter hardiness. Chandler is also susceptible to anthracnose disease.

Darselect (France) is a large fruited, high yielding variety. The berries are attractive and bright red with a long conical shape. The flavor is very good. However, it tends to be soft. It is susceptible to powdery mildew, which can be a problem in areas with morning fog.

Elsanta (Netherlands) is one of the most widely planted varieties in Europe. It is June-bearing with high yield potential. Fruit is firm and aromatic. It is susceptible to red stele, anthracnose, and Verticillium wilt.

Jewel (Cornell University, NY) continues to be the favorite in this season. The high quality berries are large and attractive with good flavor. Yields are moderate. On a good site, it's hard to beat. It is susceptible to red stele and can have vigor problems in poor or cold sites.

Kent (Nova Scotia) produces medium sized berries with very good yield, especially in new plantings. Hot weather can cause skin toughness to deteriorated. It is very susceptible to leaf spot and scorch and to angular leaf spot. It is very sensitive to Sinbar herbicide. It does not do well in hot weather.

L'Amour (Cornell University, NY) is an early mid-season type with excellent fruit quality. Berries are bright red and firm but not hard, with excellent eating quality and flavor. Fruit is long round conical with a fancy calyx, which makes them very attractive. No significant disease or insect problems have been noted to date.

Mesabi (University of Minnesota) is a very high yielding berry with large berries and good flavor, but does not store well. It is resistant to red stele and tolerant to leaf diseases and powdery mildew.

Raritan (Rutgers University, NJ) is productive with the fine taste of an heirloom strawberry. Raritan is very flavorful. Its small, deep-red berries are easy to pick. Plants are susceptible to a wide range of diseases.

Sapphire (University of Guelph, Ontario) is a late mid season variety with bright red and large. It is reported to be tolerant of the herbicide Sinbar (terbacil).

Late Season

Allstar (USDA, MD) is good yielding, high quality variety with good flavor. Unfortunately, the color is pale to orangish and is unacceptable to an uninformed consumer.

Cabot (Nova Scotia) produces impressive berries. Average fruit weight is larger than any variety currently available. Primary berries often top 40-50 g. The color can be pale throughout the berry and primary berries are often irregular in shape. Yields are very high. It is resistant to red stele but is susceptible to virus infection and cyclamen mites.

Clancy (Cornell University, NY) was developed through a joint venture with the USDA breeding program in Beltsville, MD. Its parents were resistant to red stele root rot. The fruit is a round conical shaped with darker red color and good flavor. The flesh is very firm with good texture and eating quality. The fruiting laterals are strong and stiff, keeping the

fruit off the ground until they reach full size. No significant disease or insect problems have been noted to date.

Eros (Italy) is a light colored late season variety with large but somewhat squat berries that are not particularly attractive. Yields are adequate in good stands but it does not renovate exceptionally well. It is susceptible to cyclamen mites.

Ovation (USDA, MD) is extremely late. It doesn't flower after most others are past their peak. Fruit quality is average but there is little to compare it to in its season. Yields are moderate

Seneca (Cornell University, NY) is probably the firmest variety available for the east. The fruit is large, bright red and attractive but the flavor is only acceptable. It doe not runner heavily and can be adapted to plasticulture.

Serenity (University of Guelph, Ontario) is a late season variety that is also tolerant to Sinbar (terbacil). The fruit is large and bright red. The skin tends to be soft. It reported to be moderately resistant to scorch and mildew.

Winona (University of Minnesota) has very large berries and average yields but can not compete with Jewel for fruit appearance. It has good vigor though and might be useful where Jewel does poorly.

Day Neutral

Everest (Great Britain) is a fairly new variety that has large, firm, bright red berries. It does not runner well and is only suited for plasticulture. Over wintering can be a problem with this one.

Seascape (University of California) is a day neutral that is seeing some success in the east. The fruit is large and very attractive. It is firm and good quality. It does not runner and is only suited for plasticulture. Over wintering can be a problem with this one.

Tribute and **Tristar** (USDA, MD) have been the standard day neutral varieties for the northeast for the last 20 years. They are disease resistant, vigorous, and runner enough for matted row production. Both are relatively small fruited and low yielding but off-season fruit may pay off. Of the two, Tribute has better size and Tristar has better flavor.

New Varieties-these have not been tested in Geneva but may be of interest.

Saint-Pierre (Quebec) has large conic shaped fruit that are pale red to orangish, much like Allstar. Fruit firmness and flavor are reported to be very good.

Bish (North Carolina State University) is large and firm. It is resistant to anthracnose. It is a June-bearing variety developed for use in plasticulture systems.

Avalon (Rutgers University, NJ) is an early season berry with large fruit size. The fruit is rounder than Earliglow and somewhat dark. Flavor and firmness are very good. Plants are large and vigorous.

Utah Pests On-Line Resources

The *Utah Pests* web page is newly updated and chock-full of useable information. It is the place to find helpful information on pests of berries and other plants; also pests of households, humans, and pets. Pests addressed include insects, spiders, and plant diseases (fungi, viruses, bacteria, and nematodes). Nutritional deficiencies and chemical injuries of plants, reduced risk pesticides, and biological control are also discussed. Information is targeted to homeowners and commercial producers of agricultural and horticultural commodities. Pest management strategies that reduce the use of pesticides and encourage the development of balanced ecosystems are emphasized. Fact sheets that help identify and recommend management options for pests of crops, fruits and vegetables, home gardens, humans and pets, ornamental landscapes, stored foods and structures, and turf are available with just a few clicks of the mouse. Other educational products provided on the site include pest advisories (for tree fruits, woody ornamentals, and West Nile Virus), a quarterly newsletter that provides a bounty of timely pest management information, a pest photo gallery, answers to frequently asked questions, slideshows from recent training programs, and plant pest sample submission information. Visit the *Utah Pests* web page at http://utahpests.usu.edu to find answers to what's been bugging you. Plants – Pests – Solutions.

Utah Plant Pest Diagnostic Laboratory Seeks State Funding

The only service lab in the state of Utah to provide diagnoses and management recommendations for insects, spiders, and plant diseases is the *Utah Plant Pest Diagnostic Laboratory* operated by Utah State University Extension Service in Logan. The entomology and plant pathology programs of USU are supported by the Diagnostic Lab. Although the Lab has been in existence for nearly 30 years, it has suffered from a lack of adequate funding. Without more funds, the Lab is unable to provide high quality pest management services to the grow-

ing population of Utah. Utah has experienced extensive population growth resulting in increased demand for information and education on caring for landscape ornamentals, turf, small pastures, and specialty fruit and vegetable crops such as berries. The growth in community gardeners' markets and home gardening has taxed the abilities of the Diagnostic Lab to meet the needs of Utah's citizens. Therefore, USU Extension is undertaking a funding request initiative in the 2008 General State Legislative Session. The Lab is looking for support from the agricultural, horticultural, and green industries for this funding effort. Please let your local state legislator know that you rely on the support and services of USU Extension Service and the *Utah Plant Pest Diagnostic Lab*. We need your support to maintain our quality service to the berry growers of Utah. Thank you, the UPPDL Staff (Erin Hodgson, Kent Evans, Diane Alston, and Ryan Davis).

Why Should I Choose Your Fruit and Berries? Or, Why Stop at Your Shop?

Dr. Ruby Ward, Utah State University (rward@econ.usu.edu)

Why do customers shop at farmers markets or roadside stands rather than grocery stores? The prices at grocery stores may be lower than those charged at farmers markets. So customers need a reason to shop at your booth or stand. Your booth at a farmers market or your roadside stand is your storefront, and we will refer to your store for this discussion. There are many possible reasons, but you need to ask yourselves "Why should a customer shop at your store?" The reason needs to be more than that you are locally owned and independent. There must be something more that you are providing to the customer that is better than the competition. If not, what can you change to provide a reason for customers to shop here?" Below are some different reasons and how they are created.

Low Prices. One strategy for attracting customers is having the lowest prices. This is the strategy used by chain stores such as Walmart. Customers come because they know they can get a better price. The supermarkets can purchase inventory in larger volumes and/or are willing to use fruit as a loss leader. A loss leader is an item that is sold at or below cost to get people in the store. This is probably not a good strategy for many growers marketing directly to customers. Customers will need other reasons for shopping with you. It costs more to operate a stand (labor and other costs) and to attend a farmer's market. So you need the returns to be high enough to cover those additional costs.

Location and convenience. Another reason that customers may want to shop at your store is because it is close and convenient. One advantage you have over a supermarket is that you are interacting directly with your customers as they purchase products. If you don't know what the reasons they are coming to you ask them. It may be especially nice to know why repeat customers are stopping. If the location and convenience is a reason, ask yourself, "How can I make shopping here more convenient?" The location of the business is already set. You can make the experience more convenient by making it easier to get purchases to cars. Making products easy to locate, maybe bundle ingredients for things together. Giving customers serving suggestions may make it easier for them to see how to use the product.

Selection. Your products may be varieties and quality that is not found elsewhere. Maybe customers should shop at your place if they want to try different varieties of fruit. If "uniqueness of the fruit" is one of the strengths of your shop, think of ways to better market this. You may need to do more to provide information about varieties and what to do with them at your store. This may include highlighting some unique varieties on a regular basis. Customers will know when they come into your store, you will always have something new displayed and information on it. Displays, newsletters, and information sheets are some ways of doing this. Employee training will also be needed so employees can talk about the products and make recommendations. It does little good to have unique products if employees cannot recommend it to customers and/or answer questions on it. During training sessions make sure employees know about unique characteristics and selling points of your product. This may mean where it was grown, how it was grown, variety, etc. One advantage of an operation that both produces and markets the products are that they have seen the product through all stages and can talk it. Sometimes this is just letting customers know what it took to produce the fruit they are eating.

Customer Service. This is another important reason a customer may want to shop at your store compared to one of your competitors. Customer service can mean many things. Perhaps you can ask yourself, "Are my customers happier when they leave my store than when they entered it?" When this is the case, chances are, that your customers will come into your store just to look around. While there, they may buy something. This is a harder reason to establish than the others be-

cause it depends on less concrete factors and many times on the pleasant atmosphere of the business. Creating customer service policies will help to establish the type of experience you want each customer to have. Even if you do not have many employees or it is just you, you still need to establish how you are interacting with customers and how you will handle situations. Employees will need to be trained in your customer service policy and interacting with customers. Set up some role-playing exercises during training sessions to allow employees to practice ways of interacting with customers. This will be more effective than saying that you want employees to greet customers or be friendly.

These are only some of the possible reasons a customer may want to shop at your store. Hopefully they will give you some ideas on ways to better market your fruit and help you come up with your own list. Whatever reasons you establish, try to expand on the positive aspects you have to offer and think of ways of communicating these strengths to customers so that their experience at your store is enjoyable.

Legislative Update: Berries in the Farm Bill

There are a number of reports in the news about the new national farm bill and how it might impact "specialty crops" including fruit. Brandon Willis, a Bear Lake Raspberry Grower and Senate Staffer sent the following update.

During the last week in July the House passed their version of the Farm Bill. The vast majority of programs remained unchanged from the 2002 Farm Bill, however it provided an additional $1 billion for specialty crops (including berries). However, money is extremely tight this year which has made things extremely difficult in the Senate, since 60 votes are needed for the Farm Bill to pass the Senate. The House only requires a simple majority. When the 2002 Farm Bill was written the Agriculture Committee was given an addition $75 billion, however, this Farm Bill there is no additional money. This has made it extremely difficult to pass a Farm Bill since there are more people who want money, but there is less money going around.

The Senate has moved at a slower pace than the House, but on September 27th the Senate Finance Committee passed *The Heartland, Habitat, Harvest, & Horticulture Act of 2007 or the 4-H Bill.* The 4-H bill provides supplemental coverage for farmers who suffer from natural disaster and also provides nearly $1 billion to specialty crop growers. The 4-H bill would fund the Pest Detection and Disease Prevention Program which provides assistance to states to help prevent pest and disease outbreaks. In addition, the Tree Assistance Program was included. This program provides assistance to farmers whose trees and vines are killed in a natural disaster. The 4-H Bill was passed by the Finance Committee and this is the first time that a tax bill has been written for a Farm Bill. Once the Farm Bill comes to the floor of the Senate the 4-H bill will be incorporated into the Farm Bill written in the Agriculture Committee.

The Agriculture Committee anticipates debating and passing the Farm Bill in committee the week of October 22nd. Soon after the Farm Bill passes the Committee it will go to the floor of the Senate for passage.

If things go well and the Agriculture Committee is able to pass the Farm Bill out of their Committee on the week of October 22nd the final version of the Farm Bill should be signed by the President (or vetoed) around the end of November or first of December.

Come join us for the 2008 Diversified Ag Conference in February on the Utah State University Campus in Logan, UT.

The dates are February 20-22.

Check out the website for more information:

http://extension.usu.edu/cooperative/agribusiness/index.cfm/cid.371/tid.762/.

NURSERY SOURCES

It is not too early to start thinking about ordering plants for 2008. Following is an alphabetized list of berry nurseries throughout North America. No endorsement or discrimination is intended. Nurseries that wish to be included in future lists should contact Brent Black at blackb@ext.usu.edu. (This list was adapted from one developed by Cornell University. The original list is accessible at http://www.fruit.cornell.edu/Berries/nurseries/

Nursery	Crops
Awald Farms 2195 Shirley Road North Collins NY 14111 phone: (716) 337-7162 www.awaldfarms.com	Red Raspberry Black Raspberry Blackberry
Boston Mountain Nurseries 20189 N Hwy 71 Mountainburg AR 72946 phone: (479) 369-2007 fax: (479) 369-2007 www.alcasoft.com/bostonmountain	Raspberry Blackberry Grape Currant & Gooseberry Elderberry
Daisy Farms 28355 M-152 Dowagiac MI 49047 phone: (269) 782-6321 fax: (269) 782-7131 www.daisyfarms.net	Strawberry Raspberry Blackberry Currant & Gooseberry
Hartmann's Plant Company PO Box 100 Locata, MI 49063-0100 phone: (269) 253-4281 fax: (269) 253-4457 www.hartmannsplantcompany.com	Raspberry Blackberry Currant & Gooseberry
Indiana Berry & Plant Co, LLC 5218 West 500 South Huntingburg IN 47542 phone:(800) 295-2226 fax: (812) 683-2004 www.inberry.com	Strawberry Raspberry Blackberry Currant & Gooseberry Grape Elderberry
Krohne Plant Farms Inc 65295 CR342 Hartford MI 49057 phone: (269) 424-5423 fax: (269) 424-3126 www.krohneplantfarms.com	Strawberry
Miller Nurseries Inc 5060 West Lake Rd Canandaigua NY 14424-8904 phone: (800) 863-9630 fax: (585) 396-2154 www.millernurseries.com	Strawberry Raspberry Blackberry Currant & Gooseberry Grape Elderberry
Norcal Nursery/Sakuma Bros. Farms PO Box 1012 Red Bluff CA 96080 phone: (530) 527-6200 fax: (530) 527-2921 www.sakumabros.com	Strawberry Raspberry
Nourse Farms Inc 41 River Rd South Deerfield MA 01373 phone: (413) 665-2658 fax: (413) 665-7888 www.noursefarms.com	Strawberry Raspberry Blackberry Currant & Gooseberry
One Green World 28696 S. Cramer Rd Molalla Or 97038-8576 phone: (877) 353-4028 fax: (800) 418-9983 www.onegreenworld.com	Strawberry Raspberry Blackberry Currant & Gooseberry Elderberry
St. Lawrence Nurseries 325 State Hwy 345 Potsdam NY 13676 phone: (315) 265-6739 www.sln.potsdam.ny.us	Raspberry Currant Grape
Ken M Spooner Farms 9710 SR 163 E. Pullyap, WA 98374-1814 phone: (800) 532-5487 (253)-845-5519 fax: (253) 845-5717 www.spoonerfarms.com	Raspberry
Strawberry Tyme Farms Inc RR 2 Simcoe ONT N3Y 4K1 phone: (519) 426-3099 fax: (519) 426-2573 www.strawberrytyme.com	Strawberry Raspberry Blackberry Currant
Ty Ty Plant Nursery 4723 US Highway 82W PO Box 130 Ty Ty, GA 31795 phone: (800) 972-2101 (229) 388-9999	Raspberry Blackberry

PLANTS, SOILS, & BIOMETEROLOGY
4820 OLD MAIN HILL
LOGAN UT 84322-4820

We hope you find the information in this newsletter useful. If you have comments regarding information in this newsletter, or would like to see in future newsletters, please contact:

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