

Strawberry Variety Update & Review

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Strawberries are one of the most variable and temperamental of the fruit crops and many varieties are available because individual varieties are often adapted to a relatively small growing region. June-bearing types are most commonly grown in north-central and northeastern North America, but interest is growing in day-neutral types grown on plastic. If you are looking to try a new variety Darselect and Cabot produce high yields or if you want to see the latest thing, L'Amour (NY1829) and Clancy (NYUS304B) are new releases from Cornell with great promise. No variety will be perfect so try new ones on a limited scale to determine how they will perform in your operation.

A replicated trial with 10 varieties, each with three 7.6 m (25 ft.) plots, was established in 2001 in Geneva, NY. A standard matted row system (Pritts and Handley, 1988) with an initial plant density of 17,940 plants per hectare (7,260 plants per acre) with overhead irrigation was used. Bare root plants were planted at 46 cm (18 in.) spacing in rows with 1.2 m (4 ft.) apart. 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. This was supplemented with hand weeding as necessary. No fungicides or insecticides were used during this trial.

The soil type in the field was Honeoye fine sandy loam with approximately 2% slope. After the establishment year, calcium nitrate was applied at the rate of 140 kg•ha⁻¹ (125 lb•ac⁻¹) in April. During renovation, ammonium nitrate was applied at 202 kg•ha⁻¹ (180 lb•ac⁻¹), and SulPoMag (22%K₂O-11%Mg-22%S) with 28.8 kg•mt⁻¹ (70 lb•t⁻¹) of 15% borate was applied at 252 kg•ha⁻¹ (225 lb•ac⁻¹) in late autumn.

The plots were harvested three times per week during the summer and total yield per hectare extrapolated from the plots. Harvest on each variety ended when the average fruit weight on a harvest day fell below 8 g per berry. Samples of 10 fruit were taken from 6 of the varieties during the 2003 season for storage trials and 5 varieties were included in a blind taste test with growers during a field day in Geneva. Total yield, percent marketable yield, and average fruit weight over the season were calculated (Table 1). Average harvest dates from 2002 and 2003 were recorded (Table 2), and results from the storage test and taste test are in Tables 3 and 4.

Table 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. Fruit over 8g with no rots, deformities, or damage were considered marketable. Yield was extrapolated from three 7.6 m plots planted at an initial density of 17,920 plants•ha⁻¹ in a matted row system. (1 kg/ha=0.89 lb/ac)

Variety	Total Yield (kg•ha ⁻¹)		% Marketable Yield		Mean Fruit Weight (g)	
	2002	2003	2002	2003	2002	2003
Cabot	29,070	17,380	79	76	17.7	15.5
Brunswick	20,060	21,690	66	73	10.8	12.2
Darselect	23,530	16,120	74	76	11.5	12.0
Clancy (NYUS304B)	15,240	18,680	78	85	12.3	13.9
Honeoye	18,280	14,470	70	84	10.7	12.4
Jewel	20,250	11,650	77	87	10.5	12.9
L'Amour (NY1829)	15,930	14,950	80	77	12.3	11.4
Eros	22,340	6,680	77	68	12.6	10.9
Sable	12,650	10,330	51	75	8.7	10.2
Earliglow	13,040	8,160	60	75	8.6	10.2

Table 2. Average harvest dates for 2002-03 for 10 strawberry varieties in Geneva, NY. Presented in order of 50% harvest date.

Variety	First Harvest Date	50% Harvest Date	Final Harvest Date	Harvest Length (days)
Earliglow	June 13	June 18	June 22	10
Sable	June 13	June 19	June 22	10
Honeoye	June 14	June 21	June 25	12
Brunswick	June 15	June 22	June 27	13
L'Amour (NY1829)	June 17	June 23	June 29	13
Jewel	June 17	June 24	June 28	12
Darselect	June 16	June 24	July 1	16
Eros	June 21	June 27	July 3	13
Clancy (NYUS304B)	June 18	June 28	July 4	17
Cabot	June 21	June 29	July 6	16

Table 3. Mean storage ratings for 5 strawberry varieties in Geneva, NY. Ten fruit samples were taken at 3 harvest dates during the 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	3.7	4	3
L'Amour (NY1829)	5	3.7	4.7	4	4.7	3.7	4.7	4
Jewel	4	3.2	5	4.3	3.7	3.2	4.7	4
Darselect	4	2	3.5	2.5	3	3	3.5	2.5
Earliglow	4.7	2.7	3.7	2.7	3	2.7	3.7	2.3
Clancy (NYUS304B)	5	4.3	4.7	3.7	4	2.8	3.7	3

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.)

Variety	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

The following 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 and include the majority of varieties grown in the north-central and northeastern growing regions of North America.

Early Season

Earliglow 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.

Honeoye 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.

Northeaster was billed as a replacement for Earliglow and out performs it in all ways except flavor. Yield is higher and fruit weight and attractiveness are equal to Earliglow but the grape Kool-Aid flavor is unusual and can be a turn off to many customers.

Sable 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.

Mid Season

Brunswick is a new variety out of Nova Scotia with 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 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.

Darselect 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.

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

L'Amour (NY1829) is a new variety from Cornell for 2004. It 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 is a very high yielding variety 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. It comes out of Minnesota and has excellent cold tolerance.

Late Season

Allstar is good yielding, high quality variety with good flavor. Unfortunately, the color is pale red to slightly orange that is unacceptable to an uninformed consumer.

Cabot 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 (NYUS304B) is a new late season release from Cornell that was developed through a joint venture with the USDA breeding program in Beltsville, MD. It has parents that are 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.

Jewel 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.

Seneca is probably the firmest variety available for the northeast. The fruit is large, bright red and attractive but the flavor is only acceptable. It does not runner heavily and can be adapted to plasticulture.

Winona has very large berries and average yields but can not compete with Jewel for fruit appearance. It has good vigor though and can be useful where Jewel does poorly. It comes from Minnesota and has very good cold tolerance.

Day Neutral

Everest is a fairly new variety out of the U.K. It 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 is a day neutral out of California 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** 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 are currently being tested in Geneva but no data is available as yet.

Evangeline is a new variety from Nova Scotia that ripens in the early season. The fruit is long conical in shape with a pronounced neck. The interior is pale and it is susceptible to red stele. The fruiting laterals are stiff and upright which keeps the fruit off the ground and clean.

Sapphire is a late mid-season variety from the University of Guelph in Ontario. The fruit are bright red and large. It is reported to be tolerant of the herbicide terbacil (Sinbar).

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

Saint-Pierre is a new variety out of Quebec. It has large conic shaped fruit that are pale red to slightly orange, much like Allstar. Fruit firmness and flavor are reported to be very good.

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.