



Berry Notes

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UPCOMING MEETINGS

Message from the Editor:

Time for ordering new plants: This is the time of year for planning next year's plantings and ordering plants. This issue of Berry Notes contains a reprint of a lengthy cultivar review written by Courtney Weber of Cornell University for 2003, looking at the tried and true as well as the new and promising berry cultivars coming out of several breeding programs around the world. Reviews of newer cultivars will be included in the next issue of Berry Notes. If you are looking for sources of particular cultivars, whether or not they are listed here, a good source of information for locating nurseries that carry certain cultivars is the Cornell Nursery Selection Guide. This Guide is updated regularly and lists most commercial cultivars of all the berry types and cross references them to a nursery supplier so you can find the nurseries that carry the cultivars listed. This list is available on-line at www.hort.cornell.edu/extension/commercial/fruit/Berries/nurseries/index.html.

New England Fruit and Vegetable Conference: We're looking forward to seeing you in Manchester, New Hampshire, for the *New England Fruit and Vegetable Conference*. This combined program between the Annual New England Fruit Meetings and Trade Show and the New England Vegetable and Berry Growers' Association winter meeting for December offers two days of excellent presentations on

tree fruit, small fruit, vegetable and cut flower production. The program can be found at the end of this issue of Berry Notes. An alternate version located at <http://www.massfruitgrowers.org/page2.html>. Registration is at the door for \$20 per day. There is no pre-registration.

Cultivar Review

Strawberry, Raspberry, and Blueberry Cultivar Review

Courtney Weber, Cornell University

The winter months are a good time to review your current small fruit cultivars and to make plans for new plantings. New cultivars are released all the time, and the vast majority of them fail to catch on for various reasons including poor adaptability to diverse growing regions, unforeseen disease or insect susceptibility, or fruit characteristics that are unacceptable to the buying public.

The following sections are meant as a guideline for New York and the northeastern U.S. No cultivar will work well in all locations, soil types, and productions

systems, but many have proven to be useful in many different situations. In addition, many new cultivars show promise and may be suitable for your operation. However, as always, try new cultivars on a limited basis before abandoning cultivars that have proven reliable in your production scheme.

This list is by no means complete but should address most situations. For convenience, an asterisk follows the standard cultivars (*). The author can be contacted with questions or to discuss other possibilities at caw34@cornell.edu.

Strawberry Cultivars

Strawberries are probably the most variable and temperamental of the small fruits and also probably have the most cultivars to choose from because they are often adapted to a relatively small growing region. June-bearing types are most commonly grown in NY and the NE U.S., but interest is growing in day-neutral types grown on plastic.

Early Season

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

Earliglow* (USDA) is still considered the best tasting berry around. Primary berries are large and attractive and are suitable for retail or wholesale. Berry size drops off quickly after the primary berries and yields are relatively low.

Northeast (USDA) 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.

Honeoye* (Cornell University-NYSAES) 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.

Mid Season

Brunswick (Nova Scotia, Patent Pending) has fruit size 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, Plant Patent #11,110) 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 (France, Plant Patent #10,402) is a large fruited, high yielding cultivar. The berries are an attractive bright red with a long conical shape. The flavor is very good. However, it tends to be soft. It is worth a look.

Kent* (Nova Scotia) 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 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 (NY1829, Patent Pending) is a new cultivar 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. Disease and insect resistance is unknown at this stage but no significant problems have been noted to date. I like this one a lot.

Mesabi* (University of Minnesota, Plant Patent #11,116) 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.

Late Season

Allstar* (USDA) is good yielding, high quality cultivar with good flavor. Unfortunately, the color is pale red to orange and is unacceptable to an uninformed consumer.

Cabot (Nova Scotia, Patent Pending) produces impressive berries. Average fruit size is far larger than any cultivar currently available. Primary berries often weigh 40-50 g. The color can be pale and primary berries are often irregular in shape. Secondary berries do not have this problem. Yields are very good. It is resistant to red stele. It is susceptible to virus infection.

Clancy (NYUS304B, Patent Pending) is a new 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 firm with good texture and eating quality. Insect and other disease resistance is unknown at this time but no significant problems have been noted to date. Growers looking for a firm late season berry may want to try this one.

Jewel* (Cornell University-NYSAES, Plant Patent # 5897) 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 sites.

Ovation (USDA) 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-NYSAES, Plant Patent #8991) is probably the firmest cultivar 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 (University of Minnesota, Plant Patent #10,191) 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 is a fairly new cultivar 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 (UC-Davis, Plant Patent #7614) 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** (USDA) have been the standard day neutral cultivars 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 Cultivars

These have not been tested in Geneva but may be of interest.

Evangeline (Patent Pending) this new cultivar from Nova Scotia ripens in the early season. The 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.

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

Serenity is a late season cultivar that is also from the U. of Guelph in Ontario. It is 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.

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

Elsanta (Netherlands) is one of the most widely planted cultivars 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.

Bish (Patent Pending) is a new cultivar out of North Carolina State University. This cultivar is large and firm. It is resistant to anthracnose. It is a June-bearing cultivar developed for use in plasticulture systems.

Avalon (Rutgers University, Plant Patent #11,372) 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.

Raspberry Cultivars

There are a lot of raspberry cultivars out there dating from the 1940's to 2003. They come in summer bearing floricanes types and fall bearing primocane types. By planting a series of cultivars, it is now possible to have fruit from mid to late June until frost in much of NY and the northeastern U.S. with only a short late summer lag in production. Here are some thoughts on some of the cultivars available.

Early Season

Boyne (Manitoba, sibling to Killarney) plants are spiny and produce many suckers. The fruit ripens early and is small to medium in size and somewhat dark and soft, but it has fair flavor and good freezing quality. It has excellent winter hardiness but is susceptible to anthracnose. It is moderately resistant to late yellow rust and tolerant to Phytophthora root rot and crown gall, but is susceptible to raspberry fireblight. Boyne yields very well and is recommended for colder climates.

Killarney* (Manitoba, sibling of Boyne) has short to medium canes, is spiny, and produces many suckers. It is moderately resistant to Phytophthora root rot. It is susceptible to mildew and anthracnose. The fruit ripens early, but after Prelude and Boyne. The fruit is medium-sized but very bright red and may crumble. Flavor and freezing quality are good, but berries may soften in warm weather. This cultivar is very hardy and is recommended for colder climates.

Prelude* (Cornell University-NYSAES, Plant Patent #11,747) is the earliest summer fruiting cultivar available. The fruit is medium sized, round, and firm with good flavor. It is very resistant to Phytophthora root rot and has good cold hardiness. A moderate fall crop is large enough to warrant double cropping. It is probably the best early season cultivar available for the northeast.

Mid Season

Canby* (Oregon) canes are tall, nearly spineless, and moderately productive. The fruit ripens mid season, is medium to large in size, firm, and bright red with excellent flavor. It has moderate to poor hardiness, and buds may winter kill in cold climates. It is susceptible to Phytophthora root rot.

Claudia (KCE-1, University of Maryland, Patent pending) produces stout, upright canes. The fruit is large and conical with good flavor and ripens mid to late season. A late fall crop is common. It has acceptable cold hardiness for most areas. This is a new release that is relatively untried, but has performed well in Geneva.

Emily (JAM-1, University of Maryland, Plant Patent #12,350) produces large midseason fruit with good

yield potential. It is susceptible to Phytophthora root rot and has suspect cold hardiness. This is a new release that is relatively untried and has performed poorly at Geneva.

Esta (GEL-114, University of Maryland, Patent pending) produces fruit mid to late season that are large and conical with a mild, bland flavor. It is susceptible to Phytophthora root rot and lacks cold hardiness. It is resistant to leaf hoppers. It needs trellising for ease of picking. This is a new release that is relatively untried.

Nova (Nova Scotia) is vigorous and upright with long, fruiting laterals. The canes have very few spines. The fruit ripens in mid-season and is medium sized, bright red, firm, and somewhat acidic in taste. It is considered to have better than average shelf life. The plants are very hardy and appear to resist most common cane diseases, including rust. It will set a late fall crop.

Titan* (Cornell University-NYSAES, Plant patent # 5404) produces large canes with very few spines with suckers that emerge mostly from the crown, so it is slow to spread. It is susceptible to crown gall and Phytophthora root rot but is extremely productive. Fruits ripen mid to late season and are extremely large and dull red, with mild flavor. Berries are difficult to pick unless fully ripe. With only fair hardiness, Titan is for moderate climates. It is resistant to the raspberry aphid vector of mosaic virus complex.

Late Season

Encore* (Cornell University-NYSAES, Plant patent # 11,746) is one of the latest summer fruiting raspberry available. It produces large, firm, slightly conical berries with very good, sweet flavor. The fruit quality is considered very good. It is moderately susceptible to Phytophthora root rot and has good cold hardiness.

K81-6 (Nova Scotia) produces canes that are medium tall with spines only at the base. The fruit is very large with good flavor that ripens very late summer with average firmness. It is resistant to late yellow rust but is susceptible to leaf curl virus and raspberry fire blight. Hardiness is judged adequate for most areas.

Black Raspberries

Bristol (Cornell University-NYSAES) is vigorous and high yielding for a black raspberry especially in a newly established planting. The fruit ripens early and is medium to large and firm, with excellent flavor. Bristol is hardy for a black raspberry but should be tested to ensure adequate hardiness. It is susceptible to anthracnose and raspberry mosaic complex but is tolerant to powdery mildew.

Jewel* (Cornell University-NYSAES) is vigorous, erect, and productive for a black raspberry. This cultivar appears to be more disease resistant than others and includes resistance to anthracnose. The fruit is firm, glossy, and flavorful and ripens in mid-season. This is a hardy black raspberry cultivar.

Mac Black is new to the scene and has not been tested much. It is a late season black raspberry with medium large berries. It is reported to have good cold hardiness for a black raspberry. Definitely worth a look to extend your black raspberry harvest by 7-10 days.

Purple Raspberries

Brandywine (Cornell University-NYSAES) produces canes that are very tall with prominent thorns, and suckers grow only from the crown so the plant will not spread. It is susceptible to crown gall but partially resistant to many other diseases. Fruits ripen later than most red cultivars and are large, dull reddish-purple, and can be quite tart. Berries are best used for processing. This is a high yielding cultivar.

Royalty* (Cornell University-NYSAES, Plant patent # 5405) is considered the best purple raspberry available. The canes are tall and vigorous, with thorns, and are extremely productive. Royalty is immune to the large raspberry aphid, which decreases the probability of mosaic virus infection, but is susceptible to crown gall. Fruits ripen late and are large and reddish-purple to dull purple when fully ripe. Berries tend to be soft but sweet and flavorful when eaten fresh. Excellent for processing. Hardiness is acceptable for northern growing areas.

Fall Bearing

Anne (University of Maryland, Plant patent # 10,411) produces large, conic, pale yellow fruit with very good flavor and texture in mid to late season. It produces tall upright canes but does not sucker adequately for good stands. It is resistant to Phytophthora root rot.

Autumn Bliss (Great Britain, Plant Patent #6597) is an early ripening raspberry with large, highly flavored fruit. It ripens 10 to 14 days before Heritage. Much of the crop is produced within the first two weeks of harvest, which is an advantage in northern climates. It produces short canes with few spines. The fruit is somewhat dark fruit. It is susceptible to raspberry bushy dwarf virus.

Autumn Britten* (Great Britain) is early ripening with large, firm, good flavored fruit. It is taller than Autumn

Bliss with better fruit quality but slightly lower yields. It is a day or two later than Autumn Bliss.

Caroline* (University of Maryland, Plant patent # 10,412) is a large, good flavored, conical fruit. It produces tall upright canes. The short fruiting laterals can be challenging to pick, but yields are very good for the fall. It has moderate to good resistance to Phytophthora root rot.

Goldie ('Graton Gold', California Plant Patent #7625) and **Kiwigold** (New Zealand, Plant patent # 11,313) are nearly identical cultivars. They are amber sports of Heritage, similar in all characteristics except fruit color. Fruit blushes pink when fully ripe. Goldie blushes slightly more than Kiwigold.

Heritage* (Cornell University-NYSAES) is considered the standard for fall bearing cultivars. These tall, rugged canes have prominent thorns and are very high yielding. The primocane crop ripens relatively late. Fruit is medium-sized and has good color and flavor, firmness, and good freezing quality. It is resistant to most diseases. Due to its late ripening, this cultivar is not recommended for regions with cool summers or a short growing season with frost before September 30.

Josephine (JEF-f1, University of Maryland, Plant Patent #12,173) plants are upright and vigorous. Fruit is large with average flavor that ripens mid season. It is resistant to Phytophthora root rot and leafhopper. This is a new release that is relatively untried.

Polana (Poland) is a very early season cultivar that ripens 2 weeks before Heritage. It produces short productive canes with multiple laterals per node. The fruit is medium sized fruit with good flavor. Susceptible to verticillium wilt and Phytophthora root rot. It needs extra nitrogen to perform well.

Ruby (Cornell University-NYSAES, Plant patent # 7067) is moderately vigorous with good productivity. The primocane crop ripens slightly ahead of Heritage. The fruit is large with a mild flavor. Ruby is moderately susceptible to Phytophthora root rot. The cultivar is suggested for fresh market or shipping in areas with longer growing seasons. It is susceptible to mosaic virus complex and resistant to late yellow rust and powdery mildew.

Greenhouse Production

Tulameen* (British Columbia) has been shown to be superior for greenhouse production. It produces very large fruit, and high yields. The fruit is glossy and firm. It is resistant to aphid vector of mosaic virus complex. Plants are not adequately hardy for field production in the Northeast.

Blueberry Cultivars

While blueberries are not widely grown in NY there are regions with suitable soil and they are more widely grown in other regions in the northeast. They exhibit a wide range of hardiness that must be taken into account when selecting cultivars.

Early Season

Bluetta* is very hardy but has small dark berries that are difficult to machine harvest. The large scar on the berry is also a problem. Suitable for Zones 3-4.

Duke* is considered the best early season cultivar available. The fruit size and quality is very good but the flavor can be bland if picked late. It can be machine harvested. Frost tolerance and winter hardiness is good. Suitable for Zones 5-6.

Early Mid Season

Bluejay has high quality fruit that can be machine harvested but may be less productive than other cultivars. Suitable for Zones 5-6.

Northland*, as the name suggests, is very winter hardy. It is a half-high bush with small, dark, soft fruit. It is productive but requires heavy pruning. Suitable for Zones 3-4.

Patriot is winter hardy but frost sensitive. It is a smaller bush but still productive but must be pruned hard for large fruit. It must be fully ripe for best flavor. A recent disease problem resembling virus infection has taken it off the recommend list.

Spartan produces large, good quality fruit with good flavor. It can be machine harvested, but it needs cross pollination for good yields and can be difficult to grow in some sites. Suitable for Zones 5-6.

Mid Season

Bluecrop* is a commonly planted cultivar in New York. It has good flavor and fruit size and firmness. It has high yield potential. It is hardy in most of NY and can be machine harvested. The canes tend to be weepy. Suitable for Zones 5-6.

Blueray* is also one of the more widely planted cultivars in New York. Fruit size is very good with good flavor and high yield potential. Extra pruning is needed with this spreading bush. Suitable for Zones 5-6.

Chippewa* is a very winter hardy cultivar that is productive with large firm fruit. This half-high bush is relatively new and has not been widely tested. Suitable for Zones 3-4.

Sierra is productive and has large firm berries that can be machine harvested. It is less hardy than other cultivars. Suitable for Zones 5-6.

Toro is a productive cultivar with large fruit that ripen uniformly. The clusters tend to be tight which makes picking harder. The canes tend to be too upright and thick. Competes with Bluecrop, which is probably better. Suitable for Zones 5-6.

Late Season

Brigitta is a large flavorful fruit that stores well. It is vigorous but can be less hardy because it grows late into the fall. Excess nitrogen will make this worse. It is susceptible to phomopsis. Suitable for Zones 5-6.

Elliott* is a very late season berry with very good shelf life, 30-45 days in a Modified atmosphere. The fruit is large and firm but can be tart. It is a good producer. Suitable for Zones 5-6.

Jersey is an old (1928) cultivar that is adapted to a wide soil range. It has high yields of machine harvested fruit but the berries are small and soft. Suitable for Zones 3-6.

Nelson* is productive with firm, attractive, good flavored that can be machine harvested. The fruit can hang on the bush for extended periods. It is a vigorous, hardy bush with wide soil adaptation. Suitable for Zones 5-6.

New Cultivars

Aurora is a late season cultivar out of the Michigan State University program. The plants are vigorous and upright with numerous, moderately branched canes. The fruit is moderately large with excellent quality.

Draper is an early mid-season cultivar out of the Michigan State University program. It has high fresh market quality and prolonged storage life. The plants are vigorous and upright. Fruit quality is very good with moderate size.

Liberty is a very late season cultivar out of the Michigan State University program. The plants are vigorous and upright with numerous, moderately branched canes. The fruit is very firm with good flavor. Storage life is very good. (*Source: Cornell Berry Resource Web Page, www.hort.cornell.edu/extension/commercial/fruit/berry.html*)

Ribes Cultivar Review 2003

Steven McKay, Cornell Cooperative Extension of Columbia County

The following are descriptions of common varieties of currants and gooseberries suitable to New York conditions.

The regulation on growing ribes species in New York was revised in 2003. New York residents can now legally grow red currants, gooseberries and cultivars of black currants that are immune or resistant to white pine blister rust throughout New York State.

In the near future, the establishment of fruiting currant districts will allow some regions to grow any of the black currant cultivars. Contact Steve McKay (sam44@cornell.edu), Cornell Cooperative Extension Educator in Hudson Valley, for further details on the establishment of fruiting districts. Cornell's white pine blister rust factsheet (<http://plantclinic.cornell.edu/FactSheets/wpineblister/wpineblister.htm>).

Black Currants

Ben Alder (U.S. Plant Patent # 9,889) is susceptible to white pine blister rust but resistance to mildew is very high. It is high yielding variety with superior juice quality. Growth habit is compact and upright and the fruit is well presented for machine harvesting. Bushes are vigorous though height varies according to climate but grows to about 4 feet tall. The plant flowers late so escapes damage by late spring frost. Harvest dates are late July to early August.

Ben Lomond (Scandinavia, 1972) is susceptible to white pine blister rust and though generally resistant to mildew, in some regions resistance has broken down. This mid-season variety is known for its frost tolerance during flowering, even ripening, high yields, large fruit, long hang time and very high Vitamin C content. The berries are large and firm. It forms a compact spreading bush that reaches about 4 * feet.

Ben Sarek (Scandinavia, 1984) is resistant to white pine blister rust. Its compact bush size, productivity, very large fruit and ease of hand harvest are its prized features. It flowers and ripens about 7 days earlier than Ben Lomond with high tolerance for frost and cold injury. It forms a compact bush of medium vigor which rarely exceeds one meter 3 feet in height.

Titania (US Plant Patent No. 11,439) is immune to white pine blister rust and has good resistance to powdery mildew. Fruit size is large, similar to Ben Lomond, fruit quality is good and yields are high. Flowering and ripening seasons are very similar to Ben Lomond. The plant is very vigorous - reaching heights

of 6 feet. Titania reaches full maturity in three seasons as opposed to four or five with most other popular varieties.

Red, White, and Pink Currants

Jonkheer van Tets (Holland, 1941) is a very popular early season red variety with excellent flavor. It is very productive but its growth habit is untidy and it is best grown as cordon. Early flowering makes it more susceptible to frost damage. Gray mold may be a problem in wet seasons.

Red Lake (Minnesota Fruit Breeding Farm, 1920) is one of the most popular red varieties grown in North America, however, it is quite susceptible to mildew, and it does not have much tolerance to late spring frost. The bushes are vigorous and it produces large long clusters of berries that are easy to pick. Fruit size is very large and of good quality with high juice content. The fruit ripens in mid-season and produces high yields of firm fruit.

Rovada (Holland, 1990) is a red cultivar that is very resistant to mildew and other leaf diseases. Late flowering helps it avoids frost damage. It produces a heavy crop of very large fruit with nice aroma on extremely long strigs.

Tatran (Slovakias, 1985) a white currant that is late-ripening, with exceptionally long clusters. It is very winter-hardy.

HRON (Slovakia) is a red cultivar that is extremely vigorous and has a very attractive upright growth habit, leaves are dark green which contributes to ornamental value, good resistance to foliar diseases, adapts well to variable climate conditions, particularly well suited to higher elevations, high degree of tolerance to late spring frost, very long clusters of bright red fruit.

Blanka (Slovakia) is very reliable and easy to grow. It has very heavy yields, good shelf life, very long clusters and some resistance to spring frost as it flowers mid-spring. It is very vigorous with a somewhat spreading growth habit. The fruit is large, opaque, off-white. It has attractive green and red foliage.

Primus (Slovakia) berries are translucent, white with a yellow cast and good flavor. The growth habit is upright and vigorous. Yields are high but not as spectacular as Blanka. Frost may be a problem as flowering takes place earlier than Blanka and berries, strigs, and plant height are smaller. It is a very attractive plant as the leaves have an appealing red cast and new shoots are fully red.

Pink Champagne has beautiful translucent pink fruit of good quality and flavor. It is best suited for home gardens as it is easy to grow but not a terrific yielder. It has a vigorous upright growth habit and is resistant to leaf diseases.

Gooseberries

Captivator is a cross of American and European cultivars and is resistant to powdery mildew. It has red teardrop-shaped fruit and is nearly thornless.

Hinnonmaki Red (Finland) has outstanding flavor, good mildew resistance and is a favorite with home gardeners. Outer skin is tangy while the flesh is sweet. Very productive with dark red medium sized fruit on upright plants. It is very adaptable to various growing systems.

Invicta (U.K) produces a vigorous, rather spreading bush though with large and numerous spines. It is high yielding and, mildew resistant. It produces pale green fruit which is a good choice for fresh market outlets. Yields are very heavy and fruit size is large. It is

suitable for processing, giving a product of high quality, even color and good flavor. It requires good soil drainage.

Poorman is one of the largest of the American cultivars and great for home gardeners. It is productive and vigorous, with medium-sized but high quality fruit.

Tixia[™] (Rafz Switerland, 1990) has large (similar to Invicta), bright red fruit; elongated and quite smooth that ripens mid-season. In addition to the attractive fruit, Tixia one year shoots have few thorns and the thorns are relatively soft; usually as single thorns with very few, if any, on the upper part of shoots. Growth is medium to strong, upright. (*Source: Cornell Berry Resource Web Page, www.hort.cornell.edu/extension/commercial/fruit/berry.html*)

Grapes

China Wine Rebirth of an Ancient Tradition

www.chiff.com Travel Directory Staff

Wine making is a skill which seems to grow in the vineyards of France. Other countries also make wines, but the heavyweights for decades have been Champagnes and Bordeaux with a few other wines from Western European countries filling in the gaps.

The newer wine growing regions in the USA, Canada and Australia have settled into contention for some of the prizes at exhibitions and wines from South America and Africa are beginning to make a mark. But China? Is there even such a thing as Chinese wine? The answer may surprise you. China began turning grapes into wine during the Shang Dynasty. That was from the 16th century B.C. to the 11th century B.C.— long before Europeans were master vintners.

In modern China the secrets lost centuries ago are being unlocked again. Since 1994 China has put an emphasis on developing its wine market. By the end of 1995, there were over 240 wineries in China. That number has now climbed to more than 300. After a few years' of importing vines and setting up modern wineries, China can finally claim a number of recognized labels, such as Changyu, Dynasty and Great Wall.

High quality Chinese wines made to match international standards for premium wines are finding greater acceptance. Labels such as Huadong's Chardonnay and Huaxia Dry Red, Changyu's Cabernet, and Beijing's Dragon Seal are a few examples of wines locally made that are catching on. The Chardonnay has won gold medals in Europe and South African wine competitions.

While beer is still much cheaper and more popular in most areas of China, the demand for wine is growing. In Shanghai, Guangzhou, Beijing, Chengdu and other more developed cities wine is becoming the fashionable drink. Luxury hotels, bars and casinos serve imported wines and are beginning to add domestic brands to their wine lists.

The French and Australian wine industries have been exporting wine and even providing grape juice to make wine while the Chinese wine industry got on its feet. Now, with more land devoted to growing grapes and with skilled wine masters on hand, it won't be long before China is once again a center for quality wines. (*Source: Michigan Grape Society Newsletter, Volume 5, Issue 4, November 2004*)

Overview of Grape Diseases During the 2004 Growing Season

Annemiek Schilder, Michigan State University

The 2004 season was challenging for grape growers, as frequent precipitation and relatively cool weather promoted many fungal diseases, especially those that rely on rain for spore dispersal and infection. At the same time, the inclement weather did not allow growers

to apply fungicide sprays at the optimal time and also led to washing off of fungicides that were applied.

Phomopsis and black rot were particularly prevalent on leaves and clusters this year. Both the Phomopsis and black rot fungi need rain/wetness for dispersal and infection, so

this season was very conducive to disease development. Incidence and severity tended to be higher in hedged vineyards than in manually pruned vineyards. This is attributed to the large amount of overwintered inoculum retained on the vines in this system. Dense foliage in some vineyards also likely increased disease incidence by creating a humid environment conducive to disease and shielding the clusters from fungicide applications.

Downy mildew on fruit clusters and leaves of wine and table grapes showed up early and were moderate to severe in vineyards with limited spray programs. Regular rain events in the spring and early summer encouraged infection. Downy mildew also got an earlier start in many 'Niagara' vineyards than in recent years, but drier weather later in the summer slowed the epidemic down. Most growers did apply fungicides for downy mildew. Some growers that had missed the opportunity to apply Ridomil because of the long PHI, were still able to apply it when the PHI of Ridomil Copper was adjusted from 66 to 42 days.



Powdery Mildew on fruit. Photo: Mark Longstroth, MSU

Powdery mildew showed up relatively late in most vineyards, and no cases of berry infection were reported in 'Concord'. Some rachis and berry infections were noted in wine grapes, but were not as severe as in prior years. Powdery mildew on 'Concord' leaves was late enough to be of little consequence. The reason for the low powdery mildew pressure is most likely weather-related. Powdery mildew prefers warm, humid weather, while frequent rains may actually lower disease incidence by washing powdery mildew spores off the leaves and causing bursting of spores in water droplets. While the humidity may have been adequate, the relatively cool temperatures during spring and summer were not conducive to powdery mildew development.

It was relatively favorable year for Botrytis bunch rot, especially in southwest Michigan. Frequent rains promote this disease. Any wounds created by insects or cracking of berries in tight bunches can encourage Botrytis development. Tight-clustered cultivars also provide a moist environment for infection and sporulation, which further spreads the disease. Botrytis

bunch rot can be distinguished from sour bunch rot by the presence of grayish brown spore masses at the stem end or along wounds in the berries, and the absence of the vinegar odor associated with sour bunch rot.

A relatively rare disease of grapes in Michigan, anthracnose, caused by the fungus *Elsinoe ampelina*, was again observed at multiple sites and tended to be more severe this year than last year. The fungus primarily attacks table grapes, but can also infect 'Niagara', 'Concord', and wine grapes. Symptoms on the shoots somewhat resemble those of Phomopsis, but are typically more sunken with raised edges. On leaves, the center of older lesions drops out, giving the lesions a "shot hole" appearance. Lesions on green berries are reddish brown or grayish with darker margins, and do not expand much upon ripening. This disease is favored by cool, rainy springs, which probably explains its increased severity this year. The fungus overwinters in infected canes, which can appear heavily damaged with crater-like indentations. Be on the lookout for this disease while pruning this winter and make sure to prune out infected canes.

Ants and various species of sap beetles were very active in some wine and juice grape vineyards. They were responsible for hollowing out ripe berries, often leaving just the papery skin. They appear to be more attracted to Phomopsis-infected berries (probably easier to break the skin), but also attack ripe and overripe berries. Once insects damage the berries, it is easy for rot organisms to move in, particularly Botrytis and sour rot organisms.

More disease than usual during the growing season often means more overwintering disease inoculum in the vineyard. It is a good idea, therefore, to prune the vines thoroughly during winter, and run a tight spray program with effective materials next spring, especially if we experience another cool and wet spring in 2005. A dormant spray just prior to budbreak with a sulfur product (e.g. Sulfurix or Sulfur 6L) will be helpful in reducing Phomopsis inoculum, and is particularly recommended for mechanically pruned vineyards. (*Source: Michigan Grape Society Newsletter, Volume 5, Issue 4, November 2004*)

General Information

Demand Increasing for Aronia and Elderberry in North America

Steven A. McKay, Cornell Cooperative Extension of Columbia County

Elderberry and Aronia (chokeberry) are common in different parts of Europe, but seldom seen in the US. This is a situation that is changing as products from these berries begin to appear in shops and even superstores. In spite of the high price of the fruit and its primary processed products, very little crop is actually produced in the US. There is only one Aronia producer who is located in Oregon, but several small-scale elderberry growers can be found scattered around producing mainly for local consumption. The recent rise in popularity for Aronia is due to a line of juice blends introduced by Wildland a few years ago. The juice is doing very well in Costco on the West Coast. Elderberry is appearing more and more as it replaces Echinaceae as a popular cold and flu nutraceutical. Syrup and pulp are imported from abroad. Both are used as food coloring because of their deep purple pigment.

Botanical Classification

Aronia~ The genus name Aronia has been replacing the rather unpleasant sounding common name, black chokeberry. Aronia is a member of the Rosaceae family, and the cultivars used for fruit production are from the species *Aronia melanocarpa*. The plant originated in North America, and cultivar selection was done in Europe. Cultivars are self-fertile.



Ripe Aronia fruit

Elderberry~ Elderberry is a member of the family Caprifoliaceae with 13 species native to North America. Commercially, we are interested in *Sambucus nigra* L. *ssp. canadensis* (North American, formerly classified as a separate species), and *Sambucus nigra* L. that is



Elderberry cymes

native to Europe. The fruit clusters of the *S. nigra* cultivars are larger than those of *S. n. canadensis*. In addition, some of the *S. nigra* cultivars have superior growth habits. Elderberries are only partially self-fruitful, and planting of two or more varieties within 60 feet of one another is beneficial. It is assumed that any pair of cultivars will function as mutual pollenizers.

Cultivars

Aronia~ ‘Viking’ and ‘Nero’ are cultivars that are commonly available in North American plant catalogs. DNA fingerprinting research done in Sweden by Niklas Jeppsson has shown very little difference between available cultivars. In fact, the cultivars perform about the same commercially, and Niklas stated in an interview “it doesn’t really matter which cultivar one uses. Seeds of the cultivars can even be planted, and the plants will be like their parents, quite suitable for commercial production.”

Elderberry~ In the *S. nigra* species, ‘Samdal’ and ‘Samyl’ are the most highly recommended for yield and desirable growth habit (produce new suckers annually). Two North American nurseries have germplasm and are propagating these in tissue culture. In the *S. n. canadensis* species, ‘York’, ‘Nova’, ‘Johns’, and the ‘Adams’ series are available. York and Nova are touted as the heavier yielders. These cultivars are products of breeding work that ended in 1960.

Propagation

Aronia~is very easy to propagate. Softwood or semi-softwood cuttings can be propagated with mist in July. Divisions from established plants can be made at a rate of as many as 25 per two year old plant. Stool beds are often used, and of course seeds that have been stratified.

Elderberry~can be propagated from softwood cuttings in June and from tissue culture. Hardwood cuttings taken in early spring have about a 50% rooting rate, and are susceptible to damage in overly wet media. Divisions, and even seed propagation can also be used for propagation.

Cultural Practices

Aronia~ is adaptable to a wide variety of neutral to slightly acid soils. Less fertile soils are desirable to keep plants smaller in size. It is suggested that plants be placed 0.8-1.0 meters apart and mulched with plastic to prevent weed growth. Plastic can be removed after two to three years as plants sucker and fill in the hedgerow. Plant growth is usually so dense after three to four years that further weed control within the row is unnecessary. At five to seven years, selective pruning is done to remove the oldest, thickest branches, and keep the center open. Frost protection is not necessary since



Aronia hedgerow with dense mat of growth. Prune thick branches as needed.

plants bloom so late, mid May in New York. Aphids on shoot tips, and leaf-eating beetles are possible pests, but plants are so vigorous, that pest damage that slows them down will not have much of a negative effect. Since Aronia is in the Rosaceae family, fire blight is a potential problem, but has not been reported as such.

Elderberry~ prefers a sandy to heavy loam soil with a pH of 5.5-6.5. It is recommended that plants be set out at 0.75-1.0 meter spacing, and that every other plant be removed after three to four years. This will improve chances of getting an economic return faster. The 'Samdal' and 'Samyl' cultivars have a nice growth



Ripe elderberry fruit.

habit where they throw canes from the base every year in good numbers. Six to eight canes are maintained per plant to fruit the following year. Flowering takes place in mid June in New York. In the fall after fruiting, the spent canes are removed, and a rotation is maintained. This way, canes are never left for more than a year, and plants are maintained as a five to seven foot bush. Aphids, leaf wrinkling mites, birds, cane borers, mildew, and botrytis blossom blight can be pest problems. Tomato ringspot virus has been a problem in the past with *S. n. canadensis* cultivars, but is less of a problem with *S. nigra*.

Harvest

Aronia~ is mechanically harvested between August and September. Five to ten tons per hectare can be expected in about five years, once plants have matured. Some yield can be expected in the first years, but plants often have weak branches that fall over in the ground.

Elderberry~ is picked by hand in the US, although mechanical harvesting is a possibility. Twenty tons per acre are produced in Denmark, while four to twelve tons per acre are recorded in New York. The *S. nigra* cultivars are higher yielding, especially when grown as hedge-rowed bushes. Fruits are picked as whole cymes and frozen until ready to



Elderberry and Aronia Products

use. A premium is paid for stem-less frozen berries. Harvest takes place from August through September. Flowers can also be harvested around June 15 and sold fresh, or processed.

Products and Uses

Aronia~ is used to produce syrup, juice, soft spreads, and tea. The tea is usually a blend with other more flavorful ingredients including black currant. The berries are also used to make food coloring.

Elderberry~ is also used for food coloring. Both flowers and fruits are used to produce cordials, beverages, soft spreads, wine, tea, and nutraceutical products. Flowers and fruits both have a fresh market in New York and elsewhere. Fresh flowers are used to make fritters, in fruit salad (delightful star-shaped petals), and baked goods. Many folks are saying that elderberry will replace Echinaceae as a top cold and flu remedy.

In Summary

Both elderberry and Aronia are gaining popularity in the US for their health benefits and quality processed products. Both plants are easy to grow, have few pests,

and can have mechanical cultivation practices employed. A number of processors are looking for potential growers to make contracts. Global prices are high, and demand is expected to continue growing. (*Source: New York Berry News, Vol. 3, No. 11 4 Tree Fruit & Berry Pathology, NYSAES*)



Elderberry flower cluster ready to harvest

A Picture is Worth a Thousand Words, Part IV: Currants and Gooseberries

Cathy Heidenreich, NYSAES Cornell University

This is the fourth and last in a series of articles spotlighting websites that provide excellent pictures of small fruit diseases, pests, and disorders. This month we are focusing on *Ribes* web sites. And for currants and gooseberries, it is one stop shopping! The [Ribes Diagnostic Tool](#) is a very well developed and easy to use site by Kim Hummer and Joseph Postman, USDA-ARS, National Clonal Germplasm Repository,

Corvallis, Oregon. This site features a diagnostic key based on symptoms leading to photographs and descriptions of each cause, along with links to other information. Biotic, abiotic diseases and insect damage are all included in this key. Happy viewing! (*Source: New York Berry News, Vol. 3, No. 11 4 Tree Fruit & Berry Pathology, NYSAES*)

Upcoming Meetings

December 15-16, 2004: New England Fruit and Vegetable Conference, Manchester, NH The New England Fruit and Vegetable Conference (NEFVC) will be held December 15-16, 2004 at the Center of New Hampshire Radisson Hotel in Manchester, NH. Concurrent morning and afternoon education sessions by researchers, extension specialists, industry personnel, and growers will present the most up-to-date production, integrated pest management (IPM), and marketing information to an audience of commercial and hobby fruit and vegetable growers in the Northeast. Pesticide recertification credits for certified applicators in New England and New York will be available for all sessions. In addition, a trade show with over 60 exhibitors will feature the latest products and services for fruit and vegetable growers. There is no pre-registration, however, a registration fee of \$20 per person per day will be collected at the door.

The NEFVC is co-sponsored by the Massachusetts Fruit Growers' Association and other New England states fruit and vegetable growers' associations, the New England Vegetable and Berry Growers Association, and New England University Cooperative Extensions.

For further information, contact the Program Chairperson, Dr. Duane Greene, University of Massachusetts, 413-545- 5219, or the Trade Show Manager, Mr. Robert Smiley, 978-422-6595. For program information and updates, see the Massachusetts Fruit Growers' Association website, <http://www.massfruitgrowers.org>.

January 18, 2004 Winter Flower Growers' Meeting sponsored by University of Massachusetts Extension and Massachusetts Flower Growers' Association. Time: 9:00 AM - 3:15 PM Place: D&D Farm and Greenhouses, 32 Hudson Rd., Stow, MA

Join us for a full-day educational program for greenhouse and flower growers and tour of D&D greenhouses. Topics will include "Creative Containers and Mixed Baskets", "Water Quality Issues for MA Growers", "Managing Your Advertising Dollars", "Sanitizing Greenhouses with Chlorine Dioxide" and "New Fungicides". The cost to register is \$15 and lunch is available for \$15.

D & D Farm and Greenhouses - What started as a way to make a few extra bucks for one man and his family, has grown into a three generation, family owned and operated wholesale flower business.

D & D Farms has over 140,000 sq. ft. of greenhouse growing area for pansies, perennials, annuals, mixed and flowering hanging baskets, 4" and 6" crops and flowering mums and asters. They just built a new Westbrook Skyline II gutter-connected, glass open roof designed greenhouse and plug operation/production facility. D&D sow all their own seedlings, from pansies to perennials to the ever-growing selection of flowering annuals. Their vegetative material and mums come from cuttings they root themselves.

For more information contact Tina Smith by phone at 413-545-5306, by email at tsmith@umext.umass.edu or visit: http://www.umass.edu/umext/floriculture/upcoming_events.html.

January 20 & 21, 2004 – Long Island Ag Forum 2005. The 2005 Long Island Agricultural Forum will be held on January 20 & 21 at Suffolk County Community College in Riverhead, NY. Sessions will include: Vegetable, Potato, **Viticulture**, Agricultural Issues, Pesticide Issues, etc. Programs will be mailed in late November/early December. Contact Linda Holm at Suffolk County Cooperative Extension, 631-727-7850, lml10@cornell.edu.

February 11-12. North American Farmers' Direct Marketing Association Conference Park Plaza Hotel in Boston.

The theme of the 20th annual North American Farmers' Direct Marketing Convention is "Start a Revolution." The convention is one of the premiere farm direct marketing events in the world. Past attendees have come from as far as England, Ireland, Japan and Australia. In addition to the conference, the convention will feature pre- and post-conference bus tours and a full-day workshop. The entire event runs from Feb. 7-14, 2005. A trade show with more than 80 vendors will be held in conjunction with the conference; it will be held across the street at the historic Castle at Park Plaza. For convention information, visit www.nafdma.com. Or, e-mail info@nafdma.com. Call (413) 529-0386. Registration will be available on-line around Nov. 1. The pre-registration deadline is Jan. 6.

February 16 – 19 2005 North American Berry Conference in Nashville, Tennessee. The 2005 North American Berry Conference will feature the most extensive program in its history and the run down of speakers reads like a list of "who's who" in the berry world.

Combining the power of the North American Strawberry Growers Association and the North American Bramble Growers Association we've created a "premier" event for berry growers . . . four tracks with focused interest topics, general sessions that bring the interests of the berry world together, an extensive exhibit area, and a production and marketing tour to top it off. If you can only go to one event each year, this is the year to put the North American Berry Conference on your calendar.

If you have questions contact us at info@nasga.org. Conference Details and Exhibitor Information At www.nasga.org/ or www.hort.cornell.edu/grower/nabga/

Massachusetts Berry Notes is a publication of the University of Massachusetts Extension Fruit Program which provides research based information on integrated management of soils, crops, pests and marketing on Massachusetts Farms. No product endorsements over like products are intended or implied.