



Berry Notes

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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 lengthy cultivar review written by Courtney Weber of Cornell University, looking at the tried and true as well as the new and promising berry cultivars coming out of several breeding programs around the world. 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 online at www.hort.cornell.edu/departments/faculty/pritts/sfruit/index.html.

2004 New England Small Fruit Pest Management Guide now available: The current revision of the New England Small Fruit Pest Management Guide is available from your local Extension Office or from the UMass Extension Bookstore. The cost is \$10 per issue and it contains up-to-date information on identification and management of key insect pests, diseases and weed problems for Strawberries, Blueberries, Brambles, and Grapes. This issue also contains a lot of good general information as well as a new section on Risk Management and Crop Insurance designed specifically for berry crops in New England. You can obtain a copy by calling the UMass

Extension Bookstore at 413-545-5538 or by ordering on-line at www.umassextension.org/Merchant2/merchant.mv.

Meetings: Also in this issue is a list of some of the workshops, seminars, and meetings scheduled for this winter. **Don't forget, the New England Vegetable and Berry Conference is coming up.** It is being held from Tuesday, December 16 through Thursday, December 18 and is chock full of exciting speakers, learning opportunities and a huge trade show. **Remember, the meeting has moved from Sturbridge, MA to Manchester, NH.** The new facility is bigger but still has the homey atmosphere we all loved. Come check it out. Call me at 413-545-4347 or email at sgs@umext.umass.edu for a brochure and registration information. You can also register on-line by going to www.nevbc.org.

Strawberry, Raspberry, and Blueberry Cultivar Review 2003

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 production 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

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.

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.

Northeaster (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.

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.

Mid Season

Brunswick (Nova Scotia, Patent Pending) has fruit size and yield similar to Honeoye. However, it has a squat, round shape and tends 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 floricanne 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 fire blight. 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. (*Source: New York Berry News, Vol 2., No. 11, Nov. 2003*)

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: New York Berry News, Vol 2., No. 11, Nov. 2003*)

Ribes Cultivar Review

Bill Turacheck Cornell University and Dick McGinnis McGinnis Berry Crops

The following are descriptions of common varieties of currants and gooseberries suitable to New York conditions. The descriptions follow closely to those on the McGinnis Berry Crops website (<http://www.berrycrops.net>). For more information contact: Dick McGinnis at mcginnis@island.net.

Black Currants

Ben Alder (U.S. Plant Patent # 9,889) is a high yielding variety with superior juice quality. Growth habit is compact and upright and the fruit is well presented for machine harvesting. Bush height varies according to climate but Ben Alder grows to about 120 cm (4') in coastal British Columbia. Bloom period is late April to early May in coastal BC. Harvest dates are late July to early August. Resistance to mildew is very high but it is very susceptible to white pine blister rust.

Ben Lomond (Scandinavia, 1972) is the first of the "Ben Series" to gain general commercial acceptance. The main features of Ben Lomond are frost tolerance during flowering, even ripening, high yields, large fruit, long hang time and very high Vitamin C content. Originally resistant to mildew, but resistance has broken down in some regions. Requires long chilling time - 2,000 hours at 2° C (36° F). Flowering is in early April in coastal BC and harvest begins about July 9. Ben Lomond forms a compact bush, is rather spreading due to its Scandinavian ancestry and is of medium vigor reaching average height of 135 cm (4 1/2') in coastal BC.

Ben Sarek (Scandinavia, 1984) has compact bush size, very large fruit and ease of hand harvest are the main features of Ben Sarek. Flowers and ripens about 7 days earlier than Ben Lomond with high tolerance for frost and cold injury. Ben Sarek forms a small, compact bush of medium vigor which rarely exceeds one meter (3') in height. It fruits prolifically as indicated in its high "harvest index", i.e., the proportion of the total plant growth that is harvested as fruit in any one season. Fruiting branches are commonly borne down under the weight of the crop.

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, and fruit quality is good. In some locations, yields are extremely high. Flowering and ripening seasons are very similar to Ben Lomond. The plant is very vigorous - reaching heights of 2 meters (6'). Titania reaches full maturity in three seasons as opposed to four or five with most other popular varieties.

Tiben (Canadian Plant Breeders' Rights Pending (release from Poland)) is a very high yielding variety characterized by even ripening, high levels of anthocyanins and vitamin C, upright growth habit and resistance to mildew. Reported to be moderately resistant to white pine blister rust in Poland but shows no infection in coastal B.C. Ripens mid-season with Ben Lomond. Recommended for commercial trials in all northern regions. *Not yet available in the U.S.*

Tisel (Canadian Plant Breeders' Rights Pending (release from Poland)) has exceptionally high yields, even ripening, very high levels of Vitamin C, very pleasant fresh flavor, resistant to mildew and complete resistance to white pine blister rust in coastal B.C. Ripens with Titania one week earlier than Tiben. Recommended for commercial trials in all northern regions. *Not yet available in the U.S.*

Red, White, and Pink Currants

Jonkheer van Tets (Holland, 1941) is a very popular early season variety top rated for flavor. Very productive but best grown as cordon because of untidy growth habit. Early flowering (early April) makes Jonkheer van Tets susceptible to frost damage. Gray mold may be a problem in wet seasons. Harvest season begins in mid to late June.

Red Lake (Minnesota Fruit Breeding Farm, 1920) is one of the most popular varieties grown in North America. Fruit size is very large and of good quality with high juice content. The fruit ripens in mid-season (July) and produces high yields of firm fruit. Two problems limit Red Lake's appeal. First, it is quite susceptible to mildew, and second, it does not have much tolerance to late spring frost.

Rovada (Holland, 1990) has very large fruit on extremely long strigs and crops heavy crops. Very resistant to mildew and other leaf diseases. Late flowering (May) avoids frost. Harvest begins in mid-August.

HRON (Slovakia) is extremely vigorous and 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, mean yields in European trials 10-12 kg. per bush.

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

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. Very attractive plant. Leaves have an appealing red cast and new shoots are fully red.

Pink Champagne has beautiful translucent pink fruit of good quality and flavor. Vigorous upright growth habit. Resistant to leaf diseases. Easy to grow but not a terrific yielder. Best suited for home gardens.

Gooseberries

Invicta (U.K) produces a vigorous, rather spreading bush. The pale green fruit is a good choice for fresh market outlets. It is suitable for processing, giving a product of high quality, even color and good flavor. Yields are very heavy. Fruit size is large (8 g). Resistance to mildew is very good; susceptible to leaf spot. Requires good drainage. Spines are large and numerous.

Tixia[™] (Rafz Switzerland, 1990) has large (similar to Invicta), bright red fruit; elongated and quite smooth. In addition to the attractive fruit, the main feature of Tixia is that the 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. Ripens mid-season.

Hinnonmaki Red (Finland) has outstanding flavor. Outer skin is tangy while the flesh is sweet. Very productive with dark red medium sized fruit (3.6 g) on upright plants. Favorite with home gardeners. Very adaptable to various growing systems. Would make good edible hedge or space barrier. Good mildew resistance. Begins fruiting in the planting year - a real nice feature for home gardeners.

Xenia[™] (Rafz, Switzerland, 1990) has large (40% larger than Invicta), dark red fruit; oval shape and quite smooth. In addition to the attractive fruit, the main feature of Xenia is that the upper part of shoots have few thorns and the thorns are relatively weak; usually as single thorns. Growth is medium to strong, upright. Ripens early to middle season. *Not yet available in the U.S. (Source: New York Berry News, Vol 2., No. 11, Nov. 2003)*

Uncommon Small Fruits:

Saskatoon Berries

A few years ago the Saskatoon berry was virtually unknown in Ontario, but now thanks to a few farming entrepreneurs the Saskatoon berry has grown steadily into the markets. With over 10 growers supplying Ontario with fresh Saskatoon's this crop is here to stay.

Not many of the fruits we enjoy originate from North America, many were brought over from Europe or other continents to be cultivated when settlers claimed the area. The Saskatoon Berry is different; its clustered bright white flowers have always graced our lands. We should take some pride in knowing that we are eating something not only produced in Canada but originating here as well.

Recently Saskatoon's have been scrutinized by the scientific community for their health benefits. In recent studies the berries have proven to be just as good as blueberries for high levels of antioxidant activity. Antioxidants help battle problems like heart disease and cancer.

With all these benefits there are some drawbacks. Birds, deer and even raccoons absolutely love the round tasty berries and this has caused quite a problem. Raccoons and deer can be removed with fencing, but the birds were another story. Luckily new industries have sprung up to tackle this problem. Redden Net Co. has worked in British Columbia for years, after hearing about the problem in Ontario (and with a little help from the Agricultural Center in Simcoe) Bird netting is now available in Ontario to combat our winged foes.

Whether you call them Serviceberries, Juneberries, Indian Pears, or Amélanchier Saskatoon berries are here to stay in Ontario and neither bird nor beast will stop them from reaching a table near you. Saskatoon Berries appear to be an excellent source of manganese, magnesium, iron, calcium, potassium, copper and carotene. A 100 gm serving of fresh saskatoons will supply 88 mg. of calcium or 11 % of the Recommended Dietary Allowance. Saskatoons can be considered a better source of calcium than red meats, vegetables and cereals. Saskatoons are an excellent source of iron! 22.3 % of the Recommended Dietary Allowance in a 100 gm serving. (Hope, 1965) suggested that saskatoon berries may be a natural source of iron for anemic persons. Saskatoons supply 33.8 % of the Recommended Dietary Allowance of manganese and 7% of the Recommended Dietary Allowance of copper. Recent research indicates saskatoons have very high components of phenolics, flavonols and anthocyanins. Saskatoons are high in sugar, rich in Vitamin C, and also contain more than three times as much iron and copper in the same weight as raisins. (*Source: Ontario Berry Growers "Ag on the Wire" online newsletter, premier issue Fall 2003*)

Recipe for Saskatoon Peach Cobbler

This old-time fruit cobbler features Saskatoon berries. Heating the fruit first prevents the biscuit topping from becoming soggy on the underside.

Ingredients:

4 cups (1 L) sliced, peeled peaches
2 cups (500 mL) saskatoon berries
1/2 cup (125 mL) granulated sugar
2 tablespoons (30 mL) cornstarch
1 tablespoon (15 mL) lemon juice

Topping:

1 cup (250 mL) all-purpose flour
1/4 cup (50 mL) granulated sugar
2 teaspoons (10 mL) baking powder
1/4 teaspoon (1 mL) salt
1/4 cup (1/2 stick [50 mL]) butter
1/2 cup (125 mL) milk
2 teaspoons (10 mL) granulated sugar

Place peaches and saskatoons into a 10-cup (2.5-L) baking dish. In a small bowl, combine sugar, cornstarch, and lemon juice; sprinkle over fruit and toss gently. Bake in a 400° F (200° C) oven for 20 to 25 minutes (30 minutes if using frozen fruit), or until hot and bubbly. For topping: Mix together flour, the 1/4 cup (50 mL) sugar, baking powder, and salt. Cut in butter until mixture resembles coarse crumbs. With fork, quickly stir in milk all at once to create a soft and sticky dough. Using a large spoon, drop 8 separate spoonfuls of dough onto hot fruit; sprinkle with the 2 teaspoons (10 mL) sugar. Bake in a 400° F (200° C) oven for 25 to 30 minutes longer or until top is golden and fruit is bubbly. Serve warm, topped with vanilla frozen yogurt or ice cream. Serves 8 to 10.

General Information

Decontaminating and Storing Sprayers

Dr Andrew Landers, Cornell University

Sprayer decontamination and maintenance Sprayers must be thoroughly decontaminated, inside and outside, after use. Regular maintenance of spraying equipment will prolong its life and ensure accurate trouble-free operation, enabling spraying to be done with the minimum loss of time and taking full advantage of favorable weather conditions.

NOTE: Read the sprayer manufacturer's instructions before beginning to wash out a sprayer. Wear protective clothing appropriate to the pesticide which has been used; this may include an apron, rubber gloves, boots and face shield.

It is important to clean everything thoroughly, including associated equipment such as mixers, the site where filling and mixing is done, and, of course, yourself.

Disposal of pesticide waste REMEMBER cleaning up should be done in such a way that washings DO NOT enter public sewers or any water courses, nor fields which have under-drainage and certainly not catchment areas for boreholes or wells.

The safe disposal of pesticide waste is a serious responsibility for sprayer operators. It is important, therefore, that everything should be done to keep to a minimum the amount of waste generated. Remember pesticide waste is of four types: Concentrated products, diluted pesticides, including washings, empty containers and contaminated clothing and other materials.

Try to keep the volume of tank washings produced to a minimum. Special low volume, inexpensive washing systems are now available which comprise spinning nozzle(s), mounted in the tank. The device can be connected to a hose or water tank and water, after it has passed through the rotating nozzle(s) cascades down the inside of the tank walls.

Preparation for storage

Sprayer decontamination is as follows:

- 1) Any spray liquid or contamination left in the tank should be disposed of correctly.
- 2) Remove tank drain plugs or open drain cock.
- 3) Hose down inside the tank and outside, including the tank top, scrub where necessary or use a special low volume washing system.
- 4) Replace drain plug.
- 5) Remove suction, main and in-line filter elements; wash them thoroughly in clean water with a soft brush and replace.
- 6) Remove nozzles, nozzle filters and nozzle manifold end-caps if they are fitted. Soak them all in a bucket of water with appropriate cleaning agent recommended for the cleaning of spray machinery. Scrub clean with a soft brush.
- 7) Partly fill the tank and pump out to flush all parts. Ensure you open/close valves during the flushing procedure to clean out crevices. Do this more than once if necessary.
- 8) Refill the tank with clean water or a recommended cleaning agent, there are about a dozen commercial tank cleaners designed to remove or neutralize most of the modern low rate chemicals. If no cleaning agent is recommended, one gallon of household ammonia per 50 gallons of water may be used. Do not use chlorine-based cleaners such as Clorox. Recirculate for 15 minutes, then pump a quantity through the pipes and spray bars. Leave the remainder for as long as practicable, overnight if possible.
- 9) Discharge at least one quarter of the contents of the tank through the system and spray bars. Drain off the rest.
- 10) Check that no deposits remain in the tank or filters. If there are any, they should be hosed down and scrubbed off.
- 11) Repeat steps 8 to 10 using clean water with the appropriate cleaning agent.
- 12) Safely store nozzles and filters, leave valves open and the tank lid loosely closed. Ensure that the sprayer is completely empty of water, particularly the pump. If you are unable to completely drain the system, you may consider using an antifreeze solution. An environmentally safe anti-freeze diluted to 50% may be acceptable,

alternatively, RV antifreeze may be used but remember it can't be diluted and so make sure the system is drained of water. Currently RV antifreeze costs \$2.00 – 2.50/gallon from stores such as Wall Mart etc.

- 13) Hose down the outside of the sprayer, scrubbing if necessary.
- 14) Ensure the sprayer is parked safely and securely
- 15) Wash down waterproof protective clothing, apron, boots and face shield.
- 16) Wash inside and outside of gloves with soap and water; rinse and dry them.
- 17) Finally thoroughly wash hands, face and neck with soap and water.

Mechanical maintenance Lubrication must be carried out prior to storage, check oil levels in the pump. Check the soundness of all mechanical components. Electrical connectors which operate control valves, spray monitors etc need to be cleaned and a non-conductive grease, available at an auto store, applied to prevent corrosion. Check wheels, wheel bearings and tire inflation.

Storage of sprayers Store the sprayer under cover, taking care to prevent dirt and moisture affecting the tank or working parts. Remember, sunlight softens and weakens rubber materials and can degrade plastic materials. Storing in a building also allows you the opportunity to conduct any routine or pre-season maintenance. (*Source: Blueberry Bulletin, Vol. XIX, No. 22, Oct. 23, 2003*)

Foliar Feeding of Plant Nutrients

Charlie O'Dell, Ext. Horticulturist Emeritus, Virginia Tech

At the SE Strawberry Expo at Greenville, NC and the Carolina Farm Stewardship Association Conference at Boone, NC this past November, many growers expressed interest in nutritional plant health products new to this region. I am excited about such unique supplemental plant health products. Some, for soil application, contain enzymes that will cause a great increase in soil's natural population of bacteria to improve soil structure, water and air permeability and help unlock bound-up currently unavailable soil nutrients. Some, for drip irrigation to roots, improve plants without applying more nitrogen. Some, formulated for foliar application, provide fastest plant response. All are designed to supplement your soil improving fertility program. Several are OMRI certified for organic growers, some now are formulated with food-grade nutrients for sustainable, non-toxic use. With improvements in plant absorption technology, use of food-grade nutrients prevents plant absorption of heavy metals or other impurities that may be contained in non-food grade nutrients, and/or toxins that could become part of the fruits or vegetables that we would consume. Look for this information on the product labels!

For many years, horticulturists and agronomists have largely subscribed to the belief that foliar feeding of plant nutrients is an idea of dubious merit. A commonly held opinion is that foliar nutrients feeding is best employed only where a specific minor element deficiency may exist as determined by tissue test of plant foliage or leaf petioles.

Dramatic and fast correction of such nutrient deficiencies are generally always seen from such foliar applications.

Dr. H.B. Tukey, renowned plant researcher and Head of Michigan State University's Department of Horticulture back in the 1950's, working with research colleague S.H. Wittwer at MSU, first proved conclusively that foliar feeding of plant nutrients really works. Researching possible peaceful uses of atomic energy in agriculture, they used radio-active phosphorous and radio-potassium to spray plants, then measured with a Geiger counter, the absorption, movement and utilization of these and many other nutrients within plants. They found plant nutrients moved at the rate of about one foot per hour to all parts of the plants. Comparing efficiency of plant use of foliar-fed nutrients versus soil-applied nutrients near roots, they found foliar feeding provided about 95 percent efficiency of use compared to about 10 percent of use from soil applications! Likewise, speed of absorption and use by foliar applications was immediate, whereas from soil applications absorption and plant use both were very slow, thus providing a major benefit of foliar feeding where a specific plant nutrient deficiency may exist, be it major or minor plant nutrient.

You'll note from references of these researchers' work cited at the end of this article, that this very important finding was published, but only in research journals and symposia proceedings. These findings rarely found their way into the ranks of Extension educators or their grower-focused publications and other teaching materials or programs.

I am living proof of that, nor was this information taught in my academic classes way back in the late 1950's and early '60's. Now, a half-century later, I believe it is important to bring these science-based findings to light and publicize this work to benefit growers and their crops.

Armed with this knowledge they dug out of the research journals, commercial agricultural chemists began developing foliar feeding formulations. Their continuous product improvement research has resulted in products containing not only specific plant nutrients, but also natural plant sugars that aid rapid entry and movement into and through plants, plus cytokinins: natural plant growth hormones extracted from seaweed, now stabilized for several years of shelf life. Together with nutrients, they aid natural plant defense mechanisms to resist many plant diseases and insect pests. We know that healthier plants, like humans, are better able to resist many pests compared to those in stressed, poor condition. Also, growers know and observe that the weakest plants are the ones most often attacked by many insect, disease and mite pests. I believe such products can help improve your soil and your plants' health for higher yields with lower pest control inputs and plant nutrients costs, based on my tests over the past year and ongoing at our farm. Remember, a relatively small amount of plant nutrients, foliar-applied, can replace a much greater amount that is soil-applied, and is immediately available to plants.

The development of a low-cost, natural soybean oil-based adjuvant for use with such foliar-applied nutrients and crop protectants further improves leaf and stem coverage and retention for about \$2.50/acre per application. An example, combined with foliar (or even to twigs and stems after leaf drop) potassium to benefit berry, grape and tree fruits plants in late fall/early winter, or during winter in milder areas when applied anytime temperatures are above freezing: To toughen/harden plant cells, apply one gallon per acre of foliar-formulated potassium. In two weeks apply a second spray of two gallons of foliar K per acre. Add 1 pint/acre of the soybean oil adjuvant first to the tank, then a small amount of water while agitator is running, then add the potassium product and fill tank with water with agitator running, then spray. 1 gallon of the potassium per acre plus 1 pint of adjuvant oil per acre costs about \$18.50 per acre per application for materials, is rain-fast in 15 minutes and is great insurance at very low cost for high-value horticultural crops. Note: Use only 50 mesh screens at the spray tips so the cytokinins will pass through to your plants. With clean spray water, I also can remove my tip screens and can also use larger spray tips to insure no clogging.

For smaller areas foliar applications for 4 gallon back pack sprayer, use 1 ounce of the spray oil in 1 quart of water, stir, then add 16 oz. of the foliar potassium, stir, then fill tank with water while stirring. Shake tank from side to side while applying to maintain agitation to prevent settling. Do NOT apply this program through drip irrigation systems, as this product is formulated for foliar use only. Seaweed extracts may clog some drip irrigation filters. A clear potassium solution is available for drip irrigation, and also supplies no plant-tenderizing nitrogen in the fall or winter.

References cited for further reading:

1. Tukey, H.B. and Wittwer, S.H., 1956. The entry of nutrients into plants through stem, leaf and fruit, as indicated by radioactive isotopes. *Progress in Nuclear Energy Biological Sciences Series Six*, pp. 106-114. McGraw-Hill. New York and Pergamon Press, London.
2. Tukey, H.B., Wittwer, S.H., Teubner, F.G., and Long, W.G., 1956. Utilization of radioactive isotopes in resolving the effectiveness of foliar absorption of plant nutrients. *International Conference on the Peaceful Uses of Atomic Energy*, Vol. 12: 138-148. United Nations, N.Y.
3. Witter, S.H., Teubner, F.G. and McCall, W.W. 1956. Comparative absorption and utilization by beans and tomatoes of phosphorus applied to the soil and foliage. *Proceedings, American Society for Horticultural Science*. (needs vol and pp numbers from Barden).

(*Source: Virginia Vegetable, Small Fruit and Specialty Crops Newsletter, November 2002; Volume 1, Issue 11*)

Announcements:

"Making it organic" - a Seminar for Food Processors and Growers

There will be seminar entitled: "Making it organic - a Seminar for Food Processors and Growers" to be held in the Greenfield area (exact location to be announced) **Wednesday, February 11, 2004 from 9:30 AM to 4:30 PM.**

A panel of experts will outline the key steps to becoming a certified organic processor and getting your products to market. Topics will include an overview of the organic movement, navigating through the National Organic Program,

and marketing organic products. Presenters include industry experts and experienced small and medium sized processors providing insights into working with the new organic standards.

Confirmed speakers include Holly Givens, Communications Director for the Organic Trade Association; Bob Burke, Principal, Natural Products Consulting Institute, expert in organic product marketing; Don Rosenberg, President, Real Pickles; Frank Carlson, Carlson Orchards, organic cidemaker; Don Franczyk, Certification Administrator and John Weaver, Purchasing Manager, Fairfield Farm Kitchens, makers of Organic Classics and Moosewood brand organic products.

Sponsors include the Massachusetts Independent Certification (Baystate Organic Certifiers), Massachusetts Department of Agricultural Resources, Franklin County Community Development Corporation - Western Massachusetts Food Processing Center, Organic Trade Association, Northeast Institute of Food Technologists, Massachusetts Specialty Foods Association, and the Northeast Center for Food Entrepreneurship.

For seminar information and registration, contact Don Franczyk dfranczyk@starpower.net (978-297-4171) or Bonita Oehlke bonita.oehlke@state.ma.us (617-626-1753). (*Source: Farm & Market Report, Vol. 80, No. 7, October/November 2003*)

Turnpike Service Areas Invite Farmers to sell during the Holiday Season

The Massachusetts Turnpike Authority invites Massachusetts farmers to sell their "Made in Massachusetts" products this holiday season at all 11 of their service areas along the Massachusetts Turnpike. The Holiday program begins December 1 and runs throughout the month. Farmers can sell products such as Christmas trees, wreathes, foods and other holiday gifts as long as their products don't compete with products sold in the service area stores and restaurants. For more information contact David Fenton at 781-431-5192 or email at dave.fenton@mta.state.ma.us. Space is available at no charge on a first come, first serve basis. (*Source: Farm & Market Report, Vol. 80, No. 7, October/November 2003*)

Schools Want Locally Grown Products!

Five public schools in Massachusetts have been chosen by the Massachusetts School Foodservice Association (MSFSA) to participate in their GET FRESH GET LOCAL pilot project. Each of these schools will try to purchase and serve more locally grown products in school lunches.

The pilot schools are BELCHERTOWN, HUDSON, MAYNARD, MIDDLEBORO, and WORCESTER.

The MSFSA is providing start-up assistance to each of the schools and would like to hear from farmers or co-ops that may have interest in selling to schools. Please contact Kelly Erwin at kelerwin@localnet.com or call 413-253-3844. (*Source: Farm & Market Report, Vol. 80, No. 7, October/November 2003*)

2004 UMass Garden Calendar Available Now!

The theme for this year's UMass Garden Calendar focuses on Garden Questions and Answers. The calendar addresses specific garden questions that have been frequently asked of Extension staff over the years. Since 1914 when the Cooperative Extension Program first began, Extension Agents have been an educational resource to the agricultural and horticultural communities. For over 25 years, the UMass Garden Calendar has featured a variety of gardening subjects that has provided gardeners with information on how to select, grow, harvest, and enjoy trees, shrubs, flowers, vegetables and lawns with minimal pesticide usage.

Each month, the calendar will feature a garden question and answer accompanied by beautiful color photos. As always, the UMass Extension Garden Calendar offers daily gardening tips such as when to plant peas, how to manage grubs, 2004 Flower Show dates, sunrise/sunset times, and phases of the moon as well as beautiful color photos and information on garden pests and management strategies.

To order, send \$11 payable to UMass, to UMass Extension Bookstore, Draper Hall, 40 Campus Center Way, Amherst, MA 01003-9244. Bulk orders are available for orders of 10 or more to one address: 10-50 copies (\$7 each), more than 50 copies (\$6 each), plus shipping and handling. For an order form or more information go to www.UMassGreenInfo.org or call (413) 545-0895. (*Source: Farm & Market Report, Vol. 80, No. 7, October/November 2003*)

Three Massachusetts Counties Eligible for FSA Emergency Funds

President Bush declared a Major Disaster Declaration in specific counties located in New York, Vermont, and New Hampshire based on damages and losses caused by severe storms, flooding and tornadoes, that occurred during July 21 through August 18, 2003. As a result of this natural disaster, counties in these states were declared eligible for Federal disaster assistance including Farm Service Agency (FSA) and emergency (EM) loans of eligible farmers.

Also, in accordance with section 321 (a) of the Consolidated Farm and Rural Development Act, counties in adjacent states that are contiguous to one or more of the primary state's counties will be named as contiguous counties where eligible family farmers may qualify for FSA EM Loan assistance whose operations had physical and production losses.

The three Massachusetts counties affected are Berkshire, Franklin, and Worcester counties. Please contact the county FSA office for more information including deadlines for processing applications.

Berkshire County: (413) 443-1776

Franklin County: (413) 772-0384

Worcester County: (508) 829-4477

(Source: Farm & Market Report, Vol. 80, No. 7, October/November 2003)

The Massachusetts Department of Agricultural Resources (MDAR) announces Agricultural Business Planning Courses to be offered in Northampton and Grafton, January-March 2004

Jon Clements, UMass Extension

MDAR (formerly MDFA) will once again provide experienced instructors, a nationally acclaimed NxLevel© curriculum tailored for agriculture, dynamic guest speakers and wonderful peer networking opportunities through its course "Tilling The Soil of Opportunity". More than 230 agricultural businesses in Massachusetts have completed this 11 week course so far - all with strong reviews for its effectiveness and immediate utility in their businesses.

This year, courses will be offered Tuesday evenings in Northampton (in cooperation with the Hilltown Community CDC, The Franklin County CDC, the New England Small Farm Institute and the UMass Donahue Institute) and Thursday evenings in Grafton (just southeast of Worcester at the new Brigham Hill Community Farm). Locations are chosen for their accessibility from major highways and their suitability for informal sessions where snacks/food are a key feature of the evening. Both sessions are limited to 12-15 agricultural enterprises, with the option to bring a partner for the same \$300 registration fee if space permits. This fee, representing a small portion of the true course cost, includes all materials and programs plus individual technical assistance to help complete your business plan. Payment options are available if this fee is a significant barrier for an otherwise qualified applicant

If you are growing an ag business, contemplating making significant changes (including transfer of property or operations to another owner/generation), or just in need of a tune-up using a well organized and easy to use format - this course is for you. In the past six years, we have had active participants whose businesses were grossing from 5,000 to 5,000,000 dollars. Due to the value of diverse agricultural peer group experiences to the class discussion, this course is not intended for farms in early start-up mode. If you are still in the idea stage, and haven't operated an agricultural enterprise for at least a year, we will refer you to other excellent options. Not sure? Call to discuss best fit.

Contact Rick to for a brochure, application and register now to hold one of the limited spaces!

* **Contact: Rick Chandler (413) 577-0459 or rhandler@umext.umass.edu**

Meetings

Great Lakes Fruit, Vegetable and Farm Expo

When: December 9-11,

Where: Grand Rapids, Michigan.

Contact: Hilary Morolla 810-234-4126. www.glexpo.com

New England Vegetable and Berry Conference

When: December 16-18, 2003,

Where: Manchester, New Hampshire.

For more information: 603-625-1000 or www.nevbc.org

Connecticut Pomological Society (CPS) Meeting

When: Tuesday, January 13, 2004

Where: the Jones Auditorium of the Connecticut Agricultural Experiment Station.

Ontario Berry Growers Association Annual Conference

When: January 13-14, 2004,

Where: Ingersoll, Ontario.

For more information: OBGA office at 519-426-1533, or visit www.ontberries.com

Ohio Fruit and Vegetable Conference

When: January 21-23, 2004.

Where: Toledo, Ohio.

For more information: www.ohiofruit.org

NY State Berry Growers Association Annual Meeting

When: February 9-12, 2004

Where: Rochester, NY

For more information 315-687-5734

Ontario Fruit and Vegetable Convention and Trade Show

When: Feb 18-19, 2004

Where: Brock University, St.Catharines, Ontario

For more information: 905-688-0990

North American Strawberry Growers Association Annual Meeting

When: Feb 23-25, 2004,

Where: Tampa Florida

For more informatio.: contact Pat Heuser, 814-238-3364 or visit <http://www.nasga.org/>

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.