



# Newsletter Extension

## Fruit ICM News

Volume 6, No. 43  
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## Calendar

**Jan. 15-17, 2003: Ohio Fruit & Vegetable Growers Congress & Ohio Roadside Marketing Conference,** Toledo SeaGate Convention Centre and Radisson Hotel. Contact Jennifer Hungerford at 614-249-2424

**Jan. 27-29, 2003: Indiana Horticultural Congress;** Adams Mark Hotel in Indianapolis.

**Feb. 7-8, 2003: North American Bramble Growers' Association** will meet in Leesburg Virginia. The meeting will be held at the Holiday Inn at the Historic Carradoc Hall. Contact Jason Murray, Commercial Horticulture Agent, for further information, at [jamurray@vt.edu](mailto:jamurray@vt.edu) or 703-737-8978. You can view the program at <http://www.ento.vt.edu/Fruitfiles/NABGAProgram03.pdf>

**February 9-11, 2003: Ohio Grape-Wine Short Course** at Wyndham Dublin Hotel in Dublin. For registration information and other details call 800-227-6972 or go online to <http://www.ohiowines.org/>

## Fruit Web Site

Volume 6, Issue 41 of the Ohio Fruit ICM News included general fruit web sites. Two of the listed sites have been updated. The *2003 Commercial Small Fruit & Grape Spray Guide* is now available at [http://www.hort.purdue.edu/hort/ext/sfg/2003\\_pdfs/03complete.pdf](http://www.hort.purdue.edu/hort/ext/sfg/2003_pdfs/03complete.pdf). The *2002 Commercial Tree Fruit Spray Guide* is available at <http://www.agcom.purdue.edu/AgCom/Pubs/ID/ID-168.2002.pdf>.

In this issue, we are including addresses specific to raspberries and strawberries. These are also available at <http://newfarm.osu.edu>. Click on "crops" and choose "raspberries" or "strawberries."

## Raspberries

Black Raspberry Enterprise Budget - OH: <http://aede.osu.edu/People/moore.301/berry/index.htm>

Brambles, Production Mgmt. & Marketing - OH: <http://ohioline.osu.edu/b782/index.html>

Hand Harvested, Full Production - BC:

[http://www.agf.gov.bc.ca/busmgmt/budgets/budget\\_pdf/berry/raspberry\\_hand\\_full\\_prod\\_summer\\_2001.pdf](http://www.agf.gov.bc.ca/busmgmt/budgets/budget_pdf/berry/raspberry_hand_full_prod_summer_2001.pdf)

Machine Harvested, Full Production - BC:

[http://www.agf.gov.bc.ca/busmgmt/budgets/budget\\_pdf/berry/raspberry\\_machine\\_full\\_prod\\_summer\\_2001.pdf](http://www.agf.gov.bc.ca/busmgmt/budgets/budget_pdf/berry/raspberry_machine_full_prod_summer_2001.pdf)

Raspberry - PA: <http://agalternatives.aers.psu.edu/crops/redraspberry/RedRaspberry.pdf>

Raspberry Crop Profile - OH: <http://pestdata.ncsu.edu/cropprofiles/docs/OHraspberry.html>

Raspberry Crop Profile - NY: <http://pestdata.ncsu.edu/cropprofiles/docs/nyraspberries.html>

Raspberry Establishment - BC:

[http://www.agf.gov.bc.ca/busmgmt/budgets/budget\\_pdf/berry/raspberry\\_establishment\\_summer2001.pdf](http://www.agf.gov.bc.ca/busmgmt/budgets/budget_pdf/berry/raspberry_establishment_summer2001.pdf)

Raspberry Production - OR: <http://berrygrape.orst.edu/fruitgrowing/berrycrops/raspberry.htm>

Raspberry Production - NC: <http://www.ces.ncsu.edu/depts/hort/hil/pdf/ag-569.pdf>

Raspberries - VA: <http://www.ext.vt.edu/pubs/fruit/423-700/423-700.html>

## **Strawberries**

Strawberries - OH: <http://aede.osu.edu/People/moore.301/scrops/strawber.pdf>

Strawberries - PA: [http://agalternatives.aers.psu.edu/crops/strawberries/Strawberries\\_PM6.5.pdf](http://agalternatives.aers.psu.edu/crops/strawberries/Strawberries_PM6.5.pdf)

Strawberries - NY: <http://www.hort.cornell.edu/extension/commercial/fruit/berrypage.htm>

Strawberry Crop Profile - OH: <http://pestdata.ncsu.edu/cropprofiles/docs/ohstrawberries.html>

Strawberry Crop Profile - PA: <http://pestdata.ncsu.edu/cropprofiles/docs/pastrawberries.html>

Strawberry Establishment - BC:

[http://www.agf.gov.bc.ca/busmgmt/budgets/budget\\_pdf/berry/strawberry\\_establishment\\_2001.pdf](http://www.agf.gov.bc.ca/busmgmt/budgets/budget_pdf/berry/strawberry_establishment_2001.pdf)

Strawberry Full Production - BC:

[http://www.agf.gov.bc.ca/busmgmt/budgets/budget\\_pdf/berry/strawberry\\_full\\_production%20\\_2001.pdf](http://www.agf.gov.bc.ca/busmgmt/budgets/budget_pdf/berry/strawberry_full_production%20_2001.pdf)

Strawberry IPM Update Newsletter - IA: <http://www.exnet.iastate.edu/Pages/plantpath/strawber.html>

Strawberry Information Resources - VA: (click on Fruit & Vegetables, then Commercial Fruit)  
<http://www.ext.vt.edu/resources/>

Strawberry, Organic Production - NY: <http://www.hort.cornell.edu/department/faculty/pritts/organic.htm>

Strawberry, Postharvest Cooling & Handling - NC:

<http://www.bae.ncsu.edu/programs/extension/publicat/postharv/ag-413-2/index.html>

Strawberry Production - OR: <http://berrygrape.orst.edu/fruitgrowing/berrycrops/strawberry.htm>

## **Strawberry, Raspberry, and Blueberry Cultivar Review**

*Source: Courtney Weber, Cornell University, New York Berry News, Vol. 1 No. 9, Nov. 17, 2002 via*

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, the standard cultivars are followed by an asterisk (\*). The author can be contacted with questions or to discuss other possibilities at [caw34@cornell.edu](mailto: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 northeastern U.S., but interest is growing in day-neutral types grown on plastic. If you are looking to try a new cultivar, check out Darselect or Cabot or if you want to see the latest thing, NY1829 and NYUS304B are available in limited numbers.

### **Early Season**

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

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

*Northeaster* was billed as a replacement for Earliglow and outperforms 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* is 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* is a new cultivar out of Nova Scotia that sizes and yields similar to Honeoye. However, it has a squat, round shape and tends to be dark and bruises easily. The flavor is good, but can be tart when under-ripe.

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

*Darselect* is a large fruited, high yielding 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\** 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.

*Mesabi\** is a very high yielding berry with large fruit and good flavor, but does not store well. It is resistant to red stele and tolerant to leaf diseases and powdery mildew.

*NY1829* is an advanced selection from the Cornell program that is available for testing this season. 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.

### **Late Season**

*Allstar\** is good yielding, high quality cultivar with good flavor. Unfortunately, the color is pale to orangish and is unacceptable to an uninformed consumer.

*Cabot* produces impressive berries. Average fruit size is far larger than any cultivar currently available. Primary berries often top 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. Resistant to red stele. Definitely worth a look.

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

*NYUS304B* was developed through a joint venture with the USDA breeding program in Beltsville, MD and Cornell University and has parents that are resistant to red stele root rot. The fruit is a round, conical shape 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. It is available for testing in the coming season. Growers looking for a firm, late season berry may want to try this one.

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

*Tribute* and *Tristar\** have been the standard day neutral 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.

### **Raspberry Cultivars**

There are a lot of raspberry cultivars out there dating from the 1940's to 2002. 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. without much late summer gap. Here are some thoughts on some of the cultivars available.

### **Early Season**

*Boyne* (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*\* (sibling of *Boyne*) has short to medium canes, is spiny, and produces many suckers. 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*\* is the earliest summer fruiting cultivar available. The fruit is medium sized, round, and firm with good flavor. It shows good field resistance 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*\* 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) (Patent pending) is a new cultivar from the Maryland program. It 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) (Patent pending) is a new cultivar from the Maryland program. It produces large mid season 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) (Patent pending) is a new cultivar from the Maryland program. It 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* 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*\* (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\** (NY 7) (Plant patent # 11,746) is 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 tolerant to *Phytophthora* root rot and has good cold hardiness.

*K81-6* 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* 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\** 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* 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\** (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* (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 susceptible to *Phytophthora* root rot.

*Autumn Bliss* 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. It is susceptible to raspberry bushy dwarf virus.

*Autumn Britten\** (Patent pending) 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\** (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. It has moderate tolerance to *Phytophthora* root rot.

*Goldie* and *Kiwigold* (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*\* 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) (Patent pending) is a new cultivar from Maryland. The plants are upright and vigorous.

Fruit is large with average flavor that ripens mid season. It is resistant to leaf hopper. This is a new release that is relatively untried.

*Polana* (Patent pending) is a very early season cultivar that ripens 14 days before *Heritage*. It produces short, productive canes with multiple laterals per node. The fruit is medium sized with good flavor. *Polana* is susceptible to verticillium wilt. It needs extra nitrogen to perform well.

*Ruby* (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*\* 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. However, 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 are very good but the flavor can be bland if picked late. It can be machine harvested. Frost tolerance and winter hardiness are 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 is still productive and 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 fruit 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.

## **Taiwan Apple Market Open Again**

Source: <http://www.fruitgrowersnews.com>

U.S. apples can now be shipped to Taiwan after a temporary agreement was reached between the two countries. Mark Powers, vice president for the Yakima, Washington-based Northwest Horticultural Council, said the agreement was reached December 10. The new protocols call for more pre-inspections and will remain in effect until next year's growing season.

Taiwan stopped imports of U.S. apples in November after the discovery of a live codling moth larva in a shipment of Washington apples and another one in a shipment of California apples.

"We can question their reaction," Powers said. "There was no need to shut the market down, and we disagree with the action they took. We disagree that the threat was as high as they believed it was, but they are in the driver's seat for this one. If we wanted the market open for Chinese New Year, we needed to get the ball rolling. Under the temporary agreement all fruit shipped to Taiwan must be inspected on the packing line, and a higher



percentage of packed fruit will be looked at."

A random 300 fruit sample per lot per day will be taken from the cull bins off the packing line. From that sample, all suspect fruit will be cut and inspected. A minimum of 30 fruit from the sample will be cut. Should a live codling moth larva be detected during the packinghouse prescreening, all fruit from that lot run on that day will be ineligible for export to Taiwan. Should a second live codling moth larva be found in that same grower lot, at any time, that entire grower lot will be ineligible for export to Taiwan for the remainder of the current season.

Regulatory officials will also have to increase inspection from 2% to 3% of cartons in a shipment. They will also increase inspection from the current maximum of 50 fruit per carton to inspect 100% of all fruit in each carton. All suspect fruit and a minimum of two fruit per box will be cut.

Should a live codling moth larva be found in the shipment, the grower lot (orchard) will be excluded from the Taiwan export program for the remainder of the season. Shipments containing fruit with insect holes/tunnels (defined as punctures that extend below the skin of the fruit and well into the flesh), will be rejected and ineligible for phytosanitary certification. Shipments containing fruit with more than a 0.5% codling moth sting rate will be rejected and ineligible for phytosanitary certification.

Powers said they are already working on a permanent agreement for next season. "The good news is the market is open," he said. "It's a very valuable market. Our people want to ship and need to ship to Taiwan. We will tackle the next phase, there will be no time off. APHIS must propose a new protocol by mid-January."

The Taiwan market is very important for both Washington and California. Washington state shippers sent 3.3 million, 42-pound boxes of the 2001 crop to Taiwan, making it Washington's third-largest export market for the season, according to the Washington Apple Commission. Of that, 85% of the apples were Fujis. California sent 600,000, 44-pound boxes of its 2001 crop to Taiwan.

## **Sinbar® on First Year Strawberries**

*Source: Dr. Doug Doohan, OSU Extension Specialist, Horticulture and Crop Science*

The DuPont Crop Protection Company has issued a supplemental label allowing for the use of Sinbar® on first year strawberries. Following is the application information for matted-row strawberry production systems.

### **Planting Year**

Apply 2 to 3 ounces of Sinbar® per acre after transplanting but before new runner plants start to root. If strawberry transplants are allowed to develop new foliage prior to Sinbar® application, the application must be followed immediately by 0.5 to 1 inch of irrigation or rainfall to wash the Sinbar® off the strawberry foliage. Otherwise unacceptable (severe) injury may result.

To extend weed control through harvest of the following year, apply 2 to 4 ounces Sinbar® per acre just prior to mulching in the late fall.

### **Harvest Years**

After post-harvest renovation, before new growth begins in midsummer, apply 4 to 8 ounces of Sinbar® per acre.

To extend weed control through harvest of the following year, apply 4 to 8 ounces of Sinbar® per acre just prior to mulching in the late fall.

## Use Precautions and Restrictions

Do not apply more than 8 ounces per acre per season of Sinbar® unless otherwise directed.

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Information presented above and where trade names are used, they are supplied with the understanding that no discrimination is intended and no endorsement by Ohio State University Extension is implied. Although every attempt is made to produce information that is complete, timely, and accurate, the pesticide user bears responsibility of consulting the pesticide label and adhering to those directions.

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