

THE VEGETABLE AND SMALL FRUIT GAZETTE

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Tip for the Month: "May the best of this past year be the worst of the new year" ..

Anonymous

Comments from the Editor

Bill Lamont, Department of Horticulture

We have survived Y2K and made the transition into a new decade, century and millennium. It still seems strange to write 2000. We have also begun Volume 4 of the Vegetable and Small Fruit Gazette. I look forward to continuing working as editor and serving your needs throughout the next year. For all my colleagues in the other departments just a reminder that the Vegetable and Small Fruit Gazette will come out as near to the 1st of each month and this means that I would like to receive your articles the last week of the previous month. I look forward to having an "Insect Pest of the Month" and a "Disease of the Month" or similar article that covers vegetables and potatoes for each issue. In this issue we have the first in another series of articles written by county agents that will cover a variety of topics. I would like to thank Greg Burns, Extension Agent, Elk County and his son Daniel for their excellent "hands-on" article about their experiences growing different vegetables in high tunnels. As soon as I locate my sheet with the list of who signed up for each month I will put include a reminder of who is up next. If you wrote down the list, please send me a copy, just in case I cannot locate my copy. As always, the Vegetable and Small Fruit Gazette Team encourages your feedback so that we can better serve your needs and address your concerns. The month of January also presents growers with time to attend some of the

excellent upcoming educational opportunities at the county, state and national levels. I would refer you to the extensive listing of upcoming meetings at the end of the gazette.

The 15th International Agricultural Plastics Congress and 29th National Ag Plastics Conference--An Planning and Organizational Meeting
Mike Orzolek, Department of Horticulture

The 15th International Agricultural Plastics Congress and 29th National Ag Plastics Conference will be held on September 23-27, 2000 at the Hershey Lodge and Convention Center, Hershey, PA which is just a mere 8 months away. A planning and organizational meeting will be held on Monday, January 24, 2000 at the Hershey Lodge and Convention Center beginning at 1:00pm to finalize plans, programs and budgets.

Interest in this meeting appears to be picking up steam since 36 individuals have already sent in their intent to present a paper at the Congress and several companies have expressed interest in exhibiting at the meeting. I look forward to your participation in and support of our upcoming meeting in September.

Packaging of Vegetables and Fruits in Italy
Mike Orzolek, Department of Horticulture

Several presentations on packaging of vegetables and fruits were made at the 13th Congress International Plastics Association (CIPA) meeting held in Verona, Italy on March 8-11, 1994. I had the opportunity to attend this meeting with Bill Lamont, then President of the American Society of Plasticulture. The theme of this meeting was 'Innovation in the Production and Use of Plastics in Agriculture. The size of vegetable and fruit production in Italy is larger than one realizes; 26,000,000 metric tons grown on 1,600,000 ha. Seventy-five percent of all production is produced for the fresh market, while twenty-five percent is used by the processing industry. In addition, 75% of all vegetable and fruit production is used for internal consumption and 12 % is exported to other countries. There are approximately 1,300 people who are employed as importers in Italy and 9,000 people who are employed as brokers/wholesalers. The current size of the fruit and vegetable industry in Italy requires substantial packaging requirements.

There are several types of materials used for packaging in Italy; wood (55%), cardboard (30%), and plastic (12%). Types of plastic used for packaging include: PVC (polyvinyl chloride), PET (polyethylene), PP (polypropylene), and PSE (polystyrene). In Italy, plastics make up 90% of small packages, some 200,000,000 are used each year. The type of packaging material that is used is based both on market demand and cost of material. Plastic in the long run is cheaper than wood or paper for many packaging requirements. In addition, plastic offers several advantages over the other materials; reduced bruising (use of honeycombs and alveoli), greater ability to mechanize the process, maintenance of higher relative humidity (95-98%), and more visibility of the product for the consumer. Because there is a substantial amount of plastics already used in packaging in Europe, recycling has become a prime concern in many of the EC countries. As an example, Germany produces 15,000,000 tons of waste annually consisting of 1.6 million tons of plastic, 5.2 million tons of cardboard, 4.6 million tons of

glass, and 3.4 million tons of wood, metal and other material. However, in 1995, Germany imposed a tax on packaging materials to help offset recycling costs. Plans In Italy call for charging an additional 3,000 lira per kg for plastic, 300 lira per kg for cardboard, and 200 lira per kg for wood. The concern is that the higher tax on plastic will discourage the use of plastics in packaging and encourage more use of cardboard and wood.

Pennsylvania Growers Wanted
Pete Ferretti, Department of Horticulture

The Book and The Cook, Philadelphia's annual 10-day fine dining festival planned for February 25 to March 5, 2000, has grown over the last sixteen years to become a cutting edge culinary event. Each year, more than 80 cookbook authors from around the world, many who are also restaurateurs, come to Philadelphia to share their talents, preparing special meals in collaboration with a host restaurant.

Through this experience The Book and The Cook created Pennsylvania Preferred TM, a promotion to showcase Pennsylvania businesses that serve the specialized needs of the fine dining industry.

Growers who are interested in selling to the restaurant trade should call the Vegetable Marketing and Research Program at 717-694-3596 to obtain a copy of a survey prepared for concerns interested in participating in the Pennsylvania Preferred TM promotion.

1999 High Tunnel Trials at the North Central Integrated Crop Management
Demonstration Site
Greg Burns, County Agent, Elk County and Daniel P. Burns

Introduction--at the North Central ICM demonstration site in Elk County two high tunnel greenhouses are currently being evaluated for use in early season production of tomatoes, melons and peppers. On May 1st the tomato and pepper house was planted. This date is one month previous to the normal late frost date for the area. The spacing was three feet between rows and two feet between each plant. Peppers were planted the same day and were spaced one foot apart. One week later the melon house was planted with two feet between plants and six feet between rows. After the transplants were set out the high tunnel sides were rolled up every day around 7:00-7:30 a.m. to prevent the buildup of excessive heat and humidity as well as reduce the potential for fungal infection.

In mid-summer the houses were closed at approximately 5:30 p.m. and during the spring and fall around 4:30-5:00 p.m. On cool nights the house would retain an additional 10 degrees above the outside air with no additional heat being supplied. This gave an excellent boost to the plants making them grow and ripen much sooner than they would have on the outside. Daytime temperatures in the houses were only slightly greater than temperatures outside because the sides were rolled up allowing heat to circulate out of the house.

Tomatoes--immediately after planting the tomatoes, a 6-foot stake was driven into the ground beside each transplant. Several weeks later the plants were pruned to the stakes. All of the suckers except the one growing immediately below the first flower cluster were removed. This sucker and the main stem of the plant were then tied to the stake. Each week until the plants reached to the height of the top of the stakes, all suckers were removed from both main shoots and tied up. Upon reaching that highest point, the tops were removed. An alternative way to prune and stake plants would be to use the basketweave system. Irrigation water was applied at the rate of 1/2 hour every three days early in the season. Later as fruit size swelled and neared maturity the house was watered for an hour every three days.

The three tomato varieties compared were, Big Beef, Ultra Sweet and Bush Early Girl. The first variety, Bush Early Girl, is a large early tomato, a determinate type and takes 56 days until harvest. Planted on May 1st, the initial harvest was made July 17th. This date is approximately one month earlier than typical first harvest in our area. As these tomatoes were being grown for a farmer's market, this would give a sizable advantage for the early market. For the first two weeks the tomatoes sold for \$1.60/pound. Bush Early Girl has excellent quality and exceptional size for a tomato this early. Unlike Ultra Sweet and Big Beef there was virtually no blossom end rot or catfacing. Bush Early Girl's yield totaled 227 pounds with an average of 15.1 pounds per plant. The Bush Early Girl tomatoes were the most valuable because they came in before the price dropped significantly. Sales from Bush Early Girl totaled \$242.95 with a seasonal average price of \$1.06/pound.

The second variety was Ultra Sweet. First picking was made on July 25th or 62 days until harvest. An indeterminate variety, it showed a considerable amount of blossom end rot early and the size of the tomatoes was small compared to the other types. This variety is well liked in New Hampshire for its cold tolerance but other cultivars appear to be superior under Pennsylvania conditions. Ultra Sweet yielded 239 pounds of tomatoes with an average yield of 15.9 pounds per plant. They sold for an average of \$1.00/pound and the total sales from Ultra Sweet were \$240.45.

The third variety tested was Big Beef. Big Beef is also an indeterminate variety and takes 72 days to harvest, but was first picked on July 26th, only one day after Ultra Sweet. Big Beef is an extremely large, high quality tomato. The greatest problem found was excessive catfacing early in the season which degraded the quality. Big Beef was the highest yielding variety but the majority of the harvest came later in the season so that their price per pound was lower than the other two. The total yield was 312 pounds with an average of 20.8 pounds per plant. Sales from Big Beef totaled \$283 with an average of \$.90/pound.

Variety	Days Until Harvest	Seeded	Transplanted	First Harvest
Early Girl	56	3/26	5/1	7/17
Ultra Sweet	62	3/26	5/1	7/25
Big Beef	72	3/26	5/1	7/26

These tomatoes were grown to sell at a farmer's market and the goal was to find which varieties would receive the best price throughout the year. Several possible conclusions can be made regarding which tomatoes would best answer this need. Growing only Bush Early Girl would result in a large number of tomatoes early in the season, which might exceed market demand, and later the number would diminish. Planting only Big Beef would bypass the early part of the season, which is partly what high tunnels are for! The first scenario would be to plant half of the house in Big Beef and the other half in Bush Early Girl. This arrangement would give a steady flow of tomatoes throughout the marketing season. Another option would be to plant two rows of Bush Early Girl and one row of Big Beef, so that a better price could be attained early on and have less tomatoes later when the price drops. A third option would be to plant part Early Girl and an additional type such as Goliath that is not noted for catfacing problems. A comparison planting of one row Bush Early Girl, one row Big Beef and one row Goliath could be conducted.

Several other varieties that performed well for Tim and Janet Taylor from Crossroad Farm in Vermont were Match and Trust. They also found Big Beef and Ultra Sweet to produce well for them. They liked Ultra Sweet for its flavor, shape and size. This possibly could be due to their 90 day growing season and cold zone 4 climate where Ultra Sweet seems to produce better than other varieties.

Report on Other Crops-- the other trials conducted in the high tunnel were largely successful as well. Cantaloupe and watermelon were planted in the other house on May 9th. The objective for the cantaloupe was to harvest them as early as possible in order to again capture the early market. The variety of cantaloupe tested was Earligold, a variety with 68 days until harvest. The first harvest was made on July 8th but the numbers did not increase until a week later. In spite of their relatively small size they sold for \$2.50 each because of their earliness. One deficiency observed was that they did not have the taste that later melons develop.

Two different varieties of watermelons were tried: Golden Crown and Million Bucks. Golden Crown is a small round melon, yellow on the outside and red on the inside. They have excellent taste and are very early with only 60 days until harvest. These melons also sold for \$2.50 each and are very popular at the farmer's market. They were first harvested on July 9th. The other variety of watermelon, Million Bucks, is a large traditional melon. They possess good size and flavor. Million Bucks was first harvested on July 30th and they take 78 days until harvest. They sold for \$.30 per pound. The problem with both watermelon varieties was low yield. This possibly could be due to a lack of effective pollination, however, the cantaloupe in the same house yielded very well.

Another experiment was to plant three plants of a patio tomato to observe how they would yield. The variety was called Fourth of July and had 44 days until harvest. The first harvest of Fourth of July was on July 19th, two days after the first harvest of Bush Early Girl, so they were extremely late. Their yields were excellent.

Gurney's Giant, the variety of pepper grown, is a large thick-fleshed pepper. They did very well in the high tunnel and produced large, excellent quality peppers. They have 70 days until harvest with the first harvest on July 5th. One problem with growing

peppers in the high tunnel is that the plants grew so large that they had to be staked so that they did not fall over.

Variety	Seeded	Planted	Days until Harvest	First Harvest
Million Bucks	3/26	5/9	78	7/30
Golden Crown	3/27	5/9	60	7/9
Earligold	3/27	5/9	68	7/8
4th of July	3/27	5/1	44	7/19
Gurney's Giant	3/25	5/9	70	7/5

The final analysis of this year's trials indicate that some changes should be implemented for the small scale grower. The melon house should be planted completely in high value muskmelons because watermelon do not seem to produce the level of yields required to make them worth the space. That space could be better utilized to grow something else more profitable. Additionally, there is excessive room for making mistakes when harvesting watermelon. In the high tunnel there was no way of knowing just how much the additional night heat sped up the watermelon's maturing process with the result that the days until harvest did not indicate clearly as to when to expect ripening. As you can see by the chart comparing the days until harvest, the peppers taking 70 days were harvested 14 days early. This was typical for many of the crops in these trials. It is difficult to determine how different species of plants are going to react to high tunnel growing conditions. Watermelons are especially hard because they do not offer a reliable way to discern harvestability. This year many mistakes were made wasting melons by taking them underripe.

Summary- high tunnels are an excellent way to get the edge of the early or late markets for vegetables. They can be very profitable and therefore a good supplement to a small farm's income. Another way to use a tunnel is to take advantage of the early start and grow several consecutive crops of vegetables in the same season.

That's a Berry Good Question!!!

Kathy Demchak, Department of Horticulture

Got a question? Send it to Kathy Demchak, at 102 Tyson Bldg., University Park, PA 16802. You will be credited with the question, or can remain anonymous, as you wish.

Q. I have Rovral and Ronilan with the old label. Will I still be able to use those materials on my strawberries this year?

A. Unfortunately, nothing's as simple as it used to be... So, here's the scoop. Ronilan is due to have its tolerance for strawberries revoked later this month or in early February. That means that you will not be able to use Ronilan on strawberries during the 2000 growing season, *whether you have material with the old label or not*. It is, however, still labeled for use on raspberries (and some vegetable crops, but check the label, or with someone who works in vegetables for that info), so Ronilan you have can still be used up that way. However, Rovral with the old label definitely still can be used on strawberries

during the 2000 growing season, and possibly beyond (I'm still working on that part of the answer.) The new Rovral label will contain the same uses for raspberries, blackberries, and blueberries, among many other crops, as it had before the label change.

This question brings me to another point. Back in the July issue's Berry Good column, the use of Elevate (a new very effective material for strawberry and grape grey mold control) was detailed (in case you missed it!) Since then, results were reported from a study in North Carolina that showed that Elevate increased the proportion of cull fruit. Some of you were understandably concerned about that, as was I. However, in the treatment that produced this effect, Elevate was applied 9 times. Keep in mind that the maximum labeled number of applications per season is 4, and if you are alternating materials, it's unlikely that you'll use more than 2 applications of Elevate per season. Jim Travis (Plant Pathology, PSU) discussed this with both Mike Ellis from Ohio, and Wayne Wilcox from New York, who have conducted research with Elevate, and both said that they saw no increase in cull fruit in their studies.

Not Just for Small Fruit Growers

So, considering the 'Berry Good' question, what do you do if you have old pesticides that you can no longer use? You may be familiar with CHEMSWEEP, PDA's pesticide disposal program. Through this program, growers and homeowners can bring pesticides to collection sites which are in different counties in different years. Additional info on CHEMSWEEP and other PDA programs can be found at <http://www.cas.psu.edu/docs/casdept/pested/pdaprofr.html>. Or, contact your PDA regional office, or your County Extension office for more information. PDA Regional office phone numbers can be found at <http://www.cas.psu.edu/docs/casdept/pested/paregmap.html#TOP>. Winter is a great time for getting your pesticide supplies in order!

Potato Musings

Cancellation of the Annual Pennsylvania Potato Institute and Thoughts on Future Educational Opportunities for Potato Growers
Bill Lamont, Department of Horticulture

The Board of Directors of the Pennsylvania Potato Growers Cooperative has decided not to hold the Annual Pennsylvania Potato Institute which was scheduled for March 1st of 2000, at the Nittany Lion Inn. In discussions with Roger Springer, Director of the Cooperative, about the future of the Pennsylvania Potato Institute it was conveyed to me that it was their desire to work with the program chairman and expand the educational program on potatoes at the Mid-Atlantic Fruit and Vegetable Growers Convention, that is held the last week of January each year at the Hershey Lodge and Convention Center. This is not possible for the upcoming meeting to be held in January 25-27, 2000 but will be considered for the meeting in 2001.

I have been the Vegetable Program Chairperson for the last two meetings and would be glad to work with the new Vegetable Program Chairperson and develop the expanded

educational sessions on potatoes. I would suggest that a committee made of faculty members from the university, county agents, growers, and representatives of the processing industry be formed to formulate ideas for the 2001 meeting. The Hershey meeting would also be an excellent opportunity for other groups associated with the potato industry such as, the Potato Research Board and the Potato Task force to meet.

Potato Session at the 2000 Hershey Meeting
Bill Lamont, Department of Horticulture

Potatoes

Tuesday, January 25, 2000, PM

Topics and Speakers

Presiding:

1:30 PM Potato Varieties for the New Millennium--Dr. Mel Henninger, Rutgers University

2:00 Potato Storage Management for Quality Potatoes--Dr. Roger Brooks, Michigan State University

2:30 Update on Potato Insect Management--Dale Moyer, Cornell University

3:00-3:15 Industry Show and Tell

3:15 Cause and Control of Soil Borne Diseases of White Potatoes--Dr. Steve Johnston, Rutgers University

4:00 Drip Irrigation for Production of Potatoes--Dr. Bill Lamont, Penn State University

4:30 Adjourn

I would encourage potato growers to attend this session and express your support for expanding the potato educational sessions to three next year. I am confident that we can develop a program that will be very attractive to not only our growers in Pennsylvania but from surrounding states as well.

County Educational Meetings on Potatoes
Bill Lamont, Department of Horticulture

The following are county meeting that will be offering educational opportunities on potatoes.

February 16, 2000: Cambria and Somerset Potato Meeting. Contact: Ron Hostetler (814) 472-7986

March 2, 2000: Lehigh/ Schuylkill County Potato Growers Meeting. Contact: Bob Leiby (610) 391-9840

March 7, 2000: Western Pennsylvania Potato Meeting, Butler, PA. Contact: Tom Zundel (724) 662-2323

March 14, 2000: North Central Vegetable Producers Meeting, Coudersport, PA. Contact: Greg Burns (814) 776-5331

March 15, 2000: Erie County Potato and Vegetable Growers Meeting. Contact Andy Muza (814) 825-0900

Upcoming Meetings

Bill Lamont, Department of Horticulture

Local

January 8-13, 2000. Pennsylvania Farm Show, Harrisburg, PA. Contact: Dr. Pete Ferretti, (814) 863-2313.

January 11, 2000: Morrison's Cove Produce Auction Meeting, Martinsburg, PA. Contact: Steve Bogash (814) 693-3265

January 13, 2000: Mexico Vegetable Growers Meeting, Mexico, PA. Contact: Steve Bogash (814) 693-3265

January 14, 2000. Susquehanna Regional Vegetable Meeting. Contact: Jeff Mizer (570) 837-4252

January 17, 2000: New Holland Vegetable Growers Day, Yoder's Restaurant, New Holland, PA. Contact: Tim Elkner (717) 394-6851

January 18-20, 2000: Lime and Fertilizer Conference. Penn Stater, University Park, PA. Contact: Dr. Herb Cole (814) 863-7235

January 20, 2000: Snyder County Produce Auction. Port Trevorton, PA. Contact: Jeff Mizer (570) 837-4252

January 25-27, 2000: Mid-Atlantic Fruit and Vegetable Growers Convention, Hershey, PA. Contact: Bill Troxell (717) 694-3596.

February 3, 2000: Northeast Vegetable Growers Meeting, Thompsons Dairy Bar, Clarks Summit, PA. Contact: John Esslinger (717) 963-4761

February 10, 2000: Franklin, Cumberland, Adams Counties Vegetable Growers Day, Huntingdon, PA. Contact: Eric Vorodi (717) 263-9226

February 16, 2000: Cambria and Somerset Potato Meeting. Contact: Ron Hostetler (814) 472-7986

February 17, 2000: New York and Pennsylvania Producers Conference. Contact: Greg Burns (814) 776-5331

February 22, 2000: Regional Vegetable Growers Meeting. Contact: George Perry (570) 622-4225

February 23, 2000: Southeastern Vegetable Growers Meeting. Contact: Scott Guiser (215) 345-3283

February 24, 2000: Berks County Vegetable Growers Meeting. Kutztown, PA. Contact: Berks County Extension Office (610) 378-1327

March 1, 2000: Lehigh/ Schuylkill County Potato Growers Meeting. Contact: Bob Leiby (610) 391-9840

March 7, 2000: Western Pennsylvania Potato Meeting, Butler, PA. Contact: Tom Zundel (724) 662-2323

March 14, 2000: North Central Vegetable Producers Meeting, Coudersport, PA. Contact: Greg Burns (814) 776-5331

March 15, 2000: Erie County Potato and Vegetable Growers Meeting. Contact Andy Muza (814) 825-0900

Regional

January 6, 2000: Illiana Vegetable Growers School, Schererville, IN. Contact: Liz Maynard (219) 989-2013.

January 14-16, 2000: Advanced Organic Vegetable Farming Workshop Saratoga Springs, NY Contact: Regional Farm & Food Project, 148 Central Ave., 2nd Floor, Albany, NY 12206. (512) 427-6537.

January 17-18, 2000: 36th Annual Meeting and Conference Northeast Agricultural Aviation Association, Harrisburg Marriott, Harrisburg, PA. Starts 8 am each day; pesticide credits are available for PA and other states. Contact: Glen A. Martin, Helicopter Applicators, Inc., Gettysburg, PA. (717) 337-1370.

January 18-20, 2000: New Jersey Annual Vegetable Growers Meeting, Trump Taj Mahal, Atlantic City, NJ. Contact: Phil Traino (609) 985-4382.

January 31-Feb 2, 2000: New York State Farmers' Direct Marketing Conference, Four Points Hotel, Rochester, NY. Contact: Diane Eggert (315) 656-9977.

February 4-5, 2000: PASA (Pennsylvania Association for Sustainable Agriculture) 9th Annual Farming For The Future Conference, The Penn Stater Conference Center Hotel, State College, PA Contact: Shirley Gryczuk (814) 863-7235.

February 10-12, 2000: Ohio Fruit and Vegetable Growers Congress, Cincinnati, OH. Contact: Mike Pullins (614) 249-2424.

February 8-10, 2000: New York Vegetable Conference, Holiday Inn and Convention Center, Syracuse, NY. Contact: Jean Warholic (607) 539-7648.

National

January 18-22, 2000: Great Lakes Vegetable Growers Convention, Grand Center, Grand Rapids, MI. Contact: Dave Smith (734) 848-8899.

February 21-22, 2000. Wisconsin Vegetable and Potato Meeting, Stevens Point, WI. Contact: Helen Harrison

March 2-4, 2000: National Potato Council Chip Seminar, Buffalo, NY. Contact: (716) 526-5356.

September 23-26, 2000: 15th International Agricultural Plastics Congress and the 29th National Agricultural Plastics Congress, Hershey, PA. Contact: Pat Heuser, Executive Secretary, American Society for Plasticulture (814) 238-7045.