The Vegetable and Small Fruit Gazette

Vol. 6, No. 9- September 2002

Horticulture Department
The Pennsylvania State University

In this Issue:

Tip for the Month: "The best way to predict the future is to create it." -Unknown

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Comments from the Editor

Bill Lamont, Department of Horticulture

The Penn State football season is underway with a win under their belts. At the Nebraska game we will be promoting the Penn State "Blue and White" potato salad at a tailgating party. It is all part of marketing. I already have an order for blue and white potatoes for a wedding next June from an alumnus of Penn State that I met at a party this summer. I will be growing these potatoes in a 17' by 96' high tunnel so I can have them for the young lady's June wedding date. I want to thank Eric Oesterling for his excellent article "Johnsongrass Management" and look forward to Cheryl Bjornson's article in the October issue. I am adding meetings, field days and twilight meetings to the Upcoming Meetings List. If you have an event that you would like to advertise, please send it to me. As always, the Vegetable and Small Fruit Gazette Team encourages your feedback so that we can better serve your needs and address your

concerns. **Note: The date of the Western Pa. Vegetable Meeting held in Butler has been moved to November 19, 2002, it has normally been held in December.**

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Schedule for Agent Articles

Bill Lamont, Department of Horticulture

October	Cheryl Bjornson
November	John Esslinger
December	Andy Muza

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Johnsongrass Management

Eric Oesterling, Extension Agent, Westmoreland County

As I drive the country roads near home I am seeing more and more red seedheads of johnsongrass standing tall among and along the edge of cornfields. It has been a serious weed problem in southeastern part of the state for many years. However, in my twenty years as a county agent in southwestern Pennsylvania, johnsongrass has become more and more common and I suspect this is true in other areas also. It is a very large, perennial, warm season grass that spreads by seeds and overwintering rhizomes. When mature it is hard to miss - it stands from two to seven feet tall with a prominent white mid-vein running the length of the leaves. From mid-July on it has loose, open seed panicles with reddish or purplish seed. If you dig the plant up you will find very large white rhizomes - as thick as your thumb. It spreads by underground rhizomes and seed.

Johnsongrass has been a serious pest in field corn, where it was difficult to control for many years. The advent of newer herbicides and roundup ready crops has made it easier to manage in field crops but still a serious problem. Unfortunately, few of those newer herbicides are labeled for horticultural crops so johnsongrass is still a very difficult weed to manage in vegetables, especially in sweet corn.

Prevention is the best medicine. If you do not have this weed on your farm do your best to keep it that way. Be careful not to introduce it in seed or soil. Use only certified weed free seed for any crop. Tillage equipment can spread rhizomes so if you must work infested ground make sure to clean equipment before moving to uninfested fields. If you

notice an occasional clump of johnsongrass dig it out or better yet spot spray with roundup or another glyphosate product - even if you have to sacrifice some crop to kill the weed. Kill the clumps before they go to seed.

Cultural practices and mechanical control methods can help but will not be enough, alone, to stop the spread of this weed. In row crops regular cultivation and hoeing can keep johnsongrass down but you have to control it in the fencerows and field edges as well. If possible use rotations that allow windows of opportunity to attack johnsongrass with non-selective herbicides. Since johnsongrass is a warm season weed these windows must occur after May and before the first frost in the fall.

Where johnsongrass seedlings are a problem and in crops where they are labeled the soil applied herbicides devrinol, command, eptam, eradicaine, prowl, pursuit, and treflan, are fairly effective in controlling seedling johnsongrass. Pre-plant incorporated EPTC (Eptam, Eradicaine) will give some suppression of rhizome johnsongrass but the others do not control the rhizomes.

Post emergent grass herbicides (Fusilade, Poast or Select) offer pretty good post emergent control and are labeled for many (but not all) vegetable crops. Follow all label directions and use crop oil or surfactant according to directions. A second application is often needed.

Where you can use it, roundup or another glyphosate product is still the most effective post treatment for johnsongrass. If you can work roundup ready crops into your rotation or arrange your rotation to allow a window during the growing season where you can allow the johnsongrass to grow for 3 or 4 weeks and then spray the entire field with glyphosate that will give the best chance of beating back johnsongrass. Foliar applied herbicides work best on healthy, vigorous weeds. Drought stressed plants do not absorb or translocate herbicides as well so control will less effective if weeds are drought stressed.

A careful integrated approach using crop rotations and carefully timed herbicide applications, along with scouting and a relentless attitude will give best results in managing this difficult weed. Follow label directions carefully.

Written with information from:
Agronomy Facts #4 - Johnsongrass and Shattercane Control, An Integrated Approach
William S. Curran and Dwight Lingenfelter
Pennsylvania Commercial Vegetable Production Guide 2002
Penn State Agronomy Guide 2002

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Heads Up on Agent Roundtable

Bill Lamont, Department of Horticulture

In an effort to minimize travel and maximize efficiency of time spent by county extension staff at the Penn State campus, the ornamental and vegetable teams in the Department of Horticulture have again decided to schedule their in-service training programs back to back.

In November the Ornamentals team will be having an In-service on November 13 and the Vegetable and Small Fruits Team will be holding their annual Agent Roundtable the next day on November 14th. There will again be a dinner on November 13th for participants of both groups to foster interaction and the concept of being part of a team.

For information on the ornamental programs contact Dr. Jim Sellmer, 814-863-2250 e-mail: jcs32@psu.edu and for information the Vegetable and Small Fruit Roundtable contact Dr. Bill Lamont, 814-865-7118 or e-mail: wlamont@psu.edu.

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High Tunnel Meeting in Bucks County

Scott Guiser, County Agent, Penn State Cooperative Extension, Bucks County

Who: All Vegetable Growers

What: Visit Penn State's demonstration high tunnel. We'll discuss construction details and Ed's experiences with his 2002 tomato crop. Also, Ed has recently transplanted lettuce and squash for a fall crop and we'll see how its' performing. You may come for either the afternoon or evening session. Come out and see how high tunnels can extend the growing season and increase profits on your farm.

When: Tuesday, September 24th, 3 - 4 p.m. **and** 6 - 7 p.m.

Where: Brumbaugh Farm
Brumbaugh's farm is located at 2575 County Line Rd, Telford, on the Bucks-Montgomery county line. County Line Rd. intersects Rt. 113 near Rt. 309 in Souderton. Follow County Line Rd. north, through the town of Telford. The farm is on the right, about 1/4 mile past the Landis Supermarket.

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2002 Heirloom Tomato Variety Trial, Rock Springs, PA

M.D. Orzolek

The tomato varieties were transplanted on May 8, 2002. Plants were spaced 18" in row and 66" between rows. Ten plants of each of the16 varieties were covered with ZipHouses immediately after transplanting the tomatoes on silver plastic mulch and raised beds. Five tomato plants of each variety were not covered. After 4 nights of temperatures below 30°F on May 19-22, uncovered tomatoes froze and those in the ZipHouses sustained moderate to severe damage, depending on variety. Frost damage rating was taken on May 23, 2002: 1 = all plants dead to 5 = plants green and actively growing.

Carbon-	1.8	Black -	2.0
Sweet Million -	2.3	Pineapple -	1.7
Victoria -	1.7	Golden Queen -	2.3
Tuscany -	1.7	Elberta Peach -	2.0
HealthKick -	1.8	Flamme -	2.0
Bush Early Girl -	1.7	Sun Sugar -	2.5
Oregon Spring -	2.3	Brandywine -	2.2
Red Rocket -	2.0	Sioux -	2.0

Since two nodes on each plant were placed below the soil line at planting, 95% of all plants regenerated new growth 2 weeks after the freeze events.

Brief variety description:
Sweet Million - Cherry tomato, 0.5 oz. red fruit (0.50 to 0.75 inch diam.), large open plant habit, fair plant canopy cover, mid-early maturity, very productive, mildly sweet fruit taste.

Victoria - Plum tomato (4.6 oz) fruit, moderate plant size, good plant canopy cover, mid-season maturity, good production potential. Round/oval fruit with red to dark red interior color, nice uniform maturity and fruit size.

Tuscany - Plum tomato (3.1 oz) fruit on compact plant with good plant canopy cover, late, mid-season maturity, fair to good production potential. Round/oval fruit with dark red interior color, very firm, uniform fruit.

Health Kick - Plum tomato (3.3 oz) fruit on a semi-compact plant with good plant canopy cover,

late, mid-season maturity, fair to good production potential. Some occurrence of Blossom End Rot in fruit. Oval fruit with blood red interior color, high lycopene content in fruit.

Bush Early Girl - Fruit (6.1 oz) on compact plant with fair plant canopy cover, mid-season maturity, good production potential, medium to large blossom scar on fruit. Flat-round fruit with dark red interior color. Nice fruit appearance but variable fruit size.

Oregon Spring- Fruit (3.4 oz) on compact plant with excellent plant canopy cover, late, mid-season maturity, fair to good production potential. Fruit have green shoulder characteristic immature and fairly severe yellow shoulder on fruit when mature. Round/oval fruit with red interior color. Fruit had moderate to high level of Blossom End Rot.

Red Rocket - Fruit (4 to 6 oz.) on medium large plant with good plant canopy cover, late maturity, fair to good production potential. Flat-round fruit with red interior color. Uniform fruit maturity.

Sioux - Fruit (4.7 oz.) on medium large plant with fair plant canopy cover, late, mid-season maturity, fair to good production potential. Round fruit with red fruit interior color. Uniform fruit shape and size with some fruit cracking.

Brandywine - Fruit (12.2 oz) on large plant with good plant canopy cover, late maturity, fair production potential. Some fruit with rough appearance on July 31, 2002. Flat-round fruit with red interior fruit color. Very meaty fruit.

Sun Sugar - Cherry tomato, 0.4 oz. fruit, orange color, very sweet (0.50 to 0.75 inches in diam.) on very large, open plants, early maturity, very good production potential. Very sweet flavor and uniform size and shape.

Flamme - Round (2 to 4 oz) red fruit on large plant with fair plant canopy cover, mid-season maturity, good production potential. Some occurrence of Blossom End Rot in fruit. At harvest, fruit were very soft and easily cracked. Poor fruit quality.

Elberta Peach - Round/oval (3.0 oz) fruit which look like a peach but taste like a tomato on large plant with good plant canopy cover, late, mid-season maturity, fair to good production potential. There are two distinct phenotypes in this variety; one with heavy pubescence (plants appear silver) and plants with no pubescence (plants appear normal green). Fruit with red to dark red interior color. Nice exterior peach appearance.

Golden Queen - Yellow fruit (5.6 oz) on medium large plant with good plant canopy cover, late, mid-season maturity, fair to good production potential. Flat-round fruit with yellow interior color. Variable fruit size, generally soft.

Pineapple - Fruit (22.4 oz) on medium large plant with excellent plant canopy cover, late maturity, fair to good production potential. Fruit have a rough looking appearance to them. Flat-

round fruit with red/yellow interior color. Large, rough-looking fruit.

Black - Dark brown fruit (3.7 oz) on medium size plant with good plant canopy cover, early mid-season maturity, good production potential. Round to oval fruit with brown/red interior color. Variable fruit size, some cracking.

Carbon - Dark brown fruit (8.5 oz) on compact plant with excellent plant canopy cover, mid-season maturity, good to excellent production potential. Round to oval fruit with brown/red interior color. Variable fruit size and shape, better fruit appearance than Black.

The yield of 16 Heirloom and other tomato varieties grown at the Horticulture Research Farm, Rock Springs, PA. Harvest data obtained from single replication.

Variety	Marketable Yield	Marketable Yield	Cull Yield (T/A)	Yellow shoulders
	Red fruit (T/A)	Green fruit (T/A)		on fruit
Sweet Million	18.8	5.6	4.2	No
Sun Sugar	21.4	5.6	5.2	No
Victoria	29.3	6.3	1.0	No
Tuscany	20.6	7.9	2.8	No
Health Kick	23.7	12.3	0.9	No
Bush Early Girl	35.1	3.4	0.9	No
Oregon Spring	13.8	7.4	3.6	Yes
Red Rocket	19.7	12.2	4.5	No
Sioux	13.4	4.7	9.2	No
Brandywine	15.8	5.4	1.5	No
Flamme	5.7	11.0	4.7	No
Elberta Peach	16.4	12.5	5.1	No
Golden Queen	4.4	2.5	3.3	No

Pineapple	19.7	8.4	2.7	No
Black	11.0	1.9	6.9	No
Carbon	15.8	1.7	10.6	No

Sources of seed:

Heirloom Seeds

Box 245

West Elizabeth, PA 15088-0245

Phone: 412/384-0852

E-mail: mail@heirloomseeds.com

Totally Tomatoes

P. O. Box 1626

Augusta, GA 30903-1626

Phone: 803/663-0016

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Edamame Cultivar Trial-In Field Production

Elsa Sanchez and Kathleen Kelley, Department of Horticulture

This is the second article in the series on production and marketing of ethnic crops.

Edamame, also known as edible or vegetable soybean, is closely related to agronomic soybeans. It is specific cultivars of soybean where the soybean is eaten in the immature stage. Edamame is delicious. It has a sweet, buttery flavor and can be eaten alone or as a component of other dishes. The pods are prepared by boiling for 5 minutes in salted water. It is traditionally eaten by placing the pod between your thumb and fore finger and applying pressure to the pod so the soybean is released from the pod into your mouth. The pod itself is not edible. Alternately, after boiling, the soybeans can be removed from the pods and used in various dishes including stir-frys.

A cultivar trial of edamame was planted at the Russell E. Larson Research Center, Rock Springs, PA to assess the best cultivars for production in Pennsylvania. Nine commercial cultivars; Early Hakucho, Lucky Lion, Green Legend, Late Giant Black Seeded, Butterbeans, Envy, Kenko, Butterbaby and Shironomai; were planted as seed inoculated with *Bradyrhizobium japonicum*. These cultivars were selected based on ease of obtaining the small quantities of seed required by small-acreage growers. The study is arranged in a randomized complete block design. Field data collected includes percent germination, days to flowering and general insect

and disease notes. The final germination rate for the field was about 50%. Low germination was also observed in cultivar trials in California and Washington. In Washington the low germination rate was further examined by planting seeds in a greenhouse. Under these conditions the germination percentage was near 100, indicating the problem in the field is likely due to a soil interaction. The low germination rates we observed in the field might be due to corn seed maggots or rotting of the seeds related to early spring planting. We plan on investigating the problem further. However, whatever the reason, the cultivars were not equally effected. Shironomai and Butterbaby were affected the most as observed by 14% and 11% germination, respectively, and Butterbeans and Envy were the least affected with 77% and 72% germination, respectively. Despite the fact that other pests such as Japanese beetles, cucumber beetles and leaf hoppers were observed, damage was negligible. Differences were also observed between the cultivars in days to flowering. Envy flowered the earliest beginning 48 days after planting. The other cultivars began flowering within the next week with the exception of Late Giant Black Seeded. This cultivar began flowering 97 days after planting. While this study is still in progress, with harvesting currently taking place, many differences between cultivars have already been observed.

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Bug vs. Bug - Two-Spotted Spider Mite

Cathy Thomas, Integrated Pest Management Program
Pennsylvania Department of Agriculture

Crop scouting is an important cornerstone of a successful Integrated Pest Management (IPM) program. Early detection and treatment of pests is critical in high value greenhouse vegetable and ornamental crops. When conducted on a regular basis (weekly), insects, diseases and cultural problems are detected early before they become major problems. Instead of relying on a weekly spray program, use this time to scout the crop to determine if a spray treatment is really necessary. Growers who scout weekly feel they save money by avoiding unnecessary sprays in addition to making the environment more worker friendly.

A successful scouting program includes weekly visual inspection of plant material and sticky cards. Rectangular 3 x 5 inch sticky traps are typically used in greenhouse crops. Sticky tapes and ribbons can be used, however these are primarily used for control of insects. Bright yellow is the color most commonly used to trap most species of insects. Keep traps in good condition and change them at least every other week, or weekly if needed. This will vary with insect population levels. Blue traps are most attractive to western flower thrips and other thrips species. This color is useful in crops that are sensitive to thrips damage and require close monitoring.

Designate one employee (2 people for larger operations) who will be trained to monitor for pests and evaluate the effectiveness of pest control treatments. Many growers find

that hiring a crop/IPM consultant is worth the cost since this person is experienced in identifying problems.

Scouting and a biocontrol program

When using natural enemies for pest control, a weekly scouting program must be implemented to determine if further introductions (or any other controls) are needed.

Scouting for greenhouse pests

Aphids - start plant inspection on lower leaves and continue up the plant to the growing tips. As aphids feed on growing tips, the leaves curl, sometimes looking like virus symptoms. Yellow sticky cards are useful in detecting winged aphids. Unfortunately, winged adults on sticky cards may indicate that there are clumped populations already established in the crop forcing them to migrate to less populated areas.

Fungus gnats - adult fungus gnats are usually found on the soil surface depositing eggs. Adults can also be detected on yellow sticky cards. Larval stages are found in the top inch of soil but can be hard to see without a hand lens. Raw potato disks (1 to 2 inches) can be placed on the soil surface to monitor for fungus gnat larvae. If larvae are present, they can usually be seen on the disk within 24 hours.

Whiteflies - examine the tops and bottoms of leaves. Larval and pupal stages are found on older leaves while the adults are attracted to younger leaves for egg-laying.

Thrips - Adult thrips will most likely be found in blossoms and larvae on leaves or hidden deep in buds. If you have difficulty detecting thrips, tap the leaves and blossoms over a sheet of white paper. This technique dislodges pests and provides for easier identification.

Spider mites - In greenhouses or tunnels, mites usually develop on the undersides of leaves and are often found at certain spots in the greenhouse (near vents, doors, heaters). These areas have a more favorable climate for development (dry, warm). It is important that one recognize the early signs of mite feeding, which is the stippling or speckled effect when chlorophyll is destroyed, that appears initially on the foliage when foliage is still green. In addition, it is essential that one uses a good hand lens to view populations of mites (or any other pest) in egg, nymph, and adult stages.

Scouting tools

- Hand lens at least 10x or greater
- Scouting forms and clipboard
- Flagging tape to mark hot spots for introduction of biocontrols or spot spray
- Sticky cards, yellow and blue Consider these points for developing a scouting program
- Maintain a notebook with scouting records, record weekly data from sticky cards and plant inspection.

- Allow at least 3 hours of scouting time per acre. This time may vary with the type of crops grown and experience level of the scout.
- Monitor least infested areas first, heavily infested areas last.
- Inspect plants using a zigzag pattern between benches. Stop at a minimum of 10 spots within a 1,000 square foot area.
- Inspect incoming plants immediately to prevent unwanted pest entry.
- Use sticky cards as a guide, and do not depend on them to determine if the controls are working. Sticky cards should always be combined with crop inspection.
- Use flagging tape to designate hot spots for biocontrol placement or pesticide treatments.

Please phone or email me if there are specific issues you would like me address in this column.

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That's a Berry Good Question!

Kathy Demchak, Department of Horticulture

Q.) First, I sometimes find that the results from the soil test and from the tissue analysis don't match up very well. Which one should I believe? And, second, because I'm not sure that I got the soil amended correctly based on the soil test, I've wondered whether I should submit a tissue analysis kit for my strawberries during the year that I plant them, rather than waiting until after renovation the first fruiting year. Is there any reason that I couldn't just send in a sample during the first year? (Anon.)

A.) Well, on the question of which results to believe, the answer, as you may guess, is both. A soil test is the best tool that we have to estimate the availability of the nutrients before the planting goes in, and following the recommendations will at least get you 'in the ballpark' for the nutrient needs of the plants. This is much better than flying in the dark. The tissue analysis, however, will show you what the plant can actually remove from the soil, rather than what the extractant used in the soil testing procedure can remove. Sometimes the answers are different, and when that happens, usually the plant analysis results will show a recommendation for additional fertilizer application. While this can be due to differences in the two procedures themselves, other non-nutritional factors may cause the nutrient levels to be low. For example, dry conditions can slow uptake of nutrients, especially calcium, and to a lesser extent potassium

and magnesium. Fruit development causes a drop in potassium levels. Root rots can totally throw off the values. So, especially if you suspect a problem, it is important to fill out the information sheets as completely as possible to help in diagnosing whether the plant nutrient levels are truly a reflection of nutrient availability, rather than some confounding factor.

And, no, for routine monitoring of strawberries, you really shouldn't send in a sample the first year. I can just about guarantee that the results will be strange. The reasons are numerous. First, for the first month or longer after planting, the test would reflect nutrients stored in the crown and roots, besides the nutrients the plants are getting from the soil. By the time that the plant levels would reflect mainly nutrients taken up from the soil, the plants are generally producing runners and/or daughter plants. Until the daughter plants become well-rooted, they draw nutrients through the mother plant. So, there can be some pretty wild fluctuations in nutrient levels in the mother plant during the entire time that runners and daughter plants are being produced, making the results of the nutrient analysis at that time nearly worthless.

Keep in mind that, at any time while the plants are growing, you can send in two samples, choosing plants that appear to have less severe and more severe symptoms, keeping factors such as leaf age and cultivar constant. These samples can be compared to each other to determine whether nutrition is likely to be the cause of the symptoms you are seeing.

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.

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Potato Musings

Bill Lamont, Department of Horticulture

Figuring Your Potato Yields

Bill Lamont, Department of Horticulture

Dig 10 feet of row per sample. Collect at least 5 samples per field. Add up the total pounds dug and divide by the number of samples collected. Refer to the following table to calculate yield. (Use the average sample weight).

Weight in lbs of 10 feet of row	CWT per Acre	Weight in lbs of 10 feet of row	CWT per Acre
10	153.7	21	322.8

11	169.1	22	338.1
12	184.4	23	353.2
13	199.8	24	368.9
14	215.2	25	384.3
15	230.6	26	399.6
16	245.9	27	415.0
17	261.3	28	430.4
18	276.3	29	445.7
19	292.0	30	461.1
20	307.4		

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2002 Disease Management During Harvest and Storage

Sara R. Mahoney and Dr. Barbara Christ, Department of Plant Pathology

The cool, wet spring weather and the late season drought in Pennsylvania this year have provided suitable conditions for many diseases that could become a problem in storage. Even if the proper controls have been implemented to protect plants during the growing season, without careful management during harvest and storage these pathogens can infect and spread rapidly.

Rots

Bacterial soft rot, Fusarium dry rot, pink rot, and Pythium leak are four serious tuber-rotting pathogens that cause the most significant losses in storage. These diseases can be brought in on infected tubers or survive on storage debris. Many of them take only a few weeks to destroy a tuber and then spread through the storage pile. The excessive moisture experienced this spring caused some poor stands, which were most likely due to bacterial soft rot or Pythium leak attacking the seed pieces and shoots before they were able to emerge. Although the remainder of the season has been dry, these pathogens are still present in the field and have probably spread to the developing tubers especially where irrigation has been used. Two of the main management practices that will reduce losses to these diseases after harvest are allowing tuber skins to mature in the field before harvesting and eliminating free moisture in storage areas.

Below there are more guidelines that can be followed to help prevent increases in disease.

Blights
Pennsylvania had record-breaking weather this spring. Due to the amount of rainfall every county in the state reached the threshold for late blight development according to the blightcast forecasting system used at Penn State. This is the first time this has happened since the development of the program. Although there was only one official report of late blight and the weather has gotten very hot and dry there still could be infections and spores around. For this reason it is important to take precautions to reduce spread of the disease to tubers at harvest.

There has also been a significant amount of early blight occurring on potatoes and tomatoes throughout Pennsylvania this summer. The wet and dry periods in the spring and early summer provided ideal conditions for the development and spread of the early blight fungus. Although it has been dry, the use of irrigation in many areas still makes this disease a threat. This needs to be kept in mind as the harvest season approaches.

Below is a list of guidelines that can be used during harvesting and storage to help prevent the spread of the diseases mentioned above and to maintain high quality potatoes:

- **Vine killing**
  •Vine kill stops tuber growth at the desired maturity, stabilizes the tuber solids, and promotes skin set.
  •Mechanical or chemical methods or a combination of the two can be used to kill potato vines.
  •More than one application if a chemical desiccant may be required.
- **Disease management**
  •Foliar diseases, especially early and late blight are still a threat as vines begin to die or vine killing methods are implemented.
  •These pathogens can spread to tubers and cause problems in storage if they are not controlled prior to harvest.
  •Application of a desiccant followed by a fungicide application a few days later is recommended instead of applying the desiccant and fungicide at the same time. This way, thorough coverage of the remaining plant material can be achieved.
- **Skin set**
  •Most tuber diseases require a wound to get into the potato. Good skin set greatly reduces the amount of wounding at harvest and increases the storage ability of the tuber.
  •Allow for skin set on the tubers in the field for at least 10-14 days before harvesting.
- **Wounding and bruising prevention**
  •Check harvesting and transporting equipment to make sure it is working properly and that it causes minimal damage to tubers
  •Harvest when the soil is moist but not too wet and when tuber pulp temperatures are around 60-65°F will make the potatoes less susceptible to bruising and wounds.
- **Grading**
  •Grade out diseased tubers as quickly as possible. The longer they are mixed with healthy tubers, the higher the chance of disease spread.

- **Healing period**
  •Store tubers at about 50-55°F for 10-14 days to allow wounds to heal before placing potatoes into colder storage.
- **Storage**
  •Before storing potatoes, facilities should be cleaned thoroughly and inspected. Make sure to check the insulation, fans, humidifiers, and ventilation system. If any of these are in poor condition it could result in losses due to disease.

References:

Rowe, R.C., Ed. 1993. Potato Health Management. The American Phytopathological Society. St. Paul, MN.

Stevenson, W.R. Loria, R., Franc, G.D., Weingartner, D.P., Eds. 2001. Compendium of Potato Diseases. 2nd edition. The American Phytopathological Society. St. Paul, MN.

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Upcoming Meetings

Bill Lamont, Department of Horticulture

Local

September 6, 2002. High Tunnel In-Service Training for County Extension Agents, High Tunnel Research and Education Facility, Rock Springs, Pa. Contact: Bill Lamont (814)-865-7118 or E-mail: wlamont@psu.edu

November 19, 2002. Western Vegetable Meeting, Days Inn, Butler, Pa. Contact: Eric Oesterling (724)-837-1402

Regional

January 14-16, 2003. Vegetable Growers Association Annual Meeting and Trade Show. Trump Taj Mahal Casino and Resort in Atlantic City, NJ.

January 15-17, 2003. Ohio Fruit and Vegetable Growers Congress/Ohio Roadside Marketing Conference/Ohio Christmas tree Winter Meeting. Toledo Sea Gate Centre, Toledo, OH. Contact: Tom Sach (614) 249-2424.

Februrary 4-6, 2003. Mid-Atlantic Fruit and Vegetable Conference, Hershey, PA. Contact: Bill Troxell (717)-694-3596 or e-mail: wt.pvga@tricountyi.net

National

September 22-25, 2002. Florida Fruit and Vegetable Convention. Ritz Carlton Hotel, Naples, Florida. Contact: (407) 894-1351.

November 14, 2002. South Dakota Potato Growers Annual Meeting. Clark, SD. Contact: (605) 532-3311

November 15-16, 2002. Red River Valley Potato Growers Annual Meeting. Fargo, ND. Contact: (218) 773-3633.

December 5-7, 2002. National Potato Council Seed Seminar. Hoiday Inn by the Bay, Portland, ME. Contact: (207) 769-5061.

January 7-11, 2003. National Potato Council 54th Annual Meeting. Loews Ventana Canyon Resort, Tucson, AZ. Contact: (202) 682-9456.

International

World Potato Conference. Kunming, China. See www.potatocongress.org