THE VEGETABLE GAZETTE

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In This Issue:

Tip for the Month: "Consider how hard it is to change yourself and then you will understand why it is so hard to change others".

Comments from the Editor
Bill Lamont, Department of Horticulture

I want to take this opportunity to commend our county agents for the quality of the educational meetings (not to mention the food) that they have organized and conducted around the state. I think that we have some of the finest county extension agents anywhere in the country-bar none!! It is a real pleasure to work with each of you and to have the opportunity to participate in your meetings and interact with the growers. After traveling around the state, I am really excited about the whole field of horticulture and especially the production and marketing of vegetables. We have so many marketing opportunities here in Pennsylvania. It has been a pleasure to have met so many innovative growers who have really captured the spirit and essence of direct marketing.

I want to thank those colleagues in the other departments that are supporting the Vegetable Gazette with contributions and encourage others to send in an article next month. We have the "Insect Pest of the Month" and hopefully will eventually have a "Disease of the Month" that covers vegetables and potatoes for each issue when Dr. MacNab returns from his sabbatical leave. Dr. Orzolek's alternating "Weed of the Month" and "Herbicide of the Month" that is really a great addition to the line-up. We have several excellent articles written by county agents in this issue, two by Scott Guiser, Extension Agent, Bucks County and one invited article by Peter J. Nitzsche, County Agricultural Agent, Rutgers Cooperative Extension of Morris County. It is great to see this participation by county extension personnel and I would remind Eric Oesterling, Extension Agent, Westmoreland County that he is on deck for an April article.

As always, the Vegetable Gazette Team encourages your feedback so that we can better serve your needs and address your concerns. The month of March has a few excellent educational

opportunities at the county level and I would refer you to the listing of upcoming meetings at the end of the gazette.

Corn Flea Beetle And Bacterial Wilt
S. J. Fleischer, Department of Entomology

Flea beetles overwinter as adults, thus winter temperatures have been useful in determining spring population pressure of adults. The 1997-98 winter was unusually warm, and high densities of flea beetles caused severe damage to the 1998 sweet corn crop. Some stands lost 40% of the crop due to a bacterial disease transmitted by corn flea beetles. This winter has also been warm and what cold snaps have occurred have included snow, which insulated the ground. Therefore, growers should be prepared for corn flea beetles and the accompanying disease this spring.

Corn flea beetles transmit a bacteria that causes bacterial wilt (also known as Stewart's wilt) of sweet corn. The bacteria is called Erwinia stewarti. The best cultural practice that can prevent wilt problems is to use resistant varieties when possible. This is more important for the early plantings, which typically sustain higher densities of corn flea beetles in sweet corn.

The 1998 Commercial Vegetable Production Guide provides three abbreviations to help you determine how the variety responds to Stewart's wilt. The abbreviations are:
BWR - bacterial wilt resistant
BWMS - bacterial wilt moderately susceptible
BWS - bacterial wilt susceptible
This notation is listed next to the cultivar. Also, the source of the seed may be able to tell you if the cultivar is resistant to Stewart's wilt.

Be prepared to treat susceptible varieties with an insecticide if there are 6 or more beetles per 100 plants. Be prepared to act quickly, you need to look for these beetles when the plants are in the spike stage, just coming out of the ground. A banded application just over the plants should work. Keep scouting even after a spray, to make sure more beetles do not move in. The overwintering adults will feed on weeds and move into corn plants throughout May and June. Beetles tend to be more abundant on outer rows. Scouting on calm, sunny days works best since the beetles are most active then, and although they will jump away from you, it will be easier to spot them because of this activity.

A systemic insecticide applied at planting sometimes retains efficacy long enough to control flea beetles, but this is less likely if soil temperatures are cool. While a systemic may help, it cannot be totally relied upon. For example, if you have 7 days from planting to plant emergence, and then the beetles move in over a 3-week period, you would need the systemic activity to be maintained for a month, which is difficult.

There are about several species listed as causing this damage. They include the corn flea beetle, pale striped flea beetle, the western black flea beetle, the toothed flea beetle, the sweetpotato flea beetle, and the smartweed flea beetle. All have enlarged femora on their hind legs (in other words, the thigh of their hind legs are a bit enlarged) which serves for the large muscles attached there. This gives them their ability to jump rapidly. Larvae feed on roots. But their damage is generally only associated with the early stages of corn, with disease transmission as the most important issue.

The corn plant, once it gets going, can easily outgrow the larval feeding or adult feeding on older corn plants.

Herbicide of the Month – Metolachlor – Dual Magnum and Dual II Magnum
Mike Orzolek, Department of Horticulture

Dual Magnum from Novartis Chemical Co. is classified as an acid amide structure. Herbicides in this group cause abnormal cell development or prevent cell division in germinating seedlings. They stop the plant from growing by inhibiting cell division in the shoot and root tips, while permitting other cell duplication processes to continue. Dual Magnum neither prevents weed seed germination nor causes immediate cessation of growth, but can prevent weed seedling establishment. Effective only as a preemergence application but not as a postemergence application. Growth of affected weed seedlings is inhibited and distorted. In grasses, leaves may not emerge from the coleoptile. If leaves do emerge, they often do not unroll completely; trapping the tip of the next developing leave and causing it to form a loop. Root growth also can be inhibited but is generally less sensitive than shoot growth. In broadleaf weeds, emergence is slowed and leaves may become crinkled or cupped. Dual is absorbed by both shoots and roots. Grass species are generally more susceptible when Dual is absorbed by the emerging shoot near the coleoptile node.

Dual is detoxified by crop plants and its half-life in plants may be only a few hours or less. The chloroacetamide - class of herbicides that Dual belongs to – and thiocarbamates are the only class of herbicides for which antidotes, also referred to as safeners or protectants are used commercially to reduce potential toxicity from herbicide application.

Application – Dual Magnum the non-safened metoachlor formulation and Dual II Magnum the safened metolachlor formulation can be applied as preplant surface, preplant incorporated and preemergence application (depending on crop and weed pressure) at 1.0 to 2.0 pints/A depending on soil type. Weeds controlled by Dual application include: Grasses – barnyardgrass, bristly foxtail, crabgrass, cowfootgrass, fall panicum. Foxtail millet, giant foxtail, goosegrass, green foxtail, prairie cupgrass, red rice, robust foxtails, signalgrass, southwestern cupgrass, wild proso millet, witchgrass, wooly cupgrass and yellow foxtail; Sedge – yellow nutsedge; Broadleave weeds – carpetweed, Eastern black nightshade, Florida pusley, galinsoga, and pigweed. Dual is extremely weak on lambsquarters and must be used with other effective herbicides to control/eradicate lambsquarters problems in the field. Best efficacy of Dual if irrigated or field receives 0.5 inches of rain within 2 days after application. Labeled for all corn types, cotton, peanuts, pod crops (including garbanzo, great northern beans, kidney beans, lima beans, mung beans, navy beans, peas, pinto beans, snap beans and lupines), potatoes, safflowers, grain forage, and soybeans.

Reference:

Fuerst, E. P. 1987. Understanding the Mode and Action of the Chloroacetamide and Thiocarbamate Herbicides. Weed Technology. 1(4):270-277.

Hartwig, N. L. 1996. Introduction to Weeds and Herbicides. Pennsylvania State University Extension Circular 365. 16pp.

Novartis Chem. Co. 1998. Dual II Magnum Label. 34pp.

Fresh Market Tomato Taste Test Results
Peter J. Nitzsche, County Agricultural Agent

Rutgers Cooperative Extension of Morris County

Fresh market tomato growers have selected modern cultivars with superior, yield, fruit size, firmness, resistance to cracking, and post-harvest attributes. Occasionally consumers, however, complain that some of these cultivars lack good tomato flavor. A study was setup in 1998 to help researchers and growers select cultivars that excel in both horticultural characteristics as well as taste.

Five commercial fresh market tomato cultivars ('Sunbeam', 'Sungem', 'Floralina', 'Mt. Spring', and 'Celebrity') were field grown at two locations, the Snyder Research and Extension Farm in Pittstown, NJ and at the Rutgers Agricultural Research and Extension Center in Bridgeton, NJ. The fruit were harvested at first color and ripened at room temperature for 10 days until "table ripe". Two panels (one for each location) consisting of forty nine Rutgers University students and employees each, were asked to evaluate the fruit at the Sensory Evaluation Laboratory in New Brunswick, NJ. The fruit was washed, cut into quarters, placed in a cup labeled with a three-digit code and served to each panelist. The panelists were given water and asked to rinse their mouths between samples. The panelists were asked to rate the sample on a 7-point liking scale (1 = dislike very much to 7 = like very much) to measure the five attributes (appearance, sweetness, acidity, flavor, texture and overall liking).

The only significant difference between cultivars at the Bridgeton site was a low sweetness rating for Celebrity. There were no significant differences in attribute ratings between cultivars at the Pittstown site and when the data from both sites were combined. Overall consumers gave high liking ratings for the tomato fruit in the study.

This limited, one-year study indicates that when ripened and handled properly, consumers could not differentiate several commercial fresh market tomato cultivars from one another. The study also indicates that commercial fresh market tomato cultivars can have flavor well liked by consumers. Further studies are planned to determine if cultivar differences would be more apparent to consumers if the fruit were grown under different weather conditions.

In the meantime, growers would be best to continue utilizing cultivars with good horticultural characteristics. Growers should allow them the tomatoes to develop on the vine as long as possible for their post-harvest handling system, and be sure they are not subjected to conditions which could adversely affect flavor (such as low temperatures below 55^0 F) before they reach the consumer.

Watch out for the Strawberry Clipper Weevil

Scott Guiser, Bucks County Cooperative Extension

Strawberry Clipper Weevil, sometimes called Strawberry Bud Weevil, is an early season insect pest that destroys strawberry buds. It is most damaging on early blooming varieties. In many years no damage occurs; at other times they can be very destructive. Growers should monitor strawberry fields before bloom to determine if clipper weevil is a potential threat.

Clipper weevils are small (1/8 -1/4 inch) brown or black beetles with a distinct snout or beak. They over-winter in hedgerows, strawberry fields and woods. In early spring when temperatures rise to about 60 degrees they look for pollen to eat and a place to lay eggs. They feed on, then lay eggs in, the unopened buds. Then the weevil "clips" the bud. Sometimes the buds drop, other times they remain partially attached to the plant by the bud stem. There is only one generation of clipper

weevils per year. They are important only in the pre-bloom period where they destroy buds and potential early fruit production.

Growers should begin to scout fields when flower trusses (flower stalks and unopened buds) begin to emerge from the crown of the berry plants. Concentrate on the edges of fields and fields near over-wintering sites such as hedgerows or woods. Look for weevils or clipped buds. Some researchers suggest that sprays are necessary when one bud per foot of row is detected. Others set the threshold at five buds per foot of row.

Guthion, Lorsban and Methoxychlor are labeled for clipper weevil control. Two sprays, ten days apart, are recommended when thresholds are reached. Scout all fields. Only early varieties may need treatment. Clipper sprays may aid in control of spittle bug and other early season insect pests. Be sure to observe days-to-harvest restrictions. Lorsban may only be used pre-bloom.

Controlling Gray Mold of Strawberries

Scott Guiser, Bucks County Cooperative Extension

Gray mold (Botrytis) is the most common fruit-rotting disease of strawberries in Pennsylvania. Every grower is familiar with the fuzzy, gray, mold that forms on ripe fruit, especially in wet years. Fungicides play an important role in reducing losses to gray mold. Proper fungicide timing is important. Cultural practices that promote leaf, flower and fruit drying are also important. Here is a summary of gray mold management practices for strawberry growers.

*Gray mold requires moist conditions to thrive. Site selection and row spacing that promote good air movement will a hasten plant drying and reduce disease.

*Do not fertilize in spring. Excess nitrogen at bloom and harvest time has been shown to greatly increase losses to gray mold. Apply nitrogen only at renovation (late June -early July) and during flower bud development (late August). See Penn State's Small Fruit Production Guide for more information.

* Some varieties, notably Earliglow, appear to have some resistance to gray mold infection but all varieties, including Earliglow, will have significant losses to gray mold in most years unless control measures are taken.

* Fungicide applications are usually necessary to achieve high levels of gray mold control. Proper timing of fungicide sprays is important. Gray mold fruit infection begins at bloom and that is the time that fungicides applications are most effective. You may think that fungicides applied to the fruit are most important because that's where you notice the fuzzy gray mold but the infections probably occurred several weeks before you see symptoms.

*Research has shown that two or three fungicide applications at bloom time (early bloom, mid bloom late bloom) are more effective in stopping gray mold than fungicide applications made after fruit begins to form and ripen. What's more, there may be little benefit from additional fungicide sprays after fruit begin to ripen. (In especially wet years, additional fungicide sprays may be beneficial. In dry years, the bloom sprays alone are likely to be sufficient.)

*Next is the question of which fungicide to use. In fact, a combination of two fungicides is recommended because gray mold has developed resistance to many of the fungicides commonly used in strawberry production.

* Ronilan, Rovral, Benlate or Topsin-M, combined with Captan is recommended. Gray mold has become resistant to Benlate, Ronilan, Rovral and Topsin M so these fungicides should not be used alone. (Note that strawberries have been deleted from new Ronilan labels. Existing supplies of Ronilan with strawberries on the label may be used through the 1999 growing season.)

* For more information on strawberry production, consult the strawberry section of the Commercial Vegetable Guide, AGRS-28 ($ 8.50) . Better yet, get a copy of Penn State's Small Fruit Production Guide, AGRS-53 ($ 10.00). Both are available from extension offices. You may order them directly from Penn State's Publication Distribution Center. Make the check payable to Penn State and send to: Publications Distribution Center, 112 Agricultural Administration Bldg. University Park, PA 16802 -2602. Be sure to request the publication by name and number. You may look over a complete list of Penn State's "For Sale" Publications at the following web site: pubs.cas.psu.edu/

Vinclozolin (Ronilan) Use Deletion Of Strawberries And Stone Fruits
Bill Hoffman, Pesticide Education Office

EPA has approved BASF's label amendments deleting strawberries and stonefruits from all new vinclozolin labels as of 9/4/98. Vinclozolin(Ronilan) is still registered to control fungi (Botrytis spp.,Sclerotinia spp., etc.) on many other crops (listed below). Existing stocks of vinclozolin products with strawberries and stone fruits listed may be used until January 30, 2000, which is when the tolerances for strawberries and stone fruit will be revoked.
Registered uses with continued support from BASF: Beans(Succulent), Kiwi(Special Local Need (Sln) In CA & SC), Lettuce, Onions, Ornamentals, Raspberries, and Turf (On Golf courses).

Do We Need to Trap for Two Races of European Corn Borer?
Chris Harding and Shelby J. Fleischer

During the past 2 summers Penn State extension in cooperation with growers and PVGA have monitored pheromone traps for the 3 worm species which infest ears of sweet corn: European corn borer (ECB), fall armyworm (FAW) and corn earworm (CEW). Although there are only 3 pest species, we require 4 pheromone traps. This is because the ECB in Pennsylvania has 2 strains - the Iowa strain (E strain) and the New York strain (Z strain), with each strain requiring its own pheromone lure.

One possibility for reducing monitoring time and cost is to use 1 pheromone trap for monitoring ECB, if 1 strain predominates. The two criteria for moving to 1 trap for ECB are (1) if a location is infested by predominately 1 strain of ECB (to the point that the other strain is insignificant) and (2) if this proportion is stable from year to year (enabling prediction of future population percentages). We analyzed the last 2 years of data, looking for these criteria. Listed below are the percents of E strain ECB at each location when they are grouped for the entire summer during the seasons of 1997 and 1998 (to get percent Z strain, subtract the % E strain value from one).

Most locations had a high enough percentage of both strains to justify pheromone traps for both races. When considering the second criterion (stability of a predominate proportion across years), keep in mind that 2 years data does not provide enough information to develop predictive trends. However, the past 2 years data illustrates the variability in ECB strain percentage that we have seen to date. Large differences were noted in places such as Brodheadsville (70% to 0%), Rock Springs (38% to 15%) and Holtwood (4% to 25%) for 1997 and 1998 respectively. A few locations did show predominantly 1 strain and consistency between years, (e.g., Leola 3% to 6%).

We also saw 2 additional important sources of variation. First, we saw strong variation within a season - charts showing the % E over time varied during the season. Even when a site had predominately 1 race for 1 week, it could easily switch for the 2nd week. Second, the % E needed to be considered with respect to the total trap catch. When the catch was low, the % E could be very high but still not be significant for making management decisions. To consider both of these issues, we plotted % E over time and the total density at that time, all on the same graph. We did this for every site, for both years. We will try and put the graphics up on the WEB this summer for those interested.

Future analysis may reveal locations where a 1-race system would suffice. For now, we recommend monitoring for both strains of European corn borer.

1998 Trap Catch Data

Location	% E strain
Bedminster	0.0
Germansville	1.5
Orefield	8.2
Royersford	47.1
Schuylkill	71.7
Orangeville	39.0
Elysburg	37.0
York Springs	25.0
Neffsville	5.6
Holtwood	25.5
Leola	6.9
York	4.7
Lebanon	50.0
Fisherville	34.2
Wilkes-Barre Farm 1	14.1
Wilkes-Barre Farm 2	70.7
Rock Springs	15.4
Indiana Farm 1	0.0
Indiana Farm 2	0.0
Salem Twp.	0.0
Brodheadsville	0.0
Stroudsburg	80.0
Effort	0.0
New Enterprise	37.5

1997 Trap Catch Data

Location	% E strain
Doylestown	12.1
Montgomery	50.0
Reading	44.7
Zion Grove	35.2
Heidelberg Twp.	6.9
S. Whitehalls Twp.	7.9
Neffsville	2.4
Holtwood	4.0
Leola	3.9
York	12.2
Boiling Springs	2.0
Chambersburg	8.8
Stroudsburg	23.3
Brodheadsville	70.7
Effort	9.1
Luzerne	56.9
Columbia	10.4
Rock Springs	38.6
Fisherville	15.2
Madison	10.5
Indiana	0.0

Tyrone	0.0
Lake Plain	17.0
Waterford	0.0
Mercer	11.4

The Potato Section

Potato Musing

Bill Lamont, Department of Horticulture

I would like to encourage my colleagues in the Entomology and Plant Pathology Departments to contribute articles each month on insect and disease problems that are negatively impacting potato production in Pennsylvania. We should have articles on disease and insects in each issue.

Just a reminder that there are several meetings left on the calendar of interest to potato growers: March 3, 1999: Lehigh/ Schuylkill County Potato Growers Meeting; March 4, 1999: Potter County Vegetable and Potato Growers Meeting; March 16, 1999: Erie County Potato and Vegetable Growers Meeting.

I have included the results from the 1998 Upscale Chipping Potato Variety Trial in Somerset County and the Snack Food Association trial. These results are also published in our Pennsylvania Potato Extension and Research Report. The 1999 planting season will soon be on us and we are excited about the opportunities that to be be innovative in our approach to solving problems and we will always strive to better serve the potato growers and potato industry in Pennsylvania. We welcome your visits, comments, feedback and suggestions as we go about our work.

Somerset County Upscale Chipping Potato Variety Trial

Bill Lamont, Department of Horticulture

The upscale chipping potato variety trials were conducted at four locations around the state in cooperation with the following chip companies: Utz Quality Foods, Snyder of Berlin, Wise Foods and Troyer Potato Products. The objective of these tests is to evaluate named varieties or very advanced lines that are nearing release in a larger plantings that are planted, maintained and harvested by the growers. The potatoes are then transported to the cooperating chip companies for further evaluation of both their ability to store and how well they chip out of short and long term storage.

Table 1. Somerset County - Yield and Size Distribution

Variety	Yield (cwt/A)		Size Distribution in Percent						%	P.O.	
	Total	Saleable Yield	No. 1	1 1/2 - 1 7/8"	1 7/8 - 2 1/2"	2 1/2 - 3 3 1/4"	3 1/4 - 4"	Over 4"	P.O.	Cwt/A	Comment
Atlantic	274.9	228.6	83	10	20	57	6	2	5	12	MS,SB
Snowden	219.6	171.7	78	18	34	41	3	0	4	9	SB
Pike	245.7	194.7	79	20	42	37	0	0	1	4	MS
Andover	229.4	200.6	87	9	29	52	6	0	3	7	GC,SB
Reba	394.5	350.5	89	8	22	60	6	0	2	4	SB

Norvalley	321.2	263.2	82	10	24	51	7	0	8	26	GC,SB
NDO1496-1	307.2	266.0	87	12	24	58	4	0	2	4	GC,MS
NYE11-45	379.3	331.0	87	7	20	61	7	0	5	17	MS,SB
ND2676-10	228.2	172.1	75	23	45	30	0	0	1	3	GC
NY102	339.1	306.1	90	9	38	50	2	0	1	3	SB
NY112	535.4	482.1	90	6	15	68	7	0	1	5	SB
AF1775-2	506.6	445.8	88	2	14	64	10	2	8	40	SE
NY103	326.3	281.1	86	9	27	59	0	0	4	14	MS,SB
AF1668-60	208.7	157.0	75	22	44	32	0	0	2	5	GC

Table 3. Somerset County - Specific Gravity and Chip Color

Variety	Specific Gravity	Chip Color 45˚ F	Chip Color 55˚ F
Atlantic	1.086	fair+	v good
Snowden	1.081	v good-good	v good
Pike	1.078	fair+	v good
Andover	1.075	fair+ good	v good
Reba	1.086	good	v good
Norvalley	1.074	good	v good
NDO1496-1	1.070	good	good
NYE11-45	1.065	fair+	good
ND2676-10	1.072	v good	v good
NY102	1.077	fair+	v good
NY112	1.071	good	v good
AF1775-2	1.077	fair-poor	good
NY103	1.071	fair	good
AF1668-60	1.085	good	v good

Snack Food Trial Results

Bill Lamont, Department of Horticulture

The Snack Food trial is a national cooperative trial that Dr. Dick Chase from Michigan State University coordinates and is funded by the Snack Food Association. The trial is conducted with a cooperating grower and chip company. The test has been conducted for the last several years in Cambria County at Leroy and Carol Hites farm in cooperation with Snyder's of Berlin.

Table 1. 1998 Snack Food Association Potato Chip Variety Trial

Variety	Yield (Cwt/A)		Size Distribution in Percent						
	Total	Marketable	No. 1	<1 7/8	1 7/8 3 1/4	>3 1/4	pick-out	S. G.	45-55F SFA
ATLANTIC	308	255	83	8	72	11	9	1.088	2.5 1.5

SNOWDEN	296	226	76	18	75	1	6	1.089	1.5	1.5
NY 112	391	333	85	7	82	3	8	1.086	2.0	1.8
NY 115	279	228	82	8	79	3	10	1.083	1.8	1.5
AF1433-4	223	197	88	8	88	0	4	1.076	2.0	1.2
AF1668-60	250	225	90	10	88	2	0	1.089	2.0	1.8
MSNT-1	256	197	77	17	77	0	6	1.090	2.2	1.7
MSEO18-1	340	258	76	7	67	9	4	1.087	2.8	2.5
BO564-8	257	198	77	20	77	0	3	1.080	2.0	1.7
BO564-9	293	251	86	13	86	0	1	1.092	2.5	2.0
ND2676-10	230	163	71	28	71	0	0	1.088	1.7	1.5
ATX85404-8	398	322	81	10	75	6	9	1.087	1.7	1.5

*Chip color determined by Dr. Wilbur Gould on a post harvest sample collected on October 1, 1998 held at 55F. **Chip color samples were determined December 16, 1998, at 45F and 55F temperature by Horticulture Department, Penn State University using the Snack Food Rating Scale.
Local Coordinator: Bill Lamont and Terrance Simpson, Department of Horticulture, Penn State University, University Park, PA; Ron Hostetler, Penn State Cooperative Extension, Cambria County
Cooperating Grower: Carol and LeRoy Hite, Gallitizin, PA.
Cooperating Chip Processor: Snyders's of Berlin, Berlin, PA.
Planting Date: May 15, 1998
Harvest Date: October 1, 1998 (140 days)
Spacing: 34" x 8.5"; not irrigated

Comments: We were delayed in planting but environmental conditions (rainfall and temperature) were good this growing season. NY 112, NY 115, AF1668-60, MSEO18-1, BO564-9, ATX8540-8 produced near or higher saleable yields than the standards Snowden and Atlantic.

Upcoming Meetings

Bill Lamont, Department of Horticulture

Local

March 3, 1999: Lehigh/ Schuylkill County Potato Growers Meeting. Contact: Bob Leiby (610) 391-9840

March 4, 1999: Potter County Vegetable and Potato Growers Meeting, Coudersport, PA. Contact: Sam Crossley (814) 274-8540

March 16, 1999: Erie County Potato and Vegetable Growers Meeting. Contact Andy Muza (814) 825-0900

April 7, 1999 Greenhouse Vegetable Growers Meeting, Cashtown, PA. Contact: Eric Vorodi (717)-263-9226

Regional

February 17-20, 1999: Mid-Atlantic Direct Marketing Conference and Trade Show, Princess Royale Hotel, Ocean City, MD. Contact: Jarvis Caine (301) 405-1265.

National

May 16-20, 1999: 6th National Symposium on Stand Establishment, Roanoke, VA. Contact: Greg Welbaum (540) 231-5801.

May 19-20, 1999: 28th National Agricultural Plastics Congress, Tallahassee, FL. Contact: Pat Heuser, Executive Secretary, American Society for Plasticulture (814) 238-7045.

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.