

# GROWER

## NEW ENGLAND VEGETABLE AND SMALL FRUIT NEWSLETTER

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## Control of Field Violet (Field Pansy) in Strawberries

*Lorraine Los and John Ahrens*  
*University of Connecticut*

**O**ne weed problem that strawberry growers in the Northeast may encounter is the field violet. Current management guides do not give information on the biology or control of this weed.

The field violet (field pansy) is a winter annual that germinates in late August to early September. It produces small pansy-like flowers in early spring and usually dies during the summer. Control of field violet requires special attention to timing and choice of herbicides.

There are effective herbicides available. Dacthal and Devrinol prevent its emergence. Sinbar is effective on young seedlings (two-leaf stage) only. Gramoxone is a broad spectrum herbicide which can be used in row middles **only**. The use of shields is necessary to protect strawberries from Gramoxone drift.

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# Field Violet

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If both field violet and Oxalis are problems, one control option is to use Dacthal W-75. Even if Dacthal is used at renovation, use again in early September at 8 to 12 pounds/acre to control field violet before it emerges. The full rate is recommended if Oxalis is also a problem. Oxalis germinates in late fall under mulch or in early spring. Light irrigation or rainfall (about 1/10 inch) will improve effectiveness.

A second control option is Devrinol 50DF, which can be used if Oxalis is not a problem. Use split application of Devrinol by applying 4 pounds product/acre in early September, then another 4 pounds product/acre at mulch time.

A third control option is to use Sinbar at 2 1/2 oz. product/acre on seedlings at the two-leaf stage. Therefore, you will need to be able to identify the seedling stage to determine when young weeds are present. Begin checking fields during the first week of September. An approximate treatment date would be around September 10. Sinbar can also be mixed with Dacthal or Devrinol to get both preemergent and postemergent control. Do not apply more than 8 oz. of Sinbar/acre/growing season. Use only on plants established six months or longer. Do not use on soils with less than 2% organic matter. Some varieties may be sensitive to Sinbar.

Another control option is Gramoxone (paraquat), a broad spectrum herbicide which controls most annual weeds. Avoid contact with strawberry plants during application, or injury may result. Use in row middles only. The use of shields is necessary to protect strawberries from Gramoxone drift. A fall application would be preferable in order to achieve early control of field violet.



# Evaluation of the Presidedress Soil Nitrate Test for Sweet Corn

George Hamilton  
University of New Hampshire

In the March issue of the *Grower* there was an article about a new soil test for nitrogen availability for sweet corn called the Presidedress Soil Nitrate Test (PSNT). Soil samples for this test are collected from the surface 12-inch layer of soil when corn is six to 12 inches tall. The test originally was developed and has been used extensively for managing nitrogen (N) for field corn. Use of the test frequently results in large reductions in N fertilizer applications with no reductions in yields.

During the past three years, the PSNT was evaluated by sweet corn growers in Hillsborough County, New Hampshire. In 1992, 14 farms participated, 53 soil samples were collected and 150 acres of sweet corn were tested. In 1993, 12 farms participated, 37 soil samples were collected and 145 acres of sweet corn were tested. In 1994, 5 farms participated, 26 soil samples were collected and 146 acres of sweet corn were tested.

## Results

### 1992 Results (a cool, wet spring)

No sidedressed nitrogen was needed on 18 fields (34% of samples) totaling 47 acres (31.3% of the sweet corn acreage). The average rate of N application for the fields that needed N fertilizer was 50 pounds/acre, which is the same as the recommendation without the test.

Average amount of sidedress N fertilizer recommended by the PSNT for all fields compared with the standard sidedress recommendation without the test:

- PSNT Recommendation—34 pounds N/acre
- Normal Application—50 pounds N/acre
- Reduction in N fertilizer—16 pounds N/acre
- Total reduction in N usage—2,370 pounds

### 1993 Results (a warm, dry spring)

No sidedressed nitrogen was needed on 26 fields (70.3% of samples) totaling 100 acres (70.0% of the sweet corn acreage). The average rate of N application for the fields that needed N fertilizer was 33 pounds/acre, which is much lower than the recommendation without the test.

Average amount of sidedress N fertilizer recommended by the PSNT for all fields compared with the standard sidedress recommendation without the test:

- PSNT Recommendation—10 pounds N/acre
- Normal Application—50 pounds N/acre
- Reduction in N fertilizer—40 pounds N/acre
- Total reduction in N usage—5,780 pounds

#### *1994 Results (a warm, dry spring)*

No sidedressed nitrogen was needed on 19 fields (73.1% of samples) totaling 106 acres (72.6% of the sweet corn acreage). The average rate of N application for the fields that needed N fertilizer was 47 pounds/acre, which is similar to the recommendation without the test.

Average amount of sidedress N fertilizer recommended by the PSNT for all fields compared with the standard topdress recommendation without the test:

- PSNT Recommendation—13 pounds N/acre
- Normal Application—50 pounds N/acre
- Reduction in N fertilizer—37 pounds N/acre
- Total reduction in N usage—5,400 pounds

The total reductions in N fertilizer usage were greater than shown above because many growers applied less N fertilizer than recommended before planting.

These results clearly show that use of the PSNT by sweet corn growers will improve profitability and maintain the quality of surface and ground water resources. Some of the benefits of using the test are listed below.

- Reductions in the amount of N applied before planting.
- Improvements in the management of materials containing N such as manure, compost and crop residues.
- Reductions in the amount of sidedressed N fertilizer.
- Reductions in the cost of production without the risk of lower yields of sweet corn.

The observations made in the past three years of using the PSNT on sweet corn in New Hampshire and work in New Jersey and Connecticut have resulted in the universities of Connecticut, New Hampshire and Rutgers (New Jersey) receiving a Northeast Region Sustainable Agriculture Research and Education grant. Two major objectives of the grant are to aggressively advocate adoption of the PSNT to manage N for sweet corn and to further evaluate the test for sweet corn production. For more information about use of the test, see the March issue of the *Grower*.



# Results of the 1994 Tomato Variety Trial

*Otho S. Wells*

*University of New Hampshire*

The objective of this experiment was to determine the yield and quality of some of the more recently developed fresh market tomatoes. 'Jetstar' was used as a comparison.

Fourteen varieties, both determinate and indeterminate, were seeded April 13. On May 26, they were transplanted into six by sixteen foot raised beds that had been covered with 1.1 mil black plastic. Overhead irrigation was applied as needed and a basketweave growing system was used. Tomatoes were harvested weekly from August 4 through September 15.

In general, all of the above varieties performed well and were of high quality. All were very firm except 'Jetstar', but this variety tasted best—my personal opinion after two different taste testings. On the date of the largest harvest (August 31), 'Merced' and 'Sunbrite' were standouts in terms of quality; on September 7, my notes indicated that 'Sunbrite' was a "perfect fruit", that 'Merced' was "almost perfect" and that 'Ultrasonic' and 'Ultrasweet' were "near perfect".

The earliest varieties with substantial yield were 'First Pik' and 'Summerset'. However, on the first harvest date, all varieties had some ripe fruits.

All those letters (ABCDs) beside the yield values can be a bit confusing, yet these letters help to show if there really are differences in yield between varieties. The values followed by the same letter are not statistically different from one another. For example, the yield of 'First Pik' is not statistically different from the yield of 'Jetstar' because both values are followed by the letter A. Now look at the D letter. The yield of 'Jetstar' is statistically no better than 'Roadside Red'; but the yield of 'First Pik' is greater than 'Roadside Red'.

When we say that there is no statistical difference, we are saying that in 95 times out of 100, the differences in yield are by chance and not due to varietal differences. However, in spite of the above explanation, there are trends that should be considered. Yield is not everything. Other factors, such as earliness and fruit size are important.

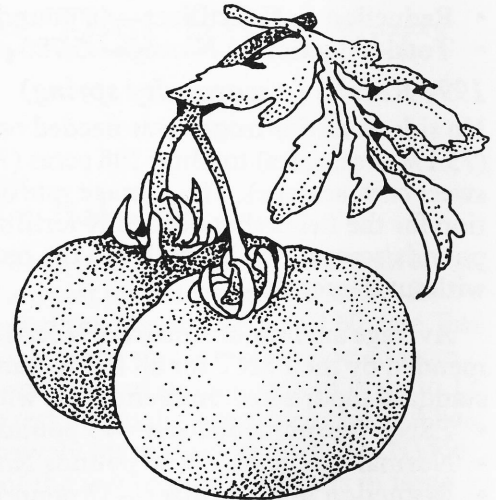
See the accompanying charts on how the yield accumulated with each successive harvest. A picture of earliness is also shown by looking at the yield on the first harvest date.

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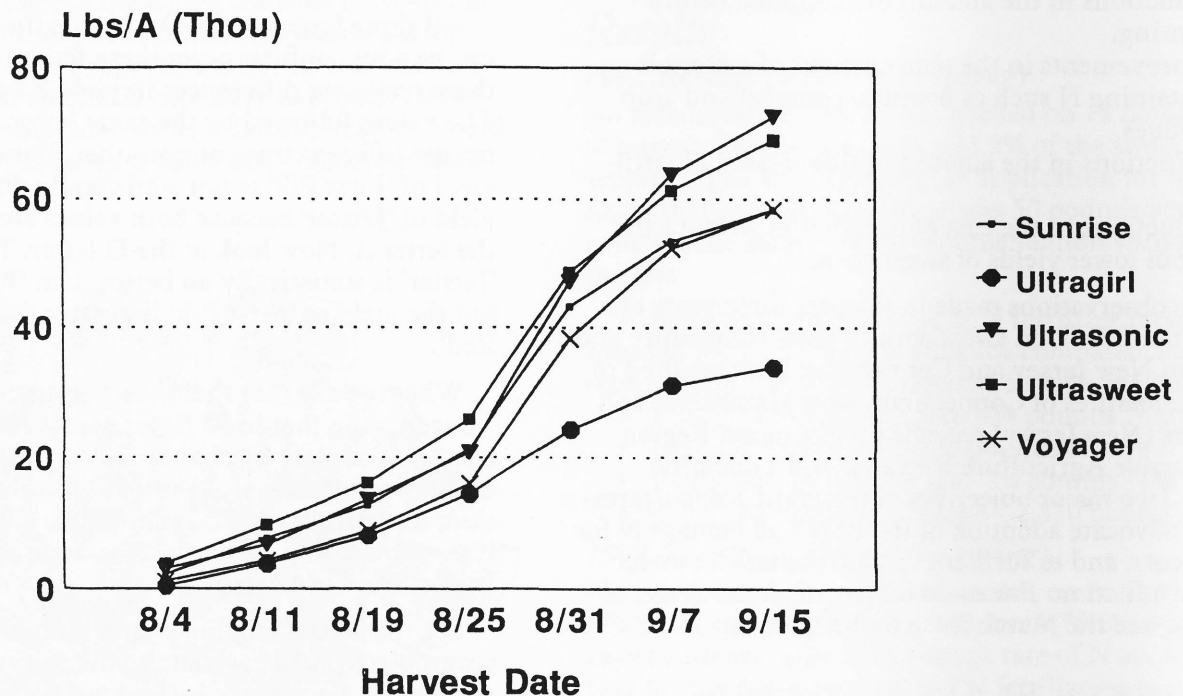
Marketable Yield and Average Fruit Size				
Variety	Type <sup>1</sup>	Source <sup>2</sup>	Lbs/A	Oz/Fruit
First Pik	D	Harris Seeds <sup>1</sup>	78,726 A	6.9
Ultrasonic	I	Stokes	72,418 AB	8.7
Paragon*	D	Johnny's	71,783 AB	9.3
Ultrasweet	I	Stokes	68,879 ABC	9.8
Market Pride	D	Harris Seeds	64,296 ABC	8.2
Daybreak	D	Agway	63,570 ABC	10.3
Sunbrite	D	Asgrow	63,480 ABC	11.9
Jetstar	I	Harris Seeds	61,302 ABCD	9.9
Sunrise**	D	Stokes	59,032 BCD	8.8
Voyager	D	Johnny's	58,352 BCD	10.2
Summerset	D	Stokes	57,762 BCD	7.7
Merced	D	Rogers NK	53,361 BCD	10.7
Johnny's 361	D	Johnny's	49,912 CD	8.9
Roadside Red	D	Stokes	43,152 D	6.6

<sup>1</sup>D = Determinate; I = Indeterminate  
<sup>2</sup>The seed company is the source of the seeds used in this trial. However, some varieties are available from more than one seed company.

\*Two replications \*\*Three replications

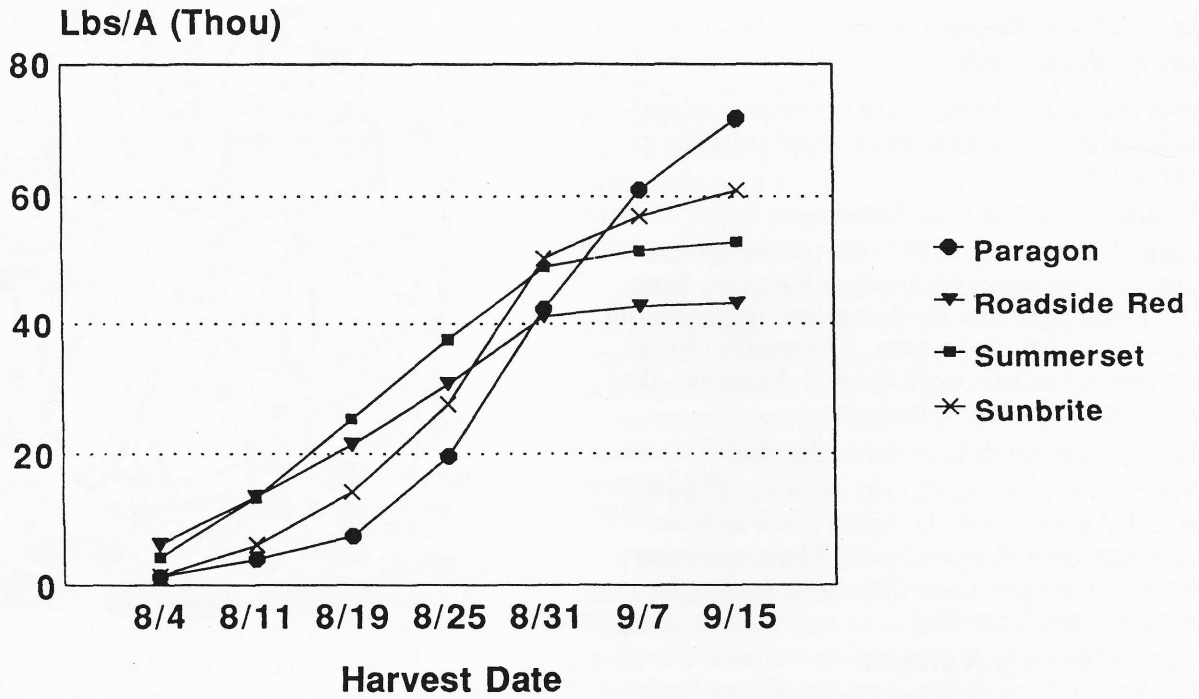


### UNH TOMATO VARIETY TRIAL -- 1994 Cumulative Yield (Lbs/A)

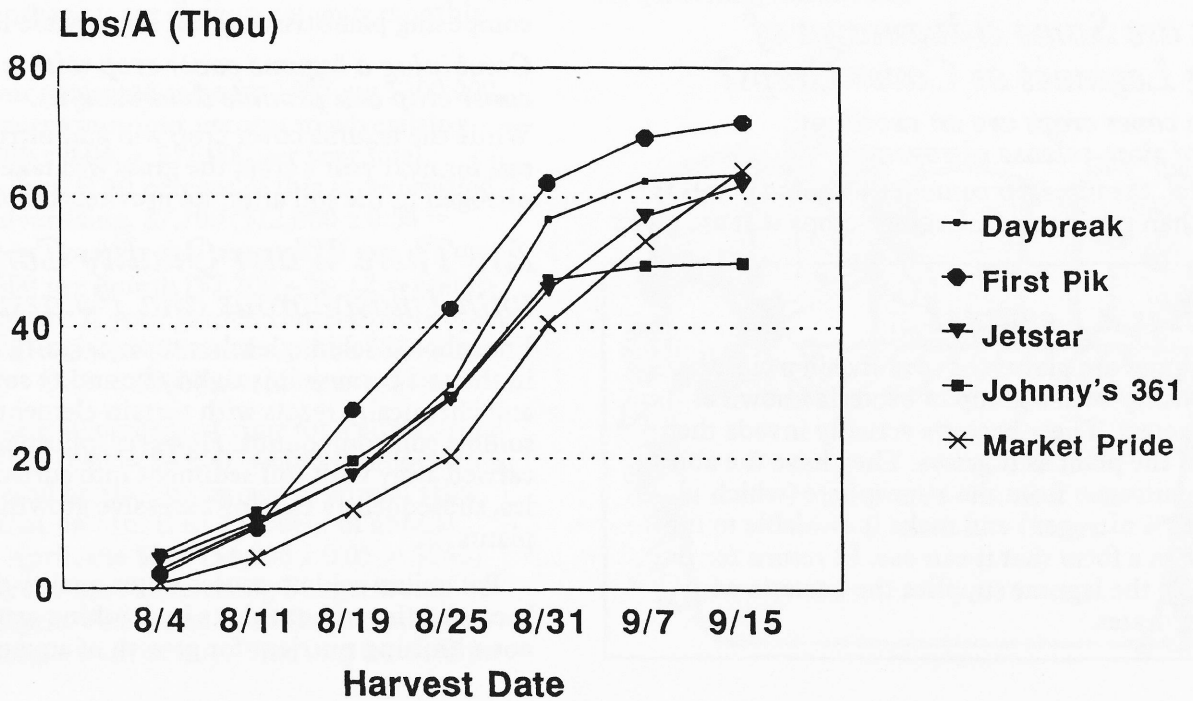


Otho S. Wells, Dept. of Plant Biology

**UNH TOMATO VARIETY TRIAL -- 1994  
Cumulative Yields (Lbs/A)**



**UNH TOMATO VARIETY TRIAL -- 1994  
Cumulative Yields (Lbs/A)**



# Cover Crops Can Protect Water Supplies

Frank Magnan and Stephen Herbert  
University of Massachusetts

**C**over crops can decrease the possibility of agricultural chemicals reaching water supplies in several ways.

## *Cover Crops Decrease Soil Erosion*

As mentioned in last month's *Grower*, some agricultural chemicals can move with soil as it erodes. Some soil-applied pesticides and fertilizers are tightly bound to soil particles or organic matter. These agricultural chemicals rarely leach through the soil. However, they can be taken with the soil as it erodes.

## *Cover Crops Extract Water from the Soil*

Cover crops can extract significant amounts of water from the soil. Agricultural chemicals leach in most soils only when the soil is saturated. The more water that is "pumped" out of the soil by cover crops, the less the possibility of leaching.

## *Cover Crops Mop Up Nitrogen*

Plants take nitrogen from the soil as they grow. The longer the crop grows, the more nitrogen is taken out of the soil. Plants vary greatly in their ability to take nitrogen from the soil. Grass cover crops such as winter rye, oat and ryegrass are the most efficient cover crops to take up leftover nitrogen. (In general, legumes are not very efficient in taking up nitrogen because they get most of their nitrogen from the atmosphere.)

## *What are Some Advantages of Using Legumes as Cover Crops?*

### *Legume cover crops are an excellent source of slow-release nitrogen*

In general, the nitrogen content of legume plants is greater than nonlegumes. Legume crops that are given



sufficient time to grow can supply most, if not all, of the nitrogen needed by a cash crop.

### *Nitrogen from legumes is less likely to leach than most nitrogen fertilizers*

As soon as legumes are incorporated, microorganisms begin to break them down. As the plant decomposes, nitrogen, along with other nutrients, is released slowly into the soil solution. Nitrogen that is still in the decomposing plant tissue is not susceptible to leaching.

### *Combining a legume cover crop with a grass cover crop can provide dual benefits.*

While the legume cover crop will add nitrogen to the soil for next year's crop, the grass will take up leftover nitrogen in the soil after the previous crop.

## *Are There Water Quality Concerns with Phosphorous and Potassium?*

Phosphorus seldom leaches to any significant amount in the soil because it is tightly bound to soil particles and chemically reacts with certain elements to form insoluble soil compounds. However, phosphorus may be carried away with soil sediment into surface water bodies, subsequently causing excessive growth of aquatic plants.

Potassium seldom causes water quality problems because it is not hazardous in drinking water and it is not a limiting nutrient for growth of aquatic plants.

### *What is a Legume?*

Legumes are plants that can live in a close relationship with a group of bacteria known as rhizobacters. These bacteria actually invade the roots of the plant as it grows. They have the ability to take nitrogen from the atmosphere (which is about 80% nitrogen) and make it available to the legume in a form that it can use. In return for the nitrogen, the legume supplies the bacteria with carbohydrates.

# Planning Your Advertising Campaign

*Richard A. Ashley*  
*Extension Specialist, Vegetables*

**A** retail garden center would typically spend three to five percent of the expected annual sales for advertising. A new business would need to commit eight to 10 percent of sales, then gradually decrease the percentage as the business becomes established. There are two schools of thought on effective advertising. One says you should advertise consistently to maintain your presence in the marketplace. The other favors advertising when the demand for your products is the greatest. Both approaches have merit and both can be combined to gain the advantages of each.

To budget for this combined approach, list your sales by month as a percentage of your total sales for last year. Use last year's sales to project your expected sales for this year. Decide on the percentage you will commit to all forms of advertising and multiply it by your projected sales. This gives you your annual budget for all forms of advertising.

Most garden centers use newspaper advertising as the basis of their ad campaign. If you plan to do this, take 60 percent of your total advertising budget and earmark it for newspaper advertising. Dividing the number by 12 will give you your monthly advertising budget. This will provide continual advertising. If your business is not open year round, divide by the number of months you are open to get your monthly budget.

Let's say your projected sales for 1995 are \$300,000, and you plan to commit four percent to advertising. That is  $\$300,000 \times 0.04 = \$12,000$  per year total advertising budget. If 60 percent of this is committed to continual advertising,  $\$7,200$  ( $\$12,000 \times 0.60 = \$7,200$ ) would be used for this purpose. If you are open year round,  $\$600$  per month ( $\$7,200 \div 12 = \$600$ ) would be budgeted. If your garden center is only open April through December (9 months), then  $\$800$  per month ( $\$7,200 \div 9 = \$800$ ) would be available.

The remaining 40 percent of your total advertising budget ( $\$12,000 \times 0.40 = \$4,800$ ) would be allocated to each month based on the percentage of annual sales that occur in that month. If five percent of annual sales occur in April, the  $\$240$  ( $\$4,800 \times 0.05 = \$240$ ) over and above the base advertising budget would be budgeted for April. This permits additional advertising when people want to buy. This may be used for

additional or larger newspaper ads, for direct mailings, radio spots or something else, but it is always in addition to your basic advertising program.

Once you have determined your advertising budget, you must decide how to use it. Your ad wants to be distinctive and should run frequently. A small ad every week will usually give better results than a large ad once a month. A vertical ad (one that is longer than it is wide) is more effective than a horizontal ad. As your business grows, you will want to dominate the page with your ad. This can be done with a quarter page ad. A full page costs four times as much and attracts little more attention.

Avoid using color in a newspaper ad, or at least use it sparingly. Colors frequently look faded on newsprint and can detract from your ad rather than draw attention to it. Use of color can also result in an unwanted gender response. Surveys show that women's favorite colors are pale pink (47%) and pale purple (40%), while men's are red (87%) and yellow (35%). Notice there is no overlap.

Your basic advertising program is most effective if used each week. Your extra advertising effort should be made for the first weekend of the month. Most everyone who has money to spend has it the first of the month. If people are paid monthly, twice per month, weekly or are on social security or welfare, they have money the first of the month. The next best time is the weekend of the 15th. Here you pick up those paid twice a month or weekly. The worst week to advertise is the last weekend of the month. By then, many people have foolishly spent their money on food, clothing and shelter and have little remaining for the gardening necessities.



# Announcing New England Plasticulture Seminar

**When:** September 15 and 16, 1995

**Where:** Comfort Inn/Yokens  
Porstmouth, New Hampshire

This seminar will focus on using plasticulture technology for the intensive production of vegetable crops as well as small fruits and to some extent tree fruits. A four-person team of plasticulture specialists will bring this seminar to New England following very successful seminars in Kansas, Tennessee, Kentucky and Mexico.

The first day, September 15, will be devoted to illustrated lectures on mulches, drip irrigation, fertigation, fertilizer management with drip irrigation, injection of chemicals with drip, row covers and high tunnels. Commercial exhibitors will be set up with tabletop displays.

The second day, September 16, will be field demonstrations held at the University of New Hampshire Horticulture Farm. Commercial

companies will be on hand with plasticulture products and demonstrations of equipment and drip irrigation systems.

This seminar will be intense but will have plenty of time for questions and discussion. It will be an excellent early fall investment in getting first-hand information on technology that can make a big difference in farm productivity.

The sponsors of this Plasticulture Seminar are the New England Vegetable and Small Fruits Consortium (Cooperative Extension) and the American Society for Plasticulture. More information to follow.



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