THE VEGETABLE GAZETTE

April 1999
Volume 3, No. 4

In This Issue:

Tip for the Month: "Take action, its better to fail than to take no action at all".

Comments from the Editor
Bill Lamont, Department of Horticulture

The weather outside is sure beckoning us to prepare some ground and get ready to plant. Mike Orzolek and I drove out to the Horticulture Farm at Rock Springs and it was all I could do to keep Mike from working up some land and applying some plastic mulch and drip irrigation tape. We will be getting some ground ready early and applying different colored plastic mulches with drip irrigation, planting potatoes and covering some of them with floating row covers, like we did last year. Also we have some early sweet corn planting with the X-Tend planter using very thin gauge clear plastic mulch. There is allot more research planned at the farm as part of the Center for Plasticulture. The second In-Service Training on the high tunnels is scheduled for April 28th and 29th. You can read more about what is planned for the Center for Plasticulture later in the newsletter. I look forward to a very productive summer and anticipate alot of really exciting research results.

I want to thank those colleagues in the other departments that are supporting the Vegetable Gazette with contributions and would like to encourage others to send in an article next month. The "Insect Pest of the Month" is very popular and hopefully we will have a "Disease of the Month" that covers vegetables and potatoes for each issue. Dr. Orzolek's alternating "Weed of the Month" and "Herbicide of the Month" that is really a great addition to the line-up. I would like to remind Judy Schwank, Extension Agent, Berks County County that she is on deck for an article next month.

As always, the Vegetable Gazette Team encourages your feedback so that we can better serve your needs and address your concerns. The month of April is a busy month

but we still have 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.

Proceedings of the Mid-Atlantic Pumpkin School
Michelle Infante, Agricultural Agent
Rutgers Cooperative Extension of Gloucester County

Back in December I sent out a notice about attending the Mid-Atlantic Pumpkin School. Well the school has come and gone with much success. For those of you who could not attend we are offering the meeting proceedings at $10 per copy. This book will have all of the write-ups from all of the speakers at the conference. Topics include: **Disease Control, New Fungicide Products, Pumpkin Pollination and Fruit Set, Insect Controls, Yield Improvements Through Spacing, Fertilizer and Irrigation, The Costs of Pumpkin Production, Variety Updates, Update From the Wye Research Center in Maryland on Pumpkin Research Including No-Till, Post Harvest Techniques, and Crop Rotations.** We will mail them out after receiving a check from you. If you would like to purchase a copy please send a $10 check made payable to:

N.J. COOPERATIVE EXTENSION, COOK COLLEGE

and mail it to: Pumpkin Proceedings
Rutgers Cooperative Extension of Gloucester County
1200 N. Delsea Drive
Clayton, NJ 08312

Please make sure to include your full mailing address and phone number on the check or on an insert. This fee will cover the cost of the proceedings and postage. If you have any questions please call 609-863-0110. We will send out the proceedings book and a receipt immediately after receiving your check.

1999 Pumpkin Weed Control
Mike Orzolek, Department of Horticulture

Weed management in pumpkin for 1999 should include both cultural and chemical considerations. Cultural considerations would include: choosing a field with minimal weed pressure from the previous year, utilizing plant spacings that optimize early plant canopy development and possible no-tillage. If you are planting a semi-bush or bush type pumpkin variety, consider closer spacings to develop a canopy capable of reducing weed problems. Previous research has shown that at high plant populations with narrow row spacings, fruit size is not affected as much as closer in-row-spacing. Planting into a heavy stand of dead hairy vetch will not only help suppress annual weed emergence, but also provide approximately 80 to 100 lbs/A of nitrogen for the pumpkin crop. One still

might consider the use of a preemergence residual herbicide in a no-till program if weed pressure the previous year was extremely competitive with the crop. If producing conventional tillage or pumpkins on plasticulture, several herbicides may be considered in your weed management program.

1) Command4EC (clomazone) applied at the rate of 10 to 14 oz/A and incorporated immediately after application to a depth no deeper than 0.5 inches. Incorporation depth is very important since too deep incorporation can cause significant crop injury and reduced weed control. Any early chlorophyll inhibition (bleaching of leaves) by Command will be reversed with time without any affect on crop yield or maturity. Command is extremely good at controlling most annual grasses, jimsonweed, velvetleaf, Pennsylvania smartweed, common purslane, and common lambsquarters. Command will not control/suppress pigweed species, carpetweed, morning-glory species or yellow nutsedge. Tank mixing Command with Curbit 3E (ethalfluralin) or Prefar 4EC (bensulide) will pick up most of the broadleaf weeds not controlled by Command. Because FMC plans to phase out the 4EC formulation of Command and replace it with a new 3ME (micro-encapsulated) formulation, carving or Jack-a-Lantern pumpkins will not appear on the 2000 label of Command 3 ME. The Command 3 ME is a much safer material (minimal, if any volatility) and in my estimation a more effective material than the 4EC formulation. Because of the reduction on concentration, the equivalent 4EC rate for Command 3ME would be 14 to 18 oz/A.

2) Prefar 4EC applied at the rate of 5 to 6 qts/A and incorporated to a maximum depth of 2 inches prior to seeding or transplanting pumpkins. If in a no-tillage situation, Prefar could be tank mixed with Command providing that rainfall (minimum of 0.25 inches) occurred within 72 hours after application. Best efficacy with Prefar observed when material was incorporated by moisture. Prefar controls annual grasses and will provide pigweed species and carpetweed suppression.

3) Curbit 3E applied at the rate of 1.0 to 1.5 pts/A preemergence after seeding the pumpkin crop. Curbit will give good control of large crabgrass, fall panicum, carpetweed, common purslane and fair control of barnyardgrass and pigweed species. Most effective control of weeds observed when rainfall (0.25 inch minimum) occurred within 96 hours of application. Curbit must **NOT** be preplant incorporated. Curbit must **NOT** be applied under plastic mulch or tunnels. Curbit must **NOT** be used on transplanted pumpkins. Curbit must **NOT** be used when soils are cold or wet since crop injury could result.

4) Poast 1.5EC (sethoxydim) applied at the rate of 1.0 to 1.5 pts/A with oil concentrate (1 gal per 100 gal water) postemergence to control most annual grasses as well as seedling Johnson grass and quackgrass. Use of oil concentrate under hot or humid conditions may increase the risk of crop injury. A minimum of preharvest interval of 14 days must be observed after application of Poast and no more than 3 pints per acre per year can be applied to pumpkins during the growing season.

5) Gramoxone Extra 2.5SC (paraquat) applied at the rate of 1.6 pts/A as a postemergence directed shielded spray between rows after crop establishment to control emerged weeds. Since Gramoxone is a non-selective contact herbicide, multiple applications may be needed prior to vines running to provide effective weed control.

For any of the herbicides to be effective, the weeds to be controlled must be on the label, their must be water to activate and solubilize the herbicide and application must be

made based on the stage of growth of the weeds. Applying herbicides to tall weeds (greater than two true leaf stage) may be ineffective.

Insect of the Month-Corn Rootworm in Sweet Corn
S. J. Fleischer, Department of Entomology

When considering insect management in sweet corn at planting, my first question is: "Did you rotate?". If you did, you effectively avoid problems from two corn rootworm species. If not, ideally you scouted for rootworm adults in the silking corn last summer, and can base a decision about a soil insecticide according to thresholds. If you are not rotating and did not scout, you should be concerned about corn rootworms and consider a soil insecticide at planting.

There are two species of corn rootworms: the western corn rootworm (WCR) and the northern corn rootworm (NCR). . Both species are native to North America, and were recorded only from the north central states in the early to mid 1800s. The northern corn rootworm reached Pennsylvania in the 1950s, and the western corn rootworm in the 1980s. The WCR looks similar to the striped cucumber beetles, but the stripes are not as straight, and the abdomen is yellow in the WCR, but it is black in the striped cucumber beetle. The NCR is pale green to tan or dull yellow in color. In sweet corn or field corn, the adult beetles feed primarily on pollen and on the silk, and they can also feed on the leaves. In cucurbits, such as pumpkins, melons, etc., the beetles are easily found in the flowers mixing in with the striped cucumber beetle, probably also feeding on pollen. Thus, the adult feeding occurred last summer and fall. The adults of both rootworm species lay their eggs at the base of corn plants in late summer or early autumn. The eggs overwinter in the top 6 inches of soil, and emerge next spring. Egg hatch occurs mostly during June, but extends from late May until early July in Pennsylvania. Larval development requires 4 to 6 weeks. Adult emergence follows for 4 to 6 weeks, with up to 1000 eggs per female being deposited from mid-July, throughout August, and into September.

Newly hatched larvae feed on root hairs and outer root tissue, and older larvae tunnel into roots and can even enter the plant crown. Root tips appear brown and chewed back. The root feeding affects plant uptake of water and nutrients, so the amount of plant damage is influenced by water availability. Vigorous plants can compensate under moist growing conditions by growing new roots faster than they are pruned off, but effective plant compensation may be better in field corn than sweet corn varieties. Although this larval feeding is typically the most significant damage by rootworms, later in the season you need to consider damage by adults feeding on silks.

The larvae that emerge in the spring will cause significant damage to the roots of corn unless one of two control measures are taken: (1) the field is rotated out of corn or cucurbits; or (2) a soil insecticide is applied at planting if corn or cucurbits is planted. The most effective option is to rotate. Only a single year rotation is required, and only a short distance of a few feet will be sufficient. That is because the newly hatched larvae must find corn roots to feed on within a few feet of where they hatch. When corn is rotated to legumes, the great majority of the larvae will starve within 1 year. Rotation to other grasses (wheat, rye, barley, oats or sorghum) is also effective because the larvae do not survive well on these other grasses. Even a 2-year rotation on larger fields is

effective in most years, because it takes some time for the rootworm populations to immigrate in and build up within a continuous corn field. Large rates of immigration could compromise a 2-year rotation, so scouting those fields in the fall is recommended. If you are rotating annually, it is not necessary to scout for rootworm adults ñ you can safely assume that the rotation is effective. There is an interesting case of a population that has adapted to a corn-soybean rotation by adults from one crop adapting to the other, but this concern is confined to the midwest.

If rotation is not practiced, insecticide needs to be applied when the adult population exceeds threshold. The threshold is determined last fall, by estimating the number of adults per plant. On field corn, the threshold varies from one to three beetles per plant. Sweet corn is more susceptible to damage, because of the smaller root system, and therefore should use the lower threshold. Insecticides can be applied at planting or at cultivation. Moving the time of application close to the time of rootworm egg hatch is the most effective, which occurs from late May until early July. Several of the insecticides listed for wireworms or grubs in the Commercial Vegetable Guide are also labeled for corn rootworms in sweet corn. Examples include Aztec, Force, Fortress (which requires SmartBox technology), and Lorsban 15G. Others listed for wireworm or grub control may also have a rootworm label in sweet corn. Check the label and follow directions on the label. Insecticides in continuous corn do protect the roots, but are not as effective as rotation ñ you can get rootworm population growth in unprotected areas of the soil even when soil insecticides are applied.

In Pennsylvania, rootworms are typically the most significant pest that would require a soil insecticide at planting in sweet corn. However, wireworms, grubs, or cutworms sometimes also cause problems with stand establishment. Wireworms are larvae of click beetles, and grubs are larvae of scarab beetles (June beetle, Japanese beetle, etc.). Problems from these are usually associated with weedy fields or fields recently moved into production from sod, forage, or pasture. Cutworms are larvae of night-flying moths. Weedy or minimum till fields are especially attractive for egg-laying.

Reference: Calvin, D. Western and northern corn rootworm management in Pennsylvania. Special Circular 333. Penn State Extension Publication.

EPA Grants Section 18 for Reflex 2LC

M.D. Orzolek, Department of Horticulture

The Environmental Protection Agency has granted a Section 18 to the Pennsylvania Department of Agriculture for the use of Reflex 2LC (fomesafen) to control broadleaf weeds in snap beans. The Section 18 on Reflex is subject to the following conditions and restrictions.

A maximum of 3,000 acres of snap beans may be treated under this exemption. A maximum of one application may be made at the rate of 1.0 to 1.5 pts/A product or 0.25 to 0.375 lb a.i./A. Total use of Reflex may not exceed 1.5 pt/A product per year. A 30-day pre-harvest interval after application must be observed. Reflex may not be applied on the same acreage more than once every two years. Livestock may not be grazed in treated fields. The Reflex exemption expires on August 30, 1999.

Update--The Center for Plasticulture
Mike Orzolek and Bill Lamont, Department of Horticulture

With the onset of Spring, the level of activity at the Center for Plasticulture has really picked up. We received delivery of the final 12 high tunnels (actually 15) from New Hampshire on March 12th. The additional three tunnels are destined for use by the following agents Tim Elkner, Steve Bogash and Eric Oesterling and extension colleagues in their respective regions, that is part of the extension programming effort of the Center for Plasticulture. At Horticulture Farm the end walls are being constructed on the 12 high tunnel frames that were constructed last fall as part of the In-Service Training Program Part I. The second In-Service Training Program is scheduled for April 28-29 at the Horticulture Farm. This will involved covering the tunnels and erecting some end walls. Eight of the first 12 high tunnels will be engaged in a fertigation of tomato project that is being funded by the Pennsylvania Vegetable Marketing and Research Program. In addition to the high tunnels, the Center will continue work with the very thin guage X-Tend degradable plastic film from Australia used with the SAMCO planter from Ireland for early sweet corn production. Three varieties of sweet corn, as well as some grain corn for feed, will be planted sometime between April 15 and 25th at Rock Springs. Several black plastic film formulations from Ampacet will be evaluated using cantaloupe as the test crop as well as other colored film mulches with pepper/tomato as the test crop. After the field plots become established and the high tunnels are completed, please feel free to stop by the Horticulture Farm and observe the activity of the Center for Plasticulture.

Potato Section

Potato Musings
Bill Lamont, Department of Horticulture

Factoid: Did you know that potatoes have been cultivated for 7,000 years.

I bet that some of the practices that we use today were utilized way back then. In the potato section of this issue of the Vegetable Gazette it is appropriate that we look at Seed Piece Management and Treatment. That old adage that “it all begins with good seed” is certainly true and is essential to starting on the road toward a good potato crop in 1999.

Proposed Activities for the 1999 Potato Program
Bill Lamont and Terry Simpson, Department of Horticulture

On-Farm Activities out in the State

Cambria/Somerset County-- Ron Hostetler and Bob Brown, County Agents
Activity: Expanded Snack Food Association Test
Tablestock Potato Variety Test
Location: Cambria County

Lehigh/Schuylkill County-- Bob Leiby and George Perry, County Agents
Activity: Mixed Potato Variety Test (Tablestock, Chip and Specialty Potatoes)
Location: Lehigh County

Schuylkill County-- George Perry, County Agent
Activity: Use of Fertigation and Drip Irrigation for Production of Potatoes
Location: Schuylkill County

Washington County-- Eric Oesterling, Westmoreland County Agent
Activity: Utilizing Plastic Mulch, Drip Irrigation and Fumigation for the Production of Tablestock Varieties for the Retail Market
Location: Washington County

York County-- John Rowehl, County Agent
Activity: Utilizing Plastic Mulch, Drip Irrigation and Fertigation for the Production of Potatoes for the Retail Market
Location: York County

Horticulture Research Farm
Rock Springs

NE-184 Regional Project "Development of New Potato Clones and Varieties in the Northeast" Trial
Tablestock Potato Variety Test--Reds
Tablestock Potato Variety Test--Whites
Tablestock Potato Variety Test--Yellow Flesh
Early Potato Varieties for the Tablestock and Chip Market Test
Specialty Potato Variety Test
Production of Potatoes Using Plastic Mulches, Drip Irrigation and Row Covers

Schuylkill County-1998 Potato Evaluation Test Results
Bill Lamont, Department of Horticulture
George Perry, Extension Agent Schuylkill County

The test was conducted at Glen Hetherington's farm. The previous crop was hay and 1,400 lbs of 14-5-9-2 was applied per acre. The test was planted on June 5 at 34" between rows and 8 inches between seed. The test was harvested October 12, graded November 11, specific gravity measured on December 7, 1998 and chipped on January 7, 1999.

Table 1. Schuylkill County - Yield and Size Distribution

Variety	Yield (cwt/A)		Size Distribution in Percent								
	Total	Saleable Yield	No. 1	1 1/2 - 1 7/8"	1 7/8 - 2 1/2"	2 1/2 - 3 1/4"	3 1/4 - 4"	Over 4"	% P.O.	P.O. Cwt/A	Comment
Atlantic	307.2	273.8	89	7	31	46	13	0	3	11	DE
Snowden	303.2	259.5	86	11	40	46	0	0	3	10	DE
Pike	323.8	274.5	85	12	42	43	0	0	4	11	Very bad DE
Andover	260.9	234.5	90	6	22	64	4	0	3	7	DE
Reba	347.3	310.5	89	6	22	61	6	0	3	10	DE
Norvalley	355.8	289.6	81	10	26	49	6	0	9	31	-------
NDO1496-1	359.8	293.3	82	6	20	50	11	2	10	36	F
ND2676-10	233.4	197.3	85	11	38	46	0	0	4	10	--------
NY102	303.2	265.9	88	10	42	46	0	0	2	7	--------
NY103	273.8	238.9	87	7	28	59	2	0	6	15	---------
AF1775-2	421.2	382.2	91	3	18	64	9	0	6	26	Little F
NY112	434.0	382.2	88	4	21	66	3	0	3	29	---------
AF1668-60	227.2	193.7	85	13	36	50	0	0	2	4	---------
NYE11-45	330.4	287.6	87	6	27	53	7	0	7	22	---------

Table 2. Schuylkill County - Tuber Characteristics

Variety	Color	Shape		Appearance		Texture	Eye	Internal Brown	H
		at grading	after grading	at grading	after grading				
Atlantic	brown	rd-obl-flat	round-flat	good	good	netted	intermediate	0	
Snowden	tan	round	round	fair+	good	slight-net	deep	0	
Pike	tan	round-lflat	round-lflat	fair+	fair+	slight-net	inter-deep	0	
Andover	tan	round-lfalt	round	v good	good	slight-net	inter-shallow	0	
Reba	buff	round-flat	rd-obl-flat	good	good	mod-smooth	deep	0	
Norvalley	buff	rd-obl-flat	rd-oblong	good	good	mod-smooth	inter-shallow	0	
NDO1496-1	tan	rd-obl-flat	round-flat	fair+	fair+	mod-smooth	intermediate	0	
ND2676-10	buff	round-flat	round	good	good	mod-smooth	inter-shallow	0	
NY102	buff	round-flat	round	good	good	slight-net	intermediate	0	
NY103	tan	round-flat	round	v good	v good	slight-net	inter-shallow	0	
AF1775-2	buff	rd-obl-vflat	rd-obl-flat	good	good	mod-smooth	inter-shallow	0	
NY112	brown	round-flat	round-flat	good	good	netted	inter-shallow	0	
AF1668-60	tan	rd-obl-flat	rond	good	good	slight-net	inter-shallow	0	
NYE11-45	white	rd-obl-flat	rd-obl-flat	v good	v good	smooth	intermediate	0	

Table 3. Schuylkill County - Specific Gravity and Chip Color

Variety	Specific Gravity	Chip Color	
		45˚ F	55˚ F

Atlantic	1.086	3.0 fair	1.5 v good
Snowden	1.087	2.2 good	1.5 v good
Pike	1,083	2.2 good	1.5 v good
Andover	1.081	1.5 v good	1.5 v good
Reba	1.072	2.0 good	2.0 good
Norvalley	1.075	2.0 good	1.5 v good
NDO1496-1	1.088	2.0 good	1.7 v good
ND2676-10	1.077	1.5 v good	1.5 v good
NY102	1.084	1.5 v good	1.5 v good
NY103	1.069	2.2 good	1.7 good
AF1775-2	1.083	fair- not good	2.5 fair
NY112	1.075	3.0 fair	1.5 v good
AF1668-60	1.076	1.5 v good	1.5 v good
NYE11-45	1.065	2.7 fair+	2.0 good

Seed Piece Management and Treatment

Bill Lamont, Department of Horticulture

(This article was written by Dr. Nora Olsen, Univ. of Idaho and published in their newsletter Spudvine)

It is difficult to raise a good potato crop when you begin with poor emergence so the best way to start the new season is with a vigorous and uniform stand.

Slowly emerging potato plants have a greater chance of being infected with Rhizoctonia stem canker and blackleg. A crop that does not emerge uniformly is also more difficult to manage, and some practices employed may be less efficient and effective. For instance, if you have varying sizes of plants due to an erratic emergence, timing fungicides applications based on tuber size is more difficult to determine.

You most likely took time to purchase quality certified seed so you should do all you can to maintain this same quality through planting. There are many places during transporting, unloading, cutting, treating, and loading where seed can be bruised and damaged allowing for the infection of such diseases as Fusarium dry rot. Minimize seed damage during handling by keeping drops to a minimum, using good chain padding, and keeping conveyors filled to capacity. The only wounds you want on the seed are cuts that turn tubers into seed pieces during the cutting operation.

Planting good seed in poor field conditions can be just a detrimental as planting poor quality seed. Cultural practices you need to consider at planting include soil temperature and moisture and seed piece planting depth and spacing. Ideally, it is better to plant in soil with temperatures close to 50°F, but avoid planting when soil temperatures are less than 45°F. At warmer temperatures, emergence and wound healing will be faster. Good soil mositure at planting will aid in stand establishment, but remember, the soft rot organism thrives in wet soil conditions so avoid excessive soil moisture at planting. If possible, do not apply irrigation water until after plants have emerged.

It is important to remember that freshly cut seed pieces must wound heal in the ground after planting. Ideal would healing conditions require 50 to 55°F temperatures, adequate moisture, and oxygen. Saturated soils may impede wound healing because of less than adequate oxygen. The first step in wound healing process is forming of a suberin layer (suberization) followed by a wound cork formation. After suberization is complete, in

about 2 to 5 days depending on conditions and variety, soft rot can no longer infect the cut surface. Fusarium dry rot can still invade a cut surface until a wound cork layer has been formed, which takes 7 to 14 days. Unfortunately, if Fusarium dry rot penetrates the suberin layer, soft rot may follow closely behind.

Check your planters to make sure you are not planting your seed pieces too deep, which may delay emergence. Planting seed pieces deeper than six inches may also decrease yield in some varieties. Frequently check planting depth to account for changes in soil conditions. Remember also to check your seed piece placement to be sure you are planting at the desired spacing.

Seed piece treatments are used to prevent healthy seed pieces from becoming infected, not to cure the infected seed. A seed piece treatment minimizes the spread of late blight between seed pieces during the cutting operation, but does not provide protection against late blight spreading in the field after planting.

Benefits of seed piece treatments can only be realized if used in conjunction with good seed management practices. One important aspect of seed piece treatments is their ability to aid in keeping the seed piece intact to provide energy to an emerged plant as long as possible. A recent study in Idaho showed that the seed pieces were still contributing to U.S. No.1 yield until some time after plants were about 8 inches tall. Seed piece size is also important in supplying adequate food reserve material to the emerging plant. Make sure to plant 1.5 to 2.5 oz. seed pieces.

There are numerous seed piece treatments available. Decide which one is best suited for you depending on which problem you may be trying to minimize such as, Rhizoctonia, silver scurf, late blight, or Fusarium dry rot.

Vine Killing Potatoes with Diquat or Reglone

Mike Orzolek, Department of Horticulture

Vine killing experiments were conducted last year at the Horticulture Farm, Rock Springs on Snowden and NY 101. The materials used in the study were 'Diquat' the standard vine desiccant and 'Reglone' a new formulation of Diquat. Three rates of each material were used in the study – 1.0, 1.5 and 2.0 pts/A. In general, the higher rate of Diquat or Reglone, the more complete the vine kill (minimum green tissue observed in the field). Reglone applications resulted in a quicker burndown response for both potato varieties compared to Diquat applications at all concentrations applied. In fact, burndown ratings for Reglone were generally higher at the same concentrations of Diquat. In addition, better weed desiccation was obtained with Reglone applications. Samples of Snowden were put in storage after harvest for later evaluation of chip quality.

Chip samples were evaluated on March 22, 1999 at the Department of Horticulture's chip lab. Samples were taken from either 45°F storage or moved to 55°F storage prior to chipping. When potato samples were chipped from 45°F, only the high Diquat treatment (2 pts/A) and low Reglone (1 pt/A) exhibited moderate vascular rings on the chips. When potato samples were chipped from 55°F, only the 1.5 pt/A rate of Diquat and 1.5 and 2.0 pt/A rate of Reglone exhibited only minor vascular rings on the chips. My conclusion would be that in general, the application of desiccants to kill potato vines prior to harvest has no detrimental affect on the quality of potato chips.

1999 Growing Season-Planning for Potato Insect Control - Eastern Field Wireworm
Zane Smilowitz, Department of Entomology

Background

The eastern field wireworm belongs to a group of very destructive root feeding. Generally, wireworm is most destructive when potatoes are planted in fields previously in sod or pasture for several years. However, they can cause damage in non-sod fields as well. The damage inflicted by wireworm can be very costly, because they are direct pests, feed on the potato tuber producing shallow to deep holes. In addition their feeding increases the chances of pathogens or other insects entering the feeding sites. These larvae can take from 3 – 5 years to complete their development and there may be a range of ages and sizes found in the field.

Broadcasting a granular insecticide on the field and tilling it in the top 4-6 inches generally controls wireworm. The control should not be applied until the soil temperature is **55-60** degrees. These insects burrow deep into the soil when the temperature is depressed in the winter or elevated in the summer. As the soil warms in the spring wireworm come closer to the surface. If controls are applied too early they will be ineffective, since wireworm will be deep in the soil below the treatment material

Detection of wireworm

Bait Station Method - Mix a cup each of untreated wheat and shelled corn for each acre being sampled, and bury the bait about four inches deep. Cover the bait area with black plastic and mark the site with a flag or stake. Dig up the bait station in 10 – 14 and count the wireworm. Use this method in the fall or about 2-3 weeks before planting.

Soil sample method – Soil temperature needs to be between 45 – 85 degrees at a depth of 6" for this method to work effectively. Take 20 soil samples 6" in diameter and 12" deep per acre sift soil and count wireworm.

Materials registered for wireworm:
Preplant: diazinon, Di-Syston, Dyfonate II, Mocap.
Planting application: Di-Syston, Mocap and Thimet.
Note: Furadan 4F 24 (c) for at plant label will not be renewed for potatoes in 1999.

Upcoming Meetings
Bill Lamont, Department of Horticulture

Local

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

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.