

PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

JUNE 4, 2003



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Vegetable of the Week: Asparagus

Michelle Infante-Casella, Gloucester County Agricultural Agent

Asparagus (*Asparagus officinalis*) is a member of the plant family Liliaceae. Asparagus originated in areas bordering the Mediterranean Sea and was considered a delicacy by the ancient Greeks. In addition to its popularity as a food in early times, asparagus was once believed to be effective in preventing bee stings, heart trouble, dropsy, and toothaches. In 1949, scientists found that asparagus contained rutin, a substance that strengthens capillary walls, thereby preventing hemorrhaging. The content of rutin in edible young spears, however, is not high, tending to increase with maturity of canes in late summer. Nutritionally, asparagus is a good source of vitamin A and C and contains a good supply of folate (folic acid). Asparagus also contains the phytochemical glutathione, which has antioxidant and anticarcinogenic properties. Additionally, it is low in calories; 5 spears contain about 25 calories.

Top producers in order of volume in the U.S. include: California, Washington, Illinois, Michigan, and New Jersey. In our state asparagus is usually shipped in 20 pound cartons and bunched. In recent years buyers have preferred 1 pound bunches over the larger bunches that were packed in the past. Also, in recent years PLU codes have been added to rubber bands or ties that are used to bunch asparagus. The PLU for small green spear bunches has been designated 4080 with 4521 used for large green spears. In California six grades are used according to diameter when bunching: small – 3/16" and larger; standard – 5/16" or larger; large – 7/16" or larger; extra large – 10/16" or larger; jumbo – 13/16" or larger; and colossal: 1" diameter or larger.

When handling asparagus for storage or shipping, temperatures and humidity are important for extending shelf life. After harvest, asparagus deteriorates rapidly when low temperatures are not maintained. At room temperature spears develop woody tissue and lose the sugar content that provides its characteristic flavor. Temperatures should be between 37-41°F with relative humidity at 95-100%. Typical shelf life for asparagus is 10-21 days if kept under the proper environment. Asparagus has a high sensitivity to freezing injury; therefore never let the temperature go below 33°F.

For production information for asparagus, see pages F1-F4 of the *2003 Commercial Vegetable Production Recommendations for New Jersey*. □

Briefs

Richard VanVranken, Atlantic County Agricultural Agent

❖ Continued cloudy, wet weather creates problems for plants held in greenhouses

Gray Mold caused by the fungus *Botrytis* is rampant in greenhouses where plants are being held long past their scheduled transplanting dates, especially those grown on or in the ground. This fungus is favored by poor air circulation/drainage. High humidity and overcast days make the conditions worse, and few fungicides are effective on this pest. Plants should be spread out as much as possible and raised off the floor. Extra fans (not just the exhaust fans) inside the greenhouse to circulate the air can help reduce gray mold. Fungicides labeled for gray mold control include Botran (3 tbsp 75WP/gal), Ronilan (1.5 tsp 50DF or OLF/gal), and Rovral (2 tbsp 50WP/gal).

❖ NJ to host 2004 Mid-Atlantic Direct Marketing Conference & Trade Show

New Jersey farm marketers will be hosting the 2004 Mid-Atlantic Direct Marketing Conference and Trade Show, Feb. 22-25, 2004 at the Clarion Hotel in Cherry Hill. The conference includes international speakers on agricultural marketing issues, several breakout sessions for more detailed discussions, tours of local farm markets, a 50 +/- vendor trade show, and hands-on workshops. New this time will be an off-site workshop at a nationally recognized farm market for an in-depth look at all aspects and enterprises of a highly successful operation. From this you can see that the five-state planning committee has initiated the planning process, but is still open for input on topics and potential speakers. If you have ideas for either that you would like to see at this conference, contact your County Agricultural Agent, your NJ Farmers' Direct Marketing Association director, or Rick VanVranken, RCE Atlantic County at 609-625-0056 or vanvranken@aesop.rutgers.edu, who is coordinating planning for the event. □

Pest Notes

Gerald M. Ghidui, Ph.D., Specialist in Vegetable Entomology

✓ **General:** Syngenta Crop Protection, Inc. will voluntarily cancel the registration for all of their products containing diazinon. These include diazinon 50W, diazinon 14G and diazinon AG500.

All manufacture and retail sale of diazinon for *indoor* use has ceased, although product in the hands of consumers can be used according to the label. All labeling, manufacture and shipment of diazinon for *outdoor-nonagricultural* use will cease by June 30, 2003, and all stock will not be sold after August 31, 2003; existing supplies in the hands of consumers can be used according to the label.

For *outdoor agricultural* uses, many labels will be cancelled, including celery, cucumbers, dandelions, parsley, parsnips, peppers, potatoes, squash (all types), Swiss chard and turnip tops/roots.

✓ **Lettuce (leaf types):** The current cool, wet weather conditions, with a few warm days in between, are ideal for **aphid** development and population expansion. The activity of the natural enemies (predators, parasites) is slowed because of the weather conditions, but the aphid population continues to expand. Admire/Provado, Assail, dimethoate, and Fulfill are all labeled for aphid management on leaf lettuce. Consult label for all rates and restrictions, including days-to-harvest from last spray, which is important when scheduling a harvest.

✓ **Pepper: European corn borer** moths are still being caught in blacklight traps, but numbers of trapped moths are lower than normal for this time of the year. It is probable that the first generation moth activity will remain low, and not be a factor in vegetables or potatoes this year. However, second generation moth populations are not dependent on first generation levels, and the borer activity will likely return to normal before August.

✓ **Potato: Colorado potato beetle** activity (feeding, mating, and oviposition) is reduced during the cool, wet weather conditions. Although beetles are still present in the field (usually at the base of the plants, or under the top 1-2" of soil), little damage will be noted on the plants. Beetles may still cause damage as air temperature increases. At-plant soil insecticides will likely become ineffective in protecting the plant within the next 1-2 weeks because of the excessive soil moisture and rainfall and also because of the time passed since planting (at-plant applications last only 60-80 days). As temperatures warm, monitor closely for both Colorado potato beetle eggmass and larval population buildup as well as **potato leafhopper** adults and nymphs. Potato leafhoppers are already in the field in low numbers, and the population may suddenly increase to damaging levels if the weather conditions are favorable.

For the **European corn borer**, moth activity is still lower than normal for this time of year. We have had only 488 degree days thus far, and last year at this same time we had 791 degree days! For a European corn borer management program on potatoes, growers should apply the first spray within 3-4 days after 700 degree days accumulation (normally about the end of May). Predictions are that we reach that point about 13 or 14 June, based on the AgMaster weather predictor. However, corn borer activity will likely have stopped by that date, so sprays will probably not be needed at all this year. Monitor the moth activity in the blacklight or pheromone traps during the next two weeks to determine if activity levels are still low. □

IPM Update

Kristian Holmstrom, Program Associate in Vegetable IPM

Sweet Corn

Adult **European corn borer (ECB)** activity continues to be extremely low due to cool conditions. The focus of activity continues to be in the Cumberland and Salem County border region (see ECB map). This pattern really has not changed for the past 3-4 weeks. Whether or not significant egg laying and damage results from this depressed adult generation remains to be seen. Sweet corn plantings in the whorl or later stages should be scouted for ECB injury, particularly if they are in the areas where adult activity is present. Look at 50 plants (5 consecutive plants in 10 random locations) in the planting and determine the number of plants exhibiting the characteristic “shot-hole” type feeding. Consider treating when 12% or more plants in the whorl stage show signs of this feeding. Be careful not to mistake older feeding from **billbugs** for ECB injury. The billbug causes larger holes that often are in a “line” across the leaf surface. This pattern results from feeding when the plant was in the seedling stage. The billbug is not considered an economic pest of sweet corn in our area.

The highest average nightly **ECB** blacklight trap catches are:

Bayside	10	Jones Island	3	Elmer	2
Pole Tavern	6	Mullica Hill	3	Woodstown	2
Cohansey	4	Cedarville	2	Mannington	1
Shirley	4	Centerton	2	New Egypt	1

As yet, only scattered, light catches of **corn earworm (CEW)** have been made in New Jersey. Activity is too low to warrant a population map thus far. This indicates a low level of overwintering by this pest. A few more may emerge as the weather warms, but it is not likely that CEW will be active at economic levels until later in the season.

Seedling stage sweet corn is being damaged by **slugs** in some areas. This feeding looks like ragged, irregular holes on the leaves. Often the slime trails may be seen on the leaves. The slugs hide under stones, debris and soil clods during the day. Drier conditions should put a stop to this feeding.

The highest average nightly **CEW** blacklight trap catches are:

Cedarville	2	Millstone	1	Sykesville	1
Cranbury	1	Mullica Hill	1		
Hammonton	1	New Egypt	1		

Peppers

Recently, a field of bell peppers in Morris County was found to have a **black cutworm** infestation. The cutworms were feeding at night, causing significant damage to foliage on the new transplants. If this type of

feeding is observed, check for holes in the soil surface where the plants have been set in the plastic on the bed. Often, cutworms may be dug up from these shallow tunnels near the base of the plant. The black cutworm is a drab, gray-brown caterpillar. If this feeding occurs on more than a few plants, an insecticide application to the soil at the base of the plants may be advisable.

Peppers in areas where there is elevated **ECB** activity may be at risk for larval damage. In this case, larvae resulting from eggs laid on the recent transplants will have no place to go but into the central stem. If this happens, the top of the plant can die, delaying growth or killing the plant outright. Check 5 consecutive plants in 10 random locations for ECB eggmasses. ECB eggs look like flat, waxy cells on the underside of leaves. They are often described as looking like fish scales. If 2 or more are found in the 50 plant sample, consider treating to prevent plant injury.

Greens and Cole Crops

Caterpillar pests of these crops have not really gotten going yet due to the cold, inclement weather. Any time the weather turns a bit warmer, however, **crucifer flea beetles** attack these crops. This is particularly true of crops like mustard, arrugula, and napa cabbage. These types of crops that have more tender foliage and higher isothiocyanate (IT) content (sharper flavored) are more attractive to the flea beetles than are regular cabbage, broccoli and cauliflower. Under warm, sunny conditions however, all of these crops will be attacked. They are most at risk when newly emerged, or recently transplanted. Look at 5 consecutive plants in 10 random locations. If flea beetles are present on more than half of the plants and obvious damage is occurring, consider treating.

Potatoes

Within the past week, a few **potato leaf hoppers (PLH)** were spotted in Cumberland County. Activity is most likely low now, but will increase with warmer weather. Check plants for PLH weekly, and consider treating if nymphs begin to appear in the field. Don't wait for the discoloration and necrosis (hopper burn) to occur before treating, as economic damage may have already happened by the time this shows up on some varieties.

Cucurbit Crops

Be on the lookout for **cucumber beetles**. This pest will be active on warmer days. If no systemic insecticide has been used at planting, consider an insecticide application if cucumber beetles are present at more than one site in a 10 site (5 plants each) sample in muskmelons or cucumbers. In pumpkins and winter squash, the threshold is 2 beetles at 6 of 10 sites. This is designed to prevent the transmission of **bacterial wilt** to the plants.

SEE ECB DISTRIBUTION MAP ON PAGE 4

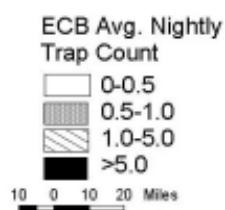
Strawberry Update

Peter R. Probasco, Agricultural Agent

Chandler strawberries have been larger this year but with more “fasciation” or multiple tips due to cold weather from last fall. These odd shaped fruits are still marketable, but are more common on the Chandler variety. The cockscomb shape berries are due to cold temperatures last fall on the fruit buds. There is not much a grower can do except plant in wind-protected areas and cover the fields with a good winter row cover. Fungicide sprays have been working well this year, considering all the rain, and a 5 day schedule will be needed until it dries out. □

ECB DISTRIBUTION MAP FROM PAGE 3

Distribution of Adult European Corn Borer for the Week Ending June 04, 2003



Data collected and processed by: Kris Holmstrom, Marilyn Hughes
Rutgers Cooperative Extension & Center for Remote Sensing

High Soil Moisture Effects on Vegetable Crops

Michelle Infante-Casella, Gloucester County Agricultural Agent

Excessive soil moisture generally occurs much less often than drought in the field. Not this year! Poor drainage in fields and flooding of planted fields cause saturated soil conditions that increase the incidence of disease in stems and root. Plants show lack of vigor, may wilt, and have leaves that are pale green or yellowish green. Flooded portions of fields may cause permanent wilting and death of small plants within 2-3 days. Fibrous roots decay quickly under this condition mainly due to lack of oxygen to the roots and later when disease infection occurs. Oxygen deprivation causes stress, asphyxiation and collapse of many root cells. Damaged roots also may allow for substances to enter the plant that may be toxic, such as metals or other harmful compounds. Plants that are exposed to too much water may also suddenly drop lower leaves and develop brown or black wet patches on the leaves or stems as a result of disease organisms that thrive in wet conditions.

Other damage that may look like disease symptoms may actually be edema or sometimes called oedema. Edema is characterized by a swelling of tissue in the plant and is like bloating from too much water. Edema can appear as numerous small bumps on lower sides of leaves, stems, or leaf edges. The “bumps” are small masses of cells that divide, expand, and break out of the normal leaf surface and at first form greenish-white swellings or galls. Later, the exposed surface of the swelling becomes rusty colored and has a corky texture on some plants. The tissue eventually dies out and leaves necrotic areas on leaf tissue or stems. On cabbage, bumps or pimples will form on top of heads.

Many symptoms we are seeing in fields at this time are due to excessive soil moisture. When rain is this heavy and frequent there isn't much that can be done. When possible, do what is necessary to encourage air into the soil. In all practicality the only way to accomplish this is through cultivation. Some growers have tried injecting air into drip irrigation systems during the growing season when irrigating, to encourage oxygen to the roots with some success. However, irrigation is not needed at this time. Hope for drier weather and *SUN*. □

Farm Safety Briefs

Raymond J. Samulis, Burlington County Agricultural Agent

Farm Safety - Money in Your Pocket!

As with many long-term programs like farm safety, it is sometimes difficult to determine exactly how much progress occurs in making farming safer. While it is easy to see the positive impact fewer accidents in your operation can have in human terms, seeing it from a financial perspective is harder to do. Cornell Cooperative Extension has just reported on a long-term training program entitled AHAT or Agricultural Hazard Abatement and Training. The program had many parts to it including farm safety audits, training meetings, and follow up evaluations. More than 575 farm employees participated in the training portion of the program and attended regularly scheduled safety sessions. When all was said and done, New York farmers averaged a 27% decrease in their workman's compensation claims as a result of this program.

The study also showed that as a result of the training program, 80% of the Power Take Off shafts were not properly fixed or contained the necessary shielding devices. Farmers who participated in the program received a 10% rebate on their workman's compensation premiums which saved the average farmer \$1,089. It's easier to see the benefits of effective farm safety when you can show dollars in the farmer's pocket. With New Jersey being the "king" of insurance premiums of all different types, a program such as New York's makes sense both figuratively and literally.

Power Take-Off Dangers

Power Take-Offs (PTO) are an important and necessary piece of equipment on modern farm machinery. Unfortunately, in many instances, the protective covering is damaged or worse yet, totally removed. Sometimes this situation is due to damage, other times it is the result of intentionally disconnecting it to allegedly save time and make the implements easier to attach. These protective devices were placed on the tractor for a definite purpose, and not simply because of some obscure law that has nothing to do with everyday farming.

On outward appearance, the shafts turn rather slowly at 540 rpm's compared to the 20,000 or more rpm's that a jet turbine or even a turbo tractor turns. But with a little calculation, even the slow 540 rpm's translates to 13.1 feet per second. Coupled with the tremendous torque behind the shaft, you can easily see why many PTO accidents cause serious injury, and oftentimes literally rip the clothes off a person. In the latter case it is actually better to have thin, flimsy clothing, rather than durable fabric like denim, which does not tear easily. I once heard a heart-wrenching story from a farm wife in upstate New York, who had to use a butcher knife to cut her husband out he was so entangled. Since PTO's are a needed item on the farm, they are, most likely, here to stay.

Let's look at some ways we can safely use PTO equipment. Be sure to turn off PTO shafts when you dismount the tractor. This is common sense, but sometimes not followed. Make sure that all safety decals and shields are in place. Do not wear loose clothing, which can easily be entangled in the shaft. Be careful not to step over moving shafts, rather, walk around the tractor. Keep children away from PTO's and other dangerous farm equipment. Lastly, it is important to make sure that any attached equipment or irrigation pumps be properly aligned at the same

SEE FARM SAFETY ON PAGE 6

Gourmet Greens Tasting!

A Public Event at Rutgers Snyder Research Farm

June 18, 2002

5:30 PM until dusk (rain or shine)

The Melda C. Snyder Teaching Garden

**140 Locust Grove Road
Pittstown, NJ (Hunterdon County)**

Growers - come and participate and observe people's preferences in this unique opportunity to sample a wide variety of **gourmet salad greens** - everything from the oldest heirloom varieties to the spectacular new showy lettuces and the "hot" new mesclun mixes. Rutgers Cooperative Extension experts will be there to teach participants how to grow "gourmet greens" and will also explain techniques that they have developed to maximize tomato yields.

You can also take an escorted hayride tour of the farm and learn all about the latest in current Rutgers research projects.

There will also be opportunities to see and learn about the latest in drought tolerant turfgrass varieties developed by Rutgers scientists.

Cooperative Extension faculty and staff will be there to answer questions and there will be drawings for door prizes.

Admission is free but a \$3.00 donation is suggested to help cover the costs of the program.

Call (908) 713-8980 to register for this event.

Snyder Research and Extension Farm is located 1.5 miles south of Pittstown, NJ at the intersection of Locust Grove Road and Route 615 (Pittstown Road). □

Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged much below normal. Extremes were 82 degrees at Hammonton, on the 31st and 40 degrees at Glassboro on the 2nd. Weekly rainfall averaged 2.69 inches north, 2.49 inches central, and 1.42 inches south. The heaviest 24 hour total reported was 2.30 inches at Canoe Brook on the 31st to 1st. Estimated soil moisture, in percent of field capacity, this past week averaged 99 percent north, 98 percent central and 87 percent south. Four inch soil temperatures averaged 59 degrees north, 60 degrees central and 59 degrees south.

Weather Summary for the Week Ending 8 am Monday 6/ 2/ 3										
WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	missing									
CANOE BROOK	4.00	14.80	1.97	79	47	62.	-2	386	51	99
CHARLOTTEBURG	missing									
FLEMINGTON	2.49	13.34	1.19	78	47	60.	-5	354	1	100
LONG VALLEY	2.18	11.93	-1.16	72	42	56.	-6	193	-80	100
NEWTON	2.10	10.43	-.75	79	48	59.	-4	304	26	100
FREEHOLD	1.60	11.79	-.32	79	45	61.	-5	406	-13	100
LONG BRANCH	3.01	13.78	1.31	76	48	59.	-6	303	-67	100
NEW BRUNSWICK	2.79	12.33	.40	81	46	60.	-6	366	-85	100
TOMS RIVER	2.56	11.29	-.78	81	50	61.	-3	369	-19	100
TRENTON	missing									
CAPE MAY COURT HOUSE	1.09	10.33	-.29	77	47	59.	-7	323	-118	81
DOWNSTOWN	2.38	11.35	.47	79	47	60.	-7	420	-89	100
GLASSBORO	1.63	12.04	.43	80	40	60.	-7	467	-23	100
HAMMONTON	1.98	10.07	-1.23	82	49	61.	-6	440	-42	100
POMONA	1.57	9.86	-.63	80	46	60.	-6	353	-63	99
SEABROOK	.82	11.39	1.35	80	47	60.	-7	495	-19	96
ATLANTIC CITY MARINA	.48	7.52	-2.41	80	50	59.	-6	323	-71	59
SOUTH HARRISON	2.10	12.07	1.30	79	48	61	NA	477	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW										
Last Week	112	(Ending 5/26/03)								
This Week	142	(Ending 6/2/03)								

FARM SAFETY FROM PAGE 5

angle as the PTO shaft.

Remember, hazardous equipment can be used safely when used with the proper safety precautions.

Farm Safety on RCE Web

Check out Rutgers Cooperative Extension's new Farm Safety Web Site at <http://www.rce.rutgers.edu/farmsafety/>. Available on the site is information on events and training; publications, including factsheets and newsletters; and web resources with links to other information on safety and worker protection. Some of these resources are provided in English as well as Spanish since English is a second language for such a high percentage of New Jersey's agricultural workers. □

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