Vegetables

The Food Chain - Ed Kee, Extension Vegetable Crops Specialist; kee@udel.edu

Our economy is an amazing phenomenon, largely consumer driven. The total value of all retail trade, that is everything from gas to cars to clothes to electronics, adds up to $3.78 trillion. Food based retailing accounts for 25.5% of this value. Each farmer is at the beginning of the food production, processing, distribution, and marketing chain. Each consumer is at the receiving end of the chain. Food and beverage stores, including warehouse clubs and supercenters, accounts for 16%; Food services and drinking places account for 9.5%.

Warehouse clubs and supercenters account for nearly 6% of all retail trade, and 41% of supercenter sales and 61% of club sales are derived from food sales, according to the U.S. Census estimates.

All of this leads to the question of capturing more of these dollars at the farm level. How can farmers participate more fully in this food chain?

Vegetable Crop Insects - Joanne Whalen, Extension IPM Specialist; jwhalen@udel.edu

Cole Crops.
As soon as temperatures increase, be sure to watch for imported cabbageworm and diamondback larvae on early planted cole crops. Once DBM eggs hatch, young larvae will first mine between the upper and lower leaf surfaces before moving to the heart of the plants. Treatments should be applied when 5% of the plants are infested with larvae and before larvae move to the heart of the plants. Avaunt, Bt insecticides, Proclaim, or Spintor will provide effective control of both species. Be sure to rotate between these classes of insecticides to avoid the development of resistance.

Cucurbit Crops.
In recent years, cucumber beetle populations have been heavier than normal in the earliest planted cucurbits. Since the beetles vector bacterial wilt, early control is extremely important in highly susceptible cucurbits including muskmelons, slicing cucumbers and a number of pumpkin varieties. When available, selection of resistant varieties is an effective control strategy. Although watermelons are virtually resistant to bacterial wilt, heavy populations can cause early stand reductions. In addition, early control is often needed to reduce population levels that cause rind damage later in the season. In 2003, foliar sprays of dimethoate provided the most consistent cucumber beetle control. However, dimethoate is only labeled on melons. Other foliar materials labeled include a
number of pyrethroids, Lannate, Sevin and Thionex. Another option is the use of materials applied at planting or through the drip irrigation. Furadan, Admire and Platinum can all be applied as at-planting materials. Admire, Platinum and Vydate can all be applied through the drip irrigation and all provided good cucumber beetle and aphid control in 2003 trials. You may also see some suppression of spider mites from Vydate. In 2003, our trial results showed spider mite suppression; however, populations were extremely low so more data is needed to determine if Vydate will provide control under high population levels. The Admire rate is 16-24 oz/acre and the Platinum rate is 5-8 oz/acre. Two - three injections of Vydate are recommended at a rate of 1-2 qts/acre. It is recommended that the first injection through drip irrigation occur soon after transplanting at a rate of 2 qts per acre followed by 2 additional applications at 1 qt per acre applied on 14 day intervals. Although rates for all products are expressed as a broadcast rate/acre, you should check the labels and calculate the rate per 1000 foot of row based on your bed spacing.

**Potatoes.**

Although most are aware that the Section 18 for Regent on potatoes was not granted to any of the states that applied in our region (Delaware, Maryland, New Jersey, Pennsylvania and Virginia), we just received official notice of EPA’s denial. The BEAD Division report from EPA concluded the case was not proven that the registered products lack efficacy and also the argument for economic loss was insufficient. We will be collecting more data in 2004.

**Vegetable Diseases** - Kate Everts, Extension Plant Pathologist University of Maryland and Delaware, everts@udel.edu

**Actigard on Spinach.**

Actigard 50WG, a plant activator, has received EPA approval (Section 3 label) for use on spinach in Maryland and Delaware. Actigard is labeled for management of downy mildew and white rust at ¾ oz/A. Applications should begin at the first or second true leaf stage and continue on a 7 to 10 day schedule. Do not make more than 3 consecutive applications per crop. To avoid injury, do not apply above the labeled rate.

**Field Crops**

**Field Crop Insects** - Joanne Whalen, Extension IPM Specialist; jwhalen@udel.edu

**Field Corn.**

We are still finding very low levels of black cutworm moths in pheromone traps (see table on last page of report or check our website at http://www.udel.edu/IPM/traps/currentbcwtrap.html). As soon as temperatures increase, we expect to see an increase in moth catches and egg laying.

**Insect Prediction Maps.**

Once again, Penn State will have their insect prediction maps for European corn borer, alfalfa weevil and western corn rootworm available online. It is in the testing phase now but will provide the link when it is up and running. For European corn borer, the website provides a map of the predicted lead European corn borer life stage for the Mid-Atlantic region. The intent of this information is to help pest management specialists and consultants anticipate key life stages to put out pheromone and blacklight traps and scout for the pest.

Each prediction is for a 10 square kilometer grid, so there can be subtle climatic differences within each grid. The model uses real time temperature information to calculate degree days and determine which life stage the population should be entering at a location. It also uses projected temperature to give a 1, 3, 5, and 7 day forecast. The model is assigning a life stage base on the most advanced life stage of the population that contains at least 5% of the population. Each life stage and generation is represented by a specific color on the map, which is shown in the accompanying key. The
**alfalfa weevil maps** provide information on the most advanced life stage that is predicted for a given geographic location. The model predicts when at least 50% of the population should have attained this stage of development. This model provides a prediction for the population resulting from eggs laid by the overwintering adults. Larval stages for the population that resulted from eggs laid in the fall that hatch early, are not predicted by this model. The eggs of overwintering adults are typically 80 to 90% of the total spring population and much more important to control. Users of this information should watch to see when the population is entering the 3rd instar. This is when the rate of feeding and injury increases greatly and control should be targeted.

The **western corn rootworm** maps show when at least 5% of the population has entered the most advanced life stage. Events in the life cycle of the northern corn rootworm population occur slightly later (typically a few days). The key events to watch are the predicted period of egg hatch relative to crop growth. A post-emergence insecticide application should be timed to the window of one week before or after 5% egg hatch (entrance into the first instar). Entrance into the 3rd instar should provide information on when to expect to see stalk lodging in fields with heavy injury. Entrance into the adult stage can be used as a guide to begin scouting fields.

**Non-Selective Herbicide Rates** - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

With the increase in number of glyphosate products on the market and the range of formulations, be sure to read the respective labels for appropriate product rates. In particular, some of the higher priced products (WeatherMax and Touchdown Total) have more concentrated formulations and lower amounts of product are needed for control.

Also, the formulation of Gramoxone changed last year from Gramoxone Extra to Gramoxone Max and herbicide rates changed as well. Gramoxone Max at 1.3 to 1.7 pts for weeds less than 3 inches, 1.7 to 2.0 pts for weeds 3 to 6 inches, and 2 to 2.7 pts for weeds over 6 inches. And remember coverage is important with Gramoxone so be sure to use adequate gallonage (at least 20 g/A and higher gallonage with dense foliage and stubble) and spray tips that provide a uniform spray pattern (avoid use of flood tips).

**Options for Triazine-Resistant Lambsquarters and Pigweed Control in Corn** - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

Triazine resistant weeds are a wide spread problem in Delaware. Atrazine at 1 to 1.5 lbs/A is an effective treatment if the weeds are not triazine-resistant, but will have no effect on triazine-resistant weeds. If lambsquarters and pigweed are not effectively controlled with the atrazine applied preemergence, but other species are controlled, you should be concerned about triazine-resistant biotypes and control the lambsquarters postemergence. Atrazine is in many pre-mixtures with residual grass herbicides including: Bicep, Guardsman Max, Keystone, Harness Xtra, and Fulltime.

If you know you have problems with triazine-resistant pigweed or lambsquarters, the two most consistent options in our trials include Lumax and Hornet. Hornet can cause some stunting if corn is planted less than1.5 inches deep or soil organic matter is less than 1.5%. Other herbicide options are available, but they have not performed as consistently in our trials. Prowl is one of those that has not been as consistent, but it is considerably less costly. Beware of planting depth and adequate soil covering of the seed if using Prowl.

Control of triazine-resistant lambsquarters is often dependent upon postemergence applications. Postemergence control of lambsquarters and pigweed (triazine-resistant and susceptible) can be achieved with a number
of options including Distinct, Banvel, Exceed, Callisto (can not use if Lumax was used at planting), Harmony GT, NorthStar, or Equip.

**Controlling Perennials When They Emerge From Seeds** - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

Perennials often produce seeds that are adapted to being moved by the wind (hemp dogbane, milkweed, or Canada thistle) or produce large seeds or berries that are eaten by birds and animals and spread around. We conducted a greenhouse study (funded by DE Soybean Board) to examine which commonly used soil-applied herbicides are effective in controlling these plants when they originate from seeds. Often perennials will emerge from seeds, but after 3 to 4 weeks they are producing perennial root systems. Being able to select the correct herbicide when you know seeds are coming into your fields can help prevent headaches and frustration in years to come. If at all possible, keeping the perennials mowed along the ditches and field edges will reduce (or eliminate) seed production. Prevention is the best approach.

Johnsongrass, bermudagrass, Canada thistle, hemp dogbane, common milkweed, common pokeweed, and horsenettle were planted in the greenhouse and sprayed with common soil-applied herbicides (Dual, Prowl, Command, Lorox, Sencor, Lexone, atrazine, Scepter, and Canopy). Next to each weed are the herbicides that provided the best level of control (over 90% control). This study was conducted a few years ago and neither Lumax nor Canopy XL was available at that time for testing.

Bermudagrass. Dual, Prowl, Command, and Sencor or Lexone.
Johnsongrass. Command.
Canada thistle. Command, Sencor or Lexone, atrazine, and Canopy.
Hemp dogbane. Command, Canopy, Sencor, and atrazine.

Common milkweed. Sencor or Lexone, and Canopy.
Common pokeweed. Canopy, and Sencor or Lexone.
Horsenettle. Sencor or Lexone, atrazine, and Canopy.

This was control of plants emerging from seeds. This was not control of plants emerging from rootstocks. If you are concerned about perennial weeds establishing in your fields due to seeds being blown in, there are options for controlling them before they become established as seedlings. As the list indicates, one herbicide will not control all the different perennial weeds. Be sure to match your herbicide with the species.

**Grain Marketing Highlights** - Carl German, Extension Crops Marketing Specialist; clgerman@udel.edu

Funds Driving Force Behind Commodity Markets.
Commodity markets were driven sharply lower at the beginning of the week as fund positions were heavily sold, with profit taking reported. By Thursday, the funds became the driving force behind a huge rally in the soybean pit, as the corn and wheat pits followed. Price bidding in the pits is likely to remain volatile until we get a better handle on '04 crop development in the U.S. Moisture conditions throughout the growing region are reported as being a mixed bag at the present time. U.S. corn planting is progressing at a rapid pace, with the potential to have one of the earliest planted crops on record.

ABIOVE Cuts Brazil Soy Crop Estimate.
The Brazilian soybean crushers' association made further cuts in their estimate of the '04 Brazilian soybean crop and reported sharp increases in soybean exports during the second half of March. ABIOVE cut its soybean production estimate to 52.8 million metric tons(mmt), down from 56.9 mmt for Brazilian production a month ago.
USDA's current production estimate for Brazil is at 56 mmt.

ABIOVE is projecting annual soybean exports for the '04/'05 marketing year at 21.2 mmt, up from 19.987 mmt in the '03/'04 marketing year. Current commitments are 69 percent of the projected total. Last year at this time, 56 percent of the projected total had been sold.

U.S. Weekly Exports.
Net export sales for the week ending April 8 were said to have met or exceeded trade expectations. Wheat sales were reported at 391,700 mt, off 10 percent from the prior 4-week average. Corn sales were placed at 1.258 mmt, 12 percent over the prior 4-week average. Soybean net sales of 179,000 mt were one-third larger than the prior 4-week average.

Market Strategy.
The soybean market continues to indicate that one had better finish up on any old crop sales, with nearby old crop May futures trading nearly $2.50 per bushel higher than new crop Nov '04 soybean futures. A veteran trader suggests, "one runs a danger of the old crop bean price being bid lower in order to line up with the new crop price level if the old crop is held too long". For new crop corn, soybeans, and wheat continue to place additional sales on hold, with the assumption being that sales are already booked for about 25 % of the corn and soybean crops and 50 % of new crop wheat.

UPCOMING MEETINGS:

Delaware Agri-tourism Association invites you to attend the 1st Annual Delaware Agri-tourism Membership Meeting!

WHO: Open to all people interested or involved with on-farm entertainment activities

WHERE: Delaware Department of Agriculture, 2320 S. Dupont Highway, Dover DE 19901

WHEN: April 27, 2004 6:30 pm—9 pm

AGENDA: Dinner, Special Guest Speakers, DDA & Extension Updates

COST: $8.00 per person for Dinner and Program

RVSP by April 23, 2004 to Amanda Brown at 302 698-4523 or by email: amanda.brown@state.de.us
2004 Wye Research Center’s Spring Strawberry Twilight Meeting

What: The 2004 Wye Research Center’s Spring Strawberry Twilight Meeting

Where: University of Maryland
Wye Research and Education Center
Queenstown MD

When: Thursday, May 20, 2004
6:00 PM

Who: University and USDA Small Fruit Specialist

What will I see?
1) 2003/04 Annual plasticulture system: evaluation of Fall deployment date of floating row covers, planting date and varieties.
2) High tunnel production for Fall and Spring harvest
3) Greenhouse production system for early Spring harvest, utilizing, dormant, multi-crowned plants.

Pre-registration not required.

For more information and directions:
Contact: Debby Dant at 410-827-8056, ddant@umd.edu or Michael Newell at 410-827-7388, mnewell@umd.edu

Weather Summary

http://www.rec.udel.edu/TopLevel/Weather.htm

Week of April 8 to April 14, 2004

Rainfall:
0.45 inches: April 11
1.44 inches: April 12
0.89 inches: April 13
0.45 inches: April 14

4.57 inches: April 15
(taken from hourly weather data)

7.80 inches since April 10
Readings taken for the previous 24 hours at 8 a.m.

Air Temperature:
Highs Ranged from 67°F on April 13 to 47°F on April 12.
Lows Ranged from 47°F on April 13 to 36°F on April 10.

Soil Temperature:
50°F average.
(Soil temperature taken at a 2 inch depth, under sod)

Web Address for the U of D Research & Education Center:
http://www.rec.udel.edu

Compiled and Edited By:
Tracy Wootten
Sussex County Extension Agent - Horticulture
University of Delaware

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# 2004 Black Cutworm Pheromone Trap Counts

**Trapping date: April 5 – April 12, 2004**

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