Vegetables

Winter Temperature Index for Predicting Stewart’s Wilt in Delaware Sweet Corn, 1998-2008

- Bob Mulrooney, Extension Plant Pathologist; bobmul@udel.edu

Average monthly temperatures in °F at Georgetown, DE REC 1998-2008

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>December</td>
<td>39.7</td>
<td>43.5</td>
<td>36.2</td>
<td>38.9</td>
<td>38.6</td>
<td>36.7</td>
<td>43.2</td>
<td>31.2</td>
<td>40.3</td>
<td>41.3</td>
</tr>
<tr>
<td>January</td>
<td>36.8</td>
<td>39.7</td>
<td>43.0</td>
<td>34.9</td>
<td>29.5</td>
<td>28.9</td>
<td>40.0</td>
<td>33.8</td>
<td>33.9</td>
<td>39.5</td>
</tr>
<tr>
<td>February</td>
<td>39.9</td>
<td>30.1</td>
<td>37.4</td>
<td>36.7</td>
<td>35.2</td>
<td>33.8</td>
<td>39.9</td>
<td>38.8</td>
<td>39.7</td>
<td>38.7</td>
</tr>
<tr>
<td>INDEX</td>
<td>116.4</td>
<td>113.3</td>
<td>116.6</td>
<td>110.5</td>
<td>103.3</td>
<td>99.4</td>
<td>123.1</td>
<td>103.8</td>
<td>113.9</td>
<td>119.5</td>
</tr>
</tbody>
</table>

Average monthly temperatures in °F at Newark, DE Experiment Station 1998-2008

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>December</td>
<td>37.5</td>
<td>42.5</td>
<td>34.0</td>
<td>35.5</td>
<td>34.0</td>
<td>33.5</td>
<td>43.3</td>
<td>31.1</td>
<td>39.1</td>
<td>41.0</td>
</tr>
<tr>
<td>January</td>
<td>35.5</td>
<td>37.3</td>
<td>39.5</td>
<td>31.0</td>
<td>26.4</td>
<td>27.1</td>
<td>39.6</td>
<td>31.5</td>
<td>32.6</td>
<td>34.8</td>
</tr>
<tr>
<td>February</td>
<td>36.5</td>
<td>27.8</td>
<td>34.5</td>
<td>34.2</td>
<td>33.1</td>
<td>29.5</td>
<td>40.1</td>
<td>38.4</td>
<td>37.8</td>
<td>38.0</td>
</tr>
<tr>
<td>INDEX</td>
<td>109.5</td>
<td>107.6</td>
<td>108.0</td>
<td>100.7</td>
<td>93.5</td>
<td>90.1</td>
<td>123.0</td>
<td>101.0</td>
<td>109.5</td>
<td>113.8</td>
</tr>
</tbody>
</table>

Severity Index: < 90, usually absent; 90-100, intermediate; >100, usually severe. The index is used to predict overwintering flea beetle populations that vector the Stewart’s wilt bacterium, Pantoea stewartii.

Prediction for 2008
Newark: 109.5 = Severe - average monthly temp (Dec, Jan, Feb) was 36.5°F
Georgetown: 116.4 = Severe - average monthly temp (Dec, Jan, Feb) was 38.8°F

For processing and fresh market growers this means that if you are planting susceptible or moderately susceptible hybrids, flea beetle control is very important. A number of strategies are available including seed treatments, granular insecticides at planting and/or foliar applied insecticides after emergence.

Note: Weather records from University of Delaware Carvel REC, Georgetown, DE and University of Delaware Ag Experiment Station Farm, Newark, DE. Thanks for the data go to Dean Dey at Georgetown and Scott Hopkins, Farm Manger, UD Ag Experiment Station, Newark.
Seed Vigor in Sweet Corn - Gordon Johnson, Extension Ag Agent, Kent Co.; gcjohn@udel.edu

A common problem that occurs each year in the field is poor stands due to low seed vigor in a particular lot of sweet corn seed. By its nature, sweet corn has lower stored food reserves (carbohydrates in particular) compared to field corn. With the advent of different endosperm types than the traditional sugary (su) such as homozygous sugary enhanced (se), shrunken supersweets (sh2), and the more recent augmented shrunken types, vigor became even more of an issue. In general, vigor of sweet corn rated from highest to lowest is: normal sugary su > se heterozygous > se homozygous > sh2 augmented > shrunken sh2. Newer synergistic sweet gene varieties may have seed with vigor characteristics of a se or a su sweet corn depending on the specific genetics (check with your sweet corn seed company for specifics on the vigor of these hybrids). Supersweet hybrids (shrunken sh2) are noted for having inherently low seed vigor due to reduced food reserves and it has been a standard recommendation to plant these varieties only when soil temperatures are above 60 °F.

With the earliest sweet corn being planted now (end of March) in Delaware, seed vigor is critical, particularly if planting without the use of plastic mulches or clear covers. Choose types and hybrids within a type that have cold tolerance and make sure that you get seed lots that have good vigor. Your sweet corn seed supplier will have cold tolerance ratings of the hybrids that they sell. A good seed treatment package with appropriate fungicides and insecticides is also critical to obtain good early stands.

It is also a good idea to have the seed vigor tested if there is any doubt about the particular lot that you are planting or if you are considering planting carried-over seed. Factors such as growing conditions during seed development and maturation in the sweet corn seed production region, mechanical damage during harvest or cleaning, drying regime, seed conditioning procedure, and seed storage can have great impacts on the vigor of a specific seed lot.

The standard seed germination test is performed under ideal laboratory conditions (temperature and moisture). This will not reflect field conditions. The standard germination test is designed to determine the germination of a seed lot under ideal conditions, the highest germination potential. It does not help to evaluate the ability of a seed lot to perform under suboptimal field conditions.

Alternative tests that are used to evaluate seed vigor that are available from different state and private seed laboratories include:

The Cold Test - Seeds are germinated using a specific cold, moist treatment regime. This will be useful in selecting those lots that will perform the best under early cold soil conditions.

Seedling Vigor Classification Test (SVCT) - In this test seedlings from a normal germination test are rated visually according to vigor (strong or weak). Visual ratings are based on whether or not the seedlings have normal developmental characteristics.

Tetrazolium (TZ) Test - This is a quick biochemical test that essentially stains living tissue in a seed a red color. The more red staining, the more viable the seed.

Accelerated Aging Test (AAT) - In this test, seed is put under a high temperature and humidity regime for a period of time and then is evaluated using a standard germination test. This is often used to check the storability of seeds under less than ideal conditions but also will do a good job of evaluating seed vigor. Modifications to the Accelerated Aging Test have been made to do a better job of evaluating sweet corn types such as shrunken sh2 varieties.

The seed laboratory at the Delaware Department of Agriculture can perform cold germination tests on sweet corn seed lots that you want to have evaluated for vigor.
Lima Bean Fungicide Update  - Bob Mulrooney, Extension Plant Pathologist; bobmul@udel.edu

There are several fungicide additions for 2008. BASF added soybean rust control on lima beans to the Headline label in addition to snapbeans. Dow Ag Products was granted a section 18 label for the use of Nova on lima beans for soybean rust control in DE last season, but Dow is no longer continuing the Nova trade name. Nova will be marketed as Rally for lima beans and other vegetable uses. Rally has been Dow’s myclobutanil product in fruit. Rally is the same formulation as Nova, a 40% wettable powder. I still do not expect soybean rust to be a threat to lima bean or snap bean production from the inoculation studies and field trials in the US and South Africa.

Understanding FRAC Codes is Important for Managing Fungicide Resistance Development  - Andy Wyenandt, Assistant Extension Specialist in Vegetable Pathology, Rutgers University; wyenandt@aesop.rutgers.edu

FRAC, or the Fungicide Resistance Action Committee, was developed to help provide resistance management guidelines for fungicide use. Remember, high-risk fungicides have a high probability of resistance development because of their modes-of-action (MOA). Those fungicides with chemistries that have a specific target site against fungal pathogens, unfortunately, will have a high risk for losing efficacy because of resistance development in the pathogen. Importantly, fungicides with similar chemistries and MOAs that belong to the same FRAC code may also be prone to cross-resistance, where a fungus that develops resistance to one fungicide in the FRAC group may also develop resistance to other fungicides in the group, even if those other fungicides haven’t been used.

With the recent influx of new fungicide chemistries on the market great lengths have been taken to reduce the risk of fungicide resistance development for many fungi where ‘high risk’ fungicides are used. There are currently 43 numbered FRAC groupings and 4 lettered groups. As new fungicides with new MOAs are released on the market, new numbered groups will be added to the list. For many vegetable crops many of the most common fungicides used fall into a few of these groupings, most notably:

Multi-Sites (M) or Low Risk FRAC Groups
M1 and M2, inorganics such as sulfur and copper
M3, Maneb or Mancozeb
M5, chlorothalonil such as Bravo

Higher Risk FRAC Groups
Group 3, triazoles such as Nova or Rally
Group 4, mefenoxams such as Ridomil
Group 11, strobilurins such as Quadris, Flint, Cabrio

Some of the newest fungicides labeled for use in vegetable production include Quintec (quinoxyfen, FRAC code 13) and Revus (mandipropamid, 40).

Knowing which fungicides belong to which FRAC code will have an impact on spray schedules, disease control, and resistance management. Protectant fungicides, such as those in the FRAC code M, have a low risk for fungicide resistance development and have less stringent restrictions. However, for those chemicals with a higher risk of fungicide resistance development the product labels are more stringent and labels should be followed precisely. Labels often require that high-risk fungicides be tank-mixed with protectant fungicides to reduce the chances for fungicide resistance development. In general, tank mixing high-risk fungicides with protectant fungicides is always a good resistance management strategy. For example and, in general, the strobilurin fungicides in FRAC code 11 should not be sprayed consecutively. Such that, if Quadris (azoxystrobin, 11) is sprayed one week, it should not be followed the next week with another Group 11 compound such as Flint (trifloxystrobin, 11) or Cabrio (pyraclostrobin, 11) or a compound containing a Group 11 fungicide (Pristine, pyraclostrobin + boscalid, 11 + 7). A simple way to remember what to use next in your fungicide rotation is to use a labeled fungicide with a different FRAC number or letter. FRAC codes can be found in the fungicide table at the beginning of each crop.
section in the 2008 Commercial Vegetable Production Recommendations to help growers learn what fungicides belong to what FRAC groups and to help them chose fungicides for use in rotations. A complete list of fungicides and FRAC groups can also be found in Table E-8 on pages E30 and E31 in the Vegetable Production Recommendations. Efforts in learning and using new chemistries with new modes of action along with knowing their FRAC grouping will ultimately pay off in the long run by reducing the chances for fungicide resistance development.

Delaware Growers - Fungicide Resistance Management Guidelines for Vegetables were distributed at Ag Week with the Vegetable Production Recommendations. If you did not receive one and would like a copy, request one from the county Extension office or stop by and pick one up. These guides were developed as a project directed by Andy Wyenandt at Rutgers assisted by the other plant pathologists in the mid-Atlantic region and funded in part by the Northeastern IPM Center and USDA/CSREES.

Agronomic Crops

Scout Alfalfa for Alfalfa Weevil and Pea Aphids - Joanne Whalen, Extension IPM Specialist; jwhalen@udel.edu

Be sure to sample alfalfa fields for small alfalfa weevil larvae feeding in the tips of plants. Early damage will appear as a round, pinhole type of feeding. Once you detect tip feeding, a full field sample should be taken. You will want to avoid treating fields too early since it may result in multiple applications. Also, be sure that you do not confuse clover leaf and alfalfa weevil larvae. Cloverleaf weevils are generally larger at this time of year and have a distinct white stripe lined with red down the middle of their backs. Although cloverleaf weevils can cause damage during cool, dry springs, controls are generally not needed for cloverleaf weevils. For pictures of cloverleaf weevil and alfalfa weevil, please refer to the following links:

http://www.ent.iastate.edu/imagegal/coleoptera/cucurullionidae/0212.47alfalfalarva6in.html

You will also want to sample fields for pea aphids. Heavily infested plants may turn yellow and wilt. Pea aphids prefer cool, dry conditions and can be a problem in both the first cutting and during spring seedling establishment. This species tends to congregate on the tips of alfalfa plants where they feed on young, succulent developing shoots. To sample for aphids, clip alfalfa stems at the base of the plant and record the number present per plant. You may want to examine plants over a white bucket to collect any aphids that are dislodged from the plants. In seedling stage alfalfa, a treatment should be considered if you find 5 aphids per stem. As a general guideline, you should consider a treatment in alfalfa less than 10 inches tall if you find 40-50 aphids per stem. The treatment threshold for alfalfa 10 inches or taller in height is 75-100 per stem.

Field Corn Soil Insect Management - Joanne Whalen, Extension IPM Specialist; jwhalen@udel.edu

The following is a brief review of conditions favoring soil insects in field corn as well as observations from past seasons:

Corn Rootworm (Larval Control)

In general, rootworms continue to be more of a problem in continuous corn. Although generally more of a problem in heavier soils, we have also seen problems in continuous, irrigated corn fields planted in sandy soils. In our area, rotating out of corn is still a viable option for corn rootworm management. However, if you plan to plant continuous corn, control options include either a soil insecticide, a high rate of a commercially applied seed treatment, or a transgenic corn hybrid with resistance to rootworm larvae.

As far as seed treatments, reports from the Mid-West and areas in PA with heavy rootworm pressure state that “when rootworm densities
and root injury have been low to moderate, seed treatments have provided acceptable protection of the roots. However, when rootworm densities have been high and root injury has been moderately high to severe, insecticidal seed treatments have not provided consistently acceptable control of corn rootworm larvae.”

**Wireworms**
High soil organic matter, sod covers, and heavy grass weed pressure the previous season all favor wireworm populations. In addition, damage from this insect is also higher in continuous corn. Commercially applied seed treatments i.e. Cruiser (thiamethoxam) and Poncho (clothianidin) have generally provided good wireworm control. NOTE - Labels for Cruiser and Poncho state seed and seedling protection.

**Grubs**
In general, grubs are favored by a number of factors including planting into soybean stubble, old sod, hay, pasture, or set-aside acreage. Cruiser and Poncho are labeled against white grubs. Although these 2 chemicals can work against low to moderate grub populations, in the past few years we have seen poor control with both products in commercial fields under high pressure, especially when the predominant grub species has been Asiatic garden beetle. If populations are high, you may still need to consider an in-furrow application of an insecticide. NOTE - Labels for Cruiser and Poncho state seed and seedling protection.

**Black Cutworm**
This insect is favored by late planting, broadleaf weed growth (especially chickweed) present before planting, poorly drained field conditions and reduced tillage. Rescue treatments can be applied for this soil insect if you are able to scout fields twice a week once leaf feeding is detected. Pheromone traps placed in the field by mid-March can be used to determine when to look for cut plants. So far, we have not caught any black cutworms in our pheromone traps. Look for pheromone trap counts in future reports. If you are unable to scout and you have conditions favoring cutworms, one of the following preventive approaches can be considered: (1) a granular soil insecticide labeled for cutworm control applied as a t-band, or (2) a tank mix of an insecticide with a pre-emergence herbicide or (3) a Herculex corn hybrid. In general, the seed applied treatments (Cruiser and Poncho) have not provided effective cutworm control in our area, especially if economic levels of larger larvae are present at planting.

**Scout Small Grains for Aphids, Winter Grain Mites and Cereal Leaf Beetle**
Joanne Whalen, Extension IPM Specialist; jwhalen@udel.edu

Recently we are receiving reports of high levels of aphids in barley and wheat fields. The fluctuating temperatures as well as continued dry conditions have been favorable for aphids. As indicated in a previous newsletter, cool, dry conditions generally favor spring outbreaks of aphids. This type of weather allows the aphids to survive and reproduce. Although natural enemies can keep aphids under control, cool dry weather in the spring often allows aphids to reproduce rapidly whereas their natural enemies reproduce slowly. Beneficial insects that attack aphids reproduce slowly at temperatures below 65°F, whereas aphids can rapidly increase when temperatures exceed 50°F. A number of insecticides are labeled for aphid control in wheat including: Baythroid, Baythroid XL, Dimethoate 4E, Lannate LV, Mustang MAX, Penncap-M, Proaxis, and Warrior. Materials labeled for aphid control in barley include Lannate, Penncap-M and Warrior. Check the labels for restrictions and harvest intervals. The recent Virginia Ag Pest Advisory written by Tom Kuhar indicates that they are hearing of many wheat (and some barley) fields with unusually high aphid numbers. Please use the following link for his comments on aphid management in wheat.

(http://www.sripmc.org/Virginia/View.cfm?lngNewsID=487)

We continue to receive report of wheat fields with damage from winter grain mites. Remember, this mite is favored by cooler conditions. No thresholds are available for this mite pest. As indicated in the most recent Virginia Ag Pest Advisory written by Tom Kuhar,
these mites have been found almost exclusively in no-till wheat situations. Very little is known about this sporadic pest; however, experience in Virginia this season indicates that that high densities of these mites can significantly affect plant vigor and growth. Although we have no experience with winter grain mite control in wheat, materials that have appeared to provide control in areas to our south include the pyrethroids (Warrior, Mustang MAX) and certain organophosphates (dimethoate). Note that dimethoate may not be effective when temperatures are below 60°F. Be sure to follow the rates and usage restrictions on the labels.

As temperatures increase in April, be sure to look for cereal leaf beetle adults, especially along field edges that border woods or in protected areas. Adult beetles feed along the veins of grain leaves leaving characteristic narrow linear holes parallel to the leaf veins. Although they do not cause much damage, you should routinely check these areas since this is where you are likely to find the first eggs and larvae. Larvae can feed heavily on leaves, especially flag leaves, and can quickly cause significant yield reductions if they exceed the economic threshold of 25 eggs/young larvae per 100 tillers.

Soybean Rust Update for 2008 - Bob Mulrooney, Extension Plant Pathologist; bobmul@udel.edu

Soybean rust continues to be a threat to soybean production in the US. Although we have not seen it here or in MD yet that does not mean that growers can let down their guard. It is important to continue to track its whereabouts and have an action plan in place should it appear. All it took was some heavy rainfall in LA, TX and OK last season to produce conditions that were very favorable for rust development. The rust spore production in those states was great enough that soybean rust was found late in the season in Iowa. Fortunately, it was too late in the season for rust to have any affect on yields in the northern states. All we would need is for the drought to be broken in northern FL and GA one of these years, and soybean rust could make it to DE and MD. Granted a lot depends on the weather, but the fungus continues to overwinter in southern FL and is infecting scattered patches of kudzu along the Gulf of Mexico at the present time. So it is important to know where it is during the growing season. The ipmPIPE website is still the best place to get your soybean rust info (www.sbrusa.net). For more info and labels of registered fungicides for use in DE see the UD Extension soybean rust website at http://ag.udel.edu/extension/pdc/soybeanrustResources.htm

In 2007 soybean rust was detected in one province in Canada, in two states (3 municipalities) in Mexico, and in 19 states and 334 counties in the U.S including: 40 counties in Alabama (19 soybean), 33 counties in Arkansas (soybean), 24 counties in Florida (11 soybean), 51 counties in Georgia (14 soybean), four counties in Illinois (soybean), one county in Indiana (soybean), 14 counties in Iowa (soybean), nine counties in Kansas (soybean), three counties in Kentucky (soybean), 21 parishes in Louisiana (18 soybean), 26 counties in Mississippi (21 soybean), 37 counties in Missouri (soybean), four counties in Nebraska (soybean), six counties in North Carolina (soybean), 12 counties in Oklahoma (soybean), seven counties in South Carolina (soybean), seven counties in Tennessee (soybean), 26 counties in Texas (25 soybean), and nine counties in Virginia (soybean).
kudzu at the present time. In Mexico there are three counties with soybean rust on another legume called jicama bean. Kudzu is coming out of dormancy in much of the South so rust activity should be increasing in the coming weeks.

Delaware will continue to participate in the ipmPIPE sentinel plot system for detecting soybean rust in a timely manner for the 2008 season. At the present time seven sentinel plots are planned for Delaware, three in Sussex and two each in Kent and New Castle counties. USDA/APHIS and commodity funding is continuing to fund this effort at the present time. Each sentinel plot will be planted with a group III and a group VII variety so that susceptible plants are present throughout the growing season and into the late fall.

Several Pest Management Issues to Think About if You are Saving Cover Crop Wheat or Barley for Grain Production - Bob Mulrooney, Extension Plant Pathologist; bobmul@udel.edu and Joanne Whalen, Extension IPM Specialist; jwhalen@udel.edu,

With the high prices of wheat and barley some cover crops may be kept for grain instead of plowing them under. As long as the stand is sufficient for economical yield the fields can be managed for grain production. There are several pest management issues that could be a problem if you have decided to do this. Loose smut is a systemic fungus disease that is transmitted in infected seed. Infected seed looks healthy and germinates as if it were not infected. When the seed germinates the fungus is activated and systemically grows within the young seedlings. The fungus remains in the plant over the winter and when growth resumes the fungus grows with the plants and eventually to the head where the fungus spores replace the wheat or barley kernel and other flower parts. The only window to control this disease, if the seed is contaminated, is with a seed treatment for loose smut at planting. If the cover crop seed was certified and/or treated with Baytan, Raxil, Vitavax, or Dividend at rates for loose smut control, the crop is protected. Currently there is no labeled foliar fungicide for wheat or barley that will control loose smut if the plants are infected. There is no way to tell if the crop is infected until heading, so if you planted untreated, saved seed or untreated seed from an unknown source there is a risk of loose smut at heading.

Since cover crops are often planted before production fields, Hessian fly could be a potential problem. Fields planted well before the "fly free" dates (New Castle County - Oct 3; Kent County - Oct 8 and Sussex County- Oct 10) could have been exposed for a longer time to egg laying by Hessian fly adults. Any eggs laid in the cover crop wheat hatched into maggots which fed on that wheat and then changed into pupae (called flax seeds) to survive the winter. When the Hessian fly adults emerge from the flaxseed this spring, they will seek a host upon which to lay their eggs. Since wheat is the principal host plant of the Hessian fly and they are not strong flyers, these fields may be susceptible to spring infestations. Please refer to the article “Management of Hessian Fly in the Spring” in WCU Volume 16, Issue 1 for sampling and possible control options.

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

March Madness Hits Commodities Market
Nearby crude closed at $105.90 per barrel in yesterday's trading, within a few dollars of the recent high. The U.S. dollar index closed at 71.95, within .75 of the recent low. Nearby corn closed at $5.52, soybeans at $13.52, and nearby soft red winter wheat at $10.33 per bushel in yesterday's trading. Speculative funds may be pulling back on some of their commodity trading as the credit crunch and bargain stock prices dictate. Volatility in commodity prices remains at extremely high levels, with limit up and down price swings common of late. Corn and soybean futures contracts will join the ranks of wheat in tomorrow's trading (March 28th) with increases in the daily trading limits taking effect coupled with expanded limits of plus 50% in the event that the market closes at the limit on a given day. With the new daily trading limits for corn (30 cents per bushel); soybeans (70 cents per
bushel); and wheat (already at 60 cents per bushel), the expanded limits then become 45 cents/bushel for corn; $1.05 per bushel for soybeans; and 90 cents per bushel for wheat. The new expanded limits amounts to a daily limit of $2,250 for a 5,000 bushel corn contract; $5,250 for a soybean contract; and $4,500 for a 5,000 bushel wheat contract.

The cost of using commodity futures for price risk management strategies down on the farm has become unacceptable and cost prohibitive to farmers and the agricultural industry (merchandisers). Hearings to that effect will soon be held on Capitol Hill to address the concerns that agriculture has with unlimited trading activity and the effect this is having on traditional price discovery mechanisms. More information will follow on the hearing date, scheduled for the later part of April.

In the meantime, expect these markets to remain quite volatile. The March 31st Planting Intentions report to be issued on Monday may or may not portend to price expectations for the near future. In other words, will commodity traders, other than farmers and the commercial traders even care about the numbers in the report? For that matter, will the planting intentions report line up with what actually gets planted this year? The Southern Hemisphere is currently in the process of harvesting what promises to be their largest crop on record while ’07/’08 U.S. soybean ending stocks are projected at 140 million bushels.

A late spring to early summer Options on Agricultural Futures webinar is being planned. Details to follow concerning the airing date. For technical assistance on making grain marketing decisions contact: Carl L. German, Extension Crops Marketing Specialist.

---

General Info

New Insecticides/New Uses for Vegetables and Field Crops - Joanne Whalen, Extension IPM Specialist; jwhalen@udel.edu

We have received a number of new insecticide registrations for the 2008 season including both new active ingredients and new uses of currently registered products. Be sure to check the label for labeled crops, use rates and restrictions.

Endigo ZC® - A mixture of thiamethoxam (Actara) and lambda-cyhalothrin(Warrior) now labeled on potatoes. (http://www.cdms.net/LDat/Ld7T4006.pdf)

Leverage® - A mixture of imidacloprid (Provado) and cyfluthrin (Baythroid) now labeled on soybeans. (http://www.cdms.net/LDat/Ld6AP004.pdf)

RadiantTMSC (spinetoram) - Labeled on a number of vegetable crops as well as small grains, corn and soybeans. Note - It is only used as a foliar spray. It is incorrectly listed under at-planting materials in the potato section of the Vegetable Production Recommendations. (http://www.cdms.net/LDat/Ld8DN000.pdf)

Regent 4SC (fipronil) - Now labeled on potatoes for wireworm control. Note - The rate is incorrectly listed as 0.184- 0.22 oz/acre in the 2008 Vegetable Recommendation Book. The correct rate is 0.184-0.22 oz/1000 row ft. (http://www.cdms.net/LDat/Ld6EG008.pdf)

Warrior (lambda-cyhalothrin) - Additional vegetable crops as well as barley, the grass forage, fodder and hay group, grasses grown for seed, pastures and rangeland were added to the label in the fall of 2007. (http://www.cdms.net/LDat/Ld5JH041.pdf)

Zeal® Miticide1 (etoxazole) - Now labeled on melons for spider mite control (http://www.cdms.net/LDat/Ld7DK010.pdf)
E-Commerce in Agriculture Study Participants Sought

Agriculturehealth.com, in conjunction with the Mid-Atlantic Direct Marketing Conference (MADMC) and WebIXI Inc., is sponsoring an “E-Commerce in Agriculture” study.

E-commerce sites will be designed, developed and hosted for 10 study participants. The objective of the study is to allow participants to enter the e-commerce world at a reduced rate, while creating real-world case studies for evaluation and analysis of e-commerce strategies in agriculture businesses.

Site development for the project participants will begin May 1, 2008 with a projected “go live” date of July 1, 2008. Analysis will be conducted over the first year that the sites are live to measure site traffic, search engine performance and e-commerce system performance.

As only 10 participants will be accepted into the study, agricultural businesses interested in participating should contact Carl German (clgerman@udel.edu) or Pat Chambers (pat@webixi.com) by April 21, 2008.

Participant selections will be made on Wednesday, April 23, 2008; chosen participants will be notified prior to April 25, 2008.

Details of the study are attached, or can be viewed online at: http://www.webixi.com/pdfs/Ag%20Health%20E-Commerce%20Study%20Announcement.pdf

Examples of WebIXI’s work can be viewed online at: http://www.webixi.com/portfolio.html

Recent Topics:

- Managing Wheat in a Year of High Prices – More on Early Fungicide Applications
- Small Grains – Another Outbreak of Winter Grain Mites
- Corn – Starter and Popup Fertilizers
- Corn – What Population Should You Plant
- Inoculating Soybeans
- Grain Markets Rebound, Limits Change for Corn and Soybeans
- Managing Wheat in a Year of High Prices – Early Fungicide Applications
- Forage Sampling
- Poultry – Attic Inlets
- Don’t Forget Soybean Cyst Nematode
- Fruit and Vegetable Crops – Planning For Pest Control
- Fungicide Treatments for Soybean Seed

For Current Agricultural Information from the UD Kent Co. Extension Office Visit www.kentagextension.blogspot.com
## Weather Summary

**Carvel Research and Education Center Georgetown, DE**

**Week of March 20 to March 26, 2008**

Readings Taken from Midnight to Midnight

<table>
<thead>
<tr>
<th>Rainfall:</th>
<th>0.09 inch: March 20</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Air Temperature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highs Ranged from 69°F on March 20 to 49°F on March 23.</td>
</tr>
<tr>
<td>Lows Ranged from 44°F on March 26 to 25°F on March 24.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Soil Temperature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>48°F average.</td>
</tr>
<tr>
<td>(Soil temperature taken at a 2&quot; depth, under sod)</td>
</tr>
</tbody>
</table>

Additional Delaware weather data is available at [http://www.rec.udel.edu/TopLevel/Weather.htm](http://www.rec.udel.edu/TopLevel/Weather.htm)

---

*Weekly Crop Update is compiled and edited by Emmalea Ernest, Extension Associate - Vegetable Crops*

Cooperative Extension Education in Agriculture and Home Economics, University of Delaware, Delaware State University and the United States Department of Agriculture cooperating. Distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Delaware Cooperative Extension, University of Delaware. It is the policy of the Delaware Cooperative Extension System that no person shall be subjected to discrimination on the grounds of race, color, sex, disability, age or national origin.