



WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

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Vegetable Crops

Producing Quality Seedless Watermelon Transplants - Gordon Johnson, Extension Fruit & Vegetable Specialist; gcjohn@udel.edu

Watermelon transplants for early production are being started this week. Those destined for later field plantings will be started throughout the month of April. Growing quality seedless watermelon transplants requires attention to detail and conditions required are different than for seeded types. Common problems include incomplete germination, uneven growth, weak plants, and stretching (leggy plants).

Seedless watermelon production can be broken into 6 phases: seeding, initial germination, emergence, seed leaf stage to first true leaf, first true leaf to second true leaf, and hardening off.

Seeding

Trays with square cells at least 2 inches deep and 1 inch square should be evenly filled with a general greenhouse growing medium like Pro-Mix BX, Fafard #2, or Sunshine #1 (these all have a starter fertilizer charge). Do not use fine seed starter or plug mix types. Do not compress the media. Trays should be watered to capacity and then allowed to drain off excess for 24 hours. During this 24 hour period, trays should be placed in a heated area so that the media reaches a temperature of 85°F. Make planting holes 1" deep with a dibber and plant seeds with the pointed side up. Cover with a small amount

of warm moist media just enough to fill over seeds in the holes. Do not water after seeding. Seeding should be done in a way that trays stay at 85°F (do not allow trays to get cold).

Initial Germination

Germination should be done in a room or chamber where temperatures can be maintained at 85-90°F and where there is high humidity. Uniform tray temperature is critical. This phase will last 2 day - trays should be kept in this high temperature growth area for 48 hours and no more. To insure even germination, it may be necessary to move trays around after 24 hours (trays on bottom shelves moved to top shelves and vice versa). In this phase the seed root will emerge but the crook that will carry the seed leaves above the surface should not be visible. If you see crooks, you have left trays in the germination area too long and you may experience plant stretch during emergence (if plants have emerged you are too late - stretch has already occurred).

Emergence

After initial germination, it is critical to move plants immediately from germination areas to the greenhouse for emergence. If you are having another grower germinate your seeds, it is important to schedule pickup or delivery so that there are no delays. Greenhouses should be set for 72-75°F day temperatures and 65°F night temperatures. Do not water until after you see emergence and even then water sparingly as needed to keep trays and emerging seedlings from drying out. Excess water and high

greenhouse temperatures during the emergence phase will lead to stretch.

Seed Leaf Stage to First True Leaf

Maintain greenhouse temperatures in the 72-75°F day and 65°F night range during this period. Water moderately to keep plants from drying out but do not fertilize during this period (*this assumes that the media you are growing in has a starter fertilizer charge*). You want the plants to grow slowly for highest quality.

First True Leaf to Second True Leaf

Continue maintaining greenhouse temperatures in the 72-75°F day and 65°F night range during this period. You can fertilize once the first true leaf emerges. Generally 2 fertilizations of 100 ppm nitrogen concentration one at first true leaf and one at second true leaf will be all that is needed. If a constant feed system is used, set for 50 ppm nitrogen each watering once the first true leaf has emerged. These fertilization rates are for the media listed in the seeding section that contain a starter fertilizer charge. Avoid using fertilizers with high amounts of ammonium N as the nitrogen source as this can lead to stretch (use fertilizers with calcium nitrate and potassium nitrate as the main nitrogen sources). Avoid over-watering. Again, you want plants to grow slowly for highest quality.

(Some growers will use a media with no starter fertilizer charge. If that is the case, a different fertilizer program will be needed. Use fertilizers with calcium nitrate and potassium nitrate as nitrogen sources. Use 50 ppm N from emergence to first true leaf every 3 days, 200 ppm N every other day from first true leaf to second true leaf)

Hardening Off

It will take 4-6 weeks to finish transplants. Prior to transplanting, harden off plants starting one week before setting in the field. This is accomplished by lowering day time temperatures in the greenhouse (if greenhouses have side curtains roll them up during days if temperatures are not too cool). Reduce watering and stop fertilization. Some growers have the ability to place plants on wagons or move benches outside during the day, bringing them in at night. This is advised where possible but make sure the area is

sheltered from high winds and avoid days where the temperature is below 60°F.

Pollenizers

The above information is for growing the seedless watermelons. Seeded pollenizers do not need special germinating conditions and can be grown directly in the greenhouse. The key is to time the production so that plants are produced and hardened off at the same time as the seedless types. They also should be grown slowly and attention should be paid to avoid stretch. Follow the same recommendations from seed leaf stage through hardening off.

2010 Fungicide Update for Vegetables - Bob Mulrooney, Extension Plant Pathologist;
bobmul@udel.edu

There are some new additions and a few deletions:

Beans

Folicur 3.6F has been added for the control of common bean rust on snap beans. The section on soybean rust on snap and limas beans was removed. This disease has not developed on any other host other than soybeans and kudzu. At this time it is not a threat to snap and lima bean production. Omega 500F is labeled on snap and lima beans for white mold control. It also has good activity on downy mildew on limas. Hopefully by application time there will be a 2(ee) registration for downy mildew as well.

Cucumber, Cantaloupe, Pumpkin, Winter Squash and Watermelon

Switch and Folicur (tebuconazole) have been added for gummy stem blight control. The fungus that causes gummy stem blight has developed resistance to Pristine in South Carolina and may be occurring here. The addition of these two products is very important to control this important disease. Folicur has also been added to these crops and summer squash for powdery mildew control in addition to the other two triazole fungicides Rally and Procure.

Peppers

Chlorothalonil (Bravo) has been labeled to

replace maneb which is no longer being manufactured for anthracnose fruit rot control.

Sweet Corn

Maneb is no longer being manufactured for use on sweet corn.

Tomato

Revus Top was added this year for control of leaf spots and late blight. Scala is labeled for early blight and gray mold control in the field as well as in the greenhouse and high tunnels.

Potatoes

Tanos was added for early blight control. Revus and Revus Top were added for late blight control.

Maneb is no longer being made but existing stocks can be used until maneb is gone.

Fungicide Guide for Managing Resistance of Fungi on Vegetable Crops Available Online

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

New Jersey Cooperative Extension has both the 2010 Commercial Vegetable Production Guide online as well as the FRAC guidelines for managing fungicide resistance on vegetable crops. There is much more at this site as well, and it is a good source of information at your

fingertips. Both publications are also available free at the Delaware Extension offices. The website is <http://njveg.rutgers.edu>. The Production Guidelines are under *Growing Crops* and the FRAC Guidelines are under *Controlling Pests-IPM*. The FRAC Fungicide Guide for vegetables is also posted on the UD Plant Clinic site <http://ag.udel.edu/plantclinic>. We will soon have the 2010 Commercial Vegetable Production Guide online as well.

Information on Potato and Tomato Late Blight Management

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

With the widespread occurrence of late blight last season on tomato and potato. There is some new information available from other universities that might be of interest. Dr. Meg McGrath, Cornell plant pathologist on Long Island, has written two articles on managing late blight organically, both of which are available online: [Managing Late Blight in Organically-Produced Potato](#) and [Managing Late Blight in Organically-Produced Tomato](#).

Dr. Tom Zitter, also from Cornell, compiled a list of tomato varieties with reported resistance to late blight and early blight that might be helpful: [Table of Late Blight and Early Blight Resistant Tomato Cultivars](#)

Winter Temperature Index for Predicting Stewart's Wilt in Delaware Sweet Corn 2000-2010

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

Average monthly temperatures in °F at Georgetown, DE. REC. 2000-2010

	2009-2010	2008-2009	2007-2008	2006-2007	2005-2006	2004-2005	2003-2004	2002-2003	2001-2002	2000-2001
December	37.9	41.8	39.7	43.5	36.2	38.9	38.6	36.7	43.2	31.2
January	32.7	31.0	36.8	39.7	43.0	34.9	29.5	28.9	40.0	33.8
February	31.1	39.2	39.9	30.1	37.4	36.7	35.2	33.8	39.9	38.8
INDEX	101.7	112.0	116.4	113.3	116.6	110.5	103.3	99.4	123.1	103.8

Average monthly temperatures in °F at Newark, DE Experiment Station. 2000-2010.

	2009-2010	2008-2009	2007-2008	2006-2007	2005-2006	2004-2005	2003-2004	2002-2003	2001-2002	2000-2001
December	34.9	37.1	37.5	42.5	34.0	35.5	34.0	33.5	43.3	31.1
January	31.6	28.0	35.5	37.3	39.5	31.0	26.4	27.1	39.6	31.5
February	31.0	35.8	36.5	27.8	34.5	34.2	33.1	29.5	40.1	38.4
INDEX	97.5	100.9	109.5	107.6	108.0	100.7	93.5	90.1	123.0	101.0

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 2010

Georgetown: 101.7 = Severe - Avg. monthly temp (Dec, Jan, Feb) = 33.9 °F

Newark: 97.5 = Intermediate - Avg. monthly temp = 32.5 °F

Control Strategies

For processing and fresh market growers this means that if you are planting susceptible or moderately susceptible hybrids that 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. For foliar applied insecticides treat susceptible cultivars at spike stage when 5% of the plants are infested. See the *2010 Delaware Commercial Vegetable Production Recommendations* for control suggestions.

Note: Weather records from University of Delaware Carvel REC, Georgetown, DE and University of Delaware Ag Experiment Station Farm, Newark, DE. Data records found online at <http://www.deos.udel.edu/>

Agronomic Crops

Agronomic Crop Disease Update - Bob Mulrooney, *Extension Plant Pathologist*; bobmul@udel.edu

Wheat

It has been a tough year for wheat production. The wet fall delayed planting, then large areas have been inundated with water for long periods of time and there has been grazing by geese. Areas of the state where wheat has survived but under very wet conditions may be at risk from Pythium root rot if wet conditions persist. The

other threat, as if there wasn't enough trouble for wheat, is from the fungal transmitted soilborne viruses, wheat soilborne mosaic virus and wheat spindle streak mosaic virus (WSSMV). Wet soils in the fall following planting can result in severe infections of wheat soilborne mosaic virus that appear as irregular stunted areas in low areas of the field. Mild stunting and yellow green mottling, dashes and streaks on the leaves are diagnostic for WSSMV. There are no controls for either disease for the present crop. Resistant varieties for both diseases are available.

Soybean Cyst Nematode Survey

I am waiting on the results of the last two soil samples before presenting the results of the Delaware Soybean Board sponsored survey for SCN in Delaware. The results so far have confirmed a shift of the race composition in Delaware soybean fields and the nasty nematode has not gone away.

Italian Ryegrass Control for No-Till Corn -

Mark VanGessel, Extension Weed Specialist;
mjv@udel.edu

Italian ryegrass is the same as annual ryegrass. The weed we struggle to control in wheat and barley is the same plant that is sometimes used as a cover crop. The same characteristics that make it a good cover crop are the same attributes that make it a pesky weed. Furthermore, it is the same species that has developed resistance to glyphosate and a number of other common herbicides.

Whether it was planted as a cover crop or there are scattered plants throughout the field, annual ryegrass can be troublesome to control in no-till corn. A trial for annual ryegrass control was conducted in 2009 at UD's Research and Education Center. Treatments included glyphosate or Gramoxone Inteon and they were either applied alone, with atrazine, with Bicep II Magnum, with Resolve, or with Bicep II Magnum plus Resolve. Glyphosate control was about 85% control, but when tankmixed with atrazine or Bicep, control was reduced to 70 to 75% control. The addition of 1 oz of Resolve to glyphosate plus atrazine or glyphosate plus Bicep II Magnum increased annual ryegrass control to over 90%. The three-way mix of Gramoxone Inteon, Bicep II Magnum, and Resolve also provided over 90% control, and this was higher than any other combination with Gramoxone Inteon. Annual ryegrass (or Italian ryegrass) is difficult to control. The addition of Resolve improved ryegrass control. In our trial, corn planting was delayed at least 2 weeks after herbicide application and no injury from Resolve was observed.

Annual ryegrass should be sprayed early, 4 to 6 inches tall. Larger plants are more difficult to

control and increase the likelihood of needing two herbicide applications to kill it.

Horseweed is Getting Harder to Control -

Mark VanGessel, Extension Weed Specialist;
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We confirmed a population of horseweed (or marehail) in Delaware that is resistant to glyphosate and ALS-inhibiting herbicide. This field had been treated with Finesse and Canopy EX and glyphosate and the horseweed was not controlled. We collected seed from this field and tested it in the greenhouse. This is the first confirmation of multiple resistance for horseweed in the Mid-Atlantic states. Glyphosate will not control this biotype, but neither will chlorimuron or FirstRate. Chlorimuron is the active ingredient in Classic, Canopy SG, Canopy EX, Synchrony, Envive, and Valor XLT. Controlling these populations will require 2,4-D (at 1 qt/A for consistent control), Ignite 280, or Kixor (but Kixor needs to be applied at least 30 days prior to planting in coarse-textured soils). The most cost-effective approach will be use of 2,4-D applied at 1 qt/A at least 30 days prior to planting. Delaying the 2,4-D applications until closer to planting will result in lower rates of 2,4-D being applied, less effective horseweed control, and more situations that are not appropriate for 2,4-D because of emergence of nearby crops and vegetables.

NOTE: There are many circumstances where 2,4-D is not an option due to susceptible plants or greenhouses in the area. Be sure to know the surrounding area before you treat a field with 2,4-D to be sure it is an appropriate treatment for the area.

Ignite 280 - Where is the Fit for Soybeans -

Mark VanGessel, Extension Weed Specialist;
mjv@udel.edu

Ignite 280 (glufosinate) is now labeled for burndown and can be used postemergence in Liberty Link soybeans. For non-Liberty Link soybeans it can be used as the burndown, particularly in fields with heavy horseweed pressure, and in situations where 2,4-D is not an

option for horseweed control. While Ignite 280 is very effective on horseweed (marehail), it is not effective on larger grasses or some winter annual species such as field pansy. As a result, it will often need to be part of a tank mix combination for burndown weed control, typically with a product that will control field pansy.

In Liberty Link soybeans, I see a better fit for Ignite 280 as a herbicide to control weeds four weeks after planting, rather than as a pre-plant herbicide. This does not mean you should consider Ignite 280 applied postemergence in soybeans as a viable option for horseweed control. Rather, always start with a clean field (everything dead at planting time), include a solid residual herbicide with your burndown, and a timely postemergence application of Ignite 280 about 4 weeks after planting.

- Starting clean often means your burndown application is made 4 weeks preplant so you can use an effective rate of 2,4-D for resistant marehail control
- A solid residual program should include a grass herbicide such as Dual, Outlook, or Micro-Tech plus a broadleaf herbicide since Ignite is not effective on large grasses. The residual herbicide will control grasses, or at least result in smaller more susceptible grasses at time of postemergence application.
- Postemergence applications need to be made timely, approximately 4 weeks after planting. While Ignite 280 is a broad-spectrum herbicide it is strictly a contact herbicide. It is difficult to get good coverage with larger weeds.

A couple of other items to consider with Ignite 280. As noted, good coverage is important for effective control, and this usually means effective spray volumes. Using low spray volumes may result in reduced levels of control. The label requires a spray volume of 15 gal/A, but even with that volume the spray boom needs to be well calibrated and provide a uniform distribution of medium sized spray droplets. Also, Ignite 280 requires the plant to have active photosynthesis at time of application for maximum effectiveness. Applications should not be made within 2 hours of sunset to ensure active photosynthesis.

Weed Control in Forages - *Quintin Johnson, Extension Associate - Weed Science; quintin@udel.edu and Mark VanGessel, Extension Weed Specialist; mjv@udel.edu*

If you have not done so yet, be sure to examine your hay, pasture, and alfalfa fields for weed infestations. Earlier applications are much more effective than later, as weeds get larger and start to produce seeds. For grass hayfields or pastures, weed control options include dicamba (Banvel or Clarity), 2,4-D, Overdrive, Crossbow, or Cimarron Max. Metsulfuron (active ingredient in Cimarron Max and Cimarron Ultra) and Crossbow provide residual control, while the other products do not. Be sure to read the label and follow all precautions concerning grazing and haying restrictions as well as overseeding and re-seeding restrictions. Remember that grasses seeded last fall should be tillering, actively growing, and mowed at least once before applications of dicamba or 2,4-D can be made.

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

2010 Preliminary Crop Production Forecasts
An important date lies just ahead for the grain trade. March 31 marks the release of USDA's survey based Prospective Plantings and the 1st quarter Grain Stocks in All Positions reports. These reports are important because they will set the stage for commodity trading going into the spring and summer months, coinciding with the time period that we generally experience seasonal rallies in the corn and soybean markets. The looming questions going into the reports are the number of 2010 corn and soybean acres farmers say they intend to plant and whether the stocks report suggests lower or higher ending stocks for the '09/'10 marketing year? The size of the production estimates and the amount of stocks on hand will help to determine the extent of the expected seasonal rally. Another factor likely to determine the extent of a seasonal rally is the weather. Although still early, saturated

soils throughout the Corn Belt may prove to be reason to remain cautiously optimistic concerning commodity prices this spring and early summer. The nation's farmers are not expected to risk delayed planting for corn this year considering the high moisture problems that were prevalent in the 2009 U.S. corn harvest.

Informa Economics estimates 2010 U.S. corn acreage at 88.427 million acres; soybean acreage at 78.629 million acres; and all U.S. wheat acreage at 53.655 million acres ahead of the March 31 report. Allendale Inc. estimates planted corn acres at 90.2 million acres; soybean plantings at 79.1 million acres; and all wheat acres at 53.4 million acres. The markets will settle on trading USDA'S projections that will be released next Wednesday.

Market Strategy

Currently, initial support for May corn futures lies at \$3.61. If May corn closes below that level then the next level of support is at \$3.51. Support for May soybeans is at \$9.58. Both markets are trading at or below support levels this morning. If broken, then we are likely to see nearby corn and soybean prices moving lower in the near term.

New crop Dec '10 corn futures are currently trading at \$3.90 per bushel (12 cents lower); Nov '10 soybean futures at \$9.28 (11 cents lower); with July '10 SRW wheat futures at \$4.86 per bushel (13 cents lower than last week's recorded prices). The lower prices are attributed to the harvest of the Southern Hemisphere corn and soybean crops; harvest progress in the Northern tier of the U.S. Corn Belt; and a drier 7 to 10 day forecast for the Midwest. For technical assistance on making grain marketing decisions contact Carl L. German, Extension Crops Marketing Specialist.

Announcements

Local Farmers Wanted for Western Sussex Farmer's Market

Saturdays 8:30 a.m. to Noon

July 3 through August 28

The Boys and Girls Club of Western Sussex

310 Virginia Ave.

Seaford, DE 19973

NEEDED: Produce, cheese, eggs, meats, fruit, nuts, bread & baked goods, jellies, herbal products, flowers, etc.

Easy access for vendor set-up!

Call (302) 629-2686 for more information.

Invitation to Join the Fruit and Vegetable Growers Association of Delaware

As the new Extension Vegetable and Fruit Specialist for the University of Delaware, I encourage you to consider joining the Fruit and Vegetable Growers Association of Delaware. I have just developed a new website for the group.

Take a look at:

<http://delawarefruitvegetable.wordpress.com>

or

<http://delawarefruitvegetable.org>

You may join by following the instructions on the membership page at the website

<http://delawarefruitvegetable.wordpress.com/membership>

We welcome growers, farm owners, farm employees, farm family members and spouses, market masters, market owners and operators, restaurant owners, produce buyers, suppliers, consultants, industry representatives, agency representatives, university representatives, and all other supporters of our fruit and vegetable growers to become members.

Member benefits include:

- A member farm page or links to farm websites on the new web page
- Newsletter and weblog, Twitter page, and Facebook page (new in 2010)
- Winter educational meetings and educational programs throughout the year.
- Promotional materials for use by member farms (such as recipes)
- Promotion of the industry and farms at events throughout the state.
- Voice in legislative activities and input into regulations affecting the industry.
- Programs that can help produce businesses such as "Farm to School"
- Training programs such as Produce Food Safety and much more...

Members of the Fruit and Vegetable Growers Association of Delaware are very diverse – from market gardeners selling at nearby farmers markets to grower-shippers who supply supermarkets throughout the east; from farms offering Community Supported

Agriculture subscriptions to nearby families to processing vegetable growers providing regional freezing and canning plants with tons of raw product that will be sold throughout the country.

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

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New Castle County Agronomic Grower Meeting and 3rd Annual Dinner

Tuesday, April 6, 2010 5:30 – 9:00 p.m.
 Blackbird Community Center
 120 Blackbird Forest Rd.
 Townsend, DE 19734

This session will gear you up for the season ahead with the latest in pest pressures and control, variety trial updates and agronomic planning for the year. We'll be sure to cover nutrient management topics, as well. A [detailed agenda](#) is available online.

This meeting is free and everyone interested in attending is welcome.

There is no fee, but registration by April 2 is required. To register, request more information or if you require special needs assistance for this meeting, please call our office in advance at (302) 831-2506.

Weather Summary

Carvel Research and Education Center Georgetown, DE

Week of March 18 to March 24, 2009

Readings Taken from Midnight to Midnight

Rainfall:

0.16 inch: March 22

Air Temperature:

Highs ranged from 75°F on March 20 and March 21 to 54°F on March 23.

Lows ranged from 51°F on March 22 to 34°F on March 18.

Soil Temperature:

54.0° F average

Additional Delaware weather data is available at http://www.deos.udel.edu/monthly_retrieval.html and <http://www.rec.udel.edu/TopLevel/Weather.htm>