

Rain, Rain, Go Away ... Dealing with Excess Spring Rain

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Almost exactly one year ago, an article appeared in this newsletter that dealt with excess spring rain. Well, it seems that history is repeating itself as frequent and occasionally heavy rainfall has disrupted farm operations in a number of locations throughout Ohio. Data from OARDC weather stations for May 10-28, 2001 show above average rainfall in all seven locations for which data are available.

Rainfall Amounts May 10 - May 28, 2001 as compared to Normal

Location	Total rainfall (in.)	Historical Average (in.)
Muck Crops Branch (Celeryville)	2.57	not available
Waterman Research Farm (Columbus)	6.92	2.8
Vegetable Crops Branch (Fremont)	3.38	2.4
Southern Branch (Jackson)	7.18	2.6
Western Branch (Hoytville)	4.26	2.3
Grape Branch (Kingsville)	3.82	2.1
Piketon Research and Extension Center (Piketon)	6.36	2.6
OARDC (Wooster)	3.17	2.6

In addition to often delivering above average amounts of rainfall, recent weather patterns have featured frequent rain -- which can be more difficult to manage

around than occasional heavy showers. Excess soil moisture combined with cool temperatures and low light can have large implications for vegetable producers. The chart below lists some of the effects of excess soil moisture. Excess early-season soil moisture -- its primary effects and their potential outcome(s)

primary effect	potential outcome(s)
1. poor transplant condition (e.g., "leggy," root bound)	difficult transplanting, poor and uneven stand establishment, low vigor crop
2. eagerness to work soil, even if wet.	compaction
3. increased seed and seedling disease.	poor and/or uneven stand establishment and continued disease pressure
4. inability to scout and apply pest control	increased pressure from many diseases, slugs, and insect pests, especially early in season
5. delayed or absent cultivation and/or herbicide inactivation	inadequate weed control
6. fertilizer leaching and runoff	crop nutrient deficiency
7. waterlogged, possibly compacted, soil	shallow-rooted, low-vigor crops, often less resistant to other types of stress
8. delayed maturity	missing desired market windows

What can be done to minimize these negative effects and outcomes? Experienced growers may be familiar with techniques to deal with some of the issues listed above.

Let's briefly review some of them here.

### 1. Transplant Condition ...

Slow transplant growth by lowering fertility, supplemental light, and, if possible, temperature levels. In the future, stay tuned to research at OSU dealing with commercial and experimental chemical treatments for slowing transplant growth (with marginal impacts on maturity or yield). Maintain disease and pest control strategies in the greenhouse. Do not transplant vegetable seedlings with symptoms of bacterial diseases. Rainfall will move the bacteria throughout the field, potentially causing many problems later.

### 2. Eagerness to work soil, even if wet ...

The desire to use any rain-free minute to work soil is understandable. But, growers are encouraged to balance short- and long-term objectives. Working soil when it is wet this year may be useful now but it will have significant, irreversible, long-term consequences. Not working soil when it is wet is perhaps the single most important step a grower can take in managing the soil's physical quality. Resist the urge to work wet soil.

### 3. Increased seed and seedling disease ...

Fungal and bacterial seed and seedling diseases may reduce stand establishment and crop vigor. Re-planting with high vigor, short- or medium-season varieties may be warranted in extreme cases and fungicide-treated seed is nearly always recommended, especially in years where conditions are conducive to the development of seed and seedling disease. Increased early-season scouting is warranted.

A special note about Phytophthora blight... If Phytophthora has been a problem in peppers or cucurbits in particular fields, for peppers apply mefenoxam (Ridomil Gold) preplant and later according to label directions. Use a Phytophthora - "tolerant" variety if possible and promote cultural practices that keep standing water away from the plants.

### 4. Disease and insect scouting and control ...

When weather does not permit the application of crop protectants using ground equipment, little can be done to manage insects or diseases during cool, wet conditions. If crop values warrant, growers may want to consider aerial applications. Insecticide application should not be made without verifying by scouting that the target pest is present. Even if scouting needs to be restricted to field edges, some scouting is better than none at all. Heavy rains sometimes eliminate pests such as aphids, mites, thrips, and small exposed caterpillars such as young European corn borer larvae. Damp weather is conducive to diseases such as Beauveria that can infect and kill insect pests. Scout potatoes carefully for late blight, beginning at emergence. Check leaves and stems. If symptoms are found, destroy infected plants (remove them from the field) and apply appropriate fungicides to the remaining crop immediately.

5. Delayed or absent cultivation and herbicide inactivation ... Some growers have claimed that the ample rainfall this year has increased herbicide activation and weed control. However, this sword can cut both ways as weeds may return later in the season due to the earlier leaching of herbicides. Therefore, more aggressive cultivation and application of post-emergent herbicides may be needed. Cultivation should be attempted only when soil moisture permits, otherwise declines in soil

quality (e.g., compaction) may offset potential gains in weed control. Pay close attention to crop tolerance, application timing, plant-back restrictions, and other label details when using any herbicide. Applying some herbicides during periods when growing conditions are poor (e.g., when there is excessive soil moisture or little sun and low temperatures) may damage some crops. Do not use tank mixes unless they are specified on the label or cleared by a crop advisor or other trained personnel, due to potential antagonism or synergism.

#### 6. Fertilizer leaching and runoff ...

Fertilizer lost to excess soil moisture can be replenished in several ways. Often a combination of methods is best. First, fertilizer may be soil-applied in "side-dress" applications. A complete fertilizer may be used but expect a delay between fertilizer application and nutrient availability. Second, nutrients may be applied foliar-applied, alone or in combination with crop protectants. This approach is best suited for nitrogen and some micronutrients but can be expected to deliver a minor portion of total crop nutrient needs (e.g., 2-3 lb N/A/application). Pay special attention to materials and tank mixes in order to avoid burning the crop. Third, nutrients (nitrogen, potassium) may be injected into irrigation water. Clearly, this method works best when soil moisture warrants irrigation. Which method(s) growers choose will depend on crop, soil condition, available equipment, and other factors. A crop's appearance (e.g., color) is not a reliable indicator of its nutrient status. Therefore, post-planting fertilizer applications should be made in conjunction with sap or tissue tests whenever possible.

#### 7. Waterlogged, potentially compacted soils ...

Heavy rainfall compacts bare soil and promotes erosion/runoff. For future reference, consider that both can be minimized by using plant residue mulches or other minimum-tillage practices. Root channels and above-ground debris permit rapid infiltration, shield the soil from the impact of rain drops, and absorb some moisture. Tiling fields to speed drainage is also useful.

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## Crop Reports

Brad Bergesford, Thom Harker and Hal Kneen

### SOUTHEASTERN OHIO

Excessive rainfall has caused creeks and Ohio River to rise and cause flooding on lowest ground. Homeowners have lost earliest greens and root crops due to flooding. Erosion a big problem, need more grass waterways.

Tomatoes- Excessive rain has hindered the application of necessary preventative sprays for early blight. Some growers have managed however most are behind in spraying. Suckering, trellising and staking are continuing however muddy conditions are causing slower working conditions. Some tomatoes are setting ranging from nickel to silver dollar size fruits. Plastic covered raised bed tomatoes look better than tomatoes grow in bare ground.

Sweet corn- rapidly growing, side dressing of nitrogen was complete on earliest corn. Later plantings need sidedressing now, delayed due to excess moisture.

Insect IPM report: Week of 5/22/01, Eur. Corn Borer= 0, Corn earworm = 1

Week of 5/29/01, Eur. Corn Borer = 3, Corn earworm = 0

### SOUTHWESTERN OHIO

Little field work has been done since last week with the continued rainfall. Some areas are nearing thirteen inches in the last 2 weeks with most areas averaging around 7 inches.

Peppers for processing are being planted by hand and many growers are holding plug plants until the weather settles. Cucumbers and summer squash seeded to fields before the rains are experiencing severe weather related injury including damping off, soil crusting, cucumber beetle feeding injury, flooded out areas, and wind and sand blowing injury.

Newly planted Melons are showing signs of sudden wilt from the saturated soil conditions. Many growers are holding plants that are getting old and leggy until they can get equipment back in the fields, these plants may need to be dumped if they need to be held much longer. There will probably be gaps in the summer sweet corn harvest for growers have not been able to plant for the past 2 weeks. Growers will probably be replacing mid season varieties with some earlier maturing varieties when they can get in the fields. Corn that is up has taken on a yellowish coloration due to the cold and wet soil conditions. Cutworm, slugs and grubs continue to feed on corn seedlings and plants. Sweet corn planted on plastic is beginning to tassel and growers are beginning to get on a tight insecticide spray program. Some growers began seeding pumpkins in the greenhouse over the Memorial day weekend since these early plantings could not be made in the field. Phytophthora is showing up in green bean fields where water has stood. Harvest of collard and kale continues. Harvest of high tunnel tomatoes, green beans, lettuce, cucumbers, and summer squash continues. Gray mold, Sclerotinia stem rot and nutrient deficiencies are showing up in high tunnel tomatoes.

## MOTH TRAP REPORTS (~5/22 to 5/29)

C. Welty

black cutworm, pheromone trap

Huron County (Celeryville): 2 (down from 5 last week)

Wood County (Hoytville): 1 (same as last week)

variegated cutworm, pheromone trap

Huron County (Celeryville): 17 (up from 11 last week)

Wood County (Hoytville): 1 (down from 15 last week)

true armyworm, pheromone trap

Wood County (Hoytville): 218 (up from 175 last week)

fall armyworm, pheromone trap

Franklin County (Columbus): 0 (same as last week)

squash vine borer, pheromone trap

Franklin County (Columbus): 0

corn earworm, pheromone trap

Meigs County (Racine): 0 (down from 1 last week)

Franklin County (Columbus): 0 (same as last week)

European corn borer, pheromone trap

Meigs County (Racine): 3 (up from 0 last week)

Franklin County (Columbus): 0 (down from 4 last week)

Wood County (Hoytville): 5 (up from 0 last week)

European corn borer, blacklight trap

Franklin County (Columbus): 0 (down from 4 last week)

Sandusky County (Fremont): 0 (down from 231 last week)

Note: full season trap records are posted at:

<http://www.ag.ohio-state.edu/~ipm/traps/traps.htm>

A link is provided from the VegNet homepage, just click on the Vegetable IPM button.

## What's New At The VegNet Web Site

Sweet Corn Tour and Workshop

June 19, 4-8 PM

[Click Here for more information!](#)

Online Edition of the 2001 Ohio Vegetable Production Guide - Now Available

Sweet Corn Disease Resistance Ratings

The following are summarized lists of Dr. Pataky's work at the Univ. of IL on disease reactions of sweet corn. In these summaries, all experimental and processing varieties have been removed and only named varieties which were rated for common rust or MDM are included. The first list are those named varieties rated for common rust. The second list are only those named varieties rated for Maize Dwarf Mosaic virus (MDM). For a complete report, E-mail: Bob Precheur:

[precheur.1@osu.edu](mailto:precheur.1@osu.edu)

Common Rust of Sweet Corn

## MDM of Sweet Corn

### Do You Know Us?

Find out what we've been up to. The OSU Vegetable Team Report is available in PDF file format for downloading from the VegNet homepage.

### Sources of Pheromone Traps Used in Vegetable Pest Management.

Do you need to find traps, lures or suppliers, click on the Vegetable IPM button on the left side of the homepage, then click on the 'Sources' document in the Vegetable IPM section.

### IR-4 News

Also in the Vegetable IPM section, you can link to the IR-4 website. Read the results of the 2000 food use workshop, monthly and quarterly newsletters. Find out the latest on pesticide registrations for minor crops. Learn about biopesticides plus much more. Click on the Vegetable IPM button on the VegNet homepage and then click on the IR4 link in the Vegetable IPM section.

[Return to Vegetable Crops Homepage | Ohio State University Extension](#)

We appreciate very much the financial support for this series of vegetable reports which we have received from the board of growers responsible for the Ohio Vegetable and Small Fruit research and Development Program. This is an example of use of Funds from the "Assessment Program".

Where trade names are used, no discrimination is intended and no endorsement by Ohio State University Extension is implied. Although every attempt is made to produce information that is complete, timely and accurate, the pesticide user bears the responsibility of consulting the pesticide label and adhering to those directions.

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