It looks like we are now in a dry stretch, and those of you in sandier soils are probably looking up at the sky a lot more, hoping for one of those passing stray showers.

I’ve been chided by several readers (it seems there actually are readers) that too often I am presenting a gloomy outlook. So this time, some pretty pictures will be featured, and positive solutions.

And the Good News is that the dry weather conditions we are experiencing right now is great for growing plants and terrible for growing plant diseases. Now is the time to stock up and be ready for warm, wet conditions that bring on plant diseases.

--> Need to discuss? Got something you need looked at? URI Extension: 401-874-2967/andy_radin@uri.edu, hfaubert@uri.edu

These Ithaca Crisphead Lettuces (center and right of center row) had good growing conditions to get to this size, with the relative coolness and somewhat damp spring. Good looking row crops here, Matt!

Summer Squash on the Verge of producing. The beginning is always so nice with squash. Then the plants keep getting bigger, and the weather gets hotter, and spines get spinier... So enjoy the harvest NOW!
Are there good organic disease controls?

Indeed, there are a number of products shown to work in some situations and not in others. What works and what doesn’t?

Something you may not know: product labels for plant protection can have target pests listed without proof that the product actually works. The only efficacy data EPA is really concerned with is for products that directly impact human health, like tick repellents or anti-microbials for surfaces on which food is processed (see sidebar). So don’t assume that if a disease organism is listed on the label, that the product actually controls that disease organism. Luckily, we have specialists at universities testing products side-by-side in the field, such as Meg McGrath at Cornell on Long Island, NY. Studies like these usually involve a control (no treatment at all), a synthetic product that has a well-established track record of efficacy, and several test products whose efficacy is not well established. All of these trials are replicated; that is, there are several identical tests of each product, randomly scattered, so as to make sure that product performance is consistent in multiple locations within a field. The American Phytopathological Society compiles efficacy testing from institutions (https://www.plantmanagementnetwork.org/pub/trial/PDMR/default.asp). We have access to these at URI.

For an extensive list of tested products on a number of diseases common to our area, go to this site: https://cpb-us-e1.wpmucdn.com/blogs.cornell.edu/dist/8/5755/files/2015/04/Organic-Fungicides-Veg-Crops-Herbs-Efficacy-results_McGrath-27wvlf.pdf. Dr. McGrath compiles these for us to see.

From the EPA-Label Review Manual-Chapter 12: Labeling Claims: “Even though registrants/applicants must conduct efficacy studies, the Agency only routinely requires the submission of these studies for certain types of products.” “EPA routinely reviews efficacy data (also referred to as product performance data) when a pesticide product bears a claim to control pest organisms that pose a threat to human health.”
Leaf Mold of High Tunnel Tomatoes

Here is a recent trial done at Christine Smart’s lab at Cornell in Geneva, NY. The taller the bar, the MORE disease. It’s clear that disease was reduced by all of the products, though over time, it was still present. The letters at the tops of the bars depict statistically significant differences in disease severity. The bar marked with A, which was untreated, shows significantly more disease than those marked with B. All of those marked with B, though each treatment had different average disease incidence over time, were not significantly different from each other. So while Champ (copper hydroxide) has the lowest disease rating, we can’t really say it was better than the rest because variability is a thing you can’t avoid!

This level of control is categorized as “Effective”

Now is the time to think about how you will prevent Field Tomato Leaf Spot diseases, particularly Early Blight (Alternaria) and Septoria leaf spot. Here are some trial results compiled by Meg McGrath:

Early blight
Serenade Max 1 lb/A ineffective (IN, 2008, PDMR 3:V135).
OxiDate 128 oz/A applied with Yucca Ag Aide ineffective; Nordox also (NY, 2011, PDMR 6:V105).
Serenade Max 3 lb/A ineffective; Nordox also (NY, 2011, PDMR 6:V105).
Sonata 4 qt/A ineffective; Nordox also (NY, 2011, PDMR 6:V105).
Sporatec AG 3 pt/A effective (others not) (NY, 2011, PDMR 6:V105).

Septoria Leaf Spot
Actinovate ineffective (NY, 2009, PDMR 4:V115; MTM).
Organocide ineffective (NY, 2009, PDMR 4:V115; MTM).
Regalia ineffective (NY, 2009, PDMR 4:V115; MTM).
Taegro ineffective (NY, 2009, PDMR 4:V115; MTM).
Sightings and Be-On-The-Look-Outs-For...

**Potato leafhoppers** are around, though reports of real hopper-burn are not coming in. There are several effective synthetics, while pyrethrum or Azera (=pyrethrum + azadiractin) are the only truly good organic controls. Keep an eye on eggplant, beans and potatoes, and Dahlias if you grow them.

If you are planning to use **Trident** (*Bacillus thuringiensis* Galleria) on **Colorado potato beetle larvae**, be sure the larvae don’t get too big- the larger they get, the less it works.

**European Corn Borer** moths are definitely flying and laying eggs. Most susceptible crops: Peppers, Beans, and Dahlias, if you grow them. If you are really paying attention to egg hatch (“blackhead stage”), B.t. works very well.

If you haven’t seen them already, **Squash bugs** will be around soon. Right now, the best organics are Azera (pyrethrum + azadiractin) and Grandevo (*Bacillus amyloliquefaciens*), according to work done by Abby Seaman at Cornell.

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Sample text from Plant Disease Management Reports

Here’s a section from tests for control of **Basil Downy Mildew (BDM):**

Cueva 1 gal/A ineffective applied twice weekly. (FL, 2016, PDMR 11:V045). *
Double Nickel 0.5 lb/A ineffective applied 6X with Cueva 2X , or applied 4X with Regalia 1 qt/A with Cueva applied for 3rd app. All twice weekly schedule. (FL, 2016, PDMR 11:V045). *

**MilStop** 2.5 lb/A **moderately effective**, 2 sites. Preventive schedule. (CT, 2011, PDMR 6:V073). *
MilStop 2.5 lb/A ineffective, 2 sites. Preventive schedule. (CT, 2012, PDMR 7:V045).

Many more trials of other products are listed. In the case of BDM, “Moderately Effective” is good as it gets.

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Comprehensive Disease Management

- Choose Resistant Varieties
- Rotate crop groupings to whatever extent possible
- Remove crop residues where there was disease infestation, or in some cases, bury residue deeply
- In small plantings, remove diseased plants and dispose of
- Use cultural practices that favor drying of wet foliage, such as pruning, wider spacing
- Use preventative applications of fungicides where diseases are endemic or predictable; for a lot (though not all) of diseases of many different crops, copper formulations are still the most effective preventative controls, but biologicals are showing efficacy on certain diseases of certain crops