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## Now is the Time to Calibrate Your Sprayer

by Erdal Ozkan, from C.O.R.N., May 8, 2012. Used with permission.

Higher pesticide costs and new chemicals designed to be used in lower doses make accurate application more important than ever. There is no better time than early spring to take a closer look at your sprayer. Among the things to do is to find out if the sprayer is delivering the proper application rate (gallons per acre) you wish for your spraying situation.

One can determine if the chemicals are applied at the proper rate only by carefully calibrating the sprayer. Calibration, perhaps more than anything else, will have a direct impact on achieving effective pest control and the cost of crop production. While applying too little pesticide may result in ineffective pest control, too much pesticide wastes money, may damage the crop and increases the potential risk of contaminating ground water and environment. Results of "Sprayer Calibration Clinics" I participated in Ohio, and data from several other States show that only one out of three to four applicators are applying chemicals at a rate that is within 5 % (plus or minus) of their intended rate (an accuracy level recommended by USDA and EPA). Sprayers should be calibrated several times a year. Changes in operating conditions and the type of chemical used require a new calibration.

Frequent calibration is even more important with liquid application because nozzles wear out with use, increasing the flow rate. Over a decade ago, my colleagues at University of Nebraska conducted an interesting survey. The survey results revealed that there is a direct positive correlation between application accuracy and the frequency of calibration. Approximately 67 percent of the operators who calibrated before every spray operation had application errors below 5 percent. Only 5 percent of the applicators who calibrated their equipment less than once a year (once every two, three, four years) achieved the same degree of application accuracy.

### How to Calibrate a Sprayer

Calibrating a boom sprayer is not as difficult as it sounds. It usually doesn't take more than 30 minutes to calibrate a sprayer, and only three things are needed: a watch showing seconds, a measuring tape, and a jar graduated in ounces. A pocket calculator also will be handy. Usually the ultimate goal when calibrating a sprayer is to find out the actual application rate in gallons per acre. There are many methods to choose from to determine this, but one method that is the easiest, most practical, and requiring few calculations is described in OSU Extension publication on boom sprayer calibration. Here is the URL for this publication:

<http://ohioline.osu.edu/aex-fact/0520.html>

Calibration may require you change the travel speed and/or spray pressure, and replacing the nozzles with the right size if the changes in pressure and/or travel speed don't bring the difference between the desired and actual application rate to within plus or minus 5% of the desired application rate. You need to recalibrate the sprayer after any adjustment is made until the application error is within the allowable range of 5% of the desired rate.

Always keep in mind that changes in spray pressure will help you bring the application rate to what you want, but you may not be getting the size of droplets recommended for a given application. Higher spray pressures cause reduction in droplet size which may increase the risk of spray drift.

One final important point to consider: Getting the right amount of chemicals on the ground is not enough to achieve effective pest control. How the chemical is deposited on the spray target is as important as the amount deposited. Make sure that all nozzle tips are properly aligned. Some nozzles require overlapping adjacent spray patterns. Check the nozzle catalog to determine the overlap required for a given type of nozzle.

## Calendar

**May 17. Strawberry Field Night**, May 17, from 6-9 p.m. RSVP to me. Cost is \$5 per person and will be conducted in the research fields following registration in the Endeavor Center. For more information, contact: Julie Strawser-Moose, Information Associate, OSU South Centers, 1864 Shyville Road, Piketon, OH 45661 740-289-2071 or 800-297-2072 ext 223

### June 21. Webinar Invitation to "IPM for Organic farmers-web tools, scouting and IPM"

Are you a bit nervous about the pests that may attack your crops this year?? Do you have your scouting plan ready?? Do you know how to calculate degree days for the key pests in your field??

If these questions have you thinking then perhaps you should join us for a webinar on understanding and setting up an IPM program for your farm!! All smart farmers scout their fields to be ready for pest occurrences, but especially organic farmers who use multiple tools to manage pests. Having a good idea if and when insects will attack is the first step to smart pest management.

**So we hope that you will join us for this 1.5 hour webinar on Thursday June 21 from 2-3:30. If you cannot attend the live presentation the webinar will be available for later viewing on [www.MichiganOrganic.msu.edu](http://www.MichiganOrganic.msu.edu) website.**

The North Central SARE program is sponsoring this webinar that will be presented by Beth Bishop, Michigan State University's Enviro Weather Coordinator. on how to set up a sound Integrated Pest Management program for your farm and use online tools to assist you predict pest outbreaks as well as give you a heads up of possible pest outbreaks.

This year will likely be challenging to all farmers in the Midwest, given the mild winter and early heat spell, triggering perennials to bloom too early and allowing overwintering insects and disease to survive in the soil. Beth Bishop, Enviro-Weather coordinator will share how to use this great online tool to predict insect flights as well as steps toward a sound Integrated Pest Management program for your farm. IPM model plants will be shared for three model crops; corn, apples and tomatoes.

Please join us in an Adobe Connect Meeting. June 21, Thursday from 2–3:30 EST  
Meeting Name: IPM for Organic farmers–web tools, scouting and IPM  
Invited By: Vicki Morrone and Beth Bishop. If you have any questions please contact Vicki at [sorrone@msu.edu](mailto:sorrone@msu.edu).  
To join the meeting on June 21 at 2 pm EST Click on this link:  
<http://connect.msu.edu/msuorganicipm/>

If you have never attended an Adobe Connect meeting before:

Test your connection: [http://connect.msu.edu/common/help/en/support/meeting\\_test.htm](http://connect.msu.edu/common/help/en/support/meeting_test.htm)

Get a quick overview: [http://www.adobe.com/go/connectpro\\_overview](http://www.adobe.com/go/connectpro_overview)

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### June 27, OPGMA Summer Tour & Field Day – Register Today.

Join your peers on June 27 for this educational and networking activity. Allied industry vendors will be sharing their newest equipment, packaging, chemicals, seeds, and services.

#### Tour Locations

- **Eshleman Fruit Farm** Clyde, Ohio
- **OARDC Muck Crops Agricultural Research Station** Willard, Ohio
- **Buurma Farms** Willard, Ohio

#### Registration Information

OPGMA Members	Non-Members
\$20 1st company attendee	\$25 1st company attendee
\$10 each additional attendee	\$10 each additional attendee

[Click here for more information and to register.](#)

**August 7. Northern Ohio Vegetable Crops Field Night.** It will be held on Tuesday, August 7, 2012 from 6:00 – 8:30 PM here at NCARS. More specifics on topics to be coming in the future. Contact information for the event is as follows:

Mark Koenig 419–334–6340 or [koenig.55@osu.edu](mailto:koenig.55@osu.edu)  
or Matt Hofelich 419–332–5142 or [Hofelich.4@osu.edu](mailto:Hofelich.4@osu.edu)

## Opportunities

### 1. Columbus Wholesaler Looking for Local Produce for Local Markets

For Details and more specific information, Contact: Brad Bergefurd, The OSU South Centers / OSU Extension Scioto County & Ohio Valley EERA1864 Shyville Road/Piketon, OH 45661 (Piketon office), 602 Seventh St./Portsmouth, OH 45662 (Scioto county office) 740–289–2071 ext. 136 (Piketon office). 740–354–7879 (Scioto county office) NEXTEL 136\*52\*3217  
[bergefurd.1@osu.edu](mailto:bergefurd.1@osu.edu) <http://southcenters.osu.edu/horticulture/>

### 2. International Opportunity, Production Improvement Assignment for Open Field Vegetable Production, (Especially for Tomatoes & Cucumbers), Kvemo Kartli Region, Georgia (Asia)

The Citizens Network for Foreign Affairs (CNFA) is searching for a horticultural resource person to assist Marneuli Agro Ltd. with tomato and cucumber production techniques with special emphasis on disease and insect control. Marneuli Agro Ltd is a private company mainly involved in vegetable production. The company was established in 2007 and since then has been producing vegetables such as tomatoes, cucumber, peppers, garlic, onion, cabbage, and cauliflower.

The preferred time period is any two weeks from May 31<sup>st</sup> through June 30<sup>th</sup>, 2012 with an extended time period to July 15<sup>th</sup> if necessary.

The assignment is part of CNFA's Farmer-to-Farmer program. The assignment is open to any person with a horticultural background either actively working or retired. It is a great opportunity to share knowledge and learn about people and agriculture in another part of the world.

Open the following websites for more information;

About CNFA; <http://cnfa.org/>

About the Georgia Assignment; <http://cnfa.org/farmertofarmer/volunteer-opportunities>

Please contact me if you have questions; Ron Overmyer, Retired OSU Extension Educator, 419–308–5378, [rovermyer@roadrunner.com](mailto:rovermyer@roadrunner.com)

## Your Summer Outlook from Accuweather.com



Active severe weather targets portions of the Great Lakes to the mid-Atlantic. Meanwhile, the Northeast will have a lack of prolonged heat.

### Pattern for the Summer of 2012

The La Niña pattern, or cooler-than-normal water temperatures over the central and eastern equatorial Pacific, that has been in place for the past two

years has ended.

This summer, the pattern is transitioning into an El Niño pattern, which is characterized by above-normal water temperatures in the central and eastern equatorial Pacific.

During June, the core of heat will be anchored over the central Plains with well above-normal temperatures stretching from West Texas to western Iowa.

Hot spells will also reach eastward into the Midwest at times during the summer. Chicago will have some heat surges, but rounds of wet weather and even severe weather will keep heat waves from lasting very long.

**Active Severe Weather for Great Lakes to the Mid-Atlantic** An active severe weather season will extend into the summer. Storms will ride over the northeastern edge of heat with increased chances for severe weather from the Great Lakes to portions of the mid-Atlantic. This type of severe weather pattern is often referred to as "ring of fire" storms. Michigan and Minnesota to portions of Kentucky, Virginia, Maryland and New Jersey will lie in the battlegrounds of severe storms at times. Cincinnati, Ohio, Lexington, Ky., Washington, D.C., and Philadelphia are among the cities at risk for active severe weather.

During the early and middle part of the summer, the threats may include damaging winds and the threat for tornadoes before the northern jet stream weakens and an El Niño pattern sets in. Later in the summer, there may be a shift to more heavy rain events in the unsettled zone.

#### **Lack of Prolonged Heat for Eastern Ohio Valley, Northeast**

While heat is centered over the northern and central portions of the Rockies and storms rattle the Great Lakes to the mid-Atlantic, it appears that there will be a lack of long-duration heat in the eastern Ohio Valley and the Northeast this summer.

A blocking pattern will set up at times, keeping long-lasting heat away from the eastern Ohio Valley and the Northeast. "Blocking over Greenland or northern Canada forces systems to dive to the Ohio Valley," Pastelok explained.

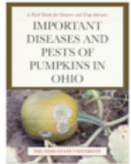
Above-normal precipitation is forecast for the East during both June and August. The rain will be beneficial for communities that have endured a dry March and April and for some since the beginning of the winter. August may feature one or two big rain events, perhaps including a tropical system hit, that pushes rainfall totals over the norm.

## TAKE IT WITH YOU

2 New eBooks now available...



### The Brown Marmorated Stink Bug in Ohio



### Important Diseases and Pests on Pumpkins in OH

See details below: "Brown Marmorated Stink Bug" available in epub or ibooks file format  
"Important Diseases and Pests on Pumpkin in Ohio" available in ibooks file format.

## The Brown Marmorated Stink Bug in Ohio

Get the 411 on this new invasive pest. Here are the things you need to know about its history, life cycle, identification, monitoring, management & control.

This is an enhanced eBook with two short videos and 1 short audio piece.

It will work on mobile devices that have an eReader that can use the 'epub' file format. They are available for IOS (iBooks) (iPhones and iPads) and Android devices. There are some plug-ins for browsers that will handle epub files.

Downloads are free & available from the VegNet home page:

<http://vegnet.osu.edu>

or at the VegNet section of iTunes U



## Two New eBooks Available

### For iPad only

#### Important Diseases and Pests on Pumpkins in OH



Do You Remember this fact sheet (left)? Probably not. It was made nearly a decade ago, but unfortunately, not many copies were printed nor was it widely distributed.

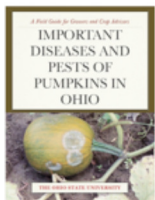


With the advent of iPads and iBooks Author, we have reissued this publication in a new and exciting visual format (See sample pages below).

The authors are: Dr. A. Wyenandt, Vegetable Pathologist, now with Rutgers University, R. M. Riedel, (Emeritus), OSU Dept. of Plant Pathology, C. Welty, OSU Dept. of Entomology, B. Precheur, OSU Dept. of Horticulture and Crop Science and J. Jasinski, OSU Dept. Of Extension, IPM Program.

Designed for growers and field consultants, take it with you to the field and here's to growing better pumpkins.

*Please note: For now, only available for iPad.*



#### Some sample pages from:

##### Important Diseases and Pests on Pumpkins in OH

###### Bacterial wilt

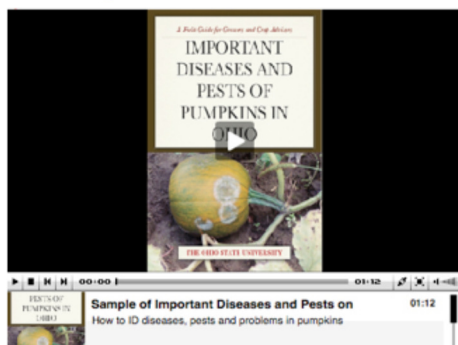


Notice the wilted appearance and death of the young leaves.



Typical leaf scorch symptoms and interveinal necrosis on young leaves.

See the promotional video on the VegNet home page to get a better idea what's in this publication.



###### Phytophthora foliar blight and fruit rot



Phytophthora foliar blight causing wilt and collapse of pumpkin vine.



Phytophthora foliar blight causing death of pumpkin vines at the crown of the plant (above right).



### Squash bug



Eggs masses of squash bug.



Leaf damage due to feeding by squash bug.

48

### Bird Damage on pumpkin fruit



Bird Damage on small, developing fruit.



Bird damage on maturing green fruit (above).  
More common in dry seasons with birds looking for moisture but can occur in wet seasons too.

56

## The Brown Marmorated Stink Bug

This is the iBook edition for iPad

Use iBooks on your iPad for these eBooks



This is the iPad or iBook version of the eBook mentioned above.

Content is the same but in a slightly enhanced format as allowed by iBooks Author for iPads.



## Where to get these iBooks

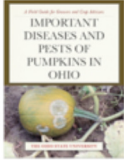


Both iBooks for iPad only are available for free download from:

1. the VegNet web site:  
<http://vegnet.osu.edu>



2. They are in the process but not yet available at the iBookstore



Please Note: File size:  
Brown Marmorated Stink bug: 41 MB

Important Diseases and Pests of Pumpkins  
in OH: 105 MB (*could be a long download  
time depending on your connection*)

## Why eBooks?

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