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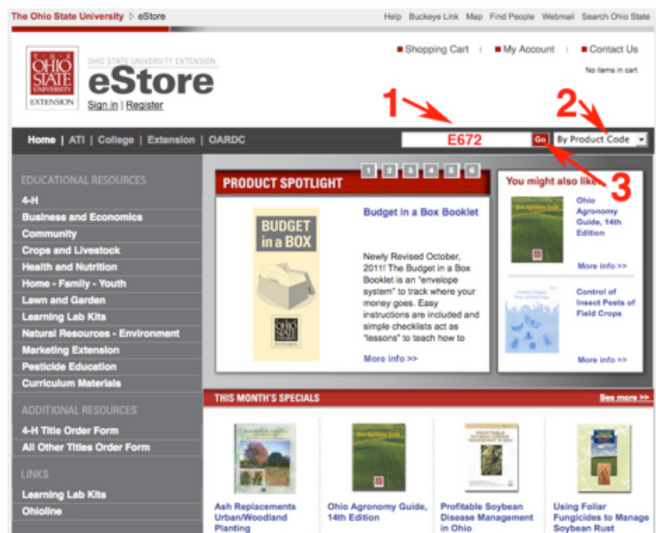
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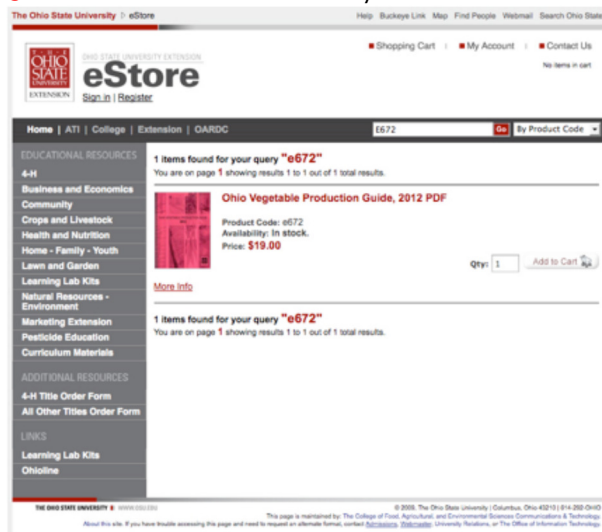
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Proven Practices for increasing sweet corn yields and profits

Recently OSU agronomist, Dr. Peter Thomison, wrote an article for the newsletter, Ag Answers: "Use proven practices for increasing corn yields and profits" *Thursday, January 26, 2012*. Dr. Thomison said corn growers coming off a record year may try to push the limits for even higher yields by going to higher seeding rates, more fertilizer, etc. Dr. Thomison said the best way to optimize yield potential was to use proven practices that are more economical and practical and we know enhance corn production. With Dr. Thomison permission, I have adapted many of these principles as most of them apply to sweet corn production, our largest fresh market vegetable crop in Ohio.

Following are Proven Practices for Increasing Sweet Corn Yields and Profits.

1. Know the yield potential of your fields, their yield history, the soil type and its productivity. Know or keep good records on crops in the field and herbicides used to prevent herbicide residue carryover problems for sweet corn or other vegetables in subsequent years.
2. Choose high-yielding, high eating quality, adapted hybrids suited for your market whether it be for retail, or wholesale . Pick hybrids that have produced consistently high quality yields across a number of locations over the years. Select hybrids with high ratings for disease resistance where possible. Bt varieties maybe your best choice for late season production. There are many resources to help you select varieties such as the Midwest Vegetable Trial Report from Purdue (a compilation of vegetable variety and other trials from the region) <http://www.hort.purdue.edu/fruitveg/reports.shtml> ,Mark Koneig's sweet corn trial work in OH <http://vegnet.osu.edu> and for disease resistance Gerald Pataky's work in IL <http://sweetcorn.illinois.edu/>
3. Follow pest management practices that will provide effective, timely pest control – especially weed control. There are many resources such as tables showing effectiveness of herbicides on various weed species, spray schedules for corn earworm, and tables of insecticides for soil and foliar applications in the OH Veg guide. There is much information in the insecticide tables such as how often has an insecticide been used for an insect pest in OH, insect pests for which a product is labeled, PHI, efficacy when known and impact on beneficial insects. For vegetable pest trap reports, go to: http://bugs.osu.edu/welty/veg_traps1/Veg_traps.html
4. Remember sweet corn is sensitive to cold soil temperatures so buying a soil thermometer is a wise investment. Se varieties require a soil temperature around 50 to 55 degrees F. The sh2's require a minimum of 60 degrees F. Growers use clear plastic mulch, row covers, etc. to modify the environment for very early sweet corn plantings. If you know a bad spell of real cold wet weather is coming it might be best to wait a few days to plant, since some

supersweets will lose a lot of seed vigor in the first 24 hours after planting in very cold, wet soils.

5. Follow practices that will enhance stand establishment. Adjust seeding depth according to soil conditions and monitor planting depth periodically during the planting operation and adjust for varying soil conditions. Make sure the planter is in good working order. Inspect and adjust the planter to improve stand establishment. Operate planters at speeds that will optimize seed placement. Uneven emergence affects crop performance because late emerging plants cannot compete with larger, early emerging plants.
6. Adjust seeding rates on a field-by-field and variety basis. Check with your seed company representative for optimum planting rates for your hybrids.
7. Supply the most economical rate of nitrogen. Use an application method that will minimize the potential loss of N. Be sure to side dress sweet corn when plants are about 12 to 18 " tall. Research has shown sweet corn responds to side dressed N with improved yield and quality.
8. Utilize soil testing to adjust pH and guide phosphorus and potassium fertilization. Avoid unnecessary phosphorus and potassium application. High soil tests do not require additional inputs.
9. Perform tillage operations only when necessary and under proper soil conditions. Deep tillage should only be performed when a compacted zone is detected and soil conditions are dry (usually late summer).
10. Take advantage of crop rotation – sweet corn grown after soybeans will probably perform better. Another crop in the field the previous year is one way to control problem weeds. However, remember your crop rotation restrictions with herbicides used in previous years and their effect on sweet corn or other vegetables in subsequent years. There are tables available to help you avoid problems with crop rotation restrictions.
11. Monitor fields and troubleshoot yield-limiting factors throughout the season. When the problems are birds, varmits, etc. there are no good answers here. Consult proper authorities and report damage to your crop.

Spray water quality matters in herbicide efficacy

Sometimes there seems to be few or no answers as to why a herbicide or other pesticide doesn't work or seems to be less effective. The problem may be water quality. Organophosphate and carbamate insecticides are the principal types of pesticides affected by water pH. Certain pesticides decompose quite rapidly in alkaline water. If a spray mix stands for several hours or overnight before use, 50% or more of the active ingredient can decompose under alkaline conditions. Decomposition is due to a reaction called "alkaline hydrolysis," in which the pesticide molecule is split by the water and converted to an inactive form. Decomposition rates are determined by the pesticide chemical makeup; each compound's rate is different. Warmer temperatures also interact with pH to speed hydrolysis. Some pesticides subject to alkaline hydrolysis are listed in the table on page 53 of the 2012 Ohio Vegetable Production Guide. pH and hardness of the spray water should be frequently checked from any water source, because algae can change water pH. Water pH can be checked with indicator paper or a pH meter. The following article was published on Jan. 24, 2012 issue of Ag Answers, An Ohio State Extension and Purdue Extension Partnership, and while directed to corn producers should be of interest to vegetable growers.

A series of studies at Purdue University has shown that spray water pH and hardness can reduce the effectiveness of herbicides, making it vitally important for crop producers to test water sources.

Hard water or water with pH values as low as 4 or as high as 9 have been shown to lower the efficacy of herbicides, including glyphosate, nicosulfuron and saflufenacil, said Bill Johnson, Purdue Extension weed scientist and professor of botany and plant pathology. An ideal pH value would be 6–7.

"At this point, it seems to be specific to a limited number of compounds," Johnson said. "It's amazing how little we know about this topic, considering the number of acres of crops planted in Indiana each year."

In his research with saflufenacil, Johnson said the herbicide is less soluble at a low pH.

"It's similar to what happens when you put too much sugar in a glass of tea," he said. "The granules are then harder for plants to absorb."

With spray water at a high pH, the molecules in saflufenacil break apart, turning the herbicide into a different compound altogether.

The high mineral content of hard water makes it more difficult for plants to take up the compounds through their tissues because the minerals bind to the herbicide, Johnson said.

Water sources in Indiana tend to have higher iron content, bringing pH levels lower. Further west in the Corn Belt, water sources can have higher pH values because there is more sodium.

Regardless of location, Johnson said crop producers need to test spray water and understand pH and hardness. He said that is especially important if producers are getting water from multiple sources because levels can vary from well to well.

Growers can buy test kits for both pH and hardness, and there are pH adjuster treatments to neutralize spray water. Hard water issues can sometimes be corrected by adding ammonium sulfate.

"Producers also need to read their herbicide labels and understand which water conditions they need to avoid," Johnson said.

He also warned producers against making complex mixtures of herbicides, insecticides, fungicides and foliar fertilizers because the characteristics of each chemical potentially could change the way the other chemicals perform.

"If farmers are putting together complex mixtures, they really need to pay attention to what each chemical does," Johnson said. "A unique mixture will have unique characteristics. For example, you might be adding hardness to the mix when you shouldn't."

More information on spray water quality, testing and solutions to hardness and high pH values are available in the Purdue Extension publication "The Impact of Water Quality on Pesticide Performance." The publication, number PPP-86, is available for free download at Purdue Extension's Education Store at <http://www.the-education-store.com>

Research Reports



2011 Vegetable Research Reports

The following reports are available online at the VegNet home page. Arranged alphabetically by crop or subject. All 2010 and previous research reports have been moved to "The Library"

- [Controlling Angular Leaf Spot on pumpkin using seed treatments and foliar applications - Jasinski \[Short Powerpoint\]](#)
- [Replicated Asparagus Cultivar Evaluation, 2007-2011 by Carl Cantaluppi from N.C. State University \[MS Word file\]](#)
- [2011 Green Pepper Cultivar Evaluation, plus pictures. \[MS Word file\].](#)
- [2011 Pumpkin Cultivar Evaluation with pictures. \[MS Word file\]](#)
-  [Green Pepper and Pumpkin Report, 2011. This version is for your mobile device using iBooks or other eReader\[epub file\]](#)
- [2011 Northern Ohio Sweet Corn evaluation \[PDF file - need Acrobat reader\]](#)
- [Evaluation of Sweet Corn Varieties at 2 Grower Locations in Ohio - 2011 with pictures.](#)

Other Resources

- Insect Natural Enemies video that provides balanced coverage of as well as some insightful landscape management comments (by Mary Gardiner, HD quality 25 minutes from the Biocontrol workshops). <http://www.youtube.com/watch?v=r1EYCEvAgnY>
- Natural Enemies ID factsheet.
A companion to the video. 2 pages, back to back. by Mary Gardiner http://www.oardc.ohio-state.edu/ale/images/Natural_Enemies_1_page_handout.pdf

Workshops

'MarketReady'

Ohio food producers looking to expand their markets to include selling to grocers, restaurants and other wholesale buyers can find out how to do so by attending one of three MarketReady training programs.

The daylong program teaches producers what is required to sell to grocers, restaurants and wholesale buyers.

Initially developed by the University of Kentucky, the program was piloted in cooperation with OSU Extension and the Ohio Direct Marketing Team. More information about the program can be found at <http://go.osu.edu/MarketReady>.

The workshops are from 9 a.m. to 4:30 p.m. Registration is \$75 per person and \$25 for each additional person from the same company. The dates and locations are as follows:

- * Feb. 15, United Food and the Commercial Workers Local 75 Hall, 200 Kovach Drive, Cincinnati.
- * Feb. 23 at the Center for Innovative Food Technology, 5555 Airport Highway, Suite 100, Toledo.
- * Feb. 28 at the Mustard Seed Market and Café, 3885 West Market Street, Akron.

Registration should be completed one week prior to the workshop. For details or to register, contact Julie Moose at 740-289-2071, ext. 223, or email moose.14@osu.edu

Brix workshop

On February 18, a three-person OARDC/OSUE team will host a 2-hr Brix workshop geared to commercial vegetable growers and buyers. The Feb 18 program will be held the first morning of the OEFFA Conference in Granville (registration required). For program description contact Matt Kleinhenz kleinhenz.1@osu.edu. Additional information on the same and other topics is also available at <http://hcs.osu.edu/vpslab/> and <http://www.facebook.com/osuvpslab>.

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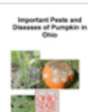
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eBooks to be available from VegNet at iTunes U



- Important Diseases and Pests on Pumpkins in OH



- An Update on the Brown Marmorated Stink Bug in OH
- Part-Time Vegetable Farming
Considerations in getting started
Essential management practices for success

The Winter Outlook Revisited

You might remember in the last newsletter we included a prediction for a very harsh winter. We should be happy that prediction was wrong or slightly inaccurate. If you don't follow Accuweather.com, they did issue an updated winter forecast around Christmas, which I didn't send out. They were right about all the storminess but we never got the temperatures that would result in ice and snow. Let's keep our fingers crossed because Europe and

western Russia had been having a record warm winter and are now suffering from extreme cold and snow in Spain, Rome and North Africa.



[VegNet](#)