Cornell Cooperative Extension | Cornell Vegetable Program

VEGEdge

YOUR TRUSTED SOURCE FOR RESEARCH-BASED KNOWLEDGE

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Prepare for Peppers

Judson Reid, Cornell Cooperative Extension, Cornell Vegetable Program

In a recent meeting a grower asked if controlling pests in one year would reduce the population for the following year. The discussion turned to European Corn Borer, a worm pest of sweet and field corn. In both the spring of 2018 and '19 field corn was planted abnormally late. Produce growers also reported heavy losses in peppers to Corn Borer. Coincidence? Unlikely. It turns out that weather can play a surprising role in the level of damage caused by Corn Borers.

Corn Borers (ECB) overwinter in corn stubble (and other hosts) and emerge in the spring. If not much corn is planted they will concentrate egg laying on other crops, particularly peppers. The larvae burrow into the pepper fruit and often a soft, bacterial rot will develop. Since the moths fly at night and the plant doesn't show any other symptoms of attack, growers may not realize there is a problem until harvest. At this point control efforts are futile.

Controlling ECB in peppers is about prevention. One of the best tools is floating rows covers. Suspended over the crop with light gauge hoops, row covers exclude moths and also provide wind protection to young transplants.

Another important step is monitoring ECB moth flights. VegEdge prints regular updates on trap catches of ECB at many sites across the state. When there are spikes in trap catches and corn has been late planted, it follows that peppers will be targeted by the pest.

Figure 1. High yields of colored bell peppers requires attention to European Corn Borer Flights. *Photo by Judson Reid, CCE Cornell Vegetable Program*

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About VegEdge

VegEdge newsletter is exclusively for enrollees in the Cornell Vegetable Program, a Cornell Cooperative Extension partnership between Cornell University and CCE Associations in 14 counties.

The newsletter is a service to our enrollees and is intended for educational purposes, strengthening the relationship between our enrollees, the Cornell Vegetable Program team, and Cornell University.

We're interested in your comments. Contact us at:
CCE Cornell Vegetable Program
480 North Main Street, Canandaigua, NY 14224
Email: cce-cvp@cornell.edu
Web address: cvp.cce.cornell.edu

Contributing Writers
Elizabeth Buck
Robert Hadad
Christy Hoepting
Margie Lund
Julie Kikkert
Judson Reid

Publishing Specialist/Distribution/Sponsors
Angela Ochterski

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Help us serve you better by telling us what you think. Email us at *cce-cvp@cornell.edu* or write to us at Cornell Vegetable Program, 480 North Main Street, Canandaigua, NY 14424.

Contents

This next issue of VegEdge newsletter will be produced on February 3, 2020.

Crop Insurance Planting Date Change for Dry Beans in New York State

Julie Kikkert and Margie Lund, CCE Cornell Vegetable Program

As a result of a request and supporting data submitted by Cornell Cooperative Extension and the NYS Dry Bean Industry to the USDA, Risk Management Agency we are pleased to report the following Crop Insurance Program change: **The crop insurance final plant date for Cranberry and Light Red Kidney dry beans types have changed for the 2020 crop year from June 30 to July 10.**

The planting date for dark red kidney beans and black turtle soup will remain as June 30. Results of years of variety trials by Cornell University Emeritus Professor, Donald Halseth, documented the case that light red kidney and cranberry beans are a full 10 to 15 days earlier in maturity than dark red kidney and black turtle soup beans typically grown in New York. In the 2014 Cornell Dry Bean Variety Fact Sheet, the final summary report of decades of dry bean trials in grower fields and research plots, Dr. Halseth reported that California Early Light Red Kidney (CELRK or CalEarly) beans (industry standard) had an average maturity of 87 days in 125 trials where it was tested. In comparison, the black bean standard variety Midnight averaged 101 days to maturity (64 trials) and the Dark Red Kidney variety Montcalm averaged 98 days (54 trials). More recent dry bean variety trial results conducted by Jim Ballerstein at Cornell AgriTech can be accessed at http://www.vegetables.cornell.edu/crops/processing-vegetable-research-and-extension-program/

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There are several insecticides available, although some are for bell pepper only. We also suggest avoiding pyrethroids (group 3A). These should be applied when fruit is formed and trap catches are peaking.

- Radiant or Entrust (Group 5, 1 Day PHI)
- Coragen (Group 28, 1 D PHI)
- Minecto Pro (Groups 28 + 6, 7 D PHI)

It may be too cold to transplant peppers today, but planning for a healthy crop can begin by having row cover on hand and subscribing to VegEdge prior to the growing season.

Figure 2. Row cover on early pepper transplants not only excludes European Corn Borer, it also provides wind and temperature protection to the transplants. *Photo by Judson Reid, CCE Cornell Vegetable Program*

Figure 3. Late spring plantings of corn mean late harvests. This can influence the level of ECB pressure on early planted peppers. *Photo by Judson Reid, CCE Cornell Vegetable Program*

Managing Wireworms in Root Crop Production

Teresa Rusinek, Cornell Cooperative Extension, ENY Commercial Horticulture Program

Wireworms are an increasing problem in root crop vegetable production. Some of this increase can be attributed to the adoption of grass-based cover crop and small grain rotations for soil building. The adult stage of the wireworm, known as click beetles, prefers grassy fields for egg laying June through August. Growers with grassy fields during this period have seen high levels of wireworm damage in subsequent years when susceptible crops are grown. Wireworms have a large host range that includes seeds of bean and corn, various root crops such as sweet potato, carrots, beets, and bulbing crops like garlic. Damage to crops may be evident for several years after a field is taken out of a grass-based cover crop, as it can take up to five years for the wireworm to complete its lifecycle in the soil and emerge as an adult click beetle.

Figure 1. Diakon radish sampled from EPN treated portion (left) of field have significantly less wireworm, grub and flea beetle larvae damage than untreated (right). *Photo by Teresa Rusinek, CCE*

In conventional vegetable production there are a few insecticides that can be applied prior to, or at planting, on select vegetable crops to reduce wireworm damage. In organic production however, growers must rely on cultural tactics to reduced damage. The lack of any "rescue" options in organic production spurred the investigation of entomopathogenic nematodes (EPNs) as a potential biocontrol agent in the suppression of wireworm infestations. Dr. Elson Shields and Tony Testa from the Cornell University Dept. of Entomology have isolated a complex of New York native EPNs that inhabit shallow and deep profiles of the soil, are cold tolerant, persist in the soil for years and have proven successful for limiting other highly-destructive insects. In 2017, Eastern NY Commercial Horticulture Program vegetable production specialists began a research and demonstration project with Shields and Testa to determine if EPNs are a viable biocontrol agent for wireworm management. Results from trials at multiple farm locations in Eastern NY growing sweet potatoes have shown significant reduction (36%, 80%) in wireworm damage in EPN treated plots when compared to untreated plots.

One of the most practical ways to manage wireworms is to keep grasses out of fields, particularly June through August. However, this tactic does not necessarily work with growers' soil health or crop rotation goals. Treating soils with EPNs can provide a reasonable level of wireworm suppression and can be combined with cultural and chemical control strategies to produce marketable root crops in fields with known wireworm pressure.

CCE-ENYCHP specialists designed and built a 50-gallon gravity fed nematode applicator to make it easier for growers to apply nematodes themselves. The applicator can be mounted on a pallet and moved through the field using a tractor with forks or on the back of a pick-up. The nematodes arrive in wax worm hosts and need to be rinsed out through a strainer into the tank water.

[Teresa will be presenting this information at the 2020 Empire State Producers Expo at the Sweet Potato Session on Wednesday, January 15 at 2:35 pm. Any western NY growers who have experienced wireworm problems on your farm and are interested in testing entomopathogenic nematodes, please contact Julie Kikkert or Robert Hadad, as we are also interested in this project. ed. J. Kikkert, CVP]

Managing Blueberry Stem Gall Wasp in New York

Esther Kibbe, WNY Berry Specialist, Cornell Cooperative Extension, Harvest New York

THE WASP

In the past few months, several growers across WNY have observed stem galls in their blueberry fields. While somewhat uncommon, the blueberry stem gall wasp *(Hemadas nubilipennis)* is an insect native to Eastern North America. It is found in both low and high bush blueberry plants in the wild and in cultivated fields. In some regions and varieties the wasp can multiply to high levels, causing economic injury in commercial fields. The Jersey and Liberty varieties are very susceptible and have been hit hard in Michigan, while other varieties appear resistant or immune. (Fruit Grower News 6/18/19)

This wasp is very small and sometimes hard to spot, but the galls are more obvious. The galls are a protective structure for the developing eggs and larvae, where they feed and overwinter. The adults emerge from the galls in the spring, right around bloom time. Female wasps lay eggs in the blueberry stems, then stab the growing end of the stem several times, halting growth. The eggs hatch into larvae, which release hormones that trigger excessive tissue growth (the galls) that serves as the food for the larvae. Each gall will house multiple larvae. A grower in NY observed 2 periods of gall development, in the spring and later in the summer, but it is unknown whether this was a true 2nd generation, or simply some late-emerging adults. The wasps cannot fly far, so galls tend to appear in a limited area. Further spread is likely due to adults being blown to new locations.

Spray programs targeting other insects (such as cranberry and cherry fruitworms) may be suppressing this wasp in conventionally managed fields. Organic or low-spray operations have shown more frequent outbreaks of stem galls.

Figure 1. Galls formed by blueberry stem gall wasp can be up to 2 inches in diameter and hold many larvae. A susceptible plant may host more than 100 galls. *Photo by Esther Kibbe, Cornell Cooperative Extension*

Figure 2. Developing larvae can be found in galleries inside of the galls. *Photo by Esther Kibbe, Cornell Cooperative Extension*

MANAGEMENT

Blueberry stem gall wasps are only a concern in some susceptible varieties. There are no insecticides currently labeled (in New York) against this pest. However, there are some cultural control approaches, starting with planting resistant or tolerant cultivars, such as Bluecrop, Blueray, Spartan, Draper, Nelson and Elliott. Liberty and Jersey should be avoided. The susceptibility of other cultivars is not well documented.

If a grower has susceptible varieties with galls, the next cultural control is to prune out as many galls as possible during the winter. The galls should be burned or bagged and removed from the field. If the infestation is so severe that the entire plant is involved, consider removing the plants. There is some anecdotal evidence that eggs can be laid (and galls formed) on shallow roots as well as stems, so that adults could be emerging even when no galls are visible in the bushes, continuing the infestation. It is important to look for and remove galls while doing normal dormant pruning, to avoid a larger population developing to the point where economic harm occurs.

With the adult emergence coinciding with bloom, any potential chemical control would require extreme care to avoid harming pollinators. In Michigan, where this pest is a major concern, there is a special label for a prebloom spray, and some indication that petal fall sprays (after bees are removed) could reduce survival of larvae in galls. Similar special exemptions could be pursued in New York if growers are struggling with this pest. Contact Esther Kibbe (ejp9@cornell.edu) or Greg Loeb (gme1@cornell.edu) if you are dealing with blueberry stem gall wasp and would like Cornell to pursue a label exemption. ●

Empire State Producers Expo

EXPO

January 14-16, 2020
The Oncenter, Syracuse
www.nysvga.org/expo

SOLAR FARMING

Everything growers need to know if they are thinking about converting some land to solar farms.

WEED CONTROL

Meet Cornell's new vegetable weed scientist, Lynn Sosnoskie, at one of the two weed management sessions: conventional management techniques and organic weed management.

TOMATO GRAFTING

Workshop on tomato grafting where growers can get hands-on experience with this technique.

GROWING HEMP

A full-day session on everything from regulations to production techniques.

TABLE BEET WORKSHOP

Fresh market and processing growers won't want to miss this 4-hour session that features Dr. Irwin Goldman, table beet breeder from Univ. of Wisconsin-Madison, a grower panel, and heaps of production information.

SWEET CORN

Overview of IPM practices and use of an app, plus predicting flights of Western Bean Cutworm.

LODGING: Our official hotel is 1.5 blocks from The Oncenter and is walkable.

Marriott Syracuse Downtown
100 East Onondaga Street
Syracuse, NY 13202
315-474-2424

Registration opens at 8:00 AM
Trade Show is open 8:00 AM-5:00 PM Tues and Weds; 8:00 AM-2:00 PM Thurs
Lunch is available to purchase 12:00-2:00 PM Tues and Weds; 12:00-1:30 PM Thurs

TUESDAY, JANUARY 14

ROOM	SESSION 1 9:00-10:15	SESSION 2 10:45–12:00	SESSION 3 2:00-3:15	SESSION 4 3:45-5:00
BALLROOM EAST	Sweet Corn	Solar Farming	Weed Management – Processing/ Conventional	Stand Establishment
BALLROOM WEST		Tree Fruit	Tree Fruit	Agricultural Employment Update and Farmworker Housing Best Practices
ROOMS 1-2	Energy Savings	Biocontrol I	Biocontrol II	Greenhouse
ROOM 3	USDA Risk Management	Tick Management	IPM for Worker Housing	IPM for Packing Houses
ROOM 4/5/6	Produce Safety Alliance Training, 8:30 AM-5:00 PM			
ROOM 7/8		Refrigeration for Fruit and Vegetable Coolers	Farm to School	Have you read the pesticide label? And Personal Protective Equipment - DEC Core

WEDNESDAY, JANUARY 15

ROOM	SESSION 1 9:00-10:15	SESSION 2 10:45–12:00	SESSION 3 2:00-3:15	SESSION 4 3:45-5:00
BALLROOM EAST	Phytophthora Blight	Vine Crops	Soil Fertility	Potatoes
BALLROOM WEST	Tree Fruit	Tree Fruit	Organic Apple	Cider Apples
ROOMS 1-2	Onions	Onions	Onions	Cabbage/Cole Crops
ROOM 3	Energy Savings	Wash/Pack Facility Design with Food Safety in Mind	Food Safety – Spanish	
ROOM 4/5/6	High Tunnels	Tomato Grafting Workshop	Sweet Potatoes	Pesticide Hazard and Risk; Glyphosate, a Case Study - DEC Core
ROOM 7/8		Farm to School	Tree Fruit IPM	Tree Fruit IPM

THURSDAY, JANUARY 16

ROOM	SESSION 1 9:00-10:15	SESSION 2 10:45-12:00	SESSION 3 and 4 1:30-?
BALLROOM EAST	Hemp	Hemp	Hemp
BALLROOM WEST	Berries	Berries	Berries
ROOMS 1-2	Soil Health	Soil Health	Weed Management – Organic
ROOM 3	Specialty Root Crops	Sprayer Tech – Small Scale	Garlic
ROOM 4/5/6	FFA Student Session	Beet Workshop	Beet Workshop
ROOM 7/8	Tree Fruit IPM	Tree Fruit IPM	Tree Fruit IPM

Visit www.nysvga.org/expo for program details and online registration. For registration help, call 585-993-0775.

Empire State Producers Expo

EXPO

January 14-16, 2020 | The Oncenter, 800 South State St, Syracuse, NY
www.nysvga.org/expo

EXPO SESSION

Pest-Free Worker Housing – How to do it and Why it Matters

Tuesday, January 14

Session organized by Abby Seaman, NYS Integrated Pest Management Program

Learn what you can do to manage and avoid three important pests that threaten worker health and welfare: cockroaches, rodents, and bedbugs. None are cheap or easy to manage, but we'll share our best information on how to tackle them. One DEC pesticide applicator recertification credit in category 7A has been applied for.

EXPO SESSION

Understanding and Avoiding Ticks on the Farm

Tuesday, January 14

Session organized by Abby Seaman, NYS Integrated Pest Management Program

Avoiding Lyme and other tick-borne diseases requires avoiding a tick bite! New York provides a home to a number of different ticks, all with different life cycles and disease risks. Understanding their biology, strengths, and weaknesses will help you protect yourself, farm workers, and your domestic animals from being bitten. The session will also provide an update on the newly discovered Asian longhorned tick which poses a particular threat to livestock. Free tick removal kits will be offered to attendees willing to participate in a short survey. One DEC pesticide applicator recertification credit in categories 3A, 7A, and 8 has been applied for.

EXPO SESSION

Optimizing IPM Practices for Rodents and Birds in Packing Houses

Tuesday, January 14

Session organized by Abby Seaman, NYS Integrated Pest Management Program

Rodent management plans in packing facilities are often based on guidelines set by third party auditing agencies, but these do not consider rodent biology, and are not supported by research. This session will describe recent research on rodent management at food distribution centers and provide insight about trap placement to improve management efforts. Birds are also pests of food distribution centers, and management techniques are highly specialized. This session will introduce bird management techniques that work. One DEC certified pesticide applicator recertification credit in categories 7A, and 7F has been applied for.

EXPO SESSION

Uniform Stand Establishment

Tuesday, January 14

Session organized by Julie Kikkert and Ali Nafchi, Cornell Cooperative Extension

Uniform stand establishment is an important topic especially for processing vegetable growers who only harvest their fields once. Maintaining uniform stand in vegetable production however, is an overall issue for achieving the highest possible yield. Seed uniformity and environmental conditions such as soil properties, temperature and moisture, and agricultural management can influence stand uniformity. To minimize these constraints, using uniform seeds along with seed treatments, addressing the environmental variations, and implementing best agricultural strategies can lead to a higher and more uniform stand. We will discuss the above mentioned topics in more detail, in the "Uniform Stand Establishment" session on Tuesday, January 14. In this session, speakers from Cornell University and Cornell Cooperative Extension will talk about the **Seed Quality and Technology**, **Soil Variability Impacts on Uniformity**, and **Precision Agriculture's Role in Uniformity**.

EXPO SESSION

Phytophthora Blight

Wednesday, January 15

Session organized by Greg Vogel, School of Integrative Plant Science, Cornell

Phytophthora blight is a devastating soil-borne disease of vegetable crops that has spread via floodwaters in recent years to an increasing number of farms. For farmers who have encountered this disease in their fields, growing squash, pumpkins, or peppers can be a serious challenge. At the Phytophthora Blight session of the 2020 Empire State Producers Expo on January 15th, five speakers will present the most up-to-date information on this destructive disease and strategies for its successful management. Margaret McGrath and Greg Vogel will share research from Cornell University on the biology of Phytophthora blight and control practices that have shown to be effective in the field. Zachariah Hansen, assistant professor at the University of Tennessee, will add what he has learned about managing this disease in the southern United States. Finally, John Hand and Dan Henry, both experienced New York growers with diverse vegetable operations, will share their insight on successfully controlling Phytophthora blight on their farms.

EXPO SESSION

Small-Scale Potatoes

Wednesday, January 15

Session organized by Margie Lund, Cornell Cooperative Extension, Cornell Vegetable Program

This year's potato session will be focused around potatoes grown on a smaller-scale or in organic settings. Whether you've been growing potatoes for years, or are hoping to introduce them to your farm, come join us to learn more about available potato varieties and IPM tactics. Walter De Jong (Cornell Plant Breeding and Genetics) will present about the benefits of different potato varieties for a small-scale operation, and Abby Seaman (NYS Integrated Pest Management) will share about disease and pest management in organic potatoes.

EXPO SESSION

Youth Program Track

Thursday, January 16

Session organized by Elizabeth Buck, Cornell Cooperative Extension, Cornell Vegetable Program

New in 2020, the Empire Producers Expo and Cornell Cooperative Extension have partnered with NYS FFA to offer sessions and programming for middle and high-school aged youth. The FFA and youth track takes place from 8:45 am to 2:30 pm on Thursday January 14th. The first session will cover event orientation, horticultural skills and careers, and introduce active learning assignments for the rest of the day. For more information or to register an FFA, 4-H, or other youth (Grades 7-12) for this track, contact Elizabeth Buck at emb273@cornell.edu.

EXPO SESSION

Apple IPM Intensive Workshop

Thursday, January 16

Looking for guidance on how to incorporate more integrated pest management strategies in your orchard? This "Apple IPM Intensive" workshop will give you a background understanding of IPM principles, in-depth understanding of our specific pests, and concrete strategies you can implement next summer. Anyone who attends the entire four session workshop will receive a certificate at the end of the course on Thursday.

For more information and to register for the Empire State Producers Expo, visit
www.nysvga.org/expo

Upcoming Events

View all CCE Cornell Vegetable Program events at CVP.CCE.CORNELL.EDU

Western Southern Tier Produce Meeting

January 28, 2020 (Tuesday) | 9:30 AM - 3:00 PM
Carnahan Hall, Jamestown Community College, 241 James Ave, Jamestown, NY 14701

A jam-packed schedule of educational topics for regional growers, this meeting features dynamic sessions and peer-to-peer learning opportunities. Focus areas in 2020 include improved local marketing and disease management with an emphasis on underlying disease biology, ID, cultural prevention techniques, and both biorational and conventional controls. Topics will be relevant for berry, field crops, and greenhouse/flower growers, too.

DEC credits available in categories 1a & 10 (2.25), 21 (1.0), 22 (1.5), 23 (1.75), and 24 (1.0). PA pesticide credits available in categories PC (5), Agronomic Crops (2), Fruit & Nuts (3), Vegetable Crops (4) and Demonstration and Research (5). Certified Crop Advisor CEUs available in categories IPM (2.0), CM (0.5), and PD (1.0).

Cost: $15 Cornell Vegetable Program enrollees; $20 non-enrollees. Pre-register by January 21 to guarantee lunch. Register online on the Cornell Vegetable Program website or contact Elizabeth Buck at 585-406-3419 for a registration form to be mailed to you. Late registrations will be accepted after January 21 but the cost will be $5 more and lunch cannot be guaranteed. For more information, contact Elizabeth Buck at 585-406-3419.

Business and Estate Transition Planning for Farm Owners

January 29, 2020 (Wednesday) | 8:30 AM registration; 9:00 - 11:45 AM workshop
Ramada Geneva Lakefront, 41 Lakefront Dr, Geneva, NY 14456

This workshop is intended for farm owners, agriculture business owners and small family business owners. Value your business and plan for your farm's future. Learn what resources are available to help you as you learn the steps necessary to successfully transition your life's work. This workshop is FREE but online registration is required. For more information, contact Greater Rochester SCORE, Tammi Bennett at 585-263-6473.

FSMA Regulations for Small and Very Small Processors

January 31, 2020 (Friday) | 8:30 AM - 4:30 PM
Cornell AgriTech, G34 Food Research Lab, 665 W North St, Geneva, NY 14456

Did you know that the new federal regulations for small food processors under the Food Safety Modernization Act (FSMA) are in effect as of September 2018? Do you know what is required of you or your facility as a New York State food manufacturer? During this one-day introductory course, the experts at Cornell's Food Venture Center will explain the new food safety exemption requirements for Small Businesses. Get the information and tools you need to make your operation comply with the FDA rules for selling safe products to the public.

Registration space is limited to 24 attendees in Geneva. The cost to register is $25/person. Deadline to register is Friday, January 17, 2020. For more information and buy tickets, go to http://events.cornell.edu/event/fsma_regulations_for_small_and_very_small_food_processors

2020 Pesticide Training and Recertification Series (Ontario County)

Trainings: February 5, 12, 19, 26, 2020 (Wednesdays) | 7:00 PM - 9:30 PM
Exam: March 4, 2020 (Wednesday) | 6:00 PM - 10:00 PM | $100 exam fee
CCE Ontario County, 480 N. Main St., Canandaigua, NY 14424

Anyone interested in obtaining a pesticide certification and meets the DEC (Department of Environmental Conservation) experience / education requirements **OR** current applicators seeking pesticide recertification credits should attend. 2.5 recertification core credits will be available for each class.

$175.00 for certification which includes the training manuals and all 4 classes. Does not include the $100.00 exam fee. Recertification is $25.00 per class. For more information and to sign up, call 585-394-3977 x427 (Nancy) or x436 (Russ). Registration form is available on the website www.cceontario.org

2020 NYS Dry Bean Meeting - SAVE THE DATE!

March 10, 2020 (Tuesday) | 9:00 AM - 12:00 noon; lunch will be available following the meeting
First United Methodist Church, 8221 Lewiston Rd (Route 63), Batavia, NY 14020

Zone Management - Part I: Zone Creation

Ali Nafchi, Cornell Cooperative Extension

Precision agriculture is to address the variations in production system to enhance plants growth and crops yield. In an ideal precision farming program, applications would accurately utilize the amount, timing, and the manner of inputs based on variabilities (Ideal precision farming is management of single plant). Soil properties such as Electrical Conductivity (EC), structure, texture, and organic matter can determine the type/amount of fertilizer, lime, seeding rate, seeding depth, and irrigation scheduling. In precision agriculture, adjusting the application according to the variations is called Variable Rate Application (VRA) or Site-Specific Management.

Zone management, as the first step to implement the VRA, is to find and detect the variations and create different zones and treat each zone individually. In zone creation, the variability in each zone must be non-random and steady (like variation in soil texture: Clay, Loam, Sand...). However, recorded plant respond to soil variability (Yield Monitoring and Yield Map), is another reliable factor for zone creation. Each zone should be relatively large enough and in a responsive range (Applicator must be able to be responsive for changing the rates). Usually, three to five zones is enough and this number changes based on variability and the field size. There are several ways for creating the zones in a field as mentioned below:

SOIL ELECTRICAL CONDUCTIVITY (EC)

Soil EC describes the ability of a soil to transmit an electrical current and is expressed in milliSiemens per meter (mS/m). Soil (EC) can be used successfully to quantify variations in soil texture and yield potential of production. Soil Electrical Conductivity meter with a GPS is used to record the EC data for a given field.

YIELD MAPS

Yield mapping is a technique in agriculture to analyze variables such as crop yield and moisture content. A yield monitor on a harvester, measures and records information such as crop mass, moisture, area covered, and location. Yield maps are automatically calculated from these variables.

AERIAL IMAGERY OR BARE SOIL IMAGE

Using airplanes or drones to create high-resolution images and by image analyzing techniques, zones are created.

WWW.NRCS.USDA.GOV/SOILSURVEY

A soil survey is a detailed report on the soils of an area provided by NRCS - USDA. The soil survey has maps with soil boundaries and photos, descriptions, and tables of soil properties and features.

COMBINATION OF ABOVE MENTIONED METHODS

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Cornell Vegetable Program

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VegEdge is the highly regarded newsletter produced by the Cornell Vegetable Program. It provides readers with information on upcoming meetings, pesticide updates, pest management strategies, cultural practices, marketing ideas and research results from Cornell University and Cornell Cooperative Extension. VegEdge is produced every few weeks, with frequency increasing leading up to and during the growing season.

VEGETABLE SPECIALISTS

Elizabeth Buck | 585-406-3419 cell | emb273@cornell.edu
fresh market vegetables, weed management, soil health

Robert Hadad | 585-739-4065 cell | rgh26@cornell.edu
farm food safety, organic, business & marketing, fresh market vegetables

Christy Hoepting | 585-721-6953 cell | cah59@cornell.edu
onions, cabbage, broccoli, pesticide management

Julie Kikkert, Team Leader | 585-313-8160 cell | jrk2@cornell.edu
processing crops (table beets, carrots, peas, snap beans, sweet corn)

Margie Lund | 607-377-9109 cell | mel296@cornell.edu
potatoes, dry beans, and post-harvest handling and storage

Judson Reid | 585-313-8912 cell | jer11@cornell.edu
greenhouses/high tunnels, small farming operations, fresh market vegs

PRECISION AG SPECIALIST

Ali Nafchi | 585-313-6197 cell | anafchi@cornell.edu

PROGRAM ASSISTANTS

John Gibbons | jpg10@cornell.edu

Angela Ochterski | 585-394-3977 x426

Sarah Vande Brake | sv483@cornell.edu

Emma van der Heide | ev247@cornell.edu

Caitlin Vore | cv275@cornell.edu

ADMINISTRATION

Peter Landre | ptl2@cornell.edu

Steve Reiners | sr43@cornell.edu

Cornell Cooperative Extension
Cornell Vegetable Program

For more information about our program, email cce-cvp@cornell.edu or visit CVP.CCE.CORNELL.EDU