

Adult Learning and Peer Learning Networks Participant Guide

Cooperative Extension supports communities by developing the capacity of our citizens, so they are prepared to better address challenges and opportunities, improve quality of life, and build strong and vibrant networks. We ground our public issues education and trainings in evidence and research-based knowledge. We work toward the long-term sustainability and well-being of communities through collaborations and partnerships that enhance active and representative participation toward enabling all community members to shape our collective future. We embrace partnerships based on mutual respect and trust as they provide a foundation for innovative strategies and informed decision making to create positive and lasting change. The widespread appeal of gardening provides opportunities to use gardens to connect with diverse audience and make garden-based education a catalyst for addressing food security and hunger; climate change; sustainable energy; childhood obesity and nutrition; food safety; and youth, family and community development.

By actively participating in Adult Learning and Peer Learning Networks, you will:

- **Appreciate** the importance of establishing ground rules in a learning environment.
- **Consider** the value of garden-based learning.
- **Understand** the basic principles of adult learning.
- **Recognize** the value of an effective peer learning network in the exchange of information among local knowledge and research-based sources.
- **Articulate** the criteria for evaluating information to identify reliable sources.

Before Session

READ:

- Fact Sheet Our Ground Rules for Engagement (1 pg handout provided)
- Fact Sheet Peer Learning Networks Support the CCE Mission (3 pgs handout provided)
- Fact Sheet Evaluating Sources (2 pgs handout provided)
- Browse the content available on these Cornell University LibGuides:

Evaluating Information:

<http://guides.library.cornell.edu/c.php?g=543699&p=4433818>

HORT 1175: Storying the Foodshed: Evaluating Credibility:

<http://guides.library.cornell.edu/c.php?g=32487&p=204540>

Critically Analyzing Information Sources: Critical Appraisal and Analysis:

<http://guides.library.cornell.edu/criticallyanalyzing>

A Guide to Finding Visual Resources:

<http://guides.library.cornell.edu/findimages>

WATCH:

Building Strong and Vibrant New York Communities

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- Adult Learning in Under 3 minutes from An Introduction into Adult Learning Concepts by Alan Caddell MA Ed. <https://www.youtube.com/watch?v=8lvkJhXnEZk>
- The C.R.A.P. Test in action: Websites from Portland State University Library (5 minute video) <https://www.youtube.com/watch?v=lhwB4zQD4XA>

DO:

- Worksheet Your Garden Lifeline (2 pgs handout provided)
- Worksheet Facilitating Adult Learning (4 pgs handout provided)

THINK:

- What does successful gardening look like to you? How might you sketch or describe in words the journey, pathway or what this achievement looks like?

Opening and Introduction

- Facilitator leads a brief discussion of ground rules and shares about housekeeping, learning objectives, and class flow.

Connect

- Mingle to introduce and discuss the question listed under the THINK prompt above.

The Basic Principles of Adult Learning Lecture

- Engage in presentation.

Extension Peer Learning Networks Lecture

- Engage in presentation.

Garden-Based Learning Outreach Facilitation Hands-on Activity

- Engage in small group activity and whole group discussion.

Conclusions

- Facilitator leads group activity to find out where people are from plus leads reflection on key take home points and any lingering questions.

Program Feedback

- Share your insight to help us improve the program, report results, & plan for the future.

Knowledge Check

- Assess what you now know. Be motivated and empowered to share your knowledge with your peers and to learn more.

After Session

REFLECT:

- What happened?
- What was my response to what happen? How do I make sense of it?
- How does it relate to other things I know?

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- What can I conclude?
- What might I do differently next time?

LEARN MORE:

- Facilitating Learning with the Adult Brain in Mind: A Conceptual and Practical Guide by Kathleen Taylor, Catherine Marienau (March 2016)
<http://www.wiley.com/WileyCDA/WileyTitle/productCd-1118711459.html>
- *Unlocking the Magic of Facilitation: 11 Key Concepts You Didn't Know You Didn't Know* by Sam Killermann and Meg Bolger
- David Kolb's experiential learning
<http://www2.le.ac.uk/departments/gradschool/training/eresources/teaching/theories/kolb>
- Learning Styles as a Myth <https://ctl.yale.edu/LearningStylesMyth>
- *Diffusion of Innovations* – a book in its 5th edition by Everett M. Rogers
- Baram-Tsabari et al. (2015) Bridging science education and science communication research. *Research in Science Teaching*
<http://onlinelibrary.wiley.com/doi/10.1002/tea.21202/full>
- Fiske and Dupree. (2014). Gaining trust as well as respect in communicating to motivated audiences about science topics. *Proceedings of the National Academy of Sciences*, 111 (Supplement 4).
http://www.pnas.org/content/111/Supplement_4/13593.full.pdf

Campus Links:

- Cornell Cooperative Extension <http://cce.cornell.edu/>
- Cornell Garden-Based Learning <http://gardening.cals.cornell.edu/>
- Cornell University Library, Portal for Cornell Cooperative Extension
http://guides.library.cornell.edu/cce_portal
- Cornell University Library, Research Guides
<http://guides.library.cornell.edu/libguides/home>
- Cornell Center for Teaching Innovation <https://teaching.cornell.edu/>

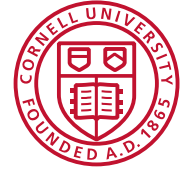
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<http://www.cornell.edu/search/index.cfm>



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Cornell Cooperative Extension

Cornell Garden-Based Learning



Community Engagement and Action Projects Participant Guide

Garden-based education can serve as a catalyst for addressing food security and hunger; climate change; sustainable energy; childhood obesity and nutrition; food safety; and youth, family and community development. The widespread appeal of gardening provides opportunities to use gardens to connect with diverse audiences. Cornell Cooperative Extension is part of the USDA's [National Institute of Food and Agriculture Cooperative Extension System](#), consequently CCE Master Gardener Volunteers are uniquely linked to Cornell University and positioned to provide best practices for creating successful gardening experiences grounded in research-based knowledge.

By actively participating in this Community Engagement and Action Projects session, you will:

- **Reflect** on your identity.
- **Acknowledge** that community engagement is essential to identifying collaborative solutions.
- **Identify** the steps you will take to complete an action project.

Before Session

READ:

- Fact Sheet *Qualities of an Active Contributor to a Peer Learning Network* (2 pg handout provided)
- Learning Styles as a Myth (1 web page) <https://ctl.yale.edu/LearningStylesMyth>
- Page 1 of Action Project Planning Worksheet (12 pg handout provided)

WATCH:

- The six short videos (~ 30 minutes total) on the Cornell Garden-Based Learning's 'Effective Community Engagement' web page. Consider the reflective questions under each video and prepare to discuss some of these in class.
<http://gardening.cals.cornell.edu/program-tools/planning-organizing/effective-community-engagement>
- The very short “ins and outs of public events” videos (~ 15 minutes total) from Colorado State MGV Program, <https://spark.adobe.com/page/6h23TrCM8wMr5/>
- Constructing Learning Objectives posted on TechSmith's SCREENCAST.COM Service (~ 5 minute video) <http://www.screencast.com/t/31O8Yjxu>

DO:

- Worksheet *Your Identity Pie Chart* (1 pg handout provided)

THINK:

- How might elements of your identity impact your role as a peer educator? And your contributions to a peer learning network?

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- What inspires you to learn and reach beyond your garden gate to connect with individuals and families in your community?
- What do you think you bring to the CCE Master Gardener Volunteer experience? Consider broadly your experiences, knowledge, skills, attitude, and passions.

Opening and Introduction

- Facilitator reviews housekeeping, ground rules, learning objectives, and class flow.

Reconnect

- Form listening pairs for discussion of the questions listed under the THINK prompt above. Then the whole group creates a wall of post-it notes listing their experiences, knowledge, skills, attitude, and passions.

Effective Community Engagement Discussion Hands-on Activity

- Engage in small group activity and whole group discussion.

Action Project Discussion

- Facilitator introduce Action Projects using the Action Project Planning Worksheet.

Garden-Based Learning Outreach Scenarios Hands-on Activity

- Engage in small group activity and whole group discussion.

Conclusions

- Facilitator leads group activity to find out where people are from and leads reflection on key take home points and any lingering questions.

Program Feedback

- Share your insight to help us improve the program, report results, & plan for the future.

Knowledge Check

- Assess what you now know. Be motivated and empowered to share your knowledge with your peers and to learn more.

After Session

REFLECT:

- What happened?
- What was my response to what happen? How do I make sense of it?
- How does it relate to other things I know?
- What can I conclude?
- What might I do differently next time?

LEARN MORE:

- Building Community: A Tool Kit for Youth & Adults in charting Assets and Creating Change http://www.theinnovationcenter.org/files/BuildingCommunity_ToolKit.pdf

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- Community Tool Box University of Kansas (<https://ctb.ku.edu/en>) specifically at: <https://ctb.ku.edu/en/table-of-contents/assessment/assessing-community-needs-and-resources/windshield-walking-surveys/main>
- Community Development Society (<https://www.comm-dev.org/>) Community Capitals Asset Identification Worksheet <http://srdc.msstate.edu/fop/levelthree/trainarc/socialcapital/communitycapitalstodevelopassets-emeryfeyflora2006.pdf>
- ABCD Model for Writing Objectives <https://ccconlineed.instructure.com/courses/837/pages/abcd-model-for-writing-objectives>

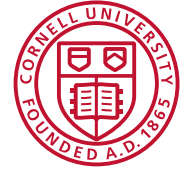
Campus Links:

- Cornell Cooperative Extension <http://cce.cornell.edu/>
- Cornell Garden-Based Learning <http://gardening.cals.cornell.edu/>
- Cornell University Library, Portal for Cornell Cooperative Extension http://guides.library.cornell.edu/cce_portal

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Plant Biology for Gardeners Participant Guide

Plant biology is the study of plant life. As a gardener, it is important to understand how plants grow and function. We could not survive without plants and we depend on them for food, fossil fuels, lumber, fibers, medicines, paper, latex, resin, cork, spices, fragrances, and dyes. After gaining an understanding of plant structure and function, participants will be able to translate these skills into more complex gardening topics. (Sourced from University of Maryland Master Gardener Handbook, pg. 27 <https://extension.umd.edu/mg/maryland-master-gardener-handbook>).

By actively participating in Plant Biology for Gardeners, you will:

- **Recognize** the parts of a plant and their functions.
- **Discover** the ways plants are classified into family groups and the value of scientific names.
- **Become familiar** with the environmental factors that affect plant germination, growth, and phenology (spacing, nutrients, light, day length, water, and temperature).
- **Examine** the three basic processes for plant growth and development: photosynthesis, respiration, and transpiration.
- **Consider** how plant characteristics are used in classification, identification, and dichotomous keys.

Before Session

READ:

- *Cornell's Botany Language Basics* (6-page handout provided)
- *Latin 101* by Dora Galitzki in *Garden Design* magazine from October 2000. (2-page handout provided)
- Most common plant families guide - **Review** to become familiar with the content on this more than 50 page document. Choose a few families of interest to read thoroughly. There is no need to memorize content that you can look up in this resource.
http://www.sci.sdsu.edu/plants/plantsystematics/Identifying_50_major_plant_families.pdf

WATCH:

- *MGV Level 1: Introduction to Plants* videos from the University of Wisconsin. (Collectively ~ 50 minutes) <https://www.youtube.com/playlist?list=PLrktjgTJbkvVjl-0QrbIM4Ox0AyLaK68C>

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THINK:

- What captivates you the most about the lives of plants?
- Why is a scientific name important? Why might it be important for gardeners to know how to research and identify a plant's scientific name? What more do you want to know about plants in general or about a specific family, species, or cultivar?

Opening and Introduction

- Facilitator reviews housekeeping, ground rules, learning objectives, and class flow.

Reconnect

- Partner up to discuss the question listed under the pre-work THINK prompt.

Cultivating Plant Observation Skills Activity

- Facilitator leads participants through group activity.

Station-Based Hands-on Activities Part 1

- Participants divide up into smaller groups and rotate around to stations to engage in hands-on activities about plant parts and characteristics.

• Station-Based Hands-on Activities Part 2

- Participants divide up into smaller groups and rotate around to stations to engage in hands-on activities about plant parts and characteristics.

Conclusions

- Facilitator leads group reflection on key take home points and any lingering questions.

Program Feedback

- Share your insight to help us improve the program, report results, & plan for the future.

Knowledge Check

- Assess what you now know. Be motivated and empowered to share with your peers and learn more.

After Session

REFLECT:

- What happened?
- What was my response to what happen? How do I make sense of it?
- How does it relate to other things I know?
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PRACTICE:

- Using identification keys takes practice. There are many print publications for plant identification; below are a few online tools. If you are new to using identification keys,

Plant Biology for Gardeners

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try starting with a plant that you already know the identification for and attempt to work through one of these keys or a key from another source.

- Cornell's Woody Plant Database <http://woodyplants.cals.cornell.edu/home>
- Cornell's Turfgrass and Landscape Weed ID <http://turfweeds.cals.cornell.edu/>
- Cornell's online Guide to Viburnums <http://www.hort.cornell.edu/vlb/key/index.html>
- The Plant List, a working list of all known species <http://www.theplantlist.org/>

LEARN MORE:

- Cornell "The Science and Politics of the GMO" MOOC course, <https://www.edx.org/course/science-politics-gmo-cornellx-gmo101x#>
- *The Patterns Method of Plant Identification An Easier Way to Identify Plants* by Thomas J. Elpel, author of *Botany in a Day*. http://www.wildflowers-and-weeds.com/Plant_Identification/index.html
- *Botany for Gardeners*, Third edition, 2010 by Brian Capon.
- Oregon State University Basic Botany for Master Gardeners, an online very short course <https://pace.oregonstate.edu/catalog/master-gardener-series-basic-botany>
- *Botany Primer* from National Phenology Network https://www.usanpn.org/files/shared/files/USA-NPN_Botany-Primer.pdf
- *Inner life of plants* – slow life video clips of photosynthesis, cell creation, phototropism, growth and development... <http://plantsinmotion.bio.indiana.edu/usbgi/index.htm>
- *Photosynthesis: Fun in the Sun*. Though way more than you might need to know, this is well done and helps us appreciate the marvelous system that is the basis for life on earth. (~14 minutes). <https://www.youtube.com/watch?v=FfLLHQDgpiI>
- *The First Flower* – Nova (~53 minutes) <https://www.youtube.com/watch?v=f7ztefVrFnU>
- *Twig Identification PowerPoint*. This lecture will show you how to use the Virginia Tech Twig ID websites. (YouTube video) <https://www.youtube.com/watch?v=WZeDrn8SRaQ&feature=youtu.be>
- *The Love Life of Plants* https://www.youtube.com/watch?time_continue=170&v=tUZTdtO3Xw

Campus Links:

- Cornell's Plant Biology section: <https://plantbio.cals.cornell.edu/>
- Cornell's Plant Breeding and Genetics section: <https://plbrgen.cals.cornell.edu/>
- Cornell's Horticulture section: <https://hort.cals.cornell.edu/>

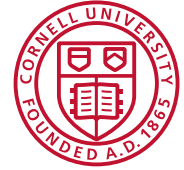
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Plant Biology for Gardeners

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Right Plant, Right Place Participant Guide

It is not possible to grow plants and gardens well without the support, water and nutrients provided by the soil. Ignoring the soil or assuming that all soils are alike can lead to disappointments or poor choices of management practices. Remember that the soil should be teaming with life and constantly changing. We can have more productive gardens and successful landscape plantings by understanding our soil and site characteristics and by utilizing systems thinking as applied to soil and site management practices.

*Key Term: **Systems thinking** is an approach that aims to understand the complexity of the world in terms of relationships, connectedness and context.*

By actively participating in Right Plant, Right Place, you will:

- **Describe** the basic relationship of soil and other environmental factors to plant growth and development.
- **Understand** the characteristics and basic properties of soil such as texture, pH, and organic matter and their impact on nutrient availability.
- **Recognize** that there is a right plant for the right soil and the right soil for the right plant.
- **Become familiar** with the concept of systems thinking and **explain** how developing habits of systems thinking when practicing management tactics in homes, lawns, gardens, and landscapes can support environmental stewardship and a sustainable community.
- **Apply** the criteria for basic site assessment.

Before Session

READ:

- Introduction to Soils (pdf) (32-page handout provided)

WATCH:

- UW- Extension Master Gardener Program Level 1 Soils video: Soil Properties Important for Gardening (18 minutes)
https://www.youtube.com/watch?v=LP39i_dZsLE&list=PLrktjgTJbkvVtin6QshFaZc0KECcRrXX&index=2

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Right Plant, Right Place

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DO:

- **One to several days before class** do the Jar Test Activity (pdf) (2-page handout provided). Bring your jar with you to class; OR take a photo of the jar and take key measurements of the settled layers.
- Bring a small amount of soil (up to ½ cup) with you to class for Soil pH Activity. Watch the first 2 minutes of this video for guidance in collecting a soil sample:
<http://soilhealth.cals.cornell.edu/testing-services/collecting-samples/>.

THINK:

- What do you know about your soil?
- How has your thinking about your soil changes in the time you have been gardening?
- What do you do to your soil? Why?

Opening and Introduction

- Facilitator reviews housekeeping, ground rules, learning objectives, and class flow.

Right Plant, Right Place Lecture

- Listen to presentation.

Station-Based Hands-on Activities

- Participants divide up into smaller groups and rotate around to stations to engage in hands-on activities about soil and systems thinking.

Conclusions

- Facilitator leads group reflection on key take home points and any lingering questions.

Program Feedback

- Share your insight to help us improve the program, report results, & plan for the future.

Knowledge Check

- Assess what you now know. Be motivated and empowered to share with your peers and learn more.

After Session

REFLECT:

- What happened?
- What was my response to what happen? How do I make sense of it?
- How does it relate to other things I know?
- What can I conclude?
- What might I do differently next time?

DO:

- Complete Worksheet Site Assessment (pdf) (2-page handout provided)

Right Plant, Right Place

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LEARN MORE:

- Cornell's Intro to Soil Lecture Channel
<https://www.youtube.com/watch?v=S9jBc19Ylvc&list=PLs7Y2nGwfz4HPoRAaB64c-MdF1kK-P-Wy&index=1&t=0s>
- UW- Extension Master Gardener Program Level 1 Soils video, What is Soil (11 minutes)
<https://www.youtube.com/watch?v=smPMb1xa9zw&index=1&list=PLrktjgTJbkvVtin6QshFaZc0KECcRrXX>
- USDA Soil Texture Calculator,
https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/?cid=nrcs142p2_054167
- USDA Web Soil Survey,
<https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>
- *Soil Science Simplified*, 4th Edition by Helmut Kohnke and D.P. Franzmeier

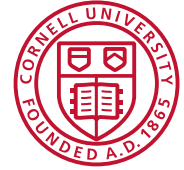
Campus Links:

- Cornell Healthy Soil www.gardening.cornell.edu/soil

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<http://www.cornell.edu/search/index.cfm>



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Beneficial Insects Participant Guide

Wild pollinators and managed bees are critically important to the health of New York's environment, as well as the strength of the state's agricultural economy. Many of the state's leading crops, such as apples, berries, pumpkins and several other fruits, rely heavily on insect pollination. New York State is also home to more than 450 wild pollinator species, a native population that is important not only to the pollination of commercial crops, but to biodiversity in our environment. (Sourced from DEC New York State Pollinator Protection Plan, 2016)

By actively participating in Beneficial Insects, you will:

- **Become familiar** with beneficial insects, how to attract them to the garden, and their value in the ecosystem and cultivated landscapes.
- **Learn** about insect morphology and **identify** key morphological characteristics of insects:
 - Three major body parts: head, thorax, abdomen
 - Six legs
 - Exoskeleton
 - Antennae
- **Explain** the two common life cycle types of insects - complete and incomplete metamorphosis.
- **Become familiar** with the characteristics of five orders of common garden insects:
 - Coleoptera (beetles)
 - Diptera (true flies)
 - Lepidoptera (butterflies and moths)
 - Hymenoptera (bees, wasps, and ants)
 - Hemiptera (true bugs, hoppers, aphids)
- **Recognize** the evidence insects leave behind on plants.

Before Session

READ:

- Basic Entomology for Identification factsheet (pdf) (2 pages handout provided)
- Insect Injury to Plants reprint (pdf) (2 pages handout provided)
- Beneficial Insects - Nature's Pest Control factsheet (pdf) (4 pages) Find it in this list of Cornell Insect Diagnostic Lab Factsheets: <http://idl.entomology.cornell.edu/factsheets>

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Beneficial Insects

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WATCH:

- Entomology 101 Video Series

DO:

- Explore the online resource BugGuide: <http://bugguide.net/node/view/73>
 - Find one insect you weren't previously aware of and become familiar with it.
 - What are its key morphological characteristics? Does it have complete or incomplete metamorphosis? Which insect order is it in?

THINK:

- Are you already familiar with beneficial insects? Make a list of those.
- What are some questions you have about beneficial insects?

Opening and Introduction

- Facilitator reviews housekeeping, ground rules, learning objectives, and class flow.

Reconnect

- Partner up to discuss the question listed under the pre-work THINK prompt.

Entomology 101 Lecture

- Listen to presentation.

Beneficial Insects Lecture

- Listen to presentation.

Insect Orders Hands-on Activity

- Facilitator leads participants through group activity and discussion.

Conclusions

- Facilitator leads group reflection on key take home points and any lingering questions.

Program Feedback

- Share your insight to help us improve the program, report results, & plan for the future.

Knowledge Check

- Assess what you now know. Be motivated and empowered to share with your peers and learn more.

Beneficial Insects

Participant Guide

After Session

REFLECT:

- What happened?
- What was my response to what happen? How do I make sense of it?
- How does it relate to other things I know?
- What can I conclude?
- What might I do differently next time?

DO:

- BugFinder Activity (pdf) (2-page handout provided)
- Explore Cornell Insect Diagnostic Lab Factsheets: <http://idl.entomology.cornell.edu/factsheets>

LEARN MORE:

- Putnam County Cornell Cooperative Extension's Create a Pollinator Paradise web resource: <http://putnam.cce.cornell.edu/gardening/create-a-pollinator-paradise>
- The Power of Pollinators: Bee Biology and Identification video ~37 minutes
- https://vod.video.cornell.edu/media/Bee+Biology/1_us110ww9
- Cornell Entomologist's Naturalist Outreach YouTube videos including one on arthropod predators and insect phylogeny: <https://www.youtube.com/user/naturalistoutreach>
- 2018 All Bugs Good and Bad Webinar Series: Bees, Wasps, and Hornets, Oh My!: <https://www.youtube.com/watch?v=C4YqzCTIPyc&feature=youtu.be>
- 2018 All Bugs Good and Bad Webinar Series: Attracting Pollinators to Our Landscape <https://www.youtube.com/watch?v=9GKrbTFWkFA&feature=youtu.be>
- MGV Level 1: Entomology from the University of Wisconsin. YouTube video series 5 parts - 60 minutes: <https://www.youtube.com/playlist?list=PLrktjgTJbkvVpnZhmjxvA21PxyWVa0Kdx>
- Insect Structure, Function, and Metamorphosis - YouTube video ~20 minutes <https://www.youtube.com/watch?v=tM53SsmjY6I>
- Managing Insects: Friend of Foe? YouTube video - ~18 minutes https://www.youtube.com/watch?v=_3k2Mqty1QU
- Dr. Entom YouTube video series on insects - 7 YouTube videos, 5 to 11 minutes each <https://www.youtube.com/channel/UCZnWmkcky0RrayAjXVEmLzw>
- Cicada Metamorphosis Timelapse YouTube video ~3 minutes <https://www.youtube.com/watch?v=mArDqy8RkxM>
- Introduction to Scale Insects: YouTube video ~2.5 minutes <https://www.youtube.com/watch?v=ZEzNVN-xGIA>
- BugGuide: <http://bugguide.net/node/view/15740>
- Insects: Their Natural History and Diversity: With a Photographic Guide to Insects of Eastern North America by Stephen A. Marshall, <http://www.fireflybooks.com/index.php/catalogue/adult-books/nature-and-science/insects/product/11548-insects-their-natural-history-and-diversity-with-a-photographic-guide-to-insects-of-eastern-north-america>

Beneficial Insects

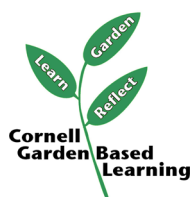
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- A Field Guide to Insects: America North of Mexico by Donald J. Borror and Richard E. White, https://www.amazon.com/Field-Guide-Insects-America-Mexico/dp/0395911702/ref=pd_lpo_sbs_14_t_0?encoding=UTF8&psc=1&refRID=9H4T1J328GXWBNA X321X
- Garden Insects of North America: The Ultimate Guide to Backyard Bugs by Whitney Cranshaw, <https://www.amazon.com/Garden-Insects-North-America-Princeton/dp/0691095612>
- Insects that Feed on Trees and Shrubs by Warren T. Johnson and Howard H. Lyon, <http://www.cornellpress.cornell.edu/book/?GCOI=80140100626460>
- PCT Field Guide for the Management of Urban Spiders By Stoy A. Hedges and Richard S. Vetter; Dan Moreland, Editor <https://store.pctonline.com/en/pct-field-guide-for-the-management-of-urban-spiders-2nd-ed>
- Common Spiders of North America by R. A. Bradley (Author), S. Buchanan (Illustrator)
- Some Commonly Encountered Pennsylvania Spiders from PENN State <https://ento.psu.edu/extension/factsheets/pdf/commonly-encountered-pa-spiders>

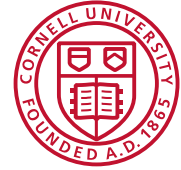
Campus Links:

- Cornell of Entomology Outreach: <https://entomology.cals.cornell.edu/extension/>
- Cornell Insect Diagnostic Lab: <http://idl.entomology.cornell.edu/>
- NYS Integrated Pest Management: <https://nysipm.cornell.edu/>
- Pollinator Network at Cornell: <https://pollinator.cals.cornell.edu/>
- Cornell's Biological Control: A Guide to Natural Enemies in North America: <https://biocontrol.entomology.cornell.edu/index.php>

Looking for Cornell people and resources? Don't Google; try the Cornell web search: <http://www.cornell.edu/search/index.cfm>



Date Published/Updated: April 2019



Basic Plant Pathology Participant Guide

A plant disease is a dynamic process during which a plant, a pathogen (living or nonliving), and the environment interact over a period of time and interfere with a plant's functions. Plant pathology is the study of plant diseases. Becoming familiar with plant diseases is an important skill for any gardener. Accurate, early detection is critical for plant health. (Adapted from Penn State Extension Master Gardener Manual, pg. 184 <https://extension.psu.edu/master-gardener-manual>)

By actively participating in Basic Plant Pathology, you will:

- **Explain** the difference between biotic and abiotic diseases.
- **Review** the five types of biotic disease organisms and their life cycles (fungi, bacteria, viruses, nematodes and phytoplasmas).
- **Recognize** the disease pyramid/triangle.
- **Be familiar** with the five basic steps to diagnosing plant problems (determine if problem exists, look for patterns, determine time of development, ask questions, and synthesize the information). Use the approach to determine if example plant problems are caused by abiotic or biotic factors.
- **Recognize** the importance of accurate, early detection of introduced and invasive pathogens.

Before Session

READ:

- Plant Diagnostics: What is “Wrong” With My Plant? (pdf) (2 pages handout provided)
- Basic Plant Pathology General Information (pdf) (7 page handout provided)

WATCH:

- *Common Diseases in the Garden* by Barb Neal. YouTube video ~ 22 minutes.
https://youtu.be/CcgZAZPt_iA?list=PLHPXm2Es8aQDjvBs5r3ZXEA4DRBUqiT58

DO:

- Take 30 minutes to explore and get acquainted with the following plant pathology resources:
 - Cornell's Plant Disease Diagnostic Clinic <http://plantclinic.cornell.edu/>
 - Scroll down to the Resources section at the bottom of the page
 - Explore the Factsheets tab at the top of the page
 - Cornell Vegetable MD Online Plant Pathology Web Page:
<http://vegetablemdonline.ppath.cornell.edu/Home.htm>

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Basic Plant Pathology

Participant Guide

- Cornell Berry Diagnostic Tool: <https://blogs.cornell.edu/berrytool/>

THINK:

- What plant diseases have you experienced in your garden endeavors? What type of disease was it: fungi, bacteria, viruses, nematodes, or phytoplasma related? How did you know?
- What are the key steps to consider when addressing plant disease questions?

Opening and Introduction

- Facilitator reviews housekeeping, ground rules, learning objectives, and class flow.

Reconnect

- Partner up to discuss the question listed under the pre-work THINK prompt.

Basic Plant Pathology Lecture

- Listen to presentation.

Diagnosing Plant Problems Sorting Exercises

- Facilitator leads participants through group activity.

Diagnosing Plant Problems Scenarios

- Facilitator leads participants through group activity.

Conclusions

- Facilitator leads group reflection on key take home points and any lingering questions.

Program Feedback

- Share your insight to help us improve the program, report results, & plan for the future.

Knowledge Check

- Assess what you now know. Be motivated and empowered to share with your peers and learn more.

After Session

Basic Plant Pathology

Participant Guide

REFLECT:

- What happened?
- What was my response to what happen? How do I make sense of it?
- How does it relate to other things I know?
- What can I conclude?
- What might I do differently next time?

DO:

- Take 15 minutes to revisit the following plant pathology resources:
 - Cornell's Plant Disease Diagnostic Clinic <http://plantclinic.cornell.edu/>
 - Scroll down to the Resources section at the bottom of the page
 - Explore the Factsheets tab at the top of the page
 - Cornell Vegetable MD Online Plant Pathology Web Page: <http://vegetablemdonline.ppath.cornell.edu/Home.htm>
 - Cornell Berry Diagnostic Tool: <https://blogs.cornell.edu/berrytool/>

LEARN MORE:

- *MGV Level 1: Plant Pathology* from the University of Wisconsin. YouTube video series - 9 parts lasting about 2 ¼ hours total.
<https://www.youtube.com/playlist?list=PLrktjgTJbkvXEFLcYK98KLzK8Oq5YRrye>
- *MGV Level 1: Diagnosing Plant Problems* video ~ 55 minutes
https://www.youtube.com/watch?v=u1C4gAMxQnM&list=PLrktjgTJbkvU5J7_m_VgiK5uxu_wYJGG8&index=2&t=0s
- *MGV Level 1: Diagnosing Plant Problems, Finding an Answer: The Hats of Plant Diagnostics.* 7 short podcasts to listen to, about 40 minutes total.
<http://blogs.ces.uwex.edu/mgvlevel1/integrated-pest-management/diagnosing-plant-problems/>
- *Fantastic Fungi: The Forbidden Fruit* - YouTube video ~2.5 minutes
<https://www.youtube.com/watch?v=EDkR2HIIIEbc>
- *Wow! Fungi plant growth - The Private Life of Plants with David Attenborough* - BBC wildlife. YouTube video ~1.5 minutes
<https://www.youtube.com/watch?v=puDkLFcCZyI>
- Become a Certified First Detector <http://firstdetector.org/detector-modules>
- Training videos here: <http://firstdetector.org/taxonomic-training>
- Northeast Plant Diagnostic Network: www.NEPDN.org
- Ohio State Yard & Garden Fact Sheets: <http://www.ag.ohio-state.edu/~ohioline/lines/hygs.html>
- Purdue University: http://www.ppd.purdue.edu/ppdl/Reference_links.html#Gardening_Landscapes
- Missouri Extension Service: <http://muextension.missouri.edu/xplor/agguides/hort/index.htm>

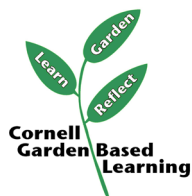
Basic Plant Pathology

Participant Guide

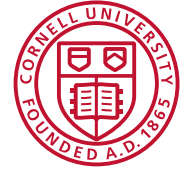
Campus Links:

- Cornell Plant Disease Diagnostic Clinic: <http://plantclinic.cornell.edu/>
- Cornell Vegetable MD Online Plant Pathology Web Page: <http://vegetablemdonline.ppath.cornell.edu/Home.htm>
- Cornell Berry Diagnostic Tool: <https://blogs.cornell.edu/berrytool/>
- NYS Integrated Pest Management: <https://nysipm.cornell.edu/>

Looking for Cornell people and resources? Don't Google; try the Cornell web search: <http://www.cornell.edu/search/index.cfm>



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Vegetable Gardening 1 Participant Guide

Community and home food gardening are active and affordable ways to improve food security status and be an ecological steward. Vegetables and fruits can be grown in containers, raised beds, or directly into the ground. CCE staff and volunteers are often well-positioned to promote knowledge and skills gains related to growing food in these settings. It is a priority of CCE to work with vulnerable populations to educate families and influence policies that will allow youth, families, and communities to make sound nutritional decisions with constrained resources. (Adapted from the CCE Statewide Plan of Work)

By actively participating in Vegetable Gardening 1, you will:

- **Recognize** common vegetable families.
- **Identify** common garden pests and diseases.
- **Examine** methods to start vegetable seeds indoors and outdoors.
- **Describe** best management practices for water, weed, pest prevention, and nutrient management for maintaining vegetable and herb crops.

Before Session

READ:

- Excerpt Chapters from Seed to Supper course book (26 pages provided).
- Factsheet Indoor Vegetable Seed Starting (2 pages provided).

DO:

- Any seed packets at home? Bring them in. Empty ones are fine.

EXPLORE:

- Take about 20 minutes to explore the Cornell Food Gardening Resources - This is an excellent site as it provides advice on growing 58 different vegetables as well as many herbs. All of it is written for New York growing conditions. It also provides more detailed information on saving seeds, container gardening and variety recommendations. This is a site you will want to keep bookmarked on your computer. You might click on a few links that catch your interest and read a little more or watch a couple videos. www.gardening.cornell.edu/vegetables and <http://www.gardening.cornell.edu/homegardening/scene0391.html>

Opening and Introduction

- Facilitator reviews housekeeping, ground rules, learning objectives, and class flow.

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Vegetable Gardening 1

Participant Guide

We Are Family Vegetable Crops Hands-on Activity Part A

- Facilitator leads participants through individual reflection and adding to charts.

Vegetable Garden 10 Things to Know Lecture

- Listen to presentation.

Seed Packet Sorting Hands-on Activity

- Facilitator leads participants through small group activity and discussion.

Vegetable Gardening Pests Lecture

- Listen to presentation.

Conclusions

- Facilitator leads group reflection on key take home points and any lingering questions.

Program Feedback

- Share your insight to help us improve the program, report results, & plan for the future.

Knowledge Check

- Assess what you now know. Be motivated and empowered to share with your peers and learn more.

After Session

REFLECT:

- What happened?
- What was my response to what happen? How do I make sense of it?
- How does it relate to other things I know?
- What can I conclude?
- What might I do differently next time?

LEARN MORE:

There are a large number of resources about vegetable gardening at Cornell University and beyond, here are a few. This is arranged by NYS Seed to Supper Course Book chapter topics:

Chapter 1- Planning Your Garden

- Vegetable Varieties for Gardeners- <http://vegvariety.cce.cornell.edu/main/login.php>

Vegetable Gardening 1

Participant Guide

- Cornell Garden-Based Learning Citizen Science projects related to growing vegetables <http://gardening.cals.cornell.edu/citizen-science/>
- Vegetable Growing Guides <http://www.gardening.cornell.edu/homegardening/scene0391.html>
- Fact Sheets on Food Gardening resource page <http://gardening.cornell.edu/vegetables/>

Chapter 2- Getting Started with Healthy Soil

- Cover crop guide for New York Vegetable Growers <http://covercrop.org>
- Cover Crops for Urban Gardens (Garden Ecology project) <https://blogs.cornell.edu/gep/gardeners>
- Healthy Soils, Healthy Communities; <http://blogs.cornell.edu/healthysoils>
- Soil Contaminants and Best Practices for Healthy Gardens, Cornell Waste Management Institute <http://cwmi.css.cornell.edu/soilquality.htm#research>
- Fact Sheets on Food Gardening resource page <http://gardening.cornell.edu/vegetables/>
- Fact Sheets on soil testing resource page <http://gardening.cornell.edu/soil>

Chapter 3- Planting Your Garden

- Fact Sheets on Food Gardening resource page <http://gardening.cornell.edu/vegetables/>
- Eliot Coleman's Four Season Farm books, <http://fourseasonfarm.com/read-our-books>
- Vegetable Gardening for Dummies by Charlie Nardozzi, 2009
- How to Grow More Vegetables by John Jeavons, 2012 8th edition
- The Vegetable Gardener's Bible by Edward C. Smith, 2009

Chapter 4- Caring for Your Growing Garden

- Save the rain: <http://savetherain.us/green-programs/green-infrastructure/rain-barrels/> and <http://cceanondaga.org/resources/how-to-build-a-rain-barrel>
- Rain Barrels, Fact Sheet 218; Cornell Cooperative Extension Rockland County; <http://rocklandcce.org/resources/rain-barrels>
- Plant Rotation in the Garden Based on Plant Families <https://extension.psu.edu/plant-rotation-in-the-garden-based-on-plant-families>
- Vegetable Resources, New York State Integrated Pest Management website, Cornell, CALS; <https://nysipm.cornell.edu/agriculture/vegetables/resources/>
- Troubleshooting, Cornell Garden- Based Learning, <http://gardening.cals.cornell.edu/garden-guidance/troubleshooting/>
- Late Blight Information; New York State Integrated Pest Management website, Cornell, CALS; <https://nysipm.cornell.edu/agriculture/vegetables/pest-alerts-vegetables/late-blight/>

Vegetable Gardening 1

Participant Guide

- Cornell University Insect Diagnostic Laboratory; <http://idl.entomology.cornell.edu>
- Pests, Cornell Vegetable Program, CALS; <https://cvp.cce.cornell.edu/pests.php#topbo>
- Weed Control for the Home Vegetable Garden, Bellinder, Robin R.; Kline, Roger A. and Warholc, Donald T. Cornell University Cooperative Extension, <https://ecommons.cornell.edu/handle/1813/3618>
- Weeds and Your Garden, New York State Integrated Pest Management, Cornell, CALS <https://ecommons.cornell.edu/bitstream/handle/1813/43859/weeds-in-garden-bro-NYSIPM.pdf;sequence=1>
- Cornell Publications Wildlife Damage Management Fact Sheets; <http://wildlifecontrol.info/publications/cornell-publications>

Chapter 5 - Harvesting and Using Your Bounty

- Resources in GBL Learning Library Advance Topic Seed Saving
- The National Center for Home Food Preservation; The University of Georgia; <https://nchfp.uga.edu/>
- So Easy to Preserve, The University of Georgia, <https://setp.uga.edu>
- Handy Reference for Drying Vegetables and Herbs; Prepared by Katherine T. Humphrey and Judy L. Price, Cornell Cooperative Extension Home Food Preservation Experts, 2002; https://cpb-us-e1.wpmucdn.com/blogs.cornell.edu/dist/b/2712/files/2009/04/2011_handy_ref_dry_veg.pdf
- Handy Reference for Canning Fruits. Ruth Klippstein, Division of Nutritional Sciences, Cornell University. <http://ccetompkins.org/resources/handy-reference-for-canning-fruits>
- Handy Reference for Canning Vegetables; Ruth Klippstein, Division of Nutritional Sciences, Cornell University. <http://ccetompkins.org/resources/handy-reference-for-canning-vegetables>
- Freezing Fruits and Vegetables; Mary Lou Tenney, Division of Nutritional Sciences, Cornell University. <http://ccetompkins.org/resources/freezing-fruits-vegetables>
- Storage Guidelines for Fruits and Vegetables, Cornell Cooperative Extension of Chemung County; <http://chemung.cce.cornell.edu/resources/storage-guidelines-for-fruits-vegetables>

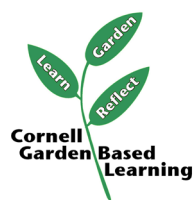
Campus Links:

- Cornell Garden-Based Learning Food Gardening web page: www.gardening.cornell.edu/vegetables
- Cornell Garden-Based Learning Citizen Science projects related to growing vegetables <http://gardening.cals.cornell.edu/citizen-science/>
- Cornell Commercial Vegetables: <https://www.vegetables.cornell.edu/>

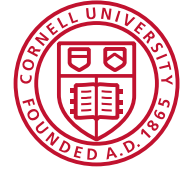
Vegetable Gardening 1

Participant Guide

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<http://www.cornell.edu/search/index.cfm>



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Vegetable Gardening Part 2

Participant Guide

Community and home food gardening are active and affordable ways to improve food security status and be an ecological steward. Vegetables and fruits can be grown in containers, raised beds, or directly into the ground. CCE staff and volunteers are often well-positioned to promote knowledge and skills gains related to growing food in these settings. It is a priority of CCE to work with vulnerable populations to educate families and influence policies that will allow youth, families and communities to make sound nutritional decisions with constrained resources. (Adapted from the CCE Statewide Plan of Work)

By actively participating in Vegetable Gardening 2, you will:

- **Create** a multi-year plan for a vegetable and herb garden including site selection and preparation, variety selection, season extension, container gardening, and intensive gardening methods.
- **Practice** answering vegetable garden-related questions.
- **Become familiar** with how and when to harvest and properly store vegetable and herb crops.

Before Session

READ:

- Excerpt Chapter 1 from Seed to Supper course book (18 pages provided).

WATCH:

- YouTube video series UW-Extension Master Gardener Program: Vegetable playlist has several mostly short videos; collectively about 60 minutes.
<https://www.youtube.com/playlist?list=PLrktjgTJbkvV8eyIUxIL2R8yXjTzwsdkn>
- <https://extension.umn.edu/planting-and-growing-guides/harvesting-and-storing-home-garden-vegetables>

DO:

- Worksheet: Ten Most Asked Vegetable Gardening Questions. Write brief answers and bring to class as we will discuss them further as a group

Opening and Introduction

- Facilitator reviews housekeeping, ground rules, learning objectives, and class flow.

Advanced Vegetable Gardening

- Listen to presentation.

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Vegetable Gardening (Part 2 of 2)

Participant Guide

Ten Most Asked Vegetable Gardening Questions Hands-on Activity

- Complete worksheet discussion in pairs then discuss whole group highlights.

Garden Planning Hands-on Activity

- Facilitator leads participants through planning activity.

We Are Family Vegetable Crops Hands-on Activity Part B

- Facilitator leads participants through individual reflection and adding to charts.

Conclusions

- Facilitator leads group reflection on key take home points and any lingering questions.

Program Feedback

- Share your insight to help us improve the program, report results, & plan for the future.

Knowledge Check

- Assess what you now know. Be motivated and empowered to share with your peers and learn more.

After Session

REFLECT:

- What happened?
- What was my response to what happen? How do I make sense of it?
- How does it relate to other things I know?
- What can I conclude?
- What might I do differently next time?

LEARN MORE:

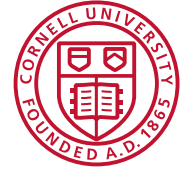
See list in Participant Guide Vegetable Gardening (Part 1 of 2)

Looking for Cornell people and resources? Don't Google; try the Cornell web search:

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Nutrition, Food Safety and Food Security Participant Guide

Food security refers to sustained access at all times, in socially acceptable ways, to food adequate in quantity and quality to maintain a healthy life. Community and home gardening are active and affordable ways to improve food security status for individuals and families. CCE staff and volunteers are often well-positioned to promote knowledge and skills gains related to growing food in these settings, post-harvest food safety, and nutrition. It is a priority of CCE to work with vulnerable populations to educate families and influence policies that will allow youth, families and communities to make sound nutritional decisions with constrained resources. (Adapted from the CCE Statewide Plan of Work)

By actively participating in Nutrition, Food Safety and Food Security, you will:

- **Recognize** Eat Smart New York's (ESNY) nutrition education activities and how garden programs link to their main messages.
- **Identify** the ways in which MGVs can partner with ESNY.
- **Understand** safe handling, preparation, and preservation of food including important practices in preventing foodborne illnesses and avoiding cross contamination.
- **Examine** aspects of food security including the availability and access to food, sufficiency of food, social and cultural acceptability of food, and nutritional quality and safety of food.
- **Become familiar** with the latest statistics and impacts of food insecurity in New York State and **articulate** the importance of gardening as a way to foster food security.

Before Session

READ:

- Chapter 6 from Seed to Supper (27-page excerpt provided). No need to read details on every crop, just pick a couple favorites.
- Take 15 minutes to read some of the information on the Hunger in America website, especially the details about New York numbers and who goes hungry.

<http://www.feedingamerica.org/hunger-in-america/>

WATCH:

- "Caring for Your Garden and the Power of Food in Our Lives" video (2 minutes). Scroll down to chapter #4, watch this video and consider the reflection questions:

<http://gardening.cals.cornell.edu/program-tools/planning-organizing/effective-community-engagement/>

THINK:

- Do you know if community and home gardening are enhancing food security status of individuals and families in your community or county? If yes, how?

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Nutrition, Food Safety After Harvest, and Food Security Participant Guide

- What do you already know about organizations in your community and county? Who are involved in food resources and nutrition education?
- Do you think there is an organization that would be particularly interested in partnering with Master Gardener Volunteers to promote knowledge and skills gains related to growing food to improve food security status? Why might they be interested?

Opening and Introduction

- Facilitator reviews housekeeping, ground rules, learning objectives, and class flow.

Introduction to Eat Smart New York (ESNY) Lecture

- Listen to presentation.

Reconnect

- Partner up and discuss to the question listed above under THINK.

Food Preservation and Food Security Lecture

- Listen to presentation.

Food Safety Hands-on Activity

- Facilitator leads participants through group activity and discussion.

Food Preservation Scavenger Hunt Hands-on Activity

- Facilitator leads participants through group activity and discussion.

Conclusions

- Facilitator leads group reflection on key take home points and any lingering questions.
- Consider how nutrition, food safety, and food security relate to gardening? How will the information shared shape your work as a garden-based learning volunteer?

Program Feedback

- Share your insight to help us improve the program, report results, and plan for the future.

Knowledge Check

- Assess what you now know. Be motivated and empowered to share with your peers and learn more.

After Session

Nutrition, Food Safety After Harvest, and Food Security Participant Guide

REFLECT:

- What happened?
- What was my response to what happen? How do I make sense of it?
- How does it relate to other things I know?
- What can I conclude?
- What might I do differently next time?

LEARN MORE:

Eat Smart NY: <http://eatsmartnewyork.org/>

CCE Saratoga Food Preservation website: <http://ccesaratoga.org/nutrition-food/food-preservation>

Program Policy Education and Action for Fighting Poverty and Economic Hardship in Upstate New York: <http://povertyaction.cals.cornell.edu/>

Benefits of Garden-Based Learning: <http://gardening.cals.cornell.edu/program-tools/benefits-and-research/>

HUNGER 101 Foodbank of the Southern Tier: <https://www.foodbankst.org/hunger-ed-101>

USDA Center for Nutrition Policy and Promotion: <https://www.cnpp.usda.gov/>

Choose my plate popular topics: <https://www.choosemyplate.gov/popular-topics>

SNAP-Ed: <https://snaped.fns.usda.gov/state-snap-ed-contacts/new-york>

The New Face of Hunger: <http://www.nationalgeographic.com/foodfeatures/hunger/>

Confronting Poverty: <https://confrontingpoverty.org/>

So Easy to Preserve, 6th Edition – University of Georgia: <https://setp.uga.edu/>

Wild Harvest Table: <http://ccesaratoga.org/nutrition-food/wild-game>

Food safety: <https://www.foodsafety.gov/keep/basics/index.html>

Get connected. Get answers. <http://211nys.org/find-services>

Handy Reference for Drying Vegetables and Herbs: https://cpb-us-e1.wpmucdn.com/blogs.cornell.edu/dist/b/2712/files/2009/04/2011_handy_ref_dry_veg.pdf

Handy Reference for Canning Fruits: <http://ccetompkins.org/resources/handy-reference-for-canning-fruits>

Nutrition, Food Safety After Harvest, and Food Security Participant Guide

Handy Reference for Canning Vegetables: <http://ccetompkins.org/resources/handy-reference-for-canning-vegetables>

Freezing Fruits and Vegetables; Mary Lou Tenney, Division of Nutritional Sciences, Cornell University: <http://ccetompkins.org/resources/freezing-fruits-vegetables>

Storage Guidelines for Fruits and Vegetables, Cornell Cooperative Extension of Chemung, County: <http://chemung.cce.cornell.edu/resources/storage-guidelines-for-fruits-vegetables>

Campus Links:

Nutrition, Food Safety and Security, and Obesity Prevention:
<http://cce.cornell.edu/program/nutrition>

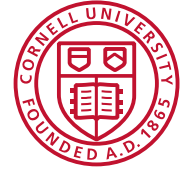
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Date Published/Updated: April 2019

Cornell Cooperative Extension

Cornell Garden-Based Learning



Woody Plants Participant Guide

Woody plants can be divided into four main groups: trees, shrubs, vines and ground covers. They are often form the backbone of our landscapes while providing beauty and ecosystem services. One key strategy CCE uses to supports long-term sustainability and well-being of communities is increasing the number of residents practicing management tactics in homes, lawns, gardens and landscapes that support environmental stewardship - including proper selection and maintenance of woody plants.

By actively participating in Woody Plants, you will:

- Acknowledge the variability of urban and other growing conditions and how these various conditions might influence selecting site appropriate materials.
- Explore Cornell University's Woody Plant Database and other tools to help identify appropriate trees and shrubs for different landscape conditions.
<http://woodyplants.cals.cornell.edu>
- Become familiar with the basics of landscape tree or shrub care including soil preparation and remediation, mulching, establishment period, water needs, and pruning.
- Recognize the three forms in which trees and shrubs can be purchased and the basic steps and considerations for planting.

Before Session

READ:

- Rakow and Weir (2005). **The Cornell Guide for Planting and Maintaining Trees and Shrubs** (25 pages) <https://ecommons.cornell.edu/handle/1813/3572>
- Bassuk (May 2018) **Greening the inner city: How do we choose the best trees?** (3 pages) On pages 387 to 389 in electronic publication Open Access Government (ISSN 2516-3817). Find a link to the article on Cornell Urban Horticulture Institute's Outreach page: <http://www.hort.cornell.edu/uhi/outreach/> Or [direct hyperlink here](#)
- Bassuk and Sutton (March 2012) **Beyond the Native/Exotic Debate** (3 pages) in electronic journal Urban Habitats (ISSN 1541-7115). Find a link to the article on Urban Horticulture Institute's Outreach page: <http://www.hort.cornell.edu/uhi/outreach/> Or [direct hyperlink here](#)
- Other Cornell Urban Horticulture Institute items as interest and time allows.

WATCH:

- Trees for Every Site: Principles of Good Selection (55 min 4 sec video) www.youtube.com/playlist?list=PLHPXm2Es8aQC2vyn2lV1ij3bAHtPk2kg2&disable_polymer=true
- Scoop and Dump Planting 26 month update (4 minute video) Find a link to UHI video on: <http://www.hort.cornell.edu/uhi/outreach/> Or [direct hyperlink here](#)

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Woody Plants

Participant Guide

- Other Cornell Urban Horticulture Institute video as interest and time allows.

THINK:

- How did the article **Beyond the Native/Exotic Debate** reinforce your perspective on native plants? How did it change your perspective and knowledge about native plants?
- What do you think is contributing to the success or failure to thrive your woody plants?

Opening and Introduction

- Facilitator reviews housekeeping, ground rules, learning objectives, and class flow.

Reconnect

- Partner up to discuss the question listed under the pre-work THINK prompt.

Trees for Every Site: Principles of Good Selection Lecture

- Listen to presentation.

Station-Based Hands-on Activities

- Participants divide up into smaller groups and rotate around to stations to engage in hands-on activities about woody plants.

Conclusions

- Facilitator leads group reflection on key take home points and any lingering questions.

Program Feedback

- Share your insight to help us improve the program, report results, & plan for the future.

Knowledge Check

- Assess what you now know. Be motivated and empowered to share with your peers and learn more.

After Session

REFLECT:

- What happened?
- What was my response to what happen? How do I make sense of it?
- How does it relate to other things I know?
- What can I conclude?
- What might I do differently next time?

PRACTICE:

Woody Plants

Participant Guide

- Spend at least a half hour playing with the Tree Pruning Guide, <https://www.arborday.org/trees/pruning/animation/launch.cfm>. Also consider watching the 6-minute video *How To Prune a Tree*: <https://goodgardeningvideos.org/videos/how-to-prune-a-tree/>.
- Enter different search characteristics to learn about appropriate trees and shrubs for different landscape conditions in the Cornell University's Urban Horticulture Institute's Woody Plant Database: <http://woodyplants.cals.cornell.edu/home>.
- Using identification keys takes practice. There are many print publications for woody plant identification; below are a few online tools. If you are new to using identification keys, try starting with a plant that you already know the identification for and attempt to work through one of these keys or a key from another source.
 - Cornell's Woody Plant Database
 - Cornell's online Guide to Viburnums
<http://www.hort.cornell.edu/vlb/key/index.html>

LEARN MORE:

- Dr. Nina Bassuk shares how to use the Cornell University's Urban Horticulture Institute's Woody Plant Database (28 minutes). <https://vimeo.com/115137311>
- Tree and shrub selection and use resources produced by Urban Horticulture Institute: <http://www.hort.cornell.edu/uhi/outreach/>
- Journal articles and thesis from Urban Horticulture Institute on their Research page: <http://www.hort.cornell.edu/uhi/research/>
- MGVI Level 1: Woody Ornamentals from the University of Wisconsin. YouTube video series with 13 parts ~ 55 minutes
https://www.youtube.com/playlist?list=PLrktjgTJbkvUzLVRfTiTKJlw6SHFaj_9K
- Pat's top picks – pdf sheet that lists the plants and reference: <http://blogs.cornell.edu/gblblog/garden-guidance/lawns-landscapes/pat-currans-top-plant-lists/>
And 2016 Pat's Top video series:
Trees for Sun 25 mins, <https://www.youtube.com/watch?v=7pXIZPcA4wY>
Trees for Light Shade 15 mins, <https://www.youtube.com/watch?v=DpKePKTmVII>
Shrubs & Vines for Sun 29 mins, <https://www.youtube.com/watch?v=xe4d36zHrT8>
Native Trees 17 mins, <https://www.youtube.com/watch?v=mKKXnmgfO0A>
Native Shrubs & Vines 29 mins, <https://www.youtube.com/watch?v=UtsfWH80eEw>
Invasive Plants 24 mins, <https://www.youtube.com/watch?v=PF0uuWFNt1c>
- Detective Dendro Podcast:
<http://www.isa-arbor.com/Online-Learning/Podcasts/Podcast/4/Detective-Dendro>
- National Tree Benefit Calculator, <http://www.treebenefits.com/calculator/index.cfm>
- Pruning Woody Plants, <https://www.udel.edu/academics/colleges/canr/cooperative-extension/fact-sheets/pruning-woody-plants/>
- Pruning Woody Landscape Plants, <https://extension.umaine.edu/publications/2169e/>

Woody Plants

Participant Guide

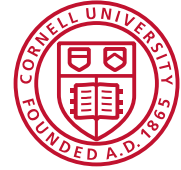
Campus Links:

- Cornell Woody Plant Database, <http://woodyplants.cals.cornell.edu/home>
- Urban Horticulture Institute, <http://www.hort.cornell.edu/uhi/outreach>
- Cornell Botanic Gardens, <https://cornellbotanicgardens.org/learn/explore-our-plants/>
 - A Rainbow in Winter video by Cornell Botanic Gardens, <https://vimeo.com/256490403>
 - High Above pruning video by Cornell Botanic Gardens <https://vimeo.com/154224963>

Looking for Cornell people and resources? Don't Google; try the Cornell web search:
<http://www.cornell.edu/search/index.cfm>



Date Published/Updated: April 2019



Herbaceous Plants Participant Guide

CCE is focused on developing capacity among citizens, leaders, and local officials so they are better prepared to address challenges and opportunities, improve quality of life, and build strong and vibrant communities. CCE works toward the long-term sustainability and well-being of communities through collaborations and partnerships and promotes active and representative participation toward enabling all community members to shape their collective future. One key strategy is to increase the number of residents practicing management tactics in homes, lawns, gardens and landscapes that support environmental stewardship and a sustainable community. This includes proper selection and maintenance of herbaceous plants in the landscape. (Sourced from CCE Statewide Plan of Work)

By actively participating in Herbaceous Plants, you will:

- **Recognize** characteristics of types of herbaceous plants including; annuals, biennials, perennials, bulbs, tubers, corms, and ornamental grasses.
- **List factors** that should be considered in planning and site selection for gardens with herbaceous plants.
- **Become familiar** with the fundamentals of herbaceous plant landscapes care including soil preparation and remediation, mulching and edging, plant selection and basic propagation.
- **Discover** Cornell University's plant databases and other tools to help select appropriate herbaceous plants:
 - <http://www.gardening.cornell.edu/homegardening/>
 - https://aggie-horticulture.tamu.edu/ornamentals/cornell_herbaceous/
 - <http://www.hort.cornell.edu/bglannuals/>
 - <https://ecommons.cornell.edu/handle/1813/42430>

Before Session

READ/BROWSE:

- Sequence of Bloom of Perennials, Biennials and Bulbs (16 pages)
<https://ecommons.cornell.edu/handle/1813/3269>
- Pat Curran's 'Top' Plant Lists <http://gardening.cals.cornell.edu/garden-guidance/lawns-landscapes/pat-currans-top-plant-lists/>
- Ornamental Grasses for the Home and Garden (24 pages)
<https://ecommons.cornell.edu/bitstream/handle/1813/3268/Ornamental%20Grasses%20for%20the%20Home%20and%20Garden.pdf?sequence=2&isAllowed=y>
- Cornell University's plant databases and other tools to help identify appropriate herbaceous plants. (see links above)

Herbaceous Plants

Participant Guide

THINK:

- With respect to gardening with herbaceous plants, how would you rate your current interest, experience and knowledge? Briefly describe how or from where you gathered your experience and knowledge in this area.
- What do you want to do with herbaceous plants in the future?

Opening and Introduction

- Facilitator reviews housekeeping, ground rules, learning objectives, and class flow.

Reconnect

- Partner up to discuss the question listed under the pre-work THINK prompt.

Herbaceous Plants Lecture

- Listen to presentation.

Herbaceous Plants Hands-on Activity

- Participants divide up into smaller groups for hands-on activity.

Herbaceous Plants Lecture continues

- Listen to presentation.

Garden Case Study Activity Discussion

- Participants pair up to read and discuss assigned scenario. Return to share highlights in whole group discussion.

Conclusions

- Facilitator leads group reflection on key take home points and any lingering questions.

Program Feedback

- Share your insight to help us improve the program, report results, & plan for the future.

Knowledge Check

- Assess what you now know. Be motive and empowered to share with your peers and learn more.

After Session

REFLECT:

- What happened?

Herbaceous Plants

Participant Guide

- What was my response to what happen? How do I make sense of it?
- How does it relate to other things I know?
- What can I conclude?
- What might I do differently next time?

LEARN MORE:

- Cornell Rock Gardens guide: <https://ecommons.cornell.edu/handle/1813/3282>
- Weed Suppressive Ground Covers brochure: <https://ecommons.cornell.edu/handle/1813/42430>
- Cornell Botanic Gardens <https://cornellbotanicgardens.org/learn/explore-our-plants/>
- YouTube video series *MGV Level 1: Herbaceous Plants* from the University of Wisconsin. <https://blogs.extension.wisc.edu/mgvlevel1/introduction-to-plants/herbaceous-plants/>
- Landscape for Life resources – Instructor and student materials about how to create and maintain a healthy and sustainable landscape. <http://landscapeforlife.org/resources/>
- EPA Ecoregion by State - Region 2 <https://www.epa.gov/eco-research/ecoregion-download-files-state-region-2>
- Missouri Botanical Garden Plant Finder – Over 7,500 plants by scientific or common name or characteristics <http://www.missouribotanicalgarden.org/plantfinder/plantfindersearch.aspx>
- Native Plant data base: <https://www.wildflower.org/plants-main/>
- Plants Do That <https://consumerhort.org/wp-content/uploads/2017/03/PlantsDoThat.pdf>
- Pat's top picks YouTube video series. Each video has a corresponding sheet that lists the plants and reference. Find those pdfs at: <http://blogs.cornell.edu/gblblog/garden-guidance/lawns-landscapes/pat-currans-top-plant-lists/>
 - 2016 Pat's Top Sun Flowering Perennials 14 mins <https://www.youtube.com/watch?v=V0aCugUhcXA>
 - 2016 Pat's Top Summer Flowering Perennials 22 mins <https://www.youtube.com/watch?v=tl67805Hu8>
 - 2016 Pat's Top Spring Flowering Perennials 15 mins <https://www.youtube.com/watch?v=1hTg6aJosK8>
 - 2016 Pat's Top Shade Flowering Perennials 23 mins <https://www.youtube.com/watch?v=mIR-ncgW4r0>
 - 2016 Pat's Top Native Flowering Perennials 16 mins https://www.youtube.com/watch?v=Jy7xH1i-z_s
 - 2016 Pat's Top Foliage Perennials 26 mins <https://www.youtube.com/watch?v=NuYrZuBUyg8>
 - 2016 Pat's Top Ferns 13 mins <https://www.youtube.com/watch?v=YVpTGB4PatU>
 - 2016 Pat's Top Fall Flowering Perennials 23 mins <https://www.youtube.com/watch?v=atRfCPk98Sk>
 - 2016 Pat's Top Bulbs 27 mins <https://www.youtube.com/watch?v=3OGuLSe22Ak>
 - 2016 Pat's Invasive Plants 24 mins <https://www.youtube.com/watch?v=PF0uuWFn1c>

Herbaceous Plants

Participant Guide

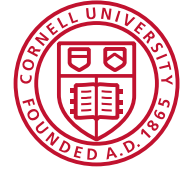
Campus Links:

- Cornell Home Gardening <http://www.gardening.cornell.edu/homegardening/index.html>
- Herbaceous Perennials Database https://aggie-horticulture.tamu.edu/ornamentals/cornell_herbaceous/
- Annual Flower Research <https://blogs.cornell.edu/trialgardens/>
- Flower Bulb Research Program <http://www.flowerbulbs.cornell.edu/>

Looking for Cornell people and resources? Don't Google; try the Cornell web search:
<http://www.cornell.edu/search/index.cfm>.



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Lawns and Plant Ecosystem Services Participant Guide

CCE is focused on developing capacity among citizens, leaders, and local officials so they are better prepared to address challenges and opportunities, improve quality of life, and build strong and vibrant communities. CCE works toward the long-term sustainability and well-being of communities through collaborations and partnerships and promotes active and representative participation toward enabling all community members to shape their collective future. One key strategy is to increase the number of residents practicing management tactics in homes, lawns, gardens and landscapes that support environmental stewardship and a sustainable community. This includes supporting ecological lawn care strategies that create an attractive environmental asset. (Sourced from CCE Statewide Plan of Work)

By actively participating in Lawns and Plant Ecosystem Services, you will:

- Describe key steps to lawn care success.
- Practice lawn care maintenance skills.
- Understand the concept of ecosystems services and discuss examples.
- Describe ways to use plants in the garden landscape that support ecosystem services.

Before Session

READ & WATCH:

- Lawn Care: The Easiest Steps to an Attractive Environmental Asset. **Focus on the Four Steps to Success** sections and the **Choose Seed** section under **Starting Fresh**. Browse the rest of the publication. Available in web and PDF formats at:
www.gardening.cornell.edu/lawn.
 - There are a number of less than 3 minute videos in the web version. **Focus on the Four Steps to Success** sections. Watch all of those.
- The Basics of Ecosystem Services (2 pgs. handout provided)
- Landscape for Life Student Manual – pg. 72 - 97 to learn about the role of plants in sustainable gardens and successful plant practices.
 - Note: The link is broken to the EPA map and guide to eco-regions that are referred to in the Landscapes for Life chapter. This link could help you identify yours:
<https://www.epa.gov/eco-research/ecoregion-download-files-state-region-2>

THINK:

- How did the resources **Lawn Care: The Easiest Steps to an Attractive Environmental Asset** change your perspective on lawns and knowledge of lawn care?
- What do you think is the greatest barrier to practicing management tactics in lawn care that support environmental stewardship?

Lawns and Plant Ecosystem Services

Participant Guide

Opening and Introduction

- Facilitator reviews housekeeping, ground rules, learning objectives, and class flow.

Reconnect

- Partner up to discuss the question listed under the pre-work THINK prompt.

Lawn Care Maintenance Hands-on Activities

- Participants divide up into smaller groups and rotate around to stations to engage in hands-on activities about lawn care.

Ecosystem Services in Our Landscapes

- Participants divide up into smaller groups to discuss the concept of ecosystem services, ways plants in our landscape support it, and plans to enhance support.

Site Assessment and Ecosystem Services

- Participants divide up into smaller groups to complete activity. If time allows, return to share highlights in whole group discussion.

Conclusions

- Facilitator leads group reflection on key take home points and lingering questions.

Program Feedback

- Share your insight to help us improve the program, report results, & plan for the future.

Knowledge Check

- Assess what you now know. Be motive and empowered to share with your peers and learn more.

After Session

REFLECT:

- What happened?
- What was my response to what happen? How do I make sense of it?
- How does it relate to other things I know?
- What can I conclude?
- What might I do differently next time?

DO:

Lawns and Plant Ecosystem Services

Participant Guide

- Revisit your notes from the in-class Ecosystem Services in our Landscape activity. Go to the landscape you had in mind and observe. Can you add additional details to your sketch/notes? Can you think of more opportunities to enhance ecosystem services?

LEARN MORE:

- Sustainable Sites Initiative - Horticulture seminar recording on YouTube.
<https://youtu.be/m5gdMrXqg-M>
- Herbaceous Plants: Think Beyond the Flower *from* The Morton Arboretum, Illinois:
https://www.mortonarb.org/files/SLRCA_Chapter6_Herbaceous.pdf
- Calibrating Your Fertilizer Spreader
<http://plantscience.psu.edu/research/centers/turf/extension/factsheets/calibrating-spreader>

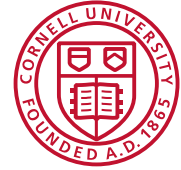
Campus Links:

- Cornell's Turf Grass Program <http://turf.cals.cornell.edu>
- Cornell Turfgrass and Landscape Weed ID, <http://turfweeds.cals.cornell.edu/>

Looking for Cornell people and resources? Don't Google; try the Cornell web search:
<http://www.cornell.edu/search/index.cfm>.



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Problem Solving: Pests of Food Crops and Ornamental Plants

Participant Guide

CCE supports programs aimed at empowering individuals and communities to make sound decisions for the future through access to research, best practices, university-based resources and community education. Land use and residential spaces is an indicator area with the outcome that residents demonstrate knowledge and skills around ecological management of homes, gardens and landscapes. This includes best management practices and providing research-based options to solutions. (CCE Statewide Plan of Work)

By actively participating in Problem Solving: Pests of Food Crops and Ornamental Plants, you will:

- **Identify** the signs and symptoms of common diseases of vegetable and fruit crops and ornamental and landscape plants.
- **Recognize** best practices in growing food crops and ornamental plants in healthy soils and garden sites.
- **Practice** how to package samples for county diagnostic lab and shipment to the Plant Disease Diagnostic Clinic and Cornell Insect Diagnostic Lab for diagnosis, and articulate what information is needed for diagnostics.
- **Develop** confidence and skills in using the five-step systemic approach to diagnosing problems (determine if problem exists, look for patterns, determine time of development, ask questions and synthesize the information).

Before Session

READ:

- What Gardeners Can Do: 10 Best Practices for Healthy Gardening (1 page)
<https://ecommons.cornell.edu/handle/1813/48154>
- Test Don't Guess (2 pages) Find link on this page: <http://plantclinic.cornell.edu/>
Or directly at http://plantclinic.cornell.edu/Resources/PDDCBrochure-estDontGuess_fourfold_FINAL.pdf

DO:

- Review "Advanced Master Gardener Training- Diagnosing Plant Problems, A systemic approach to diagnosing plant damage" found at <http://plantclinic.cornell.edu/mastergardner.html>
- Review factsheets from Module 1.4 Plant Pathology: "What's Wrong with my Plant".

THINK:

Building Strong and Vibrant New York Communities

Diversity and Inclusion are a part of Cornell University's heritage. We are a recognized employer and educator valuing AA/EEO, Protected Veterans, and Individuals with Disabilities.

Pests of Food Crops and Ornamental Plants

Participant Guide

- What basic information do you need to know to address a gardening question? What questions might you ask the client/person with the question to gather the information you need? Be prepared to share your answers with the greater group.

EXPLORE:

- Take 30 minutes to become familiar with Cornell Garden-Based Learning Troubleshooting resources related to ornamental and landscape plants and go deeper into ones that catch your eye. <http://gardening.cals.cornell.edu/garden-guidance/troubleshooting/>

Opening and Introduction

- Facilitator reviews housekeeping, ground rules, learning objectives, and class flow.

Reconnect

- Partner up and discuss to the question listed above under THINK.

Problem Solving: “What’s Wrong With This Picture” Lecture

- Listen to and participate in the presentation.

“What’s Wrong With This Picture” Hands-On Activity

- Facilitator leads participants through group activity.

Conclusions

- Facilitator leads group reflection on key take home points and any lingering questions.

Program Feedback

- Share your insight to help us improve the program, report results, & plan for the future.

Knowledge Check

- Assess what you now know. Be motivated and empowered to share with your peers and learn more.

After Session

REFLECT:

- What happened?
- What was my response to what happen? How do I make sense of it?
- How does it relate to other things I know?
- What can I conclude?
- What might I do differently next time?

LEARN MORE:

- Complete additional First Detector Modules. If you complete all six-modules, you receive a First Detector Training Certificate of Completion, <http://firstdetector.org/detector-modules>
- Tomato Disease Identification Key, <http://vegetablemdonline.ppath.cornell.edu/DiagnosticKeys/TomWlt/TomWiltKey.html>

Pests of Food Crops and Ornamental Plants

Participant Guide

- Photo gallery: Vegetable diseases,
<http://www.longislandhort.cornell.edu/vegpath/photos/index.htm>

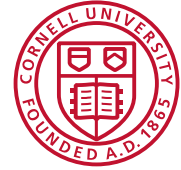
Campus Links:

- Cornell Plant Disease Diagnostic Clinic, <http://plantclinic.cornell.edu/>
- Cornell Plant Pathology and Plant-Microbe Biology,
<https://pppmb.cals.cornell.edu/extension-outreach/extension-resources/>
- Cornell Insect Diagnostic Lab, <http://idl.entomology.cornell.edu/>
- Cornell Nutrient Analysis Lab, <http://cnal.cals.cornell.edu/>
- New York State Integrated Pest Management Factsheets for Vegetables
<http://www.nysipm.cornell.edu/factsheets/vegetables/>

Looking for Cornell people and resources? Don't google, try the Cornell web search:
<http://www.cornell.edu/search/index.cfm>



Date Published: April 2019



Integrated Pest Management (IPM)

Participant Guide

CCE supports programs aimed at empowering individuals and communities to make sound decisions through access to research, best practices, university-based resources and community education. Land use and residential spaces is an important area where residents benefit from the knowledge and skills around ecological management of homes, gardens and landscapes. This includes integrated pest management and proper pesticide use.

By actively participating in Integrated Pest Management, you will:

- **Define** a “pest.”
- **Describe** the principles of Integrated Pest Management (IPM).
- **Apply** the ‘IPM Triangle’ to identify preventative measures, including cultural management options for plant pests.
- **Use** the five-step approach to diagnosing problems to gather the necessary information for IPM.
- **Articulate** options that reduce pesticide exposure to the environment.

Before Session

READ:

- Defining IPM (1 paragraph) <https://nysipm.cornell.edu/about/defining-ipm>
- IPM in Communities (1 page) <https://nysipm.cornell.edu/about/defining-ipm/ipm-communities>
- *Pest Problems & Solutions: Integrated Pest Management for your Home and Garden*
 - Read Chapters 1 & 2 (46 pages total):
<https://nysipm.cornell.edu/community/publications/integrated-pest-management-your-home-and-garden/>

WATCH:

- *MGV Level 1: Integrated Pest Management* from the University of Wisconsin. Video series – 2 parts lasting about 30 minutes total.
<https://blogs.ces.uwex.edu/mgvlevel1/integrated-pest-management/>
 - Video 1: *IPM Introduction*,
 - Video 2: *IPM How it Works*

THINK:

- What defines a plant pest? What plant pests have you encountered? What pest management strategies have you taken?

Opening and Introduction

- Facilitator reviews housekeeping, ground rules, learning objectives, and class flow.

Building Strong and Vibrant New York Communities

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Pest Management and IPM

Participant Guide

Reconnect

- What defines a plant pest? What plant pests have you encountered? What is pest management? What pest management strategies have you taken?

Damage Identification Activity

- Facilitator leads participants through group activity.

Identifying Pest Problems and Determining Cultural Methods of Management Activity

- Facilitator leads participants through group activity.

Using *Pest Problems & Solutions: Integrated Pest Management for your Home and Garden* to Give Recommendations Activity

- Facilitator leads participants through group activity.

Conclusions

- Facilitator leads group reflection on key take home points and any lingering questions.

Program Feedback

- Share your insight to help us improve the program, report results, & plan for the future.

Knowledge Check

- Assess what you now know. Be motivated and empowered to share with your peers and learn more.

After Session

REFLECT:

- What happened?
- What was my response to what happened? How do I make sense of it?
- How does it relate to other things I know?
- What can I conclude?
- What might I do differently next time?

READ:

- *Pest Problems & Solutions: Integrated Pest Management for your Home and Garden*
 - Read Chapter 3 (74 pages total):
<https://nysipm.cornell.edu/community/publications/integrated-pest-management-your-home-and-garden/>

Pest Management and IPM

Participant Guide

- Read *Climate Change Basics* and focus on the 'growing degree days' definition, handout provided (6 pages). Check out the site that has *growing degree data*:
<http://newa.cornell.edu/index.php?page=degree-day-calculator-2>

DO:

- Schedule time to shadow others who are providing guidance using principles of integrated pest management (i.e. team up with your county garden hotline and/or diagnostic lab volunteers or staff). This should be mandatory for MGVs that provide any pest management advice.

LEARN MORE:

- Cornell Pest Management Guidelines Series - There are many books in this series which your local extension office may have in a resource library. The *Pest Management Around the Home - Part 1 Cultural Methods* book is one of the resources used in session activities.
<https://ipmguidelines.org/>
- Identify disease resistant vegetable varieties using Cornell's Vegetable Varieties for Gardeners (<http://gardening.cals.cornell.edu/citizen-science/>) and Vegetable MD Online (<http://vegetablemdonline.ppath.cornell.edu/Home.htm>)

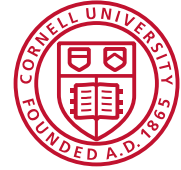
Campus Links:

- New York State Integrated Pest Management: <https://nysipm.cornell.edu/>
 - NYS IPM's Flickr page: <https://www.flickr.com/photos/99758165@N06/>
- Pesticide Management Education Program (PMEP) at Cornell University:
<http://pmep.cce.cornell.edu>
- Cornell University Plant Disease Diagnostic Clinic: <http://plantclinic.cornell.edu/>
- Cornell University Insect Diagnostic Lab: <http://idl.entomology.cornell.edu/>
- Cornell University Plant Pathology and Plant-Microbe Biology Section:
<https://pppmb.cals.cornell.edu/>
- Turfgrass and Landscape Weed ID: <http://turfweeds.cals.cornell.edu/plants>
- Cornell Turfgrass Program, Pests and Weeds: <http://turf.cals.cornell.edu/pests-and-weeds/>
- Cornell University Vegetable MD Online: <http://vegetablemdonline.ppath.cornell.edu/>
- Cornell Vegetable Pathology- Long Island Horticultural Research and Extension Center:
<http://blogs.cornell.edu/livegpath/extension/>
- Cornell's Biological Control: A Guide to Natural Enemies in North America,
<https://biocontrol.entomology.cornell.edu/index.php>

Looking for Cornell people and resources? Don't google, try the Cornell web search:
<http://www.cornell.edu/search/index.cfm>



Date Published/Updated: April 2019



Pests in the Home and Garden Participant Guide

Garden pests may differ in each region of New York State, however our approach in managing and control is one we can find common solutions for in preventing further damage and invasion. Cultural methods and IPM are our first line of defense, as each region has local laws that address how we deal with wildlife and garden and household pests.

By actively participating in Problem Solving Pests in the Home and Garden you will:

- **Identify** nuisance wildlife, pests and weeds commonly found in the garden, and understand their lifecycles and attraction to ideal habitats.
- **Practice** how to package samples for county diagnostic lab and/or shipment to the Cornell Insect Diagnostic Lab for diagnosis, and articulate what information is needed for diagnostics.
- **Determine** cultural control methods and steps for exclusion of wildlife and garden pests.
- **Develop** confidence and skills in systems thinking to address pests in the home, wildlife pests, ticks and invasive weeds.

Before Session

READ:

- **Insect Diagnostic Lab** Sample Submission Directions, <http://idl.entomology.cornell.edu/sample-directions/>
- **Cornell University Cooperative Extension's Role on Wildlife Control:** <http://wildlifecontrol.info/extension/>
- Visit the **Weed Science** website at <http://ccesuffolk.org/agriculture/weed-science> and look at the:
 - **"Weed-suppressive Groundcovers Brochure"**
<https://s3.amazonaws.com/assets.cce.cornell.edu/attachments/1980/Weed-Suppr-Groundcovers-Brochure.pdf?1408469013>
 - **"Ten Invasive Weeds to Watch for in the Landscape and Turf"**
https://s3.amazonaws.com/assets.cce.cornell.edu/attachments/6164/InvasiveWeeds_in_Landscape_and_Turf_2015.pdf?1423234631

WATCH:

- NYS IPM **"Ticks and the Diseases They Carry"** video playlist (~40 minutes), <https://www.youtube.com/playlist?list=PLoNb8lODb49u4CuLkEU-7mYVlc8qg-vhp>
 - "Life Cycle of the Black-Legged Tick (and Lyme Disease Prevention)"
 - "Lyme Disease an avoidable or unstoppable epidemic"
 - "Arthropod-Borne Diseases and Climate in NY"
 - "Reported Cases of Lyme Disease in the United States 2001-2016"
 - "How to Remove a Tick"

Building Strong and Vibrant New York Communities

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Pests in the Home and Garden

Participant Guide

DO:

- Complete the **Identifying Household and Garden Pests** pre-work activity and practice using the **Pest Identification Key for Household Pests in the Northeastern US** at <https://nysipm.cornell.edu/whats-bugging-you/pest-identification-center/>.
- Learn how to send a sample or photo to your county CCE Diagnostic Lab and the Cornell Insect Diagnostic Lab for identification at <http://idl.entomology.cornell.edu/sample-directions/>
- Visit the “What’s Bugging You” website at <https://nysipm.cornell.edu/whats-bugging-you/> and browse the sections on ticks, deer and other common pests found in the home and garden.

THINK:

- What basic information do you need to know to address a home and garden pest question? What questions might you ask the client/person with the question to gather the information you need? Be prepared to share your answers with the greater group.

EXPLORE:

- **Cornell Publications:** What are the top three nuisance wildlife you encounter in your garden? Take time to read about each in the Cornell University and Penn State publications found at: <http://wildlifecontrol.info/publications/cornell-publications/> and <http://wildlifecontrol.info/publications/penn-state-publications/>
- Take 15 minutes to become familiar with the Cornell Garden-Based Learning website, <http://gardening.cals.cornell.edu/>

Opening and Introduction

- Facilitator reviews housekeeping, ground rules, learning objectives, and class flow.

Reconnect

- Partner up and discuss to the question listed above under THINK.

“Pests in the Home and Garden” Hands-on Activity

- Facilitator leads participants through group activity.

Tick Scavenger Hunt Activity

- Facilitator leads participants through group activity.

Conclusions

- Facilitator leads group reflection on key take home points and any lingering questions.

Program Feedback

- Share your insight to help us improve the program, report results, & plan for the future.

Pests in the Home and Garden

Participant Guide

Knowledge Check

- Assess what you now know. Be motive and empower to share with your peers and learn more.

After Session

EXPLORE:

- Don't Get Ticked NY website, <https://nysipm.cornell.edu/whats-bugging-you/ticks/>

WATCH:

- “Nuisance Wildlife” video, found on the GBL Learning Library YouTube Playlist, https://www.youtube.com/playlist?list=PLHPXm2Es8aQC2vyn2IV1ij3bAHtPk2kg2&disable_polymer=true (~1 hour & 45 minutes)

REFLECT:

- What happened?
- What was my response to what happen? How do I make sense of it?
- How does it relate to other things I know?
- What can I conclude?
- What might I do differently next time?

LEARN MORE:

- NYS Department of Environmental Conservation: Nuisance Wildlife <https://www.dec.ny.gov/animals/7005.html>
- Horticulture Factsheets from your county and also at: <http://ccesuffolk.org/gardening/horticulture-factsheets>

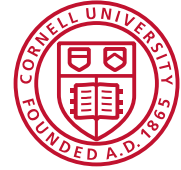
Campus Links:

- Cornell Insect Diagnostic Lab, <http://idl.entomology.cornell.edu/>
- New York State Integrated Pest Management “What’s Bugging You” <https://nysipm.cornell.edu/whats-bugging-you/>
- Wildlife Damage Control <http://wildlifecontrol.info/nuisance-wildlife-management/>

Looking for Cornell people and resources? Don’t google, try the Cornell web search: <http://www.cornell.edu/search/index.cfm>



Date Published: April 2019



Soil Amendments and Fertilizers Participant Guide

A soil amendment refers to a material added to the soil to improve its physical, biological or chemical properties. There are many different types of soil amendments, each fulfilling a different goal. While some may add nutrients, others may improve soil structure. While some may act quickly others will act more slowly over a sustained time period. It is important to understand what different soil amendments do and how to apply them.

By actively participating in Soil Amendments and Fertilizers, you will:

- **Practice** reading a soil test report to gather information about the soil nutrient status of a site.
- **Explain** management practices that help individuals enhance soil to optimize plant success.
- **Identify** when and how to use compost and other soil amendments.
- **Practice** using Cornell's Cover Crop Guide and become familiar with cover crop management practices.
- **Recognize** that soils can be impacted by lead and other contaminants and it is important to consider the quality of *any* material that you add to your garden in order to avoid contaminants and other undesirable materials.
- **Read and understand** fertilizer labels to be able to identify appropriate fertilizers to meet plant needs and personal goals.

Before Session

DO:

- ☐ Look online or go to your local garden center and look at fertilizers for lawns, gardens and landscapes. **Take a photo or write down at least one label, bring that with you to class. Or, if you are online, you can print the label to bring to class or load the label on your device during class.**

EXPLORE:

- ☐ NY Cover Crop Guide and Cover Crop Decision Tool, take 10-15 minutes to explore and try using the cover crop tool. <http://covercrops.cals.cornell.edu>
- ☐ Cornell Garden-Based Learning Healthy Soil Page, take 5-10 minutes to explore <http://gardening.cals.cornell.edu/garden-guidance/healthysoil>.
 - Read *Getting the Most out of Your Vegetable Garden Soil Test Report* (pdf) <https://blogs.cornell.edu/gblblog/files/2016/07/Veggie-Info-Sheet-2016-1jsq90e.pdf>
 - Browse other sections under 'For Nutrient Testing with Cornell Recommendations' focusing on what you find most interesting or relevant.

READ:

- ☐ *Soil Amendments and Fertilizers* (23 pgs) handout provided

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Soil Amendments and Fertilizers

Participant Guide

Opening and Introduction

- Facilitator reviews housekeeping, ground rules, learning objectives, and class flow.

Reconnect

- Partner up to discuss: Why should we care about soil? What are some ways we can learn about our soil?

Soil Amendments and Fertilizers Presentation

- Listen to presentation.

Station-Based Hands-on Activities

- Participants divide up into smaller groups and rotate around to stations to engage in hands-on activities related to soil amendments and fertilizers.

Conclusions

- Facilitator leads group reflection on key take home points and any lingering questions.

Program Feedback

- Share your insight to help us improve the program, report results, & plan for the future.

Knowledge Check

- Assess what you now know. Be motivated and empowered to share your knowledge with your peers and to learn more.

After Session

REFLECT:

- What happened?
- What was my response to what happened? How do I make sense of it?
- How does it relate to other things I know?
- What can I conclude?
- What might I do differently next time?

WATCH:

- *Benefits of No-Till Farming*, (~1.5 minutes) https://www.youtube.com/watch?v=Rpl09XP_f-w
- *Dangers of Compaction*, (~4.5 minutes). This video is geared towards farmers, but is useful for gardening too. <https://www.youtube.com/watch?v=GTUVRieYoZ8>

Soil Amendments and Fertilizers

Participant Guide

LEARN MORE:

- Metals in Urban Garden Soils, <https://ecommons.cornell.edu/handle/1813/48147>
- Comprehensive Assessment of Soil Health <http://www.css.cornell.edu/extension/soil-health/manual.pdf>
- The Garden Ecology Project <https://blogs.cornell.edu/gep/gardeners/>
- University of Delaware <http://extension.udel.edu/factsheets/delaware-gardeners-guide-to-lawn-and-landscape-fertilizers/>
- *Soil Science Simplified*, 4th Edition by Helmut Kohnke and D.P. Franzmeier

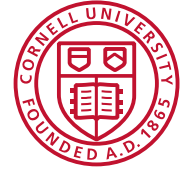
Campus Links:

- Cornell Soil Health, <https://soilhealth.cals.cornell.edu/>
- Healthy Soils, Healthy Communities, <http://blogs.cornell.edu/healthysoils/>
- Cornell Nutrient Analysis Laboratory, <https://cna.cals.cornell.edu/>
- Cornell Soil Health, <https://soilhealth.cals.cornell.edu/>

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<http://www.cornell.edu/search/index.cfm>



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Revised May 2020 AMH



Organic Waste Management: Composting Participant Guide

There are a wide range of waste producers in New York State including individuals, agriculture, industry, and government. These different types of waste producers need access to information and solutions for managing their waste, reducing waste at the source, minimizing energy use and costs, and managing the risk and environmental inequities resulting from waste generation and disposal practices. Improved waste management and waste reduction efforts will result in an enhanced and protected environment, including soil, air, and water, and reduced risk for individuals and families. (Sourced from CCE Statewide Plan of Work)

By actively participating in Organic Waste Management: Composting, you will:

- Understand that composting is managed decomposition and that there is a link between compost and soil health.
- Articulate the proper management of compost including acceptable inputs and the balance of browns and greens.
- Demonstrate the proper technique of lasagna layering.
- Assess various composting systems (i.e. wire bin, tumblers, worm bin) and be able to assist the public in selecting the type that best suits them.
- Understand the process of how composting works, be familiar with the factors that facilitate or slow the process.
- Determine if compost is finished (mature) and be versed in how to harvest and use the compost.
- Recognize the current statistics regarding food waste and steps that can be taken individually and statewide to minimize the food waste stream.
- Identify common composting troubleshooting and problems and become familiar with composting FAQs.

Before Session

READ:

- Compost Resources from the CCE Tompkins County Compost Education program:
<http://ccetompkins.org/gardening/composting/compost-resources>
 - [Lasagna Composting](#) (1 page)
 - [Is It Done Yet?](#) (2 pages)

WATCH:

- Videos from the CCE Tompkins County Compost Education program:
<http://ccetompkins.org/gardening/composting/compost-resources>
 - [Lasagna Layering](#) (8 ½ minutes)
- Videos from Cornell University's vermicompost research page:
<http://cwmi.css.cornell.edu/vermicompost.htm>
 - [Vermicompost and Pythium Suppression](#) (3 minutes)

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Organic Waste Management: Composting

Participant Guide

DO:

- Daily for 1 week record the weight of your household's kitchen food waste that would be appropriate to add to a home compost pile. Bring to class a slip of paper with:
 - your total household's kitchen food waste weight for the week
 - your guess of the average household's kitchen food waste weight for your class participants
 - your first name

THINK:

- List organic materials you generate in the kitchen or yard that could be used in a home composting system. Label each as either 'browns' or 'greens' or unknown.
- Consider what additional efforts you could take to reduce waste and divert organic materials from our landfills.
- What questions do you hear from others about composting? And do you have questions?

Opening and Introduction

- Facilitator reviews housekeeping, ground rules, learning objectives, and class flow.
- Hand in your slip of paper from the DO activity above.

Reconnect

- Partner up to discuss the question listed under the pre-work THINK prompt.

Home Composting Lecture

- Engage in presentation.

Addressing Food Waste in our Kitchen Discussion

- Facilitator leads group discussion and sharing of results the DO activity above.

Station-Based Hands-on Activities

- Participants divide up into smaller groups and rotate around to stations to engage in hands-on activities about home composting.

Compost Troubleshooting Hands-on Activity

- Participants divide into pairs or smaller groups for activity then return for whole group discussion.

Conclusions

- Facilitator leads group reflection on key take home points and any lingering questions.

Organic Waste Management: Composting

Participant Guide

Program Feedback

- Share your insight to help us improve the program, report results, & plan for the future.

Knowledge Check

- Assess what you now know. Be motive and empower to share with your peers and learn more.

After Session

REFLECT:

- What happened?
- What was my response to what happen? How do I make sense of it?
- How does it relate to other things I know?
- What can I conclude?
- What might I do differently next time?

LEARN MORE:

- Cornell Waste Management Institute (CWMI) has put most of its resources in Cornell eCommons: <https://ecommons.cornell.edu/>

Use the search tool to find resources in the CWMI eCommon's:

- Composting at Home - the Green and Brown Alternative
<http://hdl.handle.net/1813/29111>
- Home Composting Slide Show <http://hdl.handle.net/1813/44789>
- School Composting <https://hdl.handle.net/1813/52083>
- Composting: Biology in the curriculum <http://hdl.handle.net/1813/45757>
- School Composting, Let's Start Composting curriculum
<http://hdl.handle.net/1813/45757>
- Master Composter Curriculum <http://hdl.handle.net/1813/12933>
- Compost Resources from CCE Tompkins County Master Composter program:
<http://ccetompkins.org/gardening/composting>
- EPA's Food: Too Good to Waste <https://www.epa.gov/sustainable-management-food/food-too-good-waste-implementation-guide-and-toolkit>
- Further with Food <https://furtherwithfood.org>
- New York State Food Recovery Campaign
<https://www.facebook.com/NYSFoodRecoveryCampaign/>

Campus Links:

- Cornell Waste Management Institute (CWMI) <http://cwmi.css.cornell.edu>
- Cornell University's vermicompost research <http://cwmi.css.cornell.edu/vermicompost.htm>

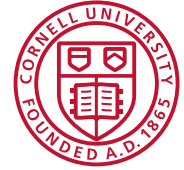
Organic Waste Management: Composting

Participant Guide

Looking for Cornell people and resources? Don't Google; try the Cornell web search:
<http://www.cornell.edu/search/index.cfm>.



Date Published/Updated: April 2019



Invasive Species for Gardeners Participant Guide

Invasive species threaten the function and integrity of ecosystems, native species, and managed landscapes. To support environmental stewardship, gardeners need to be aware of the top terrestrial invasive species threatening their region, where to report potential sightings, and the sound garden management practices that may minimize wider distribution.

By actively participating in Invasive Species for Gardeners, you will:

- Consider definitions of what's 'non-native' and what's 'invasive', and discuss some of the controversy around these definitions.
- Recognize the impacts invasive species have on our ecosystems & human quality of life.
- Understand the invasion curve and what actions are appropriate at each stage of invasion.
- Learn the profile of an invasive weed or pest, and the red flags for invasiveness.
- Discuss the regional nature of invasiveness, and what that might mean in the face of climate change.
- Become familiar with resources that will assist in identification characteristics, lifecycles, signs, and symptoms for current top invasive species in your region.
- Explore the prohibited and regulated species regulations in New York and how to report suspect invasions to state and local agencies.
- Consider and discuss the invasive species in our landscapes and management strategies.

Before Session

READ:

- *Upstate Hemlock Trees under Attack from Woolly Invader*, an online article from the Rochester NY's Democrat and Chronicle. Found online at:
<https://www.democratandchronicle.com/story/news/2017/09/18/upstate-hemlock-trees-under-attack-woolly-invader/677642001/>

WATCH:

- Video Invasive Species: The Basics (6 minutes):
<https://www.youtube.com/watch?v=yIgysZ5Hho8>

DO:

- Choose one of the following invasive species to research. Make and bring to class a short list of 1) identifying characteristics of your chosen invasive species; 2) information on what ecological problems it is causing; 3) management strategies gardeners use to minimize its spread.

Invasive Species for Gardeners

Participant Guide

Slender False Brome: <https://www.dec.ny.gov/animals/108686.html>

Jumping Worms: https://blogs.cornell.edu/cerp/files/2017/11/JumpingWorms_FactSheet-11_15_17-2026fwt.pdf

Porcelain Berry: http://www.docs.dcnr.pa.gov/cs/groups/public/documents/document/dcnr_010236.pdf

THINK:

- Consider what makes one non-native (like tulips) fine, and another one (like knotweed) 'invasive'? What is the difference between an invasive species, a weed, and an aggressive native species?

Opening and Introduction

- Facilitator reviews housekeeping, ground rules, learning objectives, and class flow.

Reconnect

- Partner up to discuss the question listed under the pre-work THINK prompt.

Invasive Species in NY Lecture

- Listen to presentation.

Blockbuster Survey Hands-on Activity Discussion

- Engage in small group activity and whole group discussion. Having use of tablets, laptops, or smartphones is needed for this activity.

Minute Paper on Reporting and Prioritizing Invasive Species Activity

- Engage in small group activity and whole group discussion.

Conclusions

- Facilitator leads group reflection on key take home points and any lingering questions.

Program Feedback

- Share your insight to help us improve the program, report results, & plan for the future.

Knowledge Check

- Assess what you now know. Be motivated and empowered to share with your peers and learn more.

After Session

REFLECT:

Invasive Species for Gardeners

Participant Guide

- What happened?
- What was my response to what happened? How do I make sense of it?
- How does it relate to other things I know?
- What can I conclude?
- What might I do differently next time?

LEARN MORE:

- Plant Wise Brochure: http://www.dec.ny.gov/docs/lands_forests_pdf/plantwise.pdf
- Prohibited and regulated species in New York: <http://www.dec.ny.gov/animals/99141.html>
- New York Invasive Species Information: <http://www.nyis.info/index.php>
- New York Invasive Species Awareness Week: <https://stoptheinvasionny.com/>
- DEC terrestrial invasive website: <http://www.dec.ny.gov/animals/95383.html>
- IMap invasives website: <http://www.imapinvasives.org/>
- Partnerships for Regional Invasive Species Management (PRISM): <https://www.dec.ny.gov/animals/47433.html>
- Hemlock Woolly Adelgid:
 - NYS Hemlock Initiative: <https://blogs.cornell.edu/nyshemlockinitiative/>
 - A Film About the Loss of an Ecosystem (23-minute documentary): <https://www.youtube.com/watch?v=AupnMjYaI0Q&feature=youtu.be>
 - Hemlock Woolly Adelgid Fact Sheet: http://www.dec.ny.gov/docs/lands_forests_pdf/hwafactsheet.pdf
- Emerald Ash Borer
 - Emerald Ash Borer in New York: <http://www.dec.ny.gov/animals/7253.html>
 - Brochure: http://www.dec.ny.gov/docs/lands_forests_pdf/eabearlydetect.pdf
- Oak Wilt Fact Sheet, http://www.dec.ny.gov/docs/lands_forests_pdf/oakwiltfs.pdf
- Bugwood resource for images of and information on invasive species: <http://bugwood.org>
- Washington Post Article “Dirty Dozen: https://www.washingtonpost.com/news/energy-environment/wp/2015/02/23/like-most-invasive-species-pythons-are-in-the-u-s-to-stay/?utm_term=.ec15178d2afc
- Biocontrol: More Than Cane Toads and Mongooses: <https://www.popsoci.com/blog-network/our-modern-plagues/biocontrol-more-cane-toads-and-mongooses>
- Doug Tallamy’s talk “Are Alien Plants Bad?”: https://vod.video.cornell.edu/media/Are+%22Alien%22+Plants+%22Bad%22F+-+Dr.+Doug+Tallamy/1_qi915ub2

Campus Links:

- Cornell University New York Invasive Species Research Institute: <http://www.nyisri.org/>

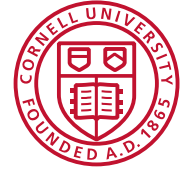
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Invasive Species for Gardeners

Participant Guide



Date Published/Updated: April 2019



Gardening in a Warming World Participant Guide

Cornell Cooperative Extension (CCE) is committed to educating stakeholders about climate change and helping citizens implement the strategies that are needed to adapt to and mitigate impacts. Gardeners everywhere are seeing the impacts of the changing climate on their gardens. Gardening means dealing directly with drought conditions, flooding and water-logging; unseasonable cold and freezing conditions; increases in new pests; changes in plant diseases; variability in heat and hardiness zones; and extreme weather events. This Gardening in a Warming World session aims to prepare volunteers as they are increasingly called upon for information in the face of this new gardening challenge.

By actively participating in Gardening in a Warming World, you will:

- **Understand** systems thinking as it applies to your garden system
- **Be familiar** with the basics of climate change
- **List** current and future possible impacts of climate change on New York State
- **Identify** ways to manage gardens to mitigate and adapt to climate impacts
- **Have** tools to be a peer educator around Gardening in a Warming World

Before Session

READ:

- *Gardening in a Warming World: A Climate Smart Gardening Course Book*. This 40-page document is divided into 4 units that describe the key concepts. Find at: <http://climatechange.cornell.edu/gardening/>

THINK:

- What changes have you noticed in your garden? What changes are challenging your garden success? How are they challenging? Any enhancing your gardening success?
- Reflect on how your personal observations are consistent or inconsistent with insights others have collected about climate change impacts through scientific monitoring, research and modeling as well as those from fellow gardeners.

Opening and Introduction

- Facilitator reviews agenda, housekeeping and ground rules, learning outcomes.
- Participants individually reflect on their garden and a few volunteers share with group.

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Gardening in a Warming World

Participant Guide

Systems Thinking for Sustainable Gardening Discussion Activity

- Facilitator shares definitions for “systems” and “systems thinker” then leads group brainstorms around how systems thinking could increase pest management success.

Knowing Your Garden Systems Discussion Activity

- Facilitator leads group in identifying approaches to documenting garden observations.
- Participants individually review “Knowing your Garden System” handout.
- In a pair or small group discuss **Do in Advance** questions from *Think* section bullet 1.

Climate Change Basics Lecture

- Listen to presentation
- Review how you might use the worksheet “Reliable Resources Matrix.”

Climate Smart Garden Audit Discussion Activity

- Participants in pairs complete “Climate-smart gardening put into action” then return to whole group to highlight.

Conclusions

- Facilitator leads group reflection on key take home points and any lingering questions.

Program Feedback

- Share your insight to help us improve the program, report results, & plan for the future.

Knowledge Check

- Assess what you now know. Be motivated and empowered to share your knowledge with your peers and to learn more.

After Session

REFLECT:

- What happened?
- What was my response to what happened? How do I make sense of it?
- How does it relate to other things I know?
- What can I conclude?
- What might I do differently next time?

Gardening in a Warming World

Participant Guide

LEARN MORE:

- Gardening in a Warming World curriculum <http://climatechange.cornell.edu/gardening>
- Cornell Botanic Gardens Climate Change Garden video <https://vimeo.com/103466340>
- Use search terms climate change to find a number of Cornell SIPS Horticulture videos related to the topic. <https://www.youtube.com/user/CornellHorticulture/featured>

Campus Links:

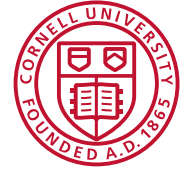
Cornell Institute for Climate Smart Solutions: <http://climatechange.cornell.edu/>

Looking for Cornell people and resources? Don't Google, try the Cornell web search:

<http://www.cornell.edu/search/index.cfm>



Date Published/Updated: April 2019



Group Gardens and New York State Seed to Supper Participant Guide

Food security is an identified focus area for the Master Gardener Volunteer program Mission and Vision. Nearly 1 million residents of upstate New York live in poverty, while the New York City metropolitan area has a 17% poverty rate. New York State ranked among the top 20 states with the worst food hardship, according to the Food Research and Action Center (FRAC), with 3 million New Yorkers relying on food assistance, 1 million being children. In response to these issues, NYS Seed to Supper (S2S) is a comprehensive beginning gardening experience focused on low budget strategies with community development and relationship building at its core. It gives novice gardeners the tools they need to connect with others in community, grow in confidence, and successfully grow a portion of their own food on a limited budget.

By actively participating in Group Gardens and New York State Seed to Supper, you will:

- **Understand** the basics of engaging with Community Organizations that run Group Gardens
- **Define** the Master Gardener Volunteer role in supporting Group Gardens and Seed to Supper.
- **Prepare** for the Seed to Supper program for interested Master Gardener Volunteers.

Before Session

Please review the following resources as supplements to the presentation.

READ:

- *Liberated Roots* - Review to become familiar with issues related to privilege and culturally responsive practices when engaging diverse groups in gardening.
Article From: Teaching Tolerance, Issue 58, Spring 2018, pg. 19
<https://www.tolerance.org/sites/default/files/2018-01/Teaching-Tolerance-magazine-58.pdf> (pdf)
- *Top 5 Things to Know about Community Gardens* (pdf available in Moodle course)
- *The Complexities of Poverty and Hunger in New York State* -Poverty and hunger in New York State is a complex issue – not one that can be introduced in just a page or two! As such, our aim with this brief overview is to begin to frame this multifaceted, challenging matter, particularly for those educators who may not have entered into this arena before, and to offer some questions for sincere reflection prior to embarking on the Seed to Supper journey (pdf available in Moodle course)
- *The Seed to Supper Program and Its Effect on Low-Income Beginning Gardeners in Oregon* - Review this Journal of Extension Article to understand the potential benefits of Seed to Supper from its origins in Oregon, such as program participants reducing their grocery

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Group Gardens and New York State Seed to Supper Participant Guide

bills as a result of growing their own food and eating more fruits and vegetables than usual during the growing season:

From Journal of Extension, June 2017, Volume 55:

https://www.joe.org/joe/2017june/pdf/JOE_v55_3iw6.pdf

- *Core Competencies for Seed to Supper Facilitators* - Working with vulnerable populations requires a unique set of competencies – those skills, knowledge and abilities, as well as the “inner ground” necessary for working in community. Review this planning sheet to reflect on how you can build a robust team of facilitators as you build your NYS Seed to Supper program. (pdf available in Moodle course)
- *NYS Seed to Supper Program: Roles and Responsibilities* - Review the Garden Educator role that Master Gardener Volunteers may fill in this overview of the communities and relationships at the core of the NYS Seed to Supper (S2S) program (pdf available in Moodle course)

WATCH:

- *Introduction: Seed to Supper* - An overview of the program elements:
<https://youtu.be/6n8F8yB74uE>
- [Chimamanda Ngozi Adichie: The Danger of a Single Story](#)

DO:

- **One to several days before class** get familiar with some of the activities surrounding cultural sensitivity in the garden:
 - Vegetable Matching Activity:
<https://cornell.box.com/s/qp5euxu67xai1lcq4hdydaan3wyt2e3d>
 - Insensitive Statements:
<https://cornell.box.com/s/mwbp9s76etw9muujzrzveekj7s4cfddu>

THINK:

- What new ideas did you learn about when thinking through working with Group Gardens and Seed to Supper, and issues related to community tolerance and privilege? Where do you need support in your gardening outreach?

Opening and Introduction

- Facilitator reviews housekeeping, ground rules, learning objectives, and class flow.

Reconnect

- Partner up to discuss the question listed under the pre-work THINK prompt on page 2

Group Gardens and New York State Seed to Supper

Participant Guide

Community Gardens

- Listen to presentation.

Why Engage Group Gardens? Activity Discussion

- Engage in small group activity and whole group discussion. Having use of tablets, laptops, or smartphones is needed for this activity.
- Review the two pre-work readings in the context of group gardens and give examples of equitable engagement versus equality in garden education.

Group Garden Insensitive Statements Activity

- Facilitator leads participants through group activity.

New York State Seed to Supper

- Participants listen to presentation and reflect on partnership organizations to engage in Seed to Supper.

Conclusions

- Facilitator leads group reflection on key take home points and any lingering questions.

Program Feedback

- Share your insight to help us improve the program, report results, & plan for the future.

Knowledge Check

- Assess what you now know. Be motivated and empowered to share your knowledge with your peers and to learn more.

After Session

REFLECT:

- What happened?
- What was my response to what happen? How do I make sense of it?
- How does it relate to other things I know?
- What can I conclude?
- What might I do differently next time?

PRACTICE:

- Practicing equity, diversity and inclusion in relation to food security and gardening takes practice and dedication. Here are a few resources to support you as you take your knowledge to the next step:
 - The American Community Gardening Association has professional development events related to engaging with Community Gardens:
<https://www.communitygarden.org/resources>

Group Gardens and New York State Seed to Supper Participant Guide

- Teaching Tolerance has educational tools and self-guided professional development on: Race & Ethnicity, Religion, Ability, Class, Immigration, Gender & Sexuality. <https://www.tolerance.org/professional-development>
- North American Association for Environmental Education has Environmental Justice Resources to practice using inclusivity frameworks: <https://naaee.org/eepr/resources/environmental-justice-resources>
- Free Civic Ecology Courses - Urban Environmental Education Approaches: <https://civicecology.org/course-uee/>

LEARN MORE:

- [A Free Seed to Supper Manual from Oregon Food Bank](#) (pdf)
- [Multiple Social Identity Profile Overview](#) (pdf)
- [The Complexity of Identity: "Who Am I?"](#) (pdf)
- [The Culture of Power \(Paul Kivel\)](#) (pdf)
- [The Increasingly Diverse United States of America \(Washington Post\)](#) (url)

Campus Links:

- Cornell's Civic Ecology Lab: <https://www.civicecology.org/>
- Cornell Garden-Based Learning - Planning and Organizing: <http://gardening.cals.cornell.edu/program-tools/planning-organizing/>
- Cornell's Diversity and Inclusion Homepage: <https://diversity.cornell.edu/>
- Cornell LibGuides - Local and Regional Food Systems: http://guides.library.cornell.edu/local_food/cornell/
- The Program on Applied Demographics (PAD) brings skills in demographics, economics, statistics, data gathering and data analysis together to provide a variety of organizations with data, information and advice: <https://pad.human.cornell.edu/>

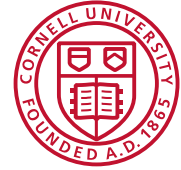
Looking for Cornell people and resources? Don't google, try the Cornell web search: <http://www.cornell.edu/search/index.cfm>

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Cornell Cooperative Extension Cornell Garden-Based Learning



Youth Development Participant Guide

Gardening enhances the quality of life in numerous ways: providing fresh food, exercise and health benefits, opportunities for multi-generational and life-long learning, creating pleasing landscapes and improved environment, and bringing people together.

Garden-based learning programs result in increased nutrition along with environmental awareness, higher learning achievements, and increased life skills for our students. They are also an effective and engaging way to integrate curricula and meet learning standards, giving young people the chance to develop a wide range of academic and social skills.

Garden experiences foster ecological literacy and stewardship skills, enhancing an awareness of the link between plants in the landscape and our clothing, food, shelter, and well-being. They also provide children and youth with the time and space to explore the natural world—something that can occur rarely in today's era of indoor living.

By actively participating in Youth Development, you will:

- Recognize the benefits of positive youth development and identify how to incorporate meaningful opportunities for youth engagement in garden-based learning (GBL) settings.
- Discuss some challenges, fears and expectations regarding youth engagement in the garden setting.
- Understand the steps to planning a successful garden project.
- Practice innovative garden-based activities and discuss how they could be adapted to fit various settings.
- Research school and youth garden projects in your community.

Before Session

DO:

- Research school and youth garden projects in your community.
- Take 10-15 minutes to look at the NYS 4-H website About and Mission, Vision, Values pages <https://nys4-h.org/what-is-4h/>, <https://nys4-h.org/nys-mission-mission-values/>

THINK:

What are the benefits of engaging youth in garden-based learning (GBL)? What are some challenges?

Opening and Introduction

- Facilitator reviews housekeeping, ground rules, learning objectives, and class flow.

Building Strong and Vibrant New York Communities

Diversity and Inclusion are a part of Cornell University's heritage. We are a recognized employer and educator valuing AA/EEO, Protected Veterans, and Individuals with Disabilities.

Youth Development Participant Guide

Reconnect

- Partner up to discuss the question listed under the pre-work THINK prompt on page 1.

Gallery Walk Activity

- Walk around the room and add your thoughts to each of the prompts on the flipchart paper.

Benefits of Garden-Based Learning

- Listen to a lecture about Garden-Based Learning

Positive Youth Development and Effective Youth Engagement Activity

- Break into small groups and look over the Positive Youth Development Walk Around worksheet and Hart's Ladder of Participation worksheet.

Planning a successful youth garden project activity

- Participate in this group activity to come up with key elements for a successful youth garden project. This includes the use of the CGBL logic model.

Garden-based learning curriculum for youth

- Practice garden-based learning activities; discuss curriculum sources and other aspects of garden based-learning.

Conclusions

- Facilitator leads group reflection on key take home points and any lingering questions.
 - What did you find most interesting or surprising about youth engagement? Do you have any lingering questions?

Program Feedback

- Share your insight to help us improve the program, report results, & plan for the future.

Knowledge Check

- Assess what you now know. Be motivated and empowered to share your knowledge with your peers and to learn more.

After Session

REFLECT:

Youth Development Participant Guide

- What happened?
- What was my response to what happen? How do I make sense of it?
- How does it relate to other things I know?
- What can I conclude?
- What might I do differently next time?

PRACTICE:

- Take 10-15 minutes to journal in response to the following prompt: Think back to an experience you had as a youth that incorporated elements of positive youth development and effective youth engagement. What did that feel like? What steps might you take to include that same feeling for youth you engage? Many of the same theories apply to adult engagement; how might you include feelings of belonging, power, mastery and generosity into an adult program?

LEARN MORE:

- Sowing the Seeds of Success, <http://gardening.cals.cornell.edu/program-tools/> a web resource designed to walk you through the organizational aspects of a gardening program.
- Cornell Garden-Based Learning: Activities, evaluation toolkit, benefits and research: <http://gardening.cals.cornell.edu/>
- Junior Master Gardener Program: <http://jmgkids.us/>
- Act for Youth: Positive Youth Development 101 Manual: http://www.actforyouth.net/youth_development/professionals/manual.cfm
- Life Lab: School Garden Resources: <http://www.lifelab.org/for-educators/schoolgardens/>
 - [Effective Outdoor Management](http://www.lifelab.org/wp-content/uploads/2003/04/OutdoorClassroomManagement2.pdf), <http://www.lifelab.org/wp-content/uploads/2003/04/OutdoorClassroomManagement2.pdf> (pdf)
- The Food Project: <http://thefoodproject.org/activities/sustainable-agriculture-curriculum>

Campus Links:

- NYS Ag in the Classroom: <https://www.agclassroom.org/ny/>
- Cornell Garden-Based Learning: <http://gardening.cals.cornell.edu/>
- 4-H Youth Development: <https://nys4-h.org/>

Looking for Cornell people and resources? Don't google, try the Cornell web search:
<http://www.cornell.edu/search/index.cfm>



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