Client Description:

Landscape Industry Employees in urban Cincinnati:

- Landscapers, contractors, garden centers, horticulturists, arborists, lawn-care professionals, landscape architects
- Significant number of landscape industry employees in urban Cincinnati
- Landscape industry employees conduct IPM through design and control methods (cultural, mechanical, biological, chemical; tree/shrub, ornamental beds, turf, spring/fall cleanup in ornamental beds, mowing, pruning, and mulching)
- Landscape sites are accessible with box truck or truck and trailer (street, driveway and parking lot parking available)

Environmental Policy-Makers in urban Cincinnati:

- Agricultural agencies, environmental protection agencies, regulatory bodies, extension services, researchers, and local, state, federal levels who contribute to setting IPM policies and guidelines
- Significant number of environmental policy-makers in urban Cincinnati
- Environmental policy-makers have an adverse effect on IPM through policy and guideline implementation that is used at the local, state and federal level

Sources: https://www.davey.com/commercial-services/
https://highlandcountypress.com/commissioners-accept-bids-osu-extension-office-new-market-road-paving-project#gsc.tab=0
https://www.timesgazette.com/2024/08/12/osu-extension-opens-new-location/

Developing and Delivering a Needs-Based Integrated Pest Management Program for Public School Grounds Employees:

This study utilized a focus group and survey to identify high-priority training topics, including landscape and turf weed management, hardscape weed management, building a low-maintenance landscape, and maximizing low impact pesticides. Site visits were conducted to confirm the severity of these issues and determine additional IPM related topics to add into future training events.

Four training events were conducted in two school districts with a total of 66 employees from 15 out of 23 school districts in the Portland Oregon area. Results showed that the majority of participants felt the training improved their knowledge of turf and landscape IPM and most attendees stated that they planned to decrease their pesticide use by applying the skills learned from the training.

The study highlights the importance of offering specific training on non-chemical methods used in IPM. By incorporating topics such as weed management and pest control, the research aimed to provide practical training to improve non-chemical IPM methods for public school grounds employees in the Portland Oregon area.

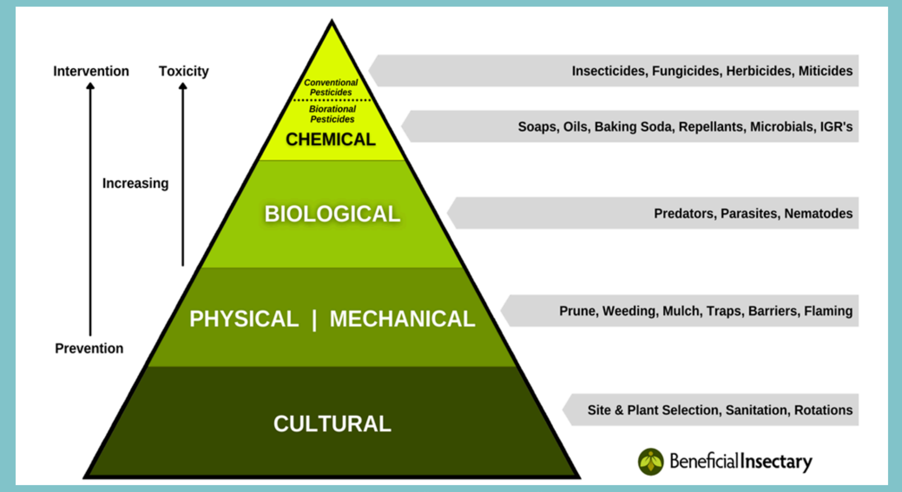
Do you feel that the IPM Practices for Metro Area Public Schools training improved your knowledge in the following categories?

Question	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Landscape weed identification	4	20	2	1	0
Turf weed identification	3	20	3	1	0
Hardscape weed identification	3	18	5	1	0

Do you feel that the IPM Practices for Metro Area Public Schools training improved your knowledge in the following categories?

Question	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Landscape weed management	6	17	3	1	0
Turf weed management	5	21	1	0	0
Hardscape weed management	5	18	3	1	0
Landscape weed prevention	5	17	4	1	0
Turf weed prevention	5	18	4	0	0
Hardscape weed prevention	6	13	7	1	0
Herbicide selection for landscape weeds	5	17	4	1	0
Herbicide selection for turf weeds	4	17	5	1	0
Herbicide selection for hardscape weeds	5	16	5	1	0
Herbicide alternative control methods for weeds in the landscape	6	17	3	1	0

Source: https://acsess.onlinelibrary.wiley.com/doi/full/10.4195/nse2015.0017



Source: https://insectary.com/ipm/

Source: https://grow.ifa.coop/agronomy/integrated-pest-management

Quinn Leibold
Faculty Advisor, Professor Stevie Famulari Gds
Horticulture Capstone
Spring 2025

Video →

How can the use of Integrated Pest Management Strategies be used to educate Landscape Industry Employees and Environmental Policy-Makers on the benefits IPM has on ecological health in urban Cincinnati?

Source: https://researchoutreach.org/articles/integrated-pest-management-advances-sustainable-food-production-food-security/

Abstract:

Integrated Pest Management (IPM) is a sustainable decision-making process that uses information on pest biology, environmental data, and technology to manage pest damage in a way that minimizes both economic costs and risks to people, property and the environment. IPM uses four major components; cultural control, mechanical control, biological control, and chemical control in order to support prevention of insect pest and pathogen problems in the landscape.

Landscape industry employees (landscapers, contractors, garden centers, horticulturists, arborists, lawn care professionals, landscape architects) and environmental policy-makers need education on the four components of integrated pest management in order to conserve beneficial insects in the landscape, make improvements to the ecological health in urban Cincinnati and to make quick, insightful, and smart decisions when it comes to prevention and control of insect pest and pathogen problems. This project explains the educational strategies that landscape industry employees need in order to fulfill this initiative.

Solution:

Educational program in IPM for Landscape Industry Employees and Environmental Policy-Makers in urban Cincinnati

Program Requirements:

Clients:

- Landscape Industry Employees
- Environmental Policy-Makers

Types of programs needed for education:

- Conferences (online or in-person)
- Expositions (online or in-person)
- Workshops (online or in-person)
- Seminars (in-person)
- Webinars (online)
- Self-paced online courses
- Ohio Certification Program (online or in-person/ will require recertification every 3 years with 5 hours of continuous education)

All programs will require quizzes or testing

Organizations that will require education:

Landscape Industry Employees:

- The American Society of Landscape Architects
- Professional Grounds Management Society
- The National Association of Landscape Professionals
- The International Society of Arboriculture
- The American Horticultural Society
- Entomological Society of America
- American Phtyopathological Society

Environmental Policy-makers:

- Ohio State Extension Agency
- Ohio Department of Agriculture
- Ohio Department of Natural Resources
- Ohio Environmental Protection Agency
- Ohio Pest Management Association
- United State Department of Agriculture

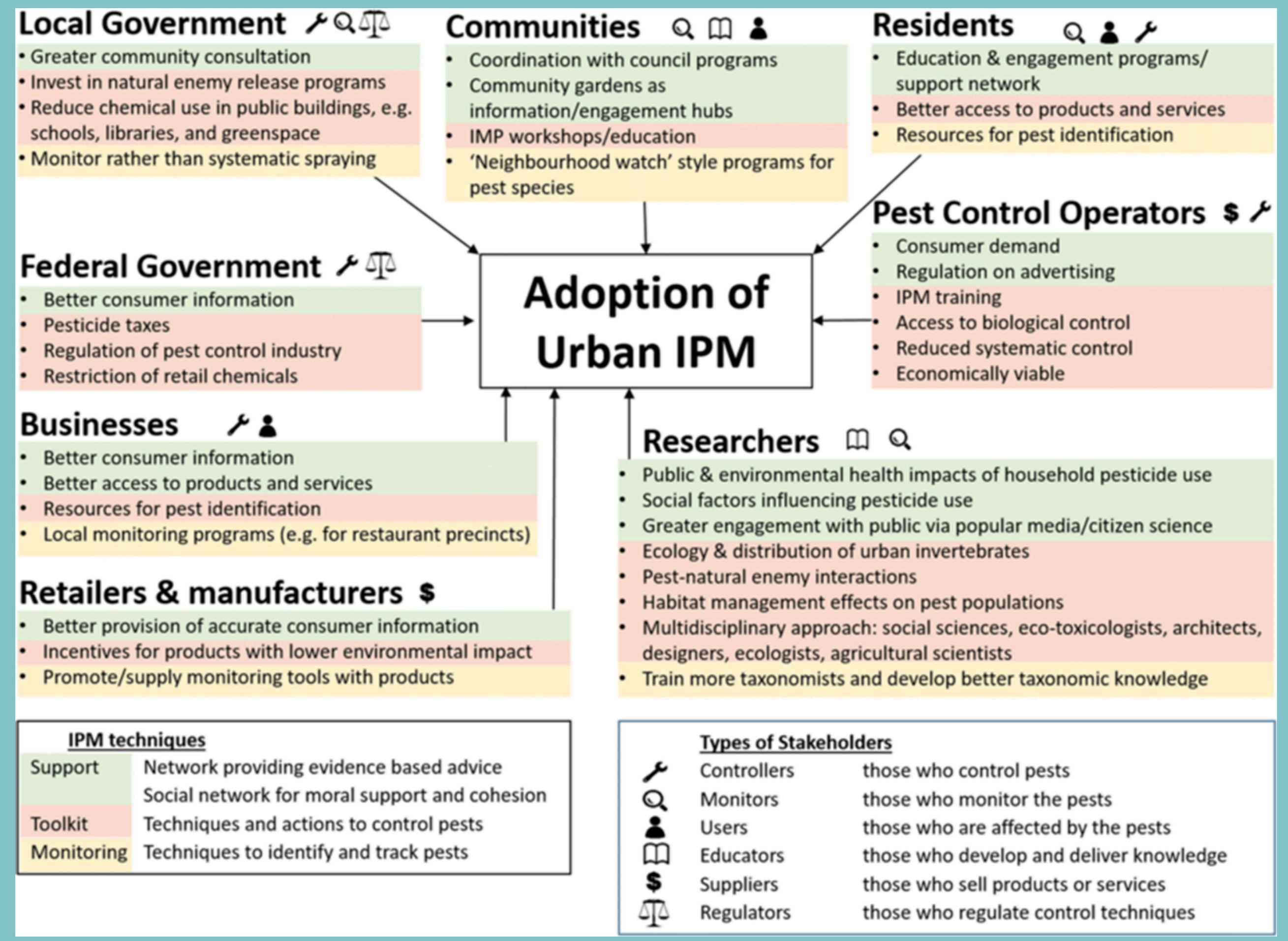
There are three areas of focus to the programs:

- The first area of the programs is focused on residential sites. These programs require 3 sections; introductory, intermediate, and advanced learning. These sections are available in all listed program types.
- The second area of the programs is focused on urban forestry. These programs require 3 sections; introductory, intermediate, and advanced learning. These sections are available in all listed program types.
- The third area of the programs is focused on commercial sites. These programs require 3 sections; introductory, intermediate, and advanced learning. These sections are available in all listed program types.

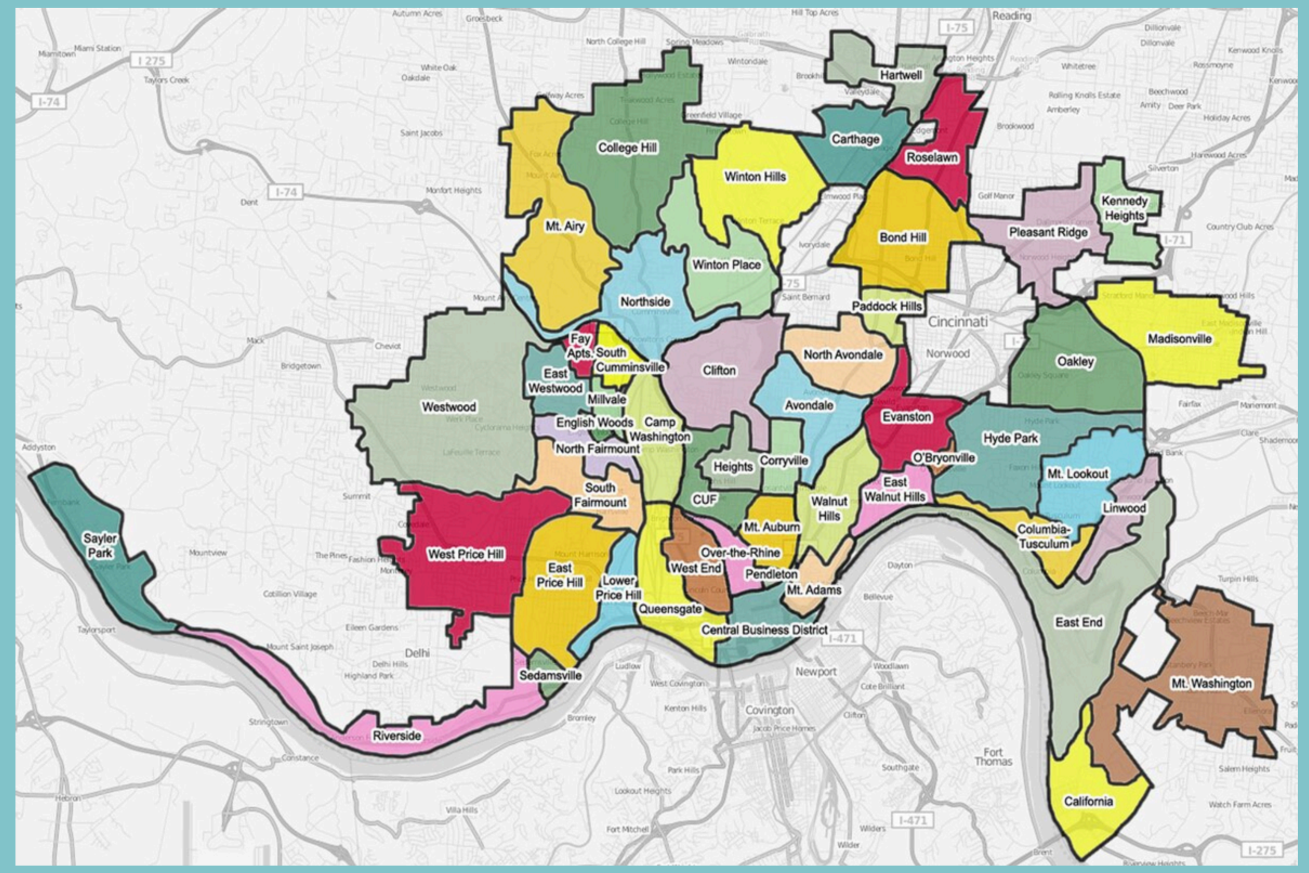
Citations:

- Introduction to creating Healthy Landscapes. Penn State Extension. (n.d.). https://extension.psu.edu/introduction-to-creating-healthy-landscapes. Retrieved on 7 February, 2025
- Benefits of IPM | office of sustainability and resilience | County of Santa Clara. (n.d.-a). https://sustainability.santaclaracounty.gov/natural-environment/integrated-pest-management/about-integrated-pest-management-ipm/benefits-ipm. Retrieved on 7 February, 2025
- Commercial renewals - applicator renewal and registration. (n.d.). https://www.planthealthrenewal.agri.ohio.gov/CommercialApplicator/. Retrieved on 27 February, 2025
- Environmental Protection Agency. (n.d.). EPA. https://www.epa.gov/ipm/integrated-pest-management-tools-resources-support-ipm-implementation#options. Retrieved on 7 February, 2025
- Frank, S., Bradley, L., & Moore, K. (n.d.). 8. Integrated Pest Management (IPM). NC State Extension Publications. https://content.ces.ncsu.edu/extension-gardener-handbook/8-integrated-pest-management-ipm. Retrieved on 7 February, 2025
- Integrated Pest Management. Home. (n.d.). https://www.usda.gov/about-usda/general-information/staff-offices/office-chief-economist/office-pest-management-policy-opmp/integrated-pest-management. Retrieved on 7 February, 2025
- IPM standard. IPM Standard | Pesticide Safety Education Program. (n.d.). https://pested.osu.edu/commercialapplicator/ipmstandard. Retrieved on 7 February, 2025
- Landscape IPM training for Local Government Employees. IPM Training for Government Employees - Integrated Pest Management – Solutions for Your Life - UF Institute of Food and Agricultural Sciences. (n.d.). https://ipm.ifas.ufl.edu/resources/grants_showcase/ornamentals_and_turf/govornt_training.shtml. Retrieved on 7 February, 2025
- Using IPM in the landscape - WSU. (n.d.-b). https://s3.wp.wsu.edu/uploads/sites/2210/2015/05/ipmdecisionmaking.pdf. Retrieved February 6, 2025
- Integrated Pest and pollinator management. (n.d.-b). https://extension.usu.edu/planthealth/factsheets/integrated-pest-and-pollinator-management.pdf. Retrieved February 6, 2025

Source: https://www.keepcincinnatibeautiful.org/greenspace



Source: https://www.researchgate.net/figure/Strategies-and-tools-to-aid-the-adoption-of-IPM-by-urban-stakeholders-The-stakeholders_fig2_330756540



Source: https://en.wikipedia.org/wiki/List_of_Cincinnati_neighborhoods