


Solve Pest Problems

A new pest management information service for the Pacific Northwest


WESTON MILLER
COMMUNITY HORTICULTURIST
OSU EXTENSION SERVICE
JANUARY 2023




1

Preview of Presentation

- ABOUT THE SOLVE PEST PROBLEMS PROJECT
- IPM PROCESS
- SOLVE PEST PROBLEMS WEBSITE VIGNETTES
- HOW TO USE THE WEBSITE
- URBAN AREAS RIPE FOR INVASIVE WEEDS
- PROFILES OF TOUGH WEEDS
 - IDENTIFY
 - BIOLOGY, HOW IT SPREADS
 - NON-CHEMICAL OPTIONS
 - CHEMICAL CONTROL
 - PREVENTATIVE STEPS



2




Solve Pest and Weed Problems

Home Page

Learn research-based and effective tactics for common garden and property pests and weeds. We provide non-chemical methods alongside the most effective and least toxic chemical options, to reduce risk to people and the environment.

<https://solvepestproblems.oregonstate.edu/>




3

Thank You to Sponsors and Collaborators

Funding partners:

- Metro
- East Multnomah Soil and Water Conservation District
- City of Gresham
- West Multnomah Soil and Water Conservation District
- OSU College of Agricultural Sciences
- OSU Pollinator Health Program
- OSU Pesticide Safety Program
- Oregon Department of Agriculture Pesticide Stewardship Partnership
- Oregon Association of Clean Water Agencies



4

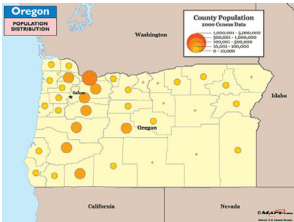
Broad coalition of support, 2019



5

Intended Audience

- Do-It-Yourself urban and rural residents
- Public and private landscape & pest control professionals
- Retail nursery workers
- OSU Master Gardener, Naturalist, and Beekeeper volunteers
- Communities historically underserved by OSU's IPM resources
- Anyone in Western US looking for pest management info

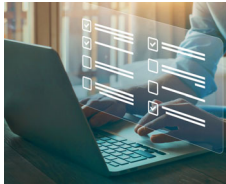


Oregon County Population, 2000 Census Data

6

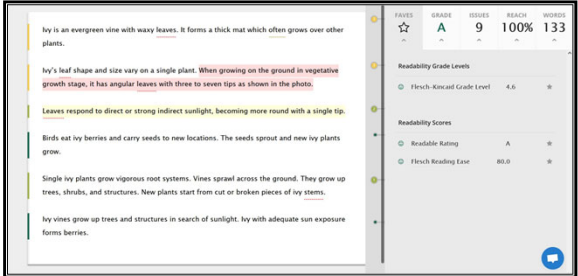
Solve Pest Problems Development Process

- Hired website professional development, user experience, graphic design, and usability tester testers via contracts.
- Performed 4 rounds of user testing facilitated by professional and with testing subjects representing diverse Oregonians
- All content peer reviewed by OSU Department of Horticulture.



7

Plain Language Editing



Readability Grade Levels

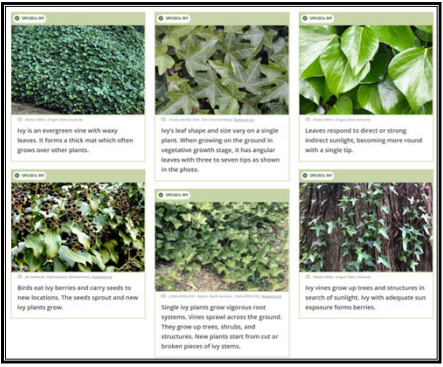
Flourish-Kincaid Grade Level	4.6
------------------------------	-----

Readability Scores

Readability Rating	A
Flourish Reading Ease	80.0

8

A picture says 1,000 words, as the saying goes

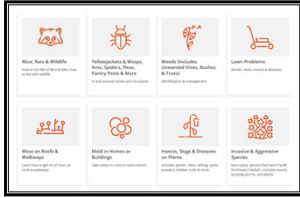


- Ivy is an evergreen vine with waxy leaves. It forms a thick mat which often grows over other plants.
- Ivy's leaf shape and size vary on a single plant. When growing on the ground in vegetative growth stage, it has angular leaves with three to seven tips as shown in the photo.
- Leaves respond to direct or strong indirect sunlight, becoming more round with a single tip.
- Birds eat ivy berries and carry seeds to new locations. The seeds sprout and new ivy plants grow.
- Single ivy plants grow vigorous root systems. Vines sprawl across the ground. They grow up trees, shrubs, and structures. New plants start from cut or broken pieces of ivy stems.
- Ivy vines grow up trees and structures in search of sunlight. Ivy with adequate sun exposure forms berries.


9

How to Use the Website - User Friendly Navigation


HOME PAGE MENU



ALL PEST & WEED SOLUTIONS MENU FROM TOP BAR



10




Solve Pest and Weed Problems

Home Page

Learn research-based and effective tactics for common garden and property pests and weeds. We provide non-chemical methods alongside the most effective and least toxic chemical options, to reduce risk to people and the environment.

<https://solvepestproblems.oregonstate.edu/>

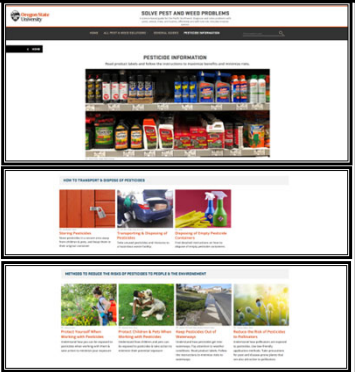


11

Pesticide Safety Information

Storage, Transporting & Disposing

Risk Reduction Methods for People, Pets, Water & Pollinators



12

Property Management Guides

Non-chemical & Biological Methods

50+ tips to control weeds without weed killer (herbicide)

13

Lawn Care

Weeds (Broadleaf, Grassy & Moss)

Insects & Plant Diseases

Access page on your phone

14

Invasive Species

Emerald Ash Borer

Jumping Worms

Japanese Beetles

Emerald Ash Borer detected in Forest Grove in 2022

Jumping Worms, identify them by their movement

Please comply with ODA control efforts in Wa. County

15

Jumping Worm Video: Found in Oregon

Courtesy: MN DNR

If you suspect you've seen jumping worm, report it to the [Oregon Invasive Species Hotline](#) or call 1-866-468-2337 (1-866-INVADER).

16

Plants Problems, Example Content

Rose Aphids > *Microlophum rosae* and other species
Rose aphid feeding causes distortion of leaves, flowers, and shoots. Aphids rarely kill plants. They produce honeydew, a sweet, sticky substance that promotes sooty mold growth.

Rose Black Spot > *Diplocarpon roseae*
Rose black spot is a fungal disease that causes black spots on rose bush leaves and stems. It makes leaves turn yellow and fall off the rose bush. Severely infected plants often look bare with few leaves and flowers.

Azalea Lace Bugs > *Styphodon pyramis*
Azalea lace bugs suck sap, which damages leaf tissue of azalea and rhododendron plants. They causes white or yellow stippling damage on the upper leaf surface. Nymphs and fecal spots are visible on the underside of leaves.

17

Plants Problems, Fundraising Campaign

BUILD-A-PAGE FUNDRAISING CAMPAIGN


- PLEASE CONSIDER MAKING A DONATION TO HELP MAKE THIS CRITICAL PEST MANAGEMENT INFORMATION AVAILABLE TO THE PUBLIC AS SOON AS POSSIBLE.
- FUNDS GO DIRECTLY TOWARD THE COSTS ASSOCIATED WITH BUILDING WEBSITE PAGES, INCLUDING GENERAL PLANT PESTS (SUCH AS SLUGS) AND THE MOST COMMON PESTS AND DISEASES FOR SPECIFIC PLANTS (SUCH AS ROSES).

OSU Agricultural Research Foundation Account

18

Increasing numbers of invasive weeds

Lesser celandine




http://www.nyb.info/index.php?action=invasive_detail&id=71


19

Urban Areas, Ripe for Invasive Plants

- **DISTURBED SOIL**
- **MANY AREAS NEGLECTED**



Shiny Geranium



Laurel

20

Urban Areas, Ripe for Invasive Plants

- **SPREAD OF HORTICULTURAL PLANTS**
- **MANY PROPERTY MANAGERS DON'T HAVE CRITICAL DECISION MAKING KNOWLEDGE AND WEED MANAGEMENT SKILLS/TRAINING**



Yellow Archangel

21

How Climate Change is Helping Invasive Species Take Over

Longer seasons and warmer weather have combined to be a game-changer in the plant wars



Purple loosestrife

<https://www.unh.edu/online/imag.com/schnepp-station/how-climate-change-is-helping-invasive-species-take-over>
Oregon Department of Agriculture

22

Climate change could alter weed proliferation and competitive behavior in weedy vegetation as well as in crop areas and maintained landscapes.

Change range in terms of latitude and elevation

Change phenology (yearly life cycle)

23

Evidence of Unrealistic Expectations Among Public

EXAMPLE SOCIAL MEDIA POST


Northwest
2 mins · 📍

↳ Weeds of the

Morning Glory and Buttercup are invading my yard. I feel overwhelmed. Should I just pull up what I can and then cover the remainder with cardboard and woodchips? Then what do I do? Help!

👍 Like 💬 Comment

PERENNIAL, SPREADS BY RHIZOMES



Creeping Buttercup

24

Market Opportunity: Align Your Services with Urban Clients' Invasive Plant Priorities

PROFILE OF URBAN CLIENTS' MIND SET	PROFILE OF URBAN CLIENTS' NEEDS
<ul style="list-style-type: none"> MANY AWARE OF THREAT FROM INVASIVE PLANTS, SOME UNAWARE UNREALISTIC UNDERSTANDING OF WEED MANAGEMENT ILL EQUIPPED TO TAKE ON VEGETATION MANAGEMENT, BUT DIY ATTITUDE WANT TO PROTECT PEOPLE, WATER QUALITY, AND POLLINATORS 	<ul style="list-style-type: none"> IDENTIFY AGGRESSIVE WEEDS RELAY THE RISK TO PROPERTY AND NATURAL AREAS PROVIDE A MANAGEMENT PLAN (1-5 YEARS) DOCUMENT STEPS TO PROTECT PEOPLE, WATER QUALITY, AND POLLINATORS

25


Business Listings of Contractors

EAST MULTNOMAH SOIL AND WATER CONSERVATION DISTRICT	BACKYARD HABITAT CERTIFICATION PROGRAM
	

26

Use Integrated Weed Management Decision Making Process

- IDENTIFY WEED, LEARN ITS BIOLOGY
- DETERMINE CONTROL OPTIONS, WEIGH BENEFITS AND RISKS
- IMPLEMENT CONTROL ACTIONS FOR SITUATION
- MONITOR AND REPEAT CONTROL ACTIONS AS NEEDED
- IMPLEMENT PREVENTATIVE STEPS TO AVOID PROBLEM IN FUTURE



Tree-of-heaven next to building

27

Site Specific Considerations

SHALLOW WATER TABLE, SANDY SOIL? USE CAUTION WITH HERBICIDES	POTENTIAL FOR RUNOFF AND/OR EROSION? HERBICIDES MOVE WITH WATER AND SOIL
	

28

Weeds

Broadleaf

Grasses & Grass-like

Vine-like

Trees & Shrubs

Effective solutions for Pacific Northwest weeds, including invasive trees & bushes.

WEEDS BY SHAPE / TRAIT



Broadleaf Weeds (Herbaceous)	Grasses & Grass-like Weeds	Vine-like Weeds	Trees & Shrubs / Bushes (Woody)
Soft leaves like lettuce. Small weeds like chickweed and dandelion are in this category. Not grass-like. 13 weeds	Thin, long leaves or blades. Grasses, sedges, rushes, reeds, horsetails, etc. 7 weeds	Climbing, trailing growth. Ivy, Blackberry, Wild Geranium, Hedge Nettle, & more. 4 weeds	Woody stems. Some growth may be soft, but the hard-like weeds with soft or hollow stems. 8 weeds

A to Z list (25 weeds)



29


Lesser Celandine (*Ranunculus ficaria*)

IDENTIFY	BIOLOGY
	


30

Lesser Celandine

BIOLOGY: SPREADS BY TUBERS



BIOLOGY: SPREADS BY VEGETATIVE PROPAGULES



31

Lesser Celandine

NON-CHEMICAL: SEPARATE THE STEMS, TUBERS, AND ROOT PIECES FROM THE SOIL



DISPOSE OF PLANT MATERIAL IN PLASTIC BAG IN TRASH OR LANDFILL




32

Lesser Celandine

CHEMICAL METHODS

- TREAT IN LATE WINTER/EARLY SPRING (BEFORE FLOWERING)
- GLYPHOSATE
- TRICLOPYR
- MIXTURE
- MONITOR AND REPEAT AS NEEDED

COVER EXPOSED SOIL



33

Lesser Celandine

MONITOR IN WINTER FOR BULBILS AND EARLY GROWTH



REMOVE DIRT FROM SHOES AND EQUIPMENT





34

Italian Arum

BIOLOGY: SPREADS QUICKLY BY SEEDS, TUBERS, & ROOT FRAGMENTS

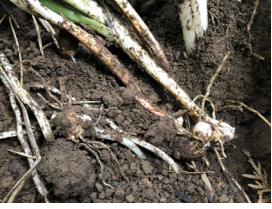
IDENTIFY: GROWS ABOUT 12-18 INCHES TALL. LEAVES ARE SHAPED LIKE AN ARROW WITH A PALE GREEN MIDRIB AND VEINS.


35

Italian Arum

NON-CHEMICAL: DIG OUT ROOTS, TUBERS AND SIFT SOIL TO REMOVE



NON-CHEMICAL: DIG OUT AND DISPOSE IN THE TRASH OR LANDFILL




36

Italian Arum

CHEMICAL CONTROL:

- CHEMICAL CONTROL (HERBICIDE) INFORMATION IS LIMITED FOR ITALIAN ARUM.
- MIX PRODUCTS IN THE SPRAYER TANK.
- AND USE AN ADJUVANT TO HELP PENETRATE THE WAXY LEAVES.
- OR ALTERNATE PRODUCTS FOR FOLLOW UP TREATMENTS.
- GLYPHOSATE, METSULFURON(RU)


EXPERIMENTAL: STEAM WEEDER, REQUIRES 3-4 TREATMENTS




37

Other Weeds to Know


SPURGE LAUREL: ESCAPING FROM LANDSCAPES, BIRDS SPREAD SEEDS



POKEWEED: ESCAPING FROM LANDSCAPES, BIRDS SPREAD SEED



38




Solve Pest and Weed Problems

Home Page

Learn research-based, safe, and effective tactics for common garden and property pests and weeds. We provide non-chemical methods alongside the most effective and least toxic chemical options, to reduce risk to people and the environment.

<https://solvepestproblems.oregonstate.edu/>



39

Review of Presentation


- ABOUT SOLVE PEST PROBLEMS
- IPM PROCESS
- SOLVE PEST PROBLEMS WEBSITE VIGNETTES
- URBAN AREAS RIPE FOR INVASIVE WEEDS
- PROFILES OF TOUGH WEEDS
 - IDENTIFY
 - BIOLOGY, HOW IT SPREADS
 - NON-CHEMICAL OPTIONS
 - CHEMICAL CONTROL
 - PREVENTATIVE STEPS




40

Questions? Please Contact Me:

WESTON MILLER, COMMUNITY HORTICULTURIST
WESTON.MILLER@OREGONSTATE.EDU
 503-706-9193



41