Weed Control....
What Master Gardeners Need to Know

Greg MacDonald, Weed Scientist
University of Florida
Questions from Weeds

• What is the weed, or what is the target plant(s)?
• What level of weed control is wanted or desired?
• What kind and level of control is:
  – Acceptable
  – Manageable
  – Affordable
Lawn, yard or flowers ........
Proper Weed Identification

- **Type of weed** - broadleaf, grass, sedge
- Growth habit - upright, prostrate, vine
- Life cycle - annual, biennial, perennial
- **Type of area** - perennial plant bed, annual beds, turf (type of grass), vegetable garden, natural setting, raised bed, etc.
Chamber Bitter

- Fast growing annual
- Lots of seeds
- Disturbed areas - high light
- Often found in containerized plants
Smilax - Greenbriar

- Slow growing perennial
- Produces underground bulbs/corms
- Low light area
- Undisturbed areas
Turf = grass
....right?
The Key Strategies

- Prevention
- Timing
- Persistence
Cultural Weed Management

• Proper plant selection - most ornamentals and grasses are highly competitive and will prevent and suppress many weeds
• Proper mowing height, frequency
• Proper watering and fertility are crucial factors
Prevention is Key
Hand Weeding?

• Hand pulling, rouging
• labor intensive, non-economical, *therapeutic*??
• fairly effective on annual weeds
• generally temporary for perennials
• can be injurious or impossible
Plastic / Fabric Mulches

- plastic mulches - impermeable to water
- fabric mulches - permeable to water & air, but very low light transmission
- generally covered with an organic mulch
- NEVER permanent weed control
- clear plastic for warming, sterilization
NEVER Permanent!!
Mechanical Weed Control

- Millions of dollars spent every year
- be wary of “wonder tools” that do it all
- basically an extension of the hand
- one tool is not for all situations, collection of several lesser expensive tools may work better overall
Mechanical Weed Control

• mowing is highly effective in turf
• vigorous and repeated tillage will reduce problems with perennial weeds
• cultivation is also effective, but limited to “row-crops”
• although good weed control may be observed, may stimulate some weeds
Proper Mowing
Chemical Weed Control

- Millions $$$ spent on “miracle products”
- constantly changing and adding of products
- familiarize with the active ingredients
- READ THE LABEL!
ENFORCER®

ROOTS & ALL™

Grass and Weed Killer II

Ready-To-Use:
Premixed & Premixed
No Waiting, Replant Spot Treated
Areas the Next Day

Visible Results in just
6 Hours

ACTIVE INGREDIENTS:
- Propionic Acid: 1.72%
- N-Isopropylacetamide: 0.11%
- 2,4-Dichlorophenoxyacetic acid: 0.20%
- 3-(2-Chloro-4-dichlorophenoxy)propionic acid: 0.20%
- Dimethylamine salt: 0.52%
- Plant-3-β-D-glucopyranosyl (1-β-D-glucopyranosyl) (1-β-D-glucopyranosylpropionate: 0.19%
- Preen-1-propionate: 0.19%

INERT INGREDIENTS:
- TOTAL: 100.00%

KEEP OUT OF REACH OF CHILDREN

CAUTION

8069

NET CONTENTS 24 fl. oz. (710 ml)
NO-PEST
GRASS & WEED KILLER
KILLS grass & weeds along fences, in cracks of walks, drives & patios
CONTROLS IN 24 HOURS
KEEP OUT OF REACH OF CHILDREN
CAUTION
NET CONTENTS 1 GALLON/3.78L
Herbicide Basics

- Herbicides are chemicals that are used to control weeds
- Grouped by the way they work in plants:
  - Selective vs. non-selective
  - Soil applied vs. foliar applied (pre/post)
  - Contact vs. systemic
Contact Herbicides

• require minimal time on leaves to show activity
• rain-free – less than 1 hour
• will not go to roots, only where the spray contacts
• plant growth condition not a major factor in level of control
Systemic Herbicides

- require some time on leaves to show activity
- rain-free – ideally > than 4 hours
- will move to roots, other parts
- **plant growth condition critical for good control**
Systemic Herbicides

“Plant growth condition critical for good control”

- Drought stress – poor control
- Plant flowering – poor control
- Perennial plant just beginning to regrow – poor control
- Perennial plant beginning to form tubers, rhizomes – good control
- Plant growing vigorously – good control
Herbicide Basics

• **Step I** – weed ID
• **Step II** – where to control
• **Step III** – herbicide selection
• **Step IV** – proper application

• *application rate is everything, especially with soil applied herbicides*
• Isoxaben
• 75% active
Calibration/Application

• One of the most important factors in good weed control is applying the right rate

• rate = amount of product per area

• water is the carrier for the product, so accurate placement of a defined amount of spray per a defined area is the real issue

• generally the area is 1000 ft²
Calibration/Application

- Practice spraying with water - calibrate yourself
- Driveways are a good spot to practice
- Use a fine spray, but not a mist
- In an undefinable area, apply until the spray droplets just begin to run
Calibration Basics
Calibration Basics

Poor Spray Pattern

Good Spray Pattern
Herbicides for Homeowners “Roundup”

- a wide range of products sold, various marketers, various concentrations
- applied to the foliage of weeds, moves within the plant to roots and shoots
- will kill any plant contacted by the spray
- accurate placement of the spray is key
- not active in the soil
Kills The Root

Roundup®

WEED & GRASS KILLER

Ready-To-Use

KEEP OUT OF REACH OF CHILDREN

CAUTION

NET 64 FL OZ (1/2 GAL)
Herbicides for Homeowners “Weed and Feeds”

- Variety of products - fertilizer + herbicide
- Herbicides -- 2,4-D, dicamba, atrazine
- Mainly used for broadleaf weed control in turfgrasses - be careful on which turf
- Uniformity of application is the key issue
Scotts
Bonus®
WEED AND FEED
LAWN FERTILIZER AND WEED CONTROL

For use on St. Augustinegrass (including Floristam), centipede, zoysia, and carpetgrass lawns only

Builds thick, green turf from the roots up without burning your lawn*
Kills dollarweed and 24 other common lawn weeds
For best results, apply a Scotts annual program (see back for details)

Do not apply to lawns or mixed lawns of bahiagrass, berbedagrass, bluegrass, kentucky bluegrass, ryegrass, or fescue

ACTIVE INGREDIENT
Ammonium
RELATED COMPOUNDS
OTHER INGREDIENTS

EPA Reg. No. 526-18
EPA Est. Reg. No. 147-003
EPA Est. Reg. No. 340-00-1-04

KEEP OUT-OF-REACH OF CHILDREN
CAUTION
See back for additional precautionary statements

29-3-4
Made in U.S.A.
NET WEIGHT 20 LBS.
Ready to use...
Simply attach to a garden hose and spray!

Scotts®

Lawn Weed & Feed 25-1-2
For use on turfgrass lawns.

The Scotts Difference:

- Controls dandelion, clover, chickweed, ground ivy, and other weeds listed on back
- Green your lawn quickly PLUS contains patented slow release nitrogen for extended feeding
- Guaranteed not to burn your lawn when used as directed
- Scotts® No-Quality Guarantee

ACTIVE INGREDIENTS:
- Glyphosate Salt of 2-O-4-Dichlorophenoxyacetic Acid
- 2.26%
- MCPP
- 0.18 lbs act. pt.

Inert Ingredients:
- Sodium Formate
- 0.003%

Net Contents: 32 fl. oz. (1 g) (946 ml) Net Weight: 2.63 lb. (1.19 kg)

KEEP OUT OF REACH OF CHILDREN. CAUTION
Herbicides for Homeowners “kills within 24 hours”

- Various products and compounds
- Generally a mixture of materials
- Contact activity, limited movement in plant
- Thorough coverage is key, but don’t overdo
- Pelargonic acid, diquat, fatty acids
One spray

Three sprays
KILLS ALL MAJOR BROADLEAF WEEDS!

Spectracide

WEED STOP

WEED KILLER FOR LAWNS

Concentrate

Overnight Results!

Kills the Weeds, Not the Lawn

Kills 66+ Types of Weeds!

Treats up to 16,000 sq. ft.

KEEP OUT OF REACH OF CHILDREN

CAUTION

NET CONTENTS 1 QT
Herbicides for Homeowners

“Preen” products

• soil applied, before the weeds emerge
• kills grasses & certain broadleaf weeds
• prevents the roots and shoots from growing
• placement is the key issue
• need to be mixed with soil, watered and covered
Corn Gluten Meal

- derived from the gluten fraction of corn
- provides good control of many annual weeds, will not harm established plants
- Works similar to “Preen” products
- will not control perennial weeds
- potential uses - annual flower beds, vegetable transplants
- limited availability? (organic)
Herbicides for Homeowners

other products

• Basagran T/O - mainly nutsedges in turf
• Brush-B-Gone (triclopyr) - effective on vines, brush, woody plants
• Vegetation killer - soil active, no selectivity (imazapyr, prometon, cacodylic acid)
Herbicides for Homeowners

Basagran T/O

mainly for
nutsedges in
turf, some
broadleaf weed
control
Herbicides for Homeowners

Brush-B-Gone (triclopyr) effective on vines, brush, woody plants
Herbicides for Homeowners

Vegetation killer (imazapyr, prometon, cacodylic acid)
- soil active, no selectivity
Herbicides for Homeowners

Finale (glufosinate)

Non-selective, kills both grass and broadleaf weeds

Not the same as glyphosate (Roundup)
Herbicides for Homeowners

Image - imazaquin

Use in turf for
sedges, broadleaf
weeds

Foliar and soil
active
Herbicides for Homeowners

Grass Control Herbicides --

fluazifop, sethoxydim

foliar active, kills all grasses, systemic
Pesticide Safety and Sense

- Never use a material from commercial setting - illegal and dangerous
- Always leave materials in original containers with the label attached
- Keep pesticides locked in a dry, secure area
- Never store mixed chemicals
- Read the label before use!
Equipment

Use separate sprayers for different types of treatments
Perennial Weed Management

• The key to successful perennial weed management is persistence and timing
• perennial weeds take a long time to grow and thus a long time to control
• may take a combination of methods - hand weeding, mechanical, chemical
Pull vines down (do not cut), then spray leaves while on ground
One plant twined within another
Pull branch (do not cut) and place inside bag
Spray leaves within the bag, shake off excess and remove.
The Key Strategies

- Prevention
- Timing
- Persistence