Module 13: Garden Weeds Identification and Control With Dr. Ron Strahan

LSU AgCenter Home Gardening Certificate Course

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Weed Basics
What is a Weed?

✓ A plant growing out of place
✓ A plant whose virtues have not yet been discovered
Some reasons weeds are problems?

1) Reduce yields of crops – harvest efficiency

2) Reduce land use efficiency

3) Spoil beauty of turf and ornamental areas

4) Diminish enjoyment of outdoor recreation

5) Can cause allergic reactions due to toxicity
Weeds are great competitors!

- Water
- Nutrients
- Light
Why so many weeds? – Pigweed example

✓ 13,000 – 1,000,000 seed/year
✓ Dormancy – survive 30 years
✓ Don’t allow seed production
How are weeds able to persist?

1) Number of seed produced
2) Survival of weed seed
3) Dormancy
4) Vegetative reproduction
How do weeds spread?

1) Nature
   - Animals and birds – Chinese tallow tree
   - Winds – dandelion
   - Rains and flooding
   - Some type of runner – rhizome, stolon

2) Humans
   - Impure seed/sod – contaminated wildflower
   - Compost and mulch – animal droppings
   - Irrigation – wet areas for sedges
   - Machinery – contaminated mowing equipment
   - Contaminated soil
Types of Weeds

• **Broadleaves** –
  - Netted veination
  - 2 cotyledons
  - Taproot
  - Showy flowers

• **Grasses** –
  - Parallel
  - 1 cotyledon
  - Fibrous roots

• **Sedges** –
  - “nutgrass”
  - Triangular stems
  - Leaves in 3’s
Broadleaf vs Grass Leaf

Broadleaf leaf veins (netted) vs grass leaf veins (parallel)
Annuals?  
Perennials?
Types of Weeds

• Annual and perennial summer weeds
  - Crabgrass (a)
  - Goosegrass (a)
  - Virginia buttonweed (p)

• Annual and perennial winter weeds
  - Annual bluegrass (a)
  - Burweed (a)
  - Dandelion (p)
Methods of Weed Control
Options for Weed Control

- Use Mulch to block weeds and prevent them from germinating.
- Physical removal
  - Hand pulling
  - Hoeing
  - Other weed pulling gadgets
  - Tilling
- Herbicides
  - Pre and Post Emergent

There are plenty of weed pulling gadgets available.
Weed Management Options - Mulch
Mulch – 2 weed management purposes

- Physical barrier to emerging seedling
- Blocks sunlight – several weeds need sunlight for germination

Chris Dunaway spreads cypress leaves as mulch.
Mulch – information

• Many options available
  – Pine Straw
  – Shredded Leaves
  – Shredded pine Bark
  – Cypress Tree Leaves
  – Plus More…

• Shredded bark, pine straw are better than large wood chips

• Reapply mulch periodically

• Check your mulch source - could be weed seeds in mulch

• Don’t expect perennial plant control
Brief Herbicide School Session
What is an herbicide?

A chemical which injures or kills a plant.
Definitions

• **Active ingredient** – molecule that provides herbicidal action
  – Glyphosate – Roundup, Eraser etc
  – Trifluralin – some versions of Preen, Treflan

• **Mode of action** – physiological process that leads to negative plant effects
  – Photosynthesis inhibitor - Atrazine
  – Mitosis disruptor – Preen
  – Amino acid production disrupted - Roundup
Preemergence?
Postemergence?
Types of Herbicides

• Preemergence – Weed preventor/residual herbicides – controls weeds before you see them.

• Postemergence – kills weeds that are actively growing.
Preemergence Herbicide Information
PRE herbicides are available for the lawn and flower bed.
Effective Preemergence Application

- Apply before weeds germinate
- Adequate rainfall or irrigation is needed
- Do not expect all season control - reapply
How do preemergence herbicides work?

✓ Herbicides provide a barrier at or just below soil surface
When Should I Apply Preemergence Herbicides in My Garden?
✓ Apply to the surface of the garden soil after the bed is prepared for planting.
✓ Apply before spreading mulch.
✓ Reapply according to label directions.
✓ Do not use Pre-emergent herbicides in areas where crops will be direct seeded into the garden.
✓ You may apply them after the crops have germinated.
Postemergence Herbicides
Types of Herbicides

• Nonselective – kills everything - Roundup, Finale

• Selective – controls certain plants and releases other species – Weed-B-Gone, Vantage, Atrazine
What determines selectivity?

• Time of application

• Rate of application

• Chemical, biochemical, morphological or physiological differences

• Knowledge of when and how to use herbicides
Types of Herbicides

- **Contact** – burns back what only what it hits - Diquat, Finale

- **Translocating (systemic)** – move throughout plant – Weed-B-Gone, Vantage, Roundup
Postemergence Herbicide Examples
Roundup

- Active ingredient – glyphosate
- Will kill or injure most plants
- A systemic herbicide – good on perennial weeds
- Totally deactivated when it hits soil
- Visual symptoms in 2-4 days in growing points
- Find everywhere
Weed B Gon

- Ortho
- 3 way herbicides
- Low % of 2,4-D
- Excellent for winter broadleaves
Grass B Gon

- Ortho
- Fluazifop
- Ready to use product
- Excellent for summer grasses
Homeowner Weed Killers
Always Read the Label and Follow All of the Directions Carefully
Before you apply a Herbicide

Read the Label!
What’s on Label

1) Type of formulation – L, DG, WP, DF

2) Use classification – general use vs restricted use

3) Common and chemical name

4) Precautionary statements
Proper Herbicide Use

1) Read label – label tells how to use and precautions
2) Store properly
3) Never eat or smoke near chemicals
4) Wear protective clothing
5) Use correct rate (calibrate)
6) Avoid drift and water contamination
7) Triple rinse containers
Common preemergence herbicides for flower beds

- Surflan -Oryzalin - homeowner
- Preen – Trifluralin, dithiopyr - homeowner
- Hi-Yield Weed Stopper – dithiopyr - homeowner
- Pendimethalin - Pendulum/Pre M - professional
- Prodiamine – Barricade – professional
  - Many others like Snapshot, Free Hand etc.
Preemergence Herbicides – great on annual grasses and small seeded broadleaves like…

Common Purslane  Spurge  Pigweed
Preemergence Herbicides – Will not work on …..

- Bermudagrass
- Torpedograss
- Florida Betony
- Chamberbitter
Grass Control in Vegetable Gardens

Did you know that you don’t have to hand pull bermudagrass!!!!
You can control bermudagrass in gardens
Control Grasses in the Vegetable Gardens

- Hi-Yield Grass Killer- sethoxydim – up to 3 oz/gallon – can be used in vegetable gardens
- Ferti-lome Over the Top II – is now sethoxydim – also can be used in vegetable gardens
Using Roundup/glyphosate safely in beds
Glyphosate with 41% active

- Roundup, Hi-Yield Killzall, Eraser, Eliminator etc.
- Will kill or injure most plants
- A systemic herbicide – good on perennial weeds
- Deactivated when it hits soil
- Visual symptoms in 2-4 days in growing points


Roundup Brands

- 18%, 41%, 50% glyphosate
- Ready to use products also – usually < 2%
- Prone to drift with high pressure and windy conditions
Roundup damage to a tomato plant.
Weed Wipers on the market

Weed wipers and products like Roundup Gel allow the application of non-selective herbicides growing near other desirable plants.
Rubber/Cotton Glove Method
Rubber Glove/Cotton Glove

- 3 oz of glyphosate in 32 oz. of water
- Rubber glove inside cotton glove
- Dip and squeeze off excess
- Gently wipe weed leaves
Use wipe method for hard to control weeds like...

- Translocates to underground storage organs
- Paint brush, sponge mop etc.

- Florida betony (rattlesnake)
- Torpedograss
- Bush killer vine
Organic Weed Control
Perfectly Natural - Organic

- 90% vinegar and 8% clove oil
- RTU – no mixing
- Smells good
- Tried it – works ok on very small annuals
Scythe – fatty acid

• Non-selective – pelargonic acid

• Works well on tender annuals – 5% solution

• Poor on perennials

• Overall, a pretty good performer
Ortho Elementals

- Non-selective
- Iron based and soybean oil
- Works well on small annual broadleaves and grasses
- Poor on perennials
Preen Organic Corn Gluten

- 100% granulated corn gluten meal
- Apply 5 lbs. per 250 sq. ft. (25' x 10') to vegetable bed.
- Gluten releases an enzyme that interferes with germinating seeds
- Gave fairly good weed control for 15 days in an experiment
Please post all your questions and results to the message board:
https://www.facebook.com/groups/538153443545779/

More resources for this module can be found at the following link:
https://www.lsuagcenter.com/topics/lawn_garden/master%20gardener/home-gardening-certificate-course