Topics for today

- General considerations
- Crabgrass
- Spring seeding
- Broadleaf weed control
- Yellow nutsedge
- Resources

General Considerations

A properly maintained lawn will recover more quickly from injury due to environment stress or pests and compete with weeds:

- Grow adapted turf species
- Mow at proper height and frequency
- Fertilize at least once per year
- Aerify to relieve compaction and control thatch
- Maintain good drainage
- Irrigate if possible
Crabgrass

https://turf.purdue.edu/turfgrass-weeds/

large crabgrass

hairy leaves

hairy stems

Seed head
Crabgrass
- Preemergence herbicides as early as March 1.
- Postemergence (too late?)
  - Dimension (dithiopyr) – 2 tiller stage
  - Products with Quinclorac or Fenoxaprop
- Good cultural practices are important.

Growing Degree Day Tracker
http://www.gddtracker.net/
Growing Degree Day – measure of heat units related to plant growth. Here used to predict pre-emergent herbicide application.

Pre-emergent herbicides – soil placement
Weed seeds germinate and are controlled as they come in contact with the herbicide.
Herbicide layer
Roots of established turfgrass are below the herbicide layer
Scheduling Seeding

- Northern ½ of Indiana (Ohio?):
  - August 15 – Sept. 15
- Southern ½ of Indiana (Ohio?):
  - Sept. 1 – 30
- Spring seeding can have problems:
  - Competition w/crabgrass
  - Soil Temperature slow to increase
  - Summer stress is soon after germination
- Dormant seeding
Selecting a Cool-Season Turfgrass Species

Full Sun:
• 100% Kentucky bluegrass (2-3 varieties)
• 100% Turf-type tall fescue (2-3 varieties)
• 85-90% Kentucky bluegrass + 10-15% perennial ryegrass
• 90% turf-type tall fescue + 10% Kentucky bluegrass

Partial Shade:
• 30-50% Shade-tolerant Kentucky bluegrass + 50-70% fine fescue
• 100% fine fescue
• 100% Turf-type tall fescue

Temporary Cover only:
• 100% Annual ryegrass (don’t let it go to seed!)

Spring seeding options
• Turf-type tall fescue (about 10 days to germinate)
  • Seed
• Fine fescues (shade – 10 days to germinate)
  • Seed (chewings and/or creeping red fescues)
• Perennial ryegrass (about 7 days to germinate)
  • Seed
• Warning: susceptible to fungal diseases
• Kentucky bluegrass – takes too long to germinate (about 2 weeks)
  • Could try sod in spring
• Consider using a starter fertilizer with mesotrione, pre-emergent herbicide

Most people will not be happy with the results of a spring seeding… the area will likely have more weeds and need reseeded in the fall.
Broadleaf Weeds

- Manage healthy turf area
- Identify weed species and life cycle
- Use mixes of 2,4-D, MCPP, and dicamba (sold as Trimec and other brand names) for wider control of common weeds.
- Use products containing triclopyr to control difficult weeds (ground ivy, clover, violet, etc.)
- Make certain environmental conditions are right

Ground Ivy (Creeping Charlie)

Photo by Aaron Patton

Broadleaf life cycles

- **Winter annuals**
  - Sept – Nov optimum control window
  - Should I apply a herbicide in the spring?
  - Common chickweed, etc.
- **Summer annuals**
  - When at seedling stage (May-June)
  - Avoid applications on warm summer days (see label)
  - Prostrate spurge, prostrate knotweed, etc.
- **Perennials**
  - Fall applications work best!
  - Late September through mid – November is best
  - Second best timing is late April and May
  - Applying earlier with an amine may reduce control
  - Use an ester formulation if spraying in early to mid-April
  - Dandelion, ground ivy, violet, broadleaf plantain, etc.

https://turf.purdue.edu/turfgrass-weeds/
Post-emergence Herbicide Use

- Annual weeds are easier to control in the seedling stage when they are small.
- Sprays give better control than granules.
- Avoid extreme temperatures. Apply when temperatures are between 40 and 85°F and sunny.
- Typically need a rain free period of at least 6 hours.
- Apply during calm periods for reduced risk of drift.
- Do not apply to drought stressed turf.
- Do not seed after application (check label).

Postemergence Herbicide Failure

- Wrong weed.
- Wrong herbicide.
- Wrong rate – don’t overdose.
- Poor spray coverage.
- Wrong Timing.
  - Weed growth stage.
  - Too big, too small.
  - Environmental conditions:
    - Too dry, too hot, too cold, too windy, etc.

Photo by Fred Whitford

Photo by Fred Whitford

Photo by Aaron Patton

Photo by Kevin Patton
Oops! We meant to apply Trimec not Roundup. Oh, and we also skipped a few spots.

$50,000 mistake by this company.

Yellow nutsedge.
There are both annual and perennial sedges

- Annual (seed)
- Perennial (rhizomes, tubers)
  - Some perennial sedges such as false-green kyllinga readily establish from seed while others like yellow nutsedge, rarely establish from seed.
Spreads by Rhizomes and Tubers

Yellow Nutsedge

Tubers produced by a single plant during one growing season.

Life Cycle

Emergence (April-May)

Growth (June)

Key to long-term control

Tubers Produced (July)

Food (roots, tubers, leaf and bulrush)
Yellow Nutsedge Growth Habits

• Wet habitats
  • Poor drainage, irrigation
• Compacted areas
• Growth rate faster than cool-season turfgrasses during summer months
• Thrives where turf is mowed at low heights and poor drainage

Key Factors for Control

• Reduce soil moisture
  • Over-irrigation
  • Poor drainage
  • Good, dense turf
• Make application at appropriate timing
  • Control before tubers start forming in late July.
• Scout & Repeat the application
• Plan on a multi-year program

Control with Herbicides

• Yellow nutsedge emergence starts in May
• Application tips
  • Make a second repeat application about 4 to 8 weeks later or when re-growth appears
  • Read and follow label directions
• Fall fertilizer on cool-season turf helps turf compete when nutsedge growth starts to decline.
### Sedge Herbicides

**Table from W. 19-W, Yellow Nutsedge Control**

<table>
<thead>
<tr>
<th>Herbicides</th>
<th>Formulation/Product</th>
<th>Ready-To-Use</th>
<th>Yellow Nutsedge Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 4-D + piclomazin + clomazone</td>
<td>Generic: Timsedge Plus High Rate plus 3% Clomazone</td>
<td>No</td>
<td>P</td>
</tr>
<tr>
<td>2, 4-D + piclomazin + clomazone</td>
<td>Syngenta: More Nutsedge Control High Rate for 3 to 4 years</td>
<td>No</td>
<td>P</td>
</tr>
<tr>
<td>2, 4-D + piclomazin + clomazone</td>
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<td>No</td>
<td>P</td>
</tr>
<tr>
<td>Imazamox</td>
<td>10% Imazamox With Nutsedge Control Plus 4% Oxyfluorfen</td>
<td>No</td>
<td>C-1</td>
</tr>
<tr>
<td>Imazaprop</td>
<td>10% Imazaprop With Nutsedge Control Plus 4% Oxyfluorfen</td>
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**Resources**

[https://turf.purdue.edu/](https://turf.purdue.edu/)

[https://buckeyeturf.osu.edu/](https://buckeyeturf.osu.edu/)
A multi-state, Purdue UNIV. Publication:
Turfgrass Weed Control for Professionals
Ohio State University Extension Bulletin - 968
Authors: Dr. Aaron Patton
and collaborators (16 states)

Quick help for identifying weeds and
selecting herbicides

2019 (8th ed.) Available at
Purdue Education Store
128 pp. | 8.5 x 11
$20.00 hard copy
$12.00 electronic download

https://turf.purdue.edu/turf-tips/
Acknowledgments

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