Landscape Weed Management Principles and Tools

- Site Preparation
- Sanitation & Exclusion
- Mulches
- Preemergence Herbicides
- Postemergence Herbicides
- Hand weeding

Site Preparation

- The best time to control perennial weeds is before planting.
- There are basically three options:
  - repeated cultivation,
  - glyphosate (Roundup) or
  - Fumigation
  - Solarization (rarely used)

Cultivation

- Repeated cultivation on a regular schedule will control most weeds.
- Area will have to be left fallow for at least one full year possibly two.
- Generally not an option in landscape plantings

Controlled by cultivation

- Dandelion
- Goldenrod

Spread by cultivation
Site Preparation with Glyphosate (Roundup-Pro & Others)

- Nonselective, systemic herbicide that kills most weeds – shoots and roots.
- The most common site preparation treatment
- Spray, cultivate no sooner than 5 days
- Will control most perennial weeds

Glyphosate in the fall, not spring

Mugwort
Goldenrod

Japanese knotweed

Woody Weeds -- Timing

Not Well Controlled By Roundup

Equisetum
Bamboo
Pennywort

Timing is critical for perennial weed control.
Some species are well controlled in the fall but not in the spring; and vice versa. (We will cover this in more detail later.)
Roundup does not control all weeds. Understand what can be controlled and what cannot.
Soil Fumigation

• Chemical fumigants kill most weed seeds and vegetative propagules, and soil insects and pathogens.
• The site preparation choice of last resort!
• Fumigants are very toxic, expensive and require significant site preparation.
• If this is to be done -- DO IT RIGHT!

Solarization

• Using the sun's energy to build heat in the soil; killing weed seeds and vegetative propagules.
• Not as effective as Fumigation but simpler.
• Requires significant time (usually 4 to 6 weeks)
• Only effective in the summer.
• Many perennial weeds will not be controlled. Not widely used.

Relative Effectiveness of Site Preparation Treatments

<table>
<thead>
<tr>
<th>Weed</th>
<th>Roundup Fall</th>
<th>Roundup Spring</th>
<th>Fumigation</th>
<th>Cultivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bindweed</td>
<td>Good</td>
<td>Poor</td>
<td>Fair</td>
<td>Poor</td>
</tr>
<tr>
<td>Japanese knotweed</td>
<td>Good</td>
<td>Poor</td>
<td>Fair</td>
<td>Good</td>
</tr>
<tr>
<td>Mugwort</td>
<td>Good</td>
<td>Poor</td>
<td>Good</td>
<td>Poor</td>
</tr>
<tr>
<td>Goldenrod</td>
<td>Poor</td>
<td>Good</td>
<td>Good</td>
<td>Poor</td>
</tr>
<tr>
<td>Nutsedge</td>
<td>Poor</td>
<td>Poor</td>
<td>Good</td>
<td>Poor</td>
</tr>
<tr>
<td>Bermudagrass</td>
<td>Fair</td>
<td>Poor</td>
<td>Good</td>
<td>Poor</td>
</tr>
<tr>
<td>Bamboo</td>
<td>Poor</td>
<td>Poor</td>
<td>Fair</td>
<td>Good</td>
</tr>
</tbody>
</table>

Site Preparation: Amendments

• If the site is to be amended with topsoil or organic matter, inspect the sources of these materials for noxious weeds.
• Topsoil from farmland or stream banks is notorious as a source of nutsedge tubers and seeds of many annual weeds like morningglory and sicklepod.
• Most mulch and commercial compost are relatively weed free.
• Free mulch typically comes with lots of weeds
• Some species frequently found in mulch piles include mugwort, thistle, spurge, bindweed, and field horsetail. If these weeds are present, find an alternate source!

Study Questions:

1. What are the 3 main options for weed control at site preparation?
2. How do you know if fumigation is necessary?
3. If you have a landscape bed infested with crabgrass, henbit and other common annual weeds would you advise fumigation?
4. Goldenrod is well controlled by cultivation. Why is this not a feasible option in landscape bed installation?
5. Roundup (glyphosate) is non-selective. Under what situations would it not provide acceptable control for site preparation?