Non-Selective Herbicides

- Scythe
- Reward
- Finale
- Roundup & generic glyphosate herbicides
What do they have in common?

- No soil residual – POST only
- Non-selective – damage most any plants they contact
What is different?

- **Contact vs. Systemic (translocated)**
  - This impacts the kinds of weeds controlled – annual vs. perennial

- **Speed of action**

- **Cost**
Scythe (*pelargonic acid*)

- Nonselective, Contact herbicide
- Rapid (within hours)
- Effective on seedling annuals
- Top kill only on perennials and larger established annuals
- Odor can persist for days
- Eye & skin irritant
Scythe

Contact burn

Fast – within 30 min on a sunny day
Reward (*diquat*)

- Nonselective, Postemergent
- Contact type -- Not translocated
- Rapid response -- symptoms are visible within 24 hours
- No soil residual
- Effective on seedling annual weeds
- Top kill only on perennials or larger annuals
Reward – contact burn symptoms in a few hours to a day
Finale (glufosinate)

- Nonselective, Postemergent
- Systemic (translocated)
- Rapid response -- symptoms are visible within 48 hours
- No soil residual
- Effective on annual & perennial weeds
- Not as well translocated as Roundup-Pro
Finale – symptoms in 48 hr
Finale not translocated as well as Roundup
Glyphosate (Roundup, Touchdown and many others)

- Postemergence, non-selective control of annual and perennial weeds
- Systemic (translocated)
- No soil residual
- Be careful around conifers with the new formulation
Roundup-Pro & others

- active ingredient: glyphosate
- non-selective, postemergent
- systemic (translocated)
- No soil residual
- Not toxic to humans or wildlife
- Fish may be injured by the surfactant
Glyphosate products

- Isopropyl amine salts
  - Roundup, Roundup-Pro
  - Generics: Glyfos, Glyflo, Glystar, Glyfomax, Target, Razor, the list goes on ....

- Diammonium salt: Touchdown-Pro

Differences? Slight.
Quick-Pro (glyphosate + diquat)

- Rapid action, plus systemic kill of annual weeds
- ??? Will this reduce activity on creeping perennials?? Probably.
- Popular with many landscapers
## Optimum timing for Roundup-Pro

<table>
<thead>
<tr>
<th>Weed Species</th>
<th>% Solution</th>
<th>Suggested application timing for best control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perennial grasses</td>
<td>1%</td>
<td>At boot stage (first indication of flowering)</td>
</tr>
<tr>
<td>quackgrass, Johnsongrass, fescue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bermudagrass</td>
<td>2%</td>
<td>At boot stage</td>
</tr>
<tr>
<td>Poison ivy</td>
<td>2%</td>
<td>~ full bloom (E. summer)</td>
</tr>
<tr>
<td>Kudzu</td>
<td>2%</td>
<td>~ full bloom (L. summer)</td>
</tr>
<tr>
<td>Greenbriar</td>
<td>3%</td>
<td>early spring (5 leaves)</td>
</tr>
<tr>
<td>English ivy</td>
<td>2%</td>
<td>2-3 new leaves (E. spring)</td>
</tr>
</tbody>
</table>
# Optimum timing for Roundup-Pro

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<tbody>
<tr>
<td>Trumpetcreeper</td>
<td>1.5%</td>
<td>Late summer to early fall</td>
</tr>
<tr>
<td>Virginia creeper</td>
<td>1%</td>
<td>Late summer to 1\textsuperscript{st} fall color</td>
</tr>
<tr>
<td>Sericea lespedeza</td>
<td>1%</td>
<td>Full bloom (mid-summer)</td>
</tr>
<tr>
<td>Mugwort</td>
<td>2%</td>
<td>Late summer to early fall</td>
</tr>
<tr>
<td>Japanese knotweed</td>
<td>2%</td>
<td>Late summer to early fall</td>
</tr>
<tr>
<td>Annual weeds</td>
<td>0.25-1%</td>
<td>Younger is better</td>
</tr>
</tbody>
</table>
Roundup injury – severity depends on species and season of applic.

Deciduous plants – greater damage in late summer / Fall

Conifers more sensitive in spring
Using non-selective herbicides without injuring ornamentals
Selective Methods for Applying Non-Selective Herbicides

**Directed applications**

**Wipers**

**Clippers:**
Selective Methods for Applying Non-Selective Herbicides

- Directed applications: spray to the base of the crop, avoiding contact with foliage and green stems
- Spray shields may reduce spray drift
Selective Methods for Applying Non-Selective Herbicides

**Directed applications:**

**Wipers:** rope, paint roller, or sponge type devices. Just wipe the weeds when they are taller than the ornamentals.
Selective Methods for Applying Non-Selective Herbicides

- **Directed applications**
- **Wipers**
- **Clippers**: wet clippers in Roundup-Pro and clip the weed
Selective Methods for Applying Non-Selective Herbicides

- Directed applications: Avoid spraying green tissues
- Wipers: rope, paint roller, or sponge type devices. Just wipe the weeds when they are taller than the ornamentals
- Clippers: wet clippers in Roundup-Pro and clip the weed

Do not use Roundup-Pro over ornamentals
Getting the most out of Postemergence Herbicides

- Actively growing weeds
- Right product for the job
- Optimum timing
- Good spray coverage
Alternatives to Herbicides

- Vinegar – contact type herbicide action
- Flame weeders – almost as effective as contact herbicides
- Steam – contact kill