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>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>

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</thead>
<tbody>
<tr>
<td>Trumpet creeper</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 1st 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:**

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.

Clippers: wet clippers in Roundup-Pro and clip the weed.

Selective Methods for Applying Non-Selective Herbicides

**Directed applications:**

**Wipers:**

**Clippers:**

Getting the most out of Postemergence 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.

Get the 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

Hot Foam & Steam

* Contact kill
* 3+ x cost of herbicide
* Equipment costs high ($40,000)