

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

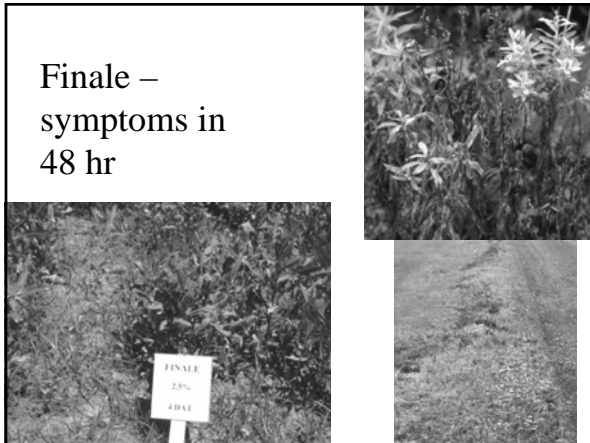
Reward – contact burn symptoms in a few hours to a day



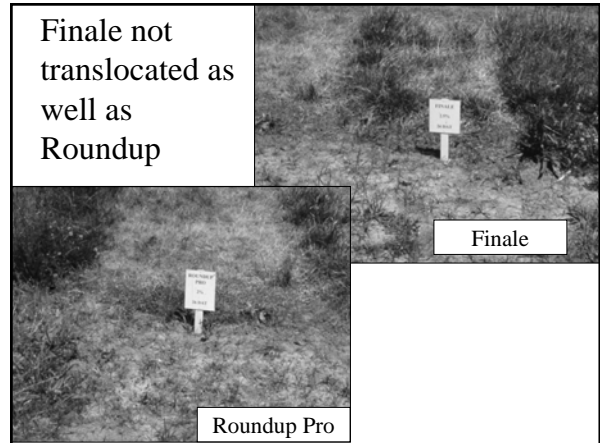
Finale (glufosinate)

- ✖ 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: Glyphos, Glyflo, Glystar, Glyphomax, 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

Weed Species	% Solution	Suggested application timing for best control
Perennial grasses quackgrass, Johnsongrass, fescue	1%	At boot stage (first indication of flowering)
Bermudagrass	2%	At boot stage
Poison ivy	2%	~ full bloom (E. summer)
Kudzu	2%	~ full bloom (L. summer)
Greenbriar	3%	early spring (5 leaves)
English ivy	2%	2-3 new leaves (E. spring)

Optimum timing for Roundup-Pro

Weed Species	% Solution	Suggested application timing for best control
Trumpet creeper	1.5%	Late summer to early fall
Virginia creeper	1%	Late summer to 1 st fall color
Sericea lespedeza	1%	Full bloom (mid-summer)
Mugwort	2%	Late summer to early fall
Japanese knotweed	2%	Late summer to early fall
Annual weeds	0.25-1%	Younger is better

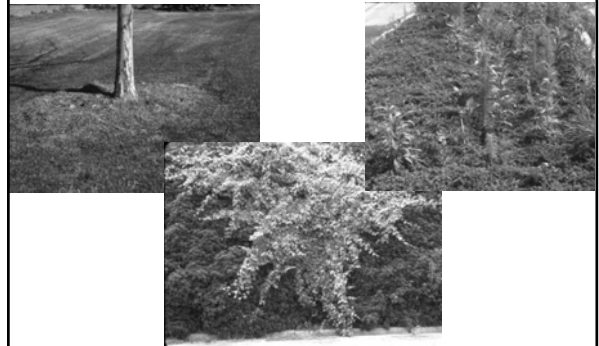


Roundup injury – severity depends on species and season of applic.

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



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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

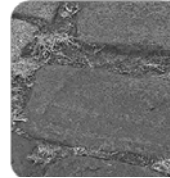
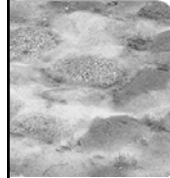
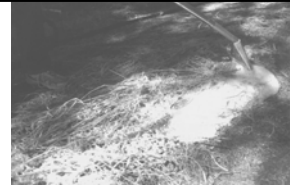
- ✱ Actively growing weeds
- ✱ Right product for the job
- ✱ Optimum timing
- ✱ Good spray coverage

Alternatives to Herbicides

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



Hot Foam & Steam



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

Waipuna Hot Foam Weed Control