



Horsenettle

Herbicides for Cut Flower Production

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Review: Types of Herbicides

- Contact postemergent
- Systemic postemergent
- Preemergent
- Broadleaf specific
- Grass specific



Yellow
Nutsedge

Our Challenges:

- Killing or controlling the growth of unwanted vegetation without damaging desired crops.
- Avoiding leaving behind chemical residues that impact the next crop.
- Using the least toxic materials while still managing the specific weed(s).

Why the Herbicide Label is so important:

- Many herbicides have variable rates based on soil type, organic matter, and weed problem.
 - Glyphosate can vary in concentration from 1.5% to 8% depending on the weed.
- Surfactants: many herbicides have specific surfactants.
- Tank mixes: some herbicides come with recommendations for tank mixes to improve the control of a broader number of weeds.
- Exclusion zones: some herbicides (Strategy) require 300' or more distance to residential housing (tree and shrub damage likely).
- Herbicides like Devrinol are very rapidly broken down in sunlight, so need to be watered in within 48 hours after application.
- Residue carry over information.
- Application and applicator safety instructions.

Contact postemergent

- Off target drift may spot, but generally does no real damage.
- Gramoxone
 - Formerly known as Paraquat
 - Carries a poison label
 - Very fast burn down
- Scythe
 - Pelargonic acid (natural plant derived compound)
 - Very fast burn down

Systemic postemergent

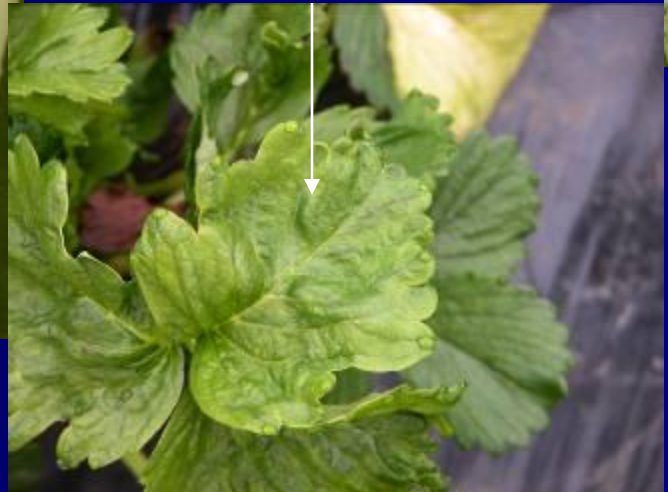
- Glyphosate (Roundup)
 - Marketed under a huge number of labels
 - Excellent for perennials
 - May take 3-10 days depending on temperatures.
 - Wide rate range depending on weeds to be treated.
 - Off target drift can do extreme damage
 - Can be sprayed and wick applied.

Off target drift damage

2-4,D damage



Glyphosate Damage



Carry over damage

Some glyphosate products:

Accord Arcade Azural Clycel Hockey
Kleenup Muster Ranger Rodeo Roundup
Shackle Solado Spasor Sting Avail Jury
Protocol Rattler Alphee Swing Laredo
Ridder Gallup Glider Trend Stirrup
Tender Buggy Tumbleweed Mirage Spark
Kusatoban Glifonox Expedite Honcho
Pondmaster Rondo Glyphogan Helosate
Complete

More glyphosate products:

Prosecutor Weedmaster Glifusato
Gliaika Glistar Compadre Soutchout
Durango Egret Cardinal Gilon Glyfos
Atila Vision Ruler Rascal Silhouette
Spasur Stacato Dart Trop Glyphotox
Glycel Lider Rophosate Glitex Glytex
Sunup Kickdown Weedoff Pin-up
Ground-up Steston Credit

Systemic postemergent

■ Finale

- Nonselective
- AI: Glufosinate-ammonium
- Variable rate based on temps, droughtiness, density of weeds
- High danger of drift damage
- Generally faster than glyphosate products

Alternative methods of post emergent application:



Plastic bottle
shield



Wick stick



Danville
Edger

Preemergent

- Multiple modes of action, but all kill the weed before it clears the soil.
- Common cut flower preemergent cut flower herbicides:
 - Surflan A.S.
 - Treflan 5G and Preen
 - Pendulum 2G
 - Ronstar G
 - Pennant Magnum
 - Devrinol
 - Gallery
 - Dimension EC

Surflan A.S.

- AI: Oryzalin
- Formulation: Aqueous suspension
- Good for many grasses
- Broadleaves: pigweeds, chickweed, purslane, oxalis, lambsquarter,
- Some control: horseweed, morningglories, smartweed, velvetleaf..
- Good around: Asters, Foxglove, Campanula, Veronica, Sedum, Verbena, Yarrow, Snaps, Dianthus, Coneflower, Iris, Rudbeckia, Salvia, Zinnia.....

Treflan and Preen

- Multiple formulations including granular
- AI: Trifluralin
- Weeds controlled: most grasses, knotweed, pigweed, purslane, chickweed...
- Extraordinarily broad labels
- Incorporation / watering in required

Pendulum 2G

- AI: Pendimethalin
- Formulation: Granular
- Safe around most woody plants
- Safe around most perennials & bulbs
- Better for broadleaved weeds, but will control some grasses
- Good for: chickweeds, clover, lambsquarters, pigweeds, purslane, smartweed, oxalis...
- Annuals: Ageratum, Platycodon, Dianthus, Salvia, Snaps, Statice, Zinnia

Ronstar

- AI: Oxadiazon
- Formulation: Granular
- Some grass control
- Good on: Galinsoga, Smartweed, Oxalis,
- Excellent on woodies w/some exceptions
- Use carefully on perennials and annuals



Hairy Galinsoga

Pennant Magnum

- AI: S-metolachlor
- Good for many grasses, and nutsedge
- Some control of: purslane, nightshade, and johnsongrass
- Extremely broad label: Zinnia, Yarrow, Ageratum, Snaps, Milkweeds, Campanula, most woody plants, Iris....

Devrinol 2-G

- AI: Napropamide
- Granular formulation
- Grasses and some broadleaved weeds
- Labeled for: zinnia, dahlia, glads, yarrow, coneflower, asters, mums...
- Good for many grasses and purslane, chickweed, pigweed, lambsquarter...
- Must be watered in.

Gallery



Field bindweed aka:wild morninglory

- AI: Isoxaben
- Formulation: Dry Flowable
- Specialty material for tougher weeds
 - Galinsoga at 10.5g/1,000ft²
 - Bindweed suppression at 14g/1,000ft²
- Noted to damage: Echinacea, Hydrangea, Sedums....

Dimension EC

- AI: Dithiopyr
- Formulation: Emulsifiable Concentrate
- Grasses controlled: crabgrass, goosegrass, foxtails
- Broadleaves controlled: chickweed, knotweed, purslane, carpetweed...
- Good around: Rudbeckia, Celosia, Aquilegia, Dianthus, many woodies, Sedum, Snapdragon, Yarrow....

Broadleaf specific

- Mostly used in grass crops
- Most are growth regulator types
- Very limited use in cutflowers
- Examples: 2,4-D, Banvel, Trimec.....

Grass specific

- Fusilade, Envoy, Acclaim
- Can often be applied “over the top” of many woodies and broadleaved plants.
- May require multiple applications
 - Species dependant
 - Size dependant
 - Growth stage dependant

Things to consider pre-application:

- Formulation:
 - WP, G, WDG, EC...
- Sprayer calibration, how much are you applying?
- Rate
- What crops comes next in the rotation?
- Incorporate or water in?
- Drift management
- Herbicide vs. hand weeding vs. mulching?

Always read the label

- Most have excellent application instructions.
- Many have specific surfactant requirements
- Tank mixing instructions
- PPE, REI
- Variable rates
- You are legally responsible

**Thank you. Your
comments and questions
please.**

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