Managing Weeds

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What Type of Plant?

Broadleaf

Grass

Sedge
Types of Herbicides

- Pre-emergent (relative to the weed)
- Post-emergent (relative to the weed)
- Residual (active in the soil for weeks/months/year) or
- Non-residual (not soil active)
- Apply before crop emergence, while dormant, or to actively growing crop?
Herbicide Modes of Action

Growth regulators
Benzoic acids (Banvel, Clarity, Distinct, Status)
Phenoxy acetic acids (2,4-D, 2,4-DB)

Amino acid synthesis inhibitors
Amino acid derivatives
Glyphosate (Roundup and others)

Lipid synthesis inhibitors

Seedling growth inhibitors

Photosynthesis inhibitors

Cell membrane disruptors

Pigment inhibitors
# SITE OF ACTION CLASSIFICATION

<table>
<thead>
<tr>
<th>GROUP</th>
<th>Site of Action</th>
<th>Family</th>
<th>Product</th>
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<tbody>
<tr>
<td>3</td>
<td>Microtubule assembly inhibition (10)</td>
<td>Dinitroaniline</td>
<td>Balan Pendimax Prowl</td>
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<tr>
<td>4</td>
<td>Synthetic auxin (24)</td>
<td>Phenoxy</td>
<td>2,4-D Butyrac</td>
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<td></td>
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<td></td>
<td>Banvel Clarity</td>
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<td></td>
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<td>Benzoic acid</td>
<td>Stinger</td>
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<td>Carboxylic acid</td>
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Resistance to Glyphosate is Possible... But is Known to be a Rare

The historical rate of development for glyphosate resistance is much slower than most all other herbicide families.
2,4-D / Banvel / Crossbow
Growth regulators that kill all broadleaf weeds (and young grasses). Apply near bud stage when plants are actively growing in late-spring through summer. Only Crossbow is effective on smooth bedstraw.

Glyphosate (RoundUp)
Must be taken in by leaves and transported to roots. Apply to actively growing plants with plenty of foliage (grasses 8” tall). Works best in the fall as perennials store energy in roots. Will not kill annuals that are nearing the bud stage.
Common troublesome weeds
Questions?