Chemical Control of Noxious Weeds
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Compiled By
Gerald Smith
Box Elder County Weed Department

Information compiled from the
1997-2002
Montana-Utah-Wyoming, Cooperative Extension Service Weed Management Handbook’s

Editing, Photographs, & design by
Nathan D. Belliston
The information contained in this document is an abridgement of the 1997-2002 Weed Management Handbook’s. It has been designed for use as a pocket field resource for general reference only. Because laws, regulations, and chemical labels undergo periodic changes, always refer to the chemical label from the container you are using for specific updated information.

Noxious weed control is a complex process involving several steps before an infested site can be stabilized and returned to desirable vegetation.

Herbicides can be effective, but alone do not ensure success. Long term objectives for an infested site should be devised. Natural control such as competition from perennial grasses in association with weed species may enhance herbicide effectiveness.
# Spot Treatment Herbicide Rate Chart

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<table>
<thead>
<tr>
<th>PRODUCT</th>
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<th>RATE</th>
<th>AMT. OF WATER</th>
<th>COVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accord</td>
<td>BW &amp; GW</td>
<td>4 fl. oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Ally</td>
<td>BW</td>
<td>0.85 grams</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Arsonal</td>
<td>BG</td>
<td>3.8 fl. oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Arsonal 0.5G</td>
<td>BG</td>
<td>4.6 - 6.9 lbs</td>
<td>RTU</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Atrazine 4L</td>
<td>BW</td>
<td>0.73 fl. oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Atrazine 90DF</td>
<td>BW</td>
<td>0.4 oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Banvel</td>
<td>BW</td>
<td>0.5 fl. oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Barrier 50W</td>
<td>BG</td>
<td>7.5 - 9 oz.</td>
<td>2 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Barrier 4G</td>
<td>BG</td>
<td>2.3 - 4.6 lbs</td>
<td>RTU</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>BK 800</td>
<td>BC</td>
<td>1 - 1.5 oz.</td>
<td>1 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Brushmaster</td>
<td>BC</td>
<td>3.8 - 7.6 oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Campaign</td>
<td>BW &amp; GW</td>
<td>1.5 fl. oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Casoron 4G</td>
<td>BG</td>
<td>2.3 - 4.6 lbs</td>
<td>RTU</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Crossbow</td>
<td>BW &amp; BC</td>
<td>6 fl. oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Curtail</td>
<td>BW</td>
<td>2 fl. oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Dibro 2+2</td>
<td>BG</td>
<td>4.5 - 9 lbs</td>
<td>RTU</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Diquat</td>
<td>BW &amp; GW</td>
<td>2 fl. oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Direx 4L</td>
<td>BG</td>
<td>6 fl. oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Direx 80DF</td>
<td>BG</td>
<td>3.5 oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Endurance</td>
<td>BG</td>
<td>0.36 - 0.83 oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Escort</td>
<td>BW &amp; BC</td>
<td>0.85 grams</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Evik DF</td>
<td>BW &amp; GW</td>
<td>0.9 oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Finale</td>
<td>BW &amp; GW</td>
<td>1.5 - 4 oz.</td>
<td>1 gal</td>
<td>Spray-to-wet</td>
</tr>
</tbody>
</table>

BC = Brush Control  BW = Broadleaf Weeds  GW = Grassy Weeds  BG = Bare Ground  CS = Cut Stump  RTU = Ready to Use  Spray-to-wet = Thorough coverage of plant but not to point of run-off

Add 2 fl. oz. of non-ionic surfactant to every 3 gal. of spray solution.
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</thead>
<tbody>
<tr>
<td>Fusilade DX</td>
<td>GW</td>
<td>2.25 fl. oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Fusion</td>
<td>GW</td>
<td>2.25 fl. oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Gallery 75DF</td>
<td>BG</td>
<td>7 - 14 grams</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Garlon 3A</td>
<td>BC</td>
<td>2 - 4 oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Garlon 4</td>
<td>BC</td>
<td>1 - 3 oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Glyfos</td>
<td>BW &amp; GW</td>
<td>4 fl. oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Gramoxone</td>
<td>BW &amp; GW</td>
<td>0.5 fl. oz.</td>
<td>1 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Grazon P+D</td>
<td>BW</td>
<td>3.8 - 7.6 oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Hi-Dep</td>
<td>BW</td>
<td>4 fl. oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Hi-Pen</td>
<td>BW</td>
<td>4 fl. oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Hyvar X-L</td>
<td>BG</td>
<td>17 fl. oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Hyvar X WP</td>
<td>BG</td>
<td>5.5 oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Karmex DF</td>
<td>BG</td>
<td>3.5 oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Krenite S</td>
<td>BC</td>
<td>11.5 fl. oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Krovar I DF</td>
<td>BG</td>
<td>4.4 oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Milestone</td>
<td>BG</td>
<td>6.5 grams</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>MSMA 6 Plus</td>
<td>GW</td>
<td>1.3 fl. oz.</td>
<td>2.5 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Oust</td>
<td>BG</td>
<td>1.3-5.2 gram</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Paramount</td>
<td>BW &amp; GW</td>
<td>0.18 oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Pathfinder II</td>
<td>CS</td>
<td>RTU</td>
<td>RTU</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Pathway</td>
<td>CS</td>
<td>RTU</td>
<td>RTU</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Patron 170</td>
<td>BC</td>
<td>8 fl. oz.</td>
<td>5 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Pendulum 3.3</td>
<td>BG</td>
<td>1.8 - 3.6 oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
</tbody>
</table>

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<tr>
<td>Pendulum</td>
<td>BG</td>
<td>1.2 - 2.4 oz</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Pendulum 2G</td>
<td>BG</td>
<td>2.3 - 4.6 lbs</td>
<td>RTU</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Plateau</td>
<td>BW &amp; GW</td>
<td>1 fl. oz.</td>
<td>1 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Plateau Eco</td>
<td>BW &amp; GW</td>
<td>1.44 fl. oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Pramitol 25E</td>
<td>BG</td>
<td>15 - 29 oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Pramitol 5PS</td>
<td>BG</td>
<td>3.5 - 9 lbs</td>
<td>RTU</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Predict DF</td>
<td>BG</td>
<td>1.8 oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Princep Liquid</td>
<td>BW</td>
<td>2 fl. oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Princep Cal 90</td>
<td>BW</td>
<td>1 oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Remedy</td>
<td>BC</td>
<td>1 - 3 oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Rodeo</td>
<td>BW &amp; GW</td>
<td>3 fl. oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Ronstar 50</td>
<td>BG</td>
<td>1.5 oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Roundup PRO</td>
<td>BW &amp; GW</td>
<td>4 fl. oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Roundup Dry</td>
<td>BW &amp; GW</td>
<td>1 oz.</td>
<td>1 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Sahara DG</td>
<td>BG</td>
<td>5 oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Salvan</td>
<td>BW</td>
<td>0.36 fl. oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Snapshot 2.5</td>
<td>BG</td>
<td>2.3 - 4.6 lbs</td>
<td>RTU</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Solution</td>
<td>BW</td>
<td>1 - 2 oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Spike 80 WSP</td>
<td>BG</td>
<td>1.8 oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Spike 20P</td>
<td>BC</td>
<td>4 - 11 oz.</td>
<td>RTU</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Sprakil SK-13</td>
<td>BG</td>
<td>3.5 - 9 lbs</td>
<td>RTU</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Stalker</td>
<td>CS</td>
<td>8 - 12 oz.</td>
<td>1 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Stinger</td>
<td>BW</td>
<td>0.1 - 0.5 oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
</tbody>
</table>

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</thead>
<tbody>
<tr>
<td>Surflan A.S.</td>
<td>BG</td>
<td>4.5 fl. oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Telar DF</td>
<td>BW</td>
<td>0.65 grams</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Topsite 2.5G</td>
<td>BG</td>
<td>4.5 - 6.8 lbs</td>
<td>RTU</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Tordon RTU</td>
<td>CS</td>
<td>RTU</td>
<td>RTU</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Tordon 101</td>
<td>BW &amp; BC</td>
<td>3.8 fl. oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Tordon K</td>
<td>BW</td>
<td>0.2 - 1.5 oz.</td>
<td>1 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Tordon 22K</td>
<td>BW</td>
<td>0.1 - 0.75 oz</td>
<td>1 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Touchdown 5</td>
<td>BW &amp; GW</td>
<td>4 fl. oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Transline</td>
<td>BW</td>
<td>2 fl. oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Trimec 992</td>
<td>BW</td>
<td>1.5 fl. oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Vanquish</td>
<td>BW</td>
<td>0.5 fl. oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Vegemec</td>
<td>BG</td>
<td>1 gal</td>
<td>8 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Velpar L</td>
<td>BG</td>
<td>8 fl. oz.</td>
<td>3 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Veteran 10G</td>
<td>BW &amp; BC</td>
<td>0.5 - 2 lbs</td>
<td>RTU</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Veteran 720</td>
<td>BW</td>
<td>3 fl. oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Vista</td>
<td>BW</td>
<td>0.25 - 0.5 oz</td>
<td>1 gal</td>
<td>1,000 sq. ft.</td>
</tr>
<tr>
<td>Weedmaster</td>
<td>BW</td>
<td>3 fl. oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>Weedone 638</td>
<td>BW</td>
<td>5 fl. oz.</td>
<td>1 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>4 lb Amine</td>
<td>BW</td>
<td>4 fl. oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>4 lb LoVol</td>
<td>BW</td>
<td>4 fl. oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
<tr>
<td>6 lb LoVol</td>
<td>BW</td>
<td>2.7 fl. oz.</td>
<td>3 gal</td>
<td>Spray-to-wet</td>
</tr>
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Source - Helena Chemical Company
**CHEMICAL CONTROLS**

**Bindweed, Field**

**FORMULA 1**

1 to 2 pts of Clarity + 1 to 2 qts of 2,4-D (4EC) per acre,

**OR**

1 to 2 pts of Clarity + 1 1/3 to 2 1/2 pt 2,4-D (6EC) per acre.

Apply in late summer or fall prior to killing frost. Best control is achieved when weeds are actively growing and in post-bloom stage. Follow-up application should be made in spring to control seedlings.

**FORMULA 2**

1 to 2 qts of Tordon 22K per acre for spot treatment,

**OR**

1/2 to 1 pt of Tordon 22K tank-mixed with 1 qt of 2,4-D (4EC) per acre for broadcast treatment.

Timing is not critical. Most consistent results are obtained when bindweed has 8 to 12 inch runners. Apply as a coarse, low pressure spray. Ground application only.

**RESTRICTED USE HERBICIDE**

**FORMULA 3**

2 to 3 qts of 2,4-D Amine (4EC) per acre.

Apply at the bud growth stage or make summer fallow applications early August. 2,4-D on bindweed reduces stand 60 to 80% and prevents seedling establishment. It is important to apply 2,4-D every year.

Continued...
Bindweed, Field continued

FORMULA 4
1 qt of **Roundup Ultra** + 1/2 pt of **Clarity** per acre.

Apply in mid to late bloom, but before seed maturity. Application to fall regrowth may provide some control. This tank mix is for use during summer fallow before planting small grains. Some crop injury may occur if **Clarity** is applied within 45 days of planting. **Roundup Ultra** is a nonselective herbicide.

FORMULA 5
54 oz of **Landmaster BW** per acre.

Apply in fallow or post-harvest when bindweed runners are at least 10 inches long. Post treatment tillage may improve control. In fallow, cultivate until July 1, then allow weeds to grow to treatment stage.

**Burdock, Common**

FORMULA 1
2 qts of **2,4-D (4EC)** per acre,  
**OR**  
2 3/4 pts of **2,4-D (6EC)** per acre.

Apply before flower bud development. Plants should be actively growing.

FORMULA 2
1/2 to 3 pts of **Clarity** per acre, depending on stage of growth.

Apply from 3” to bolting stage. The best performance is when the application is at early growth stages. Lower rates are for young plants.

Continued...
Burdock, Common continued

FORMULA 3
1/2 oz of Escort per acre

Apply when the burdock is fully emerged, in early June through late summer. Use a nonionic surfactant. Use solution within 24 hours.

Cattail, Common

FORMULA 1
1 1/2 gal of 2,4-D Ester (4EC) per 100 gal of water for spot treatment, OR
1 gal of 2,4-D Ester (6EC) per 100 gal of water for spot treatment.

Apply before cattail heads appear in the spring. Thoroughly wet the foliage. 2,4-D must be reapplied to give satisfactory control.

FORMULA 2
1 1/2 qts of Roundup Ultra per acre, OR
4 1/2 to 6 pts of Rodeo per acre.

Apply to cattails in the early to full bloom stage. Additional surfactant should be used on cattails. Rodeo should be used wherever water is present. Roundup Ultra and Rodeo are nonselective herbicides.
Cress, Hoary (Whitetop)

**FORMULA 1**

For non-cropland use
2 qts of **2,4-D** (4EC) per acre, 
**OR**
2 3/4 pts of **2,4-D** (6EC) per acre.
For selective treatment use
1 qt of **2,4-D** (4EC) per acre, 
**OR**
1 1/3 pts of **2,4-D** (6EC) per acre.
Apply in early growth stage of hoary cress, little control is attained after the bud stage.
In cereals, apply **2,4-D** before the boot stage.
When possible, use **2,4-D** on hoary cress plants before plowing the fields in the spring. Re-spray in the fall if new growth appears.

**Dock, Curly**

**FORMULA 1**

For spot treatments use:
1 qt of **2,4-D** (4EC or 6 EC) per 50 gal of water, 
**OR**
1 qt of **Clarity** per 50 gal of water, 
**OR**
1 qt of **Tordon 22K** 50 gal of water.
Apply before flower stem elongation. Retreatments will be needed to control regrowth. **Tordon 22K** is a RESTRICTED USE HERBICIDE.

**FORMULA 2**

1 oz of **Telar** per acre.
Apply to actively growing plants. Use a nonionic surfactant. Use solution within 24 hours.
Dock, Curly continued

FORMULA 3
1/2 to 1 oz of Escort per acre.

Apply to young actively growing plants. Use a nonionic surfactant. Use solution within 24 hours.

FORMULA 4
3 to 5 qts of Roundup Ultra per acre.

Apply at early bud stage. Roundup Ultra is a nonselective herbicide.

Goatgrass, Jointed

FORMULA 1
1 1/3 oz of Oust per acre.

Apply in late fall. Do not apply to frozen ground. Maintain constant agitation for the spray solution. Do not use Oust on cropland. Use equipment for non-crop uses only or clean equipment thoroughly. Use spray solution within 24 hours.

FORMULA 2
1 1/3 oz of Roundup Ultra per acre.

Apply when all plants have emerged. Roundup Ultra cannot be used selectively in small grains but must be used as a spot treatment near field edges or within fields to prevent seed development.
Gumweed, Curlycup
FORMULA 1
1 oz of Escort per acre.

Apply in early spring when new growth and seedlings are fully emerged. Use spray solution within 24 hours. Use nonionic surfactant.

FORMULA 2
2 qts 2,4-D Ester (4EC) per acre, OR
2 3/4 pts 2,4-D Ester (6EC) per acre.

Apply in early spring when new growth and new seedlings are fully emerged. Control is reduced if plants have reached the bloom stage.

FORMULA 3
1 pt of Tordon 22K per acre, OR
2 qts of Grazon per acre.

Apply in very early spring shortly after all plants have reached the seedling stage. RESTRICTED USE HERBICIDE.

Halogeiton
FORMULA 1
1/2 to 1 oz of Escort per acre.

Apply in early spring when new growth and seedlings are fully emerged. Use a nonionic surfactant. Use spray solution within 24 hours. Continued...
Halogencontinued  
FORMULA 2  
2 qts of 2,4-D Ester (LV4EC) per acre,  
OR  
2 3/4 qts of 2,4-D Ester (LV6EC) per acre.  
Apply from bolting stage to early bud stage.  
Use a nonionic surfactant.  

FORMULA 2  
1 oz of Telar per acre.  
Apply during the bud to early bloom stage.  
Use on non-cropland. Use a nonionic surfactant. Use spray solution within 24 hours.  

FORMULA 3  
1 oz of Escort or Ally per acre.  
Apply during the bud to early bloom stage.  
Use Escort when spraying on rangeland and Ally for pasture land. Use a nonionic surfactant. Use spray solution within 24 hours.  

Henbane, Black  
FORMULA 1  
2 qts of 2,4-D (4EC) + 1 pt of Banvel or Vanquish per acre,  
OR  
1 qt of 2,4-D (4EC) + 1/4 pt of Banvel or Vanquish per 50 gal of water,  
OR  
1/4 pt of 2,4-D + 1/8 pt of Banvel or Vanquish per gal in a backpack sprayer for spot treatment. Apply when actively growing to flowering stage. Annual re-spraying will be required until no regrowth is observed.  
Continued...
Henbane, Black continued

FORMULA 2
1/2 oz Escort + 2 qts 2,4-D Ester (LV6EC) per acre.

Apply from rosette to bloom stages. Use a nonionic surfactant. Use solution within 24 hours.

Houndstongue

FORMULA 1
2 qts of 2,4-D Ester (4EC) per acre, OR
2 3/4 qts of 2,4-D Ester (6EC) per acre.
Apply in early spring before bloom occurs. Houndstongue is especially poisonous to horses, either as fresh forage or in hay.

FORMULA 2
1 oz of Escort per acre.
Apply in mid-June when the plant is in the seedling or bolting stage. Use a nonionic surfactant. Use spray solution within 24 hours.

FORMULA 3
12 oz of Plateau per acre.

Apply prior to bloom stage. Use methylated seed oil at 1 1/2 to 2 pts per acre.
Knapweed, Diffuse and Spotted

FORMULA 1
1 to 1 1/2 pts of Tordon 22K per acre, OR
2 to 3 qts of Grazon per acre.

Apply from rosette to mid-bolting stage.
RESTRICTED USE HERBICIDES.

FORMULA 2
2 qts of 2,4-D (4EC) per acre, OR
2 3/4 qts of 2,4-D (6EC) per acre.

Apply at early bolt stage. Re-treatment will be required to control late season growth. Use a nonionic surfactant.

FORMULA 3
1 pt of Clarity + 1 qt of 2,4-D (4EC) per acre.

Apply in early spring to actively growing plants prior to bolting. Use a nonionic surfactant.

Knapweed, Russian

FORMULA 1
1 gal of Roundup Ultra per acre.

Apply to actively growing knapweed when most plants are at the late bud to early flower stage. This treatment is usually effective in eliminating most of the knapweed. Re-spraying will be necessary the second year to catch escaped plants. Roundup Ultra is a nonselective herbicide. Continued...
**Knapweed, Russian continued**

**FORMULA 2**

1 pt to 2 qts of *Tordon 22K* per acre.

Apply when plants are in the early flower stage up to the time of the first killing frost. Competition from crops or grasses following treatments is important. **RESTRICTED USE HERBICIDE.**

**FORMULA 3**

2 to 4 pts of *Curtail* per acre,  
**OR**  
2/3 to 1 1/3 pints *Transline* per acre.

Use in rangeland and pastures. Lower rate, suppression only for cereal grain. Higher rates for fallow, post-harvest, and CRP applications. Consult label. CRP requires high spray volume. Apply from full bloom up to killing frost. Lowest rates best when applied following a killing frost.

**FORMULA 4**

1 1/2 oz of *Telar* per acre.

Apply to rosette, pre-bloom to bloom. Maintain agitation and apply minimum of 10 gal of water per acre with ground equipment. The rate is dependent on soil texture and plant stage. Use nonionic surfactant. Use spray solution within 24 hours.
**Milkwheat**

**FORMULA 1**
2 to 3 qts of Tordon 22K per acre.

Apply at bud to early bloom stage. RESTRICTED USE HERBICIDE.

**FORMULA 2**
2 qts of Clarity per acre.

Apply from full emergence to bloom stage.

**Olive, Russian**

**FORMULA 1**
3 pts Arsenal + 1 qt Roundup Ultra per acre.

Apply in late summer or early fall. Arsenal and Roundup Ultra are absorbed in foliage and roots and translocated throughout plant. Complete kill takes several weeks. Add a nonionic surfactant. Use minimum of 10 gals of water per acre. Roundup Ultra is a nonselective herbicide.

**Pepperweed, Perennial**

**FORMULA 1**
1 oz of Escort per acre.

Apply to actively growing plants, prior to full bloom. Use a nonionic surfactant.

**FORMULA 2**
1 oz of Telar per acre.

Apply during bud to early bloom stage. Use a nonionic surfactant.
**Puncturevine**

**FORMULA 1**
- 2 qts of *2,4-D* (4EC) per acre,
  **OR**
- 2 qts of *2,4-D* (6EC) per acre

Apply to actively growing, fully emerged plants prior to bloom stage.

**FORMULA 2**
- 1 1/2 oz of *Telar* per acre.

Apply after plant has fully emerged. Use a minimum of 10 gal of water per acre. Use a nonionic surfactant.

**Quackgrass**

**FORMULA 1**
- 1 to 3 qts of *Roundup Ultra* per acre,
  **OR**
- 1 to 2 qts of *Roundup Ultra* per acre for non-sodded quackgrass,
  **OR**
- 2 to 3 qts *Roundup Ultra* per acre for sodded quackgrass.

Apply when quackgrass is in the late boot stage to early flowering stage. Thorough wetting of foliage is necessary. Seedlings will soon emerge after treatment. Follow-up treatments will be necessary for complete control. *Roundup Ultra* is a nonselective herbicide.
Ragweed, Common

**FORMULA 1**
2 qts of 2,4-D Ester (4 or 6EC) per acre.
Apply after plants have fully emerged prior to flowering. Thoroughly wet foliage. Use 50 gal of water per acre.

**Sagebrush, Big**

**FORMULA 1**
2 qts of 2,4-D Ester (LV4 or 6 EC) per acre.
Apply when plants are actively growing.

**FORMULA 2**
1 to 2 1/2 lbs of Spike per acre.
May be applied any time the soil is not frozen.

**FORMULA 3**
1 pt of Tordon 22K +1 qt of 2,4-D (6EC) per acre.
Apply when plants are actively growing and fully emerged up to flower bud formation. Tordon is a RESTRICTED USE HERBICIDE.

**Snakeweed, Broom**

**FORMULA 1**
1 pt of Tordon 22K per acre,
OR
2 qts of Grazon per acre.
Apply from full leaf to early boom, during active growth stages. RESTRICTED USE HERBICIDES.
Snakeweed, Broom continued
FORMULA 2
1/2 oz of Escort per acre.

Apply in early spring when plant is 3-4” tall and actively growing. Use a nonionic surfactant.

Sowthistle
FORMULA 1
2 qts of 2,4-D Ester (4EC) per acre, OR
2 3/4 qts of 2,4-D Ester (6EC) per acre.

Apply at the bud stage and on regrowth. Follow-up applications are necessary.

Spurge, Leafy
FORMULA 1
2 qts of Clarity per acre.

Apply in spring or early summer. Repeat treatments as necessary. Clarity is both soil and foliar active. Non-cropland only at labeled rates. Keep spray away from water sources. Do not graze livestock in treated fields within 30 days of slaughter.

Continued...
Spurge, Leafy continued

FORMULA 2

1 to 3 qts of Tordon 22K per acre.

Near water, restrict use to a series of 1 qt per acre applications. Control may improve by adding 1 qt of 2,4-D to each qt of Tordon per acre. Apply during growing season up to and following the first frost. Lower rates are best after the first frost. Tordon gives excellent control with follow-up treatments. Soil residual at higher rates. RESTRICTED USE HERBICIDE.

FORMULA 3

1 qt of 2,4-D Ester (4EC) per acre, OR
1 1/3 pt of 2,4-D Ester (6EC) per acre.

Use lower rates to prevent seed formation in the bud to early bloom stage, Use higher rates in early spring applications. Retreatments will be necessary.

Continued...
Spurge, Leafy continued
FORMULA 4
1 pt of Roundup Ultra + 1 pt of 2,4-D Amine (4EC) + 1% nonionic surfactant per acre, OR
54 oz of Landmaster BW per acre.

Applications need to be split on 30 day intervals. 1 pt applications of Roundup Ultra should be applied approximately June 1, July 1, and August 1. 2 pt applications of Roundup Ultra should be applied about June 1 and July 1. 1 pt applications will leave more perennial grasses. 2 pt applications will control perennial grasses. Applications will prevent vegetation growth the year of application and will stunt leafy spurge, preventing seed production the second year. Repeated treatments will be necessary for continued control.

Thistle, Canada
FORMULA 1
2/3 to 1 1/3 pt Stinger or Transline per acre, OR
2 to 4 pt Curtail per acre.

Apply to actively growing rosettes to the early bloom stage. Use in non-cropland and fallow systems. Use only once per 12 month period. Do not rotate to crop except wheat, barley, oats, grass, and sugar beets for one year following treatment. Do not contaminate water. Apply only by ground application when using Stinger or Transline. Continued...
Thistle, Canada continued

FORMULA 2
1 to 1 1/2 oz of Telar per acre.

Apply to bud to bloom stage. Do not apply to frozen ground. Maintain agitation while mixing. Use a minimum of 10 gal of water.

FORMULA 3
1/2 to 1 qt of Clarity per acre.

Apply any time during growing season. Uptake is through both the foliage and root system. May mix with 1 qt of Roundup Ultra for fall applications.

FORMULA 4
1 to 2 qts of Tordon 22K per acre, OR
2 to 3 qts of Tordon 22K per 100 gal of water for spot treatments. Rates below 2 qts, tank mix with 1 qt of 2,4-D per acre. Best control is obtained when applied to thistle before or at bud stage. RESTRICTED USE HERBICIDE.

FORMULA 5
2 to 3 qts of Roundup Ultra per acre.

Apply when thistles are past the bud growth stage. Allow three days for maximum root translocation before tillage treatments. Roundup Ultra is a nonselective herbicide.
FORMULA 1
1 to 2 qts of Curtail per acre, OR
2/3 to 1 1/3 pts Transline per acre.

Apply after rosettes have emerged but before flower stem is fully developed. Apply lower rate for areas where there is rapid growth and good moisture situations. Ensure good total coverage. Do not rotate to any other crop other than wheat, barley, oats, or grass for one year after treatment. Do not graze dairy cattle for 14 days after application. Do not cut hay for 30 days after application.

FORMULA 2
1/2 to 1 oz of Escort per acre.

Apply in early summer following emergence of thistle seedlings and rosettes. Some musk thistle biotypes may be controlled with 1/4 to 1/2 oz of Escort per acre.

FORMULA 3
1 to 2 pts of Tordon 22K per acre.

Apply in the spring before scotch or musk thistle produces seed stalks. Follow-up applications will be necessary to control new seedlings and escaped plants. RESTRICTED USE HERBICIDE.
Toadflax, Dalmatian

FORMULA 1
2 oz of Telar per acre.

Apply to actively growing plants in spring or fall. Use a nonionic surfactant. Telar is labeled for non-cropland use only. Use solution within 24 hours.

FORMULA 2
1 to 2 qts of Tordon 22K per acre.

Apply to actively growing plants through full bloom or to fall regrowth. Fall applications after the first killing frost are especially effective. RESTRICTED USE HERBICIDE.

Woad, Dyer’s

FORMULA 1
1 1/2 to 2 qts 2,4-D (4EC) per acre, OR
2 to 2 1/2 pts 2,4-D (6EC) per acre.

In rosette stage, treatments should be made after seedlings have started growth in fall. Repeated treatments will be required for effective control. Treatment may damage small grains at these application stages. Do not graze for 2 weeds. Do not feed livestock treated straw.

Continued...
Woad, Dyer’s continued

FORMULA 2

3/4 oz of Escort or Ally per acre.

Apply post-emergence to young actively growing plants. Use a nonionic surfactant. Do not apply to frozen ground. Maintain constant agitation. Apply minimum of 10 gal of water per acre using ground equipment. Use in pastures and non-cropland. Clean sprayer thoroughly. Use solution within 24 hours.

FORMULA 3

1 oz of Telar per acre

Apply pre or early post-emergence to control young plants. Use a nonionic surfactant. Use in pastures and non-cropland. Clean sprayer thoroughly. Use spray solution within 24 hours.