Strategic Use of Herbicides for Noxious, Obnoxious & Toxic Weed Control

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Labels / MSDS

- Manufacturers
- Other Search Options
- Terms of Use

Dow AgroSciences LLC
Crossbow® Herbicide, EPA Reg No. 62719-260

Available PDF files for Viewing:
- Specimen Label, D02-032-013 (EPA accepted 5/27/08; CA accepted 3/16/10; NY accepted 6/21/10)
- 24(c) Registration, WA-010031 R-032-003 For Control of Unwanted Trees in Abandoned Orchards
- MSDS, 05/12/2011
Specimen Label

Dow AgroSciences

Crossbow®

Specialty Herbicide

Low Volatile Weed and Brush Herbicide

For the control of most kinds of unwanted trees and brush, as well as annual and perennial broadleaf weeds on rangeland, permanent grass pastures, conservation reserve program (CRP) acres, fence rows, non-irrigation ditchbanks, roadsides, other non-crop areas and industrial sites

Active Ingredient(s):
- 2,4-dichlorophenoxyacetic acid, butoxyethyl ester.................................................................34.4%
- triclopyr BEE: 3,5,6-trichloro-2-pyridinyloxyacetic acid, butoxyethyl ester......................................16.5%

Other Ingredients .................................................................49.1%

Total ..................................................................................100.0%

Contains Petroleum Distillates

Acid Equivalents:
- 2,4-dichlorophenoxyacetic acid - 23.7% - 2 lb/gal
- triclopyr - 11.9% - 1 lb/gal

EPA Reg. No. 62719-260

Keep Out of Reach of Children

CAUTION

All mixers, loaders, applicators, flaggers, and other handlers must wear:
- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves made of any waterproof material such as barrier laminate, nitrile rubber, neoprene rubber, and viton
- Protective eyewear
- Chemical resistant apron when mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate

See engineering controls for additional requirements

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protections Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)].

User Safety Recommendations

Users should:
- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

First Aid

If swallowed: Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

Note to Physician: This product may pose an aspiration pneumonia hazard. Contains petroleum distillates.
I would like to convert a fallow field into a pasture for my horses. The field has a lot of Johnson grass and Foxtail in it. How do I get rid of this?
Weed Control Annuals

% Control

Seedling
Vegetative
Flowering
Mature
Pasture Herbicides
Post Emergence Grass Control

• Lipid Synthesis Inhibitor
  Aryoxyphenoxy-Propianates
  Fluazifop-P-Butyl: Fusilade®

Cyclohexandiones
Sethoxydim: Poast®

 ✓ Post-emergence with no soil activity or uptake.
 ✓ Controls gasses only.
 ✓ Primarily leaf uptake – rapidly translocates to growing points.
 ✓ Use with crop oil concentrate (COC).
Pasture Herbicides
Post Emergence Grass Control

• **Enzyme Protoporphyrinogen Oxidase (PPO) Inhibitor:** Specifically Inhibits Acetyl-CoA Carboxylase a Key Enzyme for Fatty Acid and Flavonoid Biosynthesis

**Aryl Triazolinones**

**Clethodim: Select® or Prism®**

- Post-emergence with no soil activity or uptake.
- Controls grasses only.
- Primarily leaf uptake – rapidly translocates to growing points.
- Use with crop oil concentrate (COC).
I don’t have much in the way of grasses in my field. What should I use to kill off what’s there so that I can start over?
Pasture Herbicides
Pre-Emergence & Post-Directed

• Aromatic Amino-Acid 5 Enolpyruvyl-Shikimate-3-Phosphate Synthase (EPSP) Inhibitors

Glycines WSSA G9

Glyphosate: Roundup Weather Max® 7+

Roundup formulations or Touchdown ® or Credit® or Rattler®

✓ Post-emergence with no soil activity or uptake.
✓ Non-selective.
✓ Contact systemic herbicide: foliar absorption with excellent translocation.
✓ Consult label for surfactant use.
Pasture Herbicides
Pre-Emergence & Post-Directed

• Cell Membrane Disrupters
Bipyridiliums WSSA D22
Paraquat: Gramoxone Inteon®

✓ Post-emergence with no soil activity or uptake.
✓ Non-selective.
✓ Contact herbicide: rapid foliar absorption with some leaf translocation.
✓ Use with a non-ionic surfactant (NIS).

Chemical Disk!
Herbicide Mode of Action & Classification

- Glutamine Synthetase Inhibitor
- Phosphinic Acids WSSA H10

**Glufosinate: Ignite®, Liberty®, or Rely®**

- Non-selective Post-emergence with no soil activity or uptake
- Contact systemic herbicide: foliar absorption with moderate plant translocation
- Do not use with a surfactant – Use AMS – 4 Hour Rainfast
- Rotational Crop Restrictions:
  - Corn & Soybeans – 0 days
  - Small Grains & Vegetables – 70 days
  - Hay Crops – 180 days!
Sacrifice Lot Blues
Green Engineered Area
Annual Cover Crops

Sacrifice Lot Management - Myers 2005.doc
<table>
<thead>
<tr>
<th>Crop Species</th>
<th>Planting Date</th>
<th>Seeding Rate/A</th>
<th>Seed Cost/A*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austrian Winter Pea</td>
<td>March 1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>75 lbs</td>
<td>$39.00</td>
</tr>
<tr>
<td>Oats</td>
<td>March 1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>120 lbs</td>
<td>$22.56</td>
</tr>
<tr>
<td>Striate Lespedeza (Kobe)</td>
<td>March 5&lt;sup&gt;th&lt;/sup&gt;</td>
<td>35 lbs</td>
<td>$28.00</td>
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<tr>
<td>Korean Lespedeza</td>
<td>March 10&lt;sup&gt;th&lt;/sup&gt;</td>
<td>30 lbs</td>
<td>$21.60</td>
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<tr>
<td>Forage Soybeans</td>
<td>May 12&lt;sup&gt;th&lt;/sup&gt;</td>
<td>75 lbs</td>
<td>$45.00</td>
</tr>
<tr>
<td>German Foxtail Millet</td>
<td>May 25&lt;sup&gt;th&lt;/sup&gt;</td>
<td>30 lbs</td>
<td>$15.72</td>
</tr>
<tr>
<td>Japanese Millet</td>
<td>May 25&lt;sup&gt;th&lt;/sup&gt;</td>
<td>30 lbs</td>
<td>$22.05</td>
</tr>
<tr>
<td>Pearl Millet</td>
<td>May 25&lt;sup&gt;th&lt;/sup&gt;</td>
<td>35 lbs</td>
<td>$22.40</td>
</tr>
<tr>
<td>Hairy Vetch</td>
<td>September 1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>25 lbs</td>
<td>$31.25</td>
</tr>
<tr>
<td>Crimson Clover</td>
<td>September 1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>25 lbs</td>
<td>$34.13</td>
</tr>
<tr>
<td>Annual Ryegrass</td>
<td>September 15&lt;sup&gt;th&lt;/sup&gt;</td>
<td>30 lbs</td>
<td>$26.10</td>
</tr>
<tr>
<td>Cereal Rye</td>
<td>September 25&lt;sup&gt;th&lt;/sup&gt;</td>
<td>120 lbs</td>
<td>$19.20</td>
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</tbody>
</table>

* Seed Cost is based upon December 2, 2002 price quotes per 50 lb unit from the Southern States Corporation. Not an Endorsement. For educational purposes only.
German Foxtail Millet

5 Days AP
German Foxtail Millet
35 Days AP
German Foxtail Millet

65 Days AP
My horses are in fields full of buttercups each spring. It looks lovely, but I understand these plants are toxic for horses. How do I get rid of them for good?
Pasture Herbicides

Post Emergence Broadleaf Control

- **Growth Regulators: Abnormal Growth Response**

  **Phenoxy Acetic Acids**

  2,4-D: 2,4-D Amine®

  2,4-DB: Butyrac® 200

  ✓ Post-emergence with 1-4 weeks of soil activity.

  ✓ Controls broadleaves only.

  ✓ Foliar & root uptake translocates in the xylem & phloem.
Bluegrass, Tall Fescue & Ladino Clover
Pasture Herbicides
Post Emergence Broadleaf Control

- Proroporphyrinogen Oxidase (PPG or Protox) Inhibitor
  Triazalone

Carfentrazone-ethyl : Aim®

Post-emergence with no soil activity or uptake, rapid microbial breakdown.

- Selective broadleaf control - Does not kill established clover.
- Contact herbicide: Rapid foliar absorption with leaf translocation (15-minutes).
- Use with a non-ionic surfactant (NIS).
- Targeted Weeds: Bedstraw, bittercress, black nightshade, carpetweed, cocklebur, common mallow, jimsonweed, lambsquarters, morningglories, mustards, pigweed sp., purslane, shepherdspurse, thistles, velvetleaf, wild buckwheat, and others.
I have field full of clover and dock, but I’d like to convert it back to pasture grasses. Please help!
Pasture Herbicides
Post Emergence Broadleaf Control

- Growth Regulators: Abnormal Growth Response

Benzoic Acids

Dicamba: Banvel® or Clarity®
or Dicamba + dyflufenzopyr: Overdrive®

- Post-emergence with 1-4 weeks of soil activity.
- 30-day replant restriction for Overdrive® (Distinct® in corn). For Dicamba 20-day grass replant restriction, after hay harvest for clovers (35-days).
- Controls broadleaves only.
- Foliar & root uptake translocates in the xylem & phloem.
My pastures are in decent shape, but I still get pokeweed and thistles scattered randomly throughout the fields. How to I control these weeds?
Pasture Herbicides
Post Emergence Broadleaf Control

• Growth Regulators
  Pyridines
  Clopyralid: Stinger®
  ✓ No Grazing or haying restrictions. Apply only to established Grass.
  ✓ 12-18 months clover rotation restrictions. No grass rotation restrictions.
  ✓ Excellent on Canada thistle.

  Triclopyr: Remedy® or
  Triclopyr + 2,4-D: Crossbow® or
  Triclopyr + clopyralid: Redeem®
  ✓ Apply only to established Grass.
  ✓ No grazing or haying restrictions, except dairy.
  ✓ Clover next season rotation restrictions. 3-week grass rotation restriction.
  ✓ For Redeem® Bioassay Required.
  ✓ Spot spray to control woody species, brambles & vines.
Herbicide Drift Potential

✓ All herbicides are subject to particle drift.

✓ Vapor drift potential varies by each herbicide’s vapor potential.

✓ Droplet size controls both types of drift.

✓ Wind, temperature and humidity affects drift severity.
Distance Water Droplet Drifts While Falling 3ft in a 5mph wind

<table>
<thead>
<tr>
<th>Size</th>
<th>Microns</th>
<th>Drift Feet</th>
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<tbody>
<tr>
<td>Very Coarse</td>
<td>600</td>
<td>0.3</td>
</tr>
<tr>
<td>Coarse</td>
<td>500</td>
<td>0.4</td>
</tr>
<tr>
<td>Medium-Coarse</td>
<td>400</td>
<td>0.7</td>
</tr>
<tr>
<td>Fine</td>
<td>200</td>
<td>5.5</td>
</tr>
<tr>
<td>Very Fine</td>
<td>100</td>
<td>26.0</td>
</tr>
<tr>
<td>Ultra Fine</td>
<td>50</td>
<td>88.0</td>
</tr>
</tbody>
</table>

Note: Spray particles under 50 microns in diameter may remain suspended in the air indefinitely or until they evaporate.
I have purchased a small farmette, about 10 acres. The fencelines are old wire covered in mulitflora rose and other brambles and brush. How do I best clean up these fencelines so I can install new fence and improve the property for my horses?
Pasture Herbicides
Post Emergence Broadleaf Control

• Amino-Acid Acetolactate Synthase (ALS) Inhibitors

Sulfonyl-Ureas (SU’s)
Metsulfuron-Methyl: Ally® to Cimarron® to Cimarron® Max to Cimarron® X-tra
Grass Pasture - POST

✓ No grazing or haying restrictions.

✓ 4-34 month forage crop rotation. restrictions. **Bioassay Required.**

✓ Excellent for spot spraying multi-flora rose & brambles.

✓ Rate: 0.1– 0.3 ounces/acre.
Pasture Herbicide
Non Selective for Fencelines & Corrals.

• Mobile Photosynthetic Inhibitors

Triazines
Prometon + Simazine + Sodium chlorate + Sodium metaborate: Pramitol®

• Mobile Photosynthetic Inhibitors

Ureas
Tebuthiuron: Spike® Non-Selective
✓ No grazing restrictions for <20 lbs /Acre. Some grass selectivity.
✓ 1-year haying restriction in treated areas.
Pasture Herbicides
Post Emergence Brush & Tree Control

• Growth Regulators: Abnormal Growth Response
  Pyridinecarboxylic Acid
  Picloram+2,4-D: Tordon® RTU or Grazon® P+D
  Picloram+Fluroxypyr: Surmount®
  Environmental Use Caution with Area Restrictions & Bioassay Required. Restricted Use.

✓ Tree & Broadleaf weed control with very active & long soil residual >12-months. Also controls kudzu, poison ivy & thistles.
✓ Tordon® RTU “Ready to Use” formulation for application to cut or girdled tree trunks.
✓ Grazon® P+D & Surmount® formulated for broadcast spray application. Not recommended in Maryland.
Pasture Herbicides
Post Emergence Broadleaf Control

• Growth Regulators: Abnormal Growth Response
  Pyridinecarboxylic Acid
  Aminopyralid: Milestone®
  Aminopyralid + 2,4-D: Forefront R&P®

  Bioassay Required.

✓ Broadleaf weed control with very active & long soil residual >12-months. Also controls multiflora rose, sumac, honeysuckle and blackberry.

✓ No grazing restriction, except dairy. 7-day hay harvest interval.
Thank You!
Any Questions?