

## Initial Private Applicator Program Story Problem Packet

To be used with recorded sessions of the MSU Extension Pesticide Education Program Core Topic presentations.

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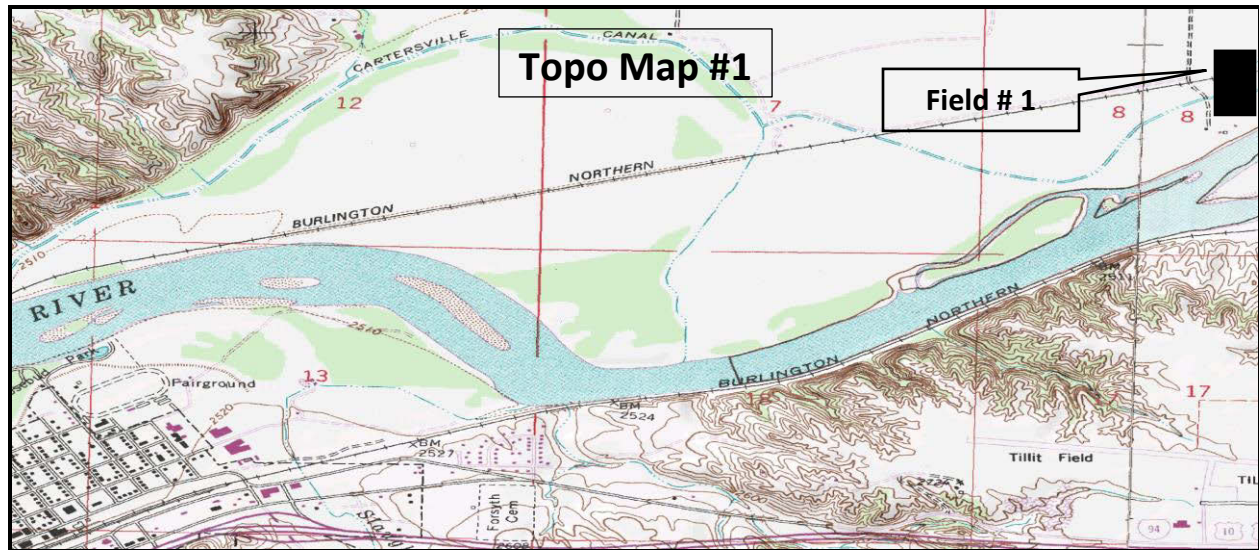
## Reading the Pesticide Product Label

Johnson wishes to apply Milestone for the management of Canada thistle on rangeland. There are caragana plants bordering the rangeland area and a dried-up irrigation ditch that carries water part of the year.

1. What is the common name of Milestone?
2. Does this product have high acute toxicity?
3. What personal protective equipment should Johnson wear while applying the pesticide?
4. Workers should stay out of the area for how long?
5. Can Milestone impact the caragana on the property?
6. Could he replant the pasture to alfalfa the next season?
7. Can he spray over the dried-up irrigation canal intended for irrigation?
8. What product rate (per acre) should Johnson use to manage Canada thistle?
9. When should he apply the product for controlling Canada thistle?

## Record Keeping

Sally made an application of Gramoxone to Field #1 to control broadleaf weeds in no-till alfalfa. A broadcast sprayer calibrated at 20 GPA (gallons per acre) was used. A total of 300 gallons of a pesticide and water solution were sprayed. Sally mapped Field #1 on Topo Map #1.



## Equations:

$$\frac{\text{Gallons Sprayed}}{\text{GPA}} = \text{Acres}$$

$$\text{Acres} \times \text{Product Rate} = \text{Total Product Needed}$$

1. What was the size of the treated area in acres?
2. Sally used the suggested application rate of 2.5 pints/acre. How many pints did she add to the tank?
3. What is the location?
4. What site was treated?
5. What is the active ingredient? Use Gramoxone label.

## Pesticides in the Environment

An application of Milestone (aminopyralid) is planned for Field #1. Use the image on the screen (below) and the Milestone label to answer the following questions.



Conditions: Daily temperature high of 75 degrees, 5 mph SW winds, rain is forecasted in the next 24 hours. Rain fell 12 hours prior.

## Pesticides in the Environment

1. What parts of the label list environmental concerns?
2. Identify the sensitive areas and potential non-target organisms within the image.
3. How might the farmer reduce non-target impacts to the sensitive areas and non-target organisms?
4. In Field #1 are two small streams. Does the farmer need to worry about applying Milestone to these areas?
5. The farmer plans to graze the area later in the summer and may sell the manure for compost. Do you have any advice for the farmer?
6. Based on the conditions and your knowledge of the Milestone label should the farmer continue his planned application? If not, what are your recommendations?

## Pesticide Safety

Mr. Greenwood wishes to apply Gramoxone SL 2.0 for managing weeds on 10 acres. He is applying the product immediately prior to a grass seed planting. His pesticide spray equipment is calibrated at 20 GPA and some weeds are 9 inches high.

1. What is the signal word?
2. What respiratory equipment must he wear?
3. What additional PPE must he wear when mixing compared to applying the product?
4. Mr. Greenwood smells something odd while wearing the respirator. What should he do?
5. Mr. Greenwood wishes to re-enter the field 18 hours after application. Is it safe for him to re-enter without PPE? If not, what PPE does he need?

## Calibration

Use directions and scenario from Pesticide Safety section.

1. What is the minimum GPA required to adequately manage weeds in Mr. Greenwood's scenario?
2. What is the maximum product rate Mr. Greenwood can use?
3. How much total solution and product does he need to cover this area? Use calibration equations.



PULL HERE TO OPEN ►

## RESTRICTED USE PESTICIDE DUE TO ACUTE TOXICITY

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR DIRECT SUPERVISION  
AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.

GROUP 22 HERBICIDE

# Gramoxone<sup>®</sup> SL 2.0

**syngenta**<sup>®</sup>

## Herbicide

A Weed, Grass, and Harvest Aid  
Desiccant/Defoliant Herbicide

*Active Ingredient:*

Paraquat dichloride (1,1'-dimethyl-4,4'-  
bipyridinium dichloride) . . . . . 30.1%

*Other Ingredients:* . . . . . 69.9%

*Total:* . . . . . 100.0%

Gramoxone SL 2.0 contains 2.0 pounds paraquat  
cation per gallon as 2.762 pounds salt per gallon.

Gramoxone SL 2.0 contains alerting agent (odor),  
emetic, and dye.

**KEEP OUT OF REACH  
OF CHILDREN.**



**DANGER / POISON  
PELIGRO / VENENO**

Si usted no entiende la etiqueta, busque a  
alguien para que se la explique a usted en  
detalle. (If you do not understand the label, find  
someone to explain it to you in detail.)

- NEVER PUT INTO FOOD, DRINK OR OTHER  
CONTAINERS.
- IF SWALLOWED, TAKE IMMEDIATE ACTION AS  
PRESCRIBED IN FIRST AID STATEMENT.  
SYMPTOMS ARE PROLONGED AND PAINFUL.
- DO NOT USE OR STORE IN OR AROUND THE  
HOME.
- DO NOT REMOVE CONTENTS EXCEPT FOR  
IMMEDIATE USE.
- THE ODOR OF THIS PRODUCT IS FROM THE  
ALERTING AGENT WHICH HAS BEEN ADDED,  
NOT FROM PARAQUAT.

EPA Reg. No. 100-1431

EPA Est. 100-LA-001

Product of the United Kingdom

Formulated in the USA

SCP 1431A-L1F 1115 4074780

**2.5 gallons**  
Net Contents



|  |  |
|--|--|
| <b>If swallowed</b>  | <ul style="list-style-type: none"> <li>• SPEED IS ESSENTIAL. Immediate medical attention is required. If available, give an adsorbent such as activated charcoal, bentonite or Fuller's Earth.</li> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul> |
| <b>If inhaled</b>  | <ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• The odor of this product is from the alerting agent, which has been added, not from the paraquat.</li> <li>• If person is not breathing, call 911 or an ambulance.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>                      |
| <b>If in eyes</b>  | <ul style="list-style-type: none"> <li>• 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.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>   |
|  |  |
| <p align="center"><b>NOTE TO PHYSICIAN</b></p> <p>Refer to the booklet 'Paraquat Poisoning. A Practical Guide to Diagnosis, First Aid and Hospital Treatment' (<a href="http://www4.syngenta.com/what-we-do/crops-and-products/paraquat-safety">http://www4.syngenta.com/what-we-do/crops-and-products/paraquat-safety</a>). Administer either activated charcoal (100g for adults or 2g/kg body weight in children) or Fuller's Earth (15% solution; 1 liter for adults or 15ml/kg body weight in children). NOTE: The use of gastric lavage without administration of an adsorbent has not shown any clinical benefit. Do not use supplemental oxygen. Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. With the possibility of late onset corneal ulceration, it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation. Use treatment that is appropriate for chemical burns. Intact skin is an effective barrier to paraquat, however contact with irritated or cut skin or repeated contact with intact skin may result in poisoning.</p> |  |
| <p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p>  |  |
| <p align="center"><b>HOT LINE NUMBER</b><br/> For 24-Hour Medical Emergency Assistance (Human or Animal)<br/> Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident)<br/> Call<br/> <b>1-800-888-8372</b></p>  |  |

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS



**DANGER / POISON**  
**PELIGRO / VENENO**

May be fatal if swallowed. Fatal if inhaled. Do not breathe spray mist. Wear a dust mist NIOSH-approved respirator with any N, R, P, or HE filter. Causes substantial but temporary eye injury. Wear protective eyewear (face shield required when mixing/loading). Harmful if absorbed through skin. Do not get in eyes, on skin, or on clothing. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

**IMPORTANT:** Inhalation is an unlikely route of exposure due to low vapor pressure and large spray droplet size, but mucosal irritation or nose bleeds may occur. Prolonged contact with this concentrated product can irritate your skin.

#### Personal Protective Equipment (PPE)

**Applicators and other handlers (other than Mixers and Loaders) must wear:**

- Long-sleeve shirt and long pants
- Shoes plus socks
- Protective eyewear
- Chemical-resistant gloves - Category A (e.g. barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or Viton®)
- A dust mist NIOSH-approved respirator with any N, R, P, or HE filter

**Mixers and Loaders must wear:**

- Long-sleeve shirt and long pants
- Shoes plus socks
- A dust mist NIOSH-approved respirator with any N, R, P, or HE filter
- Chemical-resistant gloves - Category A (e.g. barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or Viton)
- Chemical-resistant apron
- Face shield

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. 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, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection 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.

#### 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.

## DIRECTIONS FOR USE

### RESTRICTED USE PESTICIDE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**DO NOT USE AROUND HOME GARDENS, SCHOOLS, RECREATIONAL PARKS, GOLF COURSES OR PLAYGROUNDS.**

#### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

**For Chemical Fallow, Early Postemergence Broadcast in Peanuts and Dormant Season Applications, and "Between Cutting" Applications in Alfalfa:** Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

**For Harvest Aid and Desiccation Applications, Preplant or Preemergence (Broadcast or Banded), and Postemergence Directed Spray:** Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Shoes plus socks
- Protective eyewear
- Chemical-resistant gloves - Category A (e.g. barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or Viton).

#### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

**DO NOT** enter or allow others to enter the treated area until sprays have dried. **AVOID** working in spray mist.

**KEEP** all unprotected persons out of operating areas or vicinity where there may be danger of drift.

Certain states may require more restrictive reentry intervals; consult your State Department of Agriculture for further information.

#### USE INSTRUCTIONS AND INFORMATION

**Do not apply this product through any type of irrigation system.**

When Gramoxone SL 2.0 is applied at less than 10 gallons per acre finished spray volume, a drift control or spray deposition additive **SHOULD** be used. Refer to the additive label for use directions.

**Flat-Fan Nozzles  
30% (60% Total) Overlap**



**Flood Nozzles  
50% (100% Total) Overlap**



Using nozzles, pressures, or setups different from the above chart will result in reduced control.

**SPRAY CARRIER**

Always use clean water (free of mud or clay), clear liquid nitrogen, or complete clear liquid fertilizers as the carrier when spraying Gramoxone SL 2.0. Muddy water, or suspension-type fertilizers containing clay, can inactivate Gramoxone SL 2.0. Never use suspension-type fertilizers containing clay as the spray carrier. If using a complete clear liquid fertilizer containing high phosphate levels as the spray carrier, always use the higher rate of Gramoxone SL 2.0 and surfactant.

Note: When using liquid fertilizers such as 28% N as a spray carrier, it is important that nonionic surfactant still be used with Gramoxone SL 2.0. Liquid fertilizer carriers cannot substitute for surfactant.

**RATES OF GRAMOXONE SL 2.0**

Follow rates listed with each use of Gramoxone SL 2.0. Use the higher label rates when weeds are dense or large. Also, use higher label rates for harvest aid when crop vegetation is dense. For broadcast applications of Gramoxone SL 2.0 with backpack sprayers, the application rate must not exceed 0.50 lb ai/A (one quart) in a minimum of 30 gallons of spray solution per acre.

**SPRAY VOLUME**

Follow minimum spray volumes listed with each use of Gramoxone SL 2.0. These are **minimum** volumes only, and spray volumes should be increased as necessary to obtain complete coverage of the target weed or plant without runoff from the foliage.

WHEN SPRAYING LESS THAN 20 GALLONS OF SPRAY CARRIER PER ACRE, TARGET WEEDS SHOULD NOT EXCEED 6 INCHES IN HEIGHT.

**APPLICATION TIMING**

**Gramoxone SL 2.0 should be applied to emerged weeds when they are small. Weeds 1-6 inches in height are the easiest to control. Larger weeds may be more difficult to control.** When weeds have been grazed or mowed, thus removing much of the green foliage, allow the weeds to regrow to a height of 2-4 inches before spraying if possible. Similarly, when forage or grain crops have been harvested prior to spraying, weeds present in the field will also have been cut. To allow for adequate green foliage to remain on weeds in this situation, raise cutter bars as high as possible from the ground to cut stubble and weeds at a greater height.

**BURNDOWN OF GRASS COVER CROPS OR VOLUNTEER CEREALS**

When using Gramoxone SL 2.0 for control of grass cover crops or volunteer cereals, best results are obtained when Gramoxone SL 2.0 is applied **prior to tillering** or **after boot stage**. This is especially important with a wheat cover crop or volunteer wheat. Treatments made between tillering and boot stage will generally not provide complete control. Do not expect complete control of perennial cover crops.

| Crop  | Maximum Number of Applications Per Year | Use Pattern                                   | Gramoxone SL 2.0 Rate Per Acre | Minimum Total Spray Per Acre | Grazing or Preharvest Interval (Days) | Directions  |
|---|---|---|--------------------------------|------------------------------|---------------------------------------|---|
| GRASSES<br>(For Seed; For Use in Seedbed Preparation) | 3                                       | Preplant, At Planting, or Preemergence        | 2.0-4.0 pt                     | Ground: 10 gal               | -                                     | <b>Restrictions</b> <ul style="list-style-type: none"> <li>Repeat applications may be made prior to grass emergence, however, do not exceed 3 applications per year.</li> <li>Do not graze treated areas or use the seed or straw from treated areas for animal feed or bedding.</li> </ul> <b>Precautions</b> <ul style="list-style-type: none"> <li>Prepare the seedbeds and allow weeds to germinate.</li> <li>Apply Gramoxone SL 2.0 when weeds are at the 3-5 leaf stage.</li> </ul>   |
| GUAR<br>(Preharvest desiccation)                      | 3                                       | Preharvest                                    | 2.0 pt                         | Ground: 10 gal               | 4                                     | <b>Restrictions</b> <ul style="list-style-type: none"> <li>Do not apply until the pods are fully mature.</li> <li>Do not graze treated areas or use the treated forage for animal feed.</li> </ul>  |
| GUAVA   | 4                                       | Directed Spray                                | 3.75 pt                        | Ground: 10 gal               | -                                     | <b>Restrictions</b> <ul style="list-style-type: none"> <li>Do not allow spray to contact green stems, fruit or foliage.</li> <li>Do not graze treated areas.</li> <li>Do not feed cover crops grown in treated areas to livestock.</li> </ul> <b>Precautions</b> <ul style="list-style-type: none"> <li>For mature woody weeds, late-germinating weeds and grasses, and perennials, retreatment or spot spraying may be necessary.</li> </ul>   |
| HOPS<br>(ID, OR, & WA only)                           | 3                                       | Directed Spray and/or Suckering and Stripping | 2.0 pt                         | Ground: 10 gal               | 14                                    | <b>Restrictions</b> <ul style="list-style-type: none"> <li>Do not apply more than 3 times per season.</li> <li>Do not allow spray to contact green stems, foliage, flowers, or cones as injury may result.</li> <li>Do not allow animals to graze in treated hopyards.</li> </ul> <b>Precautions</b> <ul style="list-style-type: none"> <li>Retreatment or spot treatment may be necessary.</li> <li>Hop vine refuse and silage may be fed to livestock.</li> <li>For suckering and stripping, spray only the basal 2 ft of the vines.</li> <li>Experience with varieties other than Cascade, Yakima Cluster, and Bullion is limited. If using Gramoxone SL 2.0 on other varieties than these, test the use pattern on a small number of vines of each variety to determine sensitivity to injury. Do not use on unlisted varieties if unacceptable crop injury occurs.</li> <li>Chemical Pruning: To burn back existing vines and obtain even emergence of subsequent vines, spray when vines are less than 3 ft tall.</li> <li>APPLICATION TO HOP VINES LESS THAN 6 FT TALL MAY CAUSE UNACCEPTABLE INJURY.</li> </ul> |

continued...

# Specimen Label



Dow AgroSciences

# Milestone®

## SPECIALTY HERBICIDE

®Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

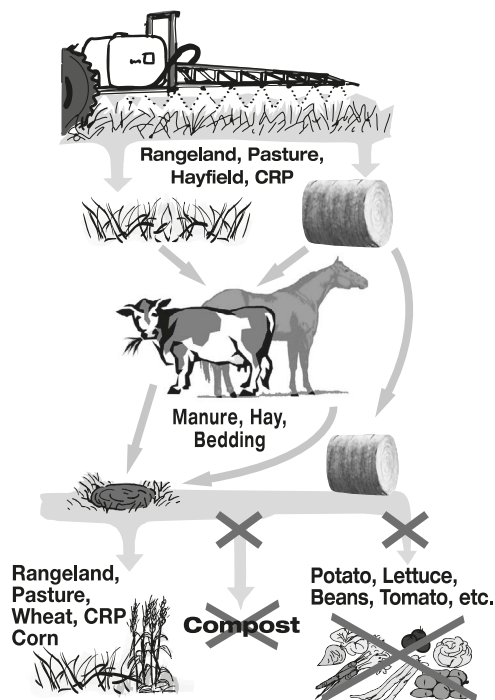
- For control of annual and perennial broadleaf weeds including invasive and noxious weeds, certain annual grasses, and certain woody plants and vines, on:
  - rangeland, permanent grass pastures (including grasses grown for hay\*), Conservation Reserve Program (CRP)
  - non-crop areas for example, airports, barrow ditches, communication transmission lines, electric power and utility rights-of-way, fencerows, gravel pits, industrial sites, military sites, mining and drilling areas, oil and gas pads, non-irrigation ditch banks, parking lots, petroleum tank farms, pipelines, roadsides, railroads, storage areas, dry storm water retention areas, substations, unimproved rough turf grasses; and
  - natural areas (open space) for example, campgrounds, parks, prairie management, trailheads and trails, recreation areas, wildlife openings, and wildlife habitat and management areas including seasonally dry flood plains, deltas, marshes, prairie potholes, or vernal pools;
  - including grazed areas in and around these sites.

\*Hay from grass treated with Milestone within the preceding 18-months can only be used on the farm or ranch where the product is applied unless allowed by supplemental labeling

### IMPORTANT USE PRECAUTIONS AND RESTRICTIONS TO PREVENT INJURY TO DESIRABLE PLANTS

- Carefully read the section "**Restrictions in Hay or Manure Use**."
- It is mandatory to follow the "**Use Precautions and Restrictions**" section of this label.
- Manure and urine from animals consuming grass or hay treated with this product may contain enough aminopyralid to cause injury to sensitive broadleaf plants.
- Hay can only be used on the farm or ranch where product is applied unless allowed by supplemental labeling.
- Consult with a Dow AgroSciences representative if you do not understand the "Use Precautions and Restrictions". **Call [1-(800) 263-1196] Customer Information Group.**

### Forage and Manure Management



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**Not for Sale, Sale into, Distribution, and/or Use in Nassau and Suffolk counties of New York State.**

**Not For Sale, Distribution, or Use in the San Luis Valley of Colorado.**

| GROUP | 4 | HERBICIDE |
|-------|---|-----------|
|-------|---|-----------|


**Active Ingredient:**

|   |        |
|---|--------|
| Triisopropanolammonium salt of 2-pyridine carboxylic acid, 4-amino-3,6-dichloro-..... | 40.6%  |
| Other Ingredients .....   | 59.4%  |
| Total .....   | 100.0% |

Acid Equivalent: aminopyralid (2-pyridine carboxylic acid, 4-amino-3,6-dichloro-) - 21.1% - 2 lb/gal


**Container Use Directions**

**1 - Tip**




Tilt container to angle as shown and fill head to desired amount - use vertical scale for measuring. Container should be closed.

**2 - Level**



Hold container up-right and check the amount for accuracy. Add or subtract as needed, using pour-back scale as guide.

**3 - Dispense**



Remove cap on head and pour into sprayer or other devices. No fluid will pour from the main container. Replace cap for storage in sealed condition.

**Precautionary Statements**

**Hazards to Humans and Domestic Animals**

EPA Reg. No. 62719-519

**CAUTION**

**Causes Moderate Eye Irritation**

**Avoid contact with eyes or clothing.**

**Personal Protective Equipment (PPE)**

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Shoes plus socks

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.

**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 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. 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.

**Environmental Hazards**

Do not apply directly to water. Take care to minimize the incidental overspray along the shoreline when applying to terrestrial plants at the water's edge or to water in areas where surface water is present. Do not apply directly to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

**Directions for Use**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Read all Directions for Use carefully before applying.

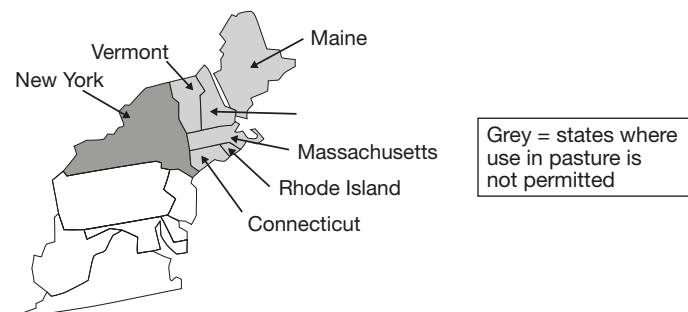
**This product is not intended for reformulation or repackaging into other end-use products.**

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**Not for Sale, Sale into, Distribution, and/or Use in Nassau and Suffolk counties of New York State.**

**Not For Sale, Distribution, or Use in the San Luis Valley of Colorado.**

**Not for use on pastures in Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. All other labeled uses are permitted in these states including grazed areas in and around these sites.**



**Agricultural Use Requirements**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about Personal Protective Equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves made of any waterproof material as polyethylene or polyvinyl chloride
- Shoes plus socks
- Protective eyewear

**Non-Agricultural Use Requirements**

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for Agricultural Pesticides (40 CFR Part 170). The WPS does not pertain to non-agricultural use on sites, such as, rangeland, permanent grass pastures, or non-cropland. See the Agricultural Use Requirements section below for information where the WPS applies.

**Entry Restrictions for Non-WPS Uses:** For applications on rangeland and permanent grass pastures (not harvested for hay) and non-cropland areas, do not enter or allow worker entry into treated areas until sprays have dried.

**Storage and Disposal**

Do not contaminate water, food, feed or fertilizer by storage or disposal. Open dumping is prohibited.

**Pesticide Storage:** If this product is exposed to subfreezing temperatures, the active ingredient may crystallize and settle out of solution. Under these conditions the product should be warmed to at least 40°F and agitated well to dissolve any crystallized active ingredient prior to use.

**Pesticide Disposal:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**Nonrefillable containers 5 gallons or less:**

**Container Handling:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.



## Storage and Disposal (Cont.)

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

### Refillable containers larger than 5 gallons:

**Container Handling:** Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

### Nonrefillable containers larger than 5 gallons:

**Container Handling:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

## Resistance Management Guidelines

- Development of plant populations resistant to this herbicide mode of action is usually not a problem on rangeland, permanent grass pastures, Conservation Reserve Program (CRP), or non-cropland sites since these sites receive infrequent pesticide applications.
- In croplands, use an effective integrated pest management (IPM) program, integrating tillage or other mechanical methods, crop rotation or other cultural control methods into weed control programs whenever practical.
- Similar looking biotypes of a given weed species occurring in a treated area may vary in their susceptibility to a herbicide. Application of a herbicide below its labeled rate may allow more tolerant weeds to survive and a shift to more tolerant biotypes within the treated area.
- Where identified, spreading of resistant weeds to other fields may be prevented by cleaning harvesting and tillage equipment before moving to other areas and by planting weed-free seed.
- Contact your extension specialist, certified crop consultant, or Dow AgroSciences representative for the latest resistance management information.

## Use Precautions

- Applications made during periods of intense rainfall, to soils saturated with water, surfaces paved with materials such as asphalt or concrete, or soils through which rainfall will not readily penetrate may result in runoff and movement of Milestone. Injury to crops may result if treated soil and/or runoff water containing Milestone is washed, or moved onto land used to produce crops. Exposure to Milestone may injure or kill susceptible crops and other plants, such as grapes, soybeans, tobacco, sensitive ornamentals.

## • Grass revegetation:

- Milestone can be used to control broadleaf plants in grass revegetation programs. Consult Dow AgroSciences' literature for more details about Milestone applications and grass stand establishment.

## • Application before seeding grasses

- Milestone can be applied to control broadleaf weeds prior to grass planting. Grass seed germination and seedling development can be adversely affected by many factors such as seed viability and seedling vigor, soil condition (sub-optimal soil temperatures or soil water content), weather after planting, seedbed preparation and seed placement, disease, insects, or animals. Milestone applications will help to reduce competition from weeds and improve the chance for successful grass stand establishment. Some grass species are more sensitive to Milestone; consult Dow AgroSciences' literature for more details.

- **Postemergence applications on grass:** During the season of establishment, Milestone should be applied only after perennial grasses are well established (have developed a good secondary root system and show good vigor. Most perennial grasses are tolerant to Milestone at this stage of development. Milestone may suppress certain established grasses, such as smooth brome grass (*Bromus inermis*), especially when plants are stressed by adverse environmental conditions. Plants should recover from this transient suppression with the onset of environmental conditions favorable to grass growth and upon release from weed competition.

## • Seeding Broadleaf Plants (Forbs) and Wildflowers

Milestone can be applied in the summer to control broadleaf weeds prior to forb planting. Forbs can be seeded 90 days after a summer application as a dormant fall planting or the following spring. Consult Dow AgroSciences literature for details.

- **Field Bioassay Instructions:** In fields previously treated with this product, plant short test rows of the intended rotational crop across the original direction of application in a manner to sample variability in field conditions such as soil texture, soil organic matter, soil pH, rainfall pattern or drainage. The field bioassay can be initiated one year after the last application of aminopyralid in that field. Observe the test crop for symptoms of herbicidal activity, such as poor stand (effect on seed germination), chlorosis (yellowing), epinasty, and necrosis (dead leaves or shoots), or stunting (reduced growth). If herbicidal symptoms do not occur, the test crop can be grown. If there is apparent herbicidal activity, do not plant the field to the intended rotational crop; plant only to wheat, forage grasses, native grasses or grasses grown for hay.

**Consult with a Dow AgroSciences representative if you do not understand the "Use Precautions and Restrictions." Call (1-800-263-1196) for more information.**

## Pasture and Rangeland Restrictions

- **Do not use grasses treated with Milestone in the preceding 18-months for hay intended for export outside the United States.**
- **Hay from areas treated with Milestone in the preceding 18-months CAN NOT be distributed or made available for sale off the farm or ranch where harvested unless allowed by supplemental labeling.**
- **Hay from areas treated with Milestone in the preceding 18-months CAN NOT be used for silage, haylage, bayload and green chop unless allowed by supplemental labeling.**
- **Do not move hay made from grass treated with Milestone within the preceding 18-months off farm unless allowed by supplemental labeling.**
- **Do not use hay or straw from areas treated with Milestone within the preceding 18-months or manure from animals feeding on hay treated with Milestone in compost.**
- **Do not use grasses treated with Milestone in the preceding 18-months for seed production.**



## Restrictions for All Uses

**Maximum Application Rate:** On all labeled use sites do not broadcast apply more than 7 fl oz per acre of Milestone per year. The total amount of Milestone applied broadcast, as a re-treatment, and/or spot treatment cannot exceed 7 fl oz per acre per year. Spot treatments may be applied at an equivalent broadcast rate of up to 0.22 lb acid equivalent (14 fl oz of Milestone) per acre per year; however, not more than 50% of an acre may be treated at that rate. Do not apply more than a total of 0.11 lb acid equivalent (7 fl oz) per acre of Milestone per year as a result of broadcast, spot or repeat applications.

**Obtain Required Permits:** Consult with appropriate state or local water authorities before applying this product around public waters. State or local public agencies may require permits.

- **Avoiding Injury to Non-Target Plants:** Do not aerially apply Milestone within 50 feet of a border downwind (in the direction of wind movement), or allow spray drift to come in contact with, any broadleaf crop or other desirable broadleaf plants, including, but not limited to, alfalfa, cotton, dry beans, flowers, grapes, lettuce, potatoes, radishes, soybeans, sugar beets, sunflowers, tobacco, tomatoes or other broadleaf or vegetable crop, fruit trees, ornamental plants, or soil where sensitive crops are growing or will be planted. Avoid application under conditions that may allow spray drift because very small quantities of spray may seriously injure susceptible crops. Read and consider the "Precautions for Avoiding Spray Drift and Spray Drift Advisory" to help minimize the potential for spray drift.
- **Chemigation:** Do not apply this product through any type of irrigation system.
- **Do not contaminate water intended for irrigation or domestic purposes.** Do not treat inside banks or bottoms of irrigation ditches, either dry or containing water, or other channels that carry water that may be used for irrigation or domestic purposes.
- Do not apply this product to lawns, turf, ornamental plantings, urban walkways, driveways, tennis courts, golf courses, athletic fields, commercial sod operations, or other high-maintenance, fine turfgrass areas, or similar areas.
- Trees adjacent to or in a treated area can occasionally be affected by root uptake of Milestone. Do not apply Milestone within the root zone of desirable trees unless such injury can be tolerated. Use special caution near roses, and leguminous trees such as locusts, redbud, mimosa, and caragana.
- Do not treat frozen soil where runoff could damage sensitive plants.
- **Grazing and Haying Restrictions:** There are no restrictions on grazing or grass hay harvest following application of Milestone at labeled rates. Cutting hay too soon after spraying weeds will reduce weed control. Wait 14 days after herbicide application to cut grass hay to allow herbicide to work. Do not transfer grazing animals from areas treated with Milestone to areas where sensitive broadleaf crops occur without first allowing 3 days of grazing on an untreated pasture. Otherwise, urine and manure may contain enough aminopyralid to cause injury to sensitive broadleaf plants.
- **Grazing Poisonous Plants:** Herbicide application may increase palatability of certain poisonous plants. Do not graze treated areas until poisonous plants are dry and no longer palatable to livestock.
- **Restrictions in Hay or Manure Use:**
  - ♦ Do not use aminopyralid-treated plant residues, including grass, wood plants, trees, hay or straw from areas treated within the preceding 18-months, in compost, mulch wood chips, or mushroom spawn.-
  - ♦ Do not use manure from animals that have eaten aminopyralid-treated forage or hay within the previous 3 days in compost, mulch or mushroom spawn. Livestock must have 3 days of eating non-aminopyralid-treated materials in order to clear their system of aminopyralid. Do not use aminopyralid-treated plants in areas where commercially grown mushrooms or susceptible broadleaf plants may be grown.
  - ♦ Do not spread manure from animals that have consumed aminopyralid-treated forage or hay within the previous 3 days on land used for growing susceptible broadleaf crops.
  - ♦ Manure from animals that have consumed aminopyralid-treated forage or hay within the previous 3 days may only be used on areas used for pasture, grass grown for seed, wheat and corn.
  - ♦ Do not plant a broadleaf crop (including soybeans, sunflower, tobacco, vegetables, field beans, peanuts, and potatoes) in fields or areas treated with aminopyralid or manure from animals that have grazed forage or eaten hay harvested from aminopyralid-treated areas until an adequately sensitive field bioassay is conducted to determine that the aminopyralid concentration in the soil is at level that is not injurious to the crop to be planted.
  - ♦ Do not plant a broadleaf crop in fields or areas treated in the previous year with manure from animals that have consumed

aminopyralid-treated forage or hay until an adequately sensitive field bioassay is conducted to determine that the aminopyralid concentration in the soil is at level that is not injurious to the crop to be planted.

- ♦ To promote herbicide decomposition, plant residues should be evenly incorporated in the surface soil or burned. Breakdown of aminopyralid in plant residues or manure is more rapid under warm, moist soil conditions and may be enhanced by supplemental irrigation.
- **Crop Rotation:** Do not rotate to any crop from rangeland, permanent pasture or CRP acres within one year following treatment. Cereals and corn can be planted one year after treatment. Broadleaf crops are sensitive to aminopyralid residues in the soil and prediction of crop safety by field bioassay (see instructions below) is the BEST way to determine planting options. Broadleaf crops such as canola, flax, and alfalfa can require **at least 2 to 3 years** depending on the crop and environmental conditions. More sensitive crops such as soybeans, tobacco, peanuts, potatoes, and peas may require a longer plant back interval and should not be planted until a field bioassay shows that the level of aminopyralid present in the soil will not adversely affect that broadleaf crop.

## Precautions for Avoiding Spray Drift

Avoid application under conditions that may allow spray drift because very small quantities of spray, which may not be visible, may injure susceptible crops. This product should be applied only when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, non-target crops and other plants) is minimal (e.g., when wind is blowing away from the sensitive areas. A drift control aid may be added to the spray solution to further reduce the potential for drift. If a drift control aid is used, follow the use directions and precautions on the manufacturer's label. Do not use a thickening agent with Microfoil, Thru-Valve booms, or other spray delivery systems that cannot accommodate thickened spray solutions.

**Ground Equipment:** With ground equipment spray drift can be lessened by keeping the spray boom as low as possible; by applying 10 gallons or more of spray per acre; by keeping the operating spray pressures at the manufacturer's specified minimum pressures for the specific nozzle type used (low pressure nozzles are available from spray equipment manufacturers); and by spraying when the wind velocity is low (follow state regulations). Avoid calm conditions which may be conducive to thermal inversions. Direct sprays no higher than the tops of target vegetation and keep spray pressures low enough to provide coarse spray droplets to minimize drift.

**Aerial Application:** Avoid spray drift at the application site. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. Users are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications:

1. The boom length must not exceed 75% of the fixed wing span and must be located at least 8 -10 inches below the trailing edge of the fixed wing; the boom length must not exceed 85% of the rotary blade.
2. Nozzles should be pointed backward parallel with the air stream or not pointed downwards more than 45 degrees.

State regulations must be followed.

The applicator should be familiar with and take into account the information covered in the following **Aerial Drift Reduction Advisory**. This information is advisory in nature and does not supersede mandatory label requirements.

## Aerial Drift Reduction Advisory

**Information on Droplet Size:** The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

### Controlling Droplet Size:

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's specified pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that will provide uniform coverage.

**Table 2:** Weeds and Woody Plants Controlled (Cont.)**Note:** Numbers in parentheses (-) refer to specific use directions for a particular weeds species.

| Common Name                     | Scientific Name                 | Rate Range<br>(fl oz/acre) | Life Cycle      | Plant Family   |
|---------------------------------|---------------------------------|----------------------------|-----------------|----------------|
| rush skeletonweed               | <i>Chondrilla juncea</i>        | 5 to 7                     | perennial       | Asteraceae     |
| sicklepod                       | <i>Cassia obtusifolia</i>       | 7                          | perennial       | Fabaceae       |
| smartweed, Pennsylvania         | <i>Polygonum pennsylvanicum</i> | 3 to 5                     | annual          | Polygonaceae   |
| sneezeweed, bitter              | <i>Helenium amarum</i>          | 4 to 7                     | annual          | Asteraceae     |
| soda apple, tropical (6)        | <i>Solanum viarum</i>           | 5 to 7                     | perennial       | Solanaceae     |
| sowthistle, annual              | <i>Sonchus oleraceae</i>        | 7                          | annual          | Asteraceae     |
| sowthistle, perennial           | <i>Sonchus arvensis</i>         | 3 to 5                     | perennial       | Asteraceae     |
| spanishneedles                  | <i>Bidens bipinnata</i>         | 4 to 7                     | annual          | Asteraceae     |
| St. Johnswort, common           | <i>Hypericum perforatum</i>     | 5 to 7                     | perennial       | Clusiaceae     |
| stiltgrass, Japanese            | <i>Microstegium vimineum</i>    | 5-7                        | annual          | Poaceae        |
| starthistle, Malta (7)          | <i>Centaurea melitensis</i>     | 3 to 5                     | annual          | Asteraceae     |
| starthistle, purple (7)         | <i>Centaurea calcitrapa</i>     | 3 to 5                     | biennial        | Asteraceae     |
| starthistle, yellow (7)         | <i>Centaurea solstitialis</i>   | 3 to 5                     | annual          | Asteraceae     |
| sunflower, common               | <i>Helianthus annuus</i>        | 4 to 7                     | annual          | Asteraceae     |
| sweetclover, white              | <i>Melilotus albus</i>          | 5 to 7                     | biennial        | Fabaceae       |
| sweetclover, yellow             | <i>Melilotus officinalis</i>    | 5 to 7                     | biennial        | Fabaceae       |
| teasel                          | <i>Dipsacus spp.</i>            | 4 to 7                     | biennial        | Dipsacaceae    |
| thistle, artichoke              | <i>Cynara cardunculus</i>       | 5 to 7                     | perennial       | Asteracea      |
| thistle, blessed milk           | <i>Silybum marianum</i>         | 4-7                        | biennial        | Asteraceae     |
| thistle, bull (8)               | <i>Cirsium vulgare</i>          | 3 to 5                     | biennial        | Asteraceae     |
| thistle, Canada (9)             | <i>Cirsium arvense</i>          | 5 to 7                     | perennial       | Asteraceae     |
| thistle, woolly distaff         | <i>Carthamus lanatus</i>        | 4 to 7                     | annual          | Asteraceae     |
| thistle, Italian                | <i>Carduus pycnocephalus</i>    | 7                          | annual          | Asteraceae     |
| thistle, musk (8)               | <i>Carduus nutans</i>           | 3 to 5                     | biennial        | Asteraceae     |
| thistle, plumeless (8)          | <i>Carduus acanthoides</i>      | 3 to 5                     | biennial        | Asteraceae     |
| thistle, Scotch                 | <i>Onopordum acanthium</i>      | 5 to 7                     | biennial        | Asteracea      |
| thistle, Russian (preemergence) | <i>Salsola spp</i>              | 7                          | annual          | Chenopodiaceae |
| tree of heaven                  | <i>Ailanthus altissima</i>      | 7                          | perennial       | Simaroubaceae  |
| vetch                           | <i>Vicia spp.</i>               | 3 to 7                     | perennial       | Fabaceae       |
| willoweed, panicle              | <i>Epilobium brachycarpum</i>   | 5-7                        | annual          | Onagraceae     |
| wisteria                        | <i>Wisteria brachybotris</i>    | 7                          | woody perennial | Fabaceae       |
| wormwood, absinth(10)           | <i>Artemisia absinthium</i>     | 6 to 7                     | perennial       | Asteraceae     |
| yarrow, common                  | <i>Achillea millefolium</i>     | 7                          | perennial       | Asteraceae     |

- (1) **Sulfur cinquefoil or oxeye daisy:** Apply Milestone at 4 to 6 fl oz per acre to plants in the prebud stage of development.
- (2) **Orange or yellow hawkweeds:** Apply Milestone at 4 to 7 fl oz per acre to plants in the bolting stage of development.
- (3) **Diffuse, spotted, and squarrose knapweeds:** Apply Milestone at 5 to 7 fl oz per acre when plants are actively growing with the optimum time of application occurring from rosette to the bolting stages of development or in the fall. Plants will be controlled by mid-summer and fall applications even though plants may not show any changes in form or stature the year of application.
- (4) **Russian knapweed:** Apply Milestone at 5 to 7 fl oz per acre to plants in the spring and summer at early bud to flowering stages and to dormant plants in the fall.
- (5) **Mullein:** Apply to the rosette stage
- (6) **Tropical soda apple:** Apply Milestone at 5 to 7 fl oz per acre at any growth stage, but application by flowering will reduce seed production potential.
- (7) **Malta, purple, and yellow starthistle:** Apply Milestone at 3 to 5 fl oz per acre to plants at the rosette through bolting growth stages.
- (8) **Bull, musk, and plumeless thistles:** Apply Milestone at 3 to 5 fl oz per acre in the spring and early summer to rosette or bolting plants or in the fall to seedlings and rosettes. Apply at 4 to 5 fl oz when plants are at the late bolt through early flowering growth stages. 2,4-D at 1 lb ae/acre should be tank-mixed with Milestone starting at the late bud stages
- (9) **Canada thistle:** Apply Milestone at 5 to 7 fl oz per acre in the spring after all plants have fully emerged (some may be budding) until the oldest plants are in full flower stage. Use the higher rate when applying to the flower stage. Applications are also effective in the fall before a killing frost. Use higher rates for older/dense stands or for longer residual control.
- (10) **Absinth wormwood:** Apply 6 to 7 fl oz per acre before wormwood is 12 inches tall. When applying by air on CRP, coverage is important and a minimum of 3 GPA is specified. Remove old duff and litter by fire or mowing for best results
- (11) **Invasive knotweeds:** Japanese, Bohemian, giant knotweeds: Optimum suppression of invasive knotweeds with Milestone herbicide is obtained when applications are made to plants that are at least 3 to 4 feet tall. Results of field trials conducted in the western U.S. indicate that high volume applications (100 gpa or greater) of Milestone at 7 fl oz/A or a spot treatment rate up to 14 fl oz/A applied in summer will provide good control of invasive knotweeds. In the upper Midwest, mowing in summer followed by fall application of Milestone (prior to frost) provided the best control. Infestations of invasive knotweed that are mowed should be allowed to regrow to at least 3 feet in height prior to herbicide treatment. Monitoring and follow-up herbicide treatments on regrowth will be necessary to control resprouts and achieve long-term control.
- (12) **Purple loosestrife:** For optimum control apply Milestone at 7 fl oz per acre plus 1 pt to 1 qt of 2,4-D amine or 1 to 2 qts of Garlon 3A. Spot treatments may also be made by applying Milestone at 14 fl oz (see Spot treatment section of the label) with or without the addition of 2,4-D or Garlon 3A.
- (13) **Fiddleneck:** For optimum control apply Milestone at 4 to 7 fl oz per acre when the plants are young and before flowering. Use higher rates if the plants are older and larger. In California optimal application timing is November through March.