

PSEP Fact Sheet:**Pesticide Labeling**

Jeff M. Edwards, *Pesticide Applicator Training Coordinator*

Joe Hiller, *Former Assistant Director, Agriculture and Natural Resources*

Mark Ferrell, *Former Extension Pesticide Coordinator*

Andrea M. Lewis, *Former Extension Publication Assistant*

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, requires that certain information accompany a pesticide. The information printed on or attached to a container is the label. Each time you purchase a pesticide, you also may receive additional instructions about how to use it. This printed information about the pesticide product from the company or its agent is called labeling. Labeling includes such things as the label on the product, brochures, flyers, and information distributed by the dealer. To the manufacturer, the label is a license to sell. The state or federal government uses it as a way to control the distribution, storage, sale, use, and disposal of the product. The buyer or user sees the label as the primary source of information about how to use the product safely, correctly, and legally. The label is a source of information on proper treatment for poisoning cases to physicians.

Information on the label is the result of many years of extensive research and development that has cost millions of dollars. This provision is made for the protection of humans, plants, animals, and the environment. Reading the label thoroughly before using any pesticide cannot be stressed too much. It is a prescription for use.

Parts of the Label

The label, by law (FIFRA), must include the following information:

1. Brand and chemical name of the product
2. Manufacturer's name and address
3. EPA registration and establishment number
4. Net contents
5. Ingredients statement
6. Kind of formulation
7. Registered uses
8. PPE – Personal Protective Equipment
9. WPS – Workers Protection Standards
10. Endangered species concerns
11. Hazard statements – toxicity categories
12. Directions for use
13. Storage and disposal precautions.

Brand and Chemical Name

The brand or trade name identifies a product of a specific company. It appears on the label on the front panel in large, bold print, and it is the most identifiable name of the product. The common name of the product is a name given to a complex chemical name. For instance, Tordon is the brand name of the herbicide picloram, which is the common name.



Department of Plant Sciences
College of Agriculture and Natural Resources

The chemical name is 4-amino-3,5,6-trichloropicolinic acid. A pesticide made by more than one company is sold under several brand names, but all of them have the same common name or chemical name.

Manufacturer's Name and Address

The law requires that the product's maker or distributor put the company's name and address on the label so you will know who made or sold the product.

Registration and Establishment Number

A registration number must be on every pesticide label. An EPA number shows that the product has been registered with the federal government. It usually is found on the front panel of the label and is written as "EPA Registration No. 0000." A number assigned to the establishment where the product is manufactured must also appear. In cases of special local needs, pesticide products may be approved by a state. These registrations are designated, for example, as EPA SLN No. WY-80004. In this case, SLN indicates "special local need." Wyoming-800004 means the product is registered for use in Wyoming, was registered in 1980, and was the fourth special needs product registered in the state that year.

Net Contents

The net contents number tells you how much is in the container. If the product is liquid, it must be stated in liquid measure terms (gallons, quarts, pints, and fluid ounces). If the product is a powder or granule, it is stated in terms of weight (pounds and ounces).

Ingredient Statement

Every pesticide label must list what is in the product. The amount of each active ingredient is given as a percentage by weight and as pounds per gallon of concentrate. It can be listed by either the chemical name or the common name. The inert ingredients need not be named, but the label must show what percent of the contents they make up.

Kind of Formulations

The basic chemical used to control pests must be formulated with other materials such as solvents, emulsifiers, surfactants, powders, granules, and dusts. The formulation is listed on the label as an emulsifiable

concentrate, wettable powder, granules, fumigant, and so on. The same pesticide may be available in more than one formulation. Formulations, for example, may be designated on the label as 7E (7 pounds per gallon emulsifiable liquid), 50-WP (50 percent wettable powder) or 10-G (10 percent granular).

Registered Uses

The label must include what specific pests the pesticide controls, what crop or animals it can be used on, and the classification of uses. Every pesticide label must show whether the contents are for general use or restricted use. The pesticide's classification depends on its toxicity (hazard of poisoning), the way in which it is used, and its effect on the environment.

General-use pesticides may be applied by the general public without restrictions, other than those specified on the label.

Restricted-use pesticides require controls in addition to label instructions because they may have unreasonable adverse effects on the environment or injure the applicator; even when applied in accordance with directions for use, warnings, and cautions; or when used in accordance with a widespread or commonly recognized practice. Labels for restricted-use products must state at the top of the front panel, "Restricted-use pesticides for retail sale to and application only by certified applicators or persons under their direct supervision."

Hazard Statements

All pesticide labels must have the statement, "Keep Out of the Reach of Children." They are grouped according to their toxicity to people, animals, and the environment. You can determine the toxicity of a product by reading the signal word and looking at the symbol on the label.

Group	Signal Word	Toxicity	Approximate amount to kill an average person
I	Danger-Poison	Highly toxic	Taste to teaspoon
II	Warning	Moderately toxic	Teaspoon to tablespoon
III	Caution	Slightly toxic	Ounce to one pint

Highly toxic materials have skull and crossbones symbol plus the signal word “Danger” and the word “Poison.” Warning statements appear on the label if the product can poison humans and animals. The label also tells you of any special steps you should take to avoid poisoning, such as the kind of protective equipment needed.

Precautionary statements are on the label to protect the environment from pesticide contamination. For example, products toxic to bees will carry a warning statement on exposure from direct treatment or residue in crops. Warning statements also appear on the label to prevent people from contaminating water by cleaning their equipment, disposing of wastes, or applying pesticides where runoff is likely to occur. Statements also appear to remind the pesticide user against harming birds, fish, and wildlife.

Highly toxic pesticides must have appropriate warning statements about symptoms or poisoning if the product is swallowed or inhaled. Information on antidotes and instructions to call a physician in an emergency will be included. A warning statement also must appear if the product can irritate the skin, nose, throat, or eyes.

Directions for Use

Pesticide labels must include instructions on how to use the pesticide and must be adequate to protect the user and the public. The use instructions should indicate how to apply the product correctly, when the product can be applied, and at what rate it should be applied. If required for the product, the label should indicate the Pre-Harvest Interval (PHI) – the number of days between treatment and harvest – and re-entry interval (REI), the amount of time that must

pass before a person can safely enter a pesticide-treated area without personal protective equipment (PPE).

The label states that it is a violation of federal law to use a pesticide and must be adequate to protect the user and the public. The use instructions should indicate how to apply the product correctly, when the product can be applied, and at what rate it should be applied. If required for the product, the label should indicate the waiting period – the number of days between treatment and harvest – and re-entry, the amount of time that must pass before a person can safely enter a pesticide-treated area without protective clothing.

The label states that it is a violation of federal law to use a product in a manner inconsistent with its directions. It is illegal to apply a pesticide to a crop or site not listed on the label. If applied to a pest not included on the label, the applicator is responsible for the results of that application. Some pesticide labels indicate use is limited to certain categories of commercial applicators.

Some directions for use that pesticide users must obey are contained in documents that are only referred to on the labeling. Such instructions include EPA or other government regulations or requirements concerning the safe use of the pesticide product. EPA has adopted new requirements concerning: groundwater protection; endangered species protection; pesticide transportation, storage, and disposal; and worker protection. One sentence or paragraph may be the only notice you will receive that additional use directions are required for the product to be used in compliance with its labeling. You must deter-

mine whether you are affected, locate the applicable directions for use, determine how to comply with the instructions and requirements in the directions for use, and comply with those instructions and requirements.

Storage and Disposal Precautions

The label has directions for storing the pesticide to prevent contamination of other products. Storage temperatures are stated on the label to prevent overheating or freezing.

The label either explains procedures for disposing empty containers or tells the user to follow procedures designated by state law. Directions on how to dispose of water when rinsing equipment and containers also are included.

Reading the Label

Before you buy a pesticide, read the label to determine:

- Whether it is the pesticide you need for the specific crop and pest
- Whether the pesticide can be used safely under the application conditions

Before you mix the pesticide, read the label and understand:

- What personal protective equipment (PPE) should be worn
- What the pesticide can be mixed with (compatibility)
- How much pesticide to use
- The mixing procedure

Before you apply the pesticide, read the label to determine:

- What safety measures you should follow
- Whether protective clothing and equipment are needed
- Where the pesticide can be used (livestock, crops, structures, as examples)
- When to apply the pesticide (including the waiting period for crops and animals)
- How to apply the pesticide
- Whether there are any restrictions for use of the pesticide

Before you store or dispose of the pesticide or pesticide container, read the label to determine:

- Where and how to store the pesticide
- How to decontaminate and dispose of the pesticide container
- Where to dispose of surplus pesticides

If you have trouble reading or understanding the pesticide labeling, contact your local county extension office or other knowledgeable person.

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INSECTICIDE

For Use by Individuals/Firms licensed by the State to apply insecticide products.

For use to control insect pests on lawns, ornamental trees and shrubs and around buildings for perimeter insect control including landscaped areas around residential, institutional, public, commercial and industrial buildings, parks, recreational areas and athletic fields.

EPA Reg. No. 279-3141

EPA Est. 39578-TX-1

Active Ingredient:	By Wt.
Permethrin**	36.8%
Other Ingredients***	<u>63.2%</u>
	100.0%

**cis/trans ratio: Max. 55% (±) cis and min. 45% (±) trans
 ***Contains petroleum distillates.

Contains 3.2 pounds permethrin per gallon

**KEEP OUT OF REACH OF CHILDREN
 CAUTION**

See other panels for additional precautionary information.



FMC Corporation
 Agricultural Products Group
 1735 Market Street
 Philadelphia PA 19103

Net Contents: 1 Gallon

FIRST AID	
If swallowed	<ul style="list-style-type: none"> • Call poison control center or doctor immediately for treatment advice. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give any liquid to the person. • Do not give anything by mouth to an unconscious person.
If inhaled	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice
If on skin or clothing	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes	<ul style="list-style-type: none"> • 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.
HOTLINE NUMBER	
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)-331-3148 for Emergency Assistance.	
NOTE TO PHYSICIAN	
This product contains aromatic hydrocarbons which can produce a severe pneumonitis if aspirated, consideration should be given to gastric lavage with an endotracheal tube in place. Treatment is controlled removal of exposure followed by symptomatic and supportive care.	
For Information Regarding the Use of this Product Call 1-800-321-1FMC (1362).	

PRECAUTIONARY STATEMENTS

Hazards to Humans (and Domestic Animals)

CAUTION

Harmful if swallowed, inhaled or absorbed through the skin. Avoid contact with skin, eyes or clothing. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

Personal Protective Equipment

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category D on an EPA chemical resistance category selection chart.

Applicators and other handlers who handle this pesticide for any use covered by Worker Protection Standard (CFR Part 170) -- in general, only agricultural-plant uses are covered --must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate or butyl rubber.
- Shoes plus socks

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

Engineering Controls Statement

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 immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Environmental Hazards

This pesticide is highly toxic to bees exposed to direct treatment or residues on crops or weeds. Do not apply this product or allow it to drift to crops or weeds on which bees are actively foraging. Additional information may be obtained from your Cooperative Extension Service.

This product is extremely toxic to fish and aquatic invertebrates. Do not apply when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. To protect the environment, do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help to ensure that wind or rain does not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid run off to water bodies or drainage systems.

Physical and Chemical Hazards

Do not use or store near heat or open flame.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

Shake well before using.

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.

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 to treated areas during the restricted entry interval (REI) of 12 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, such as barrier laminate or butyl rubber.

Shoes plus socks.

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 Standards for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries and greenhouses.

Do not allow people or pets on treated surfaces until the spray has dried.

Do not touch treated surface until dry.

Storage and Disposal

Prohibitions: Do not contaminate water, food or feed by storage or disposal.

Storage: Store at temperatures above 40°F (5°C)

If separation occurs during storage, and less than entire contents of container are to be used, remix by inverting and shaking the container several times until contents are homogeneous. For the 5 gallon U-Turn® container, grasp handle and rock container forward and backward vigorously until contents are homogeneous. For 10 gallon U-Turn container, remix with mechanical agitator by attaching a power drill with ¼ inch chuck to agitator shaft and agitating by spinning shaft for 1 minute prior to dispensing.

If crystals have formed, warm to room temperature (70°F) (21°C) by room heating for 24–48 hours and shake occasionally until crystals dissolve and product appears uniform. Do not use external source of heat for warming container.

Keep out of reach of children and animals. Store in original containers only. Store in a cool, dry place and avoid excess heat. Carefully open containers. After partial use, replace lids and close tightly. Do not put concentrate or dilute material into food or drink containers. Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal.

In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills. Call FMC: (800) 331-3148.

To confine spill: If liquid, dike surrounding area or absorb with sand, cat litter, or commercial clay or gel absorbents. If dry material, cover to prevent dispersal. Place damaged package in a holding container. Identify contents.

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Disposal:

Metal or Plastic Container: Non-refillable container. Do not reuse or refill this container. Triple rinse as follows: Empty the contents into application equipment or a mix tank and drain for 10 seconds after flow begins to drip. Fill container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or 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. Then offer for recycling, if available or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill.

Returnable/Refillable Sealed Container: Refill this container with pesticide only. Do not reuse this container for any other purpose. Do not rinse container. Do not empty remaining formulated product. Do not break seals. Return intact to point of purchase. 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.

Ornamental and Lawn Use (Greenhouses, Interiorscapes and Landscapes, Lawns, Trees and Shrubs)

General Application Instructions

Astro may be used to control insect pests on ornamentals and lawns in landscaped areas around residential, institutional, public, commercial and industrial buildings, parks, recreational areas and athletic fields.

Astro is a 3.2 pounds per gallon formulation of the insecticide permethrin. Apply Astro when insects appear or feeding is noticed. The higher rate should be used as pest populations increase. Retreatment may be necessary to achieve and/or maintain control during periods of high pest pressure. Repeat application is necessary only if there are signs of renewed insect activity. Repeat application should be limited to no more than once per seven days.

Astro may be applied by ground equipment. Use sufficient water to obtain full coverage.

To prepare a 0.5% emulsion, mix 1.6 oz. (50 ml) of Astro Insecticide in 1 gallon of water.

Do not apply more than 2.0 lb. a.i./A/year.

Astro has demonstrated excellent plant safety; however, not all cultivars have been tested. Before treating large numbers of plants of a particular cultivar, treat a few plants and observe prior to full scale application.

Spray Drift Precautions:

All ground application equipment must be properly maintained and calibrated using appropriate carriers.

Do not make ground applications during temperature inversions.

Do not apply by air.

Make ground applications when the wind velocity favors on target product disposition (approximately 3 to 10 mph). Do not apply when wind velocity exceeds 15 mph.

Do not apply by ground equipment within 25 feet of lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries, and commercial fish farm ponds.

Resistance: Some insects are known to develop resistance to products used repeatedly for control. Because the development of resistance cannot be predicted, the use of this product should conform to resistance management strategies established for the use area. Consult your local or state pest management authorities for details.

If resistance to this product develops in your area, this product, or other products with a similar mode of action, may not provide adequate control. If poor performance cannot be attributed to improper application or extreme weather conditions, a resistant strain of insect may be present. If you experience difficulty with control and suspect that resistance is a reasonable cause, immediately consult your local company representative or pest management advisor for the best alternative method of control for your area.

Recommended Application Rates

CROP	PEST	RECOMMENDED RATE	SPECIFIC INSTRUCTIONS	
Ornamentals in greenhouses and interiorscapes, in residential landscaped areas and landscaped areas around institutional, public, commercial and industrial buildings, parks, recreational areas and athletic fields.	Ants Aphids Bagworm Beet Armyworm Birch Leafminer Cabbage Looper Cankerworms Citrus Thrips Fungus Gnat Gypsy Moth Caterpillars Heliothis spp Japanese Beetles Lace Bug Leaf Feeding Caterpillars Leafminers Leafhoppers Leafrollers Lygus Bugs Mealybugs Pine Sawflies Plant Bugs Root Weevils (Adult) Tent Caterpillars Webworms Whiteflies Zimmerman Pine Moths	Broadcast 4 to 8 Fl. Oz. per 100 Gals.	Apply sufficient volume of water to adequately cover foliage. Use higher rate for moderate to high infestations. Direct application to blooms may cause browning of petals. Marginal leaf burn may occur on Salvia, Dieffenbachia and Pteris Fern.	
	Ornamental Trees	Clearwing Moth Borers Ash Borer, Banded ash Clearwing, Dogwood borer, Lesser peachtree borer, Lilac borer, Oak borer, Peachtree borer, Rhododendron borer	1 to 2 qts. per 100 Gals.	Apply to the lower branches and trunks prior to adult emergence. Adult emergence varies according to pest species, host tree, environmental conditions and geographic location.
		Bark Beetles Dendroctonus spp., Ips spp., Elm bark beetles, Mountain pine beetle, Pine engravers, Turpentine beetles, Western pine beetle	2 to 5 qts. per 100 Gals.	Thorough coverage of bark is required for control.
		Coleopteran borers Bronze birch borer, Flatheaded apple-tree borer	2 to 5 qts. per 100 Gals.	
		For maximum residual control of the above listed pests	5.35 qts. per 100 Gals.	
	Nantucket Pine Tip Moth Coneworms* Seed Bugs*	4 to 8 Fl. Oz. per 100 Gals.	Begin application when adults appear. Repeat applications may be made on 5-7 day intervals as needed.	
Lawns (around residential, institutional, public, commercial and industrial buildings, parks, recreational areas and athletic fields)	Chinchbugs Pill Bugs Sod Webworm (See also list of pests under Pest control on outside surfaces and around buildings)	0.4 to 0.8 fl. oz. per 1000 sq. ft.	Apply using sufficient water to provide adequate coverage.	

*To control Coneworm, Seed Bugs—Use Astro® Insecticide at the following rates:
For high volume sprayers: Use 8 ounces in 100 gallons of water. Apply 5 to 10 gallons of finished spray per tree.
For low volume sprayers: Use 42 ounces in 100 gallons of water.
To control Webbing Coneworm—make first application within 1 week of female flower closure or peak pollen flight.
To control other coneworms and seed bugs—make first application within 30 days following flower closure.

Recommended Application Rates for Fruit and Nut Trees Around Residential Sites Only

Apply the appropriate amount of Astro insecticide (see table below) in 1 gallon of water per 436 sq. ft. Astro insecticide may be diluted and applied in greater volumes of water providing that the maximum application rates listed below are not exceeded on a per acre basis. For example: when attempting to control Navel Orangeworm on almonds using an application volume of 2 gallons per 436 sq. ft, the maximum legal dilution of Astro Insecticide is ½ teaspoon per 1gallon.

TREE	PEST	RECOMMENDED RATE	CROP
Almond	Navel Orangeworm Peach Twig Borer	½ to 1 tsp. per 1 gal/436 sq. ft.	Do not harvest nuts within 7 days after application. Do not apply more than 2 tsp. per 436 sq. ft. during hull split. Do not apply more than 5 tsp. per 436 sq. ft. per year.
Apples	Green Fruitworm Oblique Banded Leafroller Plum Curculio Redbanded Leafroller Rosy Apple Aphid Spotted Tentiform Leafminer Tarnished Plant Bug White Apple Leafhopper	¼ to ½ tsp per 1 gal/436 sq. ft.	Do not apply more than 1½ tsp. per 436 sq. ft. per year.
Cherries	Green Fruitworm Lesser Peachtree Borer Plum Curculio Redbanded Leafroller Rose Chafer Tarnished Plant Bug	¼ to ½ tsp per 1 gal/436 sq. ft.	Do not harvest fruit within 3 days after application. Do not make more than 4 applications per year. Do not make more than 3 applications after petal fall.
Filberts	Filbertworm Oblique Banded Leafroller	½ to 1 tsp. per 1 gal/436 sq. ft.	Do not harvest nuts within 14 days after application. Do not apply more than 4 tsp. per 436 sq. ft. per year.
Peaches	Green Fruitworm Lesser Peachtree Borer Oriental Fruit Moth Peach Twig Borer Plum Curculio Rose Chafer Tarnished Plant Bug	¼ to ¾ tsp per 1 gal/436 sq. ft.	Do not harvest fruit within 14days after application. Do not apply more than 3¾ tsp. per 436 sq. ft. per year
Pears	Pear Psylla	½ to 1 tsp. per 1 gal/436 sq. ft.	Apply only during dormant through delayed dormant growth periods. Do not apply more than 2 tsp. per 436 sq. ft. per year.
Pistachios	Leaffooted Bugs Navel Orangeworm Peach Twig Borer Plant Bugs Stinkbugs	½ to 1 tsp. per 1 gal/436 sq. ft.	Nuts may be harvested on the day of application. Do not apply more than 2 tsp. per 436 sq. ft. per year. Do not apply after 10 percent hull split.

1fl. oz. = 2 tablespoons = 6 teaspoons.
Do not use household utensils to measure Astro Insecticide.

Astro insecticide is not for use on commercial fruit and nut trees.

Pest Control on Outside Surfaces and Buildings

Apply Astro® insecticide using a 0.5% emulsion as a residual spray to outside surfaces of buildings including, but not limited to, exterior siding, foundations, porches, window frames, eaves, patios, garages, refuse dumps, lawn areas adjacent or around private homes, duplexes, townhouses, condominiums, house trailers, apartment complexes, carports, garages, fence lines, storage sheds, barns, other residential structures, commercial, industrial and institutional buildings, soil, trunks of woody ornamentals and other areas where pests congregate or have been seen. Retreatment may be necessary to achieve and/or maintain control during periods of high pest pressure. Repeat application is necessary only if there are signs of renewed insect activity. Repeat application should be limited to no more than once per seven days.

Vinyl and Aluminum Siding: The application of Astro Insecticide to vinyl and aluminum siding (particularly lightly colored, aged, weathered or otherwise damaged) may result in staining, bleaching or discoloration. Factors such as extreme heat and direct sunlight can promote damage when using emulsifiable concentrates. Before applying Astro Insecticide to vinyl or aluminum siding, treat a small area and evaluate 30 minutes later to allow any potential staining to occur. Regardless of the test results, do not apply to vinyl or aluminum siding while exposed to direct sunlight or during the heat of the day.

Perimeter Treatment: Apply to a band of soil and vegetation 6 to 10 feet wide around and adjacent to the structure. Also, treat the foundation of the structure to a height of 2 to 3 feet. Use a spray volume of 2 to 10 gallons of emulsion per 1000 square feet. Higher volumes of water may be needed if mulch or leaf litter is present or foliage is dense. House siding may be treated if pests such as Gypsy moth adults and caterpillars, boxelder bugs, elm leaf beetles, earwigs or silverfish are present.

Applications to Outside Surfaces

Pest	Specific Instructions																				
Ants	Apply as a pinstream, as a fine/coarse, low pressure spray (20 psi or less), as a spot treatment or with a paintbrush. Treat where pests are found or entry points of the structure such as window and door frames and along the foundation.																				
Ant Mounds ¹																					
Armyworm																					
Fire Ants																					
Bees																					
Carpenter Bees																					
Bark Beetles ³																					
Borers ³																					
Boxelder Bugs ²																					
Centipedes																					
Cockroaches	¹ Drench Method: Apply 1-2 gallons of emulsion to each mound area by sprinkling the mound until it is wet and treat a 4 foot diameter circle around the mound. Use the higher volume for mounds larger than 12". For best results, apply in cool weather, such as in early morning or late evening hours, but not in the heat of the day.																				
Asian																					
Cockroaches																					
Crickets																					
Mole Crickets																					
Earwigs																					
Elm Leaf																					
Beetles ²																					
Firebrats																					
Fleas ⁴																					
Ground Beetles	² Boxelder Bugs, Elm Leaf Beetles, Gypsy Moth Caterpillars: Spray tree trunks, building siding or wherever pests congregate, thoroughly but not to the point of runoff.																				
Gypsy Moths (adults & Caterpillars) ²																					
Millipedes																					
Scorpions																					
Silverfish																					
Sowbugs																					
Spiders																					
Wasps																					
Ticks ⁴																					
Flies																					
Carpenter Ants	³ Borers and Bark Beetles: To prevent infestation of trees and woody ornaments, spray the bark thoroughly but not to the point of runoff.																				
Chinchbugs ⁴																					
Pill Bugs																					
Sod Webworm																					
	<table border="1"> <thead> <tr> <th>Lawn</th> <th>Sq Ft</th> <th>Oz of Astro®</th> <th>Gals of Water</th> </tr> </thead> <tbody> <tr> <td>Small</td> <td>2,000</td> <td>0.8 to 1.6</td> <td>8 to 50</td> </tr> <tr> <td></td> <td>4,000</td> <td>1.6 to 3.2</td> <td>16 to 100</td> </tr> <tr> <td>Medium</td> <td>6,000</td> <td>2.4 to 4.8</td> <td>24 to 150</td> </tr> <tr> <td>Large</td> <td>12,000</td> <td>4.8 to 9.6</td> <td>48 to 300</td> </tr> </tbody> </table>	Lawn	Sq Ft	Oz of Astro®	Gals of Water	Small	2,000	0.8 to 1.6	8 to 50		4,000	1.6 to 3.2	16 to 100	Medium	6,000	2.4 to 4.8	24 to 150	Large	12,000	4.8 to 9.6	48 to 300
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	<p>⁴ Fleas: Mix 1.6-3.2 oz. of Astro in 16 to 100 gallons of water and apply to 4000 square feet of lawn. Use the lower rate to knock down existing fleas and the higher rate where faster knockdown or greater residual is desired. For example:</p>																				
		Lawn should not be longer than 3 inches at the time of application. Repeat application should be limited to no more than once per seven days. Application in combination with compatible surfactants may enhance penetration. Arid climates generally require the higher volumes.																			

Subsurface Injection of Astro to Flush Mole Crickets: **(In New York State, this product may NOT be used for subsurface injection).** To increase flushing of mole crickets with subsurface insecticide applications, use Astro with a companion mole cricket control product (such as Talstar PL Granular) and apply at the rate of 0.2 to 0.8 fluid ounces of Astro per 1,000 square feet. Applications must be made in accordance with the more restrictive of label limitations and precautions. No label application rates may be exceeded. This product cannot be used with any product with label prohibitions against such mixing.

Conditions of Sale and Limitation of Warranty and Liability:

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions beyond the control of FMC or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold FMC and Seller harmless for any claims relating to such factors.

Seller warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the Directions for Use when used in accordance with the directions under normal conditions of use. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, FMC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, NOR ANY OTHER EXPRESS OR IMPLIED WARRANTIES WITH RESPECT TO THE SELECTION, PURCHASE, OR USE OF THIS PRODUCT. Any warranties, express or implied, having been made are inapplicable if this product has been used contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to (or beyond the control of) seller or FMC, and buyer assumes the risk of any such use.

To the extent consistent with applicable law, FMC or seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF FMC AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF FMC OR SELLER, THE REPLACEMENT OF THE PRODUCT.

This Conditions of Sale and Limitation of Warranty and Liability may not be amended by any oral or written agreement.

Astro, U-Turn and FMC—Trademarks of FMC Corporation

RESTRICTED USE PESTICIDE

May injure (phytotoxic) susceptible, non-target plants. 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. Commercial certified applicators must also ensure that all persons involved in these activities are informed of the precautionary statements.



PICLORAM 22K

Specimen Label

For control of susceptible annual and perennial broadleaf weeds, woody plants, and vines on rangeland and permanent grass pastures, fallow cropland, spring seeded wheat, barley and oats not underseeded with a legume (Montana Only), non-crop areas including forest planting sites, industrial manufacturing sites, rights-of-way such as electrical power lines, communication lines, pipelines, roadsides, railroads, and wildlife openings in forest and non-crop areas, and on Conservation Reserve Program (CRP) acres.

Not for sale, use, or distribution in Nassau and Suffolk Counties in New York State.

ACTIVE INGREDIENT:

Picloram: 4-amino-3,5,6-trichloropicolinic acid, potassium salt 24.4%

OTHER INGREDIENTS: 75.6%

TOTAL: 100.0%

Alligare Picloram 22K contains the following acid equivalent:

Picloram: 4-amino-3,5,6-trichloropicolinic acid – 21.1% (2 lbs./gal.)

EPA Reg. No. 81927-18

EPA Est. No. 37429-GA-002^{BO}

EPA Est. No. 5905-IA-001^{HD}

EPA Est. No. 75640-COL-001^{PC}

EPA Est. No. 81927-AL-001^{PM}

Letter(s) in lot number correspond(s) to superscript in EPA Est. No.

KEEP OUT OF REACH OF CHILDREN WARNING / AVISO

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).

FIRST AID	
If in eyes	<ul style="list-style-type: none">• 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.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.	

Manufactured for: Alligare, LLC
13 N. 8th Street • Opelika, AL 36801

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS WARNING

Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Prolonged or frequent repeated skin contact may cause allergic reactions in some individuals.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category A on an EPA chemical resistance category selection chart.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves Category A, such as barrier laminate ≥ 14 mils, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, natural rubber ≥ 14 mils, polyethylene ≥ 14 mils, polyvinyl chloride (PVC) ≥ 14 mils, or viton ≥ 14 mils
- Shoes plus socks
- Protective eyewear

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.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing 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.

ENGINEERING CONTROLS

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

ENVIRONMENTAL HAZARDS

This pesticide is toxic to some plants at very low concentrations. Non-target plants may be adversely affected if pesticide is allowed to drift from areas of application. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Do not contaminate water used for irrigation or domestic purposes by cleaning of equipment or disposal of wastes or rinsate. Do not allow runoff or spray to contaminate wells, irrigation ditches or any body of water used for irrigation or domestic purposes. Do not make application when circumstances favor movement from treatment site.

This chemical is known to leach through soil into groundwater under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

This chemical can contaminate surface water through spray drift. Under some conditions, picloram may also have a high potential for runoff into surface water (primarily via dissolution in runoff water), for several months post-application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas over-laying extremely shallow groundwater, areas with in-field canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetative filter strips, and areas over-laying tile drainage systems that drain to surface water.

DIRECTIONS FOR USE

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

This product is not intended for manufacturing or formulating.

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.

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 12 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 Category A, such as barrier laminate ≥ 14 mils, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, natural rubber ≥ 14 mils, polyethylene ≥ 14 mils, polyvinyl chloride (PVC) ≥ 14 mils, or viton ≥ 14 mils
- 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 applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Entry Restrictions for Non-WPS Uses: For applications on rangeland, permanent grass pastures, and non-cropland, do not enter or allow worker entry into treated areas until sprays have dried, unless applicator and other handler PPE is worn.

PRODUCT INFORMATION

Use Alligare Picloram 22K for control of unwanted annual and perennial broadleaf weeds, woody plants and vines on rangeland and permanent grass pastures, fallow cropland, spring seeded wheat, barley and oats not underseeded with a legume, non-crop areas including forest planting sites, industrial manufacturing sites; rights-of-way such as electrical power lines, communication lines, pipelines, roadsides, and wildlife openings in forest and non-crop areas, and on Conservation Reserve Program (CRP) acres.

This product is NOT for sale or use in the San Luis Valley of Colorado.

Not for sale, use, or distribution in Nassau and Suffolk Counties in New York State.

USE PRECAUTIONS AND RESTRICTIONS

Use this product only as specified on this label or EPA accepted Alligare, LLC supplemental labeling.

Observe any special use and application restrictions and limitations, including method of application and permissible areas of use as promulgated by state or local authorities.

Do not mix with dry fertilizer.

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

PICLORAM 22K

Specimen Label

Grazing Poisonous Plants: Application of this herbicide may increase the palatability of certain poisonous plants. Do not graze treated areas until poisonous plants are dry and no longer palatable to livestock.

Maximum Use Rates:

Non-cropland Areas and Rights-of-Way: Total use of picloram, including retreatments or spot treatments, must not exceed 1 lb ae per acre picloram (2 quarts per acre Alligare Picloram 22K) per annual growing season.

Forest Sites: No more than 1 lb. ae picloram (2 quarts of Alligare Picloram 22K) per acre may be applied one time every two years to forest sites.

Rangeland and Permanent Grass Pastures: For control of noxious weeds as defined by federal, state, or local authorities, picloram may be applied at up to 1 lb ae per acre (2 quarts Alligare Picloram 22K per acre) per annual growing season as a broadcast treatment. Spot treatments may be applied at the equivalent broadcast rate of up to 1 lb ae picloram (2 quarts Alligare Picloram 22K) per acre.

For control of other broadleaf weeds and woody plants, picloram may be applied broadcast at up to 0.5 lb ae per acre (1 quart Alligare Picloram 22K per acre) per annual growing season. Apply spot treatments at an equivalent broadcast rate of up to 1 lb ae per acre (2 quarts Alligare Picloram 22K per acre) per annual growing season, but not more than 50% of an acre may be treated. Repeat treatments may be applied as necessary, but total use must not exceed the maximum amount specified.

Cropland (Spring-Seeded Wheat, Barley and Oats): Do not apply more than 0.09 lb ae picloram (1 1/2 fluid ounces of Alligare Picloram 22K) per acre during the small grain growing season.

Fallow Cropland (Not Rotated to Broadleaf Crops): Do not apply more than 0.25 lb ae picloram per acre (1 pint per acre of Alligare Picloram 22K) as a broadcast treatment per annual growing season.

Conservation Reserve Program (CRP) for Seeding to Permanent Grasses Only: Do not broadcast apply more than 0.5 lb ae per acre of picloram (1 quart per acre of Alligare Picloram 22K) per annual growing season or apply more than 1 lb ae per acre picloram (2 quarts per acre of Alligare Picloram 22K) per annual growing season as a spot application. To reduce potential damage to subsequent small grain crops, use the lower specified rate or discontinue the use of Alligare Picloram 22K at least 2 years prior to the seeding of small grain crops. After CRP, do not plant broadleaf crops in treated acres until an adequately sensitive bioassay shows that no detectable picloram is present in the soil.

Precautions for Avoiding Injury to Non-Target Plants

- Do not apply to areas that may be rotated to any broadleaf crop.
- Do not move treated soil to other areas or use it to grow plants if they are not registered for use with picloram until an adequate sensitive bioassay or chemical test shows that no detectable picloram is present in the soil.
- Do not spray if the loss of forage legumes, including clover cannot be tolerated. Alligare Picloram 22K may injure or kill legumes. New legume seedlings may not grow for several years following application of this product.
- Be sure that use of this product conforms to all applicable regulations.
- Do not make application when circumstances favor movement from treatment site.
- Do not rotate to food or feed crops on treated land if they are not registered for use with picloram until an adequately sensitive bioassay or chemical test shows that no detectable picloram is present in the soil.
- Observe any special use and application restrictions and limitations, including method of application and permissible areas of use as promulgated by state authorities.
- Do not allow or otherwise permit Alligare Picloram 22K or sprays containing Alligare Picloram 22K to contact crops not listed on this label or other desirable broadleaf plants including, but not limited to, alfalfa, beans, cotton, grapes, melons, peas, potatoes, safflower, soybeans, sugar beets, sunflower, tobacco, tomatoes and other vegetable crops, flowers, fruit plants, ornamentals or shade trees.
- Do not contaminate water intended for irrigation or domestic purposes. To avoid injury to crops or other desirable plants, do not treat or allow spray drift or runoff to fall onto 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 Alligare Picloram 22K on residential or commercial lawns or near ornamental trees and shrubs. Untreated trees can occasionally be affected by root uptake of herbicide through movement into the topsoil or by excretion of the product from the roots of nearby treated trees. Do not apply Alligare Picloram 22K within the root zone of desirable trees unless such injury can be tolerated.
- Allow 7 days of grazing on an untreated grass pasture (or feeding of untreated hay) before transferring livestock from treated grazing areas (or feeding of treated hay) onto sensitive broadleaf crop areas. Otherwise, urine and manure may contain enough picloram to cause injury to sensitive broadleaf plants.
- Do not use manure from animals grazing treated areas or feeding on treated hay on land used for growing broadleaf crops, ornamentals, orchards or other susceptible, desirable plants. Manure may contain enough picloram to cause injury to susceptible plants.
- Do not use grass or hay from treated areas for composting or mulching of susceptible broadleaf plants.
- Do not apply to snow or frozen ground. Application during very cold (near freezing) weather is not advisable.
- Do not use on flood or sub-irrigated land.
- Do not apply this product through a mist blower.
- Avoid injury to newly planted conifers. Conifer planting intervals vary. Pines planted sooner than 6 months after treatment with Alligare Picloram 22K may be injured in the South or west of the Cascade Mountains. Other conifers, west of the Cascade Mountains, may be injured if planted sooner than 8 to 9 months after treatment. For all conifers, the waiting period between treatment and planting should be 11 to 12 months in the area between the Cascade and Rocky Mountains and 8 to 9 months in the lake States and Northeastern U.S.
- Avoid injurious spray drift. Applications should be made only when there is little or no hazard from spray drift. Very small quantities of spray, which may not be visible, may seriously injure susceptible crops or ornamental plants near enough to be injured. Use a continu-

ous smoke column at or near the spray site or a smoke generator on the spray equipment to detect air movement, lapse conditions or temperature inversions. If the smoke layers or indicates a potential of hazardous spray drift, do not spray.

- Cropland (Spring-seeded Wheat, Barley and Oats): Do not apply more than 1 1/2 fluid ounces of Alligare Picloram 22K per acre during the small grain growing season.

Precautions for Avoiding Injurious Spray Drift

For aerial applications on rights-of-way or other areas near susceptible crops, use drift control additive as recommended by the manufacturer.

Do not apply or otherwise permit Alligare Picloram 22K or spray containing Alligare Picloram 22K to contact crops not listed on this label or other desirable broadleaf plants, including but not limited to alfalfa, beans, grapes, melons, peas, potatoes, safflower, soybeans, sugar beets, sunflower, tomatoes, and other vegetable crops, flowers, fruit plants, ornamentals or shade trees or the soil containing roots of nearby valuable plants.

Applications should be made to avoid spray drift since very small quantities of spray, which may not be visible, may seriously injure susceptible crops during both growing and dormant periods. To minimize spray drift, use low nozzle pressure; apply as a coarse spray; and use nozzles designed for herbicide application that do not produce a fine droplet spray. To aid in further reducing spray drift, a drift control and deposition aid may be used with this product, especially when water alone is used as the carrier. If a drift control aid is used, follow all use recommendations and precautions on the product label. Do not use a thickening agent with Microfoil or Thru-Valve booms, or other systems that cannot accommodate thick sprays.

Ground Equipment: With ground equipment, spray drift can be reduced 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 manufacturer's recommended minimum pressures for the specific nozzle type used (low pressure nozzles are available from spray equipment manufacturers); by spraying when wind velocity is low (follow state regulations). Avoid calm conditions which may be conducive to air 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. A spray thickening agent may be used to further reduce the potential for drift. Do not apply with hollow cone-type insecticide or other nozzles that produce a fine droplet spray.

Aerial Application:

AERIAL SPRAY DRIFT MANAGEMENT

Spray Drift Management

AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator is responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they must be observed.

The applicator should be familiar with and take into account the information covered in the [Aerial Drift Reduction Advisory](#).

Aerial Drift Reduction Advisory

[This section is advisory in nature and does not supersede the mandatory label requirements.]

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 recommended 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 provide uniform coverage.
- Nozzle Orientation – Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- Nozzle Type – Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length

For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height

Applications should not be made at a height greater than 10 feet above the top of the target plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

PICLORAM 22K

Specimen Label

Swath Adjustment

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.)

Wind

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

MIXING INSTRUCTIONS

Mix the required amount of Alligare Picloram 22K in water and apply as a coarse, low pressure spray using ground equipment or aircraft. Use enough spray volume to provide uniform coverage of the weeds.

Use with Surfactants: Addition of wetting or penetration agents is not usually necessary when using Alligare Picloram 22K. However, under certain conditions, such as drought, addition of a surfactant may improve efficacy. However, if foliar burn occurs too rapidly, translocation of Alligare Picloram 22K will not occur and control of perennial weeds, such as field bindweed, may be reduced.

Mixing with Water

To prepare the spray, add about half the desired amount of water in the spray tank. Then with agitation, add the recommended amount of Alligare Picloram 22K and other registered tank mix herbicides. Finally, with continued agitation, add the rest of the water and additives such as surfactants or drift control and deposition aids.

Mixing Oil-Water Emulsions (Ground and Aerial Applications)

For aerial application, add oil to the total spray mix at the ratio of 1 part oil to 5 parts water (1:5 ratio). For ground application, add oil to the spray mix at a rate of 5 to 10% of the total mix. Do not use more than 1 gallon of oil per acre for aerial or ground application. Use agricultural spray emulsifiers such as Sponto 712 or Triton X-100 according to mixing instructions given below.

Batch Mixing Instructions

With continuous, vigorous agitation:

1. Add half the amount of water to be used to the spray tank.
2. Add the required amount of water-soluble herbicides such as Alligare Picloram 22K, Reclaim™ herbicide or 2,4-D Amine.
3. With continued, vigorous agitation, slowly add a premix of oil, emulsifier and oil soluble herbicides such as Alligare Triclopyr 4 or Garlon 4, Remedy™ herbicide or a 2,4-D ester as required. Note: Do not add water or mixtures containing water to the premix or oil soluble herbicide since a thick "invert" (water in oil) emulsion may be formed that will be difficult to break. An invert emulsion will also form if the premix is added to the mixing tank before the addition of water.
4. Finish filling the spray tank and maintain sufficient agitation to ensure uniformity of the spray mixture during application.

Invert Emulsions (Non-food Crop Use Only)

Apply Alligare Picloram 22K with Envert 171 Woody Plant Herbicide or an approved inverting agent to provide a thick invert water-in-oil spray emulsion designed to minimize spray drift. Consult label directions for Envert 171 or inverting agent for use directions. Invert emulsions may be used only for non-food uses.

Where root-suckering species such as sumac, sassafras, locust and black gum predominate, mix 3 gallons of Envert 171 plus 1 1/2 quarts Alligare Picloram 22K with 9 gallons of water for each acre to be sprayed.

Where harder-to-control species such as red maple, elm or oaks are present, mix 5 to 6 gallons of Envert 171 plus 1 to 2 quarts of Alligare Picloram 22K with 15 to 18 gallons of water for each acre to be sprayed.

Mixing with Sprayable Liquid Fertilizer Solutions

Alligare Picloram 22K is compatible with most non-pressurized liquid fertilizer solutions; however, a compatibility test (jar test) should be made prior to mixing. Jar tests are particularly important when a new batch of fertilizer or pesticide is used, when water sources change, or when tank mixture ingredients or concentrations are changed. Compatibility may be deter-

mined by mixing the spray components in the desired order and proportions in a clear glass jar before large scale mixing of spray components in the spray tank.

Note: The lower the temperature of the liquid fertilizer, the greater the likelihood of mixing problems.

Use of a compatibility aid such as Unite or Compex may help obtain and maintain a uniform spray solution during mixing and application. Compatibility is best with straight liquid nitrogen fertilizer solutions. Mixing with N-P-K fertilizer solutions or suspensions is more difficult and should not be attempted without first conducting a successful jar test. Agitation in the spray tank must be vigorous to be comparable with jar test agitation. For best results, liquid fertilizer rates should not exceed 50% of the total spray volume. Premix Alligare Picloram 22K with water and add to the liquid fertilizer/water mixture while agitating contents of the spray tank. Apply the spray the same day it is prepared while maintaining continuous agitation. Rinse spray tank thoroughly after use.

Note: Foliar applied liquid fertilizers used as carrier for Alligare Picloram 22K can cause yellowing or leaf burn of crop foliage.

Do not use spray equipment used to apply Alligare Picloram 22K for other applications to land planted to, or to be planted to susceptible crops or desirable sensitive plants, unless it has been determined that all phytotoxic residue of this herbicide has been removed by thorough cleaning of equipment.

Local conditions may affect the use of herbicides. State agricultural experiment stations or extension service weed specialists in many states issue recommendations to fit local conditions. Be sure that use of this product conforms to all applicable regulations.

Tank Mixing

Alligare Picloram 22K may be applied in tank mix combination with labeled rates of 2,4-D or other products provided (1) the tank mix product is labeled for the timing and method of application for the use site to be treated; and (2) tank mixing is not prohibited by the label of the tank mix product.

Tank Mixing Precautions:

- Read carefully and follow all applicable use directions, precautions, and limitations on the respective product labels.
- Do not exceed specified application rates. If products containing the same active ingredients are tank mixed, do not exceed the maximum allowable active ingredient use rates.
- For products packaged in water-soluble packaging, do not tank mix with products containing boron or mix in equipment previously used to apply a product mixture containing boron unless the tank and spray equipment has been adequately cleaned. (See "Sprayer Clean-Out" below.)
- For direct injection or other spray equipment where the product formulations will be mixed in undiluted form, special care should be taken to ensure tank mix compatibility.
- Always perform a (jar) test to ensure the compatibility of products to be used in tank mixture.

Tank Mix Compatibility Testing: A jar test is recommended prior to tank mixing to ensure compatibility of Alligare Picloram 22K and other pesticides or carriers. Use a clear glass jar with lid and mix the tank mix ingredients in their relative proportions. The tank mixture is compatible if the materials mix readily when the jar is inverted several times. The mixture should remain stable after standing for ½ hour or, if separation occurs, should readily mix if agitated. An incompatible mixture is indicated by separation into distinct layers which do not readily remix when agitated and/or the presence of flakes, precipitates, gels, or heavy oily film on the jar.

Sprayer Clean-Out: To avoid injury to desirable plants, equipment used to apply Alligare Picloram 22K should be thoroughly cleaned before reusing to apply any other chemicals.

1. Rinse and flush application equipment thoroughly after use. Dispose of rinse water in non-cropland area away from water supplies.
2. Rinse a second time, adding 1 quart of household ammonia for every 25 gallons of water. Circulate the solution through the entire system so that all internal surfaces are contacted (15-20 min.). Let the solution stand for several hours, preferably overnight.
3. Flush the solution out of the spray tank through the boom.
4. Rinse the system twice with clean water, recirculating and draining each time.
5. Nozzles and screens should be removed and cleaned separately.

APPLICATION METHODS

Ground or Aerial Broadcast

Use Alligare Picloram 22K as a broadcast treatment by ground or aerially to control listed broadleaf weeds and woody plants. Apply Alligare Picloram 22K as a coarse low-pressure spray at the specified rates in a spray volume of 2 or more gallons per acre by air or 10 or more gallons per acre by ground. For non-crop applications make ground applications in 15 or more gallons of total spray mixture per acre. For aerial applications, the use of 5 to 20 gallons per acre of spray mixture is recommended.

High-Volume Foliar Applications

Spray to thoroughly wet foliage and stems. An approved agricultural surfactant may be added at the manufacturer's recommended rate. Do not apply more than the maximum application rate of Alligare Picloram 22K specified for a given treatment site.

Modified High Volume Applications

For modified high volume leaf-stem treatments of woody brush mix 1 to 3 quarts of Alligare Picloram 22K in 100 gallons of water. To control a wider range of plant species, mix 1 to 3 quarts of Alligare Picloram 22K with 1-3 quarts of Alligare Triclopyr 4 or Garlon 4 herbicide or 1 to 4 quarts of Alligare Triclopyr 3 or Garlon 3A herbicide and dilute to make 100 gallons of spray. Apply after the foliage is well developed and in a manner which thoroughly wets all leaves, stems, and root collars.

The amount of spray mixture applied per acre will vary with plant size and density however 40 to 60 gallons per acre is recommended. The total use of Alligare Picloram 22K must not exceed 2 quarts per acre.

PICLORAM 22K

Specimen Label

Spot Treatment

Use application rates as specified in this label. Apply in a total spray volume of 20 to 100 gallons per acre. To prevent misapplication, apply spot treatments with a calibrated boom or with hand sprayers according to directions provided below. Do not exceed maximum application rates for Alligare Picloram 22K for a given treatment site. On rangeland and permanent grass pastures, apply spot treatments at an equivalent broadcast rate of up to 2 quarts per acre per annual growing season, but not more than 50% of an acre may be treated (unless the target weed is a noxious weed which allows higher broadcast use rates). Repeat treatments may be applied, but total use must not exceed the maximum amount specified.

Hand-Held Sprayers: Hand-held or backpack sprayers may be used for spot applications of Alligare Picloram 22K if care is taken to apply the spray uniformly and at a rate equivalent to a broadcast application. Application rates in the table are based on an area of 1,000 sq. ft. Mix the amount of Alligare Picloram 22K (fl. oz. or ml) corresponding to the desired broadcast rate in 0.5 to 2.5 gallons of water, depending on the spray volume required to treat 1,000 sq. ft. To calculate the amount of Alligare Picloram 22K required for larger areas, multiply the table value (fl. oz. or ml) by the area to be treated in "thousands" of square feet, e.g., if the area to be treated is 3,500 sq. ft., multiply the table value of 3.5 (calc. 3,500/1,000 = 3.5). An area of 1,000 sq. ft. is approximately 10.5 x 10.5 yards (strides) in size.

Amount of Alligare Picloram 22K per 1,000 sq. ft. to Equal Specified Broadcast Rate					
1/4 pt./acre	1/3 pt./acre	1/2 pt./acre	2/3 pt./acre	1 qt./acre	1 qt./acre
1/10 fl. oz. ¹ (2.7 ml)	1/8 fl. oz. (3.6 ml)	1/5 fl. oz. (5.4 ml)	1/4 fl. oz. (7.3 ml)	3/8 fl. oz. (11 ml)	3/4 fl. oz. (22 ml)

¹ 1 fl. oz. = 29.6 (30) ml

Special Application Methods

Wick Application (non-cropland only) – Mix 1 part of Alligare Picloram 22K with 2 parts of water to prepare a 33% solution. Apply when weeds are actively growing and are above most desirable plants. For ironweed and goldenrod, best results are obtained when applications are made prior to the early bud stage. Drain the wick applicator and clean after each use. Change ropes when flow is reduced from wear, extended use, poor cleaning or intermittent use.

Carpet Roller Application (non-cropland only) – Alligare Picloram 22K can be applied with carpeted rollers where drift presents a hazard to susceptible crops, surface waters and other sensitive areas. Apply to previously untreated plants less than 6 feet tall, and short enough to pass beneath the tractor without breaking off at the ground. Applications made during periods of extended drought conditions will not provide acceptable control. Do not burn, mow or otherwise disturb the treated plants during the remainder of the growing season. Operate carpeted rollers as close to the ground as possible without breaking the stems, but above the tallest grasses. Grasses growing adjacent to treated plants may exhibit temporary injury. Maximize herbicide deposition on stems and foliage and minimize drippage losses by rotating the carpeted roller at 30 to 40 rpm with the lower edge moving in the same direction as the direction of travel. Maintain the carpet sufficiently wetted to apply up to 1 gal./acre of herbicide-water mixture to stands of average density (100 to 200 plants/acre), and up to 2 gals./acre in dense stands (300 to 400 plants/acre). Rewet rollers at regular intervals. See the Rangeland, Permanent Grass Pastures and Non-Cropland section of this label for treatment directions.

Soil Spot Concentrate: Alligare Picloram 22K may be applied diluted as a spot concentrate application to control ashe juniper, eastern redcedar and eastern persimmon (see specific use directions for these plant species under the Specific Use Directions for Rangeland and Permanent Grass Pastures section of this label). Applications should precede periods of expected rainfall. Apply directly to the soil within the dripline and on the upslope side of the tree. Applications to trees taller than 12 feet are not recommended.

Broadcast Cut Stubble Treatment

Apply Alligare Picloram K at the rate of 2 quarts per acre in 15 or more gallons of a water spray mixture to prevent resprouting of susceptible woody species after mowing or hand-cutting on non-crop areas and rights-of-way. For best results, make applications before or during periods of active root growth. Do not apply when the soil surface is frozen or covered by snow or standing water. Make applications soon after cutting, before sprouting of woody species has occurred. The "Brown Brush Monitor" is recommended for this type of application.

Special Ground Sprayer Equipment: To control annual and perennial weed species using special low-volume, minimum drift equipment, such as the hooded Forage Chemical Mower, apply 1 to 2 pts. of Alligare Picloram 22K in total volumes ranging from 1 gallon to 5 gallons per acre in water alone or as an oil-water emulsion at a 1:5 and 1:4 oil-to-water ratio for a 1 gallon and 5 gallon per acre solutions, respectively.

WOODY PLANTS AND BROADLEAF WEEDS CONTROLLED BY ALLIGARE PICLORAM 22K

Woody Plants:

acacia, blackbrush	guava	plum, java
acacia, catclaw	gums	poplar spp.
acacia, twisted	haw	rabbitbrush, Douglas
aspen	hemlock	rose, Macartney
blackberry	hickory	rose, multiflora
broom, Scotch	huisache (suppression only)	sagebrush, fringed
buttonbush	junipers/cedars	salmonberry
cactus spp.	lantana	sassafrass
camelthorn	locust	sourwood
cedars (Juniper)	maple spp.	spruce
chaparral spp.	mesquite	sumac
dogwood	oak spp.	tallowtree, Chinese
Douglas fir	oak, live	trumpetreeper
fir spp.	oak, poison	willows
gorse	persimmon	wormwood, absinth
granjeno	pine	
guajillo	pine, pinyon	

Annual and Perennial Broadleaf Weeds:

bindweed, field (p)	ironweed (p)	ragwort, tansy (b)
bitterweed (a)	knawweed, diffuse (a)	Russian thistle (a)
broomweed, annual (a)	knawweed, Russian (p)	skeletonweed, rush (p)
buckwheat, wild (a)	knawweed, spotted (p)	smartweed (a)
buffalobur (a)	knawweed, squarrose (p)	snakeweed, broom (p)
bullnettle (p)	lambquarters (a)	sneezeweed, bitter (a)
bursage (a)	larkspur, geyer (p)	sowthistle, perennial (p)
burroweed (p)	larkspur, plains (p)	spurge, leafy (p)
camphorweed (a)	larkspur, tall (p)	St. Johnswort (p)
carrot, wild (b)	lettuce, prickly (a)	starthistle, Iberian (a)
cinqfoil, sulfur (p)	licorice, wild (p)	starthistle, purple (a)
cocklebur (a)	locoweeds (p)	starthistle, yellow (a)
coneflower, upright prairie (p)	loco, woolly (p)	sunflower (a)
croton (a)	loco, Wooten (garbancillo) (p)	tasajillo (p)
crupina, common (a)	lupines (p)	thistles, annual or biennial, including:
daisy, ox-eye (p)	marshelder (sumpweed) (a)	thistle, bull (b)
dock, curly (p)	mayweed (a)	thistle, distaff (a)
garbancillo (Wooten loco) (p)	milkweed (p)	thistle, Italian (b)
goldaster, gray (p)	mustard, wild (a)	thistle, musk (b)
goldaster, narrowleaf (p)	nightsshade, silverleaf (p)	thistle, plumless (b)
goldenrod, common (p)	pennycress (a)	thistle, Scotch (b)
goldenweed, Drummond (p)	pigweed (a)	thistles, perennial, including
gronfisel (p)	pricklypear, plains (p)	thistle, Canada (p)
henbane, black (a,b)	pricklypear, lindheimer (p)	thistle, wavy leaf (p)
horsenettle, Carolina (p)	ragweed, bur (a)	toadflax, dalmation (p)
horsenettle, western (p)	ragweed, common (a)	toadflax, yellow (p)
horsenettle, white (p)	ragweed, lanceleaf (a)	yankeeweed (p)
horseweed (a)	ragweed, western (a)	

(a) – annual; (b) – biennial; (p) – perennial

SPECIFIC USE DIRECTIONS FOR NON-CROPLAND AREAS

Use Alligare Picloram 22K to control susceptible broadleaf weeds and woody plants and vines on non-cropland areas including forest planting sites, industrial manufacturing sites, rights-of-way such as electrical power lines, communication lines, pipelines, roadsides, railroads or other rights-of-way, fence rows, around farm buildings and wildlife openings in forest and non-crop areas. Up to 2 quarts of Alligare Picloram 22K per acre may be applied. See specific use directions for Forest Site Preparation below.

Maximum Use Rates for Non-Cropland Areas: Total use of Alligare Picloram 22K, including retreatments or spot treatments must not exceed 2 quarts per acre per annual growing season.

Broadcast Treatments for Forest Site Preparation (Not for Conifer Release)

For broadcast applications, apply the specified rate of Alligare Picloram 22K in a total spray volume of 5-to-25 gallons per acre by air or 10-to-100 gallons per acre by ground. Use spray volumes sufficient to provide thorough coverage of treated foliage. Use application systems designed to prevent spray drift to off-target sites. Nozzles or additives that produce larger droplets may require higher spray volumes to provide adequate coverage.

Southern States including Alabama, Arkansas, Delaware, Georgia, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas and Virginia: Apply Alligare Picloram 22K at a rate of 2 quarts per acre to control susceptible woody plants and broadleaf weeds. Apply 2 quarts per acre of Alligare Picloram 22K in tank-mix combination with 2-to-4 quarts per acre of Alligare Triclopyr 4 or Garlon® 4 Herbicide to broaden the spectrum of woody plants and broadleaf weeds controlled. Where grass control is also desired, Alligare Picloram 22K alone, or in combination with Alligare Triclopyr 4 or Garlon® 4 Herbicide, may be tank-mixed with 1-to-4 quarts per acre of Accord®, Alligare's Glyphosate 4 Plus or Roundup® herbicides, or 8-to-16 fluid ounces per acre of Arsenal® Applicator's Concentrate. Susceptible woody plants, broadleaf weeds and grasses may also be controlled using a tank-mix of 2 quarts per acre of Alligare Picloram 22K and 3-to-5 quarts of Accord®, Alligare's Glyphosate 4 Plus or Roundup® herbicide, or 16-to-24 fluid ounces of Arsenal® Applicator's Concentrate. When applying tank mixes, follow the directions for use and precautions on each product label.

In Western, Northeastern, North Central and Lake States (States not listed above as Southern States): To control susceptible woody plants and broadleaf weeds, apply Alligare Picloram 22K at a rate of 1-to-2 quarts per acre. Apply 1-to-2 quarts per acre of Alligare Picloram 22K in tank-mix combination with 1 ½-to-3 quarts of Alligare Triclopyr 4 or Garlon® 4 Herbicide to broaden the spectrum of woody plants and broadleaf weeds controlled. Where grass control is also desired, Alligare Picloram 22K alone, or in combination with Alligare Triclopyr 4 or Garlon® 4 Herbicide, may be tank-mixed with 1-to-3 quarts per acre of Accord®, Alligare's Glyphosate 4 Plus or Roundup®, or 2-to-4 fluid ounces of Oust®, or a combination of Accord®, Alligare's Glyphosate 4 Plus or Roundup®, plus Oust® at the rates listed, or 8-to-16 fluid ounces of Arsenal® Applicator's Concentrate. When applying tank mixes, follow the directions for use and precautions on each product label.

SPECIFIC USE DIRECTIONS FOR RANGELAND AND PERMANENT GRASS PASTURES

Do not use on rangeland and grass pastures that will be harvested for hay or silage.

Use Alligare Picloram 22K on rangeland and permanent grass pastures to control susceptible broadleaf weeds and woody plants including, but not limited to those shown in the following tables. Many annual weeds at the seedling stage are controlled at the rate of 1 pt. per acre. Where a rate range is specified, choose the higher rate for dense weed infestations, and for more dependable, longer-lasting control. Lower rates will perform best when applied under favorable conditions and at the optimum growth stage, but may provide a lower level of control and require retreatment. For best results, treat when weeds are small and actively growing in the spring before full bloom, however, certain weeds may also be treated in late summer or fall. Treatments during full bloom or seed stage of some weeds may not provide acceptable control.

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Refer to the "Application Methods" section of this label for information on various methods of application including ground or aerial broadcast, high volume foliar application, spot treatments, and special application methods for certain weeds or woody plants including spot concentrate application or application with special low volume or hooded spray equipment.

Precautions and Restrictions:

Do not use on rangeland and grass pastures that will be harvested for hay or silage.

Maximum Use Rates for Rangeland and Permanent Grass Pastures: For control of noxious weeds as defined by federal, state, or local authorities, Alligare Picloram 22K may be applied at up to 2 quarts per acre per annual growing season as a broadcast treatment. Spot treatments may be applied at the equivalent broadcast rate of up to 2 quarts per acre.

For control of other broadleaf weeds and woody plants, Alligare Picloram 22K may be applied broadcast (ground, air, or high volume foliar) at up to 1 quart per acre per annual

growing season. Spot treatments (hand sprayer, calibrated boom, high volume foliar, or soil spot concentrate) may be applied at an equivalent broadcast rate of up to 2 quarts per acre per annual growing season, but not more than 50% of an acre may be treated. Repeat treatments may be applied, but total use must not exceed 2 qts. of Alligare Picloram 22K/A (1.0 lb ae/A) per annual growing season.

Grazing Restrictions: Do not cut grass for feed within two weeks after treatment when applying more than 1 quart of Alligare Picloram 22K per acre. Meat animals grazing for up to two weeks after treatment should be removed from treated areas three days prior to slaughter. Do not graze lactating dairy animals on treated areas within two weeks after treatment.

Certain established grasses, such as brome grass, blue gamma, and buffalograss may be suppressed when using rates of Alligare Picloram 22K over 1 quart per acre. However, subsequent grass growth should be improved by release from weed competition.

Application Instructions for Noxious, Invasive, or Other Weed Species Predominant in the Plains and Northern States

Weed Species	Broadcast Application (Rate/acre)	Specific Use Directions
Annual and Biennial Weeds:		
bursage (bur ragweed) crupina, common henbane, black horseweed starthistle, Iberian starthistle, purple starthistle, yellow	1-2 pts. Alligare Picloram 22K	Apply when there is adequate soil moisture and weeds are actively growing.
thistles, including: bull distaff Italian musk plumeless scotch	Fall: 1/2 - 3/4 pt. Alligare Picloram 22K Spring: 1/2 - 3/4 pt. Alligare Picloram 22K + 1 lb. a.e. 2,4-D	Apply at the rosette stage before bolting in the spring or in the fall prior to soil freeze up. Distaff Thistle: Apply at rosette stage in spring only. Bolted Musk Thistle: Apply before flowering at the rate of 3/4 - 1 pt. of Alligare Picloram 22K plus 1 lb. a.e. of 2,4-D/acre.
Mullein, common	1 - 1 1/2 pts. Alligare Picloram 22K + 1 lb. a.e. 2,4-D	Apply at the rosette stage with surfactant and use at least 30 gallons per acre of water carrier.
Perennial Weeds:		
pricklypear, plains	1/2 - 1 pt. Alligare Picloram 22K	Apply at peak of flowering. Use of an oil-water emulsion spray mixture may improve control. Lower rate will provide partial control (stand reduction) and high rate more complete control. Treatment response is slow and may continue for 2 years or longer.
sagebrush, fringed	1/2 - 1 pt. Alligare Picloram 22K + 1 lb. a.e. 2,4-D ester	Apply after seed stalk elongation and early flowering and throughout the summer if growing conditions are favorable.
cinquefoil, sulfur larkspur, geyer larkspur, plains locoweeds snakeweed, broom	1 pt. Alligare Picloram 22K	Apply when weeds are actively growing. Sulfur cinquefoil: Apply during active growth or fall regrowth. Geyer larkspur: Apply when plant is actively growing between rosette stage and flower bud formation. Locoweeds: Apply from early bud to early bloom stage. See "Use Precautions and Restrictions" section of this label for note on grazing treated poisonous plants. Broom snakeweed: Apply during active growth between full leaf to early bloom stage.
burweed daisy, ox-eye goldenrod, common knapweed, diffuse knapweed, meadow knapweed, spotted knapweed, squarrose rabbitbrush, Douglas sage, Mediterranean thistle, artichoke thistle, Canada thistle, wavy leaf wormwood, absinth	1-2 pts. Alligare Picloram 22K	Apply during active growth prior to bud stage. Lower rates in rate range may require annual spot treatments. Control with lower rates may be improved by tank mixing with 1.0 lb. a.e. per acre 2,4-D. Goldenrod: Apply during active growth prior to bud stage. Diffuse or spotted knapweed: Optimum application from rosette to mid-bolting stage or to fall regrowth. Under favorable growing conditions, application in summer can be effective if higher application volumes are used. Thistle (Canada and Wavy Leaf): Apply when most basal leaves have emerged, but before bud stage, or apply to regrowth in the fall. Apply rates less than 1 1/2 pts./acre only under favorable conditions and in combination with 1 lb. a.e./acre of 2,4-D; retreatment may be required. Absinth wormwood: Apply in spring or early summer when plants are actively growing. Ox-eye Daisy: Use 1 1/2 - 2 pts./acre with at least 30 gallons per acre of water.
licorice, wild milkweed	2 pts. Alligare Picloram 22K	Wild Licorice: Apply at bloom stage. Milkweed: Treat during active growth and tank mix specified rate of Alligare Picloram 22K with 1 lb. a.e./acre 2,4-D.
bindweed, field gorse lupines knapweed, Russian ragwort, tansy skeletonweed, rush spurge, leafy St. Johnswort toadflax, dalmation	2-4 pts. Alligare Picloram 22K	Annual retreatment of these species will be required at rates at low end of rate range. Control at low end of rate range may be improved by tank mixing with 1 lb. a.e. 2,4-D. Russian Knapweed: Apply during active growth from bud to mid-flowering, or to fall regrowth. Leafy Spurge: Apply at true flower stage of growth or apply to fall regrowth. Re-apply when level of control falls below 80 percent. Dalmation Toadflax: Apply when plants are actively growing through full bloom stage of growth.
larkspur, tall sowthistle, perennial toadflax, yellow	4 pts. Alligare Picloram 22K	A retreatment program may be necessary for satisfactory control of these species. Tall Larkspur: For best results apply from 6 inches tall to late bloom stage. For increased control, apply in tank-mix with Ally® or Escort® herbicide and non-ionic surfactant. See "Use Precautions and Restrictions" section of this label for note on grazing treated poisonous plants.
Woody Plants:		
juniper	4 qts. Alligare Picloram 22K per 100 gallons of spray	Apply as a high volume foliar spray/individual plant treatment.
redcedar, eastern	Eastern red cedar can be controlled with spot concentrate applications of Alligare Picloram 22K in either the spring (April-May) or fall (September-October). For best results, use 3 ml to 4 ml of Alligare Picloram 22K (undiluted) per 3 feet of plant height. Application should precede periods of expected rainfall. Apply directly to soil within the dripline and on the upslope side of the tree. Application to trees taller than 15 feet is not recommended. Do not use more than 2 pints of Alligare Picloram 22K per acre in any one year.	

PICLORAM 22K

Specimen Label

Application Instructions for Broadleaf Weeds and Woody Species in the Southern U.S. (Alabama, Arkansas, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas and Virginia)

To control certain species, Alligare Picloram 22K may be applied alone or in combination with 2,4-D as indicated in the following table. When Alligare Picloram 22K is applied alone, herbicide symptoms will be slower to appear than when it is applied in combination with 2,4-D.

Weed Species	Broadcast Application (Rate/acre)	High Vol. Foliar (Rate/100 gal.)	Specific Use Directions
Annual and Biennial Weeds:			
bitterweed, western broomweed, annual buffalobur bursage (bur ragweed) camphorweed carrot, wild cocklebur croton horseweed lettuce, prickly marshelder (sumpweed, sulfaweed) ragweed, common ragweed, lanceleaf ragweed, western smartweed sneezeweed, bitter sunflower thistle, bull thistle, musk	Early Season: 1/2 - 1 pt. Alligare Picloram 22K + 0.5 lb. a.e. 2,4-D or 3/4 - 1 1/2 pts. Alligare Picloram 22K Mid to Late Season: 1 pt. Alligare Picloram 22K + 0.5-1.0 lb. a.e. 2,4-D or 1-2 pts. Alligare Picloram 22K	1-2 qts. Alligare Picloram 22K + 2 lbs. a.e. 2,4-D	Apply when there is adequate soil moisture and weeds are actively growing. Early Season: Rates specified are intended only for very early in the season when weeds are no more than 2 to 3 inches tall. Mid to Late Season: Rates specified are for weeds from 3 inches tall to early flowering. Marshelder: Use a minimum of 3/4 pt./acre of Alligare Picloram 22K plus 0.75 lb. a.e./acre 2,4-D + non-ionic surfactant. Apply when plants are no more than 3-6 inches tall. Control may be improved by adding ammonium sulfate at 17 lbs./100 gals. spray solution. Thistles: Apply when thistles are in the rosette stage before bolting. When bolting, increase rate and add 2,4-D. Lanceleaf Ragweed: Use the higher rate within the specified rate range.
Perennial Weeds:			
snakeweed, broom	Fall, Early Winter 1 pt. Alligare Picloram 22K Late Winter, Early Spring 2 pts. Alligare Picloram 22K	—	Fall and Early Winter: If rainfall is less than average prior to flowering, apply after flowering is complete. If rainfall is average to above average prior to or during flowering, apply during full flower and/or active pollination, before resumption of new top growth. Late Winter and Early Spring: Apply following sufficient precipitation (rain or snow) to stimulate active plant growth. Both basal and terminal leaves should be green and active plant growth occurring.
bullnettle coneflower, upright prairie dock, curly horsenettle, Carolina horsenettle, western horsenettle, white ironweed nightshade, silverleaf yankeeweed	1/2 - 1 pt. Alligare Picloram 22K + 0.5-1.0 lb. a.e. 2,4-D or 1-2 pts. Alligare Picloram 22K	1-2 qts. Alligare Picloram 22K + 2 lbs. a.e. 2,4-D	Apply when there is adequate soil moisture and weeds are actively growing. Nettles and Silverleaf Nightshade: Apply when plants begin to flower in spring. Upright Prairie Coneflower: Apply when plants are 2-6 inches tall, before flowering. Curly Dock: Apply up to bolting. Ironweed: Apply up to bud stage. Yankeeweed: Apply when plants are 8 to 10 inches tall.
goldaster, gray goldaster, narrowleaf goldenweed, common goldenweed, Drummond (<i>Isocoma</i> spp.)	1-2 pts. Alligare Picloram 22K + 0.5-1 lb. a.e. 2,4-D or 2 pts. Alligare Picloram 22K	1-2 qts. Alligare Picloram 22K + 2-4 lbs. a.e. 2,4-D	Gray and Narrowleaf Goldaster: Apply in oil-water emulsion in spring during bud stage (prebloom). Thorough coverage is essential. Goldenweed: Apply in spring (April-June) when there is substantial canopy development as a result of good growing conditions. Add an agricultural surfactant at 0.25% - 0.5% or apply in oil-water emulsion. Increase spray volume, 4-5 gpa by air or 15-20 gpa by ground, to ensure thorough coverage
Poisonous Plants such as groundsel (<i>Senecio</i> spp.) loco, woolly loco, Wooton (garbancillo)	3/4 - 1 pt. Alligare Picloram 22K + 0.5-1.0 lb. a.e. 2,4-D or 1 1/2 - 2 pts. Alligare Picloram 22K	1 qt. Alligare Picloram 22K + 2 lbs. a.e. 2,4-D	Apply in fall or winter when there is adequate soil moisture and weeds are actively growing. See the "Use Precautions and Restrictions" section of this label for note on grazing treated poisonous plants. Locoweeds: To improve wetting of locoweeds, use an agricultural surfactant at 0.25%-0.5% or apply in oil-water emulsion.
Cactus:			
cactus sp. cactus, cholla	—	4 qt. Alligare Picloram 22K	Apply any time of the year with water and surfactant. Good coverage is essential.
Woody Plants:			
Tank Mixing: Within rate ranges for listed products, consult local cooperative extensions.			
huisache (suppression)	2 pts. Alligare Picloram 22K + 1 pt. Remedy™	2 qt. Alligare Picloram 22K + 1 qt. Remedy™	Fall application is recommended, however, fall applications will not provide satisfactory control of other woody species in the South Texas mixed brush complex. Performance can be erratic.
juniper, including, alligator redberry Utah one-seeded eastern redcedar pinyon pine	—	4 qts. Alligare Picloram 22K	Apply May through July. Complete coverage is essential. Results with ashe juniper may be variable with high volume foliar application.
pricklypear, lindheimer (unburned rangeland)	2 pts. Alligare Picloram 22K	4 qts. Alligare Picloram 22K	Application may be made anytime, but optimum time is late August to early November. Onset of herbicidal activity is very slow and may continue for two years or longer. Good coverage is essential.
pricklypear, lindheimer (burned rangeland)	1 pt. Alligare Picloram 22K	2 qts. Alligare Picloram 22K	Conduct intense controlled burns from December through March and apply Alligare Picloram 22K mid-April through May. Rainfall following burning can also stimulate prolific resprouting of the burned plants. Good coverage is also essential.
pricklypear, plains	1 1/2 - pts.	4 qts. Alligare Picloram 22K	Optimum time for treatment is during flowering. Control may be improved by use of an oil-water emulsion spray mixture. Lower rate will provide partial control (stand reduction) and high rate more complete control. Treatment response is slow and may continue for 2 years or longer.
rose, Macartney rose, multiflora	1 qt. Alligare Picloram 22K + 2 lbs. a.e. 2,4-D	1-2 qts. Alligare Picloram 22K + 2-4 lbs. a.e. 2,4-D	Apply in the spring or fall when conditions are favorable for plant growth. Use an agricultural surfactant (0.5% v/v) or apply as an oil-water emulsion. Ensure thorough and uniform coverage by applying at higher spray volume, 5 or more gpa by air or 20 or more gpa by ground. Avoid treatment less than 9 to 12 months after mowing when plants have a high percentage of new growth. Repeat treatment if needed, but do not exceed specified maximum use rates.

Weed Species	Broadcast Application (Rate/acre)	High Vol. Foliar (Rate/100 gal.)	Specific Use Directions
tallowtree, Chinese	1 qt. Alligare Picloram 22K + 2 lbs. a.e. 2,4-D or 1 pt. Remedy™	2 qts. Alligare Picloram 22K or 1-2 qts. Alligare Picloram 22K + 2-4 lbs. a.e. 2,4-D or 1 qt. Remedy™	Apply in the spring or fall when conditions are favorable for plant growth. Use an agricultural surfactant (0.5% v/v) or use an oil-water emulsion and higher spray volumes, 5 gpa or more by air and 20 gpa or more by ground.
South Texas mixed brush, including, acacia, blackbrush acacia, catclaw acacia, twisted granjeno guajillo mesquite prickly pear tasajillo	2 pts. Alligare Picloram 22K + 2/3-1 1/3 pt. Reclaim™ or 1 to 2 pts. Remedy™	2 qts. Alligare Picloram 22K + 2-3 pts. Remedy™ or 1-2 qts. Reclaim™	Apply in oil-water emulsion. Use 4 or more gpa by air or 20 or more gpa by ground. For application timing for mesquite, see comments in section on mesquite control. Tank mixing with Reclaim™ will provide improved control of pricklypear and legume species such as mesquite and acacias while tank mixing with Remedy™ will provide improved control of non-legume species such as granjeno, oaks and hackberry.
mesquite	1-2 pts. Alligare Picloram 22K + 2/3-1 1/3 pt. Reclaim™ or 2 pts. Alligare Picloram 22K + 1 pt. Remedy™	1-2 qts. Alligare Picloram 22K + 1-2 qts. Reclaim™ or 1 1/2 - 3 pts. Remedy™	Alligare Picloram 22K Alone: Apply as a water spray or oil-emulsion (see Mixing Instructions) in 4 or more gpa by air or 10 or more gpa by ground. Increase spray volumes with increasing brush density and height to ensure adequate coverage. Where control of pricklypear cactus is desired, use the 2 pint/acre rate of Alligare Picloram 22K.
<p>Alligare Picloram 22K in Tank Mix: Tank mixing with Reclaim™ will provide control of pricklypear and improved control of legume species such as mesquite and acacias while tank mixing with Remedy™ will provide improved control of non-legume species such as granjeno, oaks and hackberry. Regrowth mesquite should be at least 4 ft. tall prior to treatment. See labels for Reclaim™ and Remedy™ for additional treatment directions and information on mesquite control. Within rate ranges given for Alligare Picloram 22K and tank mix products, consult local cooperative extension.</p> <p>Timing and Factors in Control: The herbicidal response of mesquite is strongly influenced by environmental conditions as well as foliage condition and stage of growth. For best results, apply when new growth foliage has turned from light to dark green, when the soil temperature has reached 75°F to 83°F at a depth of 12-18 inches, and soil moisture is adequate for plant growth. Application should be made within 45 days after the critical soil temperature at the 12-18 inch depth has been reached, or if Alligare Picloram 22K is applied in combination with Reclaim™ within 60 days. Product performance may be adversely affected if application is made before mesquite foliage has turned from light to dark green or if foliage has been injured or removed by late frost, insects, hail or plant diseases. Do not apply if mesquite exhibits new (light green) growth in response to significant rainfall during the growing season. Soil temperatures at the 12-18 inch depth may vary with soil texture and drainage. Coarse-textured (sandy) soils warm up sooner than fine-textured soils (clay) soils and dry soils warm up more quickly than wet soils.</p> <p>Re-application: Do not reapply in the same growing season. Retreatment will not be effective until woody plants develop sufficient new foliage for interception, uptake, and translocation of the herbicide to plant roots.</p>			
ashe juniper eastern redcedar eastern persimmon	<p>Apply Alligare Picloram 22K undiluted as a spot concentrate application prior to periods of expected rainfall. Apply directly to the soil within the dripline and on the upslope side of the tree. Application to trees taller than 12 feet is not recommended. See directions for "Soil Spot Concentrate" in "Application Methods" section.</p> <p>Ashe Juniper: Apply 4 to 6 ml per 3 ft. of plant height in the spring (April-May).</p> <p>Eastern Redcedar: Apply 3 to 4 ml per 3 ft. of plant height in either spring (April-May) or fall (September-October).</p> <p>Eastern Persimmon: Apply 2 to 4 ml per inch of stem diameter in spring (March through May).</p>		

Rangeland, Permanent Grass Pastures and Non-Cropland (Specific Use Directions: All Areas West of the Mississippi River – Carpet Roller Use)

Brush Species	Amount of Alligare Picloram 22K	Specific Use Directions
mesquite regrowth	1 gal. alone or with 2 qts. Reclaim™ herbicide to make 8 gals. of spray mixture	Include 1 ounce of a recommended agricultural surfactant per gallon of herbicide-water mixture (0.75% vol/vol). Apply from May through August, but preferably in May and June, when moisture availability is sufficient to allow normal plant growth.
huisache/blackbrush	1 gal. alone or with 2 to 3 qts. of Reclaim™ to make 8 gals. of spray mixture	Include 1 ounce of a recommended agricultural surfactant per gallon of herbicide-water mixture (0.75% vol/vol). Apply in the fall.
Refer to the Application Instructions for Broadleaf Weeds and Woody Species in the Southern U.S. (Alabama, Arkansas, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas and Virginia) table for information on timing and factors in control of mesquite.		

SPECIFIC USE DIRECTIONS FOR SMALL GRAINS, FALLOW CROPLAND, AND CRP ACRES

SMALL GRAINS

Spring Seeded Barley, Oats, and Wheat Not Underseeded With a Legume (Which is Not Flood or Sub-Irrigated and Not Rotated to Broadleaf Crops) – For Use Only in the State of Montana

Use Alligare Picloram 22K for the control of susceptible annual broadleaf weeds such as (but not limited to) volunteer sunflower, wild buckwheat, lambsquarters, pigweed, Russian thistle, and sowthistle. This product may cause shorter straw on some varieties of cereals but grain yields are usually not affected.

Use Restrictions

- Do not use on barley, oats, and wheat grown for hay.
- Do not treat durum wheat since some varieties of durum wheat may be injured.
- Do not apply Alligare Picloram 22K within 50 days before harvest.
- Do not graze or feed forage from treated areas for 2 weeks after treatment. Do not harvest hay from treated grain fields.
- Use only on land that will be planted the following year to grass, barley, oats, wheat, grain sorghum or fallowed. Do not plant grain sorghum within 8 months after application. This product is not intended for use on land planted to sweet sorghum.
- Do not apply more than 1 1/2 fluid ounces of Alligare Picloram 22K per acre during the small grain growing season.

Broadcast Treatment (Ground and Aerial Applications)

Alligare Picloram 22K can be applied as a single broadcast treatment by ground or aerially to control several broadleaf weeds by itself or as a tank mix with 2,4-D, MCPA, or sulfonyleurea herbicides such as Ally™. Apply Alligare Picloram 22K at the rates specified in the following table in 2 to 5 gallons of water per acre by air or in 5 to 20 gallons of water per acre by ground. The addition of surfactants may aid control under dry conditions, but may cause injury to grain if used over the top. Read and follow directions and precautions on other product labels when tank mixing.

Application Timing

Spring Wheat, Barley and Oats: Apply from the 3 to 5 leaf stage to early jointing stage of growth as indicated in the table below. Applications at the 3 to 5 leaf stage occasionally cause slight head malformations and straw shortening but normally do not affect yield.

Durum Wheat: Do not apply to durum wheat since some varieties of durum wheat may be injured.

Winter Wheat and Barley: Apply only after resumption of active growth in the spring until the early jointing stage.

PICLORAM 22K

Specimen Label

Use Rates for Spring Wheat, Barley and Oats¹

Weed Species	Weed Growth Stage ²	Grain Growth Stage	Amounts of Each Product Per Acre ³		
			Alligare Picloram 22K	4 lb. a.e./gal 2,4-D or MCPA	6 lb. a.e./gal 2,4-D or MCPA
More susceptible species, such as: lambquarters pennycress wild mustard mayweed	3 inches	3 to 5 leaf to early tillering	1 fl. oz.	1/2 pint	1/3 pint
	3 to 6 inches	Tillering to early jointing	1 1/2 fl. oz.	3/4 pint	1/2 pint
Less susceptible species such as: volunteer sunflower wild buckwheat Russian thistle pigweed Canada thistle, top growth suppression	1 to 6 inches	Tillering to early jointing	1 1/2 fl. oz.	3/4 to 1 pint	1/2 to 2/3 pint

¹For oats, do not tank mix with 2,4-D herbicides.

²For best results, treat when weeds have 2 to 4 leaves and are actively growing.

³When measuring small amounts of Alligare Picloram 22K, special care must be taken not to exceed specified rates.

FALLOW CROPLAND (Not Rotated to Broadleaf Crops)

Apply Alligare Picloram 22K as a post harvest or fallow treatment in continuous grain or during the fallow period. Alligare Picloram 22K may be applied alone or in tank mix combination with 2,4-D or other herbicides registered for this use. Apply in 2 or more gallons of water per acre by air or 5 or more gallons per acre by ground.

Application Rates

Annual Weeds: To control annual weeds such as Russian thistle and wild buckwheat, apply 1/4 to 1/2 pint per acre of Alligare Picloram 22K in tank mix combination with 1/2 to 1 lb. a.e. of 2,4-D or other herbicides registered for use on fallow land. Apply when weeds are actively growing.

Field Bindweed: Apply 1/2 to 1 pint per acre of Alligare Picloram 22K plus 1/2 lb. to 1 lb. a.e. per acre of 2,4-D when bindweed is actively growing. Optimum time for treatment is when plant runners reach 8 to 12 inches. Use 1/2 pint per acre to control light to moderate infestations under good growing conditions or to reduce the potential for crop injury. Use 1 pint per acre for heavy infestations and to start a treatment program for long-term control. Some regrowth will occur the following season and a re-treatment program of 1/2 pint of Alligare Picloram 22K plus 1/2 lb. a.e. of 2,4-D for one to two years will provide stand reduction.

Canada thistle: Apply 1 pint per acre of Alligare Picloram 22K plus 1 lb. a.e. per acre of 2,4-D when the majority of thistle plants are emerged but prior to bud stage.

Crop Rotation

Use only on land to be planted the following year to grass, barley, oats, wheat grain sorghum (milo) or fallowed. Do not plant grain sorghum within 8 months after application. Do not use this product for sweet sorghum production or on land that will be rotated to sweet sorghum. Many broadleaf crops are extremely sensitive to soil residues of Alligare Picloram 22K. Do not plant sensitive broadleaf crops for 36 months after treatment or until soil residues have declined to a safe level as indicated by an adequately sensitive bioassay using the intended broadleaf crop. A bioassay is recommended following treatment prior to planting any sensitive broadleaf crop.

Preplant Interval

A preplant interval following application of Alligare Picloram 22K prior to planting small grains is recommended to reduce or eliminate potential crop injury and/or yield reduction. The possibility for crop injury or yield reduction to occur depends on application rate, soil organic matter, rainfall, temperature and incidence of cereal diseases. Adequate soil moisture and soil temperature during the preplant interval is important in reducing, but may not eliminate, the risk of crop injury. When considering use of Alligare Picloram 22K on fallow land, growers should consider the benefit of weed control against the risk of crop damage and treat only if the risk of injury to small grains can be tolerated. The following preplant intervals are recommended:

For applications up to 1/2 pint per acre, allow a minimum of 45 days of soil temperatures above 40°F between application and planting.

For applications of greater than 1/2 pint and up to 1 pint per acre, allow a minimum of 60 days of soil temperatures above 40°F between application and planting, except in the states of Idaho, North Dakota, Nebraska, Montana, Oregon, South Dakota, Washington and Wyoming, where the minimum preplant interval is 90 days.

Restrictions:

- Do not apply more than 1 pint per acre as a broadcast treatment per annual growing season.
- Spot Treatment: See "Spot Treatment" in "Mixing and Application Methods" section for directions for calibration, spray volume determination and mixing. Spot treatments of Alligare Picloram 22K at rates over 1 pint per acre can be made on fallow, non-irrigated cropland if the treated areas comprise less than 10% of the immediate field in any one year. Alligare Picloram 22K should not be applied to cropland at rates exceeding 2 quarts per acre. When Alligare Picloram 22K is applied at rates above 1 pint per acre, injury to small grains may result for periods up to two years after treatment.

SEEDING TO PERMANENT GRASSES, INCLUDING CONSERVATION RESERVE PROGRAM (CRP) ACRES

Newly Seeded Grasses:

Apply Alligare Picloram 22K only after perennial grasses are well established as indicated by development of a good secondary root system and vigorous growth (usually 45 to 60 days after planting). Most perennial grasses show improved tolerance to the post emergence applications at this stage of development. Generally, wheatgrass species are more tolerant to picloram soil residues.

For best results, apply to actively growing weeds in a spray volume of 2 or more gallons of water per acre by air or 10 or more gallons of water per acre by ground. Refer to the weeds rate chart for information on target weed species and application rates.

Perennial Broadleaf Weeds: Apply Alligare Picloram 22K to actively growing perennial broadleaf weeds at up to 2 pints per acre after the grass is well established. Risk of grass injury is greatest when using the maximum 2 pint per acre rate.

Annual Broadleaf Weeds: Apply Alligare Picloram 22K at 1/2 to 3/4 pint per acre to actively growing susceptible annual broadleaf weeds (including Russian thistle). Alligare Picloram 22K can also be tank mixed with 1/2 to 1 pound a.e. per acre of 2,4-D where 2,4-D sensitive species are present. Read and follow all directions for use and use precautions on other product labels.

Weed Control Prior to Seeding Cool Season Perennial Grasses:

Weed control with Alligare Picloram 22K fits into the following grass re-vegetation programs where perennial range or reclamation grass species are to be established in non-cropland, rangeland, permanent grass pastures, or CRP areas. Alligare Picloram 22K may be applied in the spring or early summer, depending on the target weed species and grass seed planted in the fall when conditions are favorable. Alternatively, Alligare Picloram 22K may be applied in the fall and grass seed planted in the winter or spring when conditions are favorable for grass establishment.

Apply Alligare Picloram 22K at 1 qt./acre or less; see weeds rate chart for information on target weed species and application rates. Depending on grass species sensitivity, there may be temporary injury on new plantings when Alligare Picloram 22K is applied at 1 qt./acre. However, this injury will be insignificant in comparison with the benefit to grasses due to the removal of weed competition. Germination of annual grass species may be suppressed after treatment. To optimize weed control, it is suggested the application area be disturbed as little as possible by the seeding operation. At the very least, the site should be left undisturbed for 14 days prior to seedbed preparation or seeding. To decrease the potential for injury on sensitive grass species, increase the interval between application and seeding.

Use Restrictions:

- Do not use on CRP acres used to harvest grass hay or grass silage.
- Do not use Alligare Picloram 22K if legumes are a desired cover during CRP.
- Conditions that stress grasses, such as drought, will increase potential for injury to the grass at all stages of growth.
- Do not rotate to grain sorghum (milo) if greater than 1 pint per acre of Alligare Picloram 22K has been applied.
- Do not plant grain sorghum within 8 months after application. Do not use this product for sweet sorghum production or on land that will be rotated to sweet sorghum.
- To reduce the potential damage to subsequent small grain crops or grain sorghum (milo), use the lower rate or discontinue the use of Alligare Picloram 22K at least every 2 years prior to the seeding of small grain crops. After CRP, do not plant broadleaf crops in treated acres until an adequately sensitive bioassay shows that no detectable picloram is present in the soil.
- Alligare Picloram 22K at rates over 2 pints per acre may suppress certain established grasses such as brome grass, bluegrass and buffalograss. However, subsequent grass growth should be improved by release from weed competition.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: The active ingredient in this product may crystallize and settle out of solution if product is exposed to subfreezing temperatures. Under these conditions, warm product to at least 40°F and agitate well to dissolve any crystallized material prior to use. Open dumping is prohibited.

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

CONTAINER DISPOSAL:

[NONREFILLABLE CONTAINERS]

Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying.

(Nonrefillable ≤ 5 gallons): 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 ¼ 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. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

(Nonrefillable > 5 gallons): Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ 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. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

[REFILLABLE CONTAINERS]

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 the container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

CONDITION OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

To the extent consistent with applicable law, upon purchase or use of this product, purchaser and user agree to the following terms:

Warranty: Alligare, LLC (the Company) warrants that this product conforms to the chemical description on the label in all material respects and is reasonably fit for the purpose referred to in the directions for use, subject to the exceptions noted below, which are beyond the Company's control. To the extent consistent with applicable law, the Company makes no other representation or warranty, express or implied, concerning the product, including no implied warranty of merchantability or fitness for a particular purpose. No such warranty shall be implied by law, and no agent or representative is authorized to make any such warranty on the Company's behalf.

Terms of Sale: The Company's directions for use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, and the manner of use or application (including failure to adhere to label directions), all of which are beyond the Company's control. To the extent consistent with applicable law, all such risks are assumed by the user.

Limitation of Liability: To the extent consistent with applicable law, the exclusive remedy against the Company for any cause of action relating to the handling or use of this product is a claim for damages, and in no event shall damages or any other recovery of any kind exceed the price of the product which caused the alleged loss, damage, injury or other claim. To the extent consistent with applicable law, under no circumstances shall the Company be liable for any special, indirect, incidental or consequential damages of any kind, including loss of profits or income, and any such claims are hereby waived. Some states do not allow the exclusion or limitation of incidental or consequential damages.

The Company and the seller offer this product, and the purchaser and user accept this product, subject to the foregoing warranty, terms of sale and limitation of liability, which may be varied or modified only by an agreement in writing signed on behalf of the Company by an authorized representative.

Arsenal® is a registered trademark of BASF Specialty Products.
Accord™, Garlon™, Reclaim™ and Remedy™ are trademarks of Dow AgroSciences LLC.
Ally®, Escort® and Oust® are registered trademarks of E. I. duPont de Nemours & Co., Inc.
Roundup® is a registered trademark of the Monsanto Company.

Specimen Label



Milestone®

Specialty Herbicide

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- For control of susceptible weeds and certain woody plants, including invasive and noxious weeds, on rangeland, permanent grass pastures (including grasses grown for hay*), Conservation Reserve Program (CRP) acres, non-cropland areas including industrial sites, rights-of-way (such as roadsides, electric utility and communication transmission lines, pipelines, and railroads), non-irrigation ditch banks, natural areas (such as wildlife management areas, wildlife openings, wildlife habitats, recreation areas, campgrounds, trailheads and trails), and 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, Distribution, or Use in New York State.

GROUP	4	HERBICIDE
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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

<p>1 - Tip</p> <p>Tilt container to angle as shown and fill head to desired amount – use vertical scale for measuring. Container should be closed.</p>	<p>2 - Level</p> <p>Hold container up-right and check the amount for accuracy. Add or subtract as needed, using pour-back scale as guide.</p>	<p>3 - Dispense</p> <p>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.</p>
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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, 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 immediately if pesticide gets inside. Then wash thoroughly and put on 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, to areas where surface water is present or 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.

Directions for Use

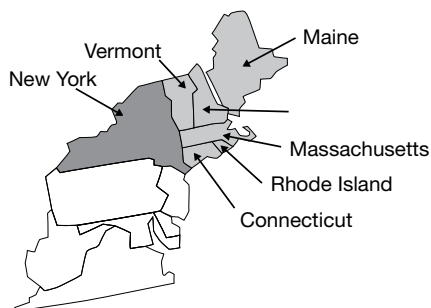
It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Read all Directions for Use carefully before applying.

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, Distribution, or Use in New York State.

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



Light grey = states where use in pastures is not permitted
Dark grey = NY where the product is not registered

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.

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.

Storage and Disposal (Cont.)

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.

Rangeland, Permanent Grass Pastures, CRP Acres, Non-Cropland Areas, Non-Irrigation Ditch Banks, Natural Areas, and Grazed Areas In and Around These Sites

Milestone® specialty herbicide may be applied by aerial or ground equipment to control susceptible broadleaf weeds and certain woody plants, including invasive and noxious weeds on rangeland, permanent grass pastures (including grasses grown for hay®), CRP acres, non-cropland areas including industrial sites, rights-of-way (such as roadsides, electric utility and communication transmission lines, pipelines, and railroads), non-irrigation ditch banks, natural areas (such as wildlife management areas, wildlife openings, wildlife habitats, recreation areas, campgrounds, trailheads and trails), and grazed areas in and around these sites without injury to most grasses.

***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.**

It is permissible to treat non-irrigation ditch banks, seasonally dry wetlands (such as flood plains, deltas, marshes, swamps, or bogs) and transitional areas between upland and lowland sites. Milestone can be used to the waters edge. Do not apply directly to water and take precautions to minimize spray drift onto water.

Use Precautions and Restrictions

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, baylage 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.**

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 annual growing season; 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 annual growing season as a result of broadcast, spot or repeat applications.

- **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" at the end of this label to help minimize the potential for spray drift.
- **Milestone is highly active against many broadleaf plant species.** Do not use this product on areas where loss of broadleaf plants, including legumes, cannot be tolerated.
- **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.
- 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. Do not treat frozen soil where runoff could damage sensitive plants.
- **Grass revegetation:**
 - Milestone can be used to control broadleaf plants in grass revegetation programs where desirable rangeland or reclamation grass species are being established in rangeland, permanent grass pastures, CRP, non-cropland, or other areas. Consult Dow AgroSciences' literature for more details about Milestone applications and grass stand establishment.
- **Application before seeding grasses**
 - Milestone can be applied in the spring through fall to control broadleaf weeds prior to grass planting. Grasses can be seeded as a dormant planting (in the late fall or early winter) in the year

of application or grasses can be seeded the following spring. The grasses should be planted when soil temperatures are low enough to ensure that the seeds will not germinate and emerge until the following spring.

- **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.
- 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.
- **Seeding Legumes:** Do not plant forage legumes until a soil bioassay has been conducted to determine if aminopyralid concentration remaining in the soil will adversely affect the legume establishment.
 - **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 treated plant residues, including hay or straw from areas treated within the preceeding 18-months, in compost, mulch or mushroom spawn.
 - ◆ Do not use manure from animals that have grazed forage or eaten hay harvested from treated areas within the previous 3 days, in compost, mulch or mushroom spawn.
 - ◆ Do not spread manure from animals that have grazed or consumed forage or eaten hay from treated areas within the previous 3 days on land used for growing susceptible broadleaf crops.
 - ◆ Manure from animals that have grazed forage or eaten hay harvested from aminopyralid-treated areas within the previous 3 days may only be used on pasture grasses, 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 treated with 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 treated in the previous year with 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.
 - ◆ 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. Most broadleaf crops are

more sensitive and can require **at least** 2 years depending on the crop and environmental conditions. Do not plant a broadleaf crop until an adequately sensitive field bioassay shows that the level of aminopyralid present in the soil will not adversely affect that broadleaf crop.

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 at any time between harvest of the treated crop and the planting of the intended rotational crop. Observe the test crop for symptoms of herbicidal activity, such as poor stand (effect on seed germination), chlorosis (yellowing), 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.

Sprayer Clean-Out Instructions

It is recommended to use separate spray equipment on highly sensitive crops such as tobacco, soybeans, peanuts and tomatoes.

Do not use spray equipment used to apply Milestone for other applications to land planted to, or to be planted to, broadleaf plants unless it has been determined that all residues of this herbicide have been removed by thorough cleaning of equipment.

Equipment used to apply Milestone should be thoroughly cleaned before reusing to apply any other chemicals as follows:

1. Rinse and flush application equipment thoroughly after use. Dispose of rinse water in non-cropland area away from water supplies.
 2. Rinse a second time, adding 1 quart of household ammonia or tank cleaning agent for every 25 gallons of water. Circulate the solution through the entire system so that all internal surfaces are contacted (15 to 20 minutes). Let the solution stand for several hours, preferably overnight.
 3. Flush the solution out of the spray tank through the boom.
 4. Rinse the system twice with clean water, recirculating and draining each time.
 5. Spray nozzles and screens should be removed and cleaned separately.
- Do not apply this product with mist blower systems that deliver very fine spray droplets. Use of mist blower equipment can reduce control achieved with the herbicide and increase spray drift potential.

Application Methods

Apply the specified rate of Milestone as a coarse low-pressure spray. Do not apply this product with mist blower systems that deliver very fine spray droplets. Spray volume should be sufficient to uniformly cover foliage. Increase spray volume to ensure thorough and uniform coverage when target vegetation is tall and/or dense. To enhance foliage wetting and coverage, an approved non-ionic agricultural surfactant may be added to the spray mixture as specified by the surfactant label.

Ground Broadcast Application: Higher spray volumes (greater than 10 gallons per acre) generally provide better coverage and better control, particularly in dense and/or tall foliage.

Aerial Broadcast Application: Do not apply less than 2 gallons per acre total spray volume. Five gallons per acre or greater will generally provide better coverage and better control, particularly in dense and/or tall foliage.

High-Volume Foliar Application: High volume foliar treatments may be applied at rates equivalent to a maximum of 7 fl oz per acre per annual growing season. Use sufficient spray volume to thoroughly and uniformly wet foliage and stems.

Spot Application: 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 annual growing season; 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 annual growing season as a result of broadcast, spot or repeat applications.) Spray volume should be sufficient to thoroughly and uniformly wet weed foliage, but not to the point of runoff. Repeat treatments may be made, but the total amount of Milestone applied must not exceed 7 fl oz per acre per year. To prevent misapplication, spot treatments should be applied with a calibrated sprayer.

Note: Table 1 below shows mixes for various sprayer outputs in gallons per acre (GPA).

Table 1: Amount of Milestone (in mL) to mix in 1 gallon of water

Gallons per acre	Milestone amount (in mL) to mix with various application rates		
	5 fl oz/a	7 fl oz/a	14 fl oz/a
20	7.5	10.5	21.0
30	5.0	7.0	14.0
40	3.8	5.3	10.5
50	3.0	4.2	8.4
60	2.5	3.5	7.0
70	2.1	3.0	6.0
80	1.9	2.6	5.3
90	1.7	2.3	4.7
100	1.5	2.1	4.2

Use a syringe to measure cc

Conversions:

1 tsp = 5 mL 30 ml = 1 fluid ounce 1 cc = 1 mL
 3 tsp = 1 Tbsp 2 Tbsp = 1 fluid ounce

Table 2: Application rates in the table below are based on treating an area of 1000 sq ft. An area of 1000 sq ft is about 10.5 by 10.5 yards in size. Mix the amount of Milestone (fl oz or milliliters) corresponding to the desired broadcast rate in 0.5 to 2.5 gallons of water, depending upon the spray volume required to treat 1000 sq ft. A delivery volume of 0.5 to 2.5 gallons per 1000 sq ft is equivalent to 22 to 109 gallons per acre.

Table 2: Amount of Milestone per 1000 sq ft to Equal Broadcast Rate

Amount of Milestone per 1000 sq ft to Equal Broadcast Rate		
Broadcast Rate (fl oz/acre)	Amount of Milestone per 1000 sq ft	
	(fl oz)	(Milliliters)
3	0.069	2
5	0.115	3.4
7	0.161	4.8

Note: 1 fluid ounce (fl oz) = 29.6 milliliters (mL) = 2 tablespoons = 6 teaspoons

To calculate the amount of Milestone for areas larger than 1000 sq ft: Multiply the table value (fl oz or milliliters) by the area to be treated in "thousands" of square feet. For example, if the area to be treated is 3500 sq ft, multiply the table value by 3.5 (3500 sq ft divided by 1000 sq ft = 3.5).

Mixing Instructions

Mixing with Water: To prepare the spray, add about half the required amount of water in the spray tank. Then, with agitation, add the specified amount of Milestone and other registered tank mix herbicides. Finally, with continued agitation, add the rest of the water and additives such as surfactants or drift control and deposition aids.

Addition of Surfactants or Adjuvants on All Labeled Use Sites: The addition of a high quality non-ionic surfactant (of at least 80% active ingredient) at 0.25 to 0.5 % volume per volume (1 to 2 quarts per 100 gallons of spray) is recommended to enhance herbicide activity under adverse environmental conditions (such as, high temperature, low relative humidity, drought conditions, dusty plant surfaces) or when weeds are heavily pubescent or more mature.

Tank Mixing with Other Herbicides: Milestone at rates of up to 7 fl oz per acre may be mixed with labeled rates of other herbicides registered for application on all labeled use sites. Milestone may be applied in tank mix combination with labeled rates of other herbicides provided: (1) the tank mix product is labeled for the timing and method of application for the use site to be treated and (2) mixing is not prohibited by the label of the registered tank mixed products, and (3) that the tank mix combination is physically compatible (see tank mix compatibility testing below). When tank mixing, use only in accordance with the restrictions, precautions and limitations on the respective product labels.

- Read carefully and follow all applicable use directions, precautions, and limitations on the respective product labels.
- Do not exceed specified application rates. If products containing the same active ingredient are mixed, do not exceed the maximum allowable active ingredient use rates.
- For direct injection or other spray equipment where the product formulations will be mixed in undiluted form, special care should be taken to ensure tank mix compatibility.
- Always perform a jar test to ensure the compatibility of products to be used in tank mixture.

Tank Mix Compatibility Testing: Perform a jar test prior to mixing in a spray tank to ensure compatibility of Milestone and other pesticides or carriers. Use a clear glass jar with lid and mix ingredients in the same order and proportions as will be used in the spray tank. The mixture is compatible if the materials mix readily when the jar is inverted several times. The mixture should remain stable after standing for 1/2 hour or, if separation occurs, should readily remix if agitated. An incompatible mixture is indicated by separation into distinct layers that do not readily remix when agitated and/or the presence of flakes, precipitates, gels, or heavy oily film in the jar. Use of an appropriate compatibility aid may resolve mix incompatibility. If the mixture is incompatible do not use that tank mix partner in tank mixtures.

Mixing with Sprayable Liquid Fertilizer Solutions: Milestone is usually compatible with liquid fertilizer solutions. It is anticipated that Milestone will not require a compatibility agent for mixing with fertilizers; however, a compatibility test (jar test) should be made prior to mixing. Jar tests are particularly important when a new batch of fertilizer or pesticide is used, when water sources change, or when tank mixture ingredients or concentrations are changed. Compatibility may be determined by mixing the spray components in the desired order and proportions in a clear glass jar before large scale mixing of spray components in the spray tank.

Note: The lower the temperature of the liquid fertilizer, the greater the likelihood of mixing problems. Use of a compatibility aid may be required if Milestone is mixed with a 2,4-D-containing product and liquid fertilizer. **Mixing Milestone and 2,4-D in N-P or N-P-K liquid fertilizer solutions is more difficult than mixing with straight nitrogen fertilizer and should not be attempted without first conducting a successful compatibility jar test.** Agitation in the spray tank must be vigorous to be comparable with jar test agitation. Apply the spray mixture the same day it is prepared while maintaining continuous agitation. Rinse the spray tank thoroughly after use.

Note: Foliar-applied liquid fertilizers themselves can cause yellowing of the foliage of forage grasses and other vegetation.

Use Rates and Timing

Milestone may be applied post emergence as a broadcast spray or as a spot application to control weeds including, but not limited to, those listed on this label. When a rate range is given use the higher rate to control weeds at advanced growth stages, or under less than favorable growing conditions, or for longer residual control. Best results are obtained when spray volume is sufficient to provide uniform coverage of treated weeds. For optimum uptake and translocation of Milestone, avoid mowing, haying, shredding, burning or soil disturbance in treated areas for at least 14 days following application.

Milestone also provides preemergence control of emerging seedlings of susceptible weeds, and re-growth of certain perennial weeds following application. Preventing establishment of weeds will depend upon application rate, season of application, and environmental conditions after application.

Milestone can provide long-term control of susceptible weeds. The length of control is dependent upon the application rate, condition and growth stage of target weeds, environmental conditions at and following application, and the density and vigor of competing desirable vegetation. Long-term weed control is most effective where grass vegetation is allowed to recover from overgrazing, drought, etc., and compete with weeds.

Milestone can be an important component of integrated vegetation management programs designed to renovate or restore desired plant communities. To maximize and extend the benefits of weed control provided by Milestone, it is important that other vegetation management practices, including proper grazing management, biological control agents, replanting, fertilization, prescribed fire, etc., be used in appropriate sequences and combinations to further alleviate the adverse effects of weeds on desirable plant species and to promote development of desired plant communities. Agricultural and natural resources specialists with federal and state government agencies can provide guidance on best management practices and development of integrated vegetation management programs.

Weeds Controlled

The following weeds will be controlled with the rates of Milestone indicated below (table 3). For best results, most weeds should be treated when they are actively growing and under conditions favorable for growth. Use a higher rate in the rate range when growing conditions are less than favorable or when weed foliage is tall and dense, or when residual control is desired. Milestone also provides preemergence control of germinating seeds or seedlings of susceptible weeds following application.

Table 3: Weeds Controlled

Note: Numbers in parentheses (-) refer to specific use directions for a particular weeds species.

Common Name	Scientific Name	Rate Range (fl oz/acre)	Life Cycle	Plant Family
amaranth, spiny	<i>Amaranthus spinosus</i>	4 to 7	annual	Amaranthaceae
bedstraw	<i>Galium spp.</i>	4 to 7	perennial	Rubiaceae
beggarticks	<i>Bidens spp.</i>	4 to 7	annual	Asteraceae
blackeyed-susan	<i>Rudbeckia hirta</i>	4 to 7	Annual	Asteraceae
broomweed, annual	<i>Amphiachyris dracunculoides</i>	4 to 7	annual	Asteraceae
burdock, common*, **	<i>Arctium minus</i>	4 to 7	biennial	Asteraceae
buttercup, hairy*	<i>Ranunculus sardous</i>	4 to 7	annual	Ranunculaceae
buttercup, tall*, **	<i>Ranunculus acris</i>	4 to 7	perennial	Ranunculaceae
camelthorn	<i>Alhagi pseudalhagi</i>	5 to 7	perennial	Fabaceae
cat's ear, common	<i>Hypochaeris radicata</i>	5 to 7	Perennial	Asteraceae
chamomile, scentless	<i>Matricaria inodora</i>	4 to 7	annual	Asteraceae
chicory*	<i>Cichorium intybus</i>	4 to 6	perennial	Asteraceae
chickweed	<i>Stellaria media</i>	7	annual	Caryophyllaceae
cinquefoil, sulfur (1)*, **	<i>Potentilla recta</i>	4 to 7	perennial	Rosaceae
cocklebur	<i>Xanthium strumarium</i>	3 to 5	annual	Asteraceae
clover	<i>Trifolium spp.</i>	5 to 7	perennial	Fabaceae
crazyweed	<i>Oxytropis</i>	5 to 7	perennial	Fabaceae
croton, tropic	<i>Croton glandulosus</i>	3 to 5	annual	Euphorbiaceae
crownvetch	<i>Securigera varia</i>	5 to 7	perennial	Fabaceae
cudweed, purple	<i>Gamochoeta purpurea</i>	4 to 7	annual	Asteraceae
daisy, oxeye (1)*, **	<i>Leucanthemum vulgare</i>	4 to 7	perennial	Asteraceae
dock, curly*	<i>Rumex crispus</i>	4 to 7	perennial	Polygonaceae
evening primrose, cutleaf	<i>Oenothera laciniata</i>	4 to 7	annual	Onagraceae
fiddleneck, common	<i>Amsinckia intermedia</i>	7	annual	Boraginaceae
fireweed	<i>Epilobium angustifolium</i>	5 to 7	perennial	Onagraceae
fleabane, flax-leaf	<i>Conyza bonariensis</i>	4 to 7	annual	Asteraceae
fleabane, hairy	<i>Conyza bonariensis</i>	5-7	annual/biennial	Asteraceae
hawkweed, orange (2)*, **	<i>Hieracium aurantiacum</i>	4 to 7	perennial	Asteraceae
hawkweed, yellow (2)*, **	<i>Hieracium caespitosum</i>	4 to 7	perennial	Asteraceae
henbane, black	<i>Hyoscyamus niger</i>	5 to 7	Annual/biennial	Solanaceae
henbit*	<i>Lamium amplexicaule</i>	5 to 7	annual/biennial	Lamiaceae
hogweed, giant	<i>Heracleum mantegazzianum</i>	7	perennial	Apiaceae
horsenettle, Carolina**	<i>Solanum carolinense</i>	4 to 7	perennial	Solanaceae
horseweed (marestail)	<i>Conyza canadensis</i>	4 to 7	annual	Asteraceae
ironweed, tall	<i>Vernonia gigantea</i>	5 to 7	perennial	Asteraceae
ironweed, western	<i>Vernonia baldwinii</i>	7	perennial	Asteraceae
knawweed, diffuse (3)*, **	<i>Centaurea diffusa</i>	5 to 7	biennial/perennial	Asteraceae
knawweed, Russian (4)*, **	<i>Acroptilon repens</i>	5 to 7	perennial	Asteraceae
knawweed, spotted (3)*, **	<i>Centaurea stoebe</i>	5 to 7	biennial/perennial	Asteraceae
knawweeds	<i>Centaurea spp.</i>	5 to 7	biennial/perennial	Asteraceae
knotweeds, Japanese, bohemian (11)*, **	<i>Reynoutria japonica</i>	7-14*	perennial	Polygonaceae
kudzu*, **	<i>Pueraria montana</i>	7	perennial	Fabaceae
lady's thumb*	<i>Polygonum persicaria</i>	3 to 5	annual	Polygonaceae
lambquarters	<i>Chenopodium album</i>	5 to 7	annual	Chenopodiaceae
lespedeza, annual	<i>Lespedeza striata</i>	5 to 7	annual	Fabaceae
licorice, wild	<i>Glycyrrhiza lepidota</i>	7	perennial	Fabaceae
locoweed	<i>Astragalus spp.</i>	5 to 7	Perennial	Fabaceae
locust, black	<i>Robinia pseudoacacia</i>	7	woody perennial	Fabaceae
locust, honey	<i>Gleditsia triacanthos</i>	7	woody perennial	Fabaceae
loosestrife, purple (12)*, **	<i>Lythrum salicaria</i>	7-14*	perennial	Lythraceae
mayweed, scentless*	<i>Tripleurospermum perforata</i>	4 to 7	annual	Asteraceae

Table 3: Weeds Controlled (Cont.)**Note:** Numbers in parentheses (-) refer to specific use directions for a particular weeds species.

Common Name	Scientific Name	Rate Range (fl oz/acre)	Life Cycle	Plant Family
mayweed, stinking*, **	<i>Anthemis cotula</i>	7	annual	Asteraceae
medic, black*	<i>Medicago lupulina</i>	4 to 7	perennial	Fabaceae
mimosa	<i>Albizia julibrissin</i>	7	woody perennial	Fabaceae
mullein (5)	<i>Verbascum spp.</i>	7	biennial	Scrophulariaceae
nightshade, silverleaf	<i>Solanum elaeagnifolium</i>	4-7	perennial	Solanaceae
ox tongue, bristly	<i>Picris echioides</i>	5 to 7	biennial	Asteraceae
pea, Swainson	<i>Sphaerophysa salsula</i>	5-7	perennial	Fabaceae
povertyweed	<i>Iva axillaris</i>	5-7	perennial	Asteraceae
ragweed, common**	<i>Ambrosia artemisiifolia</i>	3 to 5	annual	Asteraceae
ragweed, western	<i>Ambrosia psilostachya</i>	4 to 7	perennial	Asteraceae
ragwort, tansy*, **	<i>Senecio jacobaea</i>	5 to 7	perennial	Asteraceae
redbud	<i>Cercis Canadensis</i>	7	woody perennial	Fabaceae
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
star-thistle, Malta (7) *,**	<i>Centaurea melitensis</i>	3 to 5	annual	Asteraceae
starthistle, purple (7) *,**	<i>Centaurea calcitrapa</i>	3 to 5	biennial	Asteraceae
star thistle, yellow (7)*, **	<i>Centaurea solstitialis</i>	3 to 5	annual	Asteraceae
sunflower, common	<i>Helianthus annuus</i>	4 to 7	annual	Asteraceae
teasel	<i>Dipsacus spp.</i>	4 to 7	biennial	Dipsacaceae
thistle, artichoke	<i>Cynara cardunculus</i>	5 to 7	perennial	Asteraceae
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	Asteraceae
thistle, Russian (preemergence)	<i>Salsola tragus</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

*Invasive plants are introduced species that are indicated to be invasive in the USDA-NRCS, PLANTS Database (<http://plants.usda.gov/index.html>).**Plants designated as noxious weeds in at least one state (PLANTS Database, USDA-NRCS, <http://plants.usda.gov/index.html>).

- Sulfur cinquefoil or oxeye daisy:** Apply Milestone at 4 to 6 fl oz per acre to plants in the prebud stage of development.
- Orange or yellow hawkweeds:** Apply Milestone at 4 to 7 fl oz per acre to plants in the bolting stage of development.
- Diffuse and spotted 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.
- Russian knapweed:** Apply Milestone at 5 to 7 fl oz per acre to plants in the spring and summer to plants from early bud to flowering stage and to dormant plants in the fall.
- Mullein:** Apply to the rosette stage
- 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.
- Malta, purple, and Yellow starthistle:** Apply Milestone at 3 to 5 fl oz per acre to plants at the rosette through bolting growth stages.
- 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
- 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: Apply Milestone at 7 fl oz per acre broadcast using high volume per acre (100 gallons per acre) or apply as a spot treatment using 14 fl oz per acre. Optimum results for suppression of plant growth are obtained when applications are made to plants that are about 3 to 4 feet in height in early summer. Multiple applications/retreatments will be necessary for control of resprout; the total amount of Milestone applied broadcast, as a re-treatment, and/or spot treatment cannot exceed 7 fl oz per acre per year.
- (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.

Woody Plant Control

Milestone may be applied alone or in tank-mix combinations with labeled rates of other herbicides provided: (1) the tank mix product is labeled for the timing and method of application for the use site to be treated and (2) mixing is not prohibited by the label of the registered tank mixed products. Use as directed in the Directions of Use section of the tank-mix partner. Follow Mixing Instructions under the General Mixing and Application Instructions section.

Add Milestone to tank mixes for improved brush control on species such as aspen, conifers (pine), elm, maple, cherry, poplar, oak, Scotch broom, boxelder, hackberry, Russian olive, salt cedar, and blackberry.

FOLIAR APPLICATIONS:

For broad spectrum brush control using a foliar application, Milestone may be added to tank mixes with Accord Concentrate or Accord XRT II, Arsenal Powerline, Garlon 4 Ultra, Forestry Garlon XRT, or Garlon 3A, Rodeo, Tordon K, or other products labeled for use in industrial vegetation management programs.

LOW VOLUME BASAL BARK APPLICATIONS:

To control susceptible woody plants with stems less than 6 inches in basal diameter, apply herbicide mix (see below for rates) with a backpack or knapsack sprayer using low pressure and a solid cone or flat fan nozzle. Spray the basal parts of brush and tree trunks to a height of 12 to 15 inches from the ground in a manner that thoroughly wets the lower stems but not to the point of runoff. The use of a Spraying Systems Y2 nozzle or similar nozzle is recommended, which will narrow the spray pattern to target individual stems. Herbicide concentration should vary with tree diameter, bark thickness, volume used per acre, and susceptibility of species treated. Apply anytime, including the winter months, except when snow or water prevent spraying to the ground line or when stem surfaces are saturated with water.

Milestone may be used as a low volume basal treatment alone, for sensitive woody species in the Fabaceae family (legumes), or in combination with Garlon 4 Ultra or Forestry Garlon XRT, for broader control of other sensitive woody species. Applications should not exceed the maximum use rate per acre.

Mix Milestone at 1 to 5% v/v alone, or with Garlon 4 Ultra or

Forestry Garlon XRT in a commercially available basal diluent (or other oils or basal diluents as recommended by the manufacturer); the basal oil should be compatible with a water soluble herbicide such as Milestone. Make a stable tank mixture for basal bark application by first combining each product with a compatibility agent prior to final mixing in the desired ratio. Mix Milestone and Garlon 4 Ultra or Forestry Garlon XRT (if using a tank mix) thoroughly with basal oil; if the mixture stands for more than 30 minutes, reagitiation may be required. Do not store the final mixture.

Cut surface

Apply Milestone in the cut surface applications listed below for control of susceptible tree species such as legumes like Albizia, mimosa, locust, etc. Mixtures of Milestone and Garlon 3A or Garlon 4 may be effective on species other than legumes such as elm, maple, oak and conifers..

Cut surface applications may be used successfully at any season except during periods of heavy sap flow of certain species - for example, maples.

Cut-Stump Treatment

Apply Milestone as a 10% dilution v/v in water, by spraying or painting the cut surfaces of freshly cut stumps and stubs as soon as possible after cutting with undiluted Milestone. The cambium area next to the bark is the most vital area to wet.

With Tree Injector Method

Apply by injecting 1 milliliter of 10% v/v Milestone in water through the bark at intervals of 3 to 4 inches between centers of the injector wound. The injections should completely surround the tree at any convenient

height. Note: No Worker Protection Standard worker entry restrictions or worker notification requirements apply when this product is injected directly into plants.

With Hack and Squirt Method

Make cuts around the tree trunk at a convenient height with a hatchet or similar equipment so that the cuts overlap slightly and make a continuous circle around the trunk. Spray 1 milliliter of 10% v/v Milestone in water into the pocket created between the bark and the inner stem/trunk by each cut.

With Frill or Girdle Method

Make a single girdle through the bark completely around the tree at a convenient height. The frill should allow for the herbicide to remain next to the inner stem and absorb into the plant. Wet the cut surface with 10% v/v Milestone in water.

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 distance of the outer most operating nozzles on the boom must not exceed 75% of wingspan or 85% of rotor diameter.
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.
- **Nozzle Orientation** - Orient nozzles so that the spray is released parallel to the airstream to produce larger droplets than other orientations. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length: The distance of the outer most operating nozzles on the boom must not exceed 75% of wingspan or 85% of rotor diameter.

Application Height: Applications should not be made at a height greater

than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment: When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

Wind: Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **Note:** Local terrain such as valleys and ravines can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity: When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions: Applications should not occur during a local, low level temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of the smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

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**Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268**

Label Code: D02-879-005
Replaces Label: D02-879-004
LOES Number: 010-02112

EPA accepted 10/12/12

Revisions:

1. Add restrictions for Northeast states.

Using the labels in this packet answer the following questions

- What is the trade name for permethrin? _____
- What is the signal word for Astro? Warning Caution Danger
- What type of pesticide is Astro? Herbicide Insecticide Fungicide Rodenticide
- What does the signal word “Danger” imply? Slightly toxic Moderately Toxic Highly Toxic
- The active Ingredient in Picloram 22K is permethrin TRUE FALSE
- Picloram 22K is a restricted use pesticide TRUE FALSE
- Each Product label contains the EPA Registration Number TRUE FALSE
- How many pounds of permethrin are in each gallon of Astro _____
- Protective Equipment (PPE) are not required when applying any of these products

TRUE FALSE
- First aide information is not contained on the product label TRUE FALSE
- Which label contains this environmental statement: This pesticide is highly toxic to bees exposed to direct treatment or residues on crops and weeds.

Milestone Astro Picloram 22K
- What is the recommended rate for controlling Canada thistle if using Picloram 22K? _____pt/Acre
- When applying Milestone there is a 7-day grazing restriction following application.

TRUE FALSE
- The labeled rate for controlling bark beetles with ASTRO is _____qts/100 Gal
- The preharvest interval (PHI) minimum number of days that must pass before harvest

TRUE FALSE
- The preharvest interval is set by the EPA TRUE FALSE
- Applying to a site not stated on the label in an example of misuse.

TRUE FALSE
- Applying at a higher than labeled rate is an example of misuse.

TRUE FALSE

Choose one of the labels and record a fictitious application as if it were a real application. Do this by completing the following pages (10–15 minutes).

Private Applicator Record of Restricted-Use Pesticides

(Retain record for two years after application)

If spot treatment (less than 1/10 acre) application is made, write "spot" in "field size".

Name of Applicator _____ Applicator certification # _____

Application date _____ Crop, commodity or site protected _____

Pesticide brand/product name _____ Pesticide EPA registration # _____

Total amount of restricted use pesticide applied _____ Field size _____

Restricted-entry interval (REI) _____

Field location (choose one of four below):

_____ County/range/township/section _____

_____ ASCS/SCS ID system _____

_____ Legal property description _____

_____ ID system using map and/or written description _____

Field Map

Notes _____

Application starting time _____ Temperature _____

Crop stage of growth _____ Wind direction and speed _____

Target pest _____ Soil conditions (wet, dry, cloddy, etc.) _____

Pest stage of growth _____ Relative humidity (low, med., high) _____

Records of restricted-use pesticide applications can be kept in any format. They may be handwritten on individual notes or forms, consist of invoices, are computerized, and/or are maintained in record keeping books. Certified commercial applicators must provide their records of a restricted-use pesticide application within 30 days to the person for whom such an application was provided. They may provide a copy of records required by this Federal Register notice or a copy of their State/Federal record.

Source: Pesticide Education Office, University of Nebraska-Lincoln

USDA Recordkeeping Manual for Private Pesticide Applicators

Grower/Applicator Information

Owner/Operator _____

Address _____

Company/Farm Name _____

Phone Number _____

Phone Number _____

Applicator Name	Certification Number
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A. _____	_____
----------	-------

B. _____	_____
----------	-------

C. _____	_____
----------	-------

D. _____	_____
----------	-------

E. _____	_____
----------	-------

F. _____	_____
----------	-------

G. _____	_____
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H. _____	_____
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SAVE TIME: The Federal recordkeeping regulations require the certified private applicator to record the brand/product name and the U.S. Environmental Protection Agency (EPA) registration number of the federally restricted-use pesticide (RUP) he/she applies. The Federal recordkeeping regulations do not require the certified private applicator to record active ingredient(s). You will be able to save time by listing the brand/product name, EPA registration number, and active ingredient(s) of the pesticides you apply on this page and then entering the corresponding number(s) to complete your record form. Use of this page is voluntary.

Brand/Product Name	EPA Registration Number	Active Ingredient(s)
1) _____	1) _____	1) _____
		1a) _____
		1b) _____
2) _____	2) _____	2) _____
		2a) _____
		2b) _____
3) _____	3) _____	3) _____
		3a) _____
		3b) _____
4) _____	4) _____	4) _____
		4a) _____
		4b) _____
5) _____	5) _____	5) _____
		5a) _____
		5b) _____
6) _____	6) _____	6) _____
		6a) _____
		6b) _____
7) _____	7) _____	7) _____
		7a) _____
		7b) _____
8) _____	8) _____	8) _____
		8a) _____
		8b) _____

Brand/Product Name	EPA Registration Number	Active Ingredient(s)
9) _____	9) _____	9) _____
		9a) _____
		9b) _____
10) _____	10) _____	10) _____
		10a) _____
		10b) _____
11) _____	11) _____	11) _____
		11a) _____
		11b) _____
12) _____	12) _____	12) _____
		12a) _____
		12b) _____
13) _____	13) _____	13) _____
		13a) _____
		13b) _____
14) _____	14) _____	14) _____
		14a) _____
		14b) _____
15) _____	15) _____	15) _____
		15a) _____
		15b) _____

**QUICK REFERENCE CHART OF PESTICIDE RECORDKEEPING
REQUIREMENTS
FOR USDA AND EPA FEDERAL REGULATIONS**

	Restricted Use Pesticides	Agricultural Use Pesticides
Required Items	USDA Requirements for Private Applicators	Worker Protection Standard Requirements for Agricultural Employers
Brand Name/Product Name		
EPA Registration Number		
Total Amount of Pesticide Applied		
MM/DD/YYYY		
Field ID/Location of Treated Area		
Crop, Commodity, or Site		
Size of Area Treated		
Name of Certified Applicator		
Applicator Certification Number		
Active Ingredients		
Restricted Entry Interval (REI)		
Completed Record	Within 14 days of the application; legible records must be recorded and kept for two years.	Post before application, information should be kept 30 days after the REI expiration.

How To Complete the Pesticide Application Record Form

- “USDA” will appear under each column heading that is required by the Federal pesticide recordkeeping regulations.
- The information in columns marked with the Hand/Head Keep Out symbol must be provided to field workers/handlers for all pesticides with “Agricultural Use Requirements” on the label to meet the WPS requirement. This information must be posted before application and remain for 30 days after the end of the REI for the WPS requirement.