



STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
BOARD OF PESTICIDES CONTROL
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

To: Board of Pesticides Control Members
From: Mary Tomlinson, Pesticides Registrar/Water Quality Specialist
Re: EPA Special Local Need (SLN) [FIFRA 24(c)] application to approve application of Corteva Agriscience Milestone Herbicide, EPA Reg. No. 62719-519, for control of herbaceous broadleaf weeds and woody plants for forest site preparation
Date: July 13, 2020

Please find enclosed the above-referenced SLN application and supporting documents for your consideration.

Ronald Lemin, Jr., Vegetation Management Sales Consultant, Nutrien Solutions, submitted the request on behalf of the Maine forest industry to permit the use of Milestone Herbicide on forested sites for site preparation with planting the next spring. The industry is seeking to replace the use of glyphosate with 40.6 % aminopyralid (triisopropanolammonium salt of 2-pyridine carboxylic acid, 4-amino-3,6-dichloro-), the active ingredient in this product, due to public concerns related to glyphosate.

The use of Milestone Herbicide for forest site preparation is not included in the approved EPA master label. The permitted rate under this SLN is up to 7 fl oz applied in a total spray volume of 10-30 gal/A which is consistent with other uses on the Section 3 label.

Milestone Herbicide reduces competition by controlling herbaceous broadleaf weeds and woody plants, including native conifers. Mr. Lemin reported two site preparation trials in 2018 with the Milestone site resulting in good brush control and good seedling vigor. Corteva Agrisciences provided additional data from 2007 and 2008 to support this SLN and those documents are attached for your review. Please note, the studies used Milestone VM, EPA Reg. No. 62719-537, that also contained 40.6 % aminopyralid.

Aminopyralid is highly soluble in water. Solubility of 203-212 mg/L reported in the table below may be erroneous because other sources report 2480 mg/L (Corteva Agrisciences, National Center for Biotechnology Information 2020, U.S. EPA 2005a, U.S. EPA 2005b). It demonstrates moderately high adsorption in soils high in organic matter and low potential for movement and leaching below the root zone (WIN-PST 3.1). Dow Agrosciences research demonstrates low potential for groundwater contamination due to “slow use rates, moderate field degradation rates and limited motility observed in field studies” (Dow AgroSciences LLC).

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Aminopyralid has not been detected in Maine groundwater studies. The potential to runoff in solution or attach to soil particles is intermediate (WIN-PST 3.1).

It is moderately persistent, stable to hydrolysis and anaerobic metabolism (U.S. EPA 2005a, U.S. EPA 2005b). However, the half-life in soils and water is highly variable dependent upon aerobic or anaerobic conditions, pH, soil type, and amount of sunlight.

Aminopyralid exhibits low human and environmental toxicity (U.S. EPA 2005a, U.S. EPA 2005b, WIN-PST 3.1). It is “practically nontoxic to mammals, birds, fish, honeybees, and aquatic invertebrates”. Please refer to the memorandum from Pam Bryer, BPC toxicologist, for further information on toxicity.

WIN-PST Results based on a broadcast application at a rate of greater than ¼ lb AI/A.

HL	Koc	SOL	PLP	PSRP	PARP	HumanT	HumanToxT	MATC
26	1000	203-212	Low	Intermediate	Intermediate	3500	HA	1360

WIN-PST 3.1. Windows Pesticide Screening Tool

HL -Half-life in the soil in days

Koc – Soil organic carbon sorption coefficient in mL/g

SOL -Solubility in water in mg/L (ppm)

PLP – Pesticide leaching potential

PSRP – Pesticide solution runoff potential

PARP – Pesticide adsorbed runoff potential

Human T – Human toxicity value – long term (ppb)

HumanToxT – Human toxicity type

MATC – Maximum acceptable toxicant concentration – fish (ppb)

A broader SLN including this use has already been approved in eleven states indicating this is no longer a local need, but rather interregional or national in scope. Therefore, this office submitted a request to Corteva Agrisciences to include the site on the EPA master and market labels.

Your package includes the following documents for your review:

- EPA Form 8570-25 FIFRA, Section 24(c) application
- Corteva Agriscience Milestone Herbicide draft Section 24(c) label
- Memo from Pamela J. Bryer, Ph.D., BPC Toxicologist
- Letter of request from Ron Lemin, Jr., Vegetation Management Sales Consultant, Nutrien Solutions
- Letter of support from Corteva Agrisciences
- Forestry Data
 - Cummings, D. Chad. Key Answer File for NA07LIB066 Milestone Applied Pre-Plant for Pine Tree Site Prep. 2007 R&P/IVM Data Review.

- Kline, Bill. Milestone VM for Forestry SLN label strategy & Progress to-date 12/10/08. 16 pages.
- Corteva Agriscience Milestone Herbicide Section 3 container label
- Safety Data Sheet

Please review these materials and contact me at (207) 287-7544 if you have any questions.

Citations

Dow AgroSciences LLC. Aminopyralid Family of Herbicides. Indianapolis, IN.
<https://www.corteva.us/dam/products/us-land-management/pdf> (accessed on July 13, 2020).

National Center for Biotechnology Information. PubChem Database. Aminopyralid, CID=213012,
<https://pubchem.ncbi.nlm.nih.gov/compound/Aminopyralid> (accessed on July 13, 2020).

U.S. EPA. Pesticide Fact Sheet. Aminopyralid. 2005a. United States Office of Prevention, Pesticides, Environmental Protections and Toxic Substances Agency.
https://www3.epa.gov/pesticides/chem_search/reg_actions/registration/fs_PC-005100_10-Aug-05.pdf (accessed on July 13, 2020).

U.S. EPA. Environmental Fate and Ecological Risk Assessment for the Registration of Aminopyralid. 2005b.
<https://archive.epa.gov/pesticides/chemicalsearch/chemical/foia/web/html/005100.html> (accessed on July 6, 2020).

United States Environmental Protection Agency
Office of Pesticide Programs, Registration Division (7505C)
Washington, DC 20460



**Application for/Notification of State Registration
of a Pesticide To Meet a Special Local Need**
(Pursuant to section 24(c) of the Federal Insecticide,
Fungicide, and Rodenticide Act, as Amended)

For State Use Only
Registration No. Assigned
Date Registration Issued

1. Name and Address of Applicant for Registration Dow AgroSciences LLC 9330 Zionsville Road Indianapolis, IN 46268-1054	2. Product is (Check one)	
	<input checked="" type="checkbox"/> EPA-Registered	EPA Registration Number 62719-519
	<input type="checkbox"/> New (not EPA-registered) Attach EPA Form 8570-4, Confidential Statement of Formula for new products.	EPA Company Number

4. Product Name Milestone	5. If this is a food/feed use, a tolerance or other residue clearance is required. Cite appropriate regulations in 40 CFR Part 180, 185, and/or 186. Nonfood use
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6. Type of Registration (Give details in Item 13 or on a separate page, properly identified and attached to this form): <input type="checkbox"/> a. To permit use of a new product. <input checked="" type="checkbox"/> b. To amend EPA registrations for one or more of the following purposes: <input type="checkbox"/> (1) To permit use on additional crops or animals. <input type="checkbox"/> (2) To permit use at additional sites. <input type="checkbox"/> (3) To permit use against additional pests. <input type="checkbox"/> (4) To permit use of additional application techniques or equipment. <input type="checkbox"/> (5) To permit use at different application rates. <input checked="" type="checkbox"/> (6) Other (specify below)	7. Nature of Special Local Need (check one)
	<input type="checkbox"/> There is no pesticide product registered by EPA for such use.
	<input checked="" type="checkbox"/> There is no EPA-registered pesticide product which, under the conditions of use within the State, would be as safe and/or as efficacious for such use within the terms and conditions of EPA registration.
	<input type="checkbox"/> An appropriate EPA-registered pesticide product is not available.
	8. If this registration is an amendment to an EPA-registered product, is it for a "new use" as defined in 40 CFR 152.3 ?
	<input type="checkbox"/> Yes (discuss in Item 13 below) <input checked="" type="checkbox"/> No

10. Has FIFRA section 24(c) registration for this use of the product ever, by another State, been (check appropriate box(es), if known): <input checked="" type="checkbox"/> Sought <input checked="" type="checkbox"/> Issued <input type="checkbox"/> Denied <input type="checkbox"/> Revoked If any of the above are checked, list States in Item 13 below. <input type="checkbox"/> No FIFRA section 24(c) Action	9. Has an EPA Registration or Experimental Use Permit for this chemical ever been (check applicable box(es), if known): <input checked="" type="checkbox"/> Sought <input checked="" type="checkbox"/> Issued <input type="checkbox"/> Denied <input type="checkbox"/> Cancelled <input type="checkbox"/> Suspended <input checked="" type="checkbox"/> Registration <input type="checkbox"/> Experimental Use Permit <input type="checkbox"/> No Previous Permit Action
	11. Endangered Species Act: (Give details in Item 13 or on a separate page, properly identified and attached to this form) Identify the counties where this pesticide will be used. If Statewide, indicate "all." Provide a list of Federally protected endangered/threatened species which occur in the areas of proposed use.

Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate, and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.	12. Indicate use status of Special Local Need, i.e., planned dates of use: From: July 2020 To: Dec 31, 2024
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Signature of Applicant or Authorized Representative <i>Elaine Bauer</i>	13. Comments (attach additional sheet, if needed) 6.b.6. For Control Of Herbaceous Broadleaf Weeds And Woody Plants in Conifer Forest Site Preparation Sites 10. Issued: AR, CA, FL, GA, LA, MN, MS, NC, SC, TX, VA
Title Regulatory Specialist	
Telephone Number 317-337-4073	

Determination by State Agency
This registration is for a Special Local Need and is being issued in accordance with section 24(c) of FIFRA, as amended. To the best of our knowledge, the information above is correct, except as noted in "Comments" below or in attachments.

Name, Title, and Address of State Agency Official	Comments (by State Agency Only)	Received by EPA
Title		
Telephone Number		

FIFRA Section 24(c) Special Local Need Label

Dow AgroSciences, LLC, 9330 Zionsville Road, Indianapolis, IN 46268-1054 USA

Milestone®

EPA Reg. No. 62719-519

FIFRA Section 24(c) Special Local Need Registration

EPA SLN ME-2000_____

**This SLN expires and must not be used or distributed after December 31, 2024.
For Distribution and Use Only Within the State of Maine**

**For Control Of Herbaceous Broadleaf Weeds And Woody Plants
in Conifer Forest Site Preparation Sites**

Directions for Use

ATTENTION

- It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
- This Special Local Need (SLN) labeling and the federal label for this product must be in the possession of the user at the time of pesticide application.
- Read this SLN labeling and the label affixed to the container for Milestone before applying.
- Follow all applicable use directions, precautions, restrictions, and statements pertaining to the Worker Protection Standard on this SLN labeling and the label affixed to the product container.

Refer to product label for Use Precautions, Restrictions, Worker Protection Standards, Mixing Instructions, and Application Methods.

Conifer Forest Site Preparation Areas

Milestone may be applied to conifer forests areas as an aerial or ground broadcast application, as a spot application, or as a high-volume foliar application to control herbaceous broadleaf weeds and woody plants. Avoid spray containing Milestone coming in contact with foliage of desirable tree species.

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 for Use section of the tank-mix partner.

Forest Management Applications

Use up to 7 fl oz of Milestone per acre. Use a non-ionic agricultural surfactant for all foliar applications. Tank mixtures with other herbicides registered for forest use may be necessary to control woody brush if brush is not susceptible to Milestone. When tank mixtures of herbicides are used for forest site preparation, labels for all products in the mixture must be followed and the longest recommended waiting period before planting observed.

For best control from broadcast and directed spray applications of Milestone, use a spray volume that will provide thorough plant coverage. Recommended spray volumes are usually 10 to 25 gallons per acre by air or 10 to 100 gallons per acre by ground. To improve spray coverage of spray volumes less than 50 gallons per acre, add an agriculturally labeled non-ionic surfactant at the recommended rate specified on the surfactant label.

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R879-083

Accepted: __/__/__

Initial



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BOARD OF PESTICIDES CONTROL
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

Memorandum

To: Board of Pesticides Control
From: Pamela J. Bryer, Ph.D. | Toxicologist
Subject: Milestone Special Local Need 24c Registration 2020 Review

July 9, 2020

Summary:

Aminopyralid is a low toxicity herbicide that is unlikely to cause undue risk to people or the environment from the proposed uses in this Special Local Need, 24c, registration.

Rationale:

Aminopyralid is a reduced risk herbicide used for controlling weedy dicots. EPA designated aminopyralid as reduced risk when it was registered in 2005 because the human health and environmental risks posed by its use are less than many other commonly used herbicides.

Aminopyralid's residence time in the environment covers an expansive range. The compound breaks down rapidly -so rapidly its half-life can be measured in hours, but only when it is in sunlight and sunlit water. In dark soil and sediment, aminopyralid can take hundreds of days to over a year to breakdown. This long half-life is part of the reason aminopyralid can offer residual control.

Aminopyralid is highly soluble in water (an attribute that makes chemicals likely to leach), however, its ability to leach is variable and dependent on soil characteristics. In soil movement studies, aminopyralid largely stayed in the top portion of the soil. The maximum leaching recorded in field trails was 15 to 90 cm deep.

The primary toxic effects of aminopyralid are to terrestrial dicots, as can be expected with an herbicide. Even in simulated worst-case spill events, a tank release into a small pond, EPA found aminopyralid did not pose unacceptable risk to algae, some plants, fish, or aquatic invertebrates.

Aminopyralid is practically non-toxic to mammals and birds. Even after accounting for ingestion of grasses and seeds sprayed in the target application zone, EPA determined there would be no

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harm to birds and small mammals. In feeding and contact studies, aminopyralid was considered to be practically non-toxic to bees.

EPA is scheduled to complete a new round of risk assessments in 2020 as part of aminopyralid's 15-year registration renewal. No dates have been announced for Proposed or Interim Decisions on re-registration.

Aminopyralid is commonly used in southern and western states for pasture as can be seen in Figure 1.

There are tolerances set for aminopyralid based on its use on wheat and pasture. These details can be found at: https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=1&SID=b069684783771469b656e65a48e2a7df&ty=HTML&h=L&mc=tr ue&r=SECTION&n=se40.26.180_1610

Source documents:

Aminopyralid Fact Sheet. Issued August 10, 2005. US EPA Office of Prevention, Pesticides. Available at: https://www3.epa.gov/pesticides/chem_search/reg_actions/registration/fs_PC-005100_10-Aug-05.pdf

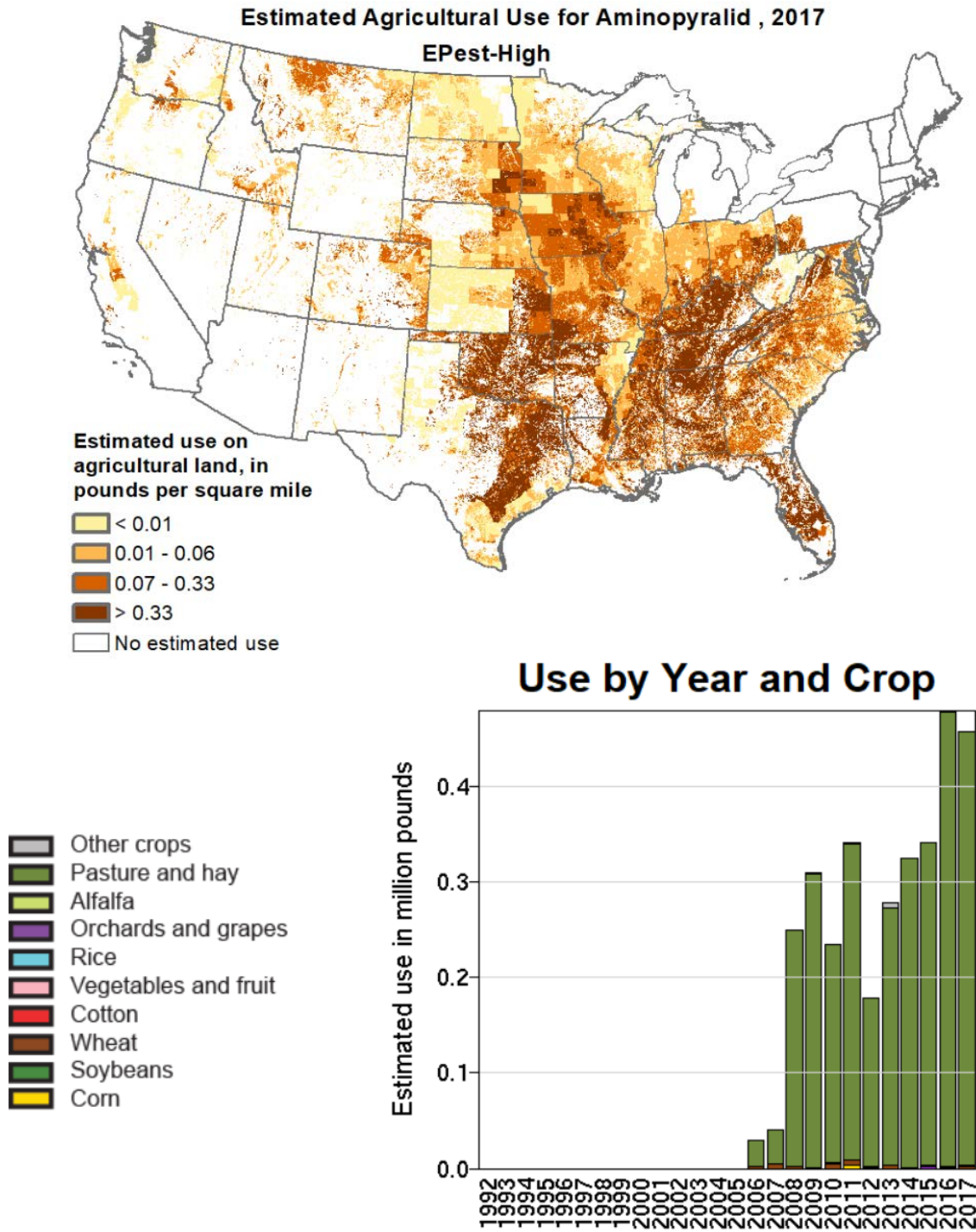
Preliminary Problem Formulation for the Environmental Fate and Ecological Risk, Endangered Species, and Human Health Drinking Water Exposure for Aminopyralid, Potassium salt of Aminopyralid, and Triisopropanolamine Salt of Aminopyralid. Issued February 12, 2014. US EPA Office of Pesticide Programs, Environmental Fate and Effects Division. Available at: <https://www.regulations.gov/document?D=EPA-HQ-OPP-2013-0749-0011>

Addendum to the Problem Formulation for the Environmental Fate and Ecological Risk, Endangered Species, and Drinking Water Assessments in Support of the Registration Review of Aminopyralid Regarding Tier I Honey Bee Toxicity Testing. Issued September 3, 2014. US EPA Office of Chemical Safety and Pollution Prevention. Available at: <https://www.regulations.gov/document?D=EPA-HQ-OPP-2013-0749-0044>

Aminopyralid Human Health and Ecological Risk Assessment -Final Report. Prepared for USDA/Forest Service and National Park Service. Issued June 28, 2007. Prepared by Syracuse Environmental Research Associates Inc., Fayetteville, New York. SERA TR-052-04-04a. Available at: https://www.fs.usda.gov/nfs/11558/www/nepa/101135_FSPLT3_2537846.pdf

Aminopyralid Estimated Agricultural Use. National Water-Quality Assessment (NAWQA) Project. USGS Website. Accessed July 7, 2020. Available at: https://water.usgs.gov/nawqa/pnsp/usage/maps/show_map.php?year=2017&map=AMINOPYRALID&hilo=L&disp=Aminopyralid

Figure 1. Data organized by USGS for estimating agricultural uses of aminopyralid in the US.





*Ronald C. Lemin, Jr.
Vegetation Management Sales Consultant
291 Lincoln Street
Bangor, Maine 04401
207-944-6160 (m)
Ronald.lemine@nutrien.com*

May 13, 2020

Mary E. Tomlinson
Pesticide Registrar / Water Quality Specialist
Maine Board of Pesticides Control
28 SHS
Augusta, ME 04333

Dear Mary and the Board of Pesticides Control,

I am in support of a 24(c) Special Local Need registration for Milestone, EPA Registration Number 62719-519 for use on forested sites in Maine to control broad-leaved plants, woody brush and native conifer species in the silvicultural site preparation process. In July forest industry applies primarily glyphosate, imazapyr, and sulfometuron methyl to control competition on forested sites prior to planting the following spring. Forestry companies are actively looking to replace the common herbicide glyphosate in the mix due to its political ramifications in the industry. In the south and other parts of the country, forest industry is site preparing with triclopyr, fluroxypyr (Vista XRT), aminopyralid (Milestone), imazapyr, and sulfometuron methyl with great success.

Based on the success of Milestone in the south and in Minnesota, I aeri ally applied (in July 2018) two site preparation trials with Vista (fluroxypyr) and Milestone (aminopyralid) to study the effects on brush control and planted seedling survival the following year. The following year the sites were planted with spruce seedlings and evaluated for mortality and vigor. There was no detected loss of seedlings due to the herbicide application the previous year, and seedling vigor was good on 98% of the seedlings. Brush control results from the site preparation trial were also good.

The forest industry would like to potentially use Milestone this July/August in the site preparation treatment using a 24(C) approved by The Maine Board of Pesticides Control and supported by both Corteva and the Maine forest industry.

The attached 24(C) approved for use in MN would be similar to the one we would use in Maine. MN forestry grows planted spruce and native fir on forested sites very similar to Maine. I have attached this label as an example that the Milestone product has been working effectively as a site preparation tool in other states with crop species and forested soils very similar to Maine

I appreciate your time and consideration in this label request. If you should have any further questions, please feel free to contact me at the address above. I would also be available to answer questions at the next Board Meeting if necessary.

Sincerely,

A handwritten signature in black ink, appearing to read "Ronald C. Lemin, Jr.", written in a cursive style.

Ronald C. Lemin, Jr



Dow AgroSciences*
9330 Zionsville Road
Indianapolis, IN 46268
USA

July 13, 2020

Maine Department of Agriculture, Conservation and Forestry
Board of Pesticides Control
Marquardt Building
32 Blossom Lane
Augusta, ME 04333-0028

**APPLICATION FOR SPECIAL LOCAL NEED SECTION 24(c) REGISTRATION
MILESTONE (A.I. AMINOPYRALID)
EPA REG. NO. 62719-519
FOR CONTROL OF HERBACEOUS BROADLEAF WEEDS AND WOODY PLANTS IN CONIFER FOREST
SITE PREPARATION SITES**

Dow AgroSciences LLC respectfully requests registration of FIFRA Section 24(c) Special Local Need (SLN) for Milestone[®], EPA Registration Number 62719-519, for control of herbaceous broadleaf weeds and woody plants in conifer forest site preparation sites. This request is being made with the support of Ronald Lemin, Jr. of Nutrien Solutions. Dow AgroSciences has a similar Sec 24(c) label registered in Minnesota (SLN MN-120005) as well as in Arkansas, California, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Texas, and Virginia.

Currently, Capstone[®] herbicide is labeled for forestry uses: Capstone is a combination of aminopyralid + triclopyr. Triclopyr is not needed on all sites, and use of Milestone herbicide alone (aminopyralid only, without the triclopyr in Capstone) will fit forestry site preparation uses better on many sites. As a tool in forestry, Milestone enhances the ability to establish conifer species generally intolerant to the other existing herbicides used in forestry. Milestone, when added to current forest site prep mixtures, provides control of wildling pines that cannot be achieved with currently available commercial herbicides or herbicide mixtures. It has the added benefit of reducing the overall amount of chemical used in forestry treatments.

Milestone has shown excellent herbaceous vegetation and brush control when applied alone or in combination with low rates of other forestry herbicides. Milestone has demonstrated the ability to suppress or inhibit germination of difficult-to-control species such as scotch broom – a characteristic not found in other forestry herbicides. Milestone also provides excellent control of legume species such as mimosa, locust, and redbud that cannot be achieved with currently available commercial herbicides or herbicide mixtures.

Research results and commercial applications have demonstrated that Milestone can safely be used for forest site preparation as close as 2 months prior to planting crop conifer trees (bare root or container seedlings) without damage or growth reduction impacts to the planted trees.

Milestone herbicide has some soil activity and has been shown to provide residual pre-emerge control of germinating weed seed, particularly weeds in the aster and composite weed families. Applications of Milestone as part of fall forest site preparation programs provides residual soil activity and spring weed control of susceptible weed species. In certain situations, site prep programs with Milestone can reduce or eliminate the need for spring “over-the-top” (of planted pines) herbicide applications – an additional potential to reduce herbicide usage and total environmental pesticide loading.

In most situations, the addition of Milestone provides reductions in per acre use rates of other herbicides typically used in forest site preparation mixtures. Maximum use rate of Milestone is very low at 1.75 oz ai/acre. This low use rate can substitute for as much as 1 lb+ of current herbicides such as glyphosate, triclopyr, imazapyr, etc.

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Maine Department of Agriculture, Conservation and Forestry
APPLICATION FOR SPECIAL LOCAL NEED SECTION 24(c) REGISTRATION
MILESTONE (A.I. AMINOPYRALID)
EPA REGISTRATION NUMBER: 62719-519
FOR CONTROL OF HERBACEOUS BROADLEAF WEEDS AND WOODY PLANTS IN CONIFER FOREST SITE
PREPARATION SITES
JULY 13, 2020

Page 2 of 2

Attachments/enclosures

Please find the following documents attached/enclosed:

- Letter/request and justification from registrant (this letter)
- US EPA Form 8570-25: Application for SLN
- Proposed Sec 24(c) SLN labeling entitled, "Milestone For Control Of Herbaceous Broadleaf Weeds And Woody Plants In Conifer Forest Preparation Sites" (Supplemental Label Code R879-083)
- Letter of Support from Ronald C. Lemin, Jr. of Nutrien Solutions dated May 13, 2020
- Summary presentation of commercial brush control data. Milestone VM for Forestry SLN label strategy & Progress to-date "The Data" Commercial Brush Control Results. Additive value of Aminopyralid in tank-mix combinations for brush control. Bill Kline. 12110/08, 16 pages
- Summary presentation of crop safety data: Key Answer File for NA07L1B066 MILESTONE Applied Pre-plant for Pine Tree Site Prep., D. Chad Cummings 2007, 10 pages

If you have any questions or require additional information, please feel free to contact me by email or phone. You may also contact Jamey Thomas, State Regulatory Lead, at 317-337-4138 / jamey.thomas@corteva.com.

Sincerely,



Elaine Bauer
Crop Protection Regulatory Specialist, US
317-337-4073 or elaine.bauer@corteva.com

Attachments/enclosures

**KEY ANSWER FILE FOR
NA07LIB066 MILESTONE
APPLIED PRE-PLANT FOR
PINE TREE SITE PREP**

**D. Chad Cummings
2007 R&P/IVM Data Review**

Trial Locations

Trial Location Summary Report **Protocol No.: NA07L1B066**

Trial No.	City/Town	State	Country	DAS Rep
PBL0735	Critz	VA	US	Burch, Pat L
WNK0708	Arnoldsville	GA	US	Kline, William N
VBL0605	Brookshire	TX	US	Langston, Vernon B
VBL0742	Nacodoches	TX	US	Langston, Vernon B
VFP0701	Molalla	OR	US	Peterson, Vanelle F

Treatments

Trt Num	Appl Code	Treatment Name	Form Conc	Conc Unit	Form Type	Rate	Rate Unit
1	A	MILESTONE VM	2 lb ae/gal		SL	511.5 ml pr/ha	
2	A	MILESTONE VM	2 lb ae/gal		SL	1023.1 ml pr/ha	
3	B	MILESTONE VM	2 lb ae/gal		SL	511.5 ml pr/ha	
4	B	MILESTONE VM	2 lb ae/gal		SL	1023.1 ml pr/ha	
5	B	MILESTONE VM	2 lb ae/gal		SL	1023.1 ml pr/ha	
5	B	OUST EXTRA	712.5 %AI W/W		WG	280212.8 mg pr/ha	
6	AB	UNTREATED					

Trt Num	Appl Code	Treatment Name	Form Conc	Conc Unit	Form Type	Rate	Rate Unit
1	A	MILESTONE VM	2 lb ae/gal		SL	7 fl oz pr/a	
2	A	MILESTONE VM	2 lb ae/gal		SL	14 fl oz pr/a	
3	B	MILESTONE VM	2 lb ae/gal		SL	7 fl oz pr/a	
4	B	MILESTONE VM	2 lb ae/gal		SL	14 fl oz pr/a	
5	B	MILESTONE VM	2 lb ae/gal		SL	14 fl oz pr/a	
5	B	OUST EXTRA	712.5 %AI W/W		WG	4 oz pr/A	
6	AB	UNTREATED					

Trial Crop Species

Crop/Host Information Summary Report

Protocol#	Trial#	Crop (Bayer Code)	Crop (Scientific)	Crop (Common)
NA06L1B000	PLB0735	PIUTD	<i>Pinus taeda</i>	Loblolly pine
NA06L1B000	PLB0735	PIUEC	<i>Pinus echinata</i>	Short-leaf pine
NA06L1B066	WNK0708	PIUTD	<i>Pinus taeda</i>	Loblolly pine
NA06L1B066	WNK0708	PIUEL	<i>Pinus elliottii</i>	Slash pine
NA07L1B066	VBL0605	PIUTD	<i>Pinus taeda</i>	Loblolly pine
NA07L1B066	VBL0605	PIUEL	<i>Pinus elliottii</i>	Slash pine
NA07L1B066	VBL0605	PIUVI	<i>Pinus virginiana</i>	Virginia pine
NA06L1B066	VBL0742	PIUTD	<i>Pinus taeda</i>	Loblolly pine
NA06L1B066	VBL0742	PIUEL	<i>Pinus elliottii</i>	Slash pine
NA07L1B066	VFP0701	PSTME	<i>Pseudotsuga menziesii</i>	Douglas fir
NA07L1B066	VFP0701	PIUPO	<i>Pinus ponderosa</i>	Ponderosa pine

KEY QUESTIONS

- Does Milestone VM provide a viable option when applied pre-plant for site prep in pine plantings?

KEY ANSWERS

- In the five trials across the US, no conifer species exhibited significant injury from a pre-plant (site-prep) application of 7 or 14 fl oz/A of Milestone VM
 - Conifer spp. included: PIUEC, PIUEL, PIUPO, PIUTD, PIUVI, and PSTME

Results

GA, VA

VA – drought
and weevils

Treatment	Crop				VA – drought and weevils	
	PIUTD	PIUEL	PIUTD	PIUEL	PIUTD	PIUEC
	Dead of 20 200DAAA	Dead of 20 200DAAA	Dead of 20 270DAAA	Dead of 20 270DAAA	Alive of 10 290DAAA	Alive of 10 290DAAA
Milestone VM 511 ml/ha	1.3	15.3	13.7	18.7	2	5.3
Milestone VM 1023 ml/ha	2.7	15.7	11.7	20	0.3	5.7
Untreated	1.7	12	8.7	16.7	0.7	5.7
LSD	NSD	NSD	NSD	NSD	NSD	NSD
n=3						

Results OR

Trt No.	Treatment	Appl. Code	Crop	
			PSTME %Injury 295DAAA	PIUPO %Injury 295DAAA
1	Milestone VM 511 ml/ha	A	26	23
2	Milestone VM 1023 ml/ha	A	25	26
3	Milestone VM 511 ml/ha	B	34	28
4	Milestone VM 1023 ml/ha	B	37	25
5	Milestone VM 1023 ml/ha	B	35	35
5	Oust Extra 280 g/ha	B		
6	Untreated	AB	31	21
	LSD		NSD	NSD

N=4, 15 Sub-samples

Results

TX

Treatment	Crop									
	PIUTD %Injury 90DAAA	PIUEL %Injury 90DAAA	PIUTD %Injury 120DAA	PIUEL %Injury 120DAAA	PIUTD %Injury 150DAAA	PIUEL %Injury 150DAAA	PIUTD %Injury 180DAAA	PIUEL %Injury 180DAAA	PIUTD %Injury 200DAAA	PIUEL %Injury 200DAAA
Milestone VM 511 ml/ha										
Milestone VM 1023 ml/ha	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
Untreated										
LSD	3.3	2	6.5			3.5	7	4	14.3	21

Treatment	Crop		
	PIUVI %Injury 100DAAA	PIUVI %Injury 150DAAA	PIUVI %Injury 175DAAA
Milestone VM 511 ml/ha	7.5 b	5	1.3
Milestone VM 1023 ml/ha	12.5 a	7.5	1.3
Untreated	0.0 c	0	0
LSD	4.1	NSD	NSD

6 MAT WEED DENSITIES

GA

Growth Form	Weed Code	Weed Species	<u>Milestone VM 7 oz/A</u>	<u>Milestone VM 14 oz/A</u>
			Diff. from Untreated 180DAAA Density	Diff. from Untreated 180DAAA Density
A	AMBEL	common ragweed	-7	-13
A	CVNGL	tropic croton	-1	-1
A	ERICA	horseweed	0	-2
A	GERCA	carolina geranium	1	1
A	GNASS	cudweed	-2	-2
A	LAMAM	henbit	3	4
A	OXAST	woodsorrel	0	7
P	EUPCP	dogfennel	-1	-2
P	POLPE	smartweed	0	0
P	RUMCR	curly dock	0	-1
P	SOOVI	goldenrod	0	1
P	ELEIN	goosegrass	-1	0
P	FESAR	tallfescue	2	4
P	SORHA	johnsongrass	-4	-2
LSD (0.05)=			NSD	NSD

Milestone VM for Forestry

SLN label strategy & Progress to-date

Prepared by Bill Kline to support submissions
to State Dept of Ag for forestry SLN labels

12/10/08

“The Data” - Commercial Brush Control Results

Additive value of Aminopyralid in tank-mix combinations for brush control

- Collected information from Sales Reps that installed demo/operational “plots” in 2006 & 2007 and rated at 1 YAT; no brownout data... just year after brush control.
- This “updated” data set includes both forestry site prep/understory and Electric Utility programs.
- Used comparisons of mixtures with aminopyralid vs mixtures without aminopyralid.
- These results and summary provide very positive information and present a strong case for use of aminopyralid in commercial brush control tank mixtures.
 - For use in forestry – site prep + most all other potential forestry uses except over-the-top conifer release programs (except longleaf – more on this later).
 - For use in Elec Utility brush control programs – both IPT and broadcast.
 - General brush control in other IVM & R&P markets – railroad, encroaching brush, etc.

The analysis...

- The data sets – both forestry site prep/understory and Electric Utility - were sorted into treatment groups:
 - 1) Tank mixtures with aminopyralid
 - 2) Tank mixtures without aminopyralid
- Average control over all species was calculated for each group to provide an overall estimate of “added brush control” due to use of aminopyralid in brush control programs.
- On an as needed basis, we can also provide differences on key species such as pines and legume species.
 - Example – improvement in pine control – included here.

All data is from operational spray programs.

Data was collected and organized in a spreadsheet.

Estimates of % Control are visual estimates from Sales Reps, Landowners/managers, Field Scientists.

Sales Rep	Milestone Y/N	Herbicide Mix	Rate - % V/V	% Control ~		Species	Application	Comments	Location
				1 YAT					
Cobb/Oden	Yes	Accord Conc + Arsenal + Milestone VM (2006)	4 + 0.75 + 0.25	90%		yaupon, mim	Backpack LV foliar		AL - Jackson South
Cobb/Oden	No	Accord Conc + Arsenal + Escort (2005)	4 + 0.75 + 2 oz/100gal	70%		yaupon, mim	Backpack LV foliar		AL - Jackson South
Cobb/Oden	Yes	Accord Conc + Arsenal + Milestone VM (2006)	4 + 0.75 + 0.25	95%		Mimosa ced	Backpack LV foliar		AL - Jackson North
Cobb/Oden	No	Accord Conc + Arsenal + Escort (2005)	4 + 0.75 + 2 oz/100gal	75%		Mimosa ced	Backpack LV foliar		AL - Jackson North
Cobb/Oden	Yes	Accord Conc + Arsenal + Milestone VM (2006)	4 + 0.75 + 0.25	95%		longleaf pine	Backpack LV foliar		AL - Southern Div - SE port
Cobb/Oden	No	Accord Conc + Arsenal + Escort (2005)	4 + 0.75 + 2 oz/100gal	70%		longleaf pine	Backpack LV foliar		AL - Southern Div - SE port
Cobb/Oden	Yes	Accord Conc + Arsenal + Milestone VM (2006)	4 + 0.75 + 0.25	98%		privit mimosa	Backpack LV foliar		AL - Southern Div - Montgor
Cobb/Oden	No	Accord Conc + Arsenal + Escort (2005)	4 + 0.75 + 2 oz/100gal	70%		privit mimosa	Backpack LV foliar		AL - Southern Div - Montgor
Cobb/Oden	Yes	Accord Conc + Arsenal + Milestone VM (2006)	4 + 0.75 + 0.25	98%		mimosa bay l	Backpack LV foliar		AL - Tuscaloosa - South
Cobb/Oden	No	Accord Conc + Arsenal + Escort (2005)	4 + 0.75 + 2 oz/100gal	80%		mimosa bay l	Backpack LV foliar		AL - Tuscaloosa - South
Cobb/Oden	Yes	Accord Conc + Arsenal + Milestone VM (2006)	4 + 0.75 + 0.25	95%		mimosa virgii	Backpack LV foliar		AL - Tuscaloosa - North
Cobb/Oden	No	Accord Conc + Arsenal + Escort (2005)	4 + 0.75 + 2 oz/100gal	70%		mimosa virgii	Backpack LV foliar		AL - Tuscaloosa - North
Cobb/Oden	Yes	Accord Conc + Arsenal + Milestone VM (2006)	4 + 0.75 + 0.25	95%		virginia pine	Backpack LV foliar		AL - Birmingham
Cobb/Oden	No	Accord Conc + Arsenal + Escort (2005)	4 + 0.75 + 2 oz/100gal	70%		virginia pine	Backpack LV foliar		AL - Birmingham
Cobb/Oden	Yes	Accord Conc + Arsenal + Milestone VM (2006)	4 + 0.75 + 0.25	95%		virginia pine	Backpack LV foliar		AL - Anniston
Cobb/Oden	No	Accord Conc + Arsenal + Escort (2005)	4 + 0.75 + 2 oz/100gal	70%		virginia pine	Backpack LV foliar		AL - Anniston
Ditmarsen	No	Aqua Star + Habitat	1.0 + 0.25	98%		scrub oak an	Handgun - 100 GPA	Aqua Star conta	Progress Energy Hardwood
Ditmarsen	Yes	Aqua Star + Habitat + Milestone VM	1.0 + 0.25 + 0.11	85%		scrub oak, pe	Handgun - 100 GPA	sumac defoliate	Progress Energy Hardwood
Ditmarsen	No	Aqua Star + Habitat + Vista	1.0 + 0.25 + 0.33	95%		scrub oak, m	Handgun - 100 GPA		Progress Energy Hardwood
Ditmarsen	Yes	Garlon 4 + Vista + Milestone VM	1.0 + 0.33 + 0.11	95%		scrub oak	Handgun - 100 GPA		Progress Energy Hardwood
Ditmarsen	Yes - alone	Milestone VM	0.11	25%		scrub oak	Handgun - 100 GPA		Progress Energy Hardwood
Ditmarsen	No	Aqua Star + Habitat	1.0 + 0.25	98%		scrub oak an	Handgun - 100 GPA	Aqua Star conta	Progress Energy Hardwood
Ditmarsen	Yes	Aqua Star + Habitat + Milestone VM	1.0 + 0.25 + 0.11	85%		scrub oak, pe	Handgun - 100 GPA	sumac defoliate	Progress Energy Hardwood
Ditmarsen	No	Aqua Star + Habitat + Vista	1.0 + 0.25 + 0.33	95%		scrub oak, m	Handgun - 100 GPA		Progress Energy Hardwood
Ditmarsen	Yes	Garlon 4 + Vista + Milestone VM	1.0 + 0.33 + 0.11	95%		scrub oak	Handgun - 100 GPA		Progress Energy Hardwood
Ditmarsen	Yes - alone	Milestone VM	0.11	25%		scrub oak	Handgun - 100 GPA		Progress Energy Hardwood
Quattrocchi	No	Garlon 3A 0.5 + Tordon K 0.25	0.5 + 0.25	95%		ash alanthius	High volume foliar		APS
Quattrocchi	Yes	Garlon 3A 0.5 + Tordon K 0.12 + Milestone 7flocz/10.5 + 0.12 + 7flocz/100gal	10.5 + 0.12 + 7flocz/100gal	98%		ash alanthius	High volume foliar		APS
Quattrocchi	No	Garlon 3A 0.5 + Tordon K 0.25	0.5 + 0.25	90%		ash alanthius	High volume foliar		APS
Quattrocchi	Yes	Garlon 3A 0.5 + Tordon K 0.12 + Milestone 7flocz/10.5 + 0.12 + 7flocz/100gal	10.5 + 0.12 + 7flocz/100gal	100%		ash alanthius	High volume foliar		APS
Quattrocchi	No	Garlon 3A 0.5 + Tordon K 0.25	0.5 + 0.25	92%		ash alanthius	High volume foliar		APS
Quattrocchi	Yes	Garlon 3A 0.5 + Tordon K 0.12 + Milestone 7flocz/10.5 + 0.12 + 7flocz/100gal	10.5 + 0.12 + 7flocz/100gal	100%		ash alanthius	High volume foliar		APS
Quattrocchi	No	Accord C 4% + Arsenal .25%	4 + 0.25	98%		ash alanthius	High volume foliar		APS
Quattrocchi	Yes	Accord C 4% + Milestone .5%	4 + 0.5	100%		ash alanthius	High volume foliar		APS
Quattrocchi	No	Garlon 3A 0.5 + Tordon K 0.25	0.5 + 0.25	95%		ash locust(B,	High volume foliar		AEP
Quattrocchi	Yes	Garlon 3A 0.5 + Tordon K 0.12 + Milestone 7flocz/10.5 + 0.12 + 7flocz/100gal	10.5 + 0.12 + 7flocz/100gal	95%		ash locust(B,	High volume foliar		AEP
Quattrocchi	No	Garlon 3A 0.5 + Tordon K 0.25	0.5 + 0.25	95%		ash locust(B,	High volume foliar		AEP
Quattrocchi	Yes	Garlon 3A 0.5 + Tordon K 0.12 + Milestone 7flocz/10.5 + 0.12 + 7flocz/100gal	10.5 + 0.12 + 7flocz/100gal	100%		ash locust(B,	High volume foliar		AEP
Quattrocchi	No	Garlon 3A 0.5 + Tordon K 0.25	0.5 + 0.25	98%		ash alanthius	High volume foliar		1st Energy
Quattrocchi	Yes	Garlon 3A 0.5 + Tordon K 0.12 + Milestone 7flocz/10.5 + 0.12 + 7flocz/100gal	10.5 + 0.12 + 7flocz/100gal	100%		ash alanthius	High volume foliar		1st Energy
Quattrocchi	No	Tordon + Arsenal + Thinvert	2 qts + 8flocz + 5 gal/acre	95%		ash alanthius	Cut stubble		PECO
Quattrocchi	Yes	Tordon + Milestone + Thinvert	2 qts + 7flocz + 5 gal/acre	100%		ash alanthius	Cut stubble		PECO
Russell	Yes	Garlon 3A + Milestone VM	2 + 0.5	100%		mimosa	Backpack LV foliar		Sumpter Elec
Russell	No	Accord + Arsenal	4 + 0.33	50%		mimosa	Backpack LV foliar		Sumpter Elec

Forestry Data – All Broadcast Foliar applied at a set “per acre” rate - mostly site prep aerial or ground broadcast (some mid-rotation release & broadcast on ROW brush) collected in 2008.

All ratings are at 1 YAT –

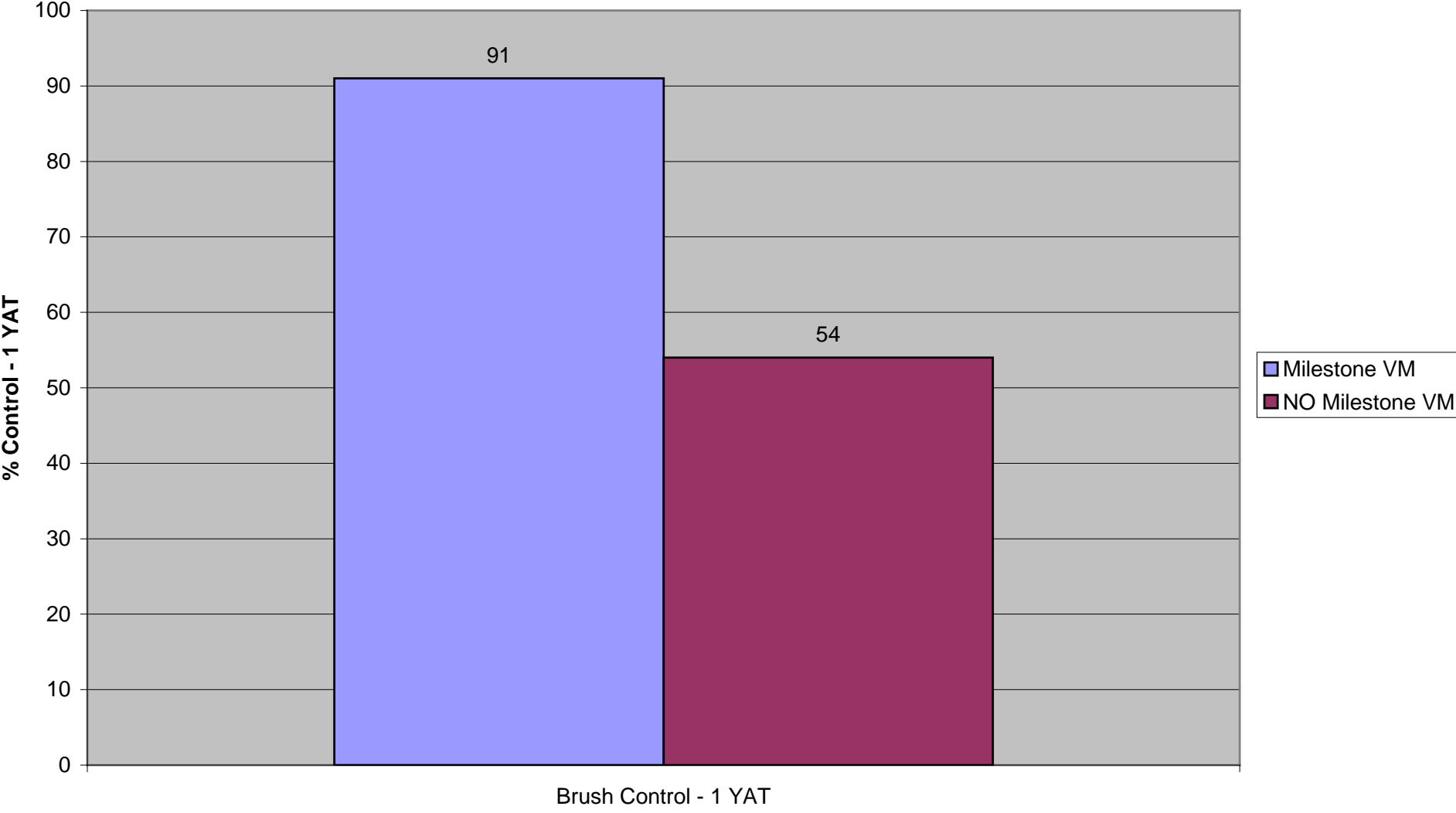
The average control achieved from mixtures containing Milestone VM was 91%

The average control achieved from mixtures not containing Milestone VM was 54%

Addition of Milestone VM to brush control mixtures, on average, increased the level of control by 37%

DAS Sales Rep	Location	Tract Name	Landowner	Local Forester/	Milestone Y/N	Herbicide Mix/ Rate - %	Control - 1	Species	Applicatio	
Cobb	Birmingham	n/a	Molpus Timb Don Sanford, 20		Y	1 gal Milestone	n/a	100	Loblolly Pine	
Cobb	Birmingham	n/a	Molpus Timb Don Sanford, 20		Y	1 gal Milestone	n/a	85	Virginia Pine	
Cobb	Atmore AL	n/a	Rayonier Wc Wayne Foley, 2E		Y	1.9 qts Garlon)	n/a	75	Loblolly Pine	
Cobb	Atmore AL	n/a	Rayonier Wc Wayne Foley, 2E		Y	1.9 qts Garlon)	n/a	95	gallberry	
Cobb	Atmore AL	n/a	Rayonier Wc Wayne Foley, 2E		Y	1.9 qts Garlon)	n/a	90	oak	
Cobb	Atmore AL	n/a	Rayonier Wc Wayne Foley, 2E		Y	1.9 qts Garlon)	n/a	100	maple	
Cobb	Fulton, AL		Scotch Lumt George Robertsr		Y	5 qts Accord XF	n/a	100	pine	
Cobb	Atmore, AL	n/a	Private Land Randy Rilling 25		Y	5 qts. Accord X	n/a	95	Locust Aerial Broa	
Cobb	Atmore, AL	n/a	Private Land Randy Rilling 25		Y	5 qts. Accord X	n/a	90	Virginia Pir Aerial Broa	
Cobb	Walnut Hill,	n/a	AmSouth Bai Mark Parrot, Sur		Y	7floc Milestone	n/a	95	Loblolly Pir Aerial Broa	
Neal	Warren Col	Warren Cour	Warren Cour	Tommy Walker,		Y	21oz Transline	n/a	88	Locust Aerial Broa
Neal	Warren Col	Warren Cour	Warren Cour	Tommy Walker,		Y	21oz Transline	n/a	100	Redbud Aerial Broa
Rogers		Wise Batten Forestry Tract				Y	Accord XRT - 4	n/a	99	Bay Aerial Broa
Rogers		Wise Batten Forestry Tract				Y	Accord XRT - 4	n/a	100	Yaupon Aerial Broa
Rogers	Broad River	n/a	Broad River Elec			Y	Accord XRT - 5	n/a	98	Virginia Pir Ground Brc
Rogers	Broad River	n/a	Broad River Elec			Y	Accord XRT - 5	n/a	90	Jap Honey:Ground Brc
Rogers	Broad River	n/a	Broad River Elec			Y	Accord XRT - 5	n/a	98	Water/willo Ground Brc
Rogers	Broad River	n/a	Broad River Elec			Y	Accord XRT - 5	n/a	85	Elm Ground Brc
Rogers		Brosman Forest Understory				Y	Garlon Ultra - 3	n/a	80	Lob Pine - Ground Brc
Russell	Eastman, GA		Rayonier Wc Jimmie Walton, I			Y	4 qts Accord XF	n/a	95	Loblolly Pir Aerial Broa
Russell	Abbeville, GA		Rayonier Cub Smith UAP			Y	4 qts. Milestone	n/a	95	Loblolly Pir Aerial Broa
Russell	Abbeville, GA		Rayonier Cub Smith UAP			Y	4 qts. Milestone	n/a	85	Virginia Pir Aerial Broa
Russell	Eulonia, GA		FIA Tim Gahl 912-7C			Y	7 qts. Accord X	n/a	90	Loblolly Pir Aerial Broa
Russell	Eulonia, GA		FIA Tim Gahl 912-7C			Y	7 qts. Accord X	n/a	95	Maple Aerial Broa
Russell	Eulonia, GA		FIA Tim Gahl 912-7C			Y	7 qts. Accord X	n/a	95	Blackberry Aerial Broa
Russell	Eulonia, GA		FIA Tim Gahl 912-7C			Y	7 qts. Accord X	n/a	60	Gallberry Aerial Broa
Average % Control - 1 YAT >>>>>>>							91			
DAS Sales Rep	Location	Tract Name	Landowner	Local Forester/	Milestone Y/N	Herbicide Mix/ Rate - %	Control - 1	Species	Applicatio	
Cobb	Birmingham	n/a	Molpus Timb Don Sanford, 20		N	1 gal Accord XF	n/a	65	Loblolly Pine	
Cobb	Birmingham	n/a	Molpus Timb Don Sanford, 20		N	1 gal Accord XF	n/a	50	Virginia Pine	
Cobb	Atmore AL	n/a	Rayonier Wc Wayne Foley, 2E		N	1.9 qts Garlon)	n/a	50	Loblolly Pine	
Cobb	Atmore AL	n/a	Rayonier Wc Wayne Foley, 2E		N	1.9 qts Garlon)	n/a	95	gallberry	
Cobb	Atmore AL	n/a	Rayonier Wc Wayne Foley, 2E		N	1.9 qts Garlon)	n/a	85	oak	
Cobb	Atmore AL	n/a	Rayonier Wc Wayne Foley, 2E		N	1.9 qts Garlon)	n/a	90	maple	
Cobb	Atmore, AL	n/a	Private Land Randy Rilling 25		N	15 floz Translin	n/a	50	Locust Aerial Broa	
Cobb	Atmore, AL	n/a	Private Land Randy Rilling 25		N	15 floz Translin	n/a	0	Virginia Pir Aerial Broa	
Cobb	Fulton, AL		Scotch Lumt George Robertsr		N	5 qts Accord XF	n/a	75	pine	
Cobb	Atmore, AL	n/a	Private Land Randy Rilling 25		N	5 qts. Accord X	n/a	25	Locust Aerial Broa	
Cobb	Atmore, AL	n/a	Private Land Randy Rilling 25		N	5 qts. Accord X	n/a	60	Virginia Pir Aerial Broa	
Cobb	Walnut Hill,	n/a	AmSouth Bai Mark Parrot, Sur		N	6 qts Razor Pro	n/a	60	Loblolly Pir Aerial Broa	
Neal	Warren Col	Warren Cour	Warren Cour	Tommy Walker,		N	21oz Transline	n/a	55	Locust Aerial Broa
Neal	Warren Col	Warren Cour	Warren Cour	Tommy Walker,		N	21oz Transline	n/a	55	Redbud Aerial Broa
Rogers	Broad River	n/a	Broad River Elec		N	Accord XRT - 5	n/a	80	Virginia Pir Ground Brc	
Rogers	Broad River	n/a	Broad River Elec		N	Accord XRT - 5	n/a	75	Jap Honey:Ground Brc	
Rogers	Broad River	n/a	Broad River Elec		N	Accord XRT - 5	n/a	80	Water/willo Ground Brc	
Rogers	Broad River	n/a	Broad River Elec		N	Accord XRT - 5	n/a	30	Elm Ground Brc	
Rogers		Wise Batten Forestry Tract				N	Garlon XRT - 2i	n/a	40	Bay Aerial Broa
Rogers		Wise Batten Forestry Tract				N	Garlon XRT - 2i	n/a	40	Yaupon Aerial Broa
Rogers		Brosman Forest Understory				N	Garlon XRT - 8.	n/a	55	Lob Pine - Ground Brc
Russell	Eulonia, GA		FIA Tim Gahl 912-7C			N	7.5 qts. Accord	n/a	85	Loblolly Pir Aerial Broa
Russell	Eulonia, GA		FIA Tim Gahl 912-7C			N	7.5 qts. Accord	n/a		Maple Aerial Broa
Russell	Eulonia, GA		FIA Tim Gahl 912-7C			N	7.5 qts. Accord	n/a		Blackberry Aerial Broa
Russell	Eulonia, GA		FIA Tim Gahl 912-7C			N	7.5 qts. Accord	n/a		Gallberry Aerial Broa
Russell	Abbeville, GA		Rayonier Cub Smith UAP			N	8 qts Razor Pro	n/a	10	Loblolly Pir Aerial Broa
Russell	Abbeville, GA		Rayonier Cub Smith UAP			N	8 qts Razor Pro	n/a	10	Virginia Pir Aerial Broa
Russell	Eastman, GA		Rayonier Wc Jimmie Walton, I			N	8 qts Razor Pro	n/a	20	Loblolly Pir Aerial Broa
Average % Control - 1 YAT >>>>>>>							54			

Brush Control from Operational 2008 Broadcast Programs - 2007 - Rated at 1 YAT
Comparisons between broadcast (per acre) spray mixtures containing Milestone VM vs mixtures not containing Milestone VM



Electric Utility Data – Mostly IPT (directed Individual Plant Treatments – foliar) initially collected in 2007 but updated with new, additional data in 2008.

All ratings are at 1 YAT –

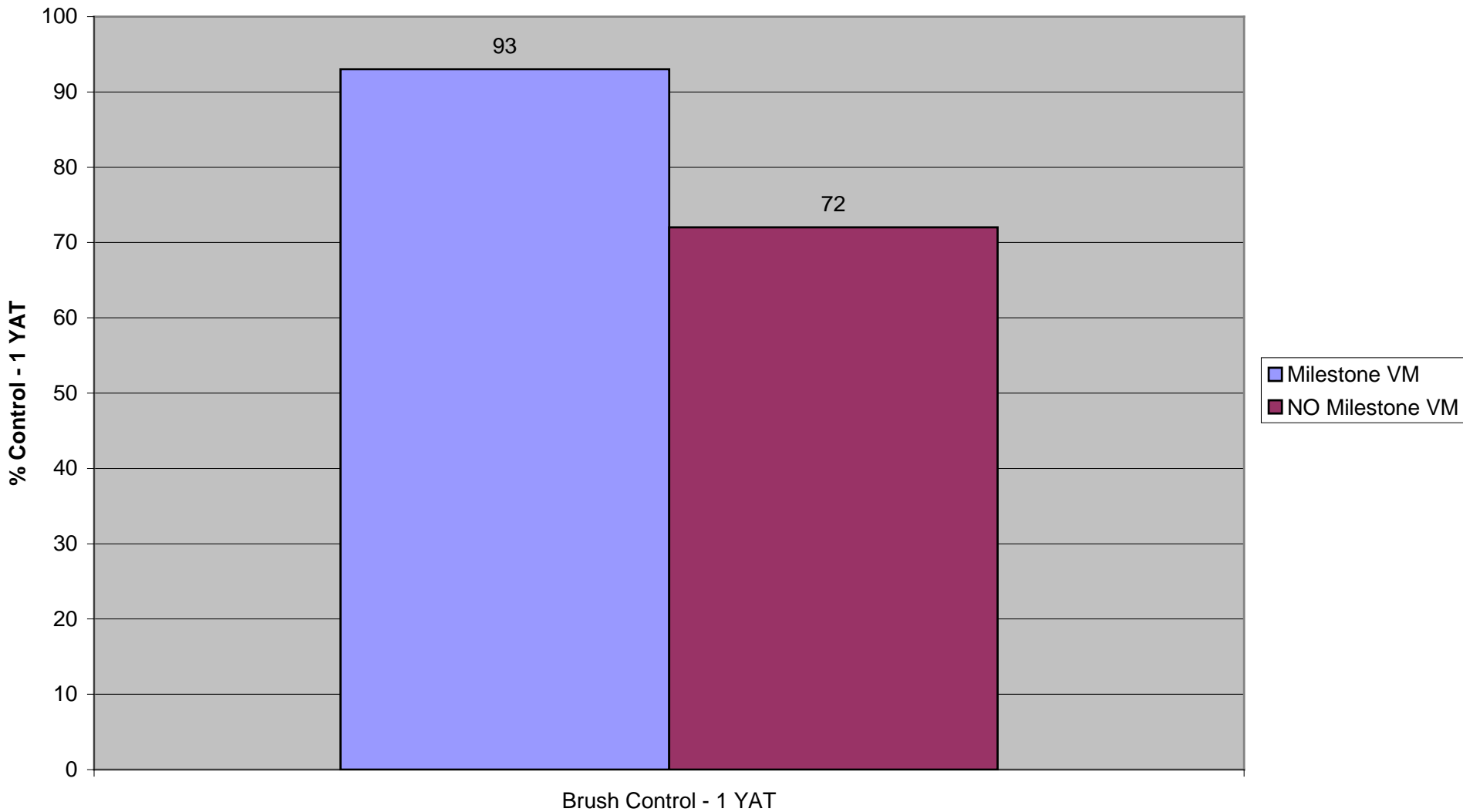
The average control achieved from mixtures containing Milestone VM was 93%

The average control achieved from mixtures not containing Milestone VM was 72%

Addition of Milestone VM to brush control mixtures, on average, increased the level of control by 21%

Date Year	DAS Sales Rep	Location	Tract Name	Landowner	Local Fore	Milestone Y/N	Herbicide Mix/ac Rate - % V/V	Control - 1 YAT	Species	Applicatio	Comments
2007	Cobb/Oden	AL - Jackson	n/a	AL - Jackson	n/a	Yes	Accord Conc + Ar 4 + 0.75 + 0.25	90	yaupon, mi	Backpack LV foliar	
2007	Cobb/Oden	AL - Jackson	n/a	AL - Jackson	n/a	Yes	Accord Conc + Ar 4 + 0.75 + 0.25	95	Mimosa ce	Backpack LV foliar	
2007	Cobb/Oden	AL - Southern	n/a	AL - Southern	n/a	Yes	Accord Conc + Ar 4 + 0.75 + 0.25	95	longleaf pir	Backpack LV foliar	
2007	Cobb/Oden	AL - Southern	n/a	AL - Southern	n/a	Yes	Accord Conc + Ar 4 + 0.75 + 0.25	98	privit mimo	Backpack LV foliar	
2007	Cobb/Oden	AL - Tuscaloo	n/a	AL - Tuscaloo	n/a	Yes	Accord Conc + Ar 4 + 0.75 + 0.25	98	mimosa ba	Backpack LV foliar	
2007	Cobb/Oden	AL - Tuscaloo	n/a	AL - Tuscaloo	n/a	Yes	Accord Conc + Ar 4 + 0.75 + 0.25	95	mimosa vir	Backpack LV foliar	
2007	Cobb/Oden	AL - Birmingham	n/a	AL - Birmingham	n/a	Yes	Accord Conc + Ar 4 + 0.75 + 0.25	95	virginia pir	Backpack LV foliar	
2007	Cobb/Oden	AL - Anniston	n/a	AL - Anniston	n/a	Yes	Accord Conc + Ar 4 + 0.75 + 0.25	95	virginia pir	Backpack LV foliar	
2007	Ditmarsen	Progress Ene	n/a	Progress Ene	n/a	Yes	Aqua Star + Habit 1.0 + 0.25 + 0.11	85	scrub oak,	Handgun - sumac defoliated but "	
2007	Ditmarsen	Progress Ene	n/a	Progress Ene	n/a	Yes	Aqua Star + Habit 1.0 + 0.25 + 0.11	85	scrub oak,	Handgun - sumac defoliated but "	
2007	Ditmarsen	Progress Ene	n/a	Progress Ene	n/a	Yes	Garlon 4 + Vista +1.0 + 0.33 + 0.11	95	scrub oak	Handgun - 100 GPA	
2007	Ditmarsen	Progress Ene	n/a	Progress Ene	n/a	Yes	Garlon 4 + Vista +1.0 + 0.33 + 0.11	95	scrub oak	Handgun - 100 GPA	
2007	Quattrocchi	APS	n/a	APS	n/a	Yes	Accord C 4% + M 4 + 0.5	100	ash alanthi	High volume foliar	
2007	Quattrocchi	APS	n/a	APS	n/a	Yes	Garlon 3A 0.5 + T 0.5 + 0.12 + 7floc	98	ash alanthi	High volume foliar	
2007	Quattrocchi	APS	n/a	APS	n/a	Yes	Garlon 3A 0.5 + T 0.5 + 0.12 + 7floc	100	ash alanthi	High volume foliar	
2007	Quattrocchi	APS	n/a	APS	n/a	Yes	Garlon 3A 0.5 + T 0.5 + 0.12 + 7floc	98	ash alanthi	High volume foliar	
2007	Quattrocchi	AEP	n/a	AEP	n/a	Yes	Garlon 3A 0.5 + T 0.5 + 0.12 + 7floc	95	ash locustH	High volume foliar	
2007	Quattrocchi	AEP	n/a	AEP	n/a	Yes	Garlon 3A 0.5 + T 0.5 + 0.12 + 7floc	100	ash locustH	High volume foliar	
2007	Quattrocchi	1st Energy	n/a	1st Energy	n/a	Yes	Garlon 3A 0.5 + T 0.5 + 0.12 + 7floc	100	ash alanthi	High volume foliar	
2007	Quattrocchi	PECO	n/a	PECO	n/a	Yes	Tordon + Milestor 2 qts + 7floc + 5 g	100	ash alanthi	Cut stubble	
2008	Rogers	Pender, Sam	n/a	Four County E	Danny Car	Yes	Accord Conc 4% 4.0% + 0.25% + 0	90	wax myrtle	10-15 GPA Elec Utility ROW	
2008	Rogers	Pender, Sam	n/a	Four County E	Danny Car	Yes	Accord Conc 4% 4.0% + 0.25% + 0	98	baccharis	10-15 GPA Elec Utility ROW	
2008	Rogers	Pender, Sam	n/a	Four County E	Danny Car	Yes	Accord Conc 4% 4.0% + 0.25% + 0	98	loblolly pint	10-15 GPA Elec Utility ROW	
2008	Rogers	Pender, Sam	n/a	Four County E	Danny Car	Yes	Accord Conc 4% 4.0% + 0.25% + 0	98	cherry	10-15 GPA Elec Utility ROW	
2008	Rogers	Pender, Sam	n/a	Four County E	Danny Car	Yes	Accord Conc 4% 4.0% + 0.25% + 0	98	water oak	10-15 GPA Elec Utility ROW	
2008	Rogers	Pender, Sam	n/a	Four County E	Danny Car	Yes	Accord Conc 4% 4.0% + 0.25% + 0	60	holly	10-15 GPA Elec Utility ROW	
2008	Rogers	Pender, Sam	n/a	Four County E	Danny Car	Yes	Accord Conc 4% 4.0% + 0.25% + 0	100	mimosa	10-15 GPA Elec Utility ROW	
2008	Rogers	Pender, Sam	n/a	Four County E	Danny Car	Yes	Accord Conc 4% 4.0% + 0.25% + 0	95	kudzu	10-15 GPA Elec Utility ROW	
2008	Rogers	Jacksonville,	n/a	REC	Gene Brow	Yes	Garlon 3A 3% + h.3.0 + 0.33	98	wax myrtle	Tractor & I Elec Utility ROW	
2008	Rogers	Jacksonville,	n/a	REC	Gene Brow	Yes	Garlon 3A 3% + h.3.0 + 0.33	98	baccharis	Tractor & I Elec Utility ROW	
2008	Rogers	Jacksonville,	n/a	REC	Gene Brow	Yes	Garlon 3A 3% + h.3.0 + 0.33	98	loblolly pint	Tractor & I Elec Utility ROW	
2008	Rogers	Jacksonville,	n/a	REC	Gene Brow	Yes	Garlon 3A 3% + h.3.0 + 0.33	100	mimosa	Tractor & I Elec Utility ROW	
2008	Rogers	Jacksonville,	n/a	REC	Gene Brow	Yes	Garlon 3A 3% + h.3.0 + 0.33	95	sweetgum	Tractor & I Elec Utility ROW	
2008	Rogers	Jacksonville,	n/a	REC	Gene Brow	Yes	Garlon 3A 3% + h.3.0 + 0.33	20	hickory	Tractor & I Elec Utility ROW	
2008	Rogers	Jacksonville,	n/a	REC	Gene Brow	Yes	Garlon 3A 3% + h.3.0 + 0.33	85	water oak	Tractor & I Elec Utility ROW	
2007	Russell	Sumpter Elec	n/a	Sumpter Elec	n/a	Yes	Garlon 3A + Mile 2 qts + 5 g	100	mimosa	Backpack LV foliar	
Average % Control - 1 YAT >>>								93			
Date Year	DAS Sales Rep	Location	Tract Name	Landowner	Local Fore	Milestone Y/N	Herbicide Mix/ac Rate - % V/V	Control - 1 YAT	Species	Applicatio	Comments
2007	Cobb/Oden	AL - Jackson	n/a	AL - Jackson	n/a	No	Accord Conc + Ar 4 + 0.75 + 2 oz/1C	70	yaupon, mi	Backpack LV foliar	
2007	Cobb/Oden	AL - Jackson	n/a	AL - Jackson	n/a	No	Accord Conc + Ar 4 + 0.75 + 2 oz/1C	75	Mimosa ce	Backpack LV foliar	
2007	Cobb/Oden	AL - Southern	n/a	AL - Southern	n/a	No	Accord Conc + Ar 4 + 0.75 + 2 oz/1C	70	longleaf pir	Backpack LV foliar	
2007	Cobb/Oden	AL - Southern	n/a	AL - Southern	n/a	No	Accord Conc + Ar 4 + 0.75 + 2 oz/1C	70	privit mimo	Backpack LV foliar	
2007	Cobb/Oden	AL - Tuscaloo	n/a	AL - Tuscaloo	n/a	No	Accord Conc + Ar 4 + 0.75 + 2 oz/1C	80	mimosa ba	Backpack LV foliar	
2007	Cobb/Oden	AL - Tuscaloo	n/a	AL - Tuscaloo	n/a	No	Accord Conc + Ar 4 + 0.75 + 2 oz/1C	70	virginia vir	Backpack LV foliar	
2007	Cobb/Oden	AL - Birmingham	n/a	AL - Birmingham	n/a	No	Accord Conc + Ar 4 + 0.75 + 2 oz/1C	70	mimosa pir	Backpack LV foliar	
2007	Cobb/Oden	AL - Anniston	n/a	AL - Anniston	n/a	No	Accord Conc + Ar 4 + 0.75 + 2 oz/1C	70	virginia pir	Backpack LV foliar	
2007	Ditmarsen	Progress Ene	n/a	Progress Ene	n/a	No	Aqua Star + Habit 1.0 + 0.25	98	scrub oak	Handgun - Aqua Star contains 5.4	
2007	Ditmarsen	Progress Ene	n/a	Progress Ene	n/a	No	Aqua Star + Habit 1.0 + 0.25	98	scrub oak	Handgun - Aqua Star contains 5.4	
2007	Ditmarsen	Progress Ene	n/a	Progress Ene	n/a	No	Aqua Star + Habit 1.0 + 0.25 + 0.33	95	scrub oak,	Handgun - 100 GPA	
2007	Ditmarsen	Progress Ene	n/a	Progress Ene	n/a	No	Aqua Star + Habit 1.0 + 0.25 + 0.33	95	scrub oak,	Handgun - 100 GPA	
2007	Quattrocchi	APS	n/a	APS	n/a	No	Accord C 4% + A 4 + 0.25	98	ash alanthi	High volume foliar	
2007	Quattrocchi	APS	n/a	APS	n/a	No	Garlon 3A 0.5 + T 0.5 + 0.25	95	ash alanthi	High volume foliar	
2007	Quattrocchi	APS	n/a	APS	n/a	No	Garlon 3A 0.5 + T 0.5 + 0.25	90	ash alanthi	High volume foliar	
2007	Quattrocchi	APS	n/a	APS	n/a	No	Garlon 3A 0.5 + T 0.5 + 0.25	92	ash alanthi	High volume foliar	
2007	Quattrocchi	AEP	n/a	AEP	n/a	No	Garlon 3A 0.5 + T 0.5 + 0.25	95	ash locustH	High volume foliar	
2007	Quattrocchi	AEP	n/a	AEP	n/a	No	Garlon 3A 0.5 + T 0.5 + 0.25	95	ash locustH	High volume foliar	
2007	Quattrocchi	1st Energy	n/a	1st Energy	n/a	No	Garlon 3A 0.5 + T 0.5 + 0.25	98	ash alanthi	High volume foliar	
2007	Quattrocchi	PECO	n/a	PECO	n/a	No	Tordon + Arsenal 2 qts + 8floc + 5 g	95	ash alanthi	Cut stubble	
2008	Rogers	Jacksonville,	n/a	REC	Gene Brow	No	Krenite S 4% + A 4.0 + 0.5	20	wax myrtle	Tractor & I Elec Utility ROW	
2008	Rogers	Jacksonville,	n/a	REC	Gene Brow	No	Krenite S 4% + A 4.0 + 0.5	20	baccharis	Tractor & I Elec Utility ROW	
2008	Rogers	Jacksonville,	n/a	REC	Gene Brow	No	Krenite S 4% + A 4.0 + 0.5	98	loblolly pint	Tractor & I Elec Utility ROW	
2008	Rogers	Jacksonville,	n/a	REC	Gene Brow	No	Krenite S 4% + A 4.0 + 0.5	20	mimosa	Tractor & I Elec Utility ROW	
2008	Rogers	Jacksonville,	n/a	REC	Gene Brow	No	Krenite S 4% + A 4.0 + 0.5	98	sweetgum	Tractor & I Elec Utility ROW	
2008	Rogers	Jacksonville,	n/a	REC	Gene Brow	No	Krenite S 4% + A 4.0 + 0.5	90	hickory	Tractor & I Elec Utility ROW	
2008	Rogers	Jacksonville,	n/a	REC	Gene Brow	No	Krenite S 4% + A 4.0 + 0.5	95	water oak	Tractor & I Elec Utility ROW	
2008	Rogers	Pender, Sam	n/a	Four County E	Danny Car	No	Krenite S 4% + A 4.0% + 0.50%	25	wax myrtle	10-15 GPA Elec Utility ROW	
2008	Rogers	Pender, Sam	n/a	Four County E	Danny Car	No	Krenite S 4% + A 4.0% + 0.50%	20	baccharis	10-15 GPA Elec Utility ROW	
2008	Rogers	Pender, Sam	n/a	Four County E	Danny Car	No	Krenite S 4% + A 4.0% + 0.50%	75	loblolly pint	10-15 GPA Elec Utility ROW	
2008	Rogers	Pender, Sam	n/a	Four County E	Danny Car	No	Krenite S 4% + A 4.0% + 0.50%	98	cherry	10-15 GPA Elec Utility ROW	
2008	Rogers	Pender, Sam	n/a	Four County E	Danny Car	No	Krenite S 4% + A 4.0% + 0.50%	98	water oak	10-15 GPA Elec Utility ROW	
2008	Rogers	Pender, Sam	n/a	Four County E	Danny Car	No	Krenite S 4% + A 4.0% + 0.50%	10	holly	10-15 GPA Elec Utility ROW	
2008	Rogers	Pender, Sam	n/a	Four County E	Danny Car	No	Krenite S 4% + A 4.0% + 0.50%	40	mimosa	10-15 GPA Elec Utility ROW	
2008	Rogers	Pender, Sam	n/a	Four County E	Danny Car	No	Krenite S 4% + A 4.0% + 0.50%	50	mimosa	Backpack LV foliar	
2007	Russell	Sumpter Elec	n/a	Sumpter Elec	n/a	No	Accord + Arsenal 4 + 0.33	40	kudzu	10-15 GPA Elec Utility ROW	
Average % Control - 1 YAT >>>								72			

Brush Control from Operational IPT & Handgun Programs - 2006 & 2007 - Rated at 1 YAT
Comparisons between spray mixtures containing Milestone VM vs mixtures not containing Milestone VM



Improvement in Pine Control:

DAS Sales Rep	Location	Tract Name	Landowner	Local Forester/	Milestone	Y/N	Herbicide Mix/	Rate - %	V% Control ~ 1 YAT	Species	Application Comments
Rogers		Brosman Forest		Understory		Y	Garlon Ultra -	n/a	80	Lob Pine -	Ground Broadcast
Cobb	Birmingham, A	n/a	Molpus Tin	Don Sanford, 2		Y	1 gal Mileston	n/a	100	Loblolly Pine	
Cobb	Atmore AL	n/a	Rayonier V	Wayne Foley, 2		Y	1.9 qts Garlon	n/a	75	Loblolly Pine	Ragweed &
Russell	Eastman, GA		Rayonier V	Jimmie Walton		Y	4 qts Accord X	n/a	95	Loblolly Pir	Aerial Broa Pine Belt aj
Russell	Abbeville, GA		Rayonier	Cub Smith UAF		Y	4 qts. Milestor	n/a	95	Loblolly Pir	Aerial Broa Pine Belt aj
Russell	Eulonia, GA		FIA	Tim Gahl 912-7		Y	7 qts. Accord	n/a	90	Loblolly Pir	Aerial Broa Pine Belt aj
Cobb	Walnut Hill, AL	n/a	Amsouth B	Mark Parrot, St		Y	7floz Mileston	n/a	95	Loblolly Pir	Aerial Broa Seedling pi
Cobb	Fulton, AL		Scotch Lun	George Robert:		Y	5 qts Accord X	n/a	100	pine	50 acres of
Cobb	Birmingham, A	n/a	Molpus Tin	Don Sanford, 2		Y	1 gal Mileston	n/a	85	Virginia Pine	Small seed
Russell	Abbeville, GA		Rayonier	Cub Smith UAF		Y	4 qts. Milestor	n/a	85	Virginia Pir	Aerial Broa Pine Belt aj
Cobb	Atmore, AL	n/a	Private Lar	Randy Rilling 2:		Y	5 qts. Accord	n/a	90	Virginia Pir	Aerial Broa north Baldv
Rogers	Broad River El	n/a	Broad River Elec			Y	Accord XPT	n/a	98	Virginia Pir	Ground Broadcast

Average % Control - 1 YAT >>>>>

91

DAS Sales Rep	Location	Tract Name	Landowner	Local Forester/	Milestone	Y/N	Herbicide Mix/	Rate - %	V% Control ~ 1 YAT	Species	Application Comments
Cobb	Birmingham, A	n/a	Molpus Tin	Don Sanford, 2		N	1 gal Accord X	n/a	65	Loblolly Pine	
Cobb	Atmore AL	n/a	Rayonier V	Wayne Foley, 2		N	1.9 qts Garlon	n/a	50	Loblolly Pine	Ragweed &
Cobb	Walnut Hill, AL	n/a	Amsouth B	Mark Parrot, St		N	6 qts Razor Pr	n/a	60	Loblolly Pir	Aerial Broadcast
Russell	Eulonia, GA		FIA	Tim Gahl 912-7		N	7.5 qts. Accor	n/a	85	Loblolly Pir	Aerial Broa Pine Belt aj
Russell	Abbeville, GA		Rayonier	Cub Smith UAF		N	8 qts Razor Pr	n/a	10	Loblolly Pir	Aerial Broa Pine Belt aj
Russell	Eastman, GA		Rayonier V	Jimmie Walton		N	8 qts Razor Pr	n/a	30	Loblolly Pir	Aerial Broa Pine Belt aj
Cobb	Fulton, AL		Scotch Lun	George Robert:		N	5 qts Accord X	n/a	75	pine	50 acres of
Cobb	Birmingham, A	n/a	Molpus Tin	Don Sanford, 2		N	1 gal Accord X	n/a	50	Virginia Pine	
Cobb	Atmore, AL	n/a	Private Lar	Randy Rilling 2:		N	15 floz Transli	n/a	0	Virginia Pir	Aerial Broa north Baldv
Cobb	Atmore, AL	n/a	Private Lar	Randy Rilling 2:		N	5 qts. Accord	n/a	60	Virginia Pir	Aerial Broa north Baldv
Russell	Abbeville, GA		Rayonier	Cub Smith UAF		N	8 qts Razor Pr	n/a	10	Virginia Pir	Aerial Broa Pine Belt aj
Rogers	Broad River El	n/a	Broad River Elec			N	Accord XPT	n/a	80	Virginia Pir	Ground Broadcast

Average % Control - 1 YAT >>>>>

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Is it safe to plant conifers following applications of aminopyralid?

- Results presented at 2007 Fall Data Review by D. Chad Cummings:
 - In the five trials across the US, no conifer species exhibited significant injury from a pre-plant (site-prep) application of 7 or 14 fl oz/A of Milestone VM
 - Conifer spp. included: PIUEC, PIUEL, PIUPO, PIUTD, PIUVI, and PSTME
- Vanelle provided additional data in 2008 – no difference with or without aminopyralid as site prep treatment prior to planting – Doug fir, ponderosa pine, cedar, Western hemlock. Box plots of these data included in “Additional Slides” at end of this presentation.
- Bottomline, We are good to go on this part of the project.

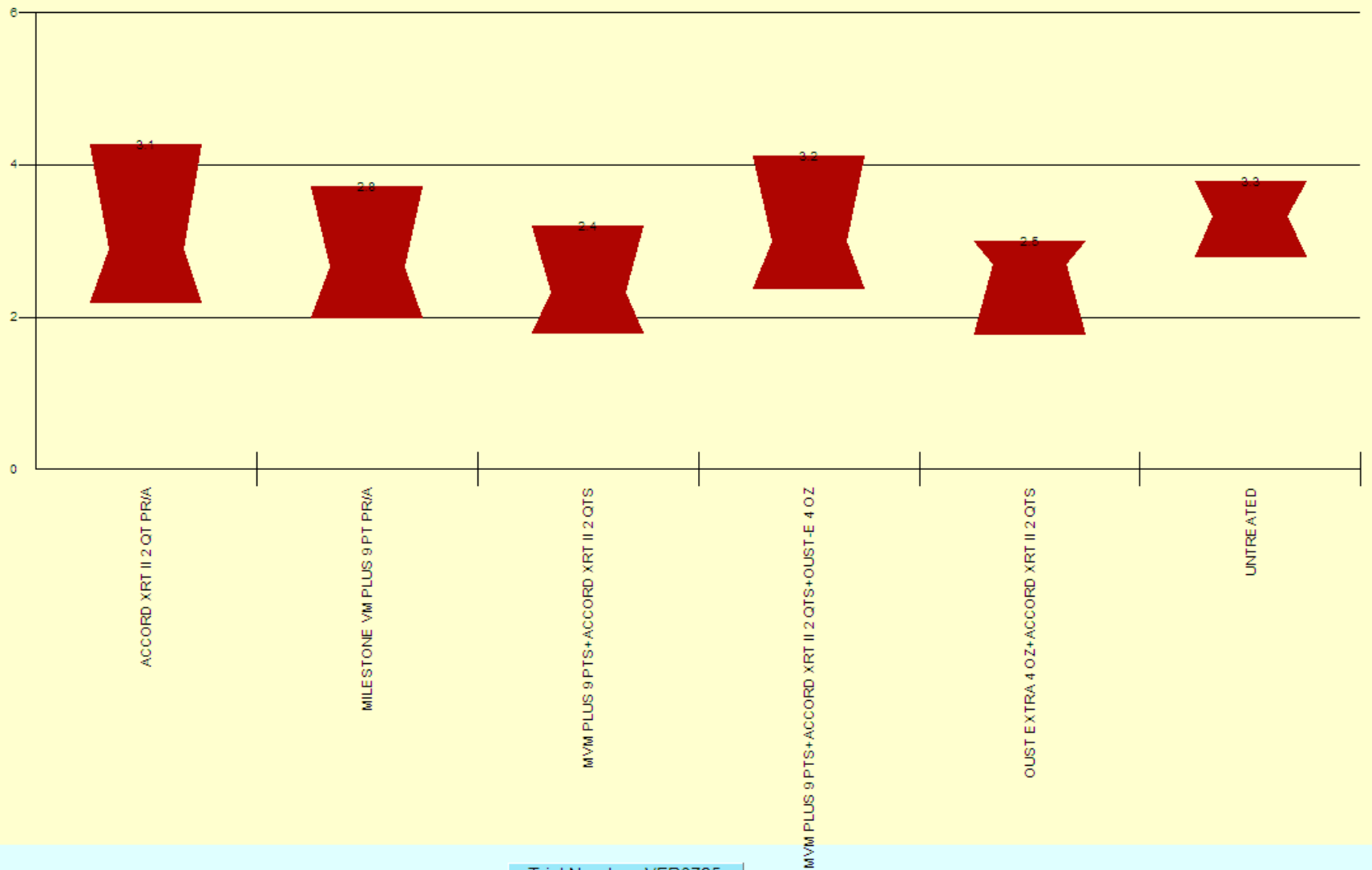
Conclusions

- Based on these data, collected over large geographic areas for 2 years, mostly in the SE:
 - The average control from **mixtures containing** Milestone VM was
 - 91% on broadcast foliar (mostly forestry sites)
 - 93% on IPT (mostly backpack electric utility ROW's).
 - The average control from **mixtures not containing** Milestone VM was
 - 54% on broadcast foliar (mostly forestry sites)
 - 72% on IPT (mostly backpack electric utility ROW's).
 - On average, addition of Milestone VM to brush control mixtures increased the level of control by
 - 37% on broadcast foliar sites
 - 21% on IPT/backpack.

Additional Slides

Milestone applied pre-plant for site prep - mixed conifers

1-6SCAL INJURY

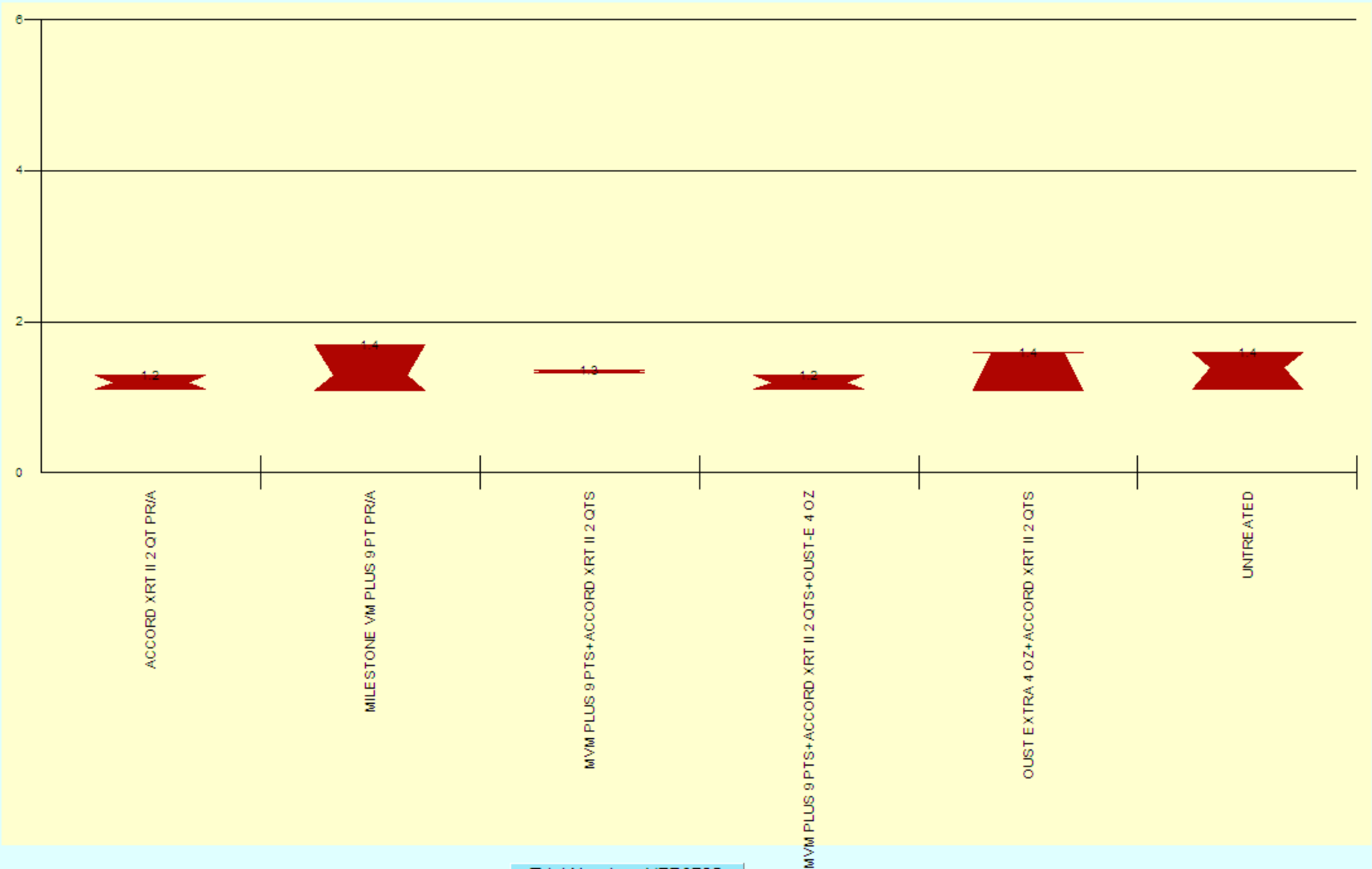


Trial Number: VFP0725

DOUGLAS FIR 297DAAA

Milestone applied pre-plant for site prep - mixed conifers

1-6SCAL INJURY

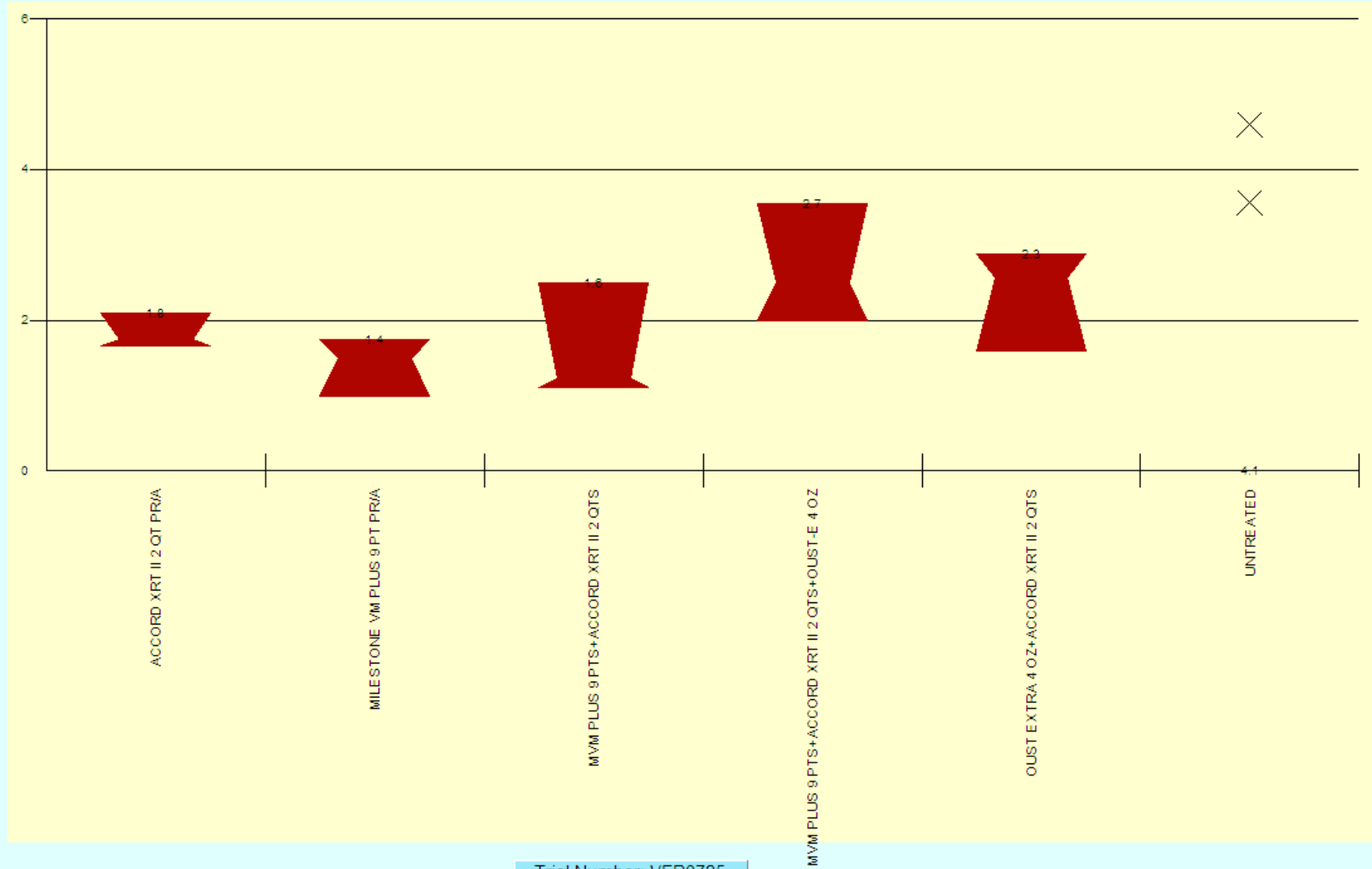


Trial Number: VFP0725

PONDEROSA PINE 297DAAA

Milestone applied pre-plant for site prep - mixed conifers

1-6SCAL INJURY

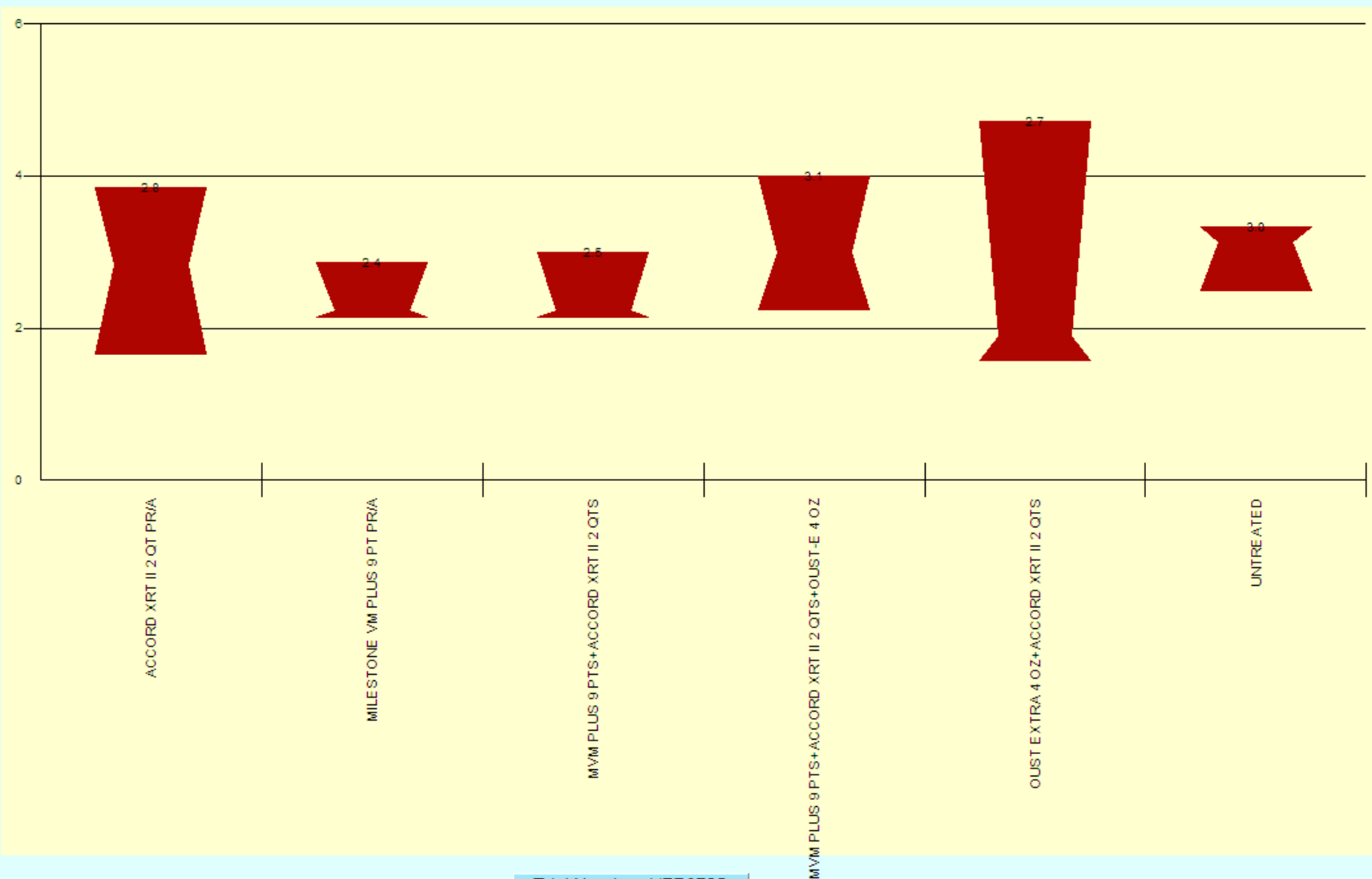


Trial Number: VFP0725

E RED CEDAR 297DAAA

Milestone applied pre-plant for site prep - mixed conifers

1-6SCAL INJURY



Trial Number: VFP0725

WESTERN HEMLOCK 297DAAA

(Base label):

Milestone[®]

HERBICIDE

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

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

IMPORTANT USE PRECAUTIONS AND RESTRICTIONS TO PREVENT INJURY TO DESIRABLE PLANTS

- Carefully read the section “*Restrictions in Hay or Manure Use.*”
- It is mandatory to follow the “*Use Precautions and Restrictions*” section of this label.
- Manure and urine from animals consuming grass or hay treated with this product may contain enough aminopyralid to cause injury to sensitive broadleaf plants.
- Hay can only be used on the farm or ranch where product is applied unless allowed by supplemental labeling.
- Consult with a Dow AgroSciences representative if you do not understand the “Use Precautions and Restrictions”. **Call 800-258-3033 Customer Information Group.**

Forage and Manure Management

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Not for Sale, Sale into, Distribution, and/or Use in Nassau and Suffolk counties of New York State. Not For Sale, Distribution, or Use in the San Luis Valley of Colorado.

GROUP	4	HERBICIDE
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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

[Editor’s Note: The following Container Use Directions should be included on the label for product that is packaged in a 1-quart Tip-and-Dispense bottle]

Container Use Directions

1 - Tip

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

2 - Level

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

3 - Dispense

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

Keep Out of Reach of Children**CAUTION**

Precautionary Statements

Hazard to Humans and Domestic Animals**Causes Moderate Eye Irritation**

Avoid contact with eyes or clothing.

Personal Protective Equipment (PPE)**Applicators and other handlers must wear:**

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

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

User Safety Recommendations

Users should:

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

First Aid

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

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

Environmental Hazards

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

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

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to label booklet under "Agricultural Use Requirements" in the "Directions for Use" section for information about this standard.

Nonrefillable containers 5 gallons or less:

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.

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:**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.

Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose.

Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

Nonrefillable containers larger than 5 gallons:**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.

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.

Refer to label booklet for Directions for Use.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-519

EPA Est. _____

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

NET CONTENTS __

(cover / shipping container):

Milestone®

HERBICIDE

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

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

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

- Carefully read the section “*Restrictions in Hay or Manure Use.*”
- It is mandatory to follow the “*Use Precautions and Restrictions*” section of this label.
- Manure and urine from animals consuming grass or hay treated with this product may contain enough aminopyralid to cause injury to sensitive broadleaf plants.
- Hay can only be used on the farm or ranch where product is applied unless allowed by supplemental labeling.
- Consult with a Dow AgroSciences representative if you do not understand the “Use Precautions and Restrictions”. **Call 800-258-3033 Customer Information Group.**

Forage and Manure Management

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Not for Sale, Sale into, Distribution, and/or Use in Nassau and Suffolk counties of New York State. Not For Sale, Distribution, or Use in the San Luis Valley of Colorado.

GROUP	4	HERBICIDE
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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

Keep Out of Reach of Children

CAUTION

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to label booklet under "Agricultural Use Requirements" in the "Directions for Use" section for information about this standard.

Refer to inside of label booklet for Directions for Use.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-519

EPA Est. _____

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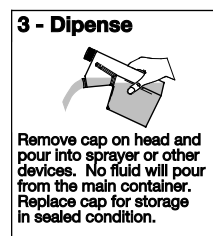
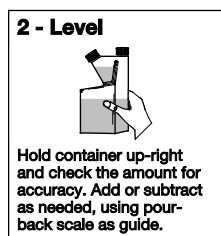
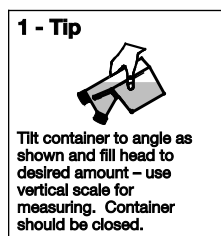
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Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268**

NET CONTENTS ____

(Page 1 through end):

[Editor's Note: The following Container Use Directions should be included on the label for product that is packaged in a 1-quart Tip-and-Dispense bottle]

Container Use Directions



Precautionary Statements

Hazards to Humans and Domestic Animals

CAUTION

Causes Moderate Eye Irritation

Avoid contact with eyes or clothing.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

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

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

User Safety Recommendations

Users should:

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

First Aid

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

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

Environmental Hazards

Do not apply directly to water. Take care to minimize the incidental overspray along the shoreline when applying to terrestrial plants at the water's edge or to water in areas where surface water is present. Do

not apply directly to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

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

Directions for Use

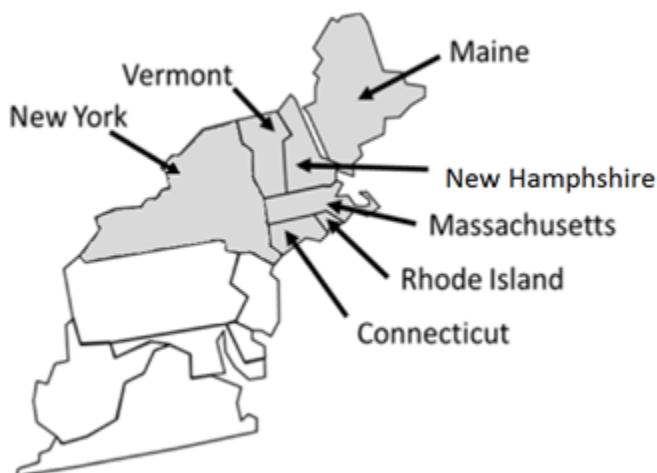
It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

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

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

Not for Sale, Sale into, Distribution, and/or Use in Nassau and Suffolk counties of New York State. Not For Sale, Distribution, or Use in the San Luis Valley of Colorado.

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



Grey = states where use in pasture is not permitted

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.

Nonrefillable containers larger than 5 gallons:

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

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with

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

Resistance Management Guidelines

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

Use Precautions

- Applications made during periods of intense rainfall, to soils saturated with water, surfaces paved with materials such as asphalt or concrete, or soils through which rainfall will not readily penetrate may result in runoff and movement of Milestone. Injury to crops may result if treated soil and/or runoff water containing Milestone is washed or moved onto land used to produce crops. Exposure to Milestone may injure or kill susceptible crops and other plants, such as grapes, soybeans, tobacco, sensitive ornamentals.
- **Grass revegetation:**
 - Milestone can be used to control broadleaf plants in grass revegetation programs. Consult Dow AgroSciences' literature for more details about Milestone applications and grass stand establishment.
- **Application before seeding grasses**
 - Milestone can be applied to control broadleaf weeds prior to grass planting. Grass seed germination and seedling development can be adversely affected by many factors such as seed viability and seedling vigor, soil condition (sub-optimal soil temperatures or soil water content), weather after planting, seedbed preparation and seed placement, disease, insects, or animals. Milestone applications will help to reduce competition from weeds and improve the chance for successful grass stand establishment. Some grass species are more sensitive to Milestone; consult Dow AgroSciences' literature for more details.
 - **Postemergence applications on grass:** During the season of establishment, Milestone should be applied only after perennial grasses are well established (have developed a good secondary root system and show good vigor. Most perennial grasses are tolerant to Milestone at this stage of development. Milestone may suppress certain established grasses, such as smooth bromegrass (*Bromus inermis*), especially when plants are stressed by

adverse environmental conditions. Plants should recover from this transient suppression with the onset of environmental conditions favorable to grass growth and upon release from weed competition.

- **Seeding Broadleaf Plants (Forbs) and Wildflowers**

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

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

Consult with a Dow AgroSciences representative if you do not understand the “Use Precautions and Restrictions.” Call 800-258-3033 for more information.

<p>IMPORTANT USE PRECAUTIONS AND RESTRICTIONS TO PREVENT INJURY TO DESIRABLE PLANTS</p> <ul style="list-style-type: none"> • Carefully read the section “<i>Restrictions in Hay or Manure Use</i>.” • It is mandatory to follow the “<i>Use Precautions and Restrictions</i>” 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 800-258-3033 Customer Information Group. 	<p>Forage and Manure Management</p> <p>©Copyright 2011 Dow AgroSciences LLC</p>
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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.**

Restrictions for All Uses

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

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

- **Avoiding Injury to Non-Target Plants:** Do not aerially apply Milestone within 50 feet of a border downwind (in the direction of wind movement), or allow spray drift to come in contact with, any broadleaf crop or other desirable broadleaf plants, including, but not limited to, alfalfa, cotton, dry beans, flowers, grapes, lettuce, potatoes, radishes, soybeans, sugar beets, sunflowers, tobacco, tomatoes or other broadleaf or vegetable crop, fruit trees, ornamental plants, or soil where sensitive crops are growing or will be planted. Avoid application under conditions that may allow spray drift because very small quantities of spray may seriously injure susceptible crops. Read and consider the "Precautions for Avoiding Spray Drift and Spray Drift Advisory" to help minimize the potential for spray drift.
- **Chemigation:** Do not apply this product through any type of irrigation system.
- **Do not contaminate water intended for irrigation or domestic purposes.** Do not treat inside banks or bottoms of irrigation ditches, either dry or containing water, or other channels that carry water that may be used for irrigation or domestic purposes.
- Do not apply this product to lawns, turf, ornamental plantings, urban walkways, driveways, tennis courts, golf courses, athletic fields, commercial sod operations, or other high-maintenance, fine turfgrass areas, or similar areas.
- Trees adjacent to or in a treated area can occasionally be affected by root uptake of Milestone. Do not apply Milestone within the root zone of desirable trees unless such injury can be tolerated. Use special caution near roses, and leguminous trees such as locusts, redbud, mimosa, and caragana.

- Do not treat frozen soil where runoff could damage sensitive plants.
- **Grazing and Haying Restrictions:** There are no restrictions on grazing or grass hay harvest following application of Milestone at labeled rates. Cutting hay too soon after spraying weeds will reduce weed control. Wait 14 days after herbicide application to cut grass hay to allow herbicide to work. Do not transfer grazing animals from areas treated with Milestone to areas where sensitive broadleaf crops occur without first allowing 3 days of grazing on an untreated pasture. Otherwise, urine and manure may contain enough aminopyralid to cause injury to sensitive broadleaf plants.
- **Grazing Poisonous Plants:** Herbicide application may increase palatability of certain poisonous plants. Do not graze treated areas until poisonous plants are dry and no longer palatable to livestock.
- **Restrictions in Hay or Manure Use:**
 - ◆ Do not use aminopyralid-treated plant residues, including grass, wood plants, trees, hay or straw from areas treated within the preceding 18-months, in compost, mulch wood chips, or mushroom spawn.
 - ◆ Do not use manure from animals that have eaten aminopyralid-treated forage or hay within the previous 3 days in compost, mulch or mushroom spawn. Livestock must have 3 days of eating non-aminopyralid-treated materials in order to clear their system of aminopyralid. Do not use aminopyralid-treated plants in areas where commercially grown mushrooms or susceptible broadleaf plants may be grown.
 - ◆ Do not spread manure from animals that have consumed aminopyralid-treated forage or hay within the previous 3 days on land used for growing susceptible broadleaf crops.
 - ◆ Manure from animals that have consumed aminopyralid-treated forage or hay within the previous 3 days may only be used on areas used for pasture, grass grown for seed, wheat and corn.
 - ◆ Do not plant a broadleaf crop (including soybeans, sunflower, tobacco, vegetables, field beans, peanuts, and potatoes) in fields or areas treated with aminopyralid or manure from animals that have grazed forage or eaten hay harvested from aminopyralid-treated areas until an adequately sensitive field bioassay is conducted to determine that the aminopyralid concentration in the soil is at level that is not injurious to the crop to be planted.
 - ◆ Do not plant a broadleaf crop in fields or areas treated in the previous year with manure from animals that have consumed aminopyralid-treated forage or hay until an adequately sensitive field bioassay is conducted to determine that the aminopyralid concentration in the soil is at level that is not injurious to the crop to be planted.
 - ◆ To promote herbicide decomposition, plant residues should be evenly incorporated in the surface soil or burned. Breakdown of aminopyralid in plant residues or manure is more rapid under warm, moist soil conditions and may be enhanced by supplemental irrigation.
- **Crop Rotation:** Do not rotate to any crop from rangeland, permanent pasture or CRP acres within one year following treatment. Cereals and corn can be planted one year after treatment. Broadleaf crops are sensitive to aminopyralid residues in the soil and prediction of crop safety by field bioassay (see instructions below) is the BEST way to determine planting options. Broadleaf crops such as canola, flax, and alfalfa can require **at least** 2 to 3 years depending on the crop and environmental conditions. More sensitive crops such as soybeans, tobacco, peanuts, potatoes, and peas may require a longer plant back interval and should not be planted until a field bioassay shows that the level of aminopyralid present in the soil will not adversely affect that broadleaf crop.

Precautions for Avoiding Spray Drift

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

Microfoil, Thru-Valve booms, or other spray delivery systems that cannot accommodate thickened spray solutions.

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

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

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

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

State regulations must be followed.

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

Aerial Drift Reduction Advisory

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

Controlling Droplet Size:

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

Sprayer Clean-Out Instructions

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

Use Information

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 or intended application site. Increase spray volume to ensure thorough and uniform coverage when target vegetation is tall and/or dense. To enhance foliage wetting and coverage, a non-ionic agricultural surfactant or other adjuvant may be added to the spray mixture as specified by the adjuvant label.

Milestone may be applied by ground or aerial application equipment on any registered use site specified on this 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 year. Use sufficient spray volume to thoroughly and uniformly wet foliage and stems.

For basal bark and cut stubble and all types of cut surface applications, see woody plant section.

Low-Volume Foliar Treatment

To control susceptible woody plants, use Milestone alone or in tank mixes with other herbicides in water. The spray concentration of Milestone tank mixes and total spray volume per acre should be adjusted according to the size and density of target woody plants and type of spray equipment used. With low-volume application, use sufficient spray volume to obtain uniform coverage of target plants including the surfaces of all foliage, stems, and root collars.

For best results, an adjuvant should be added to all spray mixtures. Match equipment and delivery rate of spray nozzles to height and density of woody plants. When treating tall, dense brush, a truck mounted spray gun with spray tips that deliver up to 2 gallons per minute at 40 to 60 psi may be required. Backpack or other types of specialized spray equipment with spray tips that deliver less than 1 gallon of spray per minute may be appropriate for short, low to moderate density brush.

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 year; however, not more than 50% of an acre may be treated at that rate. Do not apply more than a total of 0.11 lb acid equivalent (7 fl oz) per acre of Milestone per year as a result of broadcast, spot or repeat applications.) 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 with a known volume per acre. Table 1 shows Milestone amount to mix 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 GPA	Milestone amount (in mL) to mix to achieve target 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

Use a syringe to measure cc

80	1.9	2.6	5.3
90	1.7	2.3	4.7
100	1.5	2.1	4.2

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

Conversions:

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

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 herbicides, if tank mixing. Finally, with continued agitation, add the rest of the water and additives such as adjuvants, 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 principal) or adjuvant 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 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 tank mix product(s), 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.

- It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.
- 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.

Invert emulsion spray mixtures

Milestone can be applied in an invert emulsion using oil and an appropriate inverting agent. Follow label directions of the inverting agent.

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 as a broadcast spray by ground or aerial equipment 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 provides post emergence control and 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.

Plants Controlled

The following weeds and woody plants will be controlled with the rates of Milestone indicated below (table 2). For best results, most weeds and woody plants 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 optimal longer term residual control is desired. Milestone also provides preemergence control of germinating seeds or seedlings of susceptible weeds following application.

Table 2: Weeds and Woody Plants Controlled

Note: Numbers in parentheses (-) refer to specific use directions for a particular weed 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
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
buttercup spp	<i>Ranunculus spp</i>	4 to 7	various	Ranunculaceae
camelthorn	<i>Alhagi pseudalhagi</i>	5 to 7	perennial	Fabaceae
cat's ear, common	<i>Hypochaeris radicata</i>	5 to 7	perennial	Asteraceae
cat's ear	<i>Hypochaeris spp</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>Gamochaeta 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	<i>Amsinckia spp</i>	4 to 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 (maretail)	<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
knapweed, diffuse (3)	<i>Centaurea diffusa</i>	5 to 7	biennial/ perennial	Asteraceae
knapweed, meadow	<i>Centaurea debeauxii</i>	5 to 7	perennial	Asteraceae
knapweed, Russian (4)	<i>Acroptilon repens</i>	5 to 7	perennial	Asteraceae
knapweed, spotted (3)	<i>Centaurea stoebe</i>	5 to 7	biennial/ perennial	Asteraceae

knapweed, squarrose	<i>Centaurea virgata</i>	5 to 7	biennial/ perennial	Asteraceae
knapweeds	<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
lambsquarters	<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 perforate</i>	4 to 7	annual	Asteraceae
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
oxtongue, 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
ragweed, giant	<i>Ambrosia trifida</i>	4 to 7	annual	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
starthistle, Malta (7)	<i>Centaurea melitensis</i>	3 to 5	annual	Asteraceae
starthistle, purple (7)	<i>Centaurea calcitrapa</i>	3 to 5	biennial	Asteraceae
starthistle, yellow (7)	<i>Centaurea solstitialis</i>	3 to 5	annual	Asteraceae
sunflower, common	<i>Helianthus annuus</i>	4 to 7	annual	Asteraceae
sweetclover, white	<i>Melilotus albus</i>	5 to 7	biennial	Fabaceae
sweetclover, yellow	<i>Melilotus officinalis</i>	5 to 7	biennial	Fabaceae
teasel	<i>Dipsacus spp.</i>	4 to 7	biennial	Dipsacaceae

thistle, artichoke	<i>Cynara cardunculus</i>	5 to 7	perennial	Asteracea
thistle, blessed milk	<i>Silybum marianum</i>	4-7	biennial	Asteraceae
thistle, bull (8)	<i>Cirsium vulgare</i>	3 to 5	biennial	Asteraceae
thistle, Canada (9)	<i>Cirsium arvense</i>	5 to 7	perennial	Asteraceae
thistle, woolly distaff	<i>Carthamus lanatus</i>	4 to 7	annual	Asteraceae
thistle, Italian	<i>Carduus pycnocephalus</i>	7	annual	Asteraceae
thistle, musk (8)	<i>Carduus nutans</i>	3 to 5	biennial	Asteraceae
thistle, plumeless (8)	<i>Carduus acanthoides</i>	3 to 5	biennial	Asteraceae
thistle, Scotch	<i>Onopordum acanthium</i>	5 to 7	biennial	Asteracea
thistle, Russian (preemergence)	<i>Salsola spp</i>	7	annual	Chenopodiaceae
tree of heaven	<i>Ailanthus altissima</i>	7	perennial	Simaroubaceae
vetch	<i>Vicia spp.</i>	3 to 7	perennial	Fabaceae
willoweed, panicle	<i>Epilobium brachycarpum</i>	5-7	annual	Onagraceae
wisteria	<i>Wisteria brachybotris</i>	7	woody perennial	Fabaceae
wormwood, absinth (10)	<i>Artemisia absinthium</i>	6 to 7	perennial	Asteraceae
yarrow, common	<i>Achillea millefolium</i>	7	perennial	Asteraceae

- (1) **Sulfur cinquefoil or oxeye daisy:** Apply Milestone at 4 to 6 fl oz per acre to plants in the prebud stage of development.
- (2) **Orange or yellow hawkweeds:** Apply Milestone at 4 to 7 fl oz per acre to plants in the bolting stage of development.
- (3) **Diffuse, spotted, and squarrose knapweeds:** Apply Milestone at 5 to 7 fl oz per acre when plants are actively growing with the optimum time of application occurring from rosette to the bolting stages of development or in the fall. Plants will be controlled by mid-summer and fall applications even though plants may not show any changes in form or stature the year of application.
- (4) **Russian knapweed:** Apply Milestone at 5 to 7 fl oz per acre to plants in the spring and summer at early bud to flowering stages and to dormant plants in the fall.
- (5) **Mullein:** Apply to the rosette stage
- (6) **Tropical soda apple:** Apply Milestone at 5 to 7 fl oz per acre at any growth stage, but application by flowering will reduce seed production potential.
- (7) **Malta, purple, and yellow starthistle:** Apply Milestone at 3 to 5 fl oz per acre to plants at the rosette through bolting growth stages.
- (8) **Bull, musk, and plumeless thistles:** Apply Milestone at 3 to 5 fl oz per acre in the spring and early summer to rosette or bolting plants or in the fall to seedlings and rosettes. Apply at 4 to 5 fl oz when plants are at the late bolt through early flowering growth stages. 2,4-D at 1 lb ae/acre should be tank-mixed with Milestone starting at the late bud stages
- (9) **Canada thistle:** Apply Milestone at 5 to 7 fl oz per acre in the spring after all plants have fully emerged (some may be budding) until the oldest plants are in full flower stage. Use the higher rate when applying to the flower stage. Applications are also effective in the fall before a killing frost. Use higher rates for older/dense stands or for longer residual control.
- (10) **Absinth wormwood:** Apply 6 to 7 fl oz per acre before wormwood is 12 inches tall. When applying by air on CRP, coverage is important and a minimum of 3 GPA is specified. Remove old duff and litter by fire or mowing for best results
- (11) **Invasive knotweeds:** Japanese, Bohemian, giant knotweeds: Optimum suppression of invasive knotweeds with Milestone herbicide is obtained when applications are made to plants that are at least 3 to 4 feet tall. Results of field trials conducted in the western U.S. indicate that high volume applications (100 gpa or greater) of Milestone at 7 fl oz/A or a spot treatment rate up to 14 fl oz/A applied in summer will provide good control of invasive knotweeds. In the upper Midwest, mowing in summer followed by fall application of Milestone (prior to frost) provided the best control. Infestations of invasive knotweed that are mowed should be allowed to regrow to at least 3 feet in height prior to herbicide treatment. Monitoring and follow-up herbicide treatments on regrowth will be necessary to control resprouts and achieve long-term control.

- (12) **Purple loosestrife:** For optimum control apply Milestone at 7 fl oz per acre plus 1 pt to 1 qt of 2,4-D amine or 1 to 2 qts of Garlon 3A. Spot treatments may also be made by applying Milestone at 14 fl oz (see Spot treatment section of the label) with or without the addition of 2,4-D or Garlon 3A.
- (13) **Fiddleneck:** For optimum control apply Milestone at 4 to 7 fl oz per acre when the plants are young and before flowering. Use higher rates if the plants are older and larger. In California optimal application timing is November through March.

For Control or Suppression of Medusahead Rye

Milestone applied broadcast at 7 to 14 fl oz/A can suppress or control medusahead rye (*Taeniatherum caput-medusae*) and downy brome (*Bromus tectorum*, also called cheatgrass). The key to optimum results is the timing of application. Applications should be made in late summer prior to rains and seed germination in order to provide the best possibility of suppression or control. In general, control or suppression will be poor if any of the seeds have germinated prior to application even if they have not yet emerged through the soil surface. Tank mixes with Accord XRT II at 12 fl oz/A, where a non-selective herbicide can be used or where desired grasses are dormant and will not be harmed, and will aid in control. Spot treatment restrictions (see spot treatment section) apply for rates above 7 fl oz/A for broadcast applications.

Control of Terrestrial Weeds near and up to the Water's Edge

Milestone can be used to treat terrestrial weeds that extend up to the water's edge. **Do not apply directly to water.** This product must not be used to treat vegetation standing in the water. When controlling terrestrial weed species near and up to the water's edge, take precautions to minimize incidental overspray to the adjacent water. Consult local public water control authorities before applying this product near public waters. Permits may be required to treat such areas. Apply the specified rate, listed in Table 2, of Milestone as a coarse low-pressure spray as ground broadcast or spot applications. Do not apply aerially for control of weeds growing at or near the water's edge. Spray volume should be sufficient to uniformly cover foliage. Increase the spray volume to ensure thorough and uniform coverage when target vegetation is tall and/or dense. It is also permissible to treat target weeds within dry non-irrigation ditches and seasonally dry transitional areas between upland and lowland sites (such as flood plains, deltas, marshes, prairie potholes or vernal pools), but only at times when those sites are dry and are forecasted or managed by water control systems to remain dry for at least 2 weeks following application.

Use Rate Restrictions:

Do not broadcast apply more than 7 fl oz per acre of Milestone per year.

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

Woody Plant Control

Milestone may be applied to control woody plants by any application method listed on the label on any site listed.

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 alder, aspen, blackberry, boxelder, cherry, coyote brush, conifers, cottonwood, elm, maple, poplar, oak, brooms (Scotch, Spanish, French, Portuguese), gorse, hackberry, Russian and Autumn olive, salt-cedar.

Low or High Volume Foliar Applications:

For broad spectrum brush control using a foliar application, Milestone may be added to tank mixes with Accord® XRT II, Arsenal Powerline, DMA® 4IVM, Garlon 4 Ultra, Remedy Ultra, Tordon 101M, Transline, Forestry Garlon XRT, or Garlon 3A, Rodeo®, Tordon® K, Tordon 22K or other products labeled for use on the intended site.

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 other products such as Garlon 4 Ultra, Forestry Garlon XRT, Remedy Ultra for broader control of other sensitive woody species. Applications should not exceed the maximum use rate per acre for the site.

Mix Milestone at 0.5 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. See table 3 to calculate the amount of Milestone that can be applied per acre at the various volumes and rates. 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. If using a tank mix, mix the oil-based products such as Garlon 4 Ultra thoroughly with basal oil and add any other oil-based products before adding the water based products. If the mixture stands for more than 30 minutes, reagitation may be required.

Oil and water based mixtures can separate over time. Long-term storage is not recommended without vigorous agitation prior to use or without a recommended compatibility agent.

Use caution when treating areas adjacent to susceptible and desirable species to avoid root uptake and possible injury when using Milestone or other soil active herbicides

Low Volume Stem Bark Band Treatment

To control susceptible woody plants (see table 2) with stems less than 6 inches in basal diameter, mix 0.5 to 5 gallons of Milestone in enough oil to make 100 gallons of spray mixture. Apply with a backpack or knapsack sprayer using low pressure and a solid cone or flat fan nozzle. Apply the spray in a 6- to 10-inch wide band that completely encircles the stem. Spray in a manner that completely wets the bark, but not to the point of runoff. The treatment band may be positioned at any height up to the first major branch. For best results apply the band as low as possible. Spray mixture concentration should vary with size and susceptibility of species to be treated. Applications may be made anytime, including winter months.

Table 3:

% of Milestone in Basal Mix	Fluid ounces of Milestone by GPA (gallons per acre)
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	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.0	1.3	2.6	3.8	5.1	6.4	7.7	9.0
1.5	1.9	3.8	5.8	7.7	9.6	11.5	13.4
2.0	2.6	5.1	7.7	10.2	12.8		
2.5	3.2	6.4	9.6	12.8			
3.0	3.8	7.7	11.5				
3.5	4.5	9.0	13.4				
4.0	5.1	10.2					
5.0	6.4	12.8					

 within spot treatment labeled rate
 in excess of spot treatment labeled rate

NOTE: Avoid treating high density of stems adjacent to desirable trees with roots in the treatment zone. See table 4 for guidance on estimated volume per acre by treated stem density. Trees adjacent to or in a treated area can occasionally be affected by root uptake of Milestone. Applications of Milestone within the root zone of desirable trees should not be made unless injury can be tolerated. Severe injury or plant death can occur if used near roses, or leguminous trees such as locusts, redbud, mimosa, and caragana.

Table 4:

Estimated gallons of spray solution per acre for basal bark applications on various stem densities per acre		
	Volume Range	Target Spacing
Number of Stems/Acre	(gal/acre)	(ft between brush/trees)
250	1.0 - 1.7	8.4
500	2.0 - 3.3	5.9
750	3.0 - 5.0	4.9
1000	4.0 - 6.6	4.2
1250	5.0 - 8.3	3.8
1500	5.9 - 9.9	3.4

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 Ultra 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 in the spring.

Cut-Stump Treatment

Apply Milestone as a 10% dilution v/v in water, by spraying or painting all the exposed cambium layer on the freshly cut surface. 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.

For use in Hawaii only:

Incision Point Application (IPA) also known as Tree Injection or Hack and Squirt

For control of susceptible tree species such as albizia and other legumes and susceptible tree species, make cuts around the tree trunk at a convenient height with a machete, hatchet or similar equipment so that the cuts are about 6 inches apart between centers. Inject ½ to 1 milliliter of undiluted Milestone into the pocket created between the bark and the inner stem/trunk by each cut as soon as possible after cutting. The cambium area next to the bark is the most vital area to wet.

Preemergent Weed Control

Typically Milestone is used as a post emergent herbicide but it has preemergent activity on susceptible weeds. Use Milestone as a preemergence spray prior to weed seed germination. Control will depend upon species susceptibility, application timing, and environmental conditions, such as precipitation, following application. When applied at rates lower than 7 fl oz per acre, Milestone can provide short-term control of some susceptible weeds but when applied at 7 fl oz (broadcast) or 14 fl oz (spot treatment), weed control is extended.

Best results for use as a preemergent application for total vegetation control are obtained if Milestone at 7 fl oz per acre is tank mixed with other herbicides to broaden the weed spectrum and to control grasses. If grasses and broadleaf weeds tolerant to Milestone are present at the time of application or will germinate on the site, then tank mixtures with other herbicides, such as Accord® XRT II, Rodeo®, Dimension® 2EW or EC (annual grasses), Oust XP, Esplanade, flumioxazin, diuron, or other herbicides labeled for total vegetation control applications.

SPOT TREATMENTS FOR AREAS SUCH AS SUBJECT POLES, SUBSTATIONS, AND OTHER SMALL AREAS

Spot treatments may be applied at an equivalent broadcast rate of up to 0.22 lb acid equivalent (14 fl oz of Milestone) per acre per year to small spots for clearing around utility subject poles to help prevent fire damage, on small substations and other spot areas. To prevent misapplication, spot treatments should be applied with a calibrated sprayer.

Terms and Conditions of Use

If terms of the following Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. To the extent permitted by law, otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies.

Warranty Disclaimer

Dow AgroSciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. To the extent permitted by law, Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Dow AgroSciences or the seller. To the extent permitted by law, all such risks shall be assumed by buyer.

Limitation of Remedies

To the extent permitted by law, the exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Dow AgroSciences' election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used.

To the extent permitted by law, Dow AgroSciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow AgroSciences is promptly notified of such loss or damage in writing. To the extent permitted by law, in no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer, Inherent Risks of Use and this Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow AgroSciences or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

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EPA accepted 01/30/17

SAFETY DATA SHEET

DOW AGROSCIENCES LLC

Product name: MILESTONE™ Herbicide

Issue Date: 08/29/2019

Print Date: 08/29/2019

DOW AGROSCIENCES LLC encourages you and expects you to read and understand the entire SDS as there is important information throughout the document. This SDS provides users with information relating to the protection of human health and safety at the workplace, protection of the environment and supports emergency response. Product users and applicators should primarily refer to the product label attached to or accompanying the product container.

1. IDENTIFICATION

Product name: MILESTONE™ Herbicide

Recommended use of the chemical and restrictions on use

Identified uses: End use herbicide product

COMPANY IDENTIFICATION

DOW AGROSCIENCES LLC
9330 ZIONSVILLE RD
INDIANAPOLIS IN 46268-1053
UNITED STATES

Customer Information Number:

800-992-5994
info@corteva.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 800-992-5994

Local Emergency Contact: 352-323-3500

2. HAZARDS IDENTIFICATION

Hazard classification

GHS classification in accordance with 29 CFR 1910.1200

Not a hazardous substance or mixture.

Other hazards

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
Aminopyralid Triisopropanolamine Salt	566191-89-7	40.6%

Triisopropanolamine	122-20-3	1.5%
Balance	Not available	57.9%

4. FIRST AID MEASURES

Description of first aid measures

General advice:

If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

Skin contact: 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.

Eye contact: Hold eyes 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 eyes. Call a poison control center or doctor for treatment advice.

Ingestion: No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed:

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

Unsuitable extinguishing media: None known.

Special hazards arising from the substance or mixture

Hazardous combustion products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Exposure to combustion products may be a hazard to health. Do not allow run-off from fire fighting to enter drains or water courses.

Advice for firefighters

Fire Fighting Procedures: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Remove undamaged containers from fire area if it is safe to do so. Evacuate area. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers.

Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice. Smoking, eating and drinking should be prohibited in the application area. Take care to prevent spills, waste and minimize release to the environment. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Conditions for safe storage: Store in a closed container. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in properly labelled containers. Store in accordance with the particular national regulations.

Do not store with the following product types: Strong oxidizing agents.
Unsuitable materials for containers: None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value/Notation
Triisopropanolamine	Dow IHG	TWA	10 mg/m ³

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields).

Skin protection

Hand protection: Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized.

Other protection: No precautions other than clean body-covering clothing should be needed.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.

The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	Liquid.
Color	Brown
Odor	Mild
Odor Threshold	No data available
pH	7.3 <i>pH Electrode</i>
Melting point/range	No data available
Freezing point	< -10 °C (< 14 °F)
Boiling point (760 mmHg)	No data available
Flash point	closed cup > 100 °C (> 212 °F) <i>Pensky-Martens Closed Cup ASTM D 93</i>
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	Not Applicable
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	No data available

Relative Density (water = 1)	No data available
Water solubility	Soluble
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	none below 400 degC
Decomposition temperature	No data available
Dynamic Viscosity	12.2 cP at 20 °C (68 °F) <i>EPA OPPTS 830.7100 (Viscosity)</i>
Kinematic Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Liquid Density	1.1401 g/mL at 20 °C (68 °F) <i>Digital density meter</i>
Molecular weight	No data available
Surface tension	54.4 mN/m at 20 °C (68 °F)

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Not classified as a reactivity hazard.

Chemical stability: No decomposition if stored and applied as directed. Stable under normal conditions.

Possibility of hazardous reactions: None known.
No hazards to be specially mentioned.

Conditions to avoid: None known.

Incompatible materials: Avoid contact with: Strong oxidizers.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Hydrogen chloride. Nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product:

LD50, Rat, male and female, > 5,000 mg/kg

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product:
LD50, Rat, male and female, > 5,000 mg/kg

Acute inhalation toxicity

No adverse effects are anticipated from single exposure to mist. Based on the available data, respiratory irritation was not observed.

As product:
LC50, Rat, male and female, 4 Hour, dust/mist, > 5.79 mg/l

Skin corrosion/irritation

Essentially nonirritating to skin.

Serious eye damage/eye irritation

Essentially nonirritating to eyes.

Sensitization

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Carcinogenicity

For similar active ingredient(s). Aminopyralid. Did not cause cancer in laboratory animals.

Teratogenicity

Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive toxicity

For similar active ingredient(s). Aminopyralid. In animal studies, did not interfere with reproduction.

Mutagenicity

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Acute toxicity to fish

LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 Hour, 360 mg/l, OECD Test Guideline 203 or Equivalent

LC50, Cyprinodon variegatus (sheepshead minnow), static test, 96 Hour, > 100 mg/l

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), static test, 48 Hour, > 460 mg/l

LC50, saltwater mysid Mysidopsis bahia, static test, 96 Hour, > 104 mg/l

Acute toxicity to algae/aquatic plants

For similar material(s):

Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).

For similar material(s):

ErC50, Myriophyllum spicatum, 14 d, 0.363 mg/l

For similar material(s):

NOEC, Myriophyllum spicatum, 14 d, 0.0639 mg/l

For similar material(s):

ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, > 1,000 mg/l

Toxicity to Above Ground Organisms

Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).

dietary LC50, Colinus virginianus (Bobwhite quail), > 21422mg/kg diet.

oral LD50, Colinus virginianus (Bobwhite quail), > 10,000 ppm

oral LD50, Apis mellifera (bees), > 460micrograms/bee

contact LD50, Apis mellifera (bees), > 460micrograms/bee

Toxicity to soil-dwelling organisms

LC50, Eisenia fetida (earthworms), 14 d, survival, > 10,000 mg/kg

Persistence and degradability

Aminopyralid Triisopropanolamine Salt

Biodegradability: For similar material(s): Aminopyralid. Material is not readily biodegradable according to OECD/EEC guidelines.

Triisopropanolamine

Biodegradability: Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%). Biodegradation rate may increase in soil and/or water with acclimation. Material is not readily biodegradable according to OECD/EEC guidelines.

10-day Window: Fail

Biodegradation: 0 %

Exposure time: 28 d

Method: OECD Test Guideline 301F or Equivalent

Theoretical Oxygen Demand: 2.35 mg/mg

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitization: OH radicals

Atmospheric half-life: 3 Hour

Method: Estimated.

Balance

Biodegradability: No relevant data found.

Bioaccumulative potential

Aminopyralid Triisopropanolamine Salt

Bioaccumulation: For similar active ingredient(s). Aminopyralid. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Triisopropanolamine

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): -0.015 at 23 °C Measured

Bioconcentration factor (BCF): < 0.57 Fish 42 d Measured

Balance

Bioaccumulation: No relevant data found.

Mobility in soil

Aminopyralid Triisopropanolamine Salt

For similar active ingredient(s).

Aminopyralid.

Potential for mobility in soil is very high (Koc between 0 and 50).

Triisopropanolamine

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient (Koc): 10 Estimated.

Balance

No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Aminopyralid Triisopropanolamine Salt)
UN number	UN 3082
Class	9
Packing group	III
Marine pollutant	Aminopyralid Triisopropanolamine Salt
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Environmentally hazardous substance, liquid, n.o.s.(Aminopyralid Triisopropanolamine Salt)
UN number	UN 3082
Class	9
Packing group	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

No SARA Hazards

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Right To Know

The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components**CASRN**

Triisopropanolamine

122-20-3

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

United States TSCA Inventory (TSCA)

This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

Federal Insecticide, Fungicide and Rodenticide Act

EPA Registration Number: 62719-519

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

CAUTION

Causes moderate eye irritation

16. OTHER INFORMATION

Hazard Rating System**NFPA**

Health	Flammability	Instability
1	1	0

Revision

Identification Number: 266154 / A211 / Issue Date: 08/29/2019 / Version: 9.1

DAS Code: GF-871

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

Dow IHG	Dow Industrial Hygiene Guideline
TWA	Time weighted average

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International

Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW AGROSCIENCES LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

US