



PAUL R. LEPAGE  
GOVERNOR

STATE OF MAINE  
DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY  
BOARD OF PESTICIDES CONTROL  
28 STATE HOUSE STATION  
AUGUSTA, MAINE 04333-0028

WALTER E. WHITCOMB  
COMMISSIONER

HENRY S. JENNINGS  
DIRECTOR

To: Board of Pesticides Control Members  
From: Mary Tomlinson, Pesticides Registrar/Water Quality Specialist  
Re: Renewal of EPA Special Local Need (FIFRA, Section 24(c)) registration, ME-100003, for use of Asulox Herbicide, (EPA Reg. No. 70506-139) to control bracken fern in wild blueberries  
Date: December 30, 2014

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The Special Local Need (SLN) registration for Asulox Herbicide (EPA Reg. No. 70506-139) expired November 5, 2014. Dr. David Yarborough, blueberry specialist at the University of Maine Cooperative Extension requests renewal of this SLN. In the absence of other effective control measures for bracken fern, this product has proven to be effective, especially in newly cleared land and abandoned fields returned to production. The proposed SLN will expire January 31, 2020.

There are no changes to the SLN label and the application conditions, as listed below, remain the same.

- Application will be no more than once every other year.
- Application will be made during non-bearing years.
- Application will be via spot treatment.

Although the risk to surface and ground water may be reduced due to the application conditions listed above, water quality monitoring is recommended due to the potential for runoff and leaching. Asulam, the active ingredient, was not included in the 2011 or 2014 groundwater monitoring, but inclusion is being explored with Montana Analytical Laboratory for future monitoring.

Please review the following documents and let me know if you have any questions.

- Letter of support from David E. Yarborough, Ph.D., Wild Blueberry Specialist, Maine Cooperative Extension
- Board Memo, Status of Human Health Risk Assessments, from Lebel Hicks, Ph.D. DABT
- Asulox Herbicide proposed Maine SLN label
- Asulox Herbicide Section 3 label



December 8, 2014

Mary E Tomlinson  
mary.e.tomlinson@maine.gov

Dear Mary:

I am writing to support the renewal of the State of Maine 24C label for the use of Asulox for bracken fern control in wild blueberries. Growers have indicated to me that there are no other effective measures for the control of bracken fern. The fern shades the wild blueberry and can reduce yields by 75% in areas where wild blueberries are fully shaded. Wild Blueberry growers have had use of Asulox as a 24C label in Maine since 2010 and have successfully used it for the control of bracken fern. However, with new land being cleared and previously abandoned fields being brought back into production there is still a need for this herbicide as it has unique mode of action and is very effective in controlling bracken fern.

Please let me know if you have any further questions on this request. You may contact me at the address below.

Sincerely,

A handwritten signature in black ink that reads 'David E. Yarborough'.

David E. Yarborough, PhD.  
Blueberry Specialist  
Professor of Horticulture  
the University of Maine  
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WALTER E. WHITCOMB  
COMMISSIONER

HENRY JENNINGS  
DIRECTOR

TO: Board Members  
FROM: Lebelle Hicks PhD DABT  
RE: Asulox 2015 Review

January 14, 2015

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**Status of Human Health Risk Assessments**

The Board’s Medical Advisory committee reviewed asulam in 2002 the concerns were: cancer potential and developmental/ reproductive toxicological thyroid effects (BPC 2002a). The asulam is ranked as group “C” possible carcinogen due to thyroid and adrenal tumors in male rats. There is not sufficient dose response data to perform a cancer risk assessment and EPA’s Carcinogen Assessment Review Committee (CARC) concluded that a cancer risk assessment is not required (EPA 2002d). This evaluation has not been updated since 2002 (EPA 2012a).

Recently, EPA has issued two documents addressing data-call-ins (D-C-I) for toxicity tests in mammals. As of 2011 the D-C-Is for mammalian toxicity database were listed as acute and subchronic neurotoxicity, and an immunotoxicity study (EPA 2011y).

Between 2011 and 2013, EPA’s Hazard and Science Policy Council (HASPOC) reviewed a request from the registrant to waive the following D-C-Is (EPA 2013af). EPA took the following actions in 2013:

The neurological studies **were waived** because of the lack of neurotoxicity in the available toxicology studies for asulam, chemicals similar to asulam were not shown to be neurotoxic, and the thyroid gland, not the nervous system is the target organ of concern.

The developmental thyroid assay **is required** because the thyroid gland is the target organ for asulam-induced toxicity, toxicity to the thyroid glands manifests as increased thyroid weights and histopathological lesions following subchronic and chronic exposures in mice, rats and dogs and there is concern for the potential toxicity to the thyroid glands in the young because of the thyroid toxicity seen in adult animals and the influence of the thyroid glands on development of organ systems.

The subchronic dermal study **is required** in order to re-evaluate personal protective equipment requirements and to assess the level of thyroid toxicity following multiple dermal doses.

The subchronic inhalation toxicity study **is not required** because of the low volume and minor use characteristics, the fact that all occupational inhalation margins of exposure (MOE)s > 3,000 (EPA’s level of concern is 1,000 and MOE greater than the level of concern are acceptable) and the thyroid metrics from an inhalation toxicity study would not contribute to a more refined risk assessment (EPA 2013af).

**Status of Environmental Fate and Toxicology Risk Assessments**

The Environmental Fate and Effects Division (EFED) released the problem formulation for asulam in 2010 (EPA 2010ad). There are four environmental fate studies (aerobic and anaerobic soil metabolism, aerobic aquatic metabolism and terrestrial field dissipation).

Using the available environmental fate data EPA's EFED concluded that asulam is highly soluble and mobile indicating ground and surface water is of concern. The currently registered section 3 uses range from 7.306 lbs ai/A (2 applications a year for sugarcane) to 3.644 lbs ai/A (1 application for ornamental trees etc., non-agricultural areas, industrial areas, Christmas trees and forest shelter belts). The proposed 24c rates are 1 gal/A (3.34 lbs ai/A) as a spot treatment every other year. Maine Maximum Exposure Guideline (MEG) set in 2002 for asulam was 35 ppb. In their 2010 revised MEG for drinking water exposure, Maine Centers for Disease Control (ME CDC) rounded the MEG up to 40 ppb (BPC 2002b)

There are also eight ecological effects studies (marine studies missing are: fish and invertebrates, acute toxicity and early life stage toxicity; the freshwater study data gap is for fish, early life stage toxicity). The missing plant studies with data gaps are vegetative vigor and seedling emergence (EPA 2010ad). Evaluation of the acceptable ecological effects studies, indicate that asulam is practically nontoxic in fresh water fish and invertebrates, birds, mammals and honey bees. As would be expected with an herbicide, aquatic plants are affected by exposure to fairly low concentrations (140 ppb for vascular plants and 180 ppb for nonvascular plants) of asulam.

### **Conclusion**

Re-issuance of this 24c with no label alterations will not change exposure patterns in Maine. The most recent evaluations by EPA indicate that the current risk assessments have not been changed and the re-issuance of this 24c will not increase known risks to non-target species from using this product. When EPA receives and evaluates the required studies in response to the DCIs, this may change.

### **References Cited**

BPC 2002a, Report of the Medical Advisory Committee 2002 reformatted in 2010

BPC 2002b, memo from L Hicks to A. Smith Establishing an interim Maximum Exposure Guideline for Asulam

EPA 2002d, Asulam HED Human Health Assessment for the Tolerance Reassessment Eligibility Decision (TRED) Chemical No 106901/02 No MRID # DP Barcode No D276505

EPA 2010ad, Registration Review: Preliminary Problem Formulation for the Environmental Fate and Ecological Risk, Endangered Species and Drinking Water Assessment for Asulam and Sodium Asulam (Case 0265)

EPA 2011y, Asulam: Human Health Risk Scoping Document in Support of Registration

EPA 2012a, Chemicals Evaluated for Carcinogenic Potential, Office of Pesticides Programs 2012

EPA 2013af, Asulam: Summary of Hazard and Science Policy Council (HASPOC) Meeting of January 17, 2013: Recommendations on the Data Requirements for Acute and Subchronic neurotoxicity Studies and Re-evaluation of Previously Waived Studies



# Special Local Need

**FOR DISTRIBUTION AND USE ONLY WITHIN THE STATE OF MAINE**

## **ASULOX® HERBICIDE**

EPA Reg. No. 70506-139

EPA SLN No. ME-100003

### **ASULOX FOR CONTROL OF BRACKEN FERN IN LOWBUSH BLUEBERRIES Non-bearing fields only**

#### **DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. This label and the federal label for this product must be in the possession of the user at the time of pesticide application.

<b>Weed Species</b>	<b>Rate</b>	<b>Special Instructions</b>
Bracken Fern ( <i>Pteridium aquilinum</i> )	1 gal/acre	Bracken should be in full frond prior to application. Use Asulox only as a spot treatment. The use of a non ionic surfactant at 0.25% v/v may improve uptake of the Asulox. Treatment is limited to non bearing fields. Do not apply more than once <u>every other</u> year. Control will be observed the year following application of the Asulox. No visible control symptoms will be observed the year of application.

Rev. 12/8/14  
Expires Jan. 31, 2020



# ASULOX<sup>®</sup>

HERBICIDE

**FOR AGRICULTURAL OR COMMERCIAL USE ONLY  
NOT FOR USE BY HOMEOWNERS**

**For Postemergent Weed Control in Sugarcane, Turf, Ornamentals,  
Christmas Tree Plantings and Non-Cropland**

**ACTIVE INGREDIENT:**

Sodium salt of asulam (methyl sulfanylcarbamate)\* ..... 36.2%

**OTHER INGREDIENTS:** ..... 63.8%

**TOTAL:** ..... 100.0%

\*Equivalent to 33.1% asulam or not less than 3.34 lbs. per gallon.

EPA Reg. No. 70506-139

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

**FIRST AID**

**IF ON SKIN OR CLOTHING:**

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

**IF IN EYES:**

- 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 the Rocky Mountain Poison Center at 1-866-673-6671 for emergency medical treatment information.**

**FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC 1-800-424-9300.**



**NET CONTENTS: \_\_\_\_\_ GALLONS**



## PRECAUTIONARY STATEMENTS HAZARD TO HUMANS AND DOMESTIC ANIMALS

**CAUTION:** Harmful if absorbed through skin. Avoid contact with eyes, skin or clothing. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear long-sleeved shirt and long pants, chemical-resistant gloves (such as Nitrile, Butyl, Neoprene, and/or Barrier Laminated), and 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.

### ENGINEERING CONTROL STATEMENTS

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

#### User Safety Recommendations

Users should leave the treated area, remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Users should 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.

### ENVIRONMENTAL HAZARDS

This chemical is known to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination. Surface water contamination may occur in areas with poorly draining soils and little or no buffers or in areas where drainage systems flow directly to surface water.

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not clean equipment or dispose of equipment washwater in a manner that will contaminate resources. Do not apply when weather conditions favor drift from treated areas. Do not contaminate water by cleaning of equipment or disposal of wastes.

### DIRECTIONS FOR USE

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

Read entire label before using this product.

#### 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 intervals. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated such as plants, soil or water is coveralls, chemical resistant gloves, and shoes plus socks.

## GENERAL INSTRUCTIONS AND INFORMATION

### APPLICATION INSTRUCTIONS

Do not apply ASULOX® Herbicide through any type of irrigation systems.

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 regulations.

### SPRAY DRIFT

**SENSITIVE AREAS:** This herbicide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitats for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

**AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR.** The interaction of many equipment and weather-related factors determine the potential for spray drift. The applicator is responsible for considering all these factors when making decisions. The following drift management requirements must be followed to avoid off-target movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulation.

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

Where states have more stringent regulations, they should be observed. The applicator should be familiar with and take into account the information covered in the [Aerial Drift Reduction Advisory Information](#).

**INFORMATION ON DROPLET SIZE:** (This section is advisory in nature and does not supersede the mandatory label requirements)

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 below).

**CONTROLLING DROPLET SIZE:** (This section is advisory in nature and does not supersede the mandatory label requirements)

- Volume - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of nozzles - Use the minimum number of nozzles that provide uniform coverage.
- Nozzle Orientation - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- Nozzle Type - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.



**BOOM LENGTH:** (This section is advisory in nature and does not supersede the mandatory label requirements)

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

**APPLICATION HEIGHT:** (This section is advisory in nature and does not supersede the mandatory label requirements)

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

**SWATH ADJUSTMENT:** (This section is advisory in nature and does not supersede the mandatory label requirements)

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 should 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:** (This section is advisory in nature and does not supersede the mandatory label requirements)

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 can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

**TEMPERATURE AND HUMIDITY:** (This section is advisory in nature and does not supersede the mandatory label requirements)

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:** (This section is advisory in nature and does not supersede the mandatory label requirements)

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict

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

## SUGARCANE

ASULOX Herbicide can be applied to either plant cane or cane grown from stubble. Apply ASULOX as a water mix spray for ground applications. Use 15 to 100 gallons of water per acre, depending on local practice. For aerial application, ASULOX Herbicide should be mixed in 3 to 5 gallons of water per acre, except in Hawaii, where 5 to 10 gallons of water per acre should be used.

Addition of an adjuvant cleared for use on growing crops to the ASULOX Herbicide water mix spray will improve weed control when environmental conditions are not optimal. Use either a non-ionic surfactant containing a minimum of 80% active ingredient at the rate of 1 to 2 quarts per 100 gallons (0.25 to 0.5% V/V) of water mix spray or a crop oil concentrate containing 80 to 85% paraffin based petroleum oil and 15 to 20% non-ionic surfactant at the rate of 4 quarts per 100 gallons (1% V/V) of water mix spray.

The rates of ASULOX Herbicide given below are for broadcast applications. For banded application, reduce the rate proportionally to the width of the band according to the following formula:

$$\frac{\text{BAND WIDTH (inches)}}{\text{ROW WIDTH (inches)}} \times \frac{\text{Broadcast Rate}}{\text{Rate}} = \text{Band Rate/Acre}$$

For spot treatments, use a 5% v/v ASULOX spray (1 gallon per 20 gallons of water). Do not exceed 8 pints of ASULOX per acre per treatment.

### Single Application Per Growing Season

WEED SPECIES	SPECIAL INSTRUCTIONS	RATE
Itchgrass or Raoulgrass ( <i>Rottboellia exaltata</i> )	Apply when the grass is 8 inches tall or less (addition of surfactant is necessary).	8 pints/acre
Johnsongrass ( <i>Sorghum halepense</i> )	Apply when the grass is between 12 to 18 inches tall. Johnsongrass should be actively growing and the average air temperature should be at least 60°F or higher.	
Paragrass or Californiagrass ( <i>Brachiaria mutica</i> or <i>Panicum purpurascens</i> )	Apply when the grass is 6 to 8 inches tall or less.	
Crabgrass ( <i>Digitaria</i> spp.)	If treatment is made before the grass reaches seed head formation then the lower rate should be used. If the grass is in early seed head formation then the higher rate should be used.	6 to 8 pints/acre
Alexandergrass ( <i>Brachiaria plantaginea</i> )	If treatment is made when the grass is 6 to 8 inches tall or less, then the lower rate should be used. If the grass is greater than 8 inches tall, then the higher rate should be used.	
Foxtail ( <i>Setaria</i> spp.)		
Goosegrass ( <i>Eleusine indica</i> )		
Broadleaf Panicum ( <i>Panicum adspersum</i> )		
Barnyardgrass ( <i>Echinochloa crusgalli</i> )		



## Two Applications Per Growing Season

This may be required when initial weed infestations are heavy and/or when rhizome Johnsongrass is present. Two applications may also be used when treating weed species which germinate at different times during one growing season.

WEED SPECIES	SPECIAL INSTRUCTIONS	1ST APPLICATION	2ND APPLICATION
Crabgrass ( <i>Digitaria</i> spp.)	At each application the grass should be treated before seed head formation.	6 to 8 pints/acre	6 to 8 pints/acre
Itchgrass or Raoulgrass ( <i>Rottboellia exaltata</i> )	At each application the grass should be 8 inches tall or less (addition of surfactant is necessary).	8 pints/acre	8 pints/acre
Johnsongrass ( <i>Sorghum halepense</i> )	At each application the grass should be between 12 and 18 inches tall.	8 pints/acre	8 pints/acre

## RESTRICTIONS AND PRECAUTIONS: Sugarcane

- ASULOX Herbicide should be used when the weeds are actively growing.
- Cover crops may be planted if plowed under and not grazed.
- The following pre-harvest intervals for ASULOX Herbicide applications to sugarcane must be observed:  
1) Mainland U.S.A. (except Louisiana) – 140 days; 2) Louisiana only – 100 days; 3) Hawaii – 400 days.
- Do not graze or feed sugarcane fodder and forage to livestock.
- Cultivation and/or fertilizer applications or any other cultural practice that disturbs the root system of targeted weed species may result in less than optimum control when applying ASULOX Herbicide. These practices are not recommended within 7 days prior to or within 7 days after applications of ASULOX Herbicide.
- Differences in crop tolerance to ASULOX among Sugarcane varieties has been reported in Louisiana. Contact your local County Agent or University Extension Specialist for further information.

## NON-CROPLAND

ASULOX Herbicide may be used as a postemergent treatment to control weeds on non-cropland areas such as:

Boundary fences	Railroad rights-of-way and yards
Fence rows	Storage areas and industrial plant sites
Highway and roadside rights-of-way	Utility rights-of-way and yards
Lumberyards	Warehouse lots
Pipeline rights-of-way	

A surfactant may be added to the spray solution at 0.25% by volume. (Use an approved non-ionic surfactant.)

Apply ASULOX as a single water-mix spray for ground applications using 20 to 100 gallons of solution per acre, depending on local practice, to control the following weed species. Apply one application per season. Aerial application is prohibited.

WEED SPECIES	SPECIAL INSTRUCTIONS	RATE
Crabgrass ( <i>Digitaria</i> spp.)	Apply before the grass reaches seed head formation.	1 gal/acre
Johnsongrass ( <i>Sorghum halepense</i> )	Apply when the grass is 18 inches or taller. Use the higher rate in well established heavy infestations. For spot treatment in Hawaii, use the higher rate in 100 gallons of solution and apply an amount not to exceed 50 gallons of total solution per acre.	
Paragrass or Californiagrass ( <i>Brachiaria mutica</i> or <i>Panicum purpurascens</i> )	Apply before the grass reaches seed head formation. For spot treatment in Hawaii, use the same rate in 100 gallons of solution and apply an amount not to exceed 50 gallons of total solution per acre.	
Western Bracken ( <i>Pteridium aquilinum</i> var. <i>pubescens</i> )	Apply when the fern is in full frond.	7 to 8 pints/acre

## CHRISTMAS TREE PLANTINGS

ASULOX Herbicide may be used as a postemergent treatment in Christmas Tree Plantings where Douglas Fir, Grand Fir, Noble Fir or Scotch Pine are grown. Do not graze or feed foliage from treated areas to livestock.

ASULOX Herbicide should be applied as a water mix spray. For ground application, use a minimum of 20 gallons of solution per acre. Do not use a wetting agent with ASULOX Herbicide. Apply one application per season. Aerial application is prohibited.

WEED SPECIES	SPECIAL INSTRUCTIONS	RATE
Western Bracken ( <i>Pteridium aquilinum</i> var. <i>pubescens</i> )	Apply after bud break and hardening or firming of new tree growth. Bracken should be in full frond prior to treatment.	1 gal/acre

**TURF  
(Sod Farms Only)**

ASULOX Herbicide can be applied on St. Augustinegrass and Tifway 419 Bermudagrass turf. Apply one application per season post-emergence to the weeds listed below. Use 20 to 50 gallons of water per acre in the spray solution.

TURF SPECIES	WEED SPECIES	RATE
St. Augustinegrass	Bullgrass ( <i>Paspalum supinum</i> ) Crabgrass ( <i>Digitaria</i> sp.) Goosegrass ( <i>Eleusine indica</i> )	5 pints/acre
Tifway 419 Bermudagrass	Sandbur ( <i>Cenchrus</i> sp.)	

Do not use a surfactant. Do not apply to turf which is under stress or freshly mowed.

**ORNAMENTALS**

ASULOX Herbicide can be applied as a single, postemergent, broadcast application on the following ornamentals:

JUNIPERS		YEWS	
Juniperus andorra	Juniperus horizontalis	Taxus cuspidata	Podocarpus macrophyllus
Juniperus chinensis	Juniperus litoralis	Taxus media	
Juniperus conferta	Juniperus sabina		

Treatment should be made with a minimum of 20 gallons of water per acre. Do not use a surfactant.

WEED SPECIES	SPECIAL INSTRUCTIONS	RATE
Barnyardgrass ( <i>Echinochloa crusgalli</i> ) Crabgrass ( <i>Digitaria</i> sp.) Fall Panicum ( <i>Panicum dichotomiflorum</i> ) Foxtails ( <i>Setaria</i> sp.) Goosegrass ( <i>Eleusine indica</i> ) Horseweed (maretail) ( <i>Coryza canadensis</i> )	Apply when the weeds are between the stages of early seedling and early seed head formation.	1 gal/acre

Local conditions may affect the use of this chemical. Consult State Agricultural Extension or Experiment Station weed specialists for specific recommendations for local weed problems and for information on possible lower dosages.

## STORAGE AND DISPOSAL

**PESTICIDE STORAGE:** Do not contaminate water, food or feed by storage or disposal. Open dumping is prohibited. Store at temperatures above 20° F.

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

**CONTAINER DISPOSAL: Nonrefillable container. Do not reuse or refill this container.**

[for containers less than 5 gallons] Triple rinse as follows: empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a rinse tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

[for containers greater than 5 gallons] Triple rinse or pressure rinse as follows:

Triple rinse: 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. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Pressure rinse: 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 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 flow begins to drip. Then 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.

CONTAINER DISPOSAL: 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 mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

## IMPORTANT INFORMATION READ BEFORE USING PRODUCT

### CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

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

The Directions for Use of this product reflect the opinion of experts based on field use and tests, and must be followed carefully. It is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of United Phosphorus, Inc. or Seller. Handling, storage, and use of the product by Buyer or User are beyond the control of United Phosphorus, Inc. and Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold United Phosphorus, Inc. and Seller harmless for any claims relating to such factors.

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Rev. 9/1/11

70506-139(092711-4406)