

81959-8

7-25-2007

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Mr. Michael Kellogg  
Agent  
Etigra  
c/o Pyxis Regulatory Consulting, Inc.  
4110 136<sup>th</sup> Street NW  
Gig Harbor, WA 98332

JUL 25 2007

RE: Etigra LLC – Imazapyr E-Pro – VM & Aquatic Herbicide  
EPA Registration Number: 81959-8  
Date of Submission: July 2, 2007

Dear Mr. Kellogg:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 dated July 2, 2007, for the product Etigra LLC - Imazapyr E-Pro – VM & Aquatic Herbicide. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the actions requested fall within the scope of PRN 98-10. The label submitted with the application has been stamped "Notification" and will be placed in our records.

If you have any questions, please call me directly at 703-305-6249 or Joyce Edwards of my staff at 703-308-5479.

Sincerely,

A handwritten signature in black ink, appearing to read "Linda Arrington".

Linda Arrington  
Notifications & Minor Formulations Team Leader  
Registration Division (7505P)  
Office of Pesticide Programs

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United States  
**Environmental Protection Agency**  
 Washington, DC 20460

<input type="checkbox"/>	Registration
<input type="checkbox"/>	Amendment
<input checked="" type="checkbox"/>	Other

OPP Identifier Number

**Application for Pesticide - Section I**

1. Company/Product Number 81959-8	2. EPA Product Manager J. Tompkins	3. Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Etigra, LLC / Imazapyr E-Pro 2 - VM & Aquatic Herbicide	PM# 25	
5. Name and Address of Applicant (Include ZIP Code) Etigra LLC c/o Pyxis Regulatory Consulting, Inc. 4110 136th St. NW Gio Harbor, WA 98332 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

**Section - II**

<input type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____	<b>NOTIFICATION</b>  JUL 25 2007
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.	
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.	

**Explanation:** Use additional page(s) if necessary. (For section I and Section II.)

Notification of minor label revisions per PR Notice 98-10 to facilitate registration in the State of California. This notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

**Section - III**

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Metal Plastic Glass Paper Other (Specify) _____		
* Certification must be submitted		If "Yes" Unit Packaging wgt. No. per container	If "Yes" Package wgt. No. per container		
3. Location of Net Contents Information <input type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container		5. Location of Label Directions <input type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled			<input type="checkbox"/> Other _____		

**Section - IV**

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)		
Name Michael Kellogg	Title Agent	Telephone No. (Include Area Code) 253-853-7363
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.		6. Date Application Received  (Stamped)
2. Signature 	3. Title Agent	
4. Typed Name Michael Kellogg	5. Date 7/2/07	



JUL 25 2007

# Imazapyr E-Pro 2 – VM & Aquatic Herbicide

Imazapyr E-Pro 2 – VM & Aquatic Herbicide will control weeds, brush and undesirable aquatic vegetation in the following sites:

## Non-Cropland Uses:

- Fence rows
- Wildlife openings
- Ditch banks (non-irrigation only)

## Industrial / Transportation Uses:

- Roads
- Transmission lines
- Bareground areas
- Storage areas
- Tank farms
- Pumping stations
- Railroads
- Pipelines
- Under paved surfaces

## Aquatic / Wetland Uses:

- Estuaries
- Wetlands
- Marine environments
- Riparian zones
- Vegetation in surface water

**NOTE:** This product is NOT to be used on food crops or Christmas trees. In California, this product may ONLY be used for Stump and Cut Stem Treatments and Aquatic applications.

## ACTIVE INGREDIENT:

Isopropylamine salt of Imazapyr (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid)\*.....28.7%

**OTHER INGREDIENTS:** .....71.3%

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

\*Equivalent to 23.4% (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid or 2 pounds acid per gallon.

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION PRECAUCION**

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

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION:** No human or domestic animal hazard statements are required. Follow instructions for Personal Protective Equipment and User Safety Recommendations.

EPA Reg. No. 81959-8

Manufactured for:  
Etigra, LLC  
2214 Hwy 44 West  
Inverness, FL 34453

EPA Est. No.

Net Contents:

Imazapyr E-Pro 2 – VM & Aquatic Herbicide contains imazapyr, the active ingredient used in Arsenal® and Habitat®.

### ENVIRONMENTAL HAZARDS

For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters or rinsate.

DO NOT apply to water except as specified in this label. Treatment of aquatic weeds may result in oxygen depletion or loss due to decomposition of dead plants. This oxygen loss may cause the suffocation of some aquatic organisms.

This herbicide is phytotoxic at extremely low concentrations. Non-target plants may be adversely affected from drift.

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

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

#### Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

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

### USER SAFETY RECOMMENDATIONS

Users should:

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

### PHYSICAL OR CHEMICAL HAZARDS

Mix, store and apply spray solutions of Imazapyr E-Pro 2 – VM & Aquatic Herbicide only in stainless steel, fiberglass, plastic and plastic-lined steel containers.

DO NOT mix, store or apply Imazapyr E-Pro 2 – VM & Aquatic Herbicide or spray solutions of Imazapyr E-Pro 2 – VM & Aquatic Herbicide in unlined steel (except stainless steel) containers or spray tanks.

### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

The following methods of application may be used to apply Imazapyr E-Pro 2 – VM & Aquatic Herbicide:

- Fixed-wing aircraft (for brush control ONLY) (Not registered for this use in California)
- Helicopters
- Ground operated sprayers
- Backback and pump sprayers
- Tree injection equipment

**IMPORTANT NOTE REGARDING AERIAL APPLICATIONS:** Applications using fixed-wing aircraft may be made for brush control applications ONLY. Aerial applications to all other use sites including aquatic sites must be made using a helicopter. All other aerial applications (including aerial applications to aquatic sites) must not be made using fixed-wing aircraft and must be made by **HELICOPTER** only.

**USE PRECAUTIONS**

- Domestic use of this product is prohibited.
- Do not apply this product to Christmas trees or to food crops.
- Do not make any applications of this product to flowing water that is one-half mile or less upstream of an active potable water intake.
- Do not make any applications of this product to standing water (such as lakes or reservoirs) that is one-half mile or less from an active potable water intake. See the Aquatic Applications section for specific instructions when making applications to water bodies.
- To help prevent accidental exposure of desirable vegetation to this product, do not allow this product to come into contact with seeds, fertilizers, insecticides, and fungicides.
- When flushing and draining equipment, do not allow rinsate to enter areas where sensitive or desirable plants or their roots may become exposed.
- Side trimming desirable vegetation with this product may cause severe injury or death of the treated plants.
- Prevent spray drift from coming in contact with desirable plants.
- To avoid spills and contamination, keep containers closed when not in use.
- Refer to the "Application to Waters Used for Irrigation" section of this label prior to treating irrigation ditches or water used for crop irrigation.

**Recommended Water Volumes**

The spray volume used should be sufficient to create an accurate and uniform spray pattern over the area to be treated while minimizing spray drift. The spray equipment used will ultimately determine the actual minimum spray volume per acre.

**Aerial Applications:** Use 2 or more gallons of water per acre unless otherwise directed on this label.

**Ground Applications (Broadcast):** Use 5 or more gallons of water per acre unless otherwise directed on this label.

**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), restricted-entry interval, and notification to workers (as applicable). The requirements in this box 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 of 12 hours.

PPE required for early entry into 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
- Shoes plus socks

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

Keep unprotected persons out of treated areas until sprays have dried.

### GENERAL INFORMATION

Imazapyr E-Pro 2 – VM & Aquatic Herbicide is an aqueous solution that is prepared by mixing with water and a surfactant and applied by spraying. Plants readily absorb the product through both foliage and roots resulting in the stoppage of growth of treated plants shortly after application followed by yellowing of leaves (chlorosis) starting with the youngest vegetation. Tissue damage and death may not be obvious until several weeks after application and brush and trees may not indicate the full effects of the herbicide until several months after application. Imazapyr E-Pro 2 – VM & Aquatic Herbicide accumulates in the meristematic regions of a plant; it also translocates to the roots, which helps in preventing perennial species from resprouting.

This product controls many brush and vine species as well as most annual and perennial grasses and broadleaf weeds. Imazapyr E-Pro 2 – VM & Aquatic Herbicide also provides residual control of labeled weeds that germinate in the treated areas. While this product is most effective when applied post-emergence (especially for established biennial and perennial species), pre-emergence applications can be made when necessary. For maximum effect, applications should be made when the vegetation is vigorously growing. Use of a surfactant will also enhance the efficacy of this product and research indicates that use of methylated seed oils or vegetable oil concentrates may improve the efficacy of Imazapyr E-Pro 2 – VM & Aquatic Herbicide in plants under moisture and / or temperature stress; refer to the "Adjuvants" section below for specific information on using surfactants with Imazapyr E-Pro 2 – VM & Aquatic Herbicide.

Applications of Imazapyr E-Pro 2 – VM & Aquatic Herbicide are rainfast one hour after treatment.

**Note Regarding Resistant Biotypes:** Naturally occurring ALS/AHAS resistant biotypes of some weeds listed on this label may not be effectively controlled by Imazapyr E-Pro 2 – VM & Aquatic Herbicide. If resistant biotypes are known to exist in the area to be treated, this product should be tank mixed or applied in addition to another herbicide with a different mode of action.

### PRECAUTIONS FOR AVOIDING INJURY TO NON-TARGET PLANTS

Because Imazapyr E-Pro 2 – VM & Aquatic Herbicide is absorbed by plants via their roots, desirable plants may be damaged or lost due to unintended root uptake from treated soil. To avoid injury to non-target plants, do not apply this product on or near desirable plants or to areas into which their roots may extend. Also, do not apply to soil that may be eroded or moved into contact with the roots of desirable plants.

Read and observe the directions in the Aquatic Applications section if aquatic sites are present in terrestrial noncrop areas and are part of the intended treatment area.

When applying in wet environments such as shorelines, plants with roots that may extend into the water are generally not affected by uptake of this product from the water.

Do not use vegetative matter that has been treated with this product as mulch or compost on or around desirable species.

The information that follows is general guidance for managing and minimizing off-target exposure of this product. Specific use recommendations in this label may vary from these general guidelines depending on the application method and objectives, and should supersede the general information provided below.

**Spray Drift:** 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 and the entity authorizing spraying are responsible for considering all these factors when making decisions.

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

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

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

Spray drift from applying this product may result in damage to sensitive plants adjacent to the treatment area. Only apply this product when the potential for drift to these and other adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, or non-target crops) is minimal. Do not apply when the following conditions exist that increase the likelihood of spray drift from intended targets: high or gusty winds, high temperatures, low humidity, temperature inversions.

To minimize spray drift, the applicator should be familiar with and take into account the following drift reduction advisory information. Additional information may be available from state enforcement agencies or the Cooperative Extension on the application of this product.

The best drift management strategy and most effective way to reduce drift potential are to apply large droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see WIND, TEMPERATURE AND HUMIDITY, and TEMPERATURE INVERSIONS).

**CONTROLLING DROPLET SIZE**

- Volume – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure – Do not exceed the nozzle manufacturer’s recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of Nozzles – Use the minimum number of nozzles that provide uniform coverage.
- Nozzle Orientation – Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is recommended practice. Significant deflection from the 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. Do not use nozzles producing a mist droplet spray.

**APPLICATION HEIGHT**

Making applications at the lowest possible height (aircraft, ground driven spray boom) that is safe and practical 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 treatment area, the applicator must compensate for this displacement by adjusting the path of the application equipment (e.g. aircraft, ground) upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller droplets, etc.).

**WIND**

Drift potential is lowest between wind speeds of 3-10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided

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below 3 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

**TEMPERATURE AND HUMIDITY**

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

**TEMPERATURE INVERSIONS**

Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes small-suspended droplets to remain in a concentrated cloud, which 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.

**WIND EROSION**

Avoid treating powdery dry or light sandy soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.

**Managing spray drift from aerial applications:** Applicators must follow these requirements to avoid off-target drift movement: 1) boom length – the distance of the outermost nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor, 2) nozzle orientation – nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees, and 3) application height – without compromising aircraft safety, applications should be made at a height of 10 feet or less above the crop canopy or tallest plants. Applicators must follow the most restrictive use precautions to avoid drift hazards, including those found in this labeling as well as applicable state and local regulations and ordinances.

**MIXING AND APPLICATION INSTRUCTIONS**

**HELICOPTER SPRAY EQUIPMENT:**

**Preparation:** Add the amount of Imazapyr E-Pro 2 – VM & Aquatic Herbicide recommended in this label for the intended use to 5 – 30 gallons of water per acre, mixing thoroughly.

**Adjuvants:** To increase efficacy, a compatible nonionic surfactant may be added to the spray solution.

Except when applying with a Microfoil™ boom, Thru-Valve™ Boom or other similar equipment, a drift control agent may be added.

If necessary, a foam reducing agent may also be added.

**Application:** Applications should not be made under windy or gusty conditions and all possible precautions should be taken in order to minimize or eliminate spray drift. Using a controlled droplet boom and nozzle configuration is recommended to assist in mitigating spray drift.

Be sure to maintain adequate buffer zones.

**Precautions:** Because uncoated steel (except stainless steel) surfaces that experience prolonged exposure to this product may corrode and eventually fail, thoroughly clean application and mixing equipment as well as portions of the aircraft that may have been exposed to the spray (including landing gear) immediately after use by flushing with water.

**GROUND OPERATED SPRAY EQUIPMENT:**

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**Preparation:** Add the amount of Imazapyr E-Pro 2 – VM & Aquatic Herbicide recommended in this label for the intended use to 5 – 100 gallons of water per acre, mixing thoroughly.

**Adjuvants:** To increase efficacy, a compatible nonionic surfactant may be added to the spray solution.

Except when applying with a Microfoil™ boom, Thru-Valve™ Boom or other similar equipment, a drift control agent may be added.

A spray pattern indicator may be added if desired.

If necessary, a foam reducing agent may also be added.

**Application:** Uniformly cover the foliage of the vegetation to be controlled with the spray solution.

Applications should not be made under windy or gusty conditions and all possible precautions should be taken in order to minimize or eliminate spray drift.

Be sure to maintain adequate buffer zones.

**Precautions:** Because uncoated steel (except stainless steel) surfaces that experience prolonged exposure to this product may corrode and eventually fail, thoroughly clean application and mixing equipment immediately after use by flushing with water.

**DIRECTED FOLIAR OR SPOT SPRAY EQUIPMENT:**

**Preparation:** Unless otherwise directed on this label, create a 1 – 5 percent by volume solution of Imazapyr E-Pro 2 – VM & Aquatic Herbicide in water using the table below:

**SPRAY SOLUTION MIXING GUIDE**

Solution Volume	Concentration			Surfactant
	1%	2.5%	5%	
1 gallon	1.3 oz.	3.25 oz.	6.5 oz.	1/3 oz.
3 gallons	3.8 oz.	9.5 oz.	1.2 pints	1 oz.
4 gallons	5.1 oz.	12.75 oz.	1.6 pints	1 1/4 oz.
5 gallons	6.5 oz.	1 pint	1 quart	1 2/3 oz.
10 gallons	13.0 oz.	1 quart	2 quarts	3 1/4 oz.
25 gallons	1 quart	2.5 quarts	1.25 gallons	8 oz.
50 gallons	2 quarts	1.25 gallons	2.5 gallons	1 pint
100 gallons	1 gallon	2.5 gallons	5 gallons	1 quart

% Solution	Amount Imazapyr E-Pro 2 – VM & Aquatic Herbicide per Gallon of Mix	Amount Imazapyr E-Pro 2 – VM & Aquatic Herbicide per 4 Gallon Backpack
0.25%	0.6 oz.	2.6 oz.
0.5%	1.3 oz.	5.1 oz.
1.0%	2.6 oz.	10.2 oz.
1.5%	3.8 oz.	15.4 oz.
2.5%	6.4 oz.	25.6 oz.

2 tablespoons = 1 fluid ounce

**Adjuvants:** A minimum of 1/4 percent by volume nonionic surfactant should be added to the spray solution using the last column of the above table.

A spray pattern indicator may be added if desired.

If necessary, a foam reducing agent may also be added.

Application: Uniformly cover the foliage of the vegetation to be controlled with the spray solution. For small brush, spray down on the crown to cover approximately 70% of the plant foliage. For larger brush, ensure coverage on as much of the crown as possible and spray at least two sides of the plant. Moisten, but do not drench target vegetation causing spray solution to run off.

Tips such as a 4004E or 1540E that produce an even, flat spray pattern with a spray angle of 40 degrees or less will help to produce ideal deposition on the vegetation. For a straight stream and cone pattern, adjustable cone nozzles such as the 5500 X3 or 5500 X4 may be used.

Applications should not be made under windy or gusty conditions and all possible precautions should be taken in order to minimize or eliminate spray drift.

Be sure to maintain adequate buffer zones.

Precautions: DO NOT exceed recommended dosage rate per acre.

DO NOT apply to the point of runoff from the treated foliage.

Injury may occur to desirable conifers or other plant species if applications are made directly to those plants.

Because uncoated steel (except stainless steel) surfaces that experience prolonged exposure to this product may corrode and eventually fail, thoroughly clean application and mixing equipment immediately after use by flushing with water.

#### ADJUVANTS

When making postemergence applications of Imazapyr E-Pro 2 – VM & Aquatic Herbicide, a spray adjuvant must be used.

NOTE: When applying to aquatic sites listed in this label, the adjuvant must be approved for aquatic uses.

**Nonionic Surfactants:** Add at a 0.25% v/v or higher rate of the spray solution as directed by the manufacturer (NOTE: 0.25% v/v is equivalent to 1 quart in 100 gallons). Nonionic surfactants that have a HLB (hydrophilic to lipophilic balance) ratio between 12 – 17 and a formulated product consisting of at least 70% surfactant will provide the best results.

**Methylated Seed Oils or Vegetable Oil Concentrates:** Methylated seed oil or vegetable-based seed oil concentrate may be used in place of a surfactant, and research indicates that use of these oils may improve the efficacy of Imazapyr E-Pro 2 – VM & Aquatic Herbicide in plants under moisture and / or temperature stress. Use a rate of 1.5 to 2 pints per acre, or when using spray volumes greater than 30 gallons per acre use a rate of 1% of the total spray volume.

**Silicone Based Surfactants:** Silicon-based surfactants may cause greater spreading of droplets on the leaf surface than conventional nonionic surfactants, but may also dry more quickly limiting herbicide uptake. These surfactants should be used at the rates specified in the manufacturer's label.

**Invert Emulsions:** Imazapyr E-Pro 2 – VM & Aquatic Herbicide can be applied as an invert (water-in-oil) spray emulsion that will minimize spray drift and spray run-off. The invert spray emulsion may be batch mixed or injected (in-line mixing); consult the label of the invert chemical for instructions on mixing.

**Fertilizer/Surfactant Blends (Not approved for use in California):** Nitrogen based liquid fertilizers may be used in combination with nonionic, methylated seed oil or vegetable oil concentrate surfactants. Tank mixing fertilizers without a surfactant is not recommended. Apply at a rate of 2 – 3 pints per acre.

If desired, other adjuvants such as spray pattern indicators or additives for reducing foaming or spray drift may be added to the mix. See the label(s) of the respective product(s) for specific instructions and application rates.

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## WEEDS CONTROLLED

Imazapyr E-Pro 2 – VM & Aquatic Herbicide controls the following weeds. Use the rates listed below for preemergence or postemergence control, as well as residual control of both annuals and perennials. For heavy or well established infestations, use the higher rates listed. These tables are based on broadcast treatments and in general, when making low-volume applications use the lower rates listed.

GRASSES			
Common Name	Scientific Name	Life Cycle	Application Rate (Pints / Acre)
Annual Bluegrass	<i>Poa annua</i>	A	2.0 - 3.0
Bahiagrass	<i>Paspalum notatum</i>	P	4.0 - 6.0
Barnyardgrass†	<i>Echinochloa crus-gali</i>	A	3.0 - 4.0
Beardgrass	<i>Andropogon</i> spp.	P	3.0 - 4.0
Bermudagrass†	<i>Cynodon dactylon</i>	P	4.0 - 6.0
Big bluestem	<i>Andropogon gerardii</i>	P	4.0 - 6.0
Bluegrass, Annual†	<i>Poa annua</i>	A	3.0 - 4.0
Broadleaf signalgrass	<i>Brachiaria platyphylla</i>	A	2.0 - 3.0
Bulrush*	<i>Scirpus validus</i>	P	3.0 - 4.0
Canada bluegrass	<i>Poa compressa</i>	P	2.0 - 3.0
Cattail*	<i>Typha</i> spp.	P	4.0 - 6.0
Cheat	<i>Bromus secalinus</i>	A	3.0 - 4.0
Cogongrass**	<i>Imperata cylindrica</i>	P	4.0 - 6.0
Crabgrass	<i>Digitaria</i> spp.	A	3.0 - 4.0
Crowfootgrass†	<i>Dactyloctenium aegyptium</i>	A	3.0 - 4.0
Dallisgrass	<i>Paspalum dilatatum</i>	P	4.0 - 6.0
Downy brome	<i>Bromus tectorum</i>	A	2.0 - 3.0
Fall panicum	<i>Panicum dichotomiflorum</i>	A	3.0 - 4.0
Feathertop	<i>Pennisetum villosum</i>	P	4.0 - 6.0
Fescue	<i>Festuca</i> spp.	A/P	2.0 - 3.0
Foxtail	<i>Setaria</i> spp.	A	2.0 - 3.0
Giant Reed**	<i>Arundo donax</i>	A	3.0 - 4.0
Goosegrass	<i>Eleusine indica</i>	A	3.0 - 4.0
Guineagrass	<i>Panicum maximum</i>	P	4.0 - 6.0
Italian ryegrass	<i>Lolium multiflorum</i>	A	2.0 - 3.0
Itchgrass†	<i>Rottboellia exaltata</i>	A	3.0 - 4.0
Johnsongrass	<i>Sorghum halepense</i>	P	2.0 - 3.0
Junglerice†	<i>Echinochloa colonum</i>	A	3.0 - 4.0
Kentucky bluegrass	<i>Poa pratensis</i>	P	2.0 - 3.0
Lovegrass	<i>Eragrostis</i> spp.	A/P	2.0 - 3.0
Lovegrass†	<i>Eragrostis</i> spp.	A	3.0 - 4.0
Maidencane*	<i>Panicum hemitomon</i>	A	3.0 - 4.0
Napier grass*	<i>Pennisetum purpureum</i>	P	2.0 - 3.0
Orchardgrass	<i>Dactylis glomerata</i>	P	2.0 - 3.0
Panicum, Browntop†	<i>Panicum fasciculatum</i>	A	3.0 - 4.0
Panicum Texas†	<i>Panicum texanum</i>	A	3.0 - 4.0
Paragrass	<i>Brachiaria mutica</i>	P	2.0 - 3.0
Phragmites	<i>Phragmites australis</i>	P	4.0 - 6.0
Prairie cordgrass	<i>Spartina pectinata</i>	P	4.0 - 6.0
Prairie threeawn	<i>Aristida oligantha</i>	P	3.0 - 4.0
Quackgrass	<i>Agropyron repens</i>	P	2.0 - 3.0
Reed canarygrass	<i>Phalaris arundinacea</i>	P	3.0 - 4.0

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<b>GRASSES</b>			
<b>Common Name</b>	<b>Scientific Name</b>	<b>Life Cycle</b>	<b>Application Rate (Pints / Acre)</b>
Saltgrass <sup>†</sup>	<i>Distichlis stricta</i>	P	4.0 - 6.0
Sand dropseed	<i>Sporobolus cryptandrus</i>	A	2.0 - 3.0
Sand dropseed	<i>Sporobolus cryptandrus</i>	P	4.0 - 6.0
Sandbur	<i>Cenchrus</i> spp.	A	2.0 - 3.0
Sandbur, Field <sup>†</sup>	<i>Cenchrus incertus</i>	A	3.0 - 4.0
Signalgrass <sup>†</sup>	<i>Brachiaria platyphylla</i>	A	3.0 - 4.0
Smooth brome	<i>Bromus inermis</i>	P	2.0 - 3.0
Sprangletop <sup>†</sup>	<i>Leptochloa</i> spp.	A	4.0 - 6.0
Timothy	<i>Phleum pretense</i>	P	4.0 - 6.0
Torpedograss**	<i>Panicum repens</i>	P	3.0 - 4.0
Vaseygrass	<i>Paspalum urvillei</i>	P	2.0 - 3.0
Wild barley	<i>Hordeum</i> spp.	A	3.0 - 4.0
Wild oats	<i>Avena fatua</i>	A	2.0 - 3.0
Wirestem muhly	<i>Muhlenbergia frondosa</i>	P	4.0 - 6.0
Witchgrass	<i>Panicum capillare</i>	A	2.0 - 3.0
Wooly Cupgrass <sup>†</sup>	<i>Eriochloa villosa</i>	A	3.0 - 4.0

<b>BROADLEAF WEEDS</b>			
<b>Common Name</b>	<b>Scientific Name</b>	<b>Life Cycle</b>	<b>Application Rate (Pints / Acre)</b>
Alligatorweed*	<i>Alternanthera philoxeroides</i>	A/P	2.0 - 3.0
Arrowwood	<i>Pluchea sericea</i>	A	4.0 - 6.0
Broom snakeweed <sup>2</sup>	<i>Gutierrezia sarothrae</i>	P	3.0 - 4.0
Bull thistle	<i>Cirsium vulgare</i>	B	3.0 - 4.0
Burclover <sup>†</sup>	<i>Medicago</i> spp.	A	3.0 - 4.0
Burdock	<i>Arctium</i> spp.	B	2.0 - 3.0
Camphorweed*	<i>Heterotheca subaxillaris</i>	P	2.0 - 3.0
Canada thistle	<i>Cirsium arvense</i>	P	4.0 - 6.0
Carolina geranium	<i>Geranium carolinianum</i>	A	2.0 - 3.0
Carpetweed	<i>Mollugo verticillata</i>	A	2.0 - 3.0
Chickweed, Mouseear <sup>1</sup>	<i>Cerastium vulgatum</i>	A	3.0 - 4.0
Clover	<i>Trifolium</i> spp.	A/P	2.0 - 3.0
Clover, Hop <sup>†</sup>	<i>Trifolium procumbens</i>	A	3.0 - 4.0
Cocklebur	<i>Xanthium strumarium</i>	A	3.0 - 4.0
Common chickweed	<i>Stellaria media</i>	A	2.0 - 3.0
Common ragweed	<i>Ambrosia artemisiifolia</i>	A	2.0 - 3.0
Cudweed <sup>†</sup>	<i>Gnaphalium</i> spp.	A	3.0 - 4.0
Dandelion	<i>Taraxacum officinale</i>	P	2.0 - 3.0
Desert Camelthorn	<i>Alhagi pseudalhagi</i>	P	3.0 - 4.0
Diffuse knapweed*	<i>Centaurea diffusa</i>	A	3.0 - 4.0
Dock	<i>Rumex</i> spp.	P	3.0 - 4.0
Dogfennel	<i>Eupatorium capillifolium</i>	A	2.0 - 3.0
Fiddleneck <sup>†</sup>	<i>Amsinckia intermedia</i>	A	3.0 - 4.0
Filaree	<i>Erodium</i> spp.	A	2.0 - 3.0
Fleabane	<i>Erigeron</i> spp.	A	2.0 - 3.0
Giant ragweed	<i>Ambrosia trifida</i>	A	4.0 - 6.0
Goldenrod	<i>Solidago</i> spp.	P	3.0 - 4.0
Grey rabbitbrush	<i>Chrysothamnus nauseosus</i>	P	4.0 - 6.0

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BROADLEAF WEEDS			
Common Name	Scientific Name	Life Cycle	Application Rate (Pints / Acre)
Henbit <sup>†</sup>	<i>Lamium alexicaule</i>	A	3.0 - 4.0
Hoary vervain	<i>Verbena stricta</i>	P	2.0 - 3.0
Horseweed*	<i>Conyza canadensis</i>	A	2.0 - 3.0
Indian mustard	<i>Brassica juncea</i>	A	2.0 - 3.0
Japanese bamboo/knotweed*	<i>Polygonum cuspidatum</i>	P	4.0 - 6.0
Knotweed, prostrate <sup>†</sup>	<i>Polygonum aviculare</i>	A/P	3.0 - 4.0
Kochia <sup>†</sup>	<i>Kochia scoparia</i>	A	2.0 - 3.0
Lambsquarters	<i>Chenopodium album</i>	A	2.0 - 3.0
Lespedeza*	<i>Lespedeza</i> spp.	P	2.0 - 3.0
Little mallow	<i>Malva parviflora</i>	B	4.0 - 6.0
Milkweed	<i>Asclepias</i> spp.	P	4.0 - 6.0
Miners lettuce	<i>Montia perfoliata</i>	A	2.0 - 3.0
Mullein	<i>Verbascum</i> spp.	B	2.0 - 3.0
Nettleleaf goosefoot	<i>Chenopodium murale</i>	A	2.0 - 3.0
Oxeye daisy	<i>Chrysanthemum leucanthemum</i>	P	2.0 - 3.0
Pepperweed	<i>Lepidium</i> spp.	A	2.0 - 3.0
Pigweed	<i>Amaranthus</i> spp.	A	2.0 - 3.0
Plantain*	<i>Plantago</i> spp.	P	2.0 - 3.0
Pokeweed	<i>Phytolacca Americana</i>	P	3.0 - 4.0
Primrose	<i>Oenothera kunthiana</i>	P	4.0 - 6.0
Puncturevine	<i>Tribulus terrestris</i>	A	2.0 - 3.0
Purple loosestrife <sup>2**</sup>	<i>Lythrum salicaria</i>	P	3.0 - 4.0
Purslane	<i>Portulaca</i> spp.	A	3.0 - 4.0
Pusley, Florida <sup>†</sup>	<i>Richardia scabra</i>	A	3.0 - 4.0
Rocket, London <sup>†</sup>	<i>Sisymbrium irio</i>	A	3.0 - 4.0
Rush skeletonweed <sup>2</sup>	<i>Chondrilla juncea</i>	B	3.0 - 4.0
Russian knapweed	<i>Centaurea repens</i>	P	4.0 - 6.0
Russian thistle	<i>Salsola kali</i>	A	2.0 - 3.0
Saltbush	<i>Atriplex</i> spp.	A	3.0 - 4.0
Shepherd's-purse <sup>†</sup>	<i>Capsella bursa-pastoris</i>	A	3.0 - 4.0
Silverleaf nightshade	<i>Solanum elaeagnifolium</i>	P	4.0 - 6.0
Smartweed	<i>Polygonum</i> spp.	A/P	2.0 - 3.0
Sorrell	<i>Rumex</i> spp.	P	2.0 - 3.0
Sowthistle	<i>Sonchus</i> spp.	A	4.0 - 6.0
Spurge, Annual <sup>†</sup>	<i>Euphorbia</i> spp.	A	3.0 - 4.0
Stinging nettle <sup>2</sup>	<i>Urtica dioica</i>	P	3.0 - 4.0
Sunflower	<i>Helianthus</i> spp.	A/B	2.0 - 3.0
Sweet clover	<i>Melilotus</i> spp.	A/B	2.0 - 3.0
Tansymustard	<i>Descurainia pinnate</i>	A	2.0 - 3.0
Texas thistle	<i>Cirsium texanum</i>	P	4.0 - 6.0
Velvetleaf <sup>†</sup>	<i>Abutilon theophrasti</i>	A	3.0 - 4.0
Western ragweed	<i>Ambrosia psilostachya</i>	P	2.0 - 3.0
Wild carrot	<i>Daucus carota</i>	B	2.0 - 3.0
Wild lettuce	<i>Lactuca</i> spp.	A/B	2.0 - 3.0
Wild parsnip	<i>Pastinaca sativa</i>	B	2.0 - 3.0
Wild turnip	<i>Brassica campestris</i>	B	2.0 - 3.0
Woollyleaf bursage	<i>Franseria tomentosa</i>	P	2.0 - 3.0
Yellow starthistle	<i>Centaurea solstitialis</i>	A	3.0 - 4.0

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<b>BROADLEAF WEEDS</b>			
Common Name	Scientific Name	Life Cycle	Application Rate (Pints / Acre)
Yellow woodsorrel	<i>Oxalis stricta</i>	P	2.0 - 3.0

<b>VINES AND BRAMBLES</b>			
Common Name	Scientific Name	Life Cycle	Application Rate (Pints / Acre)
Blackberry <sup>7,*</sup>	<i>Rubus</i> spp.	P	4.0 - 6.0
Dewberry <sup>7,*</sup>	<i>Rubus</i> spp.	P	4.0 - 6.0
Field bindweed	<i>Convolvulus arvensis</i>	P	1.0
Greenbriar	<i>Smilax</i> spp.	P	3.0 - 4.0
Hedge bindweed	<i>Calystegia sepium</i>	A	1.0
Honeysuckle	<i>Lonicera</i> spp.	P	3.0 - 4.0
Kudzu <sup>†,*</sup>	<i>Pueraria lobata</i>	P	4.0 - 6.0
Morningglory	<i>Ipomoea</i> spp.	A/P	3.0 - 4.0
Poison ivy	<i>Rhus radicans</i>	P	3.0 - 4.0
Redvine	<i>Brunnichia cirrhosa</i>	P	3.0 - 4.0
Trumpet creeper	<i>Campsis radicans</i>	P	4.0 - 6.0
Virginia creeper	<i>Parthenocissus quinquefolia</i>	P	4.0 - 6.0
Wild buckwheat	<i>Polygonum convolvulus</i>	P	2.0 - 3.0
Wild grape	<i>Vitis</i> spp.	P	4.0 - 6.0
Wild rose	<i>Rosa</i> spp.	P	3.0 - 4.0

<b>BRUSH</b>			
Common Name	Scientific Name	Life Cycle	Application Rate (Pints / Acre)
Black Locust <sup>3</sup>	<i>Robinia pseudoacacia</i>	P	4.0 - 6.0
Blackgum	<i>Nyssa sylvatica</i>	P	4.0 - 6.0
Boxelder	<i>Acer negundo</i>	P	4.0 - 6.0
Brazilian peppertree <sup>*</sup>	<i>Schinus terebinthifolius</i>	P	4.0 - 6.0
Cherry	<i>Prunus</i> spp.	P	4.0 - 6.0
Chinaberry	<i>Melia azadarach</i>	P	4.0 - 6.0
Chinese tallow-tree <sup>**</sup>	<i>Sapium sebiferum</i>	P	4.0 - 6.0
Dogwood	<i>Cornus</i> spp.	P	4.0 - 6.0
Elm <sup>4</sup>	<i>Ulmus</i> spp.	P	4.0 - 6.0
Hawthorn	<i>Crataegus</i> spp.	P	4.0 - 6.0
Hickory	<i>Carya</i> spp.	P	4.0 - 6.0
Honeylocust <sup>5</sup>	<i>Gleditsia triacanthos</i>	P	4.0 - 6.0
Maple	<i>Acer</i> spp.	P	4.0 - 6.0
Melaleuca	<i>Melaleuca quiquenervia</i>	P	4.0 - 6.0
Mulberry	<i>Morus</i> spp.	P	4.0 - 6.0
Oak	<i>Quercus</i> spp.	P	4.0 - 6.0
Persimmon	<i>Diospyros virginiana</i>	P	4.0 - 6.0
Pine <sup>6,*</sup>	<i>Pinus</i> spp.	P	4.0 - 6.0
Poplar	<i>Populus</i> spp.	P	4.0 - 6.0
Privet	<i>Ligustrum vulgare</i>	P	4.0 - 6.0
Red Alder	<i>Alnus rubra</i>	P	4.0 - 6.0
Red Maple	<i>Acer rubrum</i>	P	4.0 - 6.0
Rubber rabbitbrush <sup>*</sup>	<i>Chrysothamnus nauseosus</i>	P	4.0 - 6.0

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BRUSH			
Common Name	Scientific Name	Life Cycle	Application Rate (Pints / Acre)
Russian Olive	<i>Eleagnus angustifolia</i>	P	4.0 - 6.0
Saltcedar**	<i>Tamarix ramosissima</i>	P	4.0 - 6.0
Sassafras	<i>Sassafras albidum</i>	P	4.0 - 6.0
Sourwood	<i>Oxydendrum arboreum</i>	P	4.0 - 6.0
Sumac**	<i>Rhus</i> spp.	P	4.0 - 6.0
Sweetgum	<i>Liquidambar styraciflua</i>	P	4.0 - 6.0
Water willow*	<i>Justica americana</i>	P	4.0 - 6.0
Willow	<i>Salix</i> spp.	P	4.0 - 6.0
Yellow poplar	<i>Liriodendron tulipifera</i>	P	4.0 - 6.0

† For preemergence control, tank-mix with Pendulum®

‡ Use a minimum of 75 GPA – Control of established stands may require repeat applications.

<sup>1</sup> For preemergence control, tank mix with Pendulum® or Karmex®.

<sup>2</sup> For best results, early postmergence applications are required.

<sup>3</sup> Tank-mix with Roundup®, Accord®, Escort®, Krenite®, Garlon™ 3A, or Tordon™ K.

<sup>4</sup> Tank-mix with Roundup®, Accord® or Escort®.

<sup>5</sup> Tank-mix with Roundup®, Accord®, Garlon™ 3A, or Tordon™ K.

<sup>6</sup> Tank-mix with Roundup®, Accord®, Krenite®, Garlon™ 3A, or Tordon™ K.

<sup>7</sup> The degree of control is species dependent; some *Rubus* species may not be completely controlled.

\*Not approved for use in California.

\*\*Not approved for this use in California. Refer to the Aquatic Pests Controlled section of this label for applicable aquatic applications.

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## NONCROP SITES

### GENERAL INFORMATION

**NOTE:** *DO NOT* make applications of this product by fixed wing aircraft *except* for aerial applications for brush control. Refer to the BRUSH CONTROL section of this label for more information. In California, this product may ONLY be used for Stump and Cut Stem Treatments and Aquatic applications.

Refer to the WEEDS CONTROLLED section of this label for a list of species controlled by Imazapyr E-Pro 2 – VM & Aquatic Herbicide. In addition to the species listed in the WEEDS CONTROLLED section, this product will also control the following woody brush and trees:

Common Name	Scientific Name	Common Name	Scientific Name
Alder	<i>Alnus</i> spp.	<i>Lyonia</i> spp.	
Aspen	<i>Populus</i> spp.	Including:	Fetterbush ( <i>Lyonia lucida</i> )
Australian pine <sup>3</sup>	<i>Casuarina equisetifolia</i>		Staggerbush ( <i>Lyonia mariana</i> )
Autumn olive	<i>Elaeagnus umbellata</i>	Madrone	<i>Arbutus menziesii</i>
Birch <sup>1</sup>	<i>Betula</i> spp.	Manzanita, greenleaf <sup>2</sup>	<i>Arctostaphylos patula</i>
Black oak	<i>Quercus kelloggii</i>	Poison oak	<i>Rhus diversiloba</i>
Ceanothis	<i>Ceanothis</i> spp.	Popcorn-tree	<i>Sapium sebiferum</i>
Chinquapin <sup>2</sup>	<i>Castanopsis chrysophylla</i>	Scotch broom <sup>3</sup>	<i>Cytisus scoparius</i>
Cottonwood	<i>Populus</i> spp.	Sweetbay magnolia <sup>2,3</sup>	<i>Magnolia virginiana</i>
Cypress	<i>Taxodium</i> spp.	Sycamore	<i>Platanus occidentalis</i>
Elderberry <sup>3</sup>	<i>Sambucus</i> spp.	Tanoak <sup>1,2,3</sup>	<i>Lithocarpus densiflorus</i>
Eucalyptus	<i>Eucalyptus</i> spp.	TiTi <sup>1,2</sup>	<i>Cyrilla racemiflora</i>
Hazel <sup>3</sup>	<i>Corylus cornuta</i>	Tree of heaven <sup>3</sup>	<i>Ailanthus altissima</i>
Holly <sup>1,2</sup>		<i>Vaccinium</i> spp.	
Including:	Gallberry ( <i>Ilex glabra</i> ) <sup>2,3</sup>	Including:	Blueberry ( <i>Vaccinium</i> spp.)
	Tall gallberry ( <i>Ilex coriacea</i> ) <sup>2</sup>		Sparkleberry ( <i>Vaccinium arboretum</i> )
	Yaupon ( <i>Ilex vomitoria</i> ) <sup>2</sup>	Waxmyrtle <sup>2,3</sup>	<i>Myrica californica</i>
Huckleberry	<i>Gaylussacia</i> spp.		<i>Myrica cerifera</i>

<sup>1</sup> Use the higher label rates for this species.

<sup>2</sup> An oil emulsion carrier is recommended for this species.

<sup>3</sup> Tank mix with Garlon™ 4 as a basal or stump treatment.

### APPLICATION NOTES FOR WET SITES

*Except in the states of California and New York*, Imazapyr E-Pro 2 – VM & Aquatic Herbicide can be applied to the following use sites:

With temporary surface water present:

- Areas between planting beds that have collected water
- Equipment ruts
- Depressions created by forest management activities

With no temporary surface water present:

- Drainage ditches
- Intermittent drainage
- Intermittently flooded low lying areas
- Seasonally dry flood plains
- Transitional areas between upland and lowland sites
- Marshes, swamps and bogs
- Seasonally dry flood deltas

NOTE: Only the edges of drainage ditches may be treated when water is present.

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## STUMP AND CUT STEM TREATMENTS

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Undesirable woody vegetation may be controlled by applying Imazapyr E-Pro 2 – VM & Aquatic Herbicide to the cambium of freshly cut stump surfaces using either a dilute solution or concentrate, or to cuts on the stems of target woody vegetation using a dilute solution. Concentrated solutions require fewer cuts on the stem while still remaining effective. For best results, stump and cut stem treatments should be done in summer and early fall and are least effective in the spring.

NOTE: Desirable woody plants may be injured or killed if they are grafted to the root system of the treated tree or they extend from the same root system as the treated tree.

### APPLICATION WITH DILUTE SOLUTIONS

**Preparation:** Add 8-12 fluid ounces of Imazapyr E-Pro 2 – VM & Aquatic Herbicide to one gallon of water, mixing thoroughly.

**Adjuvants:** To prevent freezing when applying in cold conditions, ethelene glycol antifreeze may be added according to the manufacturer's instructions.

A surfactant or penetrating agent may be used to improve uptake of the herbicide through cambiums that have become partially callused.

**Application:** **Cut Stump Treatments –** Cut the stump surface and then brush or spray the solution onto the exposed cambium in the cuts, making sure to thoroughly wet the entire cambium area.

**Tree Injection Treatments –** Making sure the injector completely penetrates the bark at each injection site, apply 1 milliliter of solution at each site. Use a one inch or smaller interval between injection sites completely around the trunk of the tree.

**Frill or Girdle Treatments:** Make cuts through the bark at no more than two inch intervals around the tree using a hatchet, machete, or similar device. Spray or brush the solution into each cut until thoroughly wet.

### APPLICATION WITH CONCENTRATED SOLUTIONS

**Preparation:** Use 2 quarts of Imazapyr E-Pro 2 – VM & Aquatic Herbicide with no more than 1 quart of water by volume for concentrated solution applications.

**Adjuvants:** To prevent freezing when applying in cold conditions, ethelene glycol antifreeze may be added according to the manufacturer's instructions.

A surfactant or penetrating agent may be used to improve uptake of the herbicide through cambiums that have become partially callused.

**Application:** **Tree Injection Treatments –** Making sure the injector completely penetrates the bark at each injection site, apply 1 milliliter of solution at each site. For best results, make one injection for every three inches of tree diameter at breast height (DBH) spacing the injections equally around the trunk.

**Frill or Girdle Treatments:** Make cuts through the bark at no more than two inch intervals around the tree using a hatchet, machete, or similar device. Spray or brush the solution into each cut until thoroughly wet.

**Hack and Squirt Treatments:** At equal intervals around the tree, make a downward-angled cut completely through the bark and cambium for every three inches of DBH using a hatchet or similar device. Then apply 1 milliliter of solution to each cut using a squirt bottle, syringe, or similar device, making sure that the solution does not run out of the cut.

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**THINLINE BASAL AND STEM APPLICATIONS and  
LOW VOLUME BASAL BARK TREATMENTS  
(Not approved for this use in California)**

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Applications of Imazapyr E-Pro 2 – VM & Aquatic Herbicide will control susceptible species such as big leaf maple (*Acer macrophyllum*), willow (*Salix* spp.) and Eucalyptus (*Eucalyptus* spp.) with stem diameters of 4 inches or less. Application sites containing high stem densities and multiple, small (1/2 inch diameter or less) stems should be foliar treated with low volume backpack or fixed boom applications. See BRUSH CONTROL/GROUND APPLICATIONS/Low Volume section of this label.

**THINLINE BASAL AND STEM APPLICATIONS**

Use thinline basal and stem applications for susceptible woody species with a stem ground line diameter of 3 inches or less. For larger diameter stems, use the low volume basal bark treatment below.

- Preparation: Mix 1.5-3.0 pints of Imazapyr E-Pro 2 – VM & Aquatic Herbicide in one gallon of diesel oil or penetrating oil, stirring frequently to maintain a uniform mixture.
- Application: Direct a thin line of the spray solution to the stems beginning a few feet from the ground and descending toward the base of the tree making a zig-zag motion.
- Precautions: Do not over apply to the point of runoff resulting in puddling.  
Injury may occur to desirable conifers or other plant species if applications are made directly to those plants.

**LOW VOLUME BASAL BARK TREATMENTS**

Use low volume basal bark treatments on stems up to 4 inches in diameter at breast height (DBH). Imazapyr E-Pro 2 – VM & Aquatic Herbicide may be tank mixed with Garlon™ 4 or other basal products to broaden the spectrum of control. To prevent stump resprouting with small (1/2 inch diameter) stems, avoid application on sites that have been mowed prior to application.

- Preparation: Mix 8–16 oz. of Imazapyr E-Pro 2 – VM & Aquatic Herbicide in one gallon of diesel oil or penetrating oil, stirring frequently to maintain a uniform mixture.
- Tank Mixes: To control black locust, honey locust, hackberry, elms and other species listed on manufacturer's labels, use 1.5 - 2.5% Imazapyr E-Pro 2 – VM & Aquatic Herbicide mixed with 15 to 20% Garlon™ 4. A tank mix of 1.5% Imazapyr E-Pro 2 – VM & Aquatic Herbicide and Garlon™ 4 is effective in the Northeastern U.S. Use the higher rate (2.5%) of Imazapyr E-Pro 2 – VM & Aquatic Herbicide in areas containing sassafras, oak, hickory, cherry, and maples or in the southern portion of the U.S.
- Application: Spray the lower 12 – 18 inches of the stem with the mixture (including the root-collar area) until wet.
- Precautions: DO NOT over apply to the point of dripping or puddling.  
Injury may occur to desirable conifers or other plant species if applications are made directly to those plants.

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**BRUSH CONTROL  
(Not approved for this use in California)**

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When mixed with water and a surfactant, Imazapyr E-Pro 2 – VM & Aquatic Herbicide may be applied as a spray solution for brush control in the following sites:

- |                     |   |
|---------------------|---|
| utility plant sites | railroad, utility, pipeline and highway rights-of-way |
| pumping stations    | petroleum tank farms                                  |
| storage areas       | fence rows  |
|                     | non-irrigation ditchbanks                             |

Imazapyr E-Pro 2 – VM & Aquatic Herbicide may be applied to non-grazed or hayed areas within these sites, and may also be used to control brush in wildlife openings.

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**AERIAL APPLICATIONS:**

**NOTE: Aerial applications for brush control may be made by fixed wing aircraft. Be sure to read and follow the precautions below when using fixed wing aircraft.**

**Preparation:** Add the amount of Imazapyr E-Pro 2 – VM & Aquatic Herbicide recommended in this label for the intended use to 5 – 30 gallons of water per acre, mixing thoroughly.

**Adjuvants:** To increase efficacy, a compatible nonionic surfactant or methylated seed oil should be added to the spray solution. See the Adjuvant section above for specific recommendations.

Except when applying with a Microfoil™ boom, Thru-Valve™ Boom or other similar equipment, a drift control agent may be added.

If necessary, a foam reducing agent may also be added.

**Application:** Applications should not be made under windy or gusty conditions and all possible precautions should be taken in order to minimize or eliminate spray drift, refer to the Spray Drift section at the beginning of this label for more information. A calibrated controlled droplet boom and nozzle configuration is recommended to assist in mitigating spray drift.

Be sure to maintain adequate buffer zones.

**Precautions:** DO NOT make applications by fixed wing aircraft unless appropriate buffer zones can be maintained to prevent spray drift out of the target area or, when treating open tracts of land, spray drift as a result of fixed wing aircraft application can be tolerated.

Because uncoated steel (except stainless steel) surfaces that experience prolonged exposure to this product may corrode and eventually fail, thoroughly clean application and mixing equipment as well as portions of the aircraft that may have been exposed to the spray (including landing gear) immediately after use by flushing with water.

Side trimming is not recommended with Imazapyr E-Pro 2 – VM & Aquatic Herbicide unless death of treated tree can be tolerated.

**GROUND APPLICATIONS:**

See the instructions under Ground Operated Spray Equipment in the Mixing and General Application Instructions section at the beginning of this label.

**Specific Instructions for Ground Applications:**

**Preparation:** Use 1.0 – 3.0 pints of Imazapyr E-Pro 2 – VM & Aquatic Herbicide in recommended tank mixtures when the roots of desirable trees may extend into rights-of-way corridors. Desirable trees may be damaged or die when their roots extend into treated zones and more than 3 pints per acre is applied.

**Tank Mixes:** To control black locust, honey locust, hackberry, elms and other species listed on manufacturer's labels, use a tank mix of 1.5 - 2.5% Imazapyr E-Pro 2 – VM & Aquatic Herbicide with 15 - 20% Garlon™ 4 in basal oil. Use the higher rate of Imazapyr E-Pro 2 – VM & Aquatic Herbicide in areas containing sassafras, oak, hickory, cherry, and maples or in the southern 2/3's of the U.S. The lower rates listed will be effective in the Northeastern U.S.

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SPRAY SOLUTION MIXING GUIDE FOR LOW VOLUME FOLIAR APPLICATIONS				
SPRAY SOLUTION VOLUME	DESIRED CONCENTRATION (fluid volume)			
	Imazapyr E-Pro 2 – VM & Aquatic Herbicide		Garlon™ 4	
	1.5%	2.5%	15%	20%
1 gallon	1.9 oz.	3.2 oz.	19.2 oz.	25.6 oz.
3 gallons	5.7 oz.	9.6 oz.	57.6 oz.	76.8 oz.
4 gallons	7.7 oz.	12.8 oz.	76.8 oz.	102.4 oz.
5 gallons	9.6 oz.	16.0 oz.	96.0 oz.	1.0 gallon
50 gallons	0.75 gallons	1.25 gallons	7.5 gallons	10.0 gallons
100 gallons	1.5 gallons	2.5 gallons	15.0 gallons	20.0 gallons

**Precautions:** DO NOT side trim with Imazapyr E-Pro 2 – VM & Aquatic Herbicide unless severe injury or death of the treated tree can be tolerated. Imazapyr E-Pro 2 – VM & Aquatic Herbicide is readily translocated and can result in death of the entire tree.

**Specific Instructions for Low Volume Applications:**

See the instructions under Directed Foliar or Spot Spray Equipment in the Mixing and General Application Instructions section at the beginning of this label.

**Preparation:** To prepare the spray solution, thoroughly mix in water 0.5% to 5.0% Imazapyr E-Pro 2 – VM & Aquatic Herbicide plus surfactant (See the ADJUVANT section above for specific recommendations).

For difficult to control brush species, use the higher concentrations of herbicide and/or spray volumes. Consult the WEEDS CONTROLLED section above for specific recommendations.

For improved control, Imazapyr E-Pro 2 – VM & Aquatic Herbicide may be tank mixed with other products, consult the Suggested Tank-Mixes and Application Rates table below.

**Adjuvants:** If necessary, a foam reducing agent may also be added.

**Application:** Use equipment calibrated to deliver 5 to 20 gallons of spray solution per acre.

When applying to brush up to 4 feet tall, spray down on the crown covering the crown and penetrating approximately 70% of the plant.

When applying to brush 4 - 8 feet tall, apply to at least two sides of the plant by spraying the plant in smooth vertical motions from the crown to the bottom. For best results, be sure to cover the crown of the plant.

When applying to brush over 8 feet tall, spray at least two sides of the brush using a smooth zigzag pattern from crown to bottom.

When making a broadcast application, spray the crown in a manner that simulates a gentle rain, allowing the spray to penetrate the target foliage but without falling to the understory. Severe injury or death of plants in the understory may result from contact with the spray solution.

**Precautions:** DO NOT side trim with Imazapyr E-Pro 2 – VM & Aquatic Herbicide unless severe injury or death of the treated tree can be tolerated. Imazapyr E-Pro 2 – VM & Aquatic Herbicide is readily translocated and can result in death of the entire tree.

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DO NOT apply more than 6 pints of Imazapyr E-Pro 2 – VM & Aquatic Herbicide per acre.

Excessive wetting of foliage is not recommended.

#### SUGGESTED LOW-VOLUME TANK-MIXES AND APPLICATION RATES

Target Vegetation	Rate of Imazapyr E-Pro 2 – VM & Aquatic Herbicide	Tank Mix
Mixed hardwoods without elm, locust, or pine	1.0-1.5% by volume	Surfactant
Mixed hardwoods containing elm, locust, and pine	0.5-1.0% by volume	Accord® at 2-3% by volume plus surfactant
Mixed hardwoods with locust and pine but no elm	0.5-1.0% by volume	Krenite® at 2-5% by volume plus surfactant
Mixed hardwoods with locust and elm but no pine	0.5-1.0% by volume	Escort® at 2 oz./Acre or 2.3 grams/gal. plus surfactant

**NOTE:** Imazapyr E-Pro 2 – VM & Aquatic Herbicide has been found to be LESS effective in tank mixes with 2,4-D or products containing 2,4-D.

#### Specific Instructions for High Volume Applications:

See the instructions under Ground Operated Spray Equipment in the Mixing and General Application Instructions section at the beginning of this label.

**Preparation:** Mix 2 – 6 pints of Imazapyr E-Pro 2 – VM & Aquatic Herbicide per acre in water and add a surfactant (see ADJUVANT section of this label for specific recommendations and rates of surfactants).

For difficult to control brush species, use the higher concentrations of herbicide and/or spray volumes. Consult the WEEDS CONTROLLED section above for specific recommendations.

**Adjuvants:** If necessary, a foam reducing agent may also be added.

**Tank Mixes:** To provide control of species tolerant to Imazapyr E-Pro 2 – VM & Aquatic Herbicide, tank mixes with Accord®, Roundup®, Krenite®, Escort®, Telar®, Tordon™ K, Garlon™ 3A, Banvel® and Vanquish® may be used.

**NOTE:** Imazapyr E-Pro 2 – VM & Aquatic Herbicide has been found to be LESS effective in tank mixes with 2,4-D or products containing 2,4-D.

**Application:** For best results on medium to high density brush, use equipment calibrated to deliver up to 100 gallons of spray solution per acre (GPA).

Spray the foliage of the vegetation to be controlled in a uniform manner being sure NOT to apply to the point of run-off.

**Precautions:** DO NOT side trim with Imazapyr E-Pro 2 – VM & Aquatic Herbicide unless severe injury or death of the treated tree can be tolerated. Imazapyr E-Pro 2 – VM & Aquatic Herbicide is readily translocated and can result in death of the entire tree.

DO NOT apply more than 6 pints of Imazapyr E-Pro 2 – VM & Aquatic Herbicide per acre.

Excessive wetting of foliage is not recommended.

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**INVERT EMULSIONS:**

In order to minimize spray drift and run-off, Imazapyr E-Pro 2 – VM & Aquatic Herbicide may be applied as an invert emulsion carrier when making applications to brush. The spray emulsion may be batch-mixed in a single tank or injected (in-line mixing). For mixing directions, refer to the invert chemical label.

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**CONTROL OF WEEDS UNDER PAVED SURFACES**  
**(Not approved for this use in California)**

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In industrial sites or where pavement has a barrier along the perimeter that prevents roots of desirable plants from encroaching into application areas, Imazapyr E-Pro 2 – VM & Aquatic Herbicide may be used under asphalt, pond liners and other paved areas to control weeds.

This product is NOT recommended for use under paved areas such as driveways or parking lots on residential properties, nor in recreational areas such as under bike or jogging paths, golf cart paths, tennis courts, or anywhere landscape plantings might occur in the future. Desirable plants may be injured or killed if this product is applied where their roots are present, and the roots of trees and shrubs may extend beyond the drip line of the plant (the outer edges of the branch extremities).

**Preparation:** Mix in a tank using a rate of 6 pints (2.2 fl. oz. per 1,000 ft.<sup>2</sup>) of Imazapyr E-Pro 2 – VM & Aquatic Herbicide to at least 100 gallons of water per acre. Create sufficient spray solution to ensure complete and uniform coverage of the entire area to be paved, including shoulder areas.

**Application:** Use equipment calibrated to deliver at least 100 gallons of spray solution per acre (GPA). Imazapyr E-Pro 2 – VM & Aquatic Herbicide may need to be incorporated into the soil if the soil is not moist prior to application in order to activate the herbicide. Incorporation may be accomplished by using a rototiller or disc to a depth of 4 – 6 inches, or 1 inch of irrigation may be used. *If irrigating, do not allow treated soil to wash or move into untreated areas.*

**Precautions:** Imazapyr E-Pro 2 – VM & Aquatic Herbicide application sites should be paved over as soon as possible after application.

DO NOT apply where the chemical may contact the roots of desirable trees or other plants.

DO NOT apply more than 6 pints of Imazapyr E-Pro 2 – VM & Aquatic Herbicide per acre.

All tubers, rhizomes, stolons and other vegetative plant parts that are present in the site should be scalped to a depth that assures their removal using a grader blade or similar technique.

Applications should be made to the soil surface only when final grade is established. Do not move soil following Imazapyr E-Pro 2 – VM & Aquatic Herbicide application.

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**CONTROL OF UNDESIRABLE WEEDS IN**  
**UNIMPROVED BERMUDAGRASS AND BAHIA GRASS**  
**(Not approved for this use in California)**

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Imazapyr E-Pro 2 – VM & Aquatic Herbicide may be used in non-cropland industrial sites, roadsides and utility rights-of-way to release unimproved bahiagrass and bermudagrass from competition with broadleaf weeds and grasses listed in the WEEDS CONTROLLED section above. Imazapyr E-Pro 2 – VM & Aquatic Herbicide applications to bermudagrass will cause seedhead inhibition and a compacted growth habit.

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## WEEDS CONTROLLED

Common Name	Scientific Name
Bedstraw	<i>Galium</i> spp.
Bishopweed	<i>Ptilimnium capillaceum</i>
Buttercup	<i>Ranunculus parviflorus</i>
Carolina geranium	<i>Geranium carolinianum</i>
Fescue	<i>Festuca</i> spp.
Foxtail	<i>Setaria</i> spp.
Little barley	<i>Hordeum pusillum</i>
Seedling Johnsongrass	<i>Sorghum halepense</i>
Wild carrot	<i>Daucus carota</i>
White clover	<i>Trifolium repens</i>
Yellow woodsorrel	<i>Oxalis stricta</i>

**Preparation:** Bermudagrass – Mix 6-12 oz. of Imazapyr E-Pro 2 – VM & Aquatic Herbicide per acre when grass is dormant, or 3-4 oz. per acre once the grass has reached full green-up. A surfactant should be used in the spray solution, but should NOT be used at a rate higher than 1 oz. / 25 gallons of spray solution.

Bahiagrass – Mix 4-8 oz. of Imazapyr E-Pro 2 – VM & Aquatic Herbicide per acre when grass is dormant or after the grass has initiated green-up but has not exceeded 25% green-up. A surfactant should be used in the spray solution (refer to the ADJUVANT section of this label for specific recommendations on surfactants).

**Tank Mixes:** Pendulum® herbicide may be added at the rate of 3.3-6.6 lbs. per acre for additional pre-emergence control of annual grasses and small seeded broadleaf weeds. Refer to the Pendulum® herbicide label for weeds controlled and other use directions and precautions.

To control johnsongrass in bermudagrass turf, use 8 oz. of Imazapyr E-Pro 2 – VM & Aquatic Herbicide with 12 oz. of Roundup® per acre and a surfactant.

For additional control of broadleaves and vines, 1-2 pints of Garlon™ 3A per acre may be added to the Imazapyr E-Pro 2 – VM & Aquatic Herbicide / Roundup® mix described above.

Be sure to follow the most restrictive instructions from all labels used in tank mixes.

**NOTE:** Imazapyr E-Pro 2 – VM & Aquatic Herbicide has been found to be LESS effective in tank mixes with 2,4-D or products containing 2,4-D.

**Application:** Uniformly apply with properly calibrated ground equipment using at least 10 gallons of water per acre with a spray pressure of 20 to 50 psi.

**Precautions:** DO NOT APPLY to grass during its first growing season.

DO NOT APPLY to grass that is under stress from drought, disease, insects, or other causes.

Applications made during green-up will delay green-up.

Temporary yellowing of grass may occur when treatment is made after regrowth commences.

### GRASS GROWTH AND SEEDHEAD SUPPRESSION

In unimproved areas, Imazapyr E-Pro 2 – VM & Aquatic Herbicide may be used to suppress seedhead development and growth of certain types of turfgrass.

**Preparation:** Bermudagrass – Mix 6-8 oz. of Imazapyr E-Pro 2 – VM & Aquatic Herbicide with at least 10 gallons of water per acre. Do NOT add a surfactant to this mix.

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Cool-Season Unimproved Turf – Mix 2 oz. of Imazapyr E-Pro 2 – VM & Aquatic Herbicide per acre with 0.25% non-ionic surfactant (refer to the ADJUVANT section of this label for specific recommendations on surfactants).

**Tank Mixes:** For increased suppression of cool-season unimproved turf, Imazapyr E-Pro 2 – VM & Aquatic Herbicide may be tank-mixed with products such as Campaign® at a rate of 24 oz. or Embark® at a rate of 8 oz. per acre.

**Application:** Apply uniformly with properly calibrated ground equipment using a spray pressure of 20 to 50 psi.

Apply to Bermudagrass from early green-up until just before seed head initiation.

For optimum performance, application should be made prior to culm elongation.

For applications made prior to mowing, allow at least three days of active growth before mowing.

For applications made after mowing, allow sufficient time for the grasses to recover before applying this product or injury may be increased.

**Precautions:** DO NOT APPLY to grass during its first growing season.

DO NOT APPLY to grass that is under stress from drought, disease, insects, or other causes. Imazapyr E-Pro 2 – VM & Aquatic Herbicide may result in temporary turf damage and/or discoloration when applied to desirable turf, with effects dependent upon environmental conditions.

Tank mixes may increase injury to desired turf. Consult each product label for recommended turf species and other use directions and precautions.

Applications made during green-up will delay green-up.

Temporary yellowing of grass may occur when treatment is made after regrowth commences.

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**TOTAL VEGETATION CONTROL WHERE BAREGROUND IS DESIRED**  
**(Not approved for this use in California)**

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Where bareground is desired, Imazapyr E-Pro 2 – VM & Aquatic Herbicide provides effective preemergence or postemergence control of many annual and perennial broadleaf and grass weeds, and is particularly effective on hard-to-control perennial grasses.

**Preparation:** Mix 1.5-6 pints Imazapyr E-Pro 2 – VM & Aquatic Herbicide per acre with water as per the instructions in the MIXING AND APPLICATION INSTRUCTIONS at the beginning of this label.

For best results on resistant or difficult to control annual grasses, applications with a total volume of 100 gallons per acre or less should be used.

For difficult to control brush species, use the higher concentrations of herbicide and/or spray volumes. Consult the WEEDS CONTROLLED section above for specific recommendations.

**Adjuvants:** Always use a spray adjuvant when making a postemergence application. Refer to the ADJUVANT section of this label for specific recommendations.

**Tank Mixes:** To provide control of species tolerant to Imazapyr E-Pro 2 – VM & Aquatic Herbicide, tank mixes with Roundup®, Finale®, MSMA, Diuron, Karmex®, Pendulum®, Simazine, Banvel®, Vanquish®, or Oust® herbicides may be used. The degree and duration of control are dependent on the rate of Imazapyr E-Pro 2 – VM & Aquatic Herbicide used,

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the tank mix partner(s), the volume of carrier used, and environmental factors such as rainfall, soil properties, etc.

**Tank-Mix Recommendations for Bareground Sites**

Imazapyr E-Pro 2 – VM & Aquatic Herbicide (pints / acre)	Pendulum® WDG (lbs. / acre)	Pendulum® 3.3 EC (quarts / acre)	Diuron (lbs. a.i. / acre)
1.5-3.0	6.6	4.8	4-6
2.0-4.0	6.6	4.8	6-10
3.0-6.0	6.6	4.8	8-12

Use higher rates for fall applications, in areas that have not been previously treated, or that have heavy infestations.

For quicker burndown or brown-out of targeted weeds, Imazapyr E-Pro 2 – VM & Aquatic Herbicide may be tank mixed with products such as Roundup®, Finale®, or MSMA.

**NOTE:** Imazapyr E-Pro 2 – VM & Aquatic Herbicide has been found to be LESS effective in tank mixes with 2,4-D or products containing 2,4-D.

**Application:** Refer to the MIXING AND APPLICATION INSTRUCTIONS in the GENERAL INFORMATION section at the beginning of this label for directions pertaining to your desired method of application.

Applications of Imazapyr E-Pro 2 – VM & Aquatic Herbicide may be made anytime of the year.

**Precautions:** DO NOT apply more than 6 pints of Imazapyr E-Pro 2 – VM & Aquatic Herbicide per acre.

**Spot Treatments:** Imazapyr E-Pro 2 – VM & Aquatic Herbicide may be used as a follow-up treatment to control escapes or weed encroachment in a bareground situation.

**Preparation:** Mix 0.5-5.0% Imazapyr E-Pro 2 – VM & Aquatic Herbicide per gallon of water as per the instructions in the MIXING AND APPLICATION INSTRUCTIONS at the beginning of this label.

For difficult to control brush species, use the higher concentrations of herbicide and/or spray volumes. Consult the WEEDS CONTROLLED section for specific recommendations.

**Adjuvants:** Always use a spray adjuvant when making a postemergence application. Refer to the ADJUVANT section of this label for specific recommendations.

**Tank Mixes:** To improve residual weed control and expand the number of weeds controlled, tank mixes with Pendulum® or Diuron herbicides may be used.

For quicker burndown or brown-out of targeted weeds, Imazapyr E-Pro 2 – VM & Aquatic Herbicide may be tank mixed with products such as Roundup®, Finale®, or MSMA.

**NOTE:** Imazapyr E-Pro 2 – VM & Aquatic Herbicide has been found to be LESS effective in tank mixes with 2,4-D or products containing 2,4-D.

**Application:** Refer to the MIXING AND APPLICATION INSTRUCTIONS in the GENERAL INFORMATION section at the beginning of this label for directions pertaining to your desired method of application.

Applications of Imazapyr E-Pro 2 – VM & Aquatic Herbicide may be made anytime of the year.

Precautions: DO NOT apply more than 6 pints of Imazapyr E-Pro 2 – VM & Aquatic Herbicide per acre.

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## AQUATIC APPLICATIONS

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Aquatic applications may be made in and around standing and flowing water for control of floating and emergent aquatic vegetation or terrestrial vegetation growing in or around surface water. The types of water bodies that may be treated are:

- Marine Water Bodies
- Wetlands
- Marshes / Bayous / Wetlands
- Streams / Rivers
- Estuaries
- Ponds / Lakes / Reservoirs
- Drainage Ditches / Canals
- Other slow-moving or still water bodies

In cases where there is minimal or no outflow to public water bodies, Imazapyr E-Pro 2 – VM & Aquatic Herbicide can be applied to private waters that are still, such as ponds, lakes and drainage ditches.

**Imazapyr E-Pro 2 – VM & Aquatic Herbicide does not control plants that are completely submerged or have a majority of their foliage under water.**

### AQUATIC USE PRECAUTIONS AND RESTRICTIONS

Applications may only be made by licensed or certified applicators making applications for programs sponsored by federal or state government agencies such as Water Management Districts, Municipal Authorities or the U.S. Army Corps of Engineers.

Permits may be required to treat public water bodies; consult your local state fish and game agency and water control authorities before making applications of Imazapyr E-Pro 2 – VM & Aquatic Herbicide to public water.

Only invasive plants or plants determined to be a nuisance by a federal or state governmental agency may be treated. DO NOT apply to water bodies or portions of water bodies where emergent and/or floating weeds do not exist.

DO NOT apply more than 6 pints of product (1.5 lbs acid equivalent) per acre per year.

Aerial application may be made *only* by helicopter.

#### **Precautions for Potable Water Intakes:**

Imazapyr E-Pro 2 – VM & Aquatic Herbicide may NOT be applied directly to water within one-half mile upstream of an active potable water intake in flowing water bodies such as rivers or streams.

Imazapyr E-Pro 2 – VM & Aquatic Herbicide may NOT be applied within one-half mile of an active potable water intake in a standing water body such as a reservoir, lake or pond.

If aquatic applications within one-half mile of active potable water intakes need to be made, the water intake must be turned off during application and for a minimum of 48 hours after the application. This type of application may only be made if there are alternative water sources or holding ponds that permit an active potable water intake to be turned off for a minimum of 48 hours after the applications.

Note: Existing potable water intakes that are no longer in use, such as those replaced by connections to wells or a municipal water system, are not considered to be active potable water intakes. This restriction does not apply to intermittent, inadvertent overspray of water in terrestrial use sites.

#### **Precautions for Irrigation Water:**

*Any water treated with Imazapyr E-Pro 2 – VM & Aquatic Herbicide may not be used for irrigation purposes for 120 days after application or until residue levels are determined by laboratory analysis to be 1.0 ppb or less.*

Apply Imazapyr E-Pro 2 – VM & Aquatic Herbicide to irrigation canals or ditches ONLY if the above restriction can be observed.

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DO NOT apply Imazapyr E-Pro 2 – VM & Aquatic Herbicide within one mile of an active irrigation water intake in lakes or reservoirs during the irrigation season. Applications closer than one mile from an inactive irrigation water intake may be made during the off-season, provided that the above restriction can be observed.

DO NOT apply Imazapyr E-Pro 2 – VM & Aquatic Herbicide within one-half mile downstream of an active irrigation water intake. If making applications upstream of an active irrigation water intake, *the intake must be turned off* until the treated water upstream has flowed completely past the irrigation intake. Before applying Imazapyr E-Pro 2 – VM & Aquatic Herbicide upstream of an active irrigation water intake, consult your local, state and/or federal authorities.

### INSTRUCTIONS FOR AQUATIC APPLICATIONS

Imazapyr E-Pro 2 – VM & Aquatic Herbicide has little to no effect on submerged aquatic vegetation and must be applied to the emergent foliage of the target vegetation. In general, applications should be made in a manner that maximizes spray interception by the target vegetation and minimizes overspray into the water. Imazapyr E-Pro 2 – VM & Aquatic Herbicide may be applied as a draw down treatment in areas described above by applying to weeds after water has been drained and then allowing 14 days before reintroducing water to the drained area.

- For best results, weeds should be growing vigorously at the time of application and the spray solution should include a surfactant (see the ADJUVANTS section of this label for specific recommendations).
- Aquatic applications of Imazapyr E-Pro 2 – VM & Aquatic Herbicide should be made in a minimum of 5 gallons of water per acre using surface or helicopter application equipment.
- To prevent concentration of this herbicide in water, applications to moving bodies of water should be made while traveling upstream.
- Do not treat more than one half of the surface area of the water in a single operation and wait at least 10 to 14 days between treatments.
- To allow fish to move into untreated areas, begin applications along the shore and proceed outwards in bands.
- Because oxygen depletion due to decaying vegetation may result in the suffocation of some sensitive fish species, when the target vegetation covers a large percentage of the surface area of a slow or non-flowing water body, the area should be treated in strips.
- For one hour after application, avoid wash-off of sprayed foliage by spray boat or recreational boat backwash.

### AQUATIC AERIAL APPLICATIONS

Refer to the MIXING AND APPLICATION INSTRUCTIONS section for general information regarding aerial applications of Imazapyr E-Pro 2 – VM & Aquatic Herbicide.

Refer to the PRECAUTION FOR AVOIDING INJURY TO NON-TARGET PLANTS section for guidance in minimizing unwanted exposure to non-target plants when making aerial applications.

**NOTE:** Aerial applications may be made *only* by helicopter.

**Preparation:** Mix Imazapyr E-Pro 2 – VM & Aquatic Herbicide for the intended use as per the instructions in the AQUATIC PESTS CONTROLLED tables below.

**Adjuvants:** For best results, a nonionic or silicon based surfactant or methylated seed oil should be added, refer to the ADJUVANT section of this label for specific recommendations.  
If needed, a foam reducing agent may be added.

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**Tank Mixes:** To enhance the spectrum or control of emergent and floating aquatic vegetation, Imazapyr E-Pro 2 – VM & Aquatic Herbicide may be tank mixed with other aquatic use herbicides. Always follow the more restrictive label when making an application involving tank mixes.

**Application:** Uniformly apply the recommended amount of Imazapyr E-Pro 2 – VM & Aquatic Herbicide in 5 to 30 gallons of water per acre following the instructions for aerial applications in the MIXING AND APPLICATION INSTRUCTIONS section at the beginning of this label.

**Precautions:** DO NOT make applications by helicopter unless appropriate buffer zones to prevent spray drift out of the target area can be maintained, or when spray drift damage as a result of helicopter application can be tolerated.

Application equipment, including landing gear must be thoroughly cleaned immediately after use of this product. Prolonged exposure of this product to uncoated steel (except stainless steel) surfaces may result in corrosion and failure of the exposed part. The maintenance of an organic coating (paint) may prevent corrosion.

**AQUATIC GROUND APPLICATIONS**

Imazapyr E-Pro 2 – VM & Aquatic Herbicide may be applied using any of the ground application methods described in the MIXING AND APPLICATION INSTRUCTIONS section at the beginning of this label.

Refer to the AQUATIC SITES CONTROLLED tables below for recommended use rates and species specific instructions.

**GROUND APPLICATION PRECAUTIONS:**

- DO NOT apply more than 6 pints of Imazapyr E-Pro 2 – VM & Aquatic Herbicide per acre.
- When making applications do not apply to the point of run off of spray solution from the target vegetation.

**AQUATIC PESTS CONTROLLED**

Imazapyr E-Pro 2 – VM & Aquatic Herbicide will control the following target species as specified in the APPLICATION RECOMMENDATION section of the table. Rate recommendations are expressed in terms of product volume for broadcast applications and as a % solution for directed applications including spot treatments. For % solution applications, DO NOT apply more than the equivalent of 1.5 quarts of Imazapyr E-Pro 2 – VM & Aquatic Herbicide per acre.

FLOATING SPECIES			
COMMON NAME	SCIENTIFIC NAME	APPLICATION RATE (pints/acre)	SPECIFIC INSTRUCTIONS
*Duckweed	<i>Lemna minor</i>	2.0-3.0	Apply in 100 gallons of water per acre.
*Duckweed, Giant	<i>Spirodela polyriza</i>	2.0-3.0	Apply in 100 gallons of water per acre.
*Frogbit	<i>Limnobium spongia</i>	1.0-2.0	Apply in 100 gallons of water per acre. Be sure to cover all actively growing foliage.
*Spadderdock	<i>Nuphar luteum</i>	1.0-2.0 Imazapyr E-Pro 2 – VM & Aquatic Herbicide with 4.0-6.0 glyphosate	Apply in 100 gallons of water per acre. Be sure to cover all actively growing foliage.
*Water Hyacinth	<i>Eichhornia crassipes</i>	1.0-2.0	Apply in 100 gallons of water per acre. Be sure to cover all actively growing foliage.
*Water Lettuce	<i>Pistia stratiotes</i>	1.0-2.0	Apply in 100 gallons of water per acre. Be sure to cover all actively growing foliage.

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EMERGED SPECIES			
COMMON NAME	SCIENTIFIC NAME	APPLICATION RATE (pints/acre)	SPECIFIC INSTRUCTIONS
*Alligatorweed	<i>Alternanthera philoxeroides</i>	1.0-4.0	Apply in 100 gallons of water per acre. Be sure to cover all actively growing foliage. Do not mix with glyphosate or higher Imazapyr E-Pro 2 – VM & Aquatic Herbicide rates will be necessary for control.
*Arrowhead, Duck-Potato	<i>Sagittaria</i> spp.	1.0-2.0	Apply in 100 gallons of water per acre. Be sure to cover all actively growing foliage.
*Bacopa, lemon	<i>Bacopa</i> spp.	1.0-2.0	Apply in 100 gallons of water per acre. Be sure to cover all actively growing foliage.
*Parrot feather	<i>Myriophyllum aquaticum</i>	1.0-2.0	There must be foliage above the waterline in order for sufficient herbicide uptake to take place. Be sure to cover all actively growing foliage.
*Pennywort	<i>Hydrocotyle</i> spp.	1.0-2.0	Apply in 100 gallons of water per acre. Be sure to cover all actively growing foliage.
*Pickerelweed	<i>Pontederia cordata</i>	2.0-3.0	Apply in 100 gallons of water per acre. Be sure to cover all actively growing foliage.
*Taro, Wild; Dasheen; Elephant's Ear; Coco Yam	<i>Colocasia esculentum</i>	4.0-6.0	Apply in 100 gallons of water per acre with an adjuvant to enhance adhesion to the foliage. Be sure to cover all actively growing foliage.
*Water Lilly	<i>Nymphaea odorata</i>	2.0-3.0	Apply in 100 gallons of water per acre. Be sure to cover all actively growing foliage.
*Water Primrose	<i>Ludwigia uruguayensis</i>	4.0-6.0	Tank mixing with glyphosate may result in reduced control.

\*Not approved for use in California.

TERRESTRIAL / MARGINAL SPECIES			
COMMON NAME	SCIENTIFIC NAME	APPLICATION RATE (pints/acre)	SPECIFIC INSTRUCTIONS
*Soda Apple, aquatic; Nightshade	<i>Solanum tampicense</i>	2.0	
*Bamboo, Japanese	<i>Phyllostachys</i> spp.	3.0-4.0	Apply when plant is actively growing but before setting seed head. Be sure to cover all actively growing foliage.
Brazilian Pepper*; Christmasberry*	<i>Schinus terebinthifolius</i>	1.0-2.0	Apply to foliage.
Cattail*	<i>Typha</i> spp.	1.0-2.0	Apply to green foliage after full leaf elongation. Higher rates should be used in the south and lower rates should provide control in the north.
Chinese Tallow Tree	<i>Sapium sebiferum</i>	1.0-1.5	Apply to foliage.
Cogongrass	<i>Imperata cylindrical</i>	2.0 <i>quarts</i> Imazapyr E-Pro 2 – VM & Aquatic Herbicide with MSO (as per label instructions)	Burn foliage and till the area to be treated. Apply in the fall to all new growth.
Cordgrass, prairie	<i>Spartina</i> spp.	4.0-6.0	Be sure to cover all actively growing foliage.
*Cutgrass	<i>Zizaniopsis miliacea</i>	4.0-6.0	Be sure to cover all actively growing foliage.
*Elephant Grass; Napier Grass	<i>Pennisetum purpureum</i>	3.0	Be sure to cover all actively growing foliage.
*Flowering Rush	<i>butumu typla</i>	2.0-3.0	Be sure to cover all actively growing foliage.

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TERRESTRIAL / MARGINAL SPECIES			
COMMON NAME	SCIENTIFIC NAME	APPLICATION RATE (pints/acre)	SPECIFIC INSTRUCTIONS
Giant Reed; Wild Cane	<i>Arundo donax</i>	4.0-6.0	Apply in spring, being sure to cover all actively growing foliage.
*Golden Bamboo	<i>Phyllostachys aurea</i>	3.0-4.0	Apply when plant is actively growing but before setting seed head. Be sure to cover all actively growing foliage.
Junglerice	<i>Echinochloa colonum</i>	3.0-4.0	Be sure to cover all actively growing foliage.
Knapweeds	<i>Centaurea</i> spp.	2.0-3.0 Imazapyr E-Pro 2 – VM & Aquatic Herbicide with 1.0 quart MSO	Apply in the fall after plants begin to senesce
Knotweed, Japanese	<i>Polygonum cuspidatum</i>	3.0-4.0	Apply postemergence only, being sure to cover all actively growing foliage.
Melaleuca; Paperbark tree	<i>Melaleuca quinquenervia</i>	Established Stands: 6.0 Imazapyr E-Pro 2 – VM & Aquatic Herbicide with 6.0 Glyphosate and a spray adjuvant. For best results use 4 quarts / acre of methylated seed oil for the adjuvant.	For ground foliar applications be sure to cover all actively growing foliage. For broadcast foliar applications apply aerially with a minimum of two cross passes using a rate of 10 gallons/acre.
		Spot Applications: 25% solution of Imazapyr E-Pro 2 – VM & Aquatic Herbicide with 25% solution of Glyphosate and 1.25% solution MSO in water.	For spot treatment apply as a frill or stump treatment, see the instructions for Stump and Cut Stem Treatments above for further instructions.
*Nutgrass; Kili'p'opu	<i>Cyperus rotundus</i>	2.0 Imazapyr E-Pro 2 – VM & Aquatic Herbicide with 1.0 quart MSO	Apply early postemergence being sure to cover all actively growing foliage.
*Nutsedge	<i>Cyperus</i> spp.	2.0-3.0	Apply to all actively growing foliage postemergence, or as an incorporated application preemergence. Preemergence applications that are not incorporated will not provide control.
Phragmites; Common Reed	<i>Phragmites australis</i>	4.0-6.0	Apply to all actively growing foliage after full leaf elongation. If large amounts of dead stem tissue is evident, mow or burn the treatment site and allow to regrow to approximately 5' tall before applying. Lower rates will provide control in the north, higher rates are necessary in the south.
*Poison Hemlock	<i>Conium maculatum</i>	2.0 Imazapyr E-Pro 2 – VM & Aquatic Herbicide with 1.0 quart MSO	Apply preemergence or postemergence to rosette stage but prior to flowering.
Purple Loosestrife	<i>Lythrum salicaria</i>	1.0	Be sure to cover all actively growing foliage.
Reed Canarygrass	<i>Phalaris arundinacea</i>	3.0-4.0	Be sure to cover all actively growing foliage.
Rose, Swamp	<i>Rosa palustris</i>	2.0-3.0	Be sure to cover all actively growing foliage.
Russian Olive	<i>Elaeagnus angustifolia</i>	2.0-4.0	Be sure to cover all actively growing foliage.
Saltcedar; Tamarisk	<i>Tamarix</i> spp.	Aerial Applications: 2.0 quarts Imazapyr E-Pro 2 – VM & Aquatic Herbicide with 0.25% v/v NIS	Do not disturb treated plants for at least two years.

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TERRESTRIAL / MARGINAL SPECIES			
COMMON NAME	SCIENTIFIC NAME	APPLICATION RATE (pints/acre)	SPECIFIC INSTRUCTIONS
		Spot Applications: 1.0% solution of Imazapyr E-Pro 2 – VM & Aquatic Herbicide with 0.25% v/v NIS	
Smartweed	<i>Polygonum</i> spp.	2.0	Apply early postemergence being sure to cover all actively growing foliage.
Sumac	<i>Rhus</i> spp.	2.0-3.0	Be sure to cover all actively growing foliage.
Swamp Morning Glory; Water Spinach; Kangkong	<i>Ipomoea aquatica</i>	1.0-2.0 Imazapyr E-Pro 2 – VM & Aquatic Herbicide with 1.0 quart MSO	Apply early postemergence being sure to cover all actively growing foliage.
Torpedo Grass	<i>Panicum repens</i>	4.0	Be sure to cover all actively growing foliage.
*White Top; Hoary Cress	<i>Cardaria draba</i>	1.0-2.0	Apply to foliage when flowering in the spring.
Willow	<i>Salix</i> spp.	2.0-3.0	Be sure to cover all actively growing foliage.

#### STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Do not store below 10°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:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

#### CONDITION OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

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