

PA 23 45639-212 2/9/99 1 of 13

US ENVIRONMENTAL PROTECTION AGENCY OFFICE OF PESTICIDES PROGRAMS REGISTRATION DIVISION (TS-767) WASHINGTON, DC 20460  <b>NOTICE OF PESTICIDE:</b> <input checked="" type="checkbox"/> REGISTRATION <input type="checkbox"/> REREGISTRATION  <i>(Under the Federal Insecticide, Fungicide,          and Rodenticide Act, as amended)</i>	EPA REGISTRATION NO.	DATE OF ISSUANCE
	45639-212	Feb. 9, 1999
	TERM OF ISSUANCE Conditional, Expires February 1, 2000	
NAME OF PESTICIDE PRODUCT		
Puma <sup>®</sup> IEC Herbicide		

NAME AND ADDRESS OF REGISTRANT (Include ZIP code)

Agrevo USA Company  
 Little Falls Centre One  
 2711 Centerville Road  
 Wilmington, DE 19808

**NOTE:** Changes in labeling formula differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above U.S. EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby Registered/Reregistered under the Federal Insecticide, Fungicide, and Rodenticide Act.

A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.

Registration is in no way to be construed as an indorsement or approval of this product by this Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, Section 3(c)(7)(C), provided that:

1. The present time-limited tolerance regulations are extended or made permanent for the residues of the safener, mefenpyr-diethyl, in barley and wheat by February 1, 2000. If such a regulation is not established by that date, this notice of Registration expires.
2. That you add the phrase "EPA Registration No. 45639-212" to the label before you release the product for shipment.
3. That you submit one (1) copy of the final printed labeling before you release the product for shipment.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records.

Eugene K. Wilson  
 Acting Product Manager (23)  
 herbicide branch  
 Registration Division (7505C)

ATTACHMENT IS APPLICABLE

SIGNATURE OF APPROVING OFFICIAL *Eugene K. Wilson* DATE Feb. 9, 1999

# PUMA™ 1EC HERBICIDE

**FOR SELECTIVE POSTEMERGENCE CONTROL OF  
GREEN AND YELLOW FOXTAIL (PIGEONGRASS), VOLUNTEER AND  
WILD MILLET SPECIES, BARNYARDGRASS, WILD OATS  
IN WHEAT (including Durum Wheat) and BARLEY**

**ACTIVE INGREDIENT:**

fenoxaprop-p-ethyl: (+)-ethyl 2-[4-[(6-chloro-2-benzoxazolyl)oxy]phenoxy]propanoate\*..... 11.53%\*\*

**INERT INGREDIENTS:\*\*\***..... 88.47%  
TOTAL 100.00%

\*\* Equivalent to 1.0 pound of pure fenoxaprop-p-ethyl (d isomer) per gallon  
\*\*\* Contains petroleum distillates

**KEEP OUT OF REACH OF CHILDREN**

## WARNING - AVISO

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

EPA Establishment Number 45639-CAN-001

Net Contents: 2.5 gallons, 15 gallons, 60 gallons, 120 gallons and bulk

\* Protected by U.S. Patent No. 5,254,527



**AgrEvo USA Company  
Little Falls Centre One  
2711 Centerville Road  
Wilmington, DE 19808**

**ACCEPTED  
with COMMENTS  
In EPA Letter Dated**

**FEB - 9 1999**

**Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.  
45639-212**

**FIRST AID**

- If Swallowed:** Call a physician or Poison Control Center. Do not induce vomiting. Drink promptly a large quantity of milk, egg whites, gelatin solution, or if these are not available, drink large quantities of water. Avoid alcohol.
- If on Skin:** Wash with plenty of soap and water. Get medical attention.
- If in Eyes:** Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. Get medical attention.

If possible, bring the container and labeling to the attending physician.

**NOTE TO PHYSICIAN:** Possible mucosal damage may contraindicate the use of gastric lavage. May pose an aspiration pneumonia hazard.

<b>IN CASE OF MEDICAL, ENVIRONMENTAL, OR TRANSPORTATION EMERGENCIES OR INJURIES, CALL 1-800-471-0660 (24 HOURS/DAY).</b>
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**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS  
AND DOMESTIC ANIMALS  
WARNING**

Causes substantial but temporary eye injury or skin irritation. Harmful if swallowed. Do not get in eyes, on skin or on clothing. Wear coveralls worn over short-sleeved shirt and short pants, socks and chemical resistant footwear, goggles or face shield and chemical resistant gloves (such as Nitrile, Butyl, Neoprene and/or Barrier Laminate). Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining Personal Protective Equipment (PPE). If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**Engineering control statement:**

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [(40 CFR 170.40(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

**USER SAFETY RECOMMENDATIONS**

Users should:

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

**ENVIRONMENTAL HAZARDS**

This pesticide is toxic to fish and aquatic invertebrates. Drift or runoff may adversely affect aquatic invertebrates or nontarget plants. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of equipment washwaters.

### STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal. Keep container tightly closed when not in use. Avoid cross contamination with other pesticides.

Do not store over 100°F or below 32°F. Do not use or store near heat or open flame.

**PESTICIDE DISPOSAL:** Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**CONTAINER DISPOSAL:** *[2½ Gallon Container Only]*

Empty containers should be triple rinsed (or equivalent). Then offer for recycling or reconditioning, 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.

**[Or, when mini-bulk containers are used:]**

This is a sealed returnable container to be used only for Puma 1EC Herbicide. When this container is empty, it must not be opened, cleaned, or discarded. Empty containers must be returned to the original filling location and must be refilled with Puma 1EC Herbicide only at an authorized bulk distribution location.

**GENERAL INFORMATION**

Puma 1EC Herbicide is a postemergence herbicide for the control of green and yellow foxtail (pigeongrass), volunteer and wild millet species, barnyardgrass and wild oats in wheat (including durum wheat) and barley.

**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not use this product until you have read the entire label. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**AGRICULTURAL USE REQUIREMENTS**

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

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

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, wear coveralls over long-sleeved shirt and long pants; socks and chemical resistant footwear. Wear goggles or face shield, and chemical resistant gloves (such as Nitrile, Butyl, Neoprene, and/or Barrier Laminate).

**APPLICATION INFORMATION**

- A. **Ground Application:** DO NOT apply when winds are gusty, or when conditions will favor movement of spray particles off the desired spray target. To avoid drift and ensure consistent weed control, apply Puma 1EC Herbicide with the spray boom as low as possible while maintaining a uniform spray pattern. Apply a minimum of 10 gallons of spray solution per acre, using a spray pressure of at least 40 psi with flat-fan nozzle tips spaced 10 to 20 inches apart across the boom. ~~When tank mixing with Banvel and Banvel SGF, use a maximum spray pressure of 20 psi.~~ Ground speed for application should not exceed 10 mph. DO NOT apply with hollow cone type nozzles or other nozzles that produce a fine droplet spray. Under dense weed populations or adverse growing conditions, high spray volume (15-20 gpa) is required for best weed control.

B. **Aerial Application:** Calibrate the spray equipment prior to use. Puma 1EC Herbicide should be applied in a minimum of 5 gallons of water per broadcast acre. To get uniform spray coverage, use nozzles to provide 200 to 350 micron size droplets. DO NOT use raindrop nozzles. Aerial applications with this product should be made at a maximum height of 10 feet above the crop with low drift nozzles at a maximum pressure of 40 psi. Avoid application under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur.

Flagmen and loaders should avoid inhalation of spray mist and prolonged contact with skin.

**INFORMATION ON HERBICIDE TOLERANT WEEDS**

Repeated use of the same herbicide or related herbicides may result in rare, naturally tolerant weeds multiplying to economic infestations. In areas with consistent use of the same herbicide or herbicide mode-of-action, crop rotation and application of alternative mode of action herbicides are encouraged to prevent and/or reduce weed tolerance. For further information, contact an AgrEvo USA Company representative or your local or state extension service

**TIMING OF APPLICATION**

Apply Puma 1EC Herbicide to the crop from the 2 leaf up to the 6-leaf stage. Do not spray barley after jointing begins.

Puma 1EC Herbicide will control susceptible grass weeds in the 2-leaf to 2-tiller stage of growth. Blackgrass can be controlled over a wide range of growth stages, from the 2-leaf through the advanced tillering stage. Windgrass will be controlled from emergence to a height of 3 inches. Applications should be made to young, vigorously growing weeds.

Under cool, wet conditions, further crop safety in barley can be obtained by tankmixing MCPA Ester (at recommended rates) with Puma 1EC Herbicide.

Puma 1EC Herbicide has no effect via the soil and will only control emerged grass weeds. Puma 1EC Herbicide, when applied as recommended, controls the annual grass weeds listed in Table 1 below at rates indicated.

**Table 1. RATE RECOMMENDATION CHART for Grass Weed Control**

Grass Weed Species, Common Name	Grass Weed Species, Scientific Name	Rate, Pints per Acre (Fl. Oz./A)
Green foxtail	<i>Setaria viridis</i>	0.33 (5.3 Fl. Oz./A)
Foxtail millets (volunteer), common, Siberian, Hungarian, German millet	<i>Setaria italica</i>	
Volunteer corn	<i>Zea mays</i>	
Hooded canarygrass	<i>Phalaris paradoxa</i>	0.40 (6.4 Fl. Oz./A)
Yellow foxtail	<i>Setaria lutescens</i>	
Proso millet (volunteer, wild)	<i>Panicum iliaceum</i>	
Barnyardgrass	<i>Echinochloa crus-galli</i>	
Blackgrass	<i>Alopecurus myosuroides</i>	0.66 (10.6 Fl. Oz./A)
Windgrass	<i>Apera interrupta</i>	
Wild oats	<i>Avena fatua</i>	

**MOISTURE EFFECTS ON ANNUAL GRASSY WEED CONTROL**

The following conditions will result in optimum wild oat control:

1. Adequate soil moisture which occurs under normal rainfall in wheat or barley following a fallow year.
2. Temperatures lower than 85° F for several days prior to application.

Low soil moisture levels, low humidity, and high temperatures might slightly reduce the wild oat control provided by Puma 1EC Herbicide.

Foxtail (pigeongrass) can be controlled over a wide range of soil moisture conditions. Foxtail under drought stress will exhibit rolled leaves ("onion leaf") and should not be sprayed as poor control may result. Apply Puma 1EC Herbicide when conditions improve.

**TANK MIX COMBINATIONS**

When tank mixing, read and follow the precautionary statements, directions for use, weeds controlled, geographic, and other restrictions on the labeling of each tank mix partner used. Use in accordance with the most restrictive of label limitations and precautions. This product cannot be mixed with any product bearing a label prohibition against such mixing. DO NOT tank mix Puma 1EC Herbicide with other herbicides, surfactants, or liquid fertilizers unless specifically recommended on this label.



**Insecticides**

Puma 1EC Herbicide may be tank mixed with either Furadan® 4F or Sevin® XLR PLUS insecticides if timing for insect and weed control are proper. **Do not tank mix with malathion as wild oat control will be reduced.**

**Fungicides**

Mancozeb, Tilt®, Topsin®, Mertect®, or Benlate® fungicides can be tank mixed with Puma 1EC Herbicide when application timing is correct for both products.

**Broadleaf Herbicides**

Additional broadleaf weed control can be achieved by tank mixing Puma 1EC Herbicide with one of the herbicides listed in Tables 2, 3, or 4, if application timing is correct for both products.

**Tank Mixes for Green Foxtail, Foxtail Millets and Volunteer Corn Control**

The tank mix partners listed in Table 2, are approved for the control of green foxtail, foxtail millets, and/or volunteer corn using Puma 1 EC at a rate of 0.33 pt/A. If wild oat or yellow foxtail is the primary weed, see sections addressing tank mixes for these weeds.

**Table 2. Green Foxtail, Foxtail Millets, Volunteer Corn**

* / ** Buctril® 2EC	> 1.0 pt/A
* / ** Buctril® Gel	> 4 packs/20 A
* Bronate®	> 1.0 pt/A
MCPA Ester (4 lb/gal)	> 0.75 pt/A
Curtail™ M	> 1.75 pt/A
** Stinger®	> 0.25 - 0.33 pt/A
** Express® 75DF	> 1/6 oz/A
** Harmony® GT	> 5/10 oz/A
** Harmony® Extra 75DF	> 3/10 oz/A
** Amber® 75DF	> 0.28 oz/A
** Peak®	> 0.5 oz/A
** Ally® 60DF	> 1/10 oz/A
** Banvel® (for use on wheat only) (4 lb/gal)	> 2.0 fl oz/A
** Banvel® SGF (for use on wheat only) (2 lb/gal)	> 4.0 fl oz/A
** Clarity® (for use on wheat only)	> 2.0 fl oz/A
** Starane®	> 0.66 pt/A
** Tordon® 22K <sup>1</sup>	> 1.0 - 1.5 fl oz/A

\* Equivalent generic bromoxynil products may be substituted in a tank mix for these products.

\*\* 1/2 to 3/4 pt/A of MCPA Ester (4lb/gal) may be included with the above tank mixes. Other formulations of MCPA Ester can be substituted for the 4lb/gal formulation providing equivalent quantities of active ingredient / A are maintained.

<sup>1</sup> Tordon 22K must not be tank mixed with Puma on durum wheat or barley.

### Tank Mixes for Yellow Foxtail, Wild and Volunteer Proso Millets Control

The tank mix partners listed in Table 3, below are approved for the control of yellow foxtail and/or wild and volunteer proso millets using Puma 1 EC at a rate of 0.4 pt/A. If wild oat is the primary weed see the section addressing tank mixes for wild oat control.

**Table 3. Yellow Foxtail, Wild & Volunteer Proso Millets**

MCPA Ester (4 lb/gal)—————>	0.75 pt/A
* Stinger—————>	0.25 - 0.33 pt/A
Curtail™ M—————>	1.75 pt/A
* Banvel <sup>1</sup> (for use on wheat only) (4 lb/gal)—————>	2.0 fl oz/A
* Banvel SGF <sup>(for use on wheat only)</sup> (2 lb/gal)—————>	4.0 fl oz/A
* Clarity® (for use on wheat only) —>	2.0 fl oz/A
* Peak®—————>	0.5 oz/A
* Starane®—————>	0.66 pt/A
* Tordon ®22K <sup>1</sup> —>	1.0 - 1.5 fl oz/A

\* 1/2 to 3/4 pt./A of MCPA Ester (4 lb/gal) may be included with the above tank mixes. Other formulations of MCPA Ester can be substituted for the 4lb/gal formulation providing equivalent quantities of active ingredient per acre are maintained.

<sup>1</sup> Tordon 22K should not be tank mixed with Puma on durum wheat or barley.

**Tank Mixes for Wild Oats, Blackgrass and Barnyardgrass Control**

The tank mix partners listed in Table 4, below are approved for the control of wild oat, blackgrass, and/or barnyardgrass. -If yellow foxtail is the primary weed, see the section addressing tank mixes for yellow foxtail control.

**Table 4. Wild Oats, Blackgrass and Barnyardgrass**

* / ** Buctril 2EC	→	1 pt/A
* / ** Buctril Gel	→	4 packs/20 A
* Bronate	→	1.0 pt/A
Curtail™ M	→	1.75 pt/A
** Stinger	→	0.25 - 0.33 pt/A
Harmony® GT	→	5/10 oz/A
Harmony® Extra 75DF	→	3/10 oz/A
MCPA Ester (4 lb/gal)	→	0.75 pt/A
** Peak®	→	0.5 oz/A
** Starane®	→	0.66 pt/A
** Tordon® 22K <sup>1</sup>	→	1.0 - 1.5 fl oz/A

\* Equivalent generic bromoxynil products may be substituted in a tank mix for these products.

\*\* ½ to ¾ pt/A of MCPA Ester (4lb/gal) may be included with the above tank mixes. Other formulations of MCPA Ester can be substituted for the 4lb/gal formulation providing equivalent quantities of active ingredient per acre are maintained.

<sup>1</sup> Tordon 22K should not be tank mixed with Puma on durum wheat or barley.

NOTE: When tank mixing Puma 1EC Herbicide with the recommended herbicides above, do not exceed the labeled use rate shown for each tank mix partner, as reduced annual grass control will occur. Use only one tank mix partner with Puma 1EC Herbicide when treating for wild oats.

**FOR THE CONTROL OF WILD OATS AND BLACKGRASS IN WINTER WHEAT IN THE STATES OF WASHINGTON, OREGON AND NORTHERN IDAHO**

In winter wheat only, the following broadleaf herbicides may be tank mixed with Puma 1EC Herbicide at the 0.66 pint per acre rate when the target grass weeds are wild oats and/or blackgrass:

- Buctril 2EC + Harmony Extra 75DF** at a maximum of 1 pt/A + 1/3 oz./A.
- Buctril Gel + Harmony Extra 75DF** at a maximum of 4 packs/20 acres + 1/3 oz./A.
- Buctril 2EC + Harmony GT** at a maximum of 1 pt/A + 1/3 oz./A.
- Buctril Gel + Harmony GT** at a maximum of 4 packs/20 acres + 1/3 oz./A.

**SPECIAL NOTES**

1. Rainfall within 1 hour of an application may cause a reduction in weed control.
2. DO NOT make more than 1 application in a growing season; DO NOT apply more than 0.66 pints per acre per growing season.
3. DO NOT apply Puma 1EC Herbicide within 60 days of harvesting wheat in the States of Minnesota, Montana, North Dakota, and South Dakota. DO NOT apply Puma 1EC Herbicide on wheat within 70 days of harvest in all other states. DO NOT apply Puma 1EC Herbicide within 57 days of harvesting barley.
4. DO NOT apply this product through any irrigation system.
5. DO NOT apply any pesticides other than those listed on this label within 5 days of a Puma 1EC Herbicide application as reduced grassy weed control may occur.
6. DO NOT tank mix Puma 1EC Herbicide with other herbicides, surfactants, or liquid fertilizers unless specifically recommended on the Puma 1EC Herbicide label.
7. DO NOT use when there is hazard from drifting mists. Coarse sprays are less likely to drift.

**IMPORTANT: READ BEFORE USE**

By using this product, user or buyer accepts the following conditions, warranty, disclaimer of warranties and limitations of liability.

**CONDITIONS:** The directions for use of this product are believed to be adequate and should be followed carefully. However, because of extreme weather conditions and soil conditions, manner of use and other factors beyond AgrEvo USA Company's control, it is impossible for AgrEvo USA Company to eliminate all risks associated with the use of this product. As a result, crop injury or ineffectiveness is always possible. All such risks shall be assumed by the user or buyer.

**DISCLAIMER OF WARRANTIES:** THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, WHICH EXTEND BEYOND THE STATEMENTS MADE ON THIS LABEL. No agent of AgrEvo USA Company is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. AgrEvo USA Company disclaims any liability whatsoever for incidental or consequential damages, including, but not limited to, liability arising out of breach of contract, express or implied warranty (including warranties of merchantability and fitness for a particular purpose), tort, negligence, strict liability or otherwise.

**LIMITATIONS OF LIABILITY:** THE EXCLUSIVE REMEDY OF THE USER OR BUYER FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, SHALL NOT EXCEED THE PURCHASE PRICE PAID, OR AT AGREVO USA COMPANY'S ELECTION, THE REPLACEMENT OF PRODUCT

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Ally, Express, Harmony, and Benlate are registered trademarks of DuPont Company.

Banvel is a registered trademark of BASF Corporation.

Buctril, Bronate, and Sevin are registered trademarks of Rhône-Poulenc Ag Company.

Stinger, Curtail, Starane, and Tordon are registered trademarks of Dow AgroSciences L.L.C.

Furadan is a registered trademark of FMC Corporation.

Amber, Peak, and Tilt are registered trademarks of Novartis Crop Protection, Inc.

Topsin is a registered trademark of Elf Atochem North America, Inc.

Mertect is a registered trademark of Merck & Co., Inc.

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