



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

February 2, 2015

Danyel L. Ward
State Registration Manager
Bayer CropScience
P.O. Box 12014
2 T.W. Alexander Drive
Research Triangle Park, NC 27709

Subject: Label Amendment – Supplement Label to Add Grass Grown for Seed (Oregon, Washington and Utah Only) & Updated Master Label
Product Name: Puma® 1EC Herbicide
EPA Registration Number: 264-666
Application Date: December 10, 2014
Decision Number: 498382

Dear Ms. Ward:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, is acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration

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process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

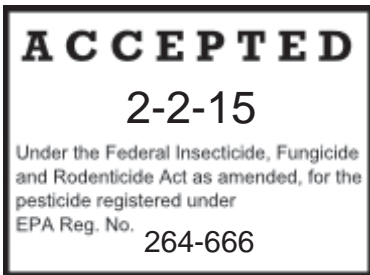
If you have any questions, please contact BeWanda Alexander by phone at (703)305-7460, or via email at alexander.bewanda@epa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Shaja Joyner".

Shaja Joyner, Product Manager 20
Fungicide and Herbicide Branch
Registration Division (7505P)
Office of Pesticide Programs

Enclosure



GROUP 1 HERBICIDE

PUMA® 1EC HERBICIDE

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

FOR SELECTIVE POSTEMERGENCE ANNUAL AND PERENNIAL GRASS CONTROL IN PERENNIAL RYEGRASS, TALL FESCUE AND CERTAIN CULTIVARS OF ANNUAL RYEGRASS GROWN FOR SEED in OREGON, WASHINGTON and UTAH.

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

OTHER INGREDIENTS:** **88.47%**

TOTAL: **100.00%**

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

**Contains petroleum distillates

EPA Reg No. 264-666

EPA Est. No.

KEEP OUT OF REACH OF CHILDREN WARNING - AVISO

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

For MEDICAL And TRANSPORTATION Emergencies ONLY Call 24 Hours A Day 1-800-334-7577

For PRODUCT USE Information Call 1-866-99BAYER (1-866-992-2937)

FIRST AID

IF SWALLOWED:	<ul style="list-style-type: none">• Immediately call a poison control center or doctor for treatment advice.• Do not induce vomiting unless told to do so by a poison control center or doctor.• Have person sip a glass of water if able to swallow.• Do not give anything by mouth to an unconscious person.
IF ON SKIN OR CLOTHING:	<ul style="list-style-type: none">• Take off contaminated clothing.• Rinse skin immediately with plenty of water for 15-20 minutes.• Call a poison control center or doctor for treatment advice.
IF IN EYES:	<ul style="list-style-type: none">• Hold eye open and rinse slowly and gently with water for 15-20 minutes.• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.• Call a poison control center or doctor for treatment advice.
For MEDICAL Emergencies Call 24 Hours A Day 1-800-334-7577. Have the product container or label with you when calling a poison control center or doctor or going for treatment.	

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

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.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

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.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

Applicators and other handlers must wear:

- Coveralls worn over short-sleeved shirt and short pants
- Socks, chemical resistant footwear
- Goggles or face shield
- Chemical resistant gloves (such as nitrile, butyl, neoprene and/or barrier laminate.)

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 170.240(d)(4-6), the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- 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.

PRODUCT 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 oat in wheat (including durum wheat) and barley. PUMA® 1EC is also used for postemergence control of annual and perennial grassy weeds in several established perennial grass crops in Oregon, Washington and Utah Only.

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

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. Ten (10) gallons of spray solution per acre is recommended. Under conditions where large grass weeds or dense weed populations are present or adverse environmental conditions exist, a greater spray volume of 15 – 20 gallons of spray solution per acre is required for best weed control. A minimum of 5 gallons of spray solution may only be used under conditions that are ideal for weed control. Herbicide applications can be negatively impacted by environmental conditions, weed populations and tank mix partners. Use a recommended spray pressure of 40 psi with flat-fan nozzle tips spaced 10 to 20 inches apart across the boom. Ground speed for application should not exceed 10 mph. To get uniform spray coverage, use nozzles to provide 200 to 350 micron size droplets. DO NOT apply with hollow cone type nozzles or other nozzles that produce a fine droplet spray.

Aerial Application: DO NOT make aerial applications in grass grown for seed. 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 a Bayer CropScience representative or your local or state extension service.

WEED RESISTANCE

Mode of Action

The active ingredient in this product, fenoxaprop-p-Ethyl is a Group 1 Herbicide based on the mode of action classification system of the Weed Science Society of America. Any weed population may contain plants naturally resistant to Group 1 herbicides. Weeds resistant to these herbicides may be effectively managed utilizing another herbicide from a different Group and/or by using cultural or mechanical practices. However, a herbicide mode of action classification by itself may not adequately address specific weeds that are resistant to specific herbicides. Consult your local company representative, state cooperative extension service, professional consultants or other qualified authorities to determine appropriate actions for treating specific resistant weeds.

Best Management Practices

Puma® Herbicide inhibits the ACC-ase enzyme system. Repeated use of herbicides with the same mode of action allows resistant weeds to spread. Proactively implementing diversified weed management programs may delay the development of resistant weeds. Diversified programs include the use of multiple herbicides with different modes of action with overlapping weed spectrums as well as the utilization of cultural weed control practices, such as tillage.

- Use labeled rates of herbicides and carefully follow the directions for use
- Scout fields after a herbicide application to facilitate early detection of weed shifts and/or weed resistance
- Implement measures to avoid allowing weeds to reproduce by seed or proliferate vegetatively
- Clean equipment between sites and avoid movement of plant material between sites to retard the spread of potentially resistant weed seed.

TIMING OF APPLICATION

Grass Grown for Seed (Oregon, Washington and Utah Only)

Apply PUMA® 1EC Herbicide to all cultivars of the listed cool and warm season grass species grown for seed that have been established for at least one month. The list of cool season grass species includes perennial rye grass (*Lolium perenne*) and tall fescue (*Festuca arundinacea*). The cultivars of annual ryegrass (*Lolium multiflorum*) are gulf, promenade, common (Marshall) and barpectra.

PUMA® 1EC Herbicide will control the following grassy weeds:

Common Name	Scientific Name
Smooth crabgrass	<i>Digitaria ischaemum</i>
Hairy crabgrass	<i>Digitaria sanguinalis</i>
Barnyardgrass	<i>Echinochloa crus-gali</i>
Foxtail species.....	<i>Setaria</i> spp.
Panicum species	<i>Panicum</i> spp.
Wild oat	<i>Avena fatua</i>
Tame oat	<i>Avena sativa</i>
Roughstalk bluegrass	<i>Poa trivialis</i>
Blackgrass.....	<i>Alopecurus myosuroides</i>
Field sandbur.....	<i>Cenchrus incertus</i>
Windgrass	<i>Apera interrupta</i>

Wheat

Apply PUMA® 1EC Herbicide to the crop from emergence up to 60 days prior to 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 other states.

Barley

Apply PUMA® 1EC Herbicide to the crop from emergence up to the 5-leaf stage. Do not spray barley after jointing begins. DO NOT apply PUMA® 1EC Herbicide within 57 days of harvesting barley. Under cool, wet conditions, tank mixing MCP Ester or MCP Ester + Harmony GT (at listed rates) with PUMA® 1EC Herbicide will further improve crop safety in barley.

PUMA® 1EC Herbicide will control susceptible grass weeds in the 1-leaf (fully expanded) to 2-tiller stage of growth. Blackgrass can be controlled over a wide range of growth stages, from the 1-leaf (fully expanded) 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.

PUMA® 1EC Herbicide has no effect via the soil and will only control emerged grass weeds. PUMA® 1EC Herbicide, when applied as directed, controls the annual grass weeds listed in Table 1 and Table 2 below at rates indicated.

Table 1
RATE DIRECTIONS AND TIMING CHART
for Weed Control in Grass Grown for Seed

Grass Weed Species, Common Name	Stage of Growth of Grassy Weed	Rate, Pints per Acre (Fluid Ounces/Acre)	Comments
Windgrass, Blackgrass, Smooth crabgrass, Hairy crabgrass, Barnyardgrass, Panicum species	2-leaf to 2-tiller	0.66 (10.5)	In annual ryegrass, the maximum labeled rate of PUMA 1EC is 0.4 pts/A for tolerance. Overall grass control may be reduced as a result.
Foxtail species	2-leaf to 2-tiller	0.4 (6.4)	Lower rate for Foxtail (Setaria) species only.
Roughstalk bluegrass	2 to 7 inches	0.66 (10.5)	SUPPRESSION ONLY: In perennial ryegrass, apply after grasses break winter dormancy and ryegrass is 3" – 6" tall. Control is dependent upon environmental conditions and size, density, and maturity of weeds. Best control is achieved when applications are made between February 20 and April 1.
Wild oat/Tame oat	2-leaf to 2-tiller	0.4 (6.4)	SUPPRESSION ONLY: Maximum rate for wild and tame oat control in seedling annual ryegrass. Only for Gulf, Common, Barspectra, and Promenade cultivars of annual ryegrass.
Wild oat/Tame oat	2-leaf to 2-tiller	0.66 (10.5)	Rate for wild and tame oat control in perennial ryegrass and tall fescue

Table 2
RATE DIRECTIONS CHART
for Grass Weed Control in Wheat and Barley

Grass Weed Species, Common Name	Grass Weed Species, Scientific Name	Rate, Pints per Acre (Fluid Ounces/Acre)	Tankmix Table
Green foxtail	<i>Setaria viridis</i>	0.33 (5.3)	See Table 2
Foxtail millets (volunteer), common, Siberian, Hungarian, German millet	<i>Setaria italica</i>		
Volunteer corn	<i>Zea mays</i>		
Yellow foxtail	<i>Setaria lutescens</i>	0.40 (6.4)	See Table 3
Proso millet (volunteer, wild)	<i>Panicum iliaceum</i>		
Barnyardgrass	<i>Echinochloa crus-galli</i>	0.66 (10.6)	See Table 4
Blackgrass	<i>Alopecurus myosuroides</i>		
Hood canarygrass	<i>Phalaris paradoxa</i>		
Littleseed canarygrass	<i>Phalaris minor</i>		
Windgrass	<i>Apera interrupta</i>		
Wild oat	<i>Avena fatua</i>		
Field sandbur	<i>Cenchrus incertus</i>		
Woolly cupgrass	<i>Erichloa villosa</i>		

MOISTURE EFFECTS ON ANNUAL GRASS 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 prior, during or following application may reduce wild oat and foxtail control provided by PUMA® 1EC Herbicide.

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 label limitations and precautions. Tank mix partners not recommended on this label may cause reduced annual grass control (antagonism) or crop injury. PUMA® 1 EC Herbicide contains 0.294 lbs. of mefenpyr-diethyl per gallon of product. Applying the maximum labeled rate of PUMA® 1EC Herbicide delivers 0.023 lbs of mefenpyr-diethyl per acre. Do not apply more than 0.053 pounds of mefenpyr-diethyl per acre per year. Do not apply any pesticide, not listed on this label, 5 days before or after an application of PUMA® 1EC Herbicide. Do not tank mix PUMA® 1EC Herbicide with liquid fertilizers unless specifically listed on this label.

Compatibility Testing with Tank Mix Partners

If PUMA® 1EC Herbicide is to be tank mixed with other pesticides, compatibility should be tested prior to mixing. To test for compatibility, use a small container and mix a small amount (0.5 to 1 qt) of spray, combining all ingredients in the same ratio as the anticipated use. If any indications of physical incompatibility develop, do not use this mixture for spraying. Indications of incompatibility usually will appear within 5-15 minutes after mixing. Read and follow the label of each tank-mix product used for precautionary statements, directions for use, geographic and other restrictions.

Insecticides

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

Fungicides

Fungicides such as mancozeb (Dithane F-45®; Manzate® 75DF; Penncozeb® 75DF), Tilt® and Stratego® without additional adjuvant, or Topsin® M can be tank mixed with PUMA® 1EC Herbicide when timing for application of each tank mix partner is the same for the use site.

Broadleaf Herbicides in Grass Grown For Seed (Oregon, Washington and Utah Only)

PUMA® 1EC Herbicide may be tank mixed with liquid nitrogen or the following broadleaf herbicides on tall fescue and perennial ryegrass established for at least 6 months. DO NOT tank mix PUMA® 1EC Herbicide with any broadleaf herbicide not listed on this label. DO NOT tank mix with more than one of these materials as crop injury will occur. When tank mixing, apply PUMA® 1EC Herbicide at 0.66 pts./A. Follow the label restrictions for each product before considering these tank mixes. DO NOT tank mix PUMA® 1EC Herbicide with these or other materials on seedling grasses.

Product	Rate
Curtail M®	1.75 pts/A
Bronate Advanced™	0.80 pts/A
Buctril®	1.00 pt/A
Stinger®	0.25 to 0.33 pts/A

Broadleaf Herbicides in Wheat and Barley

Broadleaf weed control options are listed in Tables 3, 4, or 5, when timing of application for each tank mix partner is the same for the use site. Always check the tank mix partner label to determine if the addition of a surfactant is required.

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

The tank mix partners listed in Table 3 may be used for the control of green foxtail, foxtail millets, and volunteer corn with 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 3
Green Foxtail, Foxtail Millets, Volunteer Corn

Herbicides for Broadleaf Weed Control	Rate	Range of Dosages: *** 0.50 - 0.75 pt/A of MCP Ester (4 lb/gal – formulation) may be added as an option
Ally® 60DF	0.10 oz/A	Yes
Amber® 75DF	0.28 oz/A	Yes
Banvel® (for use on wheat only) (4 lb/gal)	2.00 fl oz/A	Yes
Banvel® SGF (for use on wheat only) (2 lb/gal)	4.00 fl oz/A	Yes
Bronate Advanced™ Herbicide */**	0.80 pt/A	No
Bronate Advanced™ + Starane™	0.60 – 0.80 pt/A + 0.25 – 0.33 pt/A	No
Buctril® Herbicide */**	1.00 pt/A	Yes
Clarity® (for use on wheat only)	2.00 fl oz/A	Yes
Curtail™ M	1.75 pt/A	No
Curtail™ M + Clarity® (for use on wheat only)	1.75 pt/A + 2.00 oz/A	No
Curtail™ M + Starane™	1.75 pt/A + up to 0.66 pt/A	No
Express® 75DF	1/6 oz/A	Yes
Finesse	0.28 oz/A	Yes
Harmony® Extra 75DF	0.30 – 0.40 oz/A	Yes
Harmony® Extra + Starane™	0.30 oz/A + up to 0.66 pt/A	No
Harmony® GT	0.30 – 0.50 oz/A	Yes
Harmony® GT + Starane™	0.30 oz/A + up to 0.66 pt/A	No
MCP Ester (4 lb/gal) ***	0.75 pt/A	No
Peak®	0.50 oz/A	Yes
Rave®	4.00 oz/A	No
Starane™	Up to 0.66 pt/A	Yes
Stinger™	0.25 – 0.33 pt/A	Yes

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

** Do not tankmix PUMA® 1EC with either Buctril® Herbicide or Bronate Advanced™ Herbicide on two row malting barley.

*** 4 lb/gal formulation of MCP Ester. Other formulations of MCP Ester may be used providing 0.25 - .375 lb ai/ A of MCP Ester is used.

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

The tank mix partners listed in Table 4 below are approved for the control of yellow and green 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 4
Yellow and Green Foxtail, Wild & Volunteer Proso Millets

Herbicides for Broadleaf Weed Control	Rate	<u>Range of Dosages:</u> *** 0.50 - 0.75 pt/A of MCP Ester (4 lb/gal – formulation) may be added as an option
Banvel® (for use on wheat only) (4 lb/gal)	2.00 fl oz/A	Yes
Banvel® SGF (for use on wheat only) (2 lb/gal)	4.00 fl oz/A	Yes
Clarity® (for use on wheat only)	2.00 fl oz/A	Yes
Curtail™ M	1.75 pt/A	No
Curtail™ M + Clarity® (for use on wheat only)	1.75 pt/A + 2.00 oz/A	No
Curtail™ M + Starane™	1.75 pt/A + up to 0.66 pt/A	No
MCP Ester (4 lb/gal)	0.75 pt/A	No
Peak®	0.50 oz/A	Yes
Starane™	Up to 0.66 pt/A	Yes
Stinger™	0.25 – 0.33 pt/A	Yes

*** 4 lb/gal formulation of MCP Ester. Other formulations of MCP Ester may be used providing 0.25 – 0.375 lb a.i./ A of MCP Ester is used.

Tank Mixes for Wild Oat, Green and Yellow Foxtail, Blackgrass and Barnyardgrass Control

The tank mix partners listed in Table 5, below are approved for the control of wild oat, green and yellow foxtail, blackgrass, and barnyardgrass using PUMA® 1 EC at a rate of 0.66 pt/A.

Table 5
Wild Oat, Green and Yellow Foxtail, Blackgrass and Barnyardgrass

Herbicides for Broadleaf Weed Control	Rate	<u>Range of Dosages:</u> *** 0.50 - 0.75 pt/A of MCP Ester (4 lb/gal – formulation) may be added as an option
Bronate Advanced™ Herbicide */**	0.80 pt/A	No
Bronate Advanced™ + Harmony GT	0.60 – 0.80 pt/A + 0.10 oz/A	No
Bronate Advanced™ + Starane™	0.60 – 0.80 pt/A + 0.25 – 0.33 pt/A	No
Buctril® Herbicide */**	1.00 pt/A	Yes
Buctril® Herbicide + Starane™	1.00 pt/A + 0.25 - 0.33 pt/A	No
Curtail™ M	1.75 pt/A	No
Curtail™ M + Starane™	1.75 pt/A + up to 0.66 pt/A	No
Harmony® Extra 75DF	0.30 – 0.40 oz/A	No
Harmony® Extra 75DF + Starane™	0.30 oz/A + up to 0.66 pt/A	No
Harmony® GT	0.30 – 0.50 oz/A	Yes
Harmony® GT + Starane™	0.30 oz/A + up to 0.66 pt/A	No
MCP Ester (4 lb/gal) ***	0.75 pt/A	No
Peak®	0.50 oz/A	Yes
Peak® + Starane™	0.50 oz/A + up to 0.66 pt/A	No
Starane™	Up to 0.66 pt/A	Yes
Stinger™	0.25 – 0.33 pt/A	Yes

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

** Do not tank mix PUMA® 1EC with either Buctril® Herbicide or Bronate Advanced™ Herbicide on two row malting barley.

*** 4 lb/gal formulation of MCP Ester. Other formulations of MCP Ester may be used providing 0.25 – 0.375 lb a.i./ A of MCP Ester is used.

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 may occur.

For the Control of Wild Oat and Blackgrass in Winter Wheat in the States of Washington, Oregon and Northern Idaho

In winter wheat only, liquid nitrogen fertilizer may be tank mixed with PUMA® 1EC alone or with PUMA® 1EC and recommended broadleaf tank mixes. Only 28 – 32% liquid nitrogen fertilizer may be added. Do not exceed 5 gallons/acre of liquid nitrogen for ground applications or 50% of the total spray volume by air.

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 oat and/or blackgrass.

Table 6
Wild Oat and Blackgrass in Winter Wheat in the states of Montana, Oregon, Northern Idaho and Washington

Herbicides for Broadleaf Weed Control	Rate
Ally®	up to 0.10 oz /A
Bronate Advanced™ *	up to 1.20 pt/A
Bronate Advanced™ + Harmony® Extra 75 DF *	up to 0.80 pt/A + up to 0.33 oz/A
Bronate Advanced™ + Harmony® GT *	up to 0.80 pt/A + up to 0.50 oz/A
Bronate Advanced™ + Peak® *	up to 0.80 pt/A + up to 0.50 oz/A
Bronate Advanced™ + Starane™ *	up to 0.80 pt/A + up to 0.50 pt/A
Buctril® Herbicide *	up to 1.50 pt/A
Buctril® Herbicide + Ally® *	up to 1.00 pt/A + up to 0.10 oz/A
Buctril® Herbicide + Ally Extra®*	up to 1.00 pt/A + up to 0.20 oz/A
Buctril® Herbicide + Express® *	up to 1.00 pt/A + up to 1/6 oz/A
Buctril® Herbicide + Harmony® Extra 75 DF *	up to 1.00 pt/A + up to 0.40 oz/A
Buctril® Herbicide + Harmony® GT *	up to 1.00 pt/A + up to 0.50 oz/A
Buctril® Herbicide + Peak® *	up to 1.00 pt/A + up to 0.50 oz/A
Buctril® Herbicide + Starane™ *	up to 1.00 pt/A + up to 0.50 pt/A
Curtail™ M + Harmony® GT	up to 1.75 pt/A + up to 0.50 oz/A
Express® 75DF	up to 1/6 oz/A
Harmony® Extra + Starane™	up to 0.40 oz/A + up to 0.66 pt/A
Harmony® GT + Starane™	up to 0.50 oz/A + up to 0.66 pt/A
MCP Ester + Ally® **	up to 0.75 pt/A + up to 0.10 oz/A
MCP Ester + Ally Extra® **	up to 0.75 pt/A + up to 0.20 oz/A
MCP Ester + Express® **	up to 0.75 pt/A + up to 1/6 oz/A
MCP Ester + Harmony® Extra 75 DF **	up to 0.75 pt/A + up to 0.40 oz/A
MCP Ester + Harmony® GT **	up to 0.75 pt/A + up to 0.50 oz/A
MCP Ester + Harmony® GT + Starane™ **	up to 0.75 pt/A + up to 0.50 oz/A + up to 0.50 pt/A
MCP Ester + Peak® **	up to 0.75 pt/A + up to 0.50 oz/A
MCP Ester + Peak® + Starane™ **	up to 0.75 pt/A + up to 0.50 oz/A + up to 0.50 pt/A

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

** 4 lb/gal formulation of MCP Ester. Other formulations of MCP Ester may be used providing up to 0.375 lb ai/ A of MCP Ester is used.

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 may occur.

Directions for the Control of Wild Oat, Littleseed Canarygrass, and Hood Canarygrass in Wheat and Barley in California Only

PUMA® 1EC Herbicide Application Rates

Grasses (2-leaf to 2-tiller stage)	Broadcast Rate in Pints/Acre (Fluid Ounces/Acre)
Wild oat	0.66
Hood canarygrass	(10.6)
Littleseed canarygrass	

Notes: In California, PUMA® 1EC Herbicide may be tank mixed with Buctril® Herbicide. Follow the label directions, use restrictions and precautions for use of Buctril® Herbicide, when tank mixing it with PUMA® 1EC Herbicide.

Directions for the Control of Wild Oat in Winter Wheat in Texas and Oklahoma Only

PUMA® 1EC Herbicide Application Rates

Grasses (2-leaf to 2-tiller stage)	Broadcast Rate in Pints/Acre (Fluid Ounces/Acre)
Wild oat	0.66 (10.6)

Note: In Texas and Oklahoma, PUMA® 1EC Herbicide may be tank mixed with Ally®, Harmony® Extra, MCP Ester and Peak®. Follow label directions, use restrictions and precautions for use of these tank mix partners when tank mixing with PUMA® 1EC Herbicide.

USE RESTRICTIONS

1. Rainfall within 1 hour of an application may cause a reduction in weed control.
2. DO NOT harvest winter wheat until 70 days after application.
3. DO NOT make more than 1 application in a growing season; DO NOT apply more than 0.66 pints per acre per growing season.
4. DO NOT apply this product through any irrigation system.
5. Tank mix partners not recommended on this label may cause reduced annual grass control or crop injury. Do not apply any pesticide, not listed on this label, 5 days before or after an application of PUMA® 1EC Herbicide.
6. Due to reduced weed control, do not tank mix with other herbicides or liquid fertilizers unless specifically listed on this label.
7. DO NOT use when there is hazard from drifting mists. Coarse sprays are less likely to drift.
8. DO NOT apply to grass grown for seed for at least 60 days prior to harvest
9. DO NOT graze treated grass for at least 60 days following application. Feeding of grass straw and seed screenings is allowed only if applications are completed at least 60 days prior to harvest.
10. DO NOT apply to Kentucky bluegrass seed production fields.
11. DO NOT apply to grass grown for seed within two weeks following a fertilizer application.
12. DO NOT apply to grass grown for seed using aerial applications.
13. Avoid application of PUMA® 1EC Herbicide to grass grown for seed under drought stress conditions. Irrigation 2 days prior to application may be helpful under these conditions

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 HANDLING

Rigid, Non-refillable containers small enough to shake (i.e., with capacities equal to or less than 5 gallons)

Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Once container is rinsed, offer for recycling if available or puncture and dispose of in a sanitary landfill or if allowed by State and local authorities by burning. If burned stay out of smoke.

Rigid Non-refillable containers that are too large to shake (i.e., with capacities greater than 5 gallons or 50 lbs)

Non-refillable Containers

Non-refillable containers - Do not reuse or refill this container. Refer to Bottom Discharge IBC or Top Discharge IBC, Drums, Kegs information as follows.

Bottom Discharge IBC (e.g. – Schuetz Caged IBC or Snyder Square Stackable)

Pressure rinsing the container before final disposal is the responsibility of the person disposing of the container. To pressure rinse the container before final disposal, empty the remaining contents from the IBC into application equipment or mix tank. Raise the bottom of the IBC by 1.5 inches on the side which is opposite of the bottom discharge valve to promote more complete product removal. Completely remove the top lid of the IBC. Use water pressurized to at least 40 PSI to rinse all interior portions. Continuously pump or drain rinsate into application equipment or rinsate collection system while pressure rinsing. Continue pressure rinsing for 2 minutes or until rinsate becomes clear. Replace the lid and close bottom valve.

Top Discharge IBC, Drums, Kegs (e.g.– Snyder 120 Next Gen, Bonar B120, Drums, Kegs).

Triple rinsing the container before final disposal is the responsibility of the person disposing of the container. To triple rinse the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container at least 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Rinse all interior surfaces. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this procedure two more times.

Once container is rinsed, offer for recycling if available or puncture and dispose of in a sanitary landfill.

Refillable Containers

Refillable container – Refer to Bottom Discharge IBC or Top Discharge IBC, Drums, Kegs information as follows. Refill this container with pesticide only. Do not reuse this container for any other purpose. Contact your Ag retailer or Bayer CropScience for container return, disposal and recycling information.

Bottom Discharge IBC (e.g. – Schuetz Caged IBC or Snyder Square Stackable)

Pressure rinsing the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To pressure rinse the container before final disposal, empty the remaining contents from the IBC into application equipment or mix tank. Raise the bottom of the IBC by 1.5 inches on the side which is opposite of the bottom discharge valve to promote more complete product removal. Completely remove the top lid of the IBC. Use water pressurized to at least 40 PSI to rinse all interior portions. Continuously pump or drain rinsate into application equipment or rinsate collection system while pressure rinsing. Continue pressure rinsing for 2 minutes or until rinsate becomes clear. Replace the lid and close bottom valve.

Top Discharge IBC, Drums, Kegs (e.g.– Snyder 120 Next Gen, Bonar B120, Drums, Kegs).

Triple rinsing the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To triple rinse the containers before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container at least 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Rinse all interior surfaces. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this procedure two more times.

Once container is rinsed, offer for recycling if available or puncture and dispose of in a sanitary landfill.

Refillable Containers

End users are authorized to remove tamper evident cables as required to remove the product from the container unless the container is equipped with one way valves and refilling or returning is planned. If this is the case, end users are not authorized to remove tamper evident cables, one way valves or clean container. See Container Handling instructions under Storage and Disposal.

IMPORTANT: READ BEFORE USE

Read the entire Directions for Use, Conditions, Disclaimer of Warranties and Limitations of Liability before using this product. If terms are not acceptable, return the unopened product container at once.

By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties and Limitations of Liability.

CONDITIONS: The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Bayer CropScience. All such risks shall be assumed by the user or buyer.

DISCLAIMER OF WARRANTIES: TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BAYER CROPSCIENCE LP MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, THAT EXTEND BEYOND THE STATEMENTS MADE ON THIS LABEL. No agent of Bayer CropScience LP is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BAYER CROPSCIENCE LP DISCLAIMS ANY LIABILITY WHATSOEVER FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

LIMITATIONS OF LIABILITY: TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, 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 BAYER CROPSCIENCE LP'S ELECTION, THE REPLACEMENT OF PRODUCT.

Net Contents: 2.5 gallons, 5 gallons, 15 gallons, 60 gallons, 120 gallons and returnable and refillable containers 15 and 30 gallons, and bulk

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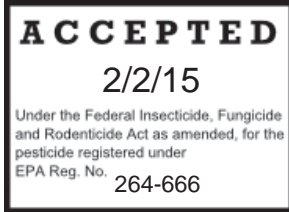
Bayer CropScience LP
P.O. Box 12014, 2 T.W. Alexander Drive
Research Triangle Park, North Carolina 27709
1-866-99BAYER (1-866-992-2937)

PUMA 1EC Herbicide (PENDING) 01/30/2015



Bayer CropScience

Bayer CropScience LP
P.O. Box 12014
2 T.W. Alexander Drive
Research Triangle Park, North Carolina 27709
1-866-99BAYER (1-866-992-2937)



PUMA® 1EC HERBICIDE

EPA Reg. No. 264-666

For Use On: Selective postemergence annual and perennial grass control in perennial ryegrass, tall fescue and certain cultivars of annual ryegrass grown for seed in oregon, washington and utah.

This supplemental label expires on 11/20/2017 and must not be used or distributed after this date.

Supplemental Label

**KEEP OUT OF REACH OF CHILDREN
 WARNING**

**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.)**

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read this Supplemental Label and the PUMA® 1EC HERBICIDE product container label before using this product. This Supplemental Label must be in the possession of the user at the time of pesticide application. Follow all applicable directions, restrictions, Worker Protection Standard requirements, and precautionary statements on the PUMA 1EC HERBICIDE product label attached to the container and this label. For a list of weeds controlled, refer to the WEED LIST on the product container label. USE DIRECTIONS FOR SPECIFIC CROPS.

DO NOT make aerial applications in grass grown for seed.

TIMING OF APPLICATION

Grass Grown for Seed (Oregon, Washington and Utah Only)

Apply PUMA 1EC Herbicide to all cultivars of the listed cool and warm season grass species grown for seed that have been established for at least one month. The list of cool season grass species includes perennial rye grass (*Lolium perenne*) and tall fescue (*Festuca arundinacea*). The cultivars of annual ryegrass (*Lolium multiflorum*) are gulf, promenade, common (Marshall) and barpectra.

PUMA 1EC Herbicide will control the following grassy weeds

Common Name	Scientific Name	Common Name	Scientific Name
Smooth crabgrass	<i>Digitaria ischaemum</i>	Tame oat	<i>Avena sativa</i>
Hairy crabgrass	<i>Digitaria sanguinalis</i>	Roughstalk bluegrass	<i>Poa trivalis</i>
Barnyardgrass	<i>Echinochloa crus-gali</i>	Blackgrass	<i>Alopecurus myosuroides</i>
Foxtail species	<i>Setaria spp.</i>	Field sandbur	<i>Cenchrus incertus</i>
Panicum species	<i>Panicum spp.</i>	Windgrass	<i>Apera interrupta</i>
Wild oat	<i>Avena fatua</i>		

Puma is a Registered trademark of Bayer.

Created on 11/20/2014

RATE DIRECTIONS AND TIMING CHART
for Weed Control in Grass Grown for Seed

Grass Weed Species, Common Name	Stage of Growth of Grassy Weed	Rate, Pints per Acre (Fluid Ounces/Acre)	Comments
Windgrass, Blackgrass, Smooth crabgrass, Hairy crabgrass, Barnyardgrass, Panicum species	2-leaf to 2-tiller	0.66 (10.5)	In annual ryegrass, the maximum recommended rate of PUMA 1EC is 0.4 pts/A for tolerance. Overall grass control may be reduced as a result.
Foxtail species	2-leaf to 2-tiller	0.4 (6.4)	Lower rate for Foxtail (<i>Setaria</i>) species only.
Roughstalk bluegrass	2 to 7 inches	0.66 (10.5)	SUPPRESSION ONLY: In perennial ryegrass, apply after grasses break winter dormancy and ryegrass is 3" – 6" tall. Control is dependent upon environmental conditions and size, density, and maturity of weeds. Best control is achieved when applications are made between February 20 and April 1.
Wild oat/Tame oat	2-leaf to 2-tiller	0.4 (6.4)	SUPPRESSION ONLY: Maximum rate for wild and tame oat control in seedling annual ryegrass. Only for Gulf, Common, Barspectra, and Promenade cultivars of annual ryegrass.
Wild oat/Tame oat	2-leaf to 2-tiller	0.66 (10.5)	Rate for wild and tame oat control in perennial ryegrass and tall fescue

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 label limitations and precautions. Tank mix partners not recommended on this label may cause reduced annual grass control (antagonism) or crop injury. PUMA 1 EC Herbicide contains 0.294 lbs. of mefenpyr-diethyl per gallon of product. Applying the maximum labeled rate of PUMA 1EC Herbicide delivers 0.023 lbs of mefenpyr-diethyl per acre. Do not apply more than 0.053 pounds of mefenpyr-diethyl per acre per year. Do not apply any pesticide, not listed on this label, 5 days before or after an application of PUMA 1EC Herbicide. Do not tank mix PUMA 1EC Herbicide with liquid fertilizers unless specifically listed on this label.

Compatibility Testing with Tank Mix Partners

If PUMA 1EC Herbicide is to be tank mixed with other pesticides, compatibility should be tested prior to mixing. To test for compatibility, use a small container and mix a small amount (0.5 to 1 qt) of spray, combining all ingredients in the same ratio as the anticipated use. If any indications of physical incompatibility develop, do not use this mixture for spraying. Indications of incompatibility usually will appear within 5-15 minutes after mixing. Read and follow the label of each tank-mix product used for precautionary statements, directions for use, geographic and other restrictions.

Broadleaf Herbicides in Grass Grown For Seed (Oregon, Washington and Utah Only)

PUMA 1EC Herbicide may be tank mixed with liquid nitrogen or the following broadleaf herbicides on tall fescue and perennial ryegrass established for at least 6 months. DO NOT tank mix PUMA 1EC Herbicide with any broadleaf herbicide not listed on this label. DO NOT tank mix with more than one of these materials as crop injury will occur. When tank mixing, apply PUMA 1EC Herbicide at 0.66 pts./A. Follow the label restrictions for each product before considering these tank mixes. DO NOT tank mix PUMA 1EC Herbicide with these or other materials on seedling grasses.

Product	Rate
Curtail M®	1.75 pts/A
Bronate Advanced™	0.80 pts/A
Buctril®	1.00 pt/A
Stinger®	0.25 to 0.33 pts/A

**For MEDICAL And TRANSPORTATION Emergencies ONLY Call 24 Hours A Day 1-800-334-7577
For PRODUCT USE Information Call 1-866-99BAYER (1-866-992-2937)**

*As with any crop-protection product, always read and follow label directions.
For additional information call toll-free 1-866-99BAYER (1-866-992-2937).*