



Bayer CropScience LP  
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**PUMA® 1EC Herbicide**

For Selective Postemergence Annual and Perennial Grass Control in Perennial Ryegrass, Tall Fescue and certain Cultivars of Annual Ryegrass Grown for Seed.

SECTION 18 EMERGENCY EXEMPTION  
 Oregon Product ID No. 2009OR002

**FOR DISTRIBUTION AND USE ONLY IN THE STATE OF OREGON  
 UNDER SECTION 18 EMERGENCY EXEMPTION**

These use directions must be in possession of the user at the time of pesticide application. It is a violation of Federal law to use this product in a manner inconsistent with the use directions. Read entire Directions for Use and Disclaimer of Warranties before using this product. Follow all applicable directions, restrictions, Worker Protection Standard requirements, and precautions on the registered product label for PUMA® 1EC Herbicide (EPA Registration Number 264-666).

Any adverse effects resulting from the use of PUMA® 1EC Herbicide under this emergency exemption must be immediately reported to the Oregon Department of Agriculture.

**EFFECTIVE PERIOD:**

This labeling becomes effective 01/23/09 and expires on 09/15/09.

**DIRECTIONS FOR USE**

**General Information**

PUMA® 1EC Herbicide is an emulsifiable concentrate (EC) formulation containing 1 pound of active ingredient per gallon. PUMA® 1EC is used for postemergence control of annual and perennial grassy weeds in several established perennial grass crops. PUMA® 1EC does not control broadleaf weeds or sedges.

Since PUMA® 1EC Herbicide is absorbed primarily through the foliage, thorough coverage is necessary. Visual injury of the grassy weed is evident approximately 4–10 days after application (dependent upon environmental conditions), but control of the grassy weeds will take 12–21 days. Visible effects begin as a general chlorosis (yellowing) and reddening of the leaf surface followed by death of the weed.

PUMA® 1EC Herbicide can be applied to all cultivars of the following cool season grass species grown for seed that have been established for at least one month:

Common Name	Scientific Name
perennial ryegrass .....	<i>Lolium perenne</i>
tall fescue .....	<i>Festuca arundinacea</i>

PUMA® 1EC Herbicide can be applied to the following cultivars of annual ryegrass (*Lolium multiflorum*) grown for seed that have been established for at least one month:

- Gulf
- Promenade
- Common (Marshall)
- Barspectra

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>

### APPLICATION INFORMATION

PUMA® 1EC Herbicide controls only grasses which are emerged at the time of spraying. Young actively growing grassy weeds are more easily controlled than larger grassy weeds. Refer to the “PUMA® 1EC Herbicide Application Rate and Timing Recommendation Chart” for application rates and timing of application. Avoid applications to these grass crops under drought stress. Growth stages of grass crops should be a minimum of 4–5 leaves and a maximum of 1 node (jointing) for PUMA® 1EC applications.

Optimum results occur when spray pressure is sufficient to provide retention of spray deposit on target weed.

#### Ground Application

PUMA® 1EC Herbicide should be applied in a minimum of 10 gallons of water per broadcast acre. Flat-fan or hollow-cone nozzles are recommended. Use a minimum pressure of 40 psi. Under dense weed canopies, high spray pressure is very important for obtaining thorough coverage; therefore, use higher spray pressure under these conditions.

#### Tank Mixes

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 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, PUMA® 1EC should be applied at 0.66 pts./A. Follow the label restrictions for each product before considering these tank mixes. DO NOT tank mix PUMA® 1EC with these or other materials on seedling grasses.

PRODUCT	RATE
liquid nitrogen (28% – 32%)*	up to 50% of the spray solution**
MCPA ester 4EC	0.75 pts/A
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

\*Do not apply a sequential fertilizer application within two weeks prior to an application of PUMA® 1EC Herbicide or crop injury may occur due to lush growth. However, a tank mix of PUMA® 1EC and liquid fertilizer is allowed.

\*\* Not more than 5 gallons/acre of liquid nitrogen fertilizer for ground applications.

PUMA® 1EC HERBICIDE APPLICATION RATE AND TIMING RECOMMENDATION CHART

Weed Species	Stage of growth of grassy Weed	fl oz/A	pts/a	Comments
Windgrass Blackgrass Smooth crabgrass Hairy crabgrass Barnyardgrass Panicum species	2-leaf to 2-tiller	10.5	0.66	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	6.4	0.4	Lower rate for Foxtail (Setaria) species only.
Roughstalk bluegrass	2 to 7 inches	10.5	0.66	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	6.4	0.40	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	10.5	0.66	Rate for wild and tame oat control in perennial ryegrass and tall fescue

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.

In order to protect the habitat of threatened and endangered species potentially found in native prairie remnants, Puma 1EC Herbicide should not be applied directly to native prairie habitats. Apply only where there is sustained wind away from wetland/transitional zone native plant communities; or leave a 25-foot untreated buffer treatment area and wetland/transitional zone native plant communities.

NOTES

1. Applications must be made at least 60 days prior to harvest.
2. Feeding of grass straw and seed screenings is allowed only if applications are completed at least 60 days prior to harvest. Grazing may not occur for at least 60 days following application.
3. DO NOT apply PUMA® 1EC Herbicide to Kentucky bluegrass seed production fields.
4. Avoid application of PUMA® 1EC Herbicide under **drought stress** conditions. Irrigation 2 days prior to application may be helpful under these conditions.
5. Rainfall or irrigation within 1 hour of application may cause a reduction in grass control. Allow spray deposit to dry before irrigation.
6. Broadleaf herbicides such as dicamba and 2,4-D reduce the effectiveness of PUMA® 1EC Herbicide. Broadleaf herbicides may be applied 5 days before or after a PUMA® 1EC Herbicide application.
7. PUMA® 1EC Herbicide is a selective grassy weed herbicide and has little or no activity on broadleaf plants or sedges.

8. Because PUMA® 1EC Herbicide controls only a limited number of the weedy grasses that are commonly found in turfgrass grown for seed in Oregon, it is important that the user apply other registered, broad spectrum herbicides for the control of seedling grasses during the fall. Species not controlled by PUMA® 1EC Herbicide include:

Common Name	Scientific Name
Annual bluegrass.....	<i>Poa annua</i>
Rattail fescue.....	<i>Vulpia myuros</i>
California brome .....	<i>Bromus carinatus</i>

9. DO NOT apply this product by air or through any type of irrigation system.

10. DO NOT apply PUMA® 1EC Herbicide within two weeks following a fertilizer application.

11. Under cool and wet conditions, wheel tracking may be observed following PUMA® 1EC Herbicide application.

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)

or

Visit our worldwide web site at [www.bayercropscienceus.com](http://www.bayercropscienceus.com)

*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)).*