

PUMA[®] ADVANCE HERBICIDE



Emulsifiable Concentrate

GROUP	1	HERBICIDE
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**FOR SALE FOR USE IN SPRING WHEAT, DURUM WHEAT, AND SPRING BARLEY
AND CERTAIN MINOR USE CROPS IN THE PRAIRIE PROVINCES
AND PEACE RIVER REGION OF BRITISH COLUMBIA ONLY
AND IN SPRING WHEAT AND SPRING BARLEY IN EASTERN CANADA**

COMMERCIAL



**DANGER: EYE AND SKIN IRRITANT
EQUIPMENT MAY BE REQUIRED**

REGISTRATION NUMBER 29615 PEST CONTROL PRODUCTS ACT

GUARANTEE: fenoxaprop-p-ethyl 90 g/L

Warning, contains the allergen soy

KEEP OUT OF REACH OF CHILDREN

READ THE LABEL AND BOOKLET BEFORE USING

Product Information: 1-888-283-6847
www.bayercropscience.ca

Bayer CropScience
Suite 200, 160 Quarry Park Blvd. SE,
Calgary, AB T2C 3G3

NET CONTENTS:
[1 L to Bulk]

PUMA ADVANCE Herbicide

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For More Information, Contact:

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GENERAL INFORMATION

Section 1: The Product

FOR SALE FOR USE IN EASTRN CANADA AND IN THE PRAIRIE PROVINCES AND PEACE RIVER REGION OF BRITISH COLUMBIA ONLY.

- PUMA ADVANCE Herbicide is a post-emergent herbicide that provides control of annual grassy weeds such as Wild Oats, Green Foxtail, Yellow Foxtail and Barnyard Grass in Spring Wheat, Durum Wheat, Spring Barley and certain minor use crops.
- PUMA ADVANCE Herbicide must be applied according to label recommendations or crop injury and a reduction in weed control will occur.

SAFETY AND HANDLING

Section 2: Precautions, Protective Clothing and Equipment

PRECAUTIONS: KEEP OUT OF REACH OF CHILDREN. Corrosive to the eye. DO NOT get in eyes. Causes skin irritation. DO NOT get on skin. Avoid contact with eyes, skin and clothing. Avoid breathing spray mist or vapours. Protective eye equipment must be worn. To minimize exposure, the following precautions should be followed:

Protective Clothing and Equipment:

- Wear coveralls over long-sleeved shirt and long pants during all activities. In addition, wear chemical resistant gloves and apron, socks and chemical resistant footwear, and goggles or face shield during mixing/loading, cleanup and repair activities.
- Change contaminated clothing daily and wash before reusing.
- DO NOT handle product with bare hands. Chemical resistant gloves significantly reduce hand exposure. ALWAYS wear gloves for mixing/loading operations and when making sprayer and nozzle repairs and adjustments. DO NOT USE LEATHER OR CLOTH GLOVES.
- Rinse gloves with soap and water before removal, and wash hands thoroughly before eating, smoking or drinking.
- Clean protective equipment daily.
- DO NOT enter or allow worker entry into treated areas during the restricted entry interval of 12 hours.

If this pest control product is to be used on a commodity that may be exported to the U.S. and you require information on acceptable residue levels in the U.S., visit [CropLife](http://www.croplife.ca) Canada's website at: www.croplife.ca.

Apply only when the potential for drift to areas of human habitation or areas of human activity such as houses, schools and recreational areas is minimal. Take into consideration wind speed, wind direction, temperature inversion, application equipment and sprayer settings.

Section 3: First Aid and Toxicological Information

FIRST AID: Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

IF SWALLOWED: Call a poison control centre or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give **any** liquid to the person. Do not give anything by mouth to an unconscious person.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15–20 minutes. Call a poison control centre or doctor for treatment advice.

IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15–20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

TOXICOLOGICAL INFORMATION:

Medical personnel should contact Bayer's medical information services toll-free 1-800-334-7577.

PUMA ADVANCE Herbicide contains **PETROLEUM DISTILLATES**. Vomiting may cause aspiration pneumonia.

Section 4: Environmental Hazards and Information

- Toxic to aquatic organisms, non-target terrestrial plants and some terrestrial invertebrates. This product contains aromatic petroleum distillates which are toxic to aquatic organisms. Observe buffer zones specified under Section 10.
- Toxic to beneficial parasitic arthropods. Minimize spray drift to reduce harmful effects on beneficial arthropods in habitats next to the application site, such as hedgerows and woodland.
- To reduce runoff from treated areas into aquatic habitats, avoid application to areas with a moderate to steep slope, compacted soil, or clay. Avoid application when heavy rain is forecast. Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body.
- As this product is not registered for the control of pests in aquatic systems, **DO NOT** use to control aquatic pests.
- **DO NOT** contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.
- Do not apply to land where tail water will be used to irrigate crop land. Do not contaminate irrigation water.
- Avoid spray drift onto susceptible plants (e.g. Tame Oats, flowers, trees or shrubs) and non-target areas.
- **USE ONLY FOR RECOMMENDED PURPOSES AND AT RECOMMENDED RATES**

Section 5: Storage

- Keep away from fire, open flame and other sources of heat.
- CANNOT be stored below freezing.
- If stored for 1 year or longer, shake well before using.
- Store the tightly closed container, away from feeds, seeds, fertilizers, plants and foodstuffs.
- Do not use or store in or around the home.
- Keep in original container during storage.

Section 6: Disposal

Recyclable Container

Do not reuse this container for any purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site:

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Make the empty, rinsed container unsuitable for further use.

If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

Returnable Container:

Do not reuse this container for any purpose. For disposal, this empty container may be returned to the point of purchase (distributor/dealer).

Refillable Container Disposal:

For disposal, this empty container may be returned to the point of purchase (distributor/dealer). It must be refilled by the distributor/dealer with the same product. Do not reuse this container for any other purpose.

Disposal of Unused, Unwanted Product:

For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for cleanup of spills.

DIRECTIONS FOR USE

Section 7: Crops, Weeds, Rates, Timing and Cautions

CROP	RECOMMENDED STAGE
Spring Wheat	1-6 leaves on main stem plus 3 tillers (Zadoks 11-16,23)
Durum Wheat	
Spring Barley	

Cautions:

- Do not apply to Tame Oats as crop damage will occur.
- **Durum Wheat:** Initial crop injury in the form of shortening or discoloration may be observed after application. This condition is temporary and should not affect yield. This injury is more likely to occur when PUMA ADVANCE Herbicide is not tank mixed or when applied past the recommended leaf stage. Early application is important to maintain crop safety.
- **Spring Barley:** Initial crop injury in the form of shortening or discoloration may be observed after application. Such injury symptoms are more frequent and often more pronounced in Spring Barley than in Durum Wheat. This injury is most likely to occur when PUMA ADVANCE Herbicide is not tank mixed or when applications are made under certain stress conditions, such as cold and moist conditions or when applications are made past the 6 leaf, 3 tiller stage. Applications of PUMA ADVANCE Herbicide on Spring Barley should be avoided 2-3 days prior to or following cold temperatures (3°C or lower).
- Do not apply PUMA ADVANCE Herbicide to any field more often than once per year.

Annual Grassy Weeds	Recommended Stage
Wild Oats	1-6 leaf (up to emergence of 3 rd tiller)
Green Foxtail (Wild Millet)	1-6 leaf (up to emergence of 3 rd tiller)
Yellow Foxtail	1-6 leaf (up to emergence of 3 rd tiller)
Barnyard Grass	1-6 leaf (up to emergence of 3 rd tiller)

Rates:

1. For control of Wild Oats, Green Foxtail, Yellow Foxtail and Barnyard Grass, apply PUMA ADVANCE Herbicide at 1.02 L/ha.
2. Under low Wild Oat infestations, and when applying PUMA ADVANCE EC Herbicide alone in Spring Wheat and Durum Wheat, apply PUMA ADVANCE EC Herbicide at 890 mL/ha.
3. For Green Foxtail control only, apply PUMA ADVANCE EC Herbicide at 510 mL/ha.

Timing:

- Apply to emerged, actively growing weeds, according to the weed stages listed.
- Under stressed conditions and/or heavy crop canopy, early application will result in improved grassy weed control.
- If application of PUMA ADVANCE Herbicide is not possible due to uneven weed germination, or differential germination of weeds and crops, consult your local weed specialist or the provincial weed control recommendations for the best alternate method of weed control.
- If another pesticide has already been applied, wait 7 days before applying PUMA ADVANCE Herbicide, or following application of PUMA ADVANCE Herbicide, a 4 day interval is required before applying another pesticide, except for those recommended on this label.
- Weeds that emerge after application will not be controlled.
- **Note:** Treatment at the 3-4 leaf stage of crops and weeds usually combines maximum crop tolerance and weed susceptibility. Under stressed conditions and/or heavy crop canopy, earlier application will result in improved grassy weed control.

Cautions:

- Application beyond the 6 leaf stage in Spring Wheat, Durum Wheat or Spring Barley may result in injury.

- **Application of PUMA ADVANCE Herbicide must take place within the leaf stages outlined for all weeds on this label. Late application will result in reduced weed control.**
- During periods of stress, plants are not actively growing. When daytime temperatures before or after application are very hot, combined with very dry conditions and low humidity, plants are under stress. Application of PUMA ADVANCE Herbicide during these periods may result in reduced weed control (and/or crop injury).
- Do not apply to a crop that is stressed by severe weather conditions, frost, low fertility, drought, water-saturated soil, disease or insect damage, as crop injury may result.

Section 8: Tank Mixes

For control of Wild Oats, Green Foxtail, Yellow Foxtail, Barnyard Grass and broadleaf weeds, PUMA ADVANCE Herbicide can be tank mixed with the following tank mix partners. Always read and follow the use directions, environmental restrictions and use precautions on the PUMA ADVANCE Herbicide label, and the label of the product(s) being applied with PUMA ADVANCE Herbicide and follow the more stringent of the two.

WEED CONTROL IN SPRING WHEAT AND DURUM WHEAT

For control of Wild Oats, Green Foxtail, Yellow Foxtail and Barnyard Grass in Spring and Durum Wheat grown in the Prairie Provinces and Peace river Region of British Columbia, mix PUMA ADVANCE Herbicide at 1.02 L/ha alone, or with the tank mix partners listed in the Spring and Durum Wheat Table.

For control of Wild Oats, Green Foxtail, Yellow Foxtail and Barnyard Grass in Spring Wheat grown in eastern Canada, apply PUMA ADVANCE Herbicide at 1.02 L/ha alone, or in a tank mixture with Buctril M , Refine SG, MCPA Amine 500, MCPA Ester 500, Refine SG + MCPA Ester 500 or Infinity.

For control of **Green Foxtail only** in Spring and Durum Wheat grown in the Prairie Provinces and Peace river Region of British Columbia, mix PUMA ADVANCE Herbicide at 510 mL/ha alone, or with the tank mix partners listed in the Spring and Durum Wheat Table.

For control of **Green Foxtail only** in Spring Wheat grown in eastern Canada, apply PUMA ADVANCE Herbicide at 510 mL/ha alone, or in a tank mixture with Buctril M, Refine SG, MCPA Amine 500, MCPA Ester 500 or Refine SG + MCPA Ester 500 or Infinity.

Note: Always consult PUMA ADVANCE Herbicide and tank mix partner labels for proper timing, weeds controlled, precautions, cropping restrictions, etc and follow the more stringent of the two.

WEED CONTROL IN SPRING WHEAT AND DURUM WHEAT				
			PUMA ADVANCE HERBICIDE RATE	
Tank Mix Partner		Tank Mix Partner Rate	Wild Oat Green Foxtail Yellow Foxtail Barnyard Grass	Green Foxtail Only
1	Attain XC A + 2,4-D Ester <i>or</i> Attain XC A + 2,4-D Ester	0.23 L/ha + 420 g ae/ha <i>or</i> 0.31 L/ha + 560 g ae/ha	1.02 L/ha	510 mL/ha
2	Thumper®	1 L/ha	1.02 L/ha	510 mL/ha
3	Mecoprop® (150 g active per Litre)	5.5 – 7 L/ha	1.02 L/ha	No
Note: A reduction in Wild Oat control may be observed when PUMA ADVANCE EC Herbicide is applied in a tank mixture with Mecoprop.				
4	MCPA Ester 500	840 mL/ha	1.02 L/ha	510 mL/ha
5	MCPA Amine 500	840 mL/ha	1.02 L/ha	510 mL/ha
6	Buctril M®	1 L/ha	1.02 L/ha	510 mL/ha
7	Refine SG®	30 g/ha	1.02 L/ha	510 mL/ha
8	Refine SG + MCPA Ester 500	30 g/ha + 840 mL/ha	1.02 L/ha	510 mL/ha
USE ONLY MCPA ESTER 500 in this tank mix and only at recommended rates. Failure to do so may result in reduced Wild Oat control. DO NOT USE MCPA AMINE				
9	Refine SG + Buctril M	10 g/ha + 1 L	1.02 L/ha	510 mL/ha
10	Triton C	97 g/ha	1.02 L/ha	No
11	Ally®	5 or 7.5 g/ha	1.02 L/ha	510 mL/ha
12	Lontrel 360	420 ml/ha	1.02 L/ha	510 mL/ha
13	Lontrel 360 + MCPA Ester 500	420 mL/ha + 840 mL/ha	1.02 L/ha	No

14	OR Lontrel 360 + MCPA Ester 500	OR 280 mL/ha + 840 mL-1.12 L/ha	1.02 L/ha	No
USE ONLY MCPA ESTER 500 in this tank mix and only at recommended rates. Failure to do so may result in reduced Wild Oat control. DO NOT USE MCPA AMINE				
15	Curtail® M	1.5 - 2 L/ha	1.02 L/ha	510 mL/ha
16	2,4-D Ester 600	700 mL/ha	1.02 L/ha	510 mL/ha
17	2,4-D Ester LV 700	600 mL/ha	1.02 L/ha	510 mL/ha
18	Estoprop®	1.75 L/ha	1.02 L/ha	510 mL/ha
19	Dichlorprop-D	1.75 L/ha	1.02 L/ha	510 mL/ha
20	Turboprop	1.75 L/ha	1.02 L/ha	510 mL/ha
21	Dyvel DSP Liquid	1.1 L/ha	No	510 mL/ha
22	Dyvel	1.25 L/ha	No	510 mL/ha
23	Prestige XC Herbicide Tank Mix Prestige XC A + Prestige XC B or Prestige XC A + Prestige XC B	0.31 L/ha + 1.5 L/ha or 0.41 L/ha + 2.0 L/ha	1.02 L/ha	510 mL/ha
24	Trophy® Herbicide Tank Mix Trophy A + Trophy B	0.6 L/ha + 1.12 L/ha	1.02 L/ha	No
25	Frontline® Herbicide Tank Mix Frontline A + Frontline B	0.1 L/ha + 0.7 L/ha	No	510 mL/ha

26	Spectrum® Herbicide Tank Mix			
	Spectrum A + Spectrum B	0.1 L/ha + 1.5 L/ha	No	510 mL/ha
27	Infinity Herbicide	0.83 L/ha	1.02 L/ha	510 mL/ha

WEED CONTROL IN SPRING BARLEY

For control of Wild Oats, Green Foxtail, Yellow Foxtail, Barnyard Grass, and broadleaf weeds in Spring Barley grown in the Prairie Provinces and the Peace River Region of British Columbia, mix PUMA ADVANCE Herbicide at 1.02 L/ha alone, or with the tank mix partners with the appropriate tank mix partner indicated in the Spring Barley Table.

For control of Wild Oats, Green Foxtail, Yellow Foxtail and Barnyard Grass in Spring Barley grown in eastern Canada, apply PUMA ADVANCE Herbicide at 1.02 L/ha alone, or in a tank mixture with Buctril M, Refine SG, MCPA Amine 500, MCPA Ester 500, Refine SG + MCPA Ester 500 or Infinity Herbicide.

For control of **Green Foxtail only** in Spring Barley grown in the Prairie Provinces and the Peace River Region of British Columbia, apply PUMA ADVANCE EC Herbicide at 510 mL/ha alone, or with the tank mix partners indicated in the Spring Barley Table.

For control of **Green Foxtail only** in Spring Barley grown in eastern Canada, apply PUMA ADVANCE Herbicide at 510 mL/ha alone, or in a tank mixture with Buctril M, Refine SG, MCPA Amine 500, MCPA Ester 500, Refine SG + MCPA Ester 500 or Infinity Herbicide.

Note: Always consult the PUMA ADVANCE Herbicide and the tank mix partner labels for proper timing, weeds controlled, precautions, cropping restrictions, etc and follow the more stringent of the two.

WEED CONTROL IN SPRING BARLEY				
			PUMA ADVANCE HERBICIDE RATE	
Tank Mix Partner		Tank Mix Partner Rate	Wild Oat Green Foxtail Yellow Foxtail Barnyard Grass	Green Foxtail Only
1	Thumper®	1 L/ha	1.02 L/ha	510 mL/ha
2	MCPA Ester 500	840 mL/ha	1.02 L/ha	510 mL/ha
3	MCPA Amine 500	840 mL/ha	1.02 L/ha	510 mL/ha
4	2,4-D Ester 600	700 mL/ha	1.02 L/ha	510 mL/ha

5	2,4-D Ester LV 700	600 mL/ha	1.02 L/ha	510 mL/ha
6	Buctril M	1 L/ha	1.02 L/ha	510 mL/ha
7	Refine SG [®]	30 g/ha	1.02 L/ha	510 mL/ha
8	Refine SG + MCPA Ester 500	30 g/ha + 840 mL/ha	1.02 L/ha	510 mL/ha
USE ONLY MCPA ESTER 500 in this tank mix and only at recommended rates. Failure to do so may result in reduced Wild Oat control. DO NOT USE MCPA AMINE				
9	Refine SG + Buctril M	10 g/ha + 1 L	1.02 L/ha	510 mL/ha
10	Triton C	97 g/ha	1.02 L/ha	No
For use on spring barley grown for feed purposes only				
11	Curtail M	1.5 – 2 L/ha	1.02 L/ha	510 mL/ha
12	Estaprop [®]	1.75 L/ha	1.02 L/ha	510 mL/ha
13	Dichlorprop- D [®]	1.75 L/ha	1.02 L/ha	510 mL/ha
14	Turboprop	1.75 L/ha	1.02 L/ha	510 mL/ha
15	Dyvel	1.25 L/ha	No	510 mL/ha
16	Ally [®]	5 or 7.5 g/ha	1.02 L/ha	510 mL/ha
17	Prestige XC Herbicide Tank Mix Prestige XC A + Prestige XC B or Prestige XC A + Prestige XC B	0.31 L/ha + 1.5 L/ha or 0.41 L/ha + 2.0 L/ha	1.02 L/ha	510 mL/ha

18	Trophy® Herbicide Tank Mix Trophy A + Trophy B	0.6 L/ha + 1.12 L/ha	1.02 L/ha	No
19	Frontline® Herbicide Tank Mix Frontline A + Frontline B	0.1 L/ha + 0.7 L/ha	No	510 mL/ha
20	Spectrum® Herbicide Tank Mix Spectrum A + Spectrum B	0.1 L/ha + 1.5 L/ha	No	510 mL/ha
21	Infinity Herbicide	0.83 L/ha	1.02 L/ha	510 mL/ha

Section 9: Minor Uses

NOTE TO USER: READ THE FOLLOWING BEFORE USING THIS PRODUCT FOR THE INDICATED SPECIAL USE APPLICATIONS (BELOW): The DIRECTIONS FOR USE for this product for the uses described below were developed by persons other than Bayer CropScience and accepted for registration by Health Canada under the User Requested Minor Use Label Expansion program. Bayer CropScience itself makes no representation or warranty with respect to performance (efficacy) or crop tolerance (phytotoxicity) claims for this product when used on the crops listed below. Accordingly, the Buyer and the User assume all risks related to performance and crop tolerance arising, and agree to hold Bayer CropScience harmless from any claims based on efficacy or phytotoxicity in connection with the uses described below.

CROPS	WEEDS CONTROLLED	PUMA ADVANCE HERBICIDE RATE	COMMENTS

Seedling and established Perennial Ryegrass grown for seed	Wild oats, Green foxtail, Yellow foxtail, Barnyard grass	1.02 L/ha	<ul style="list-style-type: none"> • For use in the Prairie provinces and Peace River Region of British Columbia only. • Apply PUMA ADVANCE Herbicide when perennial ryegrass is at the 2-4 leaf stage, and when wild oats, green foxtail, yellow foxtail and barnyard grass are at the 1-6 leaf stage (up to emergence of 3rd tiller).
	Green foxtail	510 mL/ha	<ul style="list-style-type: none"> • For ground application, apply in a minimum water volume of 55 litres per hectare, at a pressure of 275 kPa, or 310 kPa if using check valves, and at a ground speed of 6-8 kph. • For aerial application, apply in no less than 35 litres of water per hectare at a pressure no less than 300 kPa. • Do not apply PUMA ADVANCE Herbicide to any field more often than once per year. • Do not graze the treated Perennial Ryegrass or cut for straw within 65 days of PUMA ADVANCE Herbicide application. • CAUTION: Initial crop injury may be observed after application, but this is temporary and should not affect yield. This injury is most likely to occur when applications are made under stress conditions or when applications are made past the recommended leaf stage. Severe crop injury will occur as a result of spray overlap. AVOID SPRAYER OVERLAP. • Refer to Sections 7 and 10 for additional use information and cautions.
Meadow Bromegrass (seedling and established) grown for forage or seed production	Wild oats, Green foxtail, Yellow foxtail, Barnyard grass	1.02 L/ha	<ul style="list-style-type: none"> • For use in the Prairie provinces and Peace River Region of British Columbia only • Apply PUMA ADVANCE Herbicide when meadow bromegrass is at the 2-4 leaf stage, and when wild oats, green foxtail, yellow foxtail and barnyard grass are at the 1-6 leaf stage (up to emergence of 3rd tiller).
	Green foxtail	510 mL/ha	<ul style="list-style-type: none"> • For ground application, apply in a minimum water volume of 55 litres per hectare, at a pressure of 275 kPa, or 310 kPa if using check valves, and at a ground speed of 6-8 kph. • For aerial application, apply in no less than 35 litres of water per hectare at a pressure no less than 300 kPa. • Do not apply PUMA ADVANCE Herbicide to any field more often than once per year. • Do not graze the treated meadow bromegrass or cut for hay within 25 days of application. • CAUTION: Initial crop injury may be observed

			<p>after application, but this is temporary and should not affect yield. This injury is most likely to occur when applications are made under stress conditions or when applications are made past the recommended leaf stage. Severe crop injury will occur as a result of spray overlap. AVOID SPRAYER OVERLAP.</p> <ul style="list-style-type: none"> Refer to Sections 7 and 10 for additional use information and cautions.
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Section 10: Application Instructions and Cautions

Application Instructions:

Field sprayer application: DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) medium classification. Boom height must be 60cm or less above the crop or ground.

Aerial application: DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT apply when wind speed is greater than 16 km/h at a flying height at the site of application. DO NOT apply with spray droplets smaller than American Society of Agricultural Engineers (ASAE) medium classification. To reduce drift caused by turbulent wingtip vortices, the nozzle distribution along the spray boom length **MUST NOT** exceed 65% of the wing- or rotorspan.

Buffer Zones:

Use of the following spray methods or equipment **DO NOT** require a buffer zone: hand-held or backpack sprayer and spot treatment.

The buffer zones specified in the table below are required between the point of direct application and the closest downwind edge of sensitive terrestrial habitats (such as grasslands, forested areas, shelter belts, woodlots, hedgerows, riparian areas and shrublands) and sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands).

Method of application	Crop	Buffer Zones (metres) Required for the Protection of:		
		Freshwater Habitats of Depths:		Terrestrial Habitat
		Less than 1m	Greater than 1m	
Field sprayer*	Wheat, Barley, Ryegrass, Meadow Brome grass	1	0	1

Aerial	Fixed Wing	Wheat, Barley, Ryegrass, Meadow Brome grass	1	0	20
	Rotary Wing		1	0	20

** For field sprayer application, buffer zones can be reduced with the use of drift reducing spray shields. When using a spray boom fitted with a full shield (shroud, curtain) that extends to the crop canopy, the labelled buffer zone can be reduced by 70%. When using a spray boom where individual nozzles are fitted with cone-shaped shields that are no more than 30 cm above the crop canopy, the labelled buffer zone can be reduced by 30%.

For tank mixes, consult the labels of the tank-mix partners and observe the largest (most restrictive) buffer zone of the products involved in the tank mixture and apply using the coarsest spray (ASAE) category indicated on the labels for those tank mix partners.

GROUND APPLICATION.

- Application of PUMA ADVANCE Herbicide should be made using a minimum of 55-110 litres of water per hectare, at a pressure of 275 kPa, or 310 kPa if using check valves, and at a ground speed of 6-8 kph.
- When tank mixing PUMA ADVANCE Herbicide with a tank mix partner, ensure you read the tank mix partner label for minimum water recommendations.
- The use of 80° or 110° flat fan nozzles is recommended for optimum spray coverage.
- Do not use flood jet nozzles, controlled droplet application equipment or Sprafoil® equipment.
- Application of the spray at a 45° angle forward and higher water volumes will result in better spray coverage and penetration of the crop canopy.
- Uniform, thorough coverage is important to obtain consistent weed control. Higher water volumes should be used under dense crop and weed canopies to ensure thorough coverage of the target weeds.
- Avoid overlapping; shut off spray boom while starting, turning, slowing or stopping to prevent crop injury from over-application.
- Do not apply if rain is expected within 1 hour of spraying. If tank mixing, consult the tank mix partner label and respect the most restrictive interval.

AIR APPLICATION

- Apply PUMA ADVANCE Herbicide alone or in tank mixes (ONLY with the recommended tank mix partners that are registered for aerial use) in no less than 35 litres of water per hectare at a pressure no less than 300 kPa.
- Apply only by fixed-wing or rotary aircraft equipment which has been functionally and operationally calibrated for the atmospheric conditions of the area and the application rates and conditions of this label.
- Label rates, conditions and precautions are product specific. Read and understand the entire label before opening this product. Apply only at the rate recommended for aerial application on this label. Where no rate for aerial application appears for the specific use, this product cannot be applied by any type of aerial equipment.
- Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices.

Aerial Use Precautions

- Read and understand the entire label before opening this product. If you have questions, call Bayer CropScience Inc. at 1-888-283-6847 or obtain technical advice from the distributor or your provincial agricultural representative.
- Apply only when meteorological conditions at the treatment site allow for complete and even crop coverage. Apply only under conditions of good practice specific to aerial application as outlined in *the National Aerial Pesticide Application Manual*, developed by the Federal/Provincial/Territorial Committee on Pest Management and Pesticides.
- Do not apply to terrain where there is a potential for surface run-off to enter aquatic systems.
- Do not apply if rain is expected within 1 hour after spraying. If tank mixing, consult the tank mix partner label and respect the most restrictive interval.

Aerial Application Operator Precautions

- Do not allow the pilot to mix chemicals to be loaded onto the aircraft. Loading of premixed chemicals with a closed system is permitted.
- It is desirable that the pilot have communication capabilities at each treatment site at the time of application.
- The field crew and the mixer/loaders must wear chemical resistant gloves, coveralls and goggles or face shield during mixing/loading, cleanup and repair. Follow the more stringent label precautions in cases where the operator precautions exceed the generic label recommendations on the existing ground boom label.
- All personnel on the job site must wash hands and face thoroughly before eating and drinking. Protective clothing, aircraft cockpit and vehicle cabs must be decontaminated regularly.

Section 11: Mixing Instructions
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1. Ensure that the spray tank, lines and filter are thoroughly clean.
2. Fill the tank half-full with clean water and start agitation or bypass system.
3. If a tank mix partner is to be used, refer to the sections on tank mix combinations with PUMA ADVANCE Herbicide. Add the tank mix partner FIRST prior to adding PUMA ADVANCE Herbicide.
4. Slowly add the correct amount of PUMA ADVANCE Herbicide to the spray tank. Agitate thoroughly.
5. Triple rinse the emptied containers into the spray tank.
6. Add the remaining amount of water while agitation continues. Spray out immediately. Spray mixture should not be left in tank overnight.
7. When mixing second and subsequent tank-fulls, ensure that the tank is half-full of clean water prior to adding herbicide, and follow steps 2-6.
8. Thoroughly clean nozzles, screens and the spray tank by flushing with a water/detergent mixture after using PUMA ADVANCE Herbicide or before using any other pesticide.
9. Do not tank mix with any other chemical additives, pesticides, surfactants or fertilizers unless recommended on this label.

Section 12: Sprayer Cleanup

Clean Up Before You Spray:

- Prior to using PUMA ADVANCE Herbicide ensure that the spray tank, lines and filter are thoroughly clean.
- All traces of PUMA ADVANCE Herbicide must be removed before equipment can be used on Rye, Flax, or broadleaf crops.

Clean Up After You Spray:

- When using tank mixes, consult the tank mix partner label for additional cleanup instructions.
- Drain or flush equipment and containers away from wells, water sources, and desirable vegetation. To avoid subsequent injury to other crops, immediately after spraying and before spraying other crops, thoroughly remove all traces of PUMA ADVANCE Herbicide from mixing and spray equipment by flushing with a water/detergent mixture.

Section 13: Herbicide Resistance Management

For resistance management, PUMA ADVANCE Herbicide is a Group 1 herbicide. Any weed population may contain or develop plants naturally resistant to PUMA ADVANCE Herbicide and other Group 1 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Other resistance mechanisms that are not linked to site of action, but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

To delay herbicide resistance:

- Where possible, rotate the use of PUMA ADVANCE Herbicide or other Group 1 herbicides within a growing season (sequence) or among growing season with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group when such use is permitted. To delay resistance, the less resistance-prone partner should control the target weed(s) as effectively as the more resistance-prone partner.
- Herbicide use should be based on an integrated weed management program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical control methods), cultural (for example, higher crop seeding rates; precision fertilizer application method and timing to favour the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.
- Monitor weed populations after herbicide application for signs of resistance development (for example, only one weed species on the herbicide label not controlled). If resistance is suspected, prevent weed seed production in the affected area if possible by an alternative herbicide from a different group.
- Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment and planting clean seed.
- Have suspected resistant weed seeds tested by a qualified laboratory to confirm resistance and identify alternative herbicide options.
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.

- For further information or to report suspected resistance, contact your local Bayer representative, or call Bayer CropScience toll-free at 1-888-283-6847.
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Section 14: Livestock Feeding and Pre-Harvest Intervals

- Do not graze the treated wheat or barley or cut for hay within 25 days of PUMA ADVANCE Herbicide application, or harvest for grain within 65 days of PUMA ADVANCE Herbicide application.
- Do not graze the treated Perennial Ryegrass or cut for straw within 65 days of PUMA ADVANCE Herbicide application.
- Do not graze the treated meadow brome grass or cut for hay within 25 days of PUMA ADVANCE Herbicide application.

Section 15: Notices

NOTICE TO USER: This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label. The user assumes the risk to persons or property that arises from any such use of this product.

FOR MORE INFORMATION CONTACT:

Product Information: 1-888-283-6847
www.bayercropscience.ca

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