

2011-2845  
2012-02-03

# THUMPER TOTAL™ 2

## Herbicide



Bayer CropScience

GROUP	4 6	HERBICIDE
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FOR POSTEMERGENCE WEED CONTROL IN SPRING AND DURUM WHEAT

**FOR USE ONLY IN MANITOBA, SASKATCHEWAN, ALBERTA AND  
PEACE RIVER, OKANAGAN AND CRESTON FLATS REGIONS OF BRITISH  
COLUMBIA**

Emulsifiable Concentrate

**This component must be used in the THUMPER TOTAL Herbicide Tank-Mix.**

AGRICULTURAL

GUARANTEE:

Bromoxynil (present as mixed octanoate  
and heptanoate esters).....280 g/L  
2,4-D (present as 2-ethylhexyl ester)....280 g a.e./L

REGISTRATION NO. 29513 PEST CONTROL PRODUCTS ACT

READ THE LABEL AND LEAFLET BEFORE USING  
KEEP OUT OF REACH OF CHILDREN

NET CONTENTS: 8 L

Product Information: 1-888-283-6847

[www.bayercropscience.ca](http://www.bayercropscience.ca)

Bayer CropScience Inc.  
Suite 200, 160 Quarry Park Blvd S.E.  
Calgary, Alberta T2C 3G3

In case of spills, poisoning or fire, telephone emergency response number 1-800-334-7577 (24 hours a day).

**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.

**DIRECTIONS FOR USE:** See the printed booklet provided with this container.

**PRECAUTIONS:** HARMFUL OR FATAL IF SWALLOWED. MAY IRRITATE EYES. KEEP OUT OF REACH OF CHILDREN. Avoid contact with skin, eyes and clothing. Store the container tightly closed away from seeds, feeds, fertilizer, plants and foodstuffs. Wash concentrate from skin or eyes immediately. Avoid working in spray mist. After use wash hands and other exposed skin. 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 Canada's website at [www.croplife.ca](http://www.croplife.ca)

**PROTECTIVE CLOTHING AND EQUIPMENT: For Aerial Application and Application using Groundboom Equipment:** Applicators must wear coveralls over a long-sleeved shirt and long pants, socks and shoes. In addition, wear protective eye wear (face shield or safety glasses) and a chemical resistant apron during mixing/loading activities. Wear chemical resistant nitrile gloves (e.g. Edmont Sol-Vex #37-155/#37-145 or Pioneer A-15) which are in good condition when mixing/loading, spraying, and during clean-up and repair. Rinse gloves before removal. Aerial applicators and applicators using a closed cab are not required to wear chemical resistant gloves. For aerial application, no human flaggers are permitted. When handling more than 265 kg 2,4-D a.e. per day (approximately 946 ha), workers must also use a closed system.

**OPERATOR USE PRECAUTIONS:** Wear freshly laundered clothing and clean protective equipment daily. Rinse gloves before removal. Wash hands before eating, drinking, using tobacco or using the toilet. If herbicide penetrates clothing remove immediately; then wash thoroughly and put on clean clothing. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. DO NOT reuse them. Users should remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. After using this product, remove clothing and launder separately and promptly and thoroughly wash hands and exposed skin with soap and water. Follow manufacturer's instructions for cleaning personal protective clothing and equipment. If no such instructions for washables are provided, use detergent and hot water. Keep and wash personal protective equipment separate from household laundry. After work, remove all clothing and shower using soap and water. DO NOT apply this product in a way that will allow product to contact workers or other persons, either directly or through drift. Only handlers wearing personal protective equipment may be in area undergoing treatment during application.

**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:** This product may cause mild irritation to the eyes. Overexposure may cause coughing, burning, dizziness or temporary loss of muscle coordination. Other possible effects of overexposure include fatigue, muscle weakness and nausea. Treat symptomatically. This product contains an aromatic hydrocarbon solvent.

**ENVIRONMENTAL HAZARDS:** TOXIC to small mammals, birds, aquatic organisms and non-target terrestrial plants. Observe buffer zones specified under DIRECTIONS FOR USE. This product will also harm other broadleaved plants in the vicinity of the treatment area. This product contains a petroleum distillate which is moderately to highly toxic to aquatic organisms. Avoid contamination of aquatic systems during application. Do not contaminate these systems through direct application, disposal of waste or cleaning equipment. Avoid contamination of ponds, streams, rivers and other water sources. Avoid spray drift onto crops other than those recommended.

**LEACHING:** The use of this chemical may result in contamination of groundwater, particularly in areas where soils are permeable (e.g. sandy soil) and/or depth of water table is shallow.

**RUNOFF:** To reduce runoff from treated areas into aquatic habitats, avoid application to areas with moderate to steep slope, compacted soil, or clay. Avoid application of this product when heavy rain is forecast. Contamination of aquatic areas may be reduced by including a strip of untreated vegetation between the treated area and the edge of the water body.

**STORAGE CONDITIONS:** This THUMPER TOTAL 2 Herbicide formulation will solidify at temperatures below -20°C but will become usable at temperatures above 0°C. Insecticides and fungicides should be separated from herbicides so as to prevent the possibility of cross contamination. *Shake well before using.*

**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.

**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.

THUMPER TOTAL is a trademark of Bayer.



Bayer CropScience

GROUP	2	HERBICIDE	
GROUP	4	6	HERBICIDE

**THUMPER TOTAL™ Herbicide Tank-Mix**

FOR POSTEMERGENCE WEED CONTROL IN SPRING AND DURUM WHEAT

**FOR USE ONLY IN MANITOBA, SASKATCHEWAN, ALBERTA AND PEACE RIVER, OKANAGAN AND CRESTON FLATS REGIONS OF BRITISH COLUMBIA**

AGRICULTURAL

READ THE LABELS AND BOOKLET BEFORE USING

KEEP OUT OF REACH OF CHILDREN

This co-package contains:

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**THUMPER TOTAL 1 HERBICIDE**  
SUSPENSION

GROUP	2	HERBICIDE
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GUARANTEE: thiencazabone-methyl.....10 g/L

REGISTRATION NO. 29512 PEST CONTROL PRODUCTS ACT

**THUMPER TOTAL 2 HERBICIDE**  
EMULSIFIABLE CONCENTRATE

GROUP	4	6	HERBICIDE
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GUARANTEE:

Bromoxynil (present as mixed octanoate and heptanoate esters) ..... 280 g/L

2,4-D (present as 2-ethylhexyl ester).....280 g a.e./L

REGISTRATION NO. 29513 PEST CONTROL PRODUCTS ACT



WARNING POISON  
WARNING – EYE AND SKIN IRRITANT

**NET CONTENTS:**

**THUMPER TOTAL 1 HERBICIDE - 4 L**

**THUMPER TOTAL 2 HERBICIDE – 8 L**

**The contents of this carton will treat 8 hectares (20 acres).**

Product Information: 1-888-283-6847

[www.bayercropscience.ca](http://www.bayercropscience.ca)

Bayer CropScience Inc.

Suite 200, 160 Quarry Park Blvd S.E.

Calgary, Alberta T2C 3G3

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## GENERAL INFORMATION

### SECTION 1: 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.

### SECTION 2: THE PRODUCT

THUMPER TOTAL™ Herbicide Tank-Mix is a post-emergent herbicide concept that provides control of certain annual grass weeds and annual broadleaf weeds in Spring Wheat (hard red spring, Canada Prairie spring, soft white spring, and extra strong or utility) and Durum wheat

FOR SALE FOR USE IN THE PRAIRIE PROVINCES AND PEACE RIVER, OKANAGAN AND CRESTON FLATS REGIONS OF BRITISH COLUMBIA.

## SAFETY AND HANDLING

### SECTION 3: PRECAUTIONS, PROTECTIVE CLOTHING AND EQUIPMENT

PRECAUTIONS: KEEP OUT OF REACH OF CHILDREN.

Avoid breathing vapors, or spray mist. Harmful or Fatal if swallowed. Causes eye irritation. DO NOT get in eyes. May irritate the skin. Avoid contact with skin and clothing. Wash concentrate from skin or eyes immediately. Wash thoroughly with soap and water after handling and before eating, drinking or smoking. Remove and wash contaminated clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE): **For Aerial Application and Application using Groundboom Equipment:**

Applicators must wear coveralls over a long-sleeved shirt and long pants, and shoes plus socks. In addition, during mixing/loading, clean up and repair, wear protective eyewear (face shield or safety glasses) plus a chemical resistant apron during mixing/loading activities. Wear chemical resistant nitrile gloves (e.g. Edmont Sol-Vex #37-155/#37-145 or Pioneer A-15) which are in good condition when mixing/loading, spraying and during clean-up and repair. Rinse gloves before removal. Aerial

applicators and applicators using a closed cab are not required to wear chemical resistant gloves.

For aerial application, no human flaggers are permitted.

When handling more than 265 kg 2,4-D a.e. per day (approximately 946 ha), workers must also use a closed system.

DO NOT apply this product in a way that this product will contact workers or other persons, either directly or through drift. Only handlers wearing personal protective equipment may be in the area being treated during application.

#### USER SAFETY RECOMMENDATIONS

- Wear freshly laundered clothing and clean protective equipment daily.
- Wash hands thoroughly with soap and water before eating, drinking, chewing gum, using tobacco, or using the toilet.
- If herbicide penetrates clothing remove immediately; then wash thoroughly and put on clean clothing. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.
- Remove Personal Protective Equipment (PPE) immediately after handling this product. Wash the outside of gloves before removing. Launder PPE separately, promptly and thoroughly. Wash hands and exposed skin with soap and water. Follow manufacturer's instructions for cleaning personal protective clothing and equipment. If no such instructions for washables are provided, use detergent and hot water. Keep and wash personal protective equipment separate from household laundry. Clean protective equipment daily.
- After work, remove all clothing, shower as soon as possible using soap and water and change into clean clothing.

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 Canada's web site at : [www.croplife.ca](http://www.croplife.ca).

### **SECTION 4: FIRST AID AND TOXICOLOGICAL INFORMATION**

#### **FIRST AID:**

Contact a poison control centre IMMEDIATELY. Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

If swallowed	<ul style="list-style-type: none"><li>• Call a poison control centre or doctor immediately for treatment advice.</li><li>• Do not induce vomiting unless told to do so by a poison</li></ul>
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	<p>control centre or doctor.</p> <ul style="list-style-type: none"> <li>• Do not give <b>any</b> liquid to the person.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
If on skin or clothing	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15–20 minutes.</li> <li>• Call a poison control centre or doctor for treatment advice.</li> </ul>
If inhaled	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control centre or doctor for further treatment advice.</li> </ul>
If in eyes	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15–20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.</li> </ul>

**TOXICOLOGICAL INFORMATION:**

**THUMPER TOTAL 1 Herbicide:** No specific antidote is available. Treat the patient symptomatically. This product contains a petroleum distillate. Vomiting may cause aspiration pneumonia.

**THUMPER TOTAL 2 Herbicide:** This product may cause mild irritation to the eyes. Overexposure may cause coughing, burning, dizziness or temporary loss of muscle coordination. Other possible effects of overexposure include fatigue, muscle weakness and nausea. Treat symptomatically. This product contains an aromatic hydrocarbon solvent.

**SECTION 5: ENVIRONMENTAL PRECAUTIONS AND INFORMATION**

**THUMPER TOTAL 1 Herbicide:** This product contains an active ingredient and aromatic petroleum distillates which are toxic to aquatic organisms and non-target terrestrial plants.

**THUMPER TOTAL 2 Herbicide:** TOXIC to small mammals, birds, aquatic organisms and non-target terrestrial plants. This product contains a petroleum distillate which is moderately to highly toxic to aquatic organisms. Avoid contamination of aquatic systems during application. Do not contaminate these systems through direct application, disposal of waste or cleaning equipment. Avoid contamination of ponds, streams, rivers and other water sources. This product will also harm other broadleaved plants in the vicinity of the treatment area. Avoid spray drift onto crops other than those recommended.

Observe buffer zones specified under DIRECTIONS FOR USE.

As these products are not registered for the control of pests in aquatic systems, DO NOT use to control aquatic pests.

**LEACHING:** The use of these chemicals may result in contamination of groundwater particularly in areas where soils are permeable (e.g., sandy soil) and/or the depth to the water table is shallow.

**RUNOFF:** 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.

## **SECTION 6: STORAGE**

Store in a cool, dry place. Do not store below freezing. Shake well before using. Do not contaminate, water, food, or feed by storage and disposal. To prevent contamination, store this product away from food or feed. Store product in original container only and keep tightly closed. Store away from other pesticides, feeds, seeds, fertilizers, foodstuffs or plants. Do not use or store in or around the home.

## **SECTION 7: 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.

**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 8: CROPS AND WEEDS

#### 8.1 CROPS AND APPLICATION TIMING

THUMPER TOTAL Herbicide Tank-Mix may be applied to the following crops when at the indicated growth stages:

CROP	RECOMMENDED GROWTH STAGE	REMARKS
<b>Spring Wheat (incl. hard red spring, Canada Prairie spring, soft white spring and extra strong (utility) wheat)</b>	4 to 6 leaves on main stem, plus 3 tillers, but prior to jointing (presence of first node)	<ul style="list-style-type: none"> <li>• Application before the 4 leaf stage may injure the crop.</li> <li>• Do not apply to crop that is under stress due to abnormal environmental conditions such as frost, extreme heat, low fertility, drought, flooding, or disease and/or insect damage as crop injury may result.</li> </ul> Under drought conditions: <ul style="list-style-type: none"> <li>○ Do not spray VELOCITY Herbicide if time between seeding and spraying exceeds 35 days (as drought hastens crop development)</li> <li>○ Do not spray VELOCITY Herbicide three days prior to or following cold temperatures (3°C or lower)</li> </ul> <ul style="list-style-type: none"> <li>• Do not treat wheat underseeded to legumes.</li> <li>• Refer to section 9.1 for general reminders for successful operation.</li> </ul>
<b>Durum Wheat</b>		

## 8.2 APPLICATION RATE AND WEEDS CONTROLLED

Treatment with THUMPER TOTAL Herbicide Tank-Mix containing **THUMPER TOTAL 1 Herbicide at 0.5 L/ha plus THUMPER TOTAL 2 Herbicide at 1 L/ha** applied according to label recommendations will provide control of the following weed species:

GRASS WEEDS	RECOMMENDED STAGE
Wild oats	1 to 6 leaves, up to emergence of the 3 <sup>rd</sup> tiller
Green foxtail	
Barnyard grass	
Yellow foxtail <sup>1</sup>	
Persian Darnel <sup>1</sup>	
Voluntary canary seed	1 to 6-leaves, up to emergence of 2 <sup>nd</sup> tiller
Japanese Brome <sup>1</sup>	1 to 6-leaf stage

BROADLEAF WEEDS	RECOMMENDED STAGE
American nightshade	Up to 4-leaf stage
Ball mustard	Up to 4-leaf stage
Bluebur	Up to 4-leaf stage
Cleavers	1 to 6 whorls
Cocklebur	Up to 4-leaf stage
Common buckwheat	Up to 8-leaf stage
Common groundsel	Up to 8-leaf stage
Common ragweed	Up to 4-leaf stage
Cow cockle	Up to 4-leaf stage
Flixweed	Up to 4-leaf stage
Green smartweed	Up to 4-leaf stage
Hemp-nettle	1 to 6-leaf stage
Kochia	Up to 5 cm high (1-12 leaf)
Lady's-thumb	Up to 4-leaf stage
Lamb's Quarters	Up to 8-leaf stage
Night-flowering catchfly	Up to 4-leaf stage
Pale Smartweed	1 to 6-leaf stage
Redroot pigweed	1 to 6-leaf stage
Round-leaved mallow <sup>1</sup>	1 to 6-leaf stage
Russian Thistle	Up to 5 cm high (2-12 leaf)
Shepherd's-purse	1 to 6-leaf stage
Stinkweed	Up to 8-leaf stage
Tartary buckwheat	Up to 8-leaf stage
Triazine resistant pigweed	Up to 4-leaf stage
Velvetleaf	Up to 8 cm high
Volunteer canola	1 to 6-leaf stage

Volunteer sunflower	Up to 4-leaf stage
Wild buckwheat	Up to 8-leaf stage
Wild mustard	Up to 8-leaf stage

## 1 SUPPRESSION ONLY

- For best results, apply to emerged, young, actively growing weeds according to the weed stages listed. Research has demonstrated that optimum wheat yield is obtained when weeds are removed early.
- Under stressed conditions and/or heavy crop canopy, early application will result in improved weed control.
- Weeds growing under adverse environmental conditions such as drought will be less susceptible to THUMPER TOTAL Herbicide Tank-Mix.

## 8.3 RAINFASTNESS

- Rainfall within 60 minutes of application may reduce effectiveness.

# SECTION 9: APPLICATION INSTRUCTIONS and USE LIMITATIONS

## 9.1 GENERAL REMINDERS FOR SUCCESSFUL OPERATION

- Apply only once per season with ground or aerial equipment.
- **Do not treat wheat underseeded to legumes.**
- Do not use THUMPER TOTAL Herbicide Tank-Mix if another Group 2 grass herbicide has been previously applied in the same season.
- Do not use another Group 2 grass herbicide following an application of THUMPER TOTAL Herbicide Tank-Mix in the same season.
- For best results, apply to emerged, young, actively growing weeds. Application *must* be made before the crop shields the weeds.
- THUMPER TOTAL Herbicide Tank-Mix will have an effect on weeds that are larger than the recommended leaf stage, however the speed of activity and level of control may be reduced.
- Under cool and/or dry conditions activity may be reduced or delayed. If weeds are under stress due to abnormal environmental conditions, delay application until stress passes and after weeds have resumed active growth. Weed control may also be reduced if application is made when weeds are dust covered or in the presence of heavy dew, fog, or mist/rain.
- Do not apply to crop that is under stress due to abnormal environmental conditions such as frost, extreme heat, low fertility, drought, flooding, or disease and/or insect damage as crop injury may result.
- Follow directions under Section 8 for the correct rate and timing of application.
- Avoid overlapping; shut off spray boom while starting, turning, slowing or

stopping to prevent crop injury from over-application.

- Avoid contact with desirable plants or crops either from direct application or from spray drift as severe damage may occur.
- Do not allow this chemical to drift on to other crops, especially canola, tame oats, or other non target crops. This product will also harm other broadleaved plants in the vicinity of the treatment area.
- DO NOT apply this product directly to freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands), estuarine/ marine habitats.
- Do not overspray non-target terrestrial or aquatic habitats. Do not contaminate aquatic habitats when cleaning and rinsing spray equipment or containers.
- DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

## **9.2 GROUND AND AERIAL APPLICATION**

### **GROUND APPLICATION**

- Apply in a spray volume of 46.8 - 93.5 L/ha at 275 kPa pressure to ensure proper weed coverage. Ensure that all tips are in good condition and spraying the same volume.
- Adjust boom height to ensure uniform coverage of the weeds. For ground applications, spray at 5 – 10 Kph.
- Flat fan nozzles of 80° or 110° are recommended for optimum coverage.
- Do not use floodjet or controlled droplet application equipment or Sprafoil® equipment.
- Nozzles may be oriented 45° forward to enhance crop penetration and to give better weed coverage.
- 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.
- 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) coarse classification. Boom height must be 60 cm or less above the crop or ground.

### **AERIAL APPLICATION**

- Apply THUMPER TOTAL Herbicide Tank-Mix alone in no less than 30 litres of water per hectare at a pressure no less than 275 kPa. For best results when there is a heavy crop canopy, or when the majority of the weeds are cow cockle, a volume rate of 40 L/ha is recommended.
- 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 on this label.
- 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 to any body of water. Avoid drifting of spray onto any body of water or other non-target areas. Specified buffer zones should be observed.
- Coarse sprays are less likely to drift, therefore, avoid combinations of pressure and nozzle type that will result in fine particles (mist).
- Do not spray when the wind is blowing towards a nearby sensitive crop, garden, terrestrial habitat (such as shelterbelt) or aquatic habitat.
- 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 the American Society of Agricultural Engineers (ASAE) coarse classification.
- DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. 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.

### **Aerial 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 pilots have communication capabilities at each treatment site at the time of application.
- 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.

### **Product Specific Precautions:**

- Read and understand the entire label before opening this product. If you have questions, call the manufacturer at 1-888-283-6847 or obtain technical advice from the distributor or your provincial agricultural representative.

### 9.3 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), sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands) and estuarine/marine habitats. Seasonal water bodies require buffer zones if there is water in them during application. Water bodies which do not fill on an annual basis need not be buffered.

Method of Application	Buffer Zones (metres) Required for the Protection of:				
	Freshwater Habitat of Depths:		Estuarine/Marine Habitats of Depths:		Terrestrial Habitat
	Less than 1 m	Greater than 1 m	Less than 1 m	Greater than 1 m	
Field Sprayer*	1	1	1	1	1
Aerial (fixed wing)	20 5		1	1	55
Aerial (rotary wing)	20 3		1	1	45

\*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 canopy or ground, 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 canopy or ground, the labelled buffer zone can be reduced by 30%.

### 9.4 ROTATIONAL CROPS

Only the following crops have been field tested to indicate they may be safely planted at the prescribed interval after an application of THUMPER TOTAL Herbicide Tank-Mix. To avoid the possibility of injury to subsequent crops after an application of the recommended rate of THUMPER TOTAL Herbicide Tank-Mix, follow the crops and replanting interval which appear on this label. A field bioassay must be conducted the year prior to growing any other crop of interest to confirm crop safety.

CROP	REPLANTING INTERVAL
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Alfalfa	10 months
Barley, spring	10 months
Canaryseed	10 months
Canola	10 months
Chickpeas	10 months
Corn, field	10 months
Dry bean	10 months
Flax, including low linolenic acid varieties	10 months
Lentils	10 months
Mustard	10 months
Oats, spring	10 months
Peas, field	10 months
Soybeans	10 months
Sunflowers	10 months
Timothy	10 months
Wheat, spring, durum and winter	10 months

## **SECTION 10: PRE-HARVEST, PRE-GRAZING/FEEDING AND RE-ENTRY INTERVALS**

- DO NOT graze the treated crops or cut for forage or hay within 30 days of application.
- Withdraw meat animals from treated fields at least 3 days before slaughter.
- DO NOT harvest wheat for grain or straw within 60 days of application.
- DO NOT re-enter treated fields within 24 hours of application.

## **SECTION 11: MIXING INSTRUCTIONS**

THUMPER TOTAL Herbicide Tank-Mix must be applied with properly calibrated and clean sprayer equipment. THUMPER TOTAL Herbicide Tank-Mix is specially formulated to mix readily in water. Prior to adding THUMPER TOTAL Herbicide Tank-Mix to the spray tank, ensure that the spray tank is thoroughly clean (see Section 12 “Sprayer Cleanup”).

1. Fill the spray tank  $\frac{1}{4}$  to  $\frac{1}{2}$  full with clean water and begin agitation or bypass.
2. Add the appropriate rate of THUMPER TOTAL 1 Herbicide, as specified under Section 8, directly to the spray tank. Maintain sufficient agitation during both mixing and application.
3. Add THUMPER TOTAL 2 Herbicide, as specified under Section 8.
4. Fill the spray tank with balance of water required.
5. Maintain sufficient agitation during both mixing and application of THUMPER TOTAL Herbicide Tank-Mix.

THUMPER TOTAL Herbicide Tank-Mix may settle if left standing without agitation. If the spray solution is allowed to stand for one hour or more, re-agitate the spray solution for a minimum of 10 minutes before application.

## **SECTION 12: SPRAYER CLEANUP**

Before and after using THUMPER TOTAL Herbicide Tank-Mix always complete a thorough cleaning of the spray tank, lines and filters. The following procedures are recommended:

1. Drain the tank completely, and then wash out tank, boom and hoses with clean water. Drain again.
2. Half fill the tank with clean water and add ammonia (i.e., 3% domestic ammonia solution) at a dilution rate of 1% (i.e., 1 litre of domestic ammonia for every 100 litres of rinsate). Complete filling of the tank with water. Agitate/recirculate and flush through boom and hoses. Leave agitation on for 10 minutes. Drain tank completely.
3. Repeat step 2.
4. Remove nozzles and screens and soak them in a 1% ammonia solution. Inspect nozzles and screens and remove visible residues.
5. Flush tank, boom, and hoses with clean water.
6. Inspect tank for visible residues. If present, repeat step 2.
7. Dispose of rinsings in accordance with provincial regulations.

## **SECTION 13: RESISTANCE MANAGEMENT RECOMMENDATIONS**

For resistance management, THUMPER TOTAL Herbicide Tank-Mix is a Group 2, 4 and 6 herbicide. Any weed population may contain or develop plants naturally resistant to THUMPER TOTAL Herbicide Tank-Mix and other Group 2, 4 and 6 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:

1. Where possible, rotate the use of THUMPER TOTAL Herbicide Tank-Mix or other Group 2, 4 and 6 herbicides with different herbicide groups that control the same weeds in a field.
2. Use tank mixtures with herbicides from a different group when such use is permitted.
3. Herbicide use should be based on an IPM program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical), cultural, biological and other chemical control practices.
4. Monitor treated weed populations for resistance development.

5. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment and planting clean seed.
6. 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.
7. For further information or to report suspected resistance contact Bayer CropScience Inc. via internet at [www.bayercropscience.ca](http://www.bayercropscience.ca) or telephone at 1-888-283-6847.

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