

GROUP 9 HERBICIDE

TOUCHDOWN® DG® Dry Flowable Herbicide

AGRICULTURAL

For Control of Annual and Perennial Grasses and Broadleaf Weeds

GUARANTEE:

Glyphosate (acid equivalent)90%

**KEEP OUT OF REACH OF CHILDREN
READ THE LABEL AND ATTACHED BOOKLET BEFORE USING**

REGISTRATION NO.: **24460**
PEST CONTROL PRODUCT ACT

NET CONTENTS: **8 kg**

Syngenta Crop Protection Canada, Inc.
140 Research Lane
Research Park, ~~University of Guelph~~
Guelph, Ontario
N1G 4Z3

Notification Change

K94/A-1

NOTICE TO USER

This control product is to be used only in accordance with the directions on this label. It is an offense under the Pest Control Products Act to use a control product under unsafe conditions.

NOTICE TO BUYER

Sellers guarantee shall be limited to the terms set out on the label and subject thereto, the buyer, assumes the risk to persons or property arising from the use or handling of this product and accepts the product on that condition.

FIRST AID

IN CASE OF POISONING, contact a physician or 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, IMMEDIATELY dilute by swallowing water or milk. Call a physician or a poison control centre IMMEDIATELY.

If in eyes, flush IMMEDIATELY with plenty of water for at least 15 minutes. Call a physician or poison control centre IMMEDIATELY.

If on skin, flush with water. Remove any contaminated clothing. If irritation develops, contact a physician or poison control centre.

TOXICOLOGICAL INFORMATION

Treat symptomatically if ingested or in contact with eyes or skin.

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN

1. **When handling the concentrate:**
 - * Wear a long sleeve shirt & long pants, chemically resistant gloves and eye protection.
 - * Wash splashes from skin and eyes immediately with plenty of water.
2. **When spraying:**
 - * Wear a long sleeved shirt & long pants.
 - * Avoid working in spray mist.
 - * Avoid all drift or contact with other vegetation. See ENVIRONMENTAL HAZARDS
3. **After spraying:**
 - * Wash hands and shower thoroughly.

4. As with all agrochemical products:

- * When using, do not eat, drink or smoke.
- * Wash hands and exposed skin with soap and water thoroughly before eating, drinking or smoking.
- * Wash out container thoroughly, empty washings into spray tank and dispose of safely. See DISPOSAL statement.
- * Keep away from food, drink and animal feeding stuffs.
- * Do not contaminate ponds, waterways or ditches with chemical. See ENVIRONMENTAL HAZARDS.
- * Store in original container, tightly closed, in a safe place.

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 U.S., contact 1-866-375-4648 or www.cropro.org.

PHYSICAL AND CHEMICAL HAZARDS

Spray solutions of TOUCHDOWN DG should be mixed, stored and applied only in stainless steel, aluminum, fibreglass, plastic and plastic-lined steel containers.

DO NOT MIX, STORE OR APPLY TOUCHDOWN DG OR SPRAY SOLUTIONS OF TOUCHDOWN DG IN GALVANIZED STEEL OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS. TOUCHDOWN DG or spray solutions of TOUCHDOWN DG react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode causing serious personal injury if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

ENVIRONMENTAL HAZARDS

Avoid direct application to any body of water populated with fish or used for domestic purposes. Do not use in areas where adverse impact on domestic water or aquatic species is likely. Do not contaminate water by disposal of waste or cleaning of equipment. Avoid all drift to or contact with other vegetation for which treatment is not intended as damage or destruction may occur. Do not apply using aerial equipment.

STORAGE

Always store in original container with top closed.

Avoid contamination of seed, feed and foodstuffs.

Heated storage is not required.

SPILL CLEANUP

Observe safety and protective measures as noted under PRECAUTIONS.

Spills on floor can be swept up and used if sufficiently free of other contaminants likely to block strainer screen or nozzles. Place in plastic lined metal drum or a fibre drum and dispose of in accordance with instructions provided under DISPOSAL. Thoroughly sweep floor surfaces with a sweeping compound and dispose as waste.

Broken and leaking containers should have container or its contents transferred to a **plastic-lined drum** or other non-leaking container and disposed of by use according to label directions or in accordance with instructions provided under DISPOSAL.

DECONTAMINATION AND DISPOSAL

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 clean up of spills.

CONTAINER DISPOSAL:

FOR DISPOSAL OF PLASTIC JUGS:

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.

***IN CASE OF EMERGENCY INVOLVING A MAJOR SPILL, FIRE OR POISONING
CALL 1-800-327-8633 (FASTMED)***

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Avoid direct application to any body of water populated with fish or used for domestic purposes. Do not use in areas where adverse impact on domestic water or aquatic species is likely. Do not contaminate water by disposal of waste or cleaning of equipment. Avoid all drift to or contact with other vegetation for which treatment is not intended as damage or destruction may occur. Do not apply using aerial equipment.

STORAGE

Always store in original container with top closed.

Avoid contamination of seed, feed and foodstuffs.

Heated storage is not required.

SPILL CLEANUP

Observe safety and protective measures as noted under PRECAUTIONS.

Spills on floor can be swept up and used if sufficiently free of other contaminants likely to block strainer screen or nozzles. Place in plastic lined metal drum or a fibre drum and dispose of in accordance with instructions provided under DISPOSAL. Thoroughly sweep floor surfaces with a sweeping compound and dispose as waste.

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PRODUCT INFORMATION

TOUCHDOWN DG is a water soluble herbicide that must be mixed in solution with DISPERSE Adjuvant to become a herbicide solution. In addition, a surfactant is required in the spray mixture; use FRIGATE[®] for this purpose.

TOUCHDOWN DG when mixed with DISPERSE[™] Adjuvant becomes a herbicide solution for **non-selective** weed control:

In cropping systems - before planting of all crops;
In pasture renovation;
In forage, (legume and grass) establishment;
In minimum tillage systems;
In tree crops:
 Apple Cherry Peach
 Pear Plum
In grapes and highbush blueberries.
In cranberries and strawberries.

TOUCHDOWN DG solution is to be applied as a foliage spray for the control of most herbaceous plants. It may be applied through most standard industrial or field type sprayers after dilution and thorough mixing with water in accordance with the booklet instructions.

TOUCHDOWN DG moves through the plant from the point of foliage contact into the root system. Visible effects on most annual weeds occur within 2 to 4 days, but, on most perennial weeds, may not occur until 7 to 10 days. Extremely cool or cloudy weather at treatment time may slow down activity of this product and delay visual effects of control. Visible effects are a gradual wilting and yellowing of the plant which advances to complete browning of above ground growth and deterioration of underground plant parts.

Delay application until vegetation has emerged to the stages described for control of such vegetation under the *APPLICATION EQUIPMENT AND USE RATES* section of this booklet to provide adequate leaf surface to receive the spray. Unemerged plants arising from underground rhizomes or root stocks of perennials will not be affected by the spray and will continue to grow. For this reason best control of most perennial weeds is obtained when treatment is made at late growth stages approaching maturity.

Always use the higher rate of TOUCHDOWN DG per hectare within the recommended range when weed growth is heavy or dense or weeds are growing in an undisturbed (non-cultivated) area.

Optimum weed control will be obtained when weeds are actively growing at application time.

Do not treat weeds growing under stress conditions such as caused by drought stress, insect or disease damage as reduced weed control may result. Poor control may also occur when treating weeds heavily covered with dust.

This product does not provide residual weed control. For subsequent residual weed control apply a registered residual herbicide.

Rainfall occurring within 6 hours after application may reduce effectiveness. Heavy rainfall within 2 hours after application may wash the chemical off the foliage and a repeat treatment may be required.

For best results, spray coverage should be uniform and complete. Do not spray weed foliage to the point of runoff.

DIRECTIONS FOR USE

GENERAL USE PRECAUTIONS

DO NOT APPLY USING AERIAL EQUIPMENT

Reduced results may occur if water containing soil is used, such as water from ponds, ditches and dugouts.

Avoid contact with desirable vegetation by direct application or spray drift as destruction may result.

Do not apply using mist blowers.

Do not use in greenhouses.

Mix only the amount of solution to be used during a one day period, as reduced activity may result from use of leftover solution.

Drain and clean application equipment immediately after using this product.

Do not contaminate water sources by disposal of waste or cleaning of equipment.

Poor control may also occur when treating weeds heavily covered with dust.

Avoid drift or overspray to non-target vegetation and wildlife habitats.

CAUTION: Do not graze the treated crops or cut for hay; sufficient data are not available to support such use.

AGRICULTURAL USES

The following are use situations for TOUCHDOWN DG solution. Information on the equipment selected to apply TOUCHDOWN DG can be found in the APPLICATION EQUIPMENT section. Use rates can then be selected from the TOUCHDOWN DG USE RATES TABLE.

The type of vegetation present and the use situation will dictate the choice of application equipment.

USE	REMARKS
AGRICULTURAL USES	
Summerfallow	To control perennial weed problems such as quack grass and Canada thistle and other weeds listed on this label.
Fall Stubble	As above.
Spot Treatments	May be used for control of quack grass, Canada thistle and other perennial weeds in barley, corn, oats, soybeans, wheat, strawberry, blueberry and forage grasses and legumes including seed production. Treatments may be made up to heading of small grain, initial pod set on soybeans, silking of corn, and emergence of seed heads. <u>The crop in the treated area will be destroyed.</u> Avoid drift beyond the treated area. DO NOT APPLY IF CROP GROWTH HAS ADVANCED BEYOND SEED SET. DO NOT GRAZE OR HARVEST TREATED AREAS IN FORAGES.
Minimum or Zero Tillage	For wheat, barley and oats, apply to emerged annual weeds less than 15 cm tall. Apply prior to or after seeding but before crop emerges. DO NOT APPLY AFTER CROP EMERGENCE. Since TOUCHDOWN DG does not provide residual weed control, application too far in advance of seeding will allow weeds to emerge between application and crop emergence.

USE	REMARKS
Forage Legumes & Grasses	To control emerged vegetation prior to emergence of legumes and grasses. If legumes and grasses are to be underseeded with a cover crop, TOUCHDOWN DG must be applied prior to planting any cover crop.
Pasture Renovation	To control or suppress existing vegetation for zero-tillage seeding of legumes into established sod for renovation. Vegetation should be at least 20 cm in height with maximum number of seedlings and shoots emerged. Apply before or after seeding but before crop emerges.
Forage Seed Production (For spot treatment)	To control perennial weeds such as quack grass and Canada thistle in seed fields. Apply to weeds at least 20 to 25 cm in height and before emergence of seed head. <u>The crop in the treated area will be destroyed.</u> Avoid drift outside of treated area.
Fruit Crops	<p>To control annual and perennial weeds in established vineyards, or orchards, or for site preparation prior to planting trees or vines.</p> <p>Use a boom sprayer, shielded sprayers, hand held guns, or wiper, roller or wick applicators (The latter three are for use only in orchards or vineyards).</p> <p>Repeat applications may be necessary as new seedlings emerge or underground parts of untreated weeds emerge.</p> <p>DO NOT APPLY MORE THAN 12.75 kg OF TOUCHDOWN DG PER YEAR.</p> <p>EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT OF TOUCHDOWN DG SOLUTION, SPRAY DRIFT, OR MIST WITH FOLIAGE OR GREEN BARK OF TRUNK, BRANCHES, SUCKERS, FRUIT, OR OTHER PARTS OF TREES OR VINES. CONTACT OF TOUCHDOWN DG WITH ANY OTHER THAN MATURE BROWN BARK CAN RESULT IN SERIOUS CROP DAMAGE.</p>
Apples, Apricots, Cherries, (Sweet & Sour), Peaches, Pears and Plums	<p>To control annual and perennial weeds.</p> <p>Allow a minimum of 30 days between last application and harvest.</p> <p>Do not apply more than 3 times per year.</p>
Filberts, Hazelnuts (established plantations)	<p>Apply a directed spray to established plantings to control annual and perennial weeds.</p> <p>Do not apply within 14 days of harvest.</p>

USE	REMARKS
Grapes	<p>To control annual and perennial weeds.</p> <p>Except for Concord variety, remove all sucker growth from the spray zone before spraying.</p> <p>Suckering should be done within 2 weeks prior to herbicide application.</p> <p>Do not apply to vines that have been established less than 3 years.</p> <p>Do not apply within 14 days of harvest.</p> <p>Do not apply more than 3 times per year.</p>
Blueberries (Highbush)	<p>Apply as a directed spray to control annual and perennial weeds. Avoid contact with the bushes.</p> <p>Do not apply within 30 days of harvest.</p> <p>Do not apply more than once per season.</p>
Cranberries	<p>Use a wiper, wick or roller applicator to control emerged cottontop.</p> <p>Do not apply within 30 days of harvest.</p> <p>Maximum of 1 application per season.</p>

GENERAL USE INFORMATION

DISPERSE Adjuvant must be used in conjunction with TOUCHDOWN DG to make a herbicidal solution.

A surfactant (FRIGATE) is required for use with TOUCHDOWN DG. See the following SURFACTANT section.

APPLICATION EQUIPMENT (and Mixing, Application and Weeds Controlled)

BOOM (Ground Boom) and BOOMLESS Equipment:

Mixing

For field or industrial type sprayers, fill the spray tank with one half the required amount of water. With the agitator running, add the required amount of DISPERSE Adjuvant followed by TOUCHDOWN DG and the surfactant FRIGATE then add the remaining portion of water with the agitator running. Placing the filling hose below the surface of the liquid solution will prevent any excessive foaming. Remove the hose from tank immediately after filling to avoid back siphoning into water source (A one-way valve should be installed to prevent back siphoning). Use of mechanical agitators may cause excessive foaming. By-pass lines should terminate at the bottom of the tank.

Application

Use flat fan nozzles in boom sprayers. Apply the required amount of DISPERSE + TOUCHDOWN DG in 100 L to 300 L of water per hectare when used for the control of perennial weeds, woody brush and trees. Use no more pressure than 275 kPa.

For annual weeds and grasses, quack grass and other grasses as listed, apply DISPERSE + TOUCHDOWN DG in 50 L to 100 L of water per hectare. Use no more pressure than 275 kPa.

Weeds Controlled**ANNUAL WEEDS- Annual Grasses**

Bluegrass (annual)	<i>Poa annua</i>
Crab Grass	<i>Digitaria sanguinalis</i>
Downy Brome	<i>Bromus tectorum</i>
Green Foxtail	<i>Setaria viridis</i>
Volunteer Barley	<i>Hordeum spp.</i>
Volunteer Corn	<i>Zea Mays</i>
Volunteer Wheat	<i>Triticum spp.</i>
Wild Oats	<i>Avena fatu</i>

ANNUAL WEEDS**Annual Broadleaf Weeds**

Flixweed	<i>Descurania sophia</i>
Kochia	<i>Kochia scoparia</i>
Lady's-Thumb	<i>Polygonum persicaria</i>
Lamb's-Quarters (common)	<i>Chenopodium album</i>
Narrow-leaved Vetch	<i>Vicia angustifolia</i>
Prickly Lettuce	<i>Lactuca scariola</i>
Ragweed (common)	<i>Ambrosia artemisiifolia</i>
Redroot Pigweed	<i>Amaranthus retroflexus</i>
Russian Thistle	<i>Salsola pestifer</i>
Shepherd's Purse	<i>Capsella bursa-pastoris</i>
Sowthistle (annual)	<i>Sonchus oleraceus</i>
Stinkweed	<i>Thlaspi arvense</i>
Volunteer Canola	<i>Brassica spp</i>
Wild Buckwheat	<i>Polygonum convolvulus</i>
Wild Mustard	<i>Sinapsis arvensis</i>

PERENNIAL WEEDS**Perennial Grasses/Sedges**

Blue Grass (Canada)	<i>Poa compressa</i>
Blue Grass (Kentucky)	<i>Poa pratensis</i>
Brome Grass (smooth)	<i>Bromus inermis</i>
Cattail (common)	<i>Typha latifolia</i>
Foxtail Barley	<i>Hordeum jubatum</i>
Quackgrass	<i>Agropyron repens</i>
Yellow Nutsedge	<i>Cyperus esculentus</i>

Perennial Broadleaved Weeds

Cottontop	<i>Eriophorum chamissionis</i>
Curled Dock	<i>Rumex crispus</i>
Field Bindweed	<i>Convolvulus arvensis</i>
Hemp Dogbane	<i>Apocynum cannabinum</i>
Hoary Cress	<i>Cardaria draba</i>
Knotweed (Japanese)	<i>Polygonum cuspidatum</i>
Milkweed (common)	<i>Asclepias syriaca</i>
Poison Ivy	<i>Rhus radicans</i>
Sow Thistle (perennial)	<i>Sonchus arvensis</i>
Thistle (Canada)	<i>Cirsium arvense</i>
Toad Flax	<i>Linaria vulgaris</i>
Wormwood (Absinth)	<i>Artemisia absinthium</i>

Perennial Weeds

When applied as recommended, TOUCHDOWN DG will control:

Bindweed (field)	<i>Convolvulus arvensis</i>
Blue Grass (Canada)	<i>Poa compressa</i>
Blue Grass (Kentucky)	<i>Poa pratensis</i>
Brome Grass (smooth)	<i>Bromus inermis</i>
Cattail (common)	<i>Typha latifolia</i>
Cress (hoary)	<i>Cardaria draba</i>
Dock (curled)	<i>Rumex crispus</i>
Dogbane (hemp)	<i>Apocynum Cannabinum</i>
Knotweed (Japanese)	<i>Polygonum cuspidatum</i>
Milkweed (common)	<i>Asclepias syriaca</i>
Nutsedge (yellow)	<i>Cyperus esculentus</i>
Poison Ivy	<i>Rhus radicans</i>
Quack Grass	<i>Elymus repens</i>
Sowthistle (perennial)	<i>Sonchus arvensis</i>
Thistle (Canada)	<i>Cirsium arvense</i>
Toadflax	<i>Linaria vulgaris</i>
Wormwood (Absinth)	<i>Artemisia absinthium</i>

KNAPSACK SPRAYERS- HAND HELD and HIGH VOLUME EQUIPMENT:**Mixing**

Mix the proper amount of DISPERSE + TOUCHDOWN DG and the surfactant FRIGATE in a larger container. Fill sprayer with the mixed solution.

Application

Spray coverage should be uniform and complete. Apply on a spray-to-wet basis. Do not spray to the point of run-off. Handgun application should be properly directed to avoid spraying desirable plants.

Weeds Controlled

See Weeds Controlled section under Boom Equipment.

WIPER, WICK AND ROLLER EQUIPMENT

These applicators apply TOUCHDOWN DG spray solution directly onto the weeds by contacting the weed with an absorbant material containing the herbicide solution. The weeds must be above any desired vegetation to prevent contact with the desired vegetation.

Mixing

Mix the proper amount of DISPERSE & TOUCHDOWN DG with water in a larger container. Use this mixed solution in wiper, wick or roller equipment.

Application

These applicators can be used to control weeds in:

- the following agricultural crops:
apple, cherry, peach, pear and plum orchards, grape vineyards, soybeans, dry beans, strawberries and cranberries.
- application must be made before initial pod set in soybeans & dry beans.

The applicator should be adjusted so that the contact point of the wiper, roller or wick is at least 5 cm above the desirable vegetation. Droplets or foam of the TOUCHDOWN DG solution settling on desirable vegetation may result in discolouration, stunting or destruction.

Weeds should be a minimum of 15 cm above the desired vegetation.

Best results may be obtained if two applications are made in opposite directions where possible. Otherwise, best results may be obtained when more of the weed is exposed to TOUCHDOWN DG solution.

Weeds not contacted will not be affected. This may occur in dense clumps, severe infestation, or when the height of the weeds varies so that not all weeds are contacted. In these instances, a repeat treatment may be necessary.

AVOID CONTACT WITH DESIRABLE VEGETATION.

Application Notes:

- * Maintain wiper equipment in good operating condition.
- * Avoid leakage or dripping onto desirable vegetation.
- * Adjust height of wiper applicator to ensure proper contact with weeds.
- * In severe weed infestations, reduce equipment ground speed to ensure that an adequate amount of TOUCHDOWN DG solution is applied.
- * Keep wiping surfaces clean.

- * Maintain recommended roller speed at 50 to 150 rpm on roller applicators while in use.
- * Keep wiper material at proper degree of saturation with herbicide solution.
- * DO NOT use wiper equipment when weeds are wet.
- * DO NOT operate equipment at ground speeds below 4 and greater than 10 km/h. Weed control may be affected by speed of application equipment. As weed density increases, reduce equipment ground speed to ensure good coverage of weeds.
- * Be aware that on sloping ground the herbicide solution may migrate, causing dripping on the lower end and drying on the upper end of the wiper applicator.
- * Variation in equipment design may affect weed control. With wiper applicators, the wiping material and its orientation must allow delivery of sufficient quantities of the recommended TOUCHDOWN DG solution directly to the weed.
- * Mix only the amount of solution to be used during a one day period, as reduced activity may result from use of leftover solution.
- * Care must be taken with all types of wipers to ensure that the absorbent material does not become over saturated, causing the herbicide to drip onto desirable vegetation.
- * Thoroughly drain and clean all equipment immediately after use.

Weed Controlled

When applied as recommended, TOUCHDOWN DG will control:

Green Foxtail	<i>Setaria viridis</i>	Volunteer Barley	<i>Hordeum spp</i>
Lamb's-Quarters	<i>Chenopodium album</i>	Volunteer Corn	<i>Zea mays</i>
Wild Oats	<i>Avena fatua</i>	Cottontop	<i>Eriophorum chamissonis</i>

Perennial Weeds

When applied as recommended TOUCHDOWN DG Suppresses:

Canada Thistle	<i>Cirsium arvense</i>	Quack Grass	<i>Agropyron repens</i>
Milkweed	<i>Asclepias syriaca</i>		

SURFACTANT

The use of FRIGATE surfactant is required for effective use of DISPERSE+TOUCHDOWN DG.

Surfactant	Type	Amount of FRIGATE® per 100 Litres of Spray Mixture Unless Otherwise Stated	
		All Uses Except Longer term Quack Grass Control	Longer Term Quack Grass Control
FRIGATE®	cationic	Use at the rate of 500 mL per 100 L (0.5% v/v) of spray mixture.	Use at the rate of 1000 mL per 100 L (1% v/v) of spray mixture.

MIXING INSTRUCTIONS

To prepare the herbicidal solution, fill the spray tank half full of water and with agitator running add required amount of DISPERSE Adjuvant. Then add the required amount of TOUCHDOWN DG. Finally, add the required amount of the surfactant FRIGATE. Complete filling the tank with agitator running.

TOUCHDOWN DG USE RATES

The surfactant FRIGATE is required for all spray mixtures. See the SURFACTANT section.

Results are best when weeds are actively growing. If weeds have been mowed, allow to return to optimum growth stages.

Refer to APPLICATION EQUIPMENT section for other pertinent details of **Mixing, Application and Weeds Controlled.**

TOUCHDOWN DG Use Rate Table					
Equipment	Vegetation	Weed Stage	DISPERSE + TOUCHDOWN DG Rates	Water Volumes	Remarks
Boom or Boomless, Knapsack and High Volume	Annual Weeds	less than 15 cm tall	0.4 kg + 0.4 kg/ha	50 to 100 L/ha	For minimum zero tillage use. Apply before or after seeding but before crop emerges.
		less than 15 cm tall	0.8 kg + 0.8 kg/ha	50 to 100 L/ha	DISPERSE + TOUCHDOWN DG rates are equivalent to 10 g + 10 g/100 m ² . DISPERSE + TOUCHDOWN DG rates are equivalent to 15 g + 15 g/100m ² .
		greater than 15 cm tall	1.25 + 1.25 kg/ha	50 to 100 L/ha	Repeat treatments may be necessary for later germinating weeds. Apply prior to any crop emergence.
Boom or Boomless, Knapsack and High Volume	Perennial Weeds	early head or early bud stage (See listing of perennial weeds)	1.75 + 1.75 kg to 5.5 + 5.5 kg/ha	100 to 300 L/ha	Allow 7 days between application and tillage. DISPERSE + TOUCHDOWN DG rates are equivalent to 20 g to 50 g/100m ² .
	Canada Thistle	bud stage or beyond	1.75 + 1.75 kg to 2.5 + 2.5 kg/ha	100 to 300 L/ha	Allow 5 days between application and tillage.

TOUCHDOWN DG Use Rate Table					
Equipment	Vegetation	Weed Stage	DISPERSE + TOUCHDOWN DG Rates	Water Volumes	Remarks
	Canada Thistle	rosette stage (minimum diameter 15 cm)	1 kg + 1kg/ha	50 to 100 L/ha	<p>Heavy frost prior to application may decrease control.</p> <p>Summerfallow use: Ensure proper growth stage by summerfallow tillage between July 5 and Aug 1. Allow regrowth for a minimum of 5 weeks to reach rosette stage.</p> <p>Allow 10 days between application and tillage.</p> <p>Treatment after mild frost is possible if leaves are still green and actively growing but not after a heavy frost.</p>
Boom or Boomless, Knapsack and High Volume	Field Bindweed	full bloom or beyond	2.5 + 2.5 kg to 4.5 + 4.5 kg/ha	100 to 300 L/ha	<p>Allow 7 days or more between application and tillage.</p>
	Common Milkweed	bud to full bloom for most shoots	4.5 + 5.5 kg/ha	100 to 300 L/ha	<p>Spot treatment rates are 50 g + 50 g per 5 L water/100 m² and spray to wet not runoff.</p> <p>Reduced results may occur if sprayed after full bloom.</p> <p>Repeat treatment may be required.</p> <p>Allow 7 days or more between application and tillage.</p>

TOUCHDOWN DG Use Rate Table					
Equipment	Vegetation	Weed Stage	DISPERSE + TOUCHDOWN DG Rates	Water Volumes	Remarks
	Quack grass	3 - 5 leaves (approx. 20 cm high)	1 kg + 1 kg/ha 1 + 1 kg to 2.5 + 2.5 kg/ha	50 to 100 L/ha 50 to 100 L/ha	For season long control.
	Spring (No Fall Tillage)				For longer term control. Reduced control may result if rhizomes have become dormant. Allow 7 days between application and tillage.
	Spring (Fall-Tillage)	3 - 5 leaves (approx. 20 cm high)	1 kg + 1 kg/ha	50 to 100 L/ha	For season long control. Apply in spring prior to seeding. Growth stage usually reached 1 to 4 weeks later than on land that has been fall-tilled.
Boom or Boomless, Knapsack and High Volume	Spring (Fall-Tillage) Continued. ..				Reduced control may result on land tilled deeper than 15 cm.

TOUCHDOWN DG Use Rate Table					
Equipment	Vegetation	Weed Stage	DISPERSE + TOUCHDOWN DG Rates	Water Volumes	Remarks
	After Harvest in Fall	3 - 5 leaves (approx. 20 cm high)	1 + 1kg/ha 1.50 + 1.50 kg to 2.50 + 2.50 kg/ha	50 to 100 L/ha 50 to 100 L/ha	<p>For season long control the following year.</p> <p>For longer term control.</p> <p>Do not till between harvest and application.</p> <p>Allow 5 days or more between application and tillage.</p> <p>Reduced control may result if rhizomes have become dormant due to poor soil fertility or land has not been tilled for several years.</p> <p>Treatment after a mild frost is possible if 3-4 leaves are still green and actively growing but not after a heavy frost.</p>
Knapsack or High Volume			0.375 + 0.375 kg to 0.825 + 0.825 kg/ha	100 L/ha	
Wipers and Wicks	Annual Weeds	Weeds to be at least 15 cm above desirable vegetation	0.375 + 0.375 kg/ha	2 L	<p>Contact point for wiper or wick must be at least 15 cm above desirable vegetation.</p> <p>In severe weed infestations, reduce ground speed to ensure adequate control.</p>
	Perennial Weeds	As above	0.375 + 0.375 kg/ha	2 L	<p>Contact point as above.</p> <p>This treatment will only <u>suppress</u> the weeds contacted.</p>

TOUCHDOWN DG Use Rate Table					
Equipment	Vegetation	Weed Stage	DISPERSE + TOUCHDOWN DG Rates	Water Volumes	Remarks
	Cottontop	As above	0.375 + 0.375 kg/ha	4 L	For use in cranberries. Apply after fruit set and no later than 30 days before harvest. For severe infestation, reduce ground speed to ensure adequate contact. A second application in the opposite direction may be beneficial.
Rollers	Annual Weeds	As above	0.175 + 0.175 kg to 0.375 + 0.375 kg/ha	10 L	
	Perennial Weeds	As above	As above	As above	This treatment will only <u>suppress</u> the weed contacted. Use the higher rate on weeds that are beyond 15 cm in height or when weed infestation is heavy. In severe weed infestations, reduce ground speed to ensure adequate contact. A second treatment in the opposite direction may be beneficial.

Resistance-Management Recommendations

For resistance management, TOUCHDOWN DG Herbicide is a Group 9 herbicide. Any weed population may contain or develop plants naturally resistant to TOUCHDOWN DG Herbicide and other Group 9 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 TOUCHDOWN DG Herbicide or other Group 9 herbicides 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.

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.

Monitor treated weed populations for resistance development. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment and planting clean seed.

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 company representatives at 1-800-459-2422 (in Eastern Canada) or 1-800-665-9250 (in Western Canada) or at www.syngenta.ca.

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