

PMRA Approved Label
2021-5991
2023-01-18
Container Label

GROUP	15	HERBICIDE
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ZIDUA® SC

HERBICIDE

SUSPENSION CONCENTRATE

COMMERCIAL (AGRICULTURAL)

ACTIVE INGREDIENT: Pyroxasulfone..... 500 g/L

Contains 1,2-benzisothiazolin-3-one and 2-methyl-4-isothiazolin-3-one, each at 0.0043%, as preservatives

OR

Contains 1,2-benzisothiazolin-3-one at 0.03800%, 5-chloro-2-methyl-4-isothiazolin-3-one at 0.00111%, 2-methyl-4-isothiazolin-3-one at 0.00037% and 2-bromo-2-nitropropane-1,3-diol at 0.02400%, as preservatives

REGISTRATION NO. 32542

PEST CONTROL PRODUCTS ACT

**IN CASE OF EMERGENCY ENDANGERING LIFE OR PROPERTY
INVOLVING THIS PRODUCT, CALL DAY OR NIGHT,
1-800-454-2673**

WARNING, contains the allergen soy

READ THE LABEL AND BOOKLET BEFORE USING

KEEP OUT OF REACH OF CHILDREN

NET CONTENTS: 0.1 L to 1000 L

BASF Canada Inc.
5025 Creekbank Road
Building A, 2nd Floor
Mississauga, Ontario L4W 0B6
1-877-371-2273

ZIDUA is a registered trade-mark of BASF SE, used with permission by BASF Canada Inc.

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN.

Avoid contact with skin, eyes or clothing.

Wear coveralls over a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes during mixing, loading, application, clean-up and repair. Gloves are not required during application within a closed cab.

Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions exist for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

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

DO NOT apply by air.

Do not handle or apply more than 66 L of product per day.

DO NOT enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

[Optional statement for smaller container sizes]

Please refer to the booklet for the complete list of precautions.

Avoid contact with skin, eyes or clothing.

DO NOT apply by air.

FIRST AID

If swallowed: Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. 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.

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

TOXICOLOGICAL INFORMATION

Treat symptomatically.

ENVIRONMENTAL PRECAUTIONS

TOXIC to aquatic organisms and to non-target terrestrial plants. Observe spray buffer zones specified under **DIRECTIONS FOR USE**.

This product demonstrates the properties and characteristics associated with chemicals detected in ground water. The use of this product in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

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 filter strip between the treated area and the edge of the water body.

STORAGE

Store this product away from food or feed.

Store in original container in cool, dry, well-ventilated location.

DISPOSAL

For Recyclable Containers

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 rinsing 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–Refillable Containers

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.

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.

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 Product Act* to use this product in a way that is inconsistent with the directions on the label.

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Booklet

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Building A, 2nd Floor
Mississauga, Ontario L4W 0B6

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GENERAL INFORMATION

ZIDUA SC is a suspension concentrate herbicide for the control of labelled annual grasses and annual broadleaf weeds in corn, soybeans, sunflowers, lentils, chickpeas, faba beans, dry field peas, potatoes, and mint; and as a post-harvest treatment.

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN.

Avoid contact with skin, eyes or clothing.

Wear coveralls over a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes during mixing, loading, application, clean-up and repair. Gloves are not required during application within a closed cab.

Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions exist for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

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

DO NOT apply by air.

Do not handle or apply more than 66 L of product per day.

DO NOT enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

FIRST AID

If swallowed: Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

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

TOXICOLOGICAL INFORMATION

Treat symptomatically.

ENVIRONMENTAL PRECAUTIONS

TOXIC to aquatic organisms and to non-target terrestrial plants. Observe spray buffer zones specified under **DIRECTIONS FOR USE**.

This product demonstrates the properties and characteristics associated with chemicals detected in ground water. The use of this product in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

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 filter strip between the treated area and the edge of the water body.

STORAGE

Store this product away from food or feed.

Store in original container in cool, dry, well-ventilated location.

DISPOSAL

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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:

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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.

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.

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 Product Act* to use this product in a way that is inconsistent with the directions on the label.

DIRECTIONS FOR USE

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.

When tank-mixes are permitted, read and observe all label directions, including rates and restrictions for each product used in the tank-mix. Follow the more stringent label precautionary measures for mixing, loading and applying stated on both product labels.

WEEDS CONTROLLED

ZIDUA SC may be applied to corn or soybeans at a rate of 250 – 493 mL/ha for the control of the following weeds:

Annual grasses	Annual Broadleaf Weeds
Barnyard grass	Common waterhemp
Crabgrass (large)	Redroot pigweed
Foxtail (green, yellow, giant)	Palmer amaranth
Ryegrass (Italian)	

Application rates of **ZIDUA SC** may vary depending on soil texture. Refer to the table below for soil texture groups used in the rate tables throughout this label unless a specific soil texture is mentioned. The table below includes a complete listing of soil textures included in each of the soil texture groupings.

Soil Textures

Coarse	Medium	Medium-Fine	Fine
Sand Loamy sand Sandy loam	Loam Silt loam Silt	Sandy clay loam Sandy clay Silty clay loam	Silty clay Clay loam Clay

WEEDS SUPPRESSED - Early season residual suppression

ZIDUA SC may be applied to lentils at a rate of 120 – 180 mL/ha, or to corn, soybeans, sunflowers, chickpeas, faba beans, dry field peas, and potatoes at a rate of 120 – 240 mL/ha for the early season residual suppression of the weeds listed below when an in-crop application of another registered herbicide is planned. Application rates are for all soil types. Use the higher rate in the listed rate range for longer residual and under heavier weed populations.

Annual grasses	Annual Broadleaf Weeds
Foxtail (green and yellow)	Cleavers*
Wild oat	Common waterhemp
Barnyard grass	Eastern black nightshade*
Downy brome	Kochia*
Japanese brome	Lamb's quarters
	Redroot pigweed
	Shepherd's purse
	Wild Buckwheat
	Common Chickweed

*Including Group 2 resistant biotypes

WEEDS CONTROLLED – POST- HARVEST TREATMENT

ZIDUA SC may be applied as a post-harvest treatment at a rate of 120 – 240 mL/ha for the control of weeds listed below. Application rates are for all soil types. Use the higher rate in the listed rate range for longer residual and under heavier weed populations.

Annual grasses
Bluegrass, annual

APPLICATION INFORMATION

Moisture is necessary to activate the active ingredient pyroxasulfone in soil for weed control. Dry weather following applications of **ZIDUA SC** may reduce effectiveness. However, when adequate moisture is received after dry conditions, **ZIDUA SC** will control susceptible germinating weeds. **ZIDUA SC** may not control weeds that germinate after application but before an activating rainfall / irrigation, or weeds that germinate through cracks resulting from dry soil. When adequate moisture is not received after **ZIDUA SC** application, weed control may be improved by irrigation.

When applying **ZIDUA SC** with glyphosate as a tank mix partner, use glyphosate present as isopropylamine, potassium, or diammonium salt.

DO NOT use flood irrigation to activate or incorporate **ZIDUA SC**.

DO NOT use on peat or muck soils and soils with 7% or more organic matter content.

DO NOT apply by air.

DO NOT apply through any type of irrigation system.

DO NOT contaminate irrigation ditches or water used for domestic purposes.

DO NOT apply **ZIDUA SC** or **ZIDUA SC** tank mixtures when environmental conditions may result in drift to non-target sites.

Drift of this product may be harmful to non-target plants near the treatment area.

DO NOT apply during periods of gusty winds.

Apply in a minimum water volume of 100 L/ha in Eastern Canada. Apply in a water volume of 50 to 100 L/ha in Western Canada.

Consult nozzle manufacturer's recommendation for spray pressures for specific nozzles.

Applications to crops under stress due to either inadequate or excess of moisture for normal crop development, cool and hot temperatures, sodic soils, poorly drained soils, hail damage, flooding, pesticide injury, mechanical injury or widely fluctuating temperatures may result in crop injury.

When tank-mixes are permitted, read and observe all label directions, including rates and restrictions for each product used in the tank-mix. Follow the more stringent label precautionary measures for mixing, loading and applying stated on both product labels.

SPRAY BUFFER ZONES

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 S572.1) medium classification. Boom height must be 60 cm or less above the crop or ground.

DO NOT apply by air.

A spray buffer zone is NOT required for:

- uses with hand-held application equipment permitted on this label
- low-clearance hooded or shielded sprayers that prevent spray contact with crop, fruit or foliage

The spray 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).

Method of application	Crop	Spray Buffer Zones (metres) Required for the Protection of:		
		Freshwater Habitat of Depths:		Terrestrial habitat
		Less than 1 m	Greater than 1 m	

Field sprayer	Sunflowers Field and seed corn Soybeans Lentils Dry field peas Chickpeas Faba beans Peanuts Potatoes Mint	5	3	1
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When tank mixes are permitted, consult the labels of the tank-mix partners and observe the largest (most restrictive) spray 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.

The spray buffer zones for this product can be modified based on weather conditions and spray equipment configuration by accessing the Spray Buffer Zone Calculator on the Pesticides portion of the Canada.ca website.

FIELD CORN

ZIDUA SC can be applied as a pre-plant surface, pre-emergence or early post-emergence treatment to field corn up to the 4 leaf stage of corn. Crop seeds must be planted a minimum 2.5 cm deep.

ZIDUA SC must be applied and activated prior to weed seedling emergence.

Application timing	Product	Rate / ha by soil texture			
		Coarse	Medium - Fine soil		Fine
	OM ≤ 3%		3% < OM < 7%		
Pre-plant (up to 30 days before planting) or Pre-emergent or Early post-emergent (up to 4 leaf stage of corn)	ZIDUA SC alone	250 mL/ha	332 mL/ha	417 mL/ha	493 mL/ha

Tank Mix Options

ZIDUA SC may also be applied in tank mix with the following products for the control of weeds in addition to those on the **ZIDUA SC** label.

Application timing	Product	Rate / ha
Pre-plant (up to 30 days before planting) or Pre-emergent	ZIDUA SC	See Application rate table for ZIDUA SC applied alone.
	+ glyphosate	Refer to glyphosate label for weeds controlled and registered rates.

Pre-plant (up to 30 days before planting) or Pre-emergent or Early post-emergent	ZIDUA SC	See Application rate table for ZIDUA SC applied alone.
	+ Aatrex Liquid 480	2.1 – 3.1 L

FIELD CORN – Early season residual suppression

ZIDUA SC can be applied as a pre-plant surface, pre-emergence or early post-emergence treatment to field corn up to the 4 leaf stage of corn. Crop seeds must be planted a minimum 2.5 cm deep.

ZIDUA SC must be applied and activated prior to weed seedling emergence.

Application timing	Product	Rate
Pre-plant (up to 30 days before planting) or Pre-emergent or Early post-emergent (up to 4 leaf stage of corn)	ZIDUA SC	120 – 240 mL/ha

Tank Mix Option

ZIDUA SC may also be applied in tank mix for the control of weeds in addition to those on the **ZIDUA SC** label. For all tank mixes, apply **ZIDUA SC** at 120 – 240 mL/ha. Tank mix products and rates are detailed in the following table.

Application timing	Product	Rate
Pre-plant (up to 30 days before planting) or Pre-emergent	Glyphosate	Refer to glyphosate label for weeds controlled and registered rates.
	Aatrex Liquid 480	2.1 – 3.1 L/ ha
	ERAGON LQ + MERGE Adjuvant + glyphosate	146 – 292 mL/ha 1 L/ha 2.5 L/ha (360 g/L equivalent)
	HEAT LQ + MERGE Adjuvant + glyphosate	53 – 146 mL/ha 0.5 – 1 L/ha 1.25 – 2.5 L/ha (360 g/L equivalent)
	INTEGRITY + glyphosate	0.73 – 1.1 L/ha ^{1,2} 2.5 L/ha (360 g/L equivalent)

¹ For pre-plant application, use 1.1 L/ha rate only.

² When applying 1.1 L/ha as pre-plant or pre-emergent treatment, DO NOT apply to field corn grown on coarse soils with a Cation Exchange Capacity (CEC) less than or equal to 15 MEQ/100 g, as injury may occur.

Application timing	Product	Rate
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Early post- emergent ^{1, 2}	Glyphosate	Refer to glyphosate label for weeds controlled and registered rates.
	Aatrex Liquid 480	2.1 – 3.1 L/ ha
	Marksman Herbicide + glyphosate	2.5 – 3.7 L/ha 2.5 L/ha (360 g/L equivalent)
	Armezon herbicide + glyphosate ³	37 mL/ha 2.5 L/ha (360 g/L equivalent)

¹ Apply glyphosate on glyphosate tolerant field corn varieties only.

² Apply post-emergent application up to 4 leaf stage of corn when tank mixing with glyphosate, Marksman Herbicide or Armezon herbicide.

³ Glyphosate present as isopropylamine salt or potassium salt

SOYBEANS

ZIDUA SC can be applied as a pre-plant surface or pre-emergence treatment to soybeans. Crop seeds must be planted a minimum 4 cm deep.

The use of **ZIDUA SC** may result in temporary growth suppression if extreme conditions of high rainfall and extended periods of water-saturated soil occur during soybean germination or early seedling development. These suppressions have not resulted in reduced soybean yield potential.

ZIDUA SC must be applied and activated prior to weed seedling emergence.

Application timing	Product	Rate / ha by soil texture			
Pre-plant (up to 30 days before planting) or Pre-emergent	ZIDUA SC alone	Coarse	Medium - Fine soil		Fine
			OM ≤ 3%	3% < OM < 7%	
		250 mL/ha	332 mL/ha	417 mL/ha	493 mL/ha

Tank Mix Option

ZIDUA SC may also be applied in tank mix with glyphosate for the control of weeds in addition to those on the **ZIDUA SC** label.

Application timing	Product	Rate / ha
Pre-plant (up to 30 days before planting) or Pre-emergent	ZIDUA SC	See Application rate table for ZIDUA SC applied alone.
	+ glyphosate	Refer to glyphosate label for weeds controlled and registered rates.

SOYBEANS – Early season residual suppression

ZIDUA SC can be applied as a pre-plant surface, pre-emergence or early post-emergence treatment to soybeans up to and including third trifoliolate leaf stage and prior to flowering. Crop seeds must be planted a minimum 4 cm deep.

The use of **ZIDUA SC** may result in temporary growth suppression if extreme conditions of high rainfall and extended periods of water-saturated soil occur during soybean germination or early seedling development. These suppressions have not resulted in reduced soybean yield potential.

ZIDUA SC must be applied and activated prior to weed seedling emergence.

Application timing	Product	Rate
Pre-plant (up to 30 days before planting) or Pre-emergent and/or Post- emergent (from emergence up to and including the third trifoliolate leaf stage and prior to flowering)	ZIDUA SC	120 – 240 mL/ha

Sequential Application

If a sequential application program of **ZIDUA SC** is used (e.g. pre-emergent application followed by post-emergent application), the maximum seasonal rate of **ZIDUA SC** that may be applied is 250 mL/ha on coarse soils and 493 mL/ha on medium to fine soils.

Tank Mix Option

ZIDUA SC may also be applied in tank mix for the control of weeds in addition to those on the **ZIDUA SC** label. For all tank mixes, apply **ZIDUA SC** at 120 – 240 mL/ha. Tank mix products and rates are detailed in the following table.

Application timing	Product	Rate
Pre-plant ¹ or Pre-emergent	Glyphosate	Refer to glyphosate label for weeds controlled and registered rates.
	ERAGON LQ ^{2, 3} + MERGE Adjuvant + glyphosate	73 mL/ha 1 L/ha 2.5 L/ha (360 g/L equivalent)
	HEAT LQ + MERGE Adjuvant + glyphosate	53 – 73 mL/ha 0.5 – 1 L/ha 1.25 – 2.5 L/ha (360 g/L equivalent)
	ENGENIA ^{4, 5} + glyphosate ⁶	0.480 – 1 L/ha 900 g ae/ha
	INTEGRITY ^{2, 3} + MERGE Adjuvant + glyphosate	0.37 L/ha 1 L/ha Refer to glyphosate label for weeds controlled and registered rates.
Post-emergent ⁷ (from emergence up to and including the third trifoliolate leaf stage and prior to flowering)	Glyphosate	Refer to glyphosate label for weeds controlled and registered rates.
	ENGENIA ^{4, 5} + glyphosate ⁶	0.480 – 1 L/ha 900 g ae/ha

¹ Apply pre-plant up to 30 days before planting when tank mixing with glyphosate alone or with ENGENIA

² Apply pre-plant up to 21 days before planting

³ For Pre-emergent timing, apply prior to when the soybeans cause the ground to crack and no more than three days after planting. DO NOT apply to coarse textured soils with less than 2% organic matter.

⁴ Apply ENGENIA only to Roundup Ready 2 Xtend Soybeans. SOYBEAN VARIETIES WHICH ARE NOT DESIGNATED AS DICAMBA TOLERANT WILL BE DAMAGED OR DESTROYED BY THIS TREATMENT.

- ⁵ The 1 L/ha rate of ENGENIA is to be used only once in a season and should be used pre-plant, pre-emergence or in-crop early post-emergence. 1.96 L/ha of ENGENIA is the maximum total to be applied in a single growing season.
- ⁶ Only use glyphosate products present as an isopropylamine or potassium salt registered for use in soybeans. Do not tank-mix ENGENIA with glyphosate products where glyphosate is present as an ammonium salt.
- ⁷ Apply glyphosate herbicides on glyphosate tolerant soybean varieties only.

SUNFLOWERS – Early season residual suppression

ZIDUA SC can be applied as a pre-plant surface or pre-emergence treatment to sunflowers. Do not apply **ZIDUA SC** if sunflowers have emerged.

The use of **ZIDUA SC** may result in temporary growth suppression if extreme conditions of high rainfall and extended periods of water-saturated soil occur during sunflower germination or early seedling development. These suppressions have not resulted in reduced sunflower yield potential. **ZIDUA SC** must be applied and activated prior to weed seedling emergence.

Application timing	Product	Rate
Pre-plant (up to 30 days before planting) or Pre-emergent	ZIDUA SC	120 – 240 mL/ha

Tank Mix Option

ZIDUA SC may also be applied in tank mix for the control of weeds in addition to those on the **ZIDUA SC** label. For all tank mixes, apply **ZIDUA SC** at 120 – 240 mL/ha. Tank mix products and rates are detailed in the following table.

Application timing	Product	Rate
Pre-plant (up to 30 days before planting) or Pre-emergent	Glyphosate	Refer to glyphosate label for weeds controlled and registered rates.

LENTILS, CHICKPEAS, BROAD BEANS (FABA BEANS) AND DRY FIELD PEAS – Early season residual suppression

Apply **ZIDUA SC** as a pre-seed or pre-emergent treatment to lentils, chickpeas, faba beans and dry field peas. Do not apply **ZIDUA SC** to lentils at a rate greater than 180 mL/ha or crop injury may result. Crop seeds must be planted a minimum 2.5 cm deep. **ZIDUA SC** must be applied and activated prior to weed seedling emergence or in a tank mixture that controls the emerged weeds such as HEAT LQ and glyphosate.

Crop	Application timing	Rate
Lentils	Pre-seed or pre-emergent	120 – 180 mL/ha ¹
Dry field peas	Pre-seed or pre-emergent	120 – 240 mL/ha
Chickpeas	Pre-seed or pre-emergent	120 – 240 mL/ha
Broad beans (Faba beans)	Pre-seed or pre-emergent	120 – 240 mL/ha

¹ Do not apply **ZIDUA SC** at a rate greater than 180 mL/ha or crop injury may result.

Tank Mix Option

For rapid burndown control of broadleaf and grass weeds in addition to those labelled on the **ZIDUA SC** label, **ZIDUA SC** may be applied as a pre-seed or pre-emergent treatment in tank mix combination with glyphosate or HEAT LQ and glyphosate. For the tank mix combination of HEAT LQ and glyphosate, apply in 50 –100 L/ha of water with MERGE® Adjuvant at a rate of 0.5 – 1.0 L/ha. Consult the HEAT LQ and glyphosate labels for a complete list of weeds controlled by HEAT LQ and glyphosate.

Use only glyphosate products registered for pre-seed application to dry field peas, chickpeas, faba beans and lentils.

For all tank mixes applied to lentils, use **ZIDUA SC** at 120 – 180 mL/ha. For all tank mixes applied to dry field peas, chickpeas and faba beans, use **ZIDUA SC** at 120 – 240 mL/ha. Tank mix products and rates are detailed in the following table.

Application timing	Product	Rate
Pre-seed or Pre-emergent	Glyphosate	1.25 – 2.5 L/ha (360 g/L equivalent) ¹
	HEAT LQ + MERGE Adjuvant + glyphosate	53 – 146 mL/ha ² 0.5 – 1 L/ha 1.25 – 2.5 L/ha (360 g/L equivalent) ¹

¹ Other glyphosate formulations may require a rate calculation adjustment according to active ingredient concentration. Refer to the glyphosate label for rate and weeds controlled.

² Rate restrictions apply for lentils. DO NOT use HEAT LQ at a rate higher than 53 mL/ha for lentils or crop injury may result.

LENTILS, CHICKPEAS, DRY FIELD PEAS, AND FABA Beans – Fall Application

ZIDUA SC is to be applied as a late fall (prior to ground freeze) residual application prior to lentils, chickpeas, dried field peas or faba beans being planted the following spring. For the fall

application, make one application only. In the following spring, a preplant or preemergent application of a registered herbicide is to be applied.

For planned herbicide treatments in the spring, **DO NOT** apply any herbicide or pest control product that contains the active ingredient flumioxazin (eg. Valtera Herbicide) or any herbicide or pest control product that contains the active ingredient pyroxasulfone (e.g. **ZIDUA SC**, FOCUS Herbicide, Heat Complete, etc.).

The application of **ZIDUA SC** as labelled will provide residual preemergence suppression of weeds listed under the “**WEEDS SUPPRESSED – Early season residual suppression**” list. Application rates are for all soil types. Use the higher rate in the listed rate range for longer residual and under heavier weed populations.

Application timing	Product	Rate
Fall / winter application (prior to ground freeze)	ZIDUA SC	180 – 240 mL/ha

Tank Mix Option

For the control of emerged weeds germinating in the fall/winter, **ZIDUA SC** may be applied in tank mix combination with glyphosate. Consult the glyphosate label for a complete list of weeds controlled by glyphosate.

For tank mix combination with glyphosate, use **ZIDUA SC** at 180 – 240 mL/ha.

Application timing	Product	Rate
Fall / winter application (prior to ground freeze)	Glyphosate	1.25 – 2.5 L/ha (360 g/L equivalent) ¹

¹ Other glyphosate formulations may require a rate calculation adjustment according to active ingredient concentration. Only use glyphosate products present as isopropylamine, potassium, or di-ammonium salt. Only use glyphosate products registered for post-harvest application. Refer to the glyphosate label for rate and weeds controlled.

MINT (PEPPERMINT AND SPEARMINT) – Dormant Season Application: Prairie Provinces only

ZIDUA SC can be applied as a dormant application to mint (peppermint and spearmint tops) in the early spring prior to active green growth for early season residual suppression of common waterhemp, kochia, lamb’s-quarters, redroot pigweed, foxtail (green and yellow) and wild oat. Before applying to mint, verification of varietal tolerance must be confirmed with your local seed company or supplier to avoid potential injury to sensitive varieties. Do not apply **ZIDUA SC** if mint has broken dormancy (new growth emerging).

The use of **ZIDUA SC** may result in temporary growth suppression if extreme conditions of high rainfall and extended periods of water-saturated soil occurs. These suppressions have not resulted in reduced mint yield potential.

Crop Specific Restrictions and Limitation

Apply to mint grown in Prairie Provinces only.

Do not apply if roots and rhizomes of mint are weak, thinned or damaged.

Do not use roots from **ZIDUA SC** treated plants for human consumption. Roots treated with **ZIDUA SC** can be used for root propagation.

Do not apply **ZIDUA SC** to newly planted mint.

Do not use **ZIDUA SC** between cuttings of mint.

Do not apply **ZIDUA SC** to mint that has broken dormancy. Application to mint that is near dormancy break can result in crop injury. Risk of crop injury increases the closer application is to mint dormancy break.

Do not apply to soils that are classified as a “sand”.

Apply only to stands that in the previous year were healthy and vigorous.

Application timing	Product	Rate
A single application at the dormant physiological stage	ZIDUA SC	180 mL/ha

POTATOES – Early season residual suppression

Apply **ZIDUA SC** as a broadcast spray to the soil surface after planting or drag-off, but before crop emergence. Where “drag off” is practiced, DO NOT apply **ZIDUA SC** until the “drag off” process is complete and there is a minimum of 5 cm (2 inches) of soil covering the vegetative portion of the potato plants, or **ZIDUA SC** may be applied after hilling but prior to potato or weed emergence, or **ZIDUA SC** may be applied where potato hills are harrowed and re-hilled and sprayed, but application must be prior to potato and weed emergence. There should be 5 cm (2 inches) of soil covering the seed piece and/or sprout/vegetation. Care must be exercised so that “drag off” implements do not injure the plants. Efficacy will be reduced if later cultural practices expose untreated soil. Apply **ZIDUA SC** only to a uniform seedbed which is firm and free of clods and cracks.

The seedbed must be prepared to ensure good seed piece row closure and soil coverage of the seed pieces.

Before applying to potato, verify with your local seed company (supplier) the selectivity of **ZIDUA SC** on your variety to avoid potential injury.

The use of **ZIDUA SC** may result in temporary growth suppression in potato under stressful conditions, such as, inadequate or excessive moisture or rainfall, cool and hot temperatures, compacted or crusted soils, improper planting depth, injury from other pesticides, disease or other pest damage, mechanical injury, nutrient imbalances, or other conditions known to cause plant stress.

Crop Specific Restrictions and Limitation

DO NOT apply **ZIDUA SC** more than once per year in potato.

DO NOT apply **ZIDUA SC** prior to planting potato seed pieces.

DO NOT apply **ZIDUA SC** to emerging or emerged potato as severe crop injury will occur.

Application timing	Product	Rate
Pre-emergent to potato after planting or following drag-off or hilling	ZIDUA SC	120 – 240 mL/ha

Tank Mix Option

ZIDUA SC may also be applied in tank mix for the control of weeds in addition to those on the **ZIDUA SC** label. For all tank mixes, apply **ZIDUA SC** at 120 – 240 mL/ha. Tank mix products are detailed in the following table.

Application timing	Product	Rate
Pre-emergent to potato after planting or following drag-off or hilling	Glyphosate	Refer to glyphosate label for weeds controlled and registered rates.
	SENCOR 480 F Herbicide*	Refer to SENCOR 480 F Herbicide label for weeds controlled and registered rates.
	Glyphosate + SENCOR 480 F Herbicide*	Refer to glyphosate label for weeds controlled and registered rates. Refer to SENCOR 480 F Herbicide label for weeds controlled and registered rates.

*EASTERN CANADA or UNDER IRRIGATED CONDITIONS IN WESTERN CANADA

POST-HARVEST

ZIDUA SC can be applied as a post-harvest treatment for the control of labelled weeds at the following rates:

Product	Rate
ZIDUA SC	120 – 240 mL/ha

DO NOT graze or feed treated hay or forage to livestock.

Tank Mix Option

ZIDUA SC may also be applied in tank mix for the control of weeds in addition to those on the **ZIDUA SC** label. For all tank mixes, apply **ZIDUA SC** at 120 – 240 mL/ha. Tank mix products and rates are detailed in the following table.

Application	Product	Rate	Weeds controlled in addition to
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timing			those controlled by ZIDUA SC
Post-harvest	Glyphosate	Refer to glyphosate label for registered rates.	Refer to glyphosate label for a complete list of weeds controlled by glyphosate.
	Glyphosate* + ENGENIA	Refer to glyphosate label for registered rates. 2 L/ha	Refer to glyphosate label for a complete list of weeds controlled by glyphosate. Field bindweed English daisy Curled dock (top growth) Goldenrod Tansy ragwort Perennial sow thistle Canada thistle

* Only use glyphosate products registered for post-harvest use and refer to glyphosate label for adjuvant recommendations. Do not tank-mix ENGENIA with glyphosate products where glyphosate is present as ammonium salt.

PEANUTS ON MINERAL SOIL
<p>The DIRECTIONS FOR USE for the uses described in this section of the label were developed by persons other than BASF Canada Inc. under the User Requested Minor Use Label Expansion program. For these uses, BASF Canada Inc. has not fully assessed performance (efficacy) and/or crop tolerance (phytotoxicity) under all environmental conditions or for all crop varieties when used in accordance with the label. The user should test the product on a small area first, under local conditions and using standard practices, to confirm the product is suitable for widespread application.</p>
<p>ZIDUA SC can be applied as an early postemergence (“at-cracking” stage to first true leaf stage through beginning of pod development stage) to peanuts grown on mineral soil.</p> <p>Before applying to peanut, verify with your local seed company (supplier) the selectivity of ZIDUA SC on your variety to avoid potential injury.</p> <p>ZIDUA SC must be applied and activated prior to weed seedling emergence. Weeds that are already emerged at the time of application must be controlled with cultivation, or sequential application of another herbicide labelled for postemergence control of the target weeds in peanut. Apply in a minimum water volume of 100 L/ha.</p> <p>Application to emerged peanut may result in temporary leaf burn and stunting, but a reduction in peanut yield is unexpected. Depending upon growing conditions, recovery from this injury begins immediately but may take several weeks for the injury to dissipate entirely.</p> <p>ZIDUA SC applied early postemergence (“at-cracking” through first leaf stage) may result in temporary growth suppression in peanut if extreme conditions of high rainfall and extended periods of water-saturated soil occur during peanut germination or early seedling development.</p> <p>Maximum 1 application per year.</p>

Feeding/Grazing Restriction: DO NOT graze or feed treated hay to livestock.

Application Timing	Product	Rate
Early postemergence ("at-cracking" stage to first true leaf stage through beginning of pod development stage)	Zidua SC	120 – 240 mL/ha*

* Use the higher rate in the listed rate range for longer residual and under heavier weed populations.

ZIDUA SC applied as directed will provide early season residual suppression of the following weeds:

Annual grasses	Annual Broadleaf Weeds
Foxtail (green and yellow)	Common waterhemp
Kochia	Lamb's-quarters
Wild oat	Redroot pigweed

SEED CORN

The **DIRECTIONS FOR USE** for the uses described in this section of the label were developed by persons other than BASF Canada Inc. under the User Requested Minor Use Label Expansion program. For these uses, BASF Canada Inc. has not fully assessed performance (efficacy) and/or crop tolerance (phytotoxicity) under all environmental conditions or for all crop varieties when used in accordance with the label. The user should test the product on a small area first, under local conditions and using standard practices, to confirm the product is suitable for widespread application.

ZIDUA SC can be applied as a pre-plant surface or pre-emergence treatment to seed corn. Crop seeds must be planted a minimum 2.5 cm deep. Apply in a minimum water volume of 100 L/ha in Eastern Canada. Apply in a water volume of 50 to 100 L/ha in Western Canada. DO NOT make more than one application per season.

Some seed corn hybrids may be more sensitive to pyroxasulfone and injury might occur. Before applying to seed corn, verify with your local seed company (supplier) the selectivity of **ZIDUA SC** on your variety to avoid potential injury.

ZIDUA SC must be applied and activated prior to weed seedling emergence. Weeds germinated at time of treatment will not be controlled and a post-emergent herbicide will be needed to control germinated weeds.

Application Timing	Product	Rate / ha by soil texture			
		Coarse	Medium-Fine Soil		Fine
			OM ≤ 3%	3% < OM < 7%	
Pre-plant (up to 30 days before planting) or Pre-emergent	ZIDUA SC	250 mL/ha	332 mL/ha	417 mL/ha	493 mL/ha

ZIDUA SC applied as directed will provide the control of the following weeds:

Annual Grasses	Annual Broadleaf Weeds
Barnyard grass	Common waterhemp
Crabgrass (large)	Redroot pigweed
Foxtail (green and yellow)	
Ryegrass (Italian)	

SEED CORN – Early season residual suppression

Application Timing	Product	Rate
Pre-plant (up to 30 days before planting or Pre-emergent)	Zidua SC	120 – 240 mL/ha

ZIDUA SC applied as directed will provide the control of the following weeds when an in-crop application of another registered herbicide is planned. Application rates are for all soil types. Use the higher rate in the above listed rate range for longer residual and under heavier weed populations.

Annual Grasses	Annual Broadleaf Weeds
Foxtail (green and yellow)	Common waterhemp
Kochia	Lamb's-quarters
Wild oat	Redroot pigweed

MIXING INSTRUCTIONS

Mixing Order

1. When applying **ZIDUA SC**, always start with a clean sprayer. Thoroughly clean the sprayer by flushing the system with water containing detergent. Refer to previously applied product labels for specific cleaning instructions.
2. Fill clean spray tank half full with clean water. Start agitation system.
3. If needed, add the correct amount of water conditioner.
4. If using a wettable powder or water dispersible granule tank mix partner add the correct amount to the tank and continue agitation until thoroughly dispersed.
5. If required, add the correct amount of micro-encapsulated product tank mix partner.
6. Using a calibrated measuring device, add the correct amount of **ZIDUA SC**. Continue to agitate.

7. If required, add the correct amount of liquid, solution or suspension product tank mix partner.
8. If required, add in the correct amount of emulsifiable concentrate product tank mix partner.
9. If required, add the correct amount of glyphosate product tank mix partner.
10. If required, add in the correct amount of adjuvants or surfactants last.
11. Continue agitation while filling the spray tank with the remaining amount of water.
12. Continue to agitate or run the by-pass system.
13. After any break in spraying operation, agitate thoroughly before spraying again. Check inside the tank to ensure that sprayer agitation is sufficient to remix the spray materials. Do not allow the mixture to sit overnight.
14. If an oil film starts to build up in the tank, drain it and clean the tank with strong detergent solution.
15. Immediately after use, thoroughly clean the sprayer by flushing the system with clean water containing detergent.

Dispose of all rinsate in accordance with provincial regulations.

CLEANING SPRAY EQUIPMENT

Clean application equipment thoroughly by using a strong detergent or commercial sprayer cleaner according to the manufacturer's directions. Triple rinse the equipment before and after applying **ZIDUA SC**.

Refer to the tank mix partner's product label for any additional cleaning instructions not included in the above steps.

CROP ROTATIONAL RESTRICTION

Plant Back (in case of crop failure)

If any crop treated with **ZIDUA SC** is lost, re-plant only labelled crops (sunflowers, field corn, soybean, lentil, chickpeas, faba beans and dry field peas) ensuring the rate of **ZIDUA SC** applied does not exceed the maximum use rate for the crop being re-planted. Do not make a second application of **ZIDUA SC**.

Rotational Cropping for Spring Application of **ZIDUA SC**

Fields treated with **ZIDUA SC** at a total seasonal rate of 120 mL/ha – 240 mL/ha can be seeded the following season to sunflowers, field corn, soybean, spring wheat, chickpea, faba beans, lentil, dry field peas, flax and potato. Winter wheat may be seeded 4 months following the **ZIDUA SC**

application. Durum wheat, barley and oats can be seeded 11 months following the **ZIDUA SC** application. Canola can be seeded 12 months following the **ZIDUA SC** application.

For total seasonal application rates higher than 240 mL/ha, corn, soybean, chickpea, lentil, dry field peas, flax and potato may be seeded the following season. Winter wheat may be seeded 4 months following the **ZIDUA SC** application.

Conduct a field bioassay (a test strip grown to maturity) to confirm crop safety prior to seeding any rotational crops other than listed above.

Rotational Cropping for Fall Application of **ZIDUA SC**

Fields treated with a Fall application of **ZIDUA SC** can be seeded the following season to labelled crops, **except peanuts**.

Conduct a field bioassay (a test strip grown to maturity) to confirm crop safety prior to seeding any rotational crops other than labelled crops.

RESTRICTIONS AND LIMITATIONS

1. **DO NOT** apply by air.
2. **DO NOT** use on peat or muck soils and soils with 7% or more organic matter content.
3. **DO NOT** apply **ZIDUA SC** more than the maximum total seasonal rate of **ZIDUA SC** in a growing season. Maximum total seasonal rates are as follows:

Crop	Soil texture	Maximum total seasonal rate
Field corn	Coarse	250 mL/ha
	Medium to Fine	493 mL/ha
Soybean	Coarse	250 mL/ha
	Medium to Fine	493 mL/ha
Mint	All soil textures	180 mL/ha
Potatoes Sunflower Dry field peas Chickpeas Faba beans Lentils	All soil textures	240 mL/ha

The growing season for **ZIDUA SC** is defined as the period following the harvest of the preceding crop through the harvest of the planned or current crop.

4. In some cases, tank mixing a pest control product with another pest control product or a fertilizer can result in biological effects that could include, but are not limited to: reduced

pest efficacy or increased host crop injury. The user should contact BASF at 1-877-371-2273 or www.agsolutions.ca for information before mixing any pesticide or fertilizer that is not specifically recommended on this label.

RESISTANCE-MANAGEMENT RECOMMENDATIONS

For resistance management, **ZIDUA SC** is a Group 15 herbicide. Any weed population may contain or develop plants naturally resistant to **ZIDUA SC** and other Group 15 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 **ZIDUA SC** or other Group 15 herbicide within a growing season (sequence) or among growing seasons 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 when moving between fields, 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 BASF at 1-877-371-2273 or at www.agsolutions.ca.

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