(Sleeve)

GROUP	2	6	HERBICIDE

# Ransack<sup>™</sup> Herbicide

#### Solution

# **COMMERCIAL (AGRICULTURAL)**

For weed control in field peas and succulent peas, dry faba beans, soybeans, dry beans, seedling sainfoin for seed production, seedling and established red and alsike clover for seed production, and seedling and established alfalfa for seed.

For sale for use in the Prairie Provinces and Interior of British Columbia (including the Peace River Region) only

#### **ACTIVE INGREDIENTS:**

#### REGISTRATION NO. 34931 PEST CONTROL PRODUCTS ACT

# READ THE LABEL AND THIS BOOKLET BEFORE USING

**KEEP OUT OF REACH OF CHILDREN** 



**NET CONTENTS:** 1 L - Bulk

Nufarm Agriculture Inc. 5101, 333 – 96th Ave NE Calgary, Alberta T3K 0S3 1-800-868-5444

24-Hour Emergency Response Number 1-800-424-9300

Ransack<sup>TM</sup> is a trademark of Nufarm Agriculture Inc.

#### **PRECAUTIONS**

#### KEEP OUT OF REACH OF CHILDREN.

**DO NOT** take internally. Harmful or fatal if swallowed. **DO NOT** get in eyes or on skin. Causes eye irritation. Potential skin sensitizer.

Wash exposed areas of skin thoroughly after handling and before eating, drinking or smoking or going to the washroom. Take a shower immediately after work.

Wear 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. In addition, wear protective eyewear (goggles or face shield) during mixing, loading, clean-up and repair.

If clothing becomes contaminated, remove immediately and wash. Store and wash all protective clothing separately from household laundry. Wash in detergent and hot water before reuse. Wear freshly laundered clothes daily.

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

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.

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.

# **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.

#### **EMERGENCY TELEPHONE NUMBERS**

For spills or transportation accidents, Chemtrec, 1-800-424-9300. For health or environmental emergencies, ProPharma Group, 1-877-325-1840. For product and use information, Nufarm Agriculture Inc., 1-800-868-5444.

#### **ENVIRONMENTAL PRECAUTIONS**

Toxic to non-target terrestrial plants. Observe spray buffer zones specified under DIRECTIONS FOR USE.

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.

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

## **STORAGE**

Store this product away from food or feed. Store the product in original, tightly-closed container and do not allow water to be introduced into this container.

**DO NOT** ship or store the product near food, feed, seed or fertilizers.

Store the product in a cool, dry, locked, well-ventilated area without floor drain.

Herbicides should be shipped or stored separately from other pesticides to avoid cross-contamination.

#### **DISPOSAL**

# **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 rinsings to the spray mixture in the tank.
- 2. Make the empty, rinsed container unsuitable for further use.

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

# **Returnable Containers**

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

#### **Refillable Containers**

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

# Disposal of unused, unwanted product

For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for 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 Products Act* to use this product in a way that is inconsistent with the directions on the label.

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# Ransack<sup>TM</sup> Herbicide

#### Solution

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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.

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## **STORAGE**

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**DO NOT** ship or store the product near food, feed, seed or fertilizers.

Store the product in a cool, dry, locked, well-ventilated area without floor drain.

Herbicides should be shipped or stored separately from other pesticides to avoid cross-contamination.

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#### **GENERAL INFORMATION**

Ransack<sup>TM</sup> Herbicide combines the two active ingredients: imazamox, belonging to herbicide mode of action Group 2, and bentazon belonging to the herbicide mode of action Group 6. Imazamox is a selective herbicide that when applied as an early post-emergence treatment may be absorbed through both the roots and foliage. Susceptible weeds stop growing and hay eventually die. Bentazon provides selective post-emergence control of many broadleaf weeds. Bentazon does not control grasses. Bentazon is a herbicide with mainly contact action. Uptake into the plant occurs primarily through the leaves. Thorough coverage of foliage is important for consistent weed control. Failure to penetrate crop or weed leaf canopies with the spray will result in incomplete control of small weeds growing underneath.

Cool weather conditions or drought will delay herbicidal activity and if prolonged, may result in poor weed control. Use of **Ransack Herbicide** in hot, humid weather may result in temporary leaf yellowing, leaf flecking, bronzing or burning. The crop usually outgrows this condition within 10 days (see Restrictions and Limitations).

#### **REGISTERED CROPS**

**Ransack Herbicide** will provide broad-spectrum weed control of most annual grasses and broadleaf weeds in field peas and succulent peas, dry faba beans, soybeans, dry beans, seedling sainfoin for seed production, seedling and established red and alsike clover for seed production, and seedling and established alfalfa for seed.

#### **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.

## **APPLICATION INSTRUCTIONS**

# Field Peas, Dry Faba Beans and Soybeans

Timing	Early post-emergence
Rate	975 mL/ha of Ransack Herbicide + 2 L/ha nitrogen source* (UAN 28%)
Water Volume	100 L/ha
Weeds Controlled	Ransack Herbicide will provide control of broadleaf and grass weeds as listed in the BROADLEAF WEED AND GRASS CONTROL section of this label.
Pre-harvest Interval	60 days
Remark	Application should be made from the 3 - 6 node stage of field peas and dry faba beans and the cotyledon to 4-leaf stage of soybeans and after weeds have emerged. Apply when broadleaf weeds are from the cotyledon to 4-leaf stage and when grassy weeds are at the 1 - 4 true leaf or early tillering.
	For field peas and dry faba beans, initial transient crop yellowing may be observed after application but this is outgrown and should not affect yield.
	DO NOT make more than one application per season.

<sup>\*</sup> Nitrogen source: A reduction in grass control can be observed without the addition of a nitrogen source (UAN 28%)

# NOTE TO USER - READ THE FOLLOWING BEFORE USING THIS PRODUCT FOR THE INDICATED SPECIAL USE APPLICATIONS:

The DIRECTIONS FOR USE for the uses described in this section of the label were developed by persons other than Nufarm Agriculture Inc. under the User Requested Minor Use Label Expansion program. For these uses, Nufarm Agriculture 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.

# Dry Edible Beans (all types of the species *Phaseolus vulgaris*<sup>1</sup>)

**Ransack Herbicide** may be topped up with application of **BASAGRAN FORTE** as below for control of additional weeds.

Timing	Early post-emergence
Rate	975 mL/ha of <b>Ransack Herbicide</b> + 0.36 L/ha of <b>BASAGRAN FORTE</b> + 2 L/ha nitrogen source <sup>2</sup> (UAN 28%)
Water Volume	100 L/ha
Weeds Controlled	<b>Ransack Herbicide</b> will provide control of broadleaf and grass weeds as listed in the BROADLEAF WEED AND GRASS CONTROL section of this label.
Pre-harvest Interval	60 days
Remark	Application should be made after 1 <sup>st</sup> trifoliate leaf has fully expanded up to the 2 <sup>nd</sup> trifoliate leaf stage of the dry bean and after weeds have emerged. Apply when broadleaf weeds are from the cotyledon to 4-leaf stage and when grassy weeds are at the 1 to 4-true leaf or early tillering. Initial transient crop yellowing may be observed after application but this is outgrown and should not affect yield.  DO NOT make more than one application per season.
Warning	Only the following dry bean types have been tested and demonstrate acceptable tolerance: Pinto, pink, red Mexican, cranberry, black, great northern and navy.

- 1 Dry common bean varieties may vary in their tolerance to herbicides, including to **Ransack Herbicide**. In particular, white (navy) beans are more susceptible to herbicide injury which can result in delayed maturity. Since not all dry common bean varieties have been tested for tolerance to **Ransack Herbicide**, first use of **Ransack Herbicide** should be limited to a small area of each variety to confirm tolerance prior to adoption as a general field practice or consult your seed supplier or Nufarm Business Representative for more information.
- 2 Nitrogen source: A reduction in grass control can be observed without the addition of a nitrogen source (UAN 28%).

Read and observe all label directions, including rates, restrictions and grazing limitations for each product in the tank mix. Follow the more stringent label precautionary measures for mixing, loading and applying stated on both product labels.

# NOTE TO USER - READ THE FOLLOWING BEFORE USING THIS PRODUCT FOR THE INDICATED SPECIAL USE APPLICATIONS:

The DIRECTIONS FOR USE for the uses described in this section of the label were developed by persons other than Nufarm Agriculture Inc. under the User Requested Minor Use Label Expansion program. For these uses, Nufarm Agriculture 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.

# Seedling and Established Red and Alsike Clover, and Seedling Sainfoin for Seed Production Only

Production Only	
Timing	Early post-emergence
Rate	975 mL/ha of <b>Ransack Herbicide</b> + 2 L/ha nitrogen source <sup>1</sup> (UAN 28%)
Water Volume	100 L/ha
Weeds Controlled	Ransack Herbicide will provide control of broadleaf and grass weeds as listed in the BROADLEAF WEED AND GRASS CONTROL section of this label.
Remark	DO NOT make more than one application per year.
	Apply as an early post-emergence treatment when weeds are actively growing. Apply when broadleaf weeds are from the cotyledon to 4-leaf stage and when grassy weeds are at the 1 to 4-true leaf or early tillering. Crop must be in the tolerant stage as indicated below:
	Seedling Clover and Sainfoin: Tolerant after third trifoliate stage.
	Established Clover: Application should be made before the crop canopy closes, prior to flowering, and when weeds are actively growing.
	Crop injury may occur under hot, humid conditions. Speed of recovery will be influenced by growing conditions and weed control. Some leaf scorch may appear but the effect is transient and will outgrow within 3-4 weeks.
	DO NOT cut treated fields for hay/forage. DO NOT graze treated field. DO NOT feed seed screenings and aftermath to livestock.

<sup>&</sup>lt;sup>1</sup> A reduction in grass control can be observed without the addition of a nitrogen source (UAN 28%).

# **Succulent Peas Timing** Early post-emergence 975 mL/ha of Ransack Herbicide + 2 L/ha nitrogen source\* (UAN 28%) Rate Water Volume 100 L/ha Weeds Controlled Ransack Herbicide will provide control of broadleaf and grass weeds (except for sow thistle (annual and perennial)) as listed in the BROADLEAF WEED AND GRASS CONTROL section of this label. Pre-harvest Interval 40 days Application should be made from 3 – 6 nodes and after weeds have Remark emerged. Apply when broadleaf weeds are from the cotyledon to 4leaf stage and grassy weeds are 1-4 true leaves or early tillering. Initial transient crop yellowing may be observed after application, but this is outgrown and should not affect yield. Do not spray under hot humid conditions to avoid any bronzing of the pea pods. Warning Since not all types of succulent peas have been tested, first application should be limited to a small area or consult your seed supplier or Nufarm Business Representative for more information.

Succulent pea varieties may vary in their tolerance to herbicides, including to **Ransack Herbicide**. Some varieties are more susceptible to herbicide injury which can result in delayed maturity. Since not all succulent pea varieties have been tested for tolerance to **Ransack Herbicide**, first use of **Ransack Herbicide** should be limited to a small area of each variety to confirm tolerance prior to adoption as a general field practice.

## Seedling and Established Alfalfa for Seed

For broad-spectrum weed control in alfalfa, **Ransack Herbicide** must be topped up with an application of **BASAGRAN FORTE** at a rate of 360 mL/ha as indicated below.

Timing	Early post-emergence	
Rate	975 mL/ha of Ransack Herbicide +	
	360 mL/ha of <b>BASAGRAN FORTE</b> +	
	2 L/ha nitrogen source <sup>1</sup> (UAN 28%)	
	For top-growth control of Canada thistle, apply an application BASAGRAN FORTE 7-15 days later at a rate of 1.75 L/ha.	
Water Volume	100 L/ha	

<sup>\*</sup> A reduction in grass control can be observed without the addition of a nitrogen source (UAN 28%).

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	Weeds Controlled	Refer to the BROADLEAF WEED AND GRASS CONTROL section of this label for weeds controlled. The addition of 360 mL/ha of <b>Basagran Forte</b> to <b>Ransack Herbicide</b> will provide control of the following additional weeds:
		Canada thistle (top-growth suppression)* Prostrate pigweed (suppression only) Spiny annual sowthistle (suppression only) Storks bill *For top growth control, an application of BASAGRAN FORTE 7-15 days later at a rate of 1.75 L/ha is required.
	Remark	Apply as an early post-emergence treatment when weeds are actively growing. Application should be made when broadleaf weeds are from the cotyledon to 4-leaf stage and when grassy weeds are at the 1 to 4-true leaf or early tillering. Crop must be in the tolerant stage as indicated below:
		<b>Seedling alfalfa</b> : Tolerant after third trifoliate stage. For seedling alfalfa grown for seed, apply prior to bud formation.
		<b>Established Alfalfa:</b> Tolerant before crop canopy closes, prior to flowering.
		Crop injury may occur under hot, humid conditions. Speed of recovery will be influenced by growing conditions and weed control. Some leaf scorch may appear but the effect is transient and will outgrow within 3-4 weeks.

<sup>&</sup>lt;sup>1</sup> A reduction in grass control can be observed without the addition of a nitrogen source (UAN 28%).

#### NOTE TO USER

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#### **BROADLEAF WEED AND GRASS CONTROL**

Ransack Herbicide applied as an early post-emergence treatment at a rate of 0.73 L/ha + 2 L/ha nitrogen source (UAN 28%) will control weeds as listed below:

• Volunteer Canola – Non-imidazolinone tolerant, cotyledon to 3-leaf

Ransack Herbicide applied as an early post-emergence treatment at a rate of 975 mL/ha + 2 L/ha nitrogen source (UAN 28%) will control weeds as listed below:

Barnyard grass
Cleavers* (including Group 2 resistant biotypes)
Cow cockle
Green foxtail
Green smartweed
Hemp nettle*
Japanese brome grass*
• Kochia*
• Lamb's-quarters
Lentils (including imidazolinone-tolerant Lentils)
Persian darnel
Redroot pigweed
Round-leaved mallow*
Russian thistle
Shepherd's purse
Sowthistle*, annual
Sowthistle**, perennial
Stinkweed
Volunteer barley
Volunteer canary seed
Volunteer canola (imidazolinone-tolerant and non-imidazolinone-tolerant canola)
Volunteer durum wheat
Volunteer spring wheat (non-imidazolinone-tolerant wheat)
Volunteer tame oats
Wild buckwheat*
Wild mustard (including Group 2 resistant)
Wild oats

Yellow foxtail

Ransack Herbicide + BASAGRAN FORTE applied as an early post-emergence treatment on dry edible beans at a rate of 975 mL/ha + 0.36 L/ha BASAGRAN FORTE + 2 L/ha nitrogen source (UAN 28%) will provide control of the following weeds in addition to those listed above:

•	Prostate pigweed*	
•	Spiny annual sowthistle*	
•	Stork's bill	-

<sup>\*</sup>suppression only

#### **MIXING INSTRUCTIONS**

- 1. When applying **Ransack Herbicide**, 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 three-quarters of the required amount of clean water and start agitation.
- 3. Add the correct amount of **Ransack Herbicide**. Continue to agitate.
- 4. If using an additional bentazon product, add the correct amount of **BASAGRAN FORTE** for dry beans. Continue to agitate.
- 5. Add the correct amount of the nitrogen source while continuing agitation.
- 6. Continue agitation while filling the spray tank with the remaining amount of water.
- 7. Maintain continuous and constant agitation throughout application until spraying is complete.
- 8. 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.
- 9. If an oil film starts to build up in the tank, drain it and clean the tank with strong detergent solution.
- 10. Immediately after use, thoroughly clean the sprayer by flushing the system with clean water containing detergent. Thoroughly flush tank, boom, hoses and in-line and nozzle screens with clean water to avoid possible injury to other crops.

Dispose of all rinsings in accordance with provincial regulations.

#### **SPRAYING INSTRUCTIONS**

Select proper nozzle to avoid spraying fine mist. For best results, use sprayers equipped with flat fan or similar nozzles to ensure coverage. Apply in a spray volume of 100 L/ha and at a pressure of 275 kPa. For applications to dense weed infestations and thick canopies, use the higher spray volume. Better coverage of the product results in enhanced control of weeds.

Keep bypass line on or near bottom of tank to minimize foaming. Use 16 mesh suction screens,

<sup>\*</sup> suppression only

<sup>\*\*</sup>top growth suppression only

50 mesh screens elsewhere on sprayer.

#### **FOLLOW CROPPING**

Winter wheat can be planted 3 months after treatment (3 MAT) as a rotational crop.

Initial crop injury to non-imidazolinone-tolerant canola may be observed. Avoid spray overlap as yield reduction may result. The following crops may be grown safely the year following an application:

- Canary seed
- Field corn
- Field peas
- Soybeans
- Imidazolinone-tolerant Canola (e.g., canola varieties with the **Clearfield** trait)
- Non-imidazolinone-tolerant canola\*
- Lentils
- Spring wheat
- Durum wheat
- Spring barley
- Sunflower
- Tame oats
- Flax
- Chickpeas
- Imidazolinone-tolerant Sunflowers (e.g., sunflower varieties with the **Clearfield** trait)

\*Research studies have shown that non-Imidazolinone-tolerant canola may be safely planted the year following an application of **Ransack Herbicide** in all regions of Western Canada except the Northern Peace River Region of Alberta (any area in Township 100 and north, including the areas of KegRiver, La Crete, Fort Vermilion and High Level). In this region, non-imidazolinone-tolerant canola can be grown safely the second year following an application (2 YAT).

The following crop may be grown safely two years following an application:

Mustard (condiment type only)

There are insufficient data for other follow crops. Conduct a field bioassay (a test strip grown to maturity) the year before growing any crop other than those listed above.

## **RESTRICTIONS AND LIMITATIONS**

 DO NOT apply when weather conditions may cause spray drift from treated fields to adjacent crops. Clean sprayer thoroughly after use to avoid damage to the next crop sprayed.

- 2. Apply using ground equipment only. **DO NOT** apply by air.
- 3. **DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.
- 4. **DO NOT** graze the treated dry bean and field pea crops or cut for hay; sufficient data are not available to support such use.
- 5. **DO NOT** graze treated soybeans or cut for hay within 20 days of application.
- 6. **DO NOT** treat any crops not listed on this label.
- 7. **DO NOT** apply to any crops that have been subjected to stress from conditions such as hail damage, flooding, drought, hot, humid weather, widely fluctuating temperature conditions, prolonged cold weather or injury from prior herbicide applications, as crop injury may result.
- 8. Apply only when the potential for drift to areas of human habitation or areas of human activity such as houses, cottages, schools and recreational area is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment and sprayer settings.
- 9. This product may be tank mixed with registered pest control products, whose labels also allow tank mixing, provided the entirety of both labels, including Directions For Use, Precautions, Restrictions, Environmental Precautions, and Spray Buffer Zones are followed for each product. In cases where these requirements differ between the tank mix partner labels, the most restrictive label must be followed. Do not tank mix products containing the same active ingredient unless specifically listed on this label.
  In some cases, tank mixing pest control products can result in reduced pesticide efficacy or
  - In some cases, tank mixing pest control products can result in reduced pesticide efficacy or increased host crop injury. The user should contact Nufarm Agriculture Inc. at 1-800-868-5444 for information before applying any tank mix that is not specifically recommended on this label.

#### WARNING

**DO NOT** apply **Ransack Herbicide** when weather conditions may cause spray drift from treated areas to adjacent crops.

Lentils, adzuki and mung beans, cucumbers, sugar beets and sunflowers can be injured by **Ransack Herbicide**.

#### SPRAY DRIFT MANAGEMENT FOR GROUND APPLICATIONS

#### **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.

## **Spray Buffer Zones**

A spray buffer zone is NOT required for uses with hand-held application equipment permitted on this label.

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).

Method of Application	Сгор	Spray Buffer zones (metres) Required for the Protection of Terrestrial Habitat:
Field sprayer*	Field peas and succulent peas, dry faba beans, soybeans, dry beans, red and alsike clover, alfalfa and sainfoin	1

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.

#### RESISTANCE MANAGEMENT RECOMMENDATIONS

For resistance management, **Ransack Herbicide** is a Group 2 and Group 6 herbicide. Any weed population may contain or develop plants naturally resistant to **Ransack Herbicide** and other Group 2 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:

- Where possible, rotate the use of **Ransack Herbicide** or other Group 2 and 6 herbicides 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 Nufarm Agriculture Inc. at 1-800-868-5444 or at www.nufarm.ca.

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