

(Sleeve)

GROUP	14	HERBICIDE
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NUFARM

PYRO HERBICIDE

Emulsifiable Concentrate

COMMERCIAL

FOR CONTROL OF EMERGED BROADLEAF WEEDS PRIOR TO THE EMERGENCE OF WHEAT (SPRING, DURUM, AND WINTER), BARLEY, OATS, RYE (SPRING AND FALL), TRITICALE, BUCKWHEAT, PEARL MILLET, PROSO MILLET, CANOLA, MUSTARD, PEAS, BEANS, LENTILS, CORN AND SOYBEAN

ACTIVE INGREDIENT:
Pyraflufen-ethyl ... 25 g/L

READ THE LABEL AND BOOKLET BEFORE USING

DANGER – CORROSIVE TO EYES AND SKIN

REGISTRATION NO.: 31258 PEST CONTROL PRODUCTS ACT

Net Contents: (0.5 – Bulk) Litres

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

PRECAUTIONS:**KEEP OUT OF REACH OF CHILDREN.**

CORROSIVE to the eye and skin. DO NOT get in eyes or on skin. During mixing, loading, application, clean-up and equipment repair workers must wear long pants, a long-sleeved shirt, socks and shoes. Wear suitable chemical resistant gloves and goggles or face shield during mixing and loading. Do not inhale vapours. Wash well after handling and before eating, drinking or smoking or using the bathroom. Remove contaminated clothing immediately after use. Wash contaminated clothing with soap and hot water, separately from household clothing, before reuse.

Apply only when the potential for drift to areas of human habitation or 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 enter treated fields until 12 hours after application.

ENVIRONMENTAL HAZARDS:

TOXIC to aquatic organisms and non-target terrestrial plants. Observe buffer zones specified under DIRECTIONS FOR USE. Toxic to certain beneficial insects. Minimize spray drift to reduce harmful effects on beneficial insects in habitats next to the application site such as hedgerows and woodland.

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

This product contains an active ingredient and aromatic petroleum distillates which are toxic to aquatic organisms.

The residues of pyraflufen-ethyl are persistent and may carryover. It is recommended that any products containing pyraflufen-ethyl not be used in areas treated with this product during the previous season.

FIRST AID:

If swallowed, call a poison control centre or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give **any** liquid to the person. Do not give anything by mouth to an unconscious person.

If on skin or clothing, take off contaminated clothing. Rinse skin immediately with plenty of water for 15–20 minutes. Call a poison control centre or doctor for treatment advice.

If 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.

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.

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

TOXICOLOGICAL INFORMATION:

Treat symptomatically. This product contains petroleum distillates. Vomiting may cause aspiration pneumonia.

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.

STORAGE CONDITIONS:

Store in a cool, well ventilated area and out of the reach of children and animals. Storage below 0°C will not impair the effectiveness of **Pyro Herbicide**, however, if frozen, return to original state by allowing product to warm to 10 - 20°C and agitate thoroughly before use.

Keep unused product in original container tightly closed.

To prevent contamination, store this product away from food or feed.

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.

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For Returnable-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.

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. The user assumes the risk to persons or property that arises from any such use of this product.

(Booklet)

GROUP

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DIRECTIONS FOR USE

Pyro Herbicide is designed for use as a contact herbicide for broadleaf weed control. **Pyro Herbicide** will damage emerged crop plants. Apply **Pyro Herbicide** prior to the emergence of the crop, either as a pre-seeding or post-seeding application. Only weeds that have emerged at the time of application will be controlled. Apply when weeds are in the seedling stage and actively growing.

Pyro Herbicide, a member of the phenyl pyrazole class of herbicides, inhibits the protoporphyrinogen oxidase (PPO) enzyme which results in cell membrane destruction and necrosis.

Pyro Herbicide is rainfast within one hour after application.

Warm, moist growing conditions promote active weed growth and enhance the activity of **Pyro Herbicide** by allowing maximum foliar uptake and contact activity. Weeds hardened off by cold weather or drought stress may not be adequately controlled or suppressed and regrowth may occur.

APPLY **Pyro Herbicide** WITH GROUND EQUIPMENT ONLY.

For best results, ensure thorough spray coverage of target weeds. Refer to the specific use directions sections of this label for complete use details.

As this product is not registered for the control of pests in aquatic systems, DO NOT use to control aquatic pests.

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.

Buffer zones:

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

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

Method of application	Crop	Buffer Zones (metres) Required for the Protection of:		
		Freshwater Habitat of Depths:		Terrestrial habitat
		Less than 1 m	Greater than 1 m	
Field sprayer	Wheat, corn, soybeans, barley, oats, rye, triticale, canola, mustard, peas, beans, lentils.	1	1	2

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

The buffer zones for this product can be modified based on weather conditions and spray equipment configuration by accessing the Buffer Zone Calculator on the Pest Management Regulatory Agency web site.

REGISTERED CROPS:

Pyro Herbicide can be applied pre-seeding or post-seeding prior to crop emergence, in the crops from the crop groups listed below as well as canary seed.

Crops not listed can be planted one month after **Pyro Herbicide** application.

Crop Group 6: Legume Vegetable (succulent or dried)

Broad bean (fava bean), chickpea, lentil, soybean, pea (*Pisum* spp.) including dwarf pea, edible-pod pea, English pea, field pea, garden pea, green pea, snow pea, sugar snap pea and bean (*Lupinus* spp.) including grain lupin, sweet lupin, white lupin, and white sweet lupin; (*Phaseolus* spp.) including field bean, kidney bean, lima bean (dry), navy bean, pinto bean, runner bean, snap bean, tepary bean, wax bean; (*Vigna* spp.) including adzuki bean, asparagus bean, blackeyed pea, catjang, Chinese longbean, cowpea, Crowder pea, moth bean, mung bean, rice bean, southern pea, urd bean, yardlong bean.

Crop Group 15: Cereal Grains

Barley, buckwheat, corn (sweet and field), pearl millet, proso millet, oats, popcorn, rye (spring and fall), triticale and wheat (spring, durum, winter)

Crop Group 20A: Oilseeds, Rapeseed Subgroup

Canola (rapeseed) and mustard seed

MIXING INSTRUCTIONS:

1. Select a spray volume and nozzle type that will ensure thorough coverage and uniform spray pattern. Use a minimum of 100 L spray volume per hectare.
2. Fill the spray tank 1/3 full with fresh water and start agitation.
3. Add the required amount of **Pyro Herbicide** to the tank, agitate well.

4. If tankmixing with glyphosate, add the required amount of glyphosate to the tank and agitate well. Always consult the label of the tank mix partner(s) for minimum spray volume requirements and apply the tank mixture using a water volume recommended for all products.
5. Continue to fill tank and maintain agitation for at least 5 minutes to ensure thorough mixing.
6. Use the spray preparation of **Pyro Herbicide** within 24 hours. Product degradation may occur under alkaline conditions (pH >7.5). If spray solution is left standing without agitation, thoroughly agitate before resuming the spraying operation.

APPLICATION INSTRUCTIONS:

Apply the spray mixture uniformly with properly calibrated ground equipment only. Ensure thorough coverage and a uniform spray pattern. Flat fan nozzles are recommended (minimum 100 L spray volume per hectare). Use 50 mesh filter screens or larger (metal or nylon). A spray pressure of 210 - 275 kPa is recommended. Apply uniformly.

i. Pyro Herbicide ALONE

Rate: Apply 180 - 360 mL of **Pyro Herbicide** per hectare tank mixed with a non-ionic surfactant blend, such as Nufarm Enhance, Carrier, Ag-Surf or Merge, at 0.25% v/v (i.e. 2.5 L in a total of 1000 L spray volume).

Weeds Controlled (C) or Suppressed* (S) with Pyro Herbicide Alone		
Weed	Pyro Herbicide Rate	
	180 mL/ha	360 mL/ha
Annual sowthistle	S	S
Canada fleabane	-	S
Cleavers (including glyphosate-resistant biotypes)	C	C
Common dandelion	S	S
Cow cockle	S	C
Flixweed	S	S
Goat's-beard	-	S
Kochia (including Group 2 and glyphosate-resistant biotypes)	C	C
Lamb's quarters	C	C
Narrow-leaved hawk's-beard	S	C
Night-flowering catchfly	C	C
Redroot pigweed	C	C
Shepherd's purse	-	C
Stinkweed	S	S
Volunteer canola (including glyphosate, glufosinate ammonium, and imidazolinone-resistant biotypes)	S	C
Wild buckwheat	S	C
Wild mustard	S	S

*Weed suppression is a visual reduction in weed competition (reduced population and/or vigour) as compared to an untreated check. Degree of suppression will vary with size of weed and environmental conditions prior to and following treatment.

180 mL/ha of **Pyro Herbicide** controls smaller populations of weed seedlings at up to the 3-leaf stage.

Use up to 360 mL/ha **Pyro Herbicide** for more consistent control of susceptible weeds, to control higher weed populations and on weed seedlings up to the 4-leaf stage or if growing conditions are less than ideal.

Timing: For best results apply to emerged, young, actively growing weeds that are less than 5 cm tall or across. Thorough coverage of target weeds is essential.

ii. Pyro Herbicide + Glyphosate

Apply **Pyro Herbicide** tank mixed with glyphosate prior to seeding or post-seeding before crop emergence. Rates and formulation of glyphosate are detailed in the following table. Follow all precautions, limitations, timing recommendations, crop rotations and sprayer cleanup on the tank mix partner product label.

Herbicide and Rate	Tank Mix Partner	glyphosate Rate
Pyro Herbicide 180 – 360 mL/ha	Glyphosate	450 – 900 g a.i./ha*

* Equal to 1.25 – 2.5 L/ha of glyphosate 360 g/L,
1.0 – 2.0 L/ha of glyphosate 450 g/L or
0.83 – 1.67 L/ha of glyphosate 540 g/L
Higher rates of glyphosate may be recommended in some situations. Refer to the glyphosate product label for further effective rates.

Weeds controlled: All weeds controlled by **Pyro Herbicide** and glyphosate alone (see the tank mix partner label).

iii. Pyro Herbicide + Bromoxynil for Control of Volunteer Canola

Apply **Pyro Herbicide** tank mixed with bromoxynil prior to seeding or post-seeding before crop emergence for enhanced control of volunteer canola (all types). Rates of bromoxynil are detailed in the following table. Follow all precautions, limitations, timing recommendations, crop rotations and sprayer cleanup on the tank mix partner product label.

Herbicide and Rate	Tank Mix Partner	Bromoxynil Rate
Pyro Herbicide 180 mL/ha	Bromoxynil	140 g a.i./ha

Weeds controlled: All weeds controlled by **Pyro Herbicide** as well as volunteer canola (all types) up to the 4-leaf stage.

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 Nufarm Agriculture Inc. at 1-800-868-5444 for information before mixing any pesticide or fertilizer that is not specifically recommended on this label. The user assumes the risk of losses that result from the use of tank mixes that do not appear on this label or that are not specifically recommended by Nufarm Agriculture Inc.

SPRAYER CLEANUP:

To avoid subsequent injury to crops, immediately after spraying and prior to spraying other crops, thoroughly remove all traces of **Pyro Herbicide** from mixing and spray equipment as follows:

- Drain tank; then flush tank, boom and hoses with clean water for a minimum of ten minutes.
- Next, prepare a sprayer cleaning solution by adding 3 litres of ammonia (containing at least 3% active) per 100 litres of clean water. Prepare sufficient cleaning solution to allow the operation of the spray system for a minimum of 15 minutes to thoroughly flush the tank, hoses, spray boom and spray nozzles.
- If possible, leave the ammonia solution or fresh water left in the spray tank, hoses, spray booms and spray nozzles overnight or during storage to dissolve and dilute any remaining traces of herbicide.
- Nozzles and screens may be cleaned separately in a bucket containing cleaning agent and water.
- DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

RESISTANCE MANAGEMENT RECOMMENDATIONS:

For resistance management, please note that **Pyro Herbicide** is a Group 14 herbicide. Any weed population may contain or develop plants naturally resistant to **Pyro Herbicide** and other Group 14 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 **Pyro Herbicide** or other Group 14 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 and to report suspected resistance, contact Nufarm Agriculture Inc. company representatives at 1-800-868-5444 or at www.nufarm.ca

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