2025-0025
2025-02-10

(Sleeve)

GROUP	4		14	HERBICIDES

ThunderHawk A Herbicide

Emulsifiable Concentrate

COMMERCIAL

FOR CONTROL OF EMERGED BROADLEAF WEEDS PRIOR TO THE EMERGENCE OF SPRING WHEAT (INCLUDING DURUM), WINTER WHEAT, SPRING BARLEY AND OATS

ACTIVE INGREDIENT:
Pyraflufen-ethyl … 13.5 g/L
MCPA, present as the 2-ethylhexyl ester … 420 g a.e./L

Warning, contains the allergen soy

READ THE LABEL AND BOOKLET BEFORE USING

CAUTION POISON
SKIN IRRITANT
POTENTIAL SKIN SENSITIZER

REGISTRATION NO.: 33687 PEST CONTROL PRODUCTS ACT

Net Contents: (0.5 – Bulk) Litres

Nufarm Agriculture Inc.
5101, 333 – 96th Ave NE
Calgary, Alberta T3K 0S3

Product Information Line: 1-800-868-5444
24-Hour Emergency Response Number 1-800-424-9300

PRECAUTIONS:
KEEP OUT OF REACH OF CHILDREN.
CAUTION – POISON. Harmful if swallowed.
CAUTION – skin irritant. Potential skin sensitizer. Avoid contact with skin, eyes and clothing. Wash concentrate from skin or eyes immediately.
Avoid breathing spray mist. After use wash hands and other exposed skin.
DO NOT apply using aerial application equipment.

Do not use in residential areas, which are defined as sites where bystanders may be present during or after spraying, including homes, schools, parks, playgrounds, playing fields and public buildings.

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.

PROTECTIVE CLOTHING AND EQUIPMENT:
During mixing, loading, clean-up and repair, workers must wear coveralls over a long-sleeved shirt, long pants, chemical-resistant gloves and shoes plus socks. Rinse gloves before removal. During application, workers must wear a long-sleeved shirt, long pants and shoes plus socks and chemical-resistant gloves. Applicators using a closed cab are not required to wear chemical-resistant gloves.

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. Discard clothing or other absorbent materials that have been drenched or heavily contaminated with this product's concentrate.

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. 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. No specific antidote. Employ supportive care. Treatment should be based on judgement of the physician in response to reactions of the patient.
High concentrations of MCPA may cause severe irritation to the eyes. Symptoms of overexposure to MCPA could include slurred speech, twitching, jerking and spasms, drooling, low-blood pressure and unconsciousness.

ENVIRONMENTAL PRECAUTIONS:
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.

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:
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 **ThunderHawk A 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.

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(Booklet)

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DIRECTIONS FOR USE

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

ThunderHawk A Herbicide is designed for use as a contact and systemic herbicide for broadleaf weed control. **ThunderHawk A Herbicide** will damage emerged crop plants, even in minute quantities. Apply **ThunderHawk A Herbicide** prior to the emergence of the crop, either as a pre-seeding or post-seeding application. **ThunderHawk A Herbicide** does not provide residual weed control. Only weeds that have emerged at the time of application will be controlled. Apply when weeds are in the seedling stage and actively growing.

Pyraflufen-ethyl, a member of the phenyl pyrazole class of herbicides, inhibits the protoporphyrinogen oxidase (PPO) enzyme which results in cell membrane destruction and necrosis.
MCPA, a member of the phenoxy class of herbicides, mimics the plant growth regulator indol-3-acetic acid (auxin), interfering with cell enlargement and division, and development in susceptible plants.

Warm, moist growing conditions promote active weed growth and enhance the activity of **ThunderHawk A 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 **ThunderHawk A 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.

Do not permit lactating dairy animals to graze fields within 7 days after application.
Do not graze or cut treated crops for forage until 30 days after application.
Withdraw meat animals from treated fields at least 3 days before slaughter.
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 contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

DO NOT apply using aerial application equipment.

Spray Buffer zones:
Spot treatments using hand-held equipment DO NOT require a buffer zone. Use of low-clearance hooded or shielded sprayers that prevent spray contact with crop, fruit or foliage, and soil drench or soil incorporation DO NOT require a spray buffer zone.

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 shrub lands) and 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	**Spring wheat (including durum), winter wheat, spring barley, oats**	**1**	**1**	**2**

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 Buffer Zone Calculator on the Pesticides portion of the Canada.ca website.

REGISTERED CROPS:

ThunderHawk A Herbicide can be applied pre-seeding or post-seeding prior to crop emergence in the crops listed below.
Crops not listed can be planted one month after **ThunderHawk A Herbicide** application.

- **Spring wheat (including durum), winter wheat, spring barley and oats**

MIXING INSTRUCTIONS:

1. Select a spray volume and nozzle type that will ensure thorough coverage and uniform spray pattern. Use a minimum of 50 - 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 **ThunderHawk A Herbicide** to the tank, agitate well.
4. If tank mixing 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 **ThunderHawk A 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 50 - 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. ThunderHawk A Herbicide ALONE

Apply 330 – 660 mL of **ThunderHawk A Herbicide** per hectare, which can be applied pre-seeding or post-seeding prior to crop emergence in spring wheat (including durum), winter wheat, spring barley and oats.

Weeds Controlled (C) or Suppressed (S) with ThunderHawk A Herbicide		
Weed	**Rate**	
	330 mL/ha	**660 mL/ha**
Annual Sowthistle	S	S
Canada fleabane	S	C
Cleavers (including glyphosate-resistant biotypes)	C	C
Common dandelion	S	S
Cow cockle	S	C
Flixweed	S	C
Goat’s beard	-	S
Kochia (including Group 2 and glyphosate-resistant biotypes)	C	C
Lamb's-quarters (including Group 2 & 5 resistant biotypes)	C	C

Mallow	C	C
Mustards (except Dog and Tansy)	C	C
Narrow-leaved hawk's-beard	C	C
Night-flowering catchfly	C	C
Redroot pigweed (including Group 2 & 5 resistant biotypes)	C	C
Stinkweed	C	C
Volunteer canola (including glyphosate, glufosinate ammonium, and imidazolinone-resistant biotypes)	C	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.

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.

ThunderHawk A Herbicide can only be applied once per year.

Weed control may be reduced if the plants are beyond the recommended application growth stage, and during stress conditions, e.g. drought, heat or cold stress, or in heavy infestations where overlapping leaves prevent spray contact. In these situations, use up to 660 mL/ha.

ii. ThunderHawk A Herbicide Tank Mixing

This product may be tank mixed with a fertilizer, a supplement, or 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 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.

<u>ThunderHawk A Herbicide + Glyphosate</u>

Apply **ThunderHawk A 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. When applied as a tank-mix combination, read and observe all label directions, including rates, personal protective equipment, restrictions and precautions for each product used in the tank-mix. Always use in accordance with the most restrictive label restrictions and precautions.

Herbicide and Rate	Tank Mix Partner	Glyphosate Rate
ThunderHawk A Herbicide 330 - 660 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 **ThunderHawk A Herbicide** and glyphosate alone (see the tank mix partner label).

For weeds that are not controlled by the chosen rate of glyphosate, apply the tank mixture in accordance with the recommended timing for control of the weed with **ThunderHawk A Herbicide** alone.

SPRAYER CLEANUP:
To avoid subsequent injury to crops, immediately after spraying and prior to spraying other crops, thoroughly remove all traces of **ThunderHawk A 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 **ThunderHawk A Herbicide** is both a Group 4 and 14 herbicide. Any weed population may contain or develop plants naturally resistant to **ThunderHawk A Herbicide** and other Group 4 and/or 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 **ThunderHawk A Herbicide** or other Group 4 and/ or 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. at 1-800-868-5444 or at www.nufarm.ca.