

VIKING[™] Pinoxaden 50 Herbicide

EMULSIFIABLE CONCENTRATE

COMMERCIAL (AGRICULTURAL)

A post emergence herbicide for control of wild oats, green foxtail, yellow foxtail, barnyard grass, volunteer oats, volunteer canary seed and proso millet in Spring Wheat and Barley.

FOR SALE FOR USE IN THE PRAIRIE PROVINCES AND INTERIOR OF BRITISH COLUMBIA (INCLUDING THE PEACE RIVER REGION) ONLY

REGISTRATION NO.: 34956 PEST CONTROL PRODUCTS ACT

ACTIVE INGREDIENT: Pinoxaden......50 g/L Contains Cloquintocet-mexyl at 12.5 g/L as a safener

NET CONTENTS: 1 L to 1020 L

READ THE LABEL AND ATTACHED BOOKLET BEFORE USING

KEEP OUT OF REACH OF CHILDREN

DANGER: EYE AND SKIN IRRITANT

In case of emergency call the 24 hour Emergency Response Number 1-800-424-9300 or 1-703-527-3887

Viking Crop Production Partners Inc. Box 18033 RPO Shawnessy Calgary, AB. T2Y 0K3 1-587-743-1029

Viking (TM) is a trademark of Viking Crop Production Partners Inc.

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.

FIRST AID

IN CASE OF POISONING, contact a physician or a poison control centre **IMMEDIATELY**. Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

If swallowed, 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 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.

TOXICOLOGICAL INFORMATION

VIKING Pinoxaden 50 Herbicide contains materials that may cause severe pneumonitis if aspirated. Treat symptomatically for ingestion and/or skin and eye contact. THIS PRODUCT CONTAINS PETROLEUM DISTILLATES. VOMITING MAY CAUSE ASPIRATION PNEUMONIA.

PRECAUTIONS

- KEEP OUT OF THE REACH OF CHILDREN.
- Severely irritating to the skin. DO NOT get on skin. May irritate eyes. Avoid contact with eyes.
- Do not wear contact lenses when using.
- Avoid contact with clothing. Wear coveralls over a long-sleeved shirt and long pants, chemical-resistant gloves, socks and chemical-resistant footwear during mixing, loading, application, clean-up and repair. In addition, wear protective eyewear (goggles or face shield) during mixing, loading, clean-up and repair. Coveralls, chemical-resistant footwear and gloves are not required during application within a closed cab and/or cockpit.
- Wash gloves thoroughly with soap and water before removing them during any operation.
- Wash hands thoroughly with soap and water after using this product and before eating, drinking or smoking.
- Remove contaminated clothing immediately after use. Store and wash contaminated clothing separately from household laundry before reuse. Wash thoroughly with soap and water after handling. Handle and apply only as recommended on this label.
- Do not eat, drink or smoke while mixing, loading or during application.
- **DO NOT** enter or allow worker 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.

If this pest control product is to be used on a commodity that may be exported to other countries in the world and you require information on acceptable residue levels in these countries, please contact Viking Crop Production Partners Inc. at 1-587-743-1029.

ENVIRONMENTAL PRECAUTIONS

TOXIC to aquatic organisms and 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.

This product contains aromatic petroleum distillates that are toxic to aquatic organisms.

STORAGE

Store this product away from food or feed. Keep in original container, tightly closed, during storage. Store in a cool, dry, well ventilated area away from feed and foodstuffs, and out of the reach of children and animals. Keep away from fire or open flame, or other sources of heat. If frozen, allow to thaw and agitate thoroughly prior to use.

DISPOSAL

For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

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 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.

FOR 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.

Booklet Label



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PRODUCT INFORMATION

VIKING Pinoxaden 50 Herbicide is a systemic, post-emergence herbicide for the selective control of wild oats, green foxtail, yellow foxtail, barnyard grass, volunteer oats, volunteer canary seed and proso millet in Spring Wheat and Barley in the Prairie Provinces and the Interior of British Columbia (including the Peace River Region).

VIKING Pinoxaden 50 Herbicide is absorbed by the leaves and is rapidly translocated to the growing points of leaves and stems. Thorough coverage of the plants is essential for consistent control. Actively growing susceptible grasses stop growing within 48 hours of treatment. Depending on species, growing conditions and crop competition, leaves and growing points turn yellow within one to three weeks after application. Further colour changes and loss of vigour will be observed, followed by a browning and control three to five weeks after application.

Although **VIKING Pinoxaden 50 Herbicide** does not control broadleaf weeds, **VIKING Pinoxaden 50 Herbicide** can be tank- mixed with a range of broadleaf herbicides to provide broad spectrum weed control in Spring Wheat and Barley. See section entitled 'TANK MIXES WITH BROADLEAF WEED HERBICIDES AND FUNGICIDES'.

DIRECTIONS FOR USE

CROPS: Spring Wheat and Barley

VIKING Pinoxaden 50 Herbicide can be used on all varieties of Spring Wheat and Barley.

One application per year is permitted.

Observe a minimum interval to harvest of 60 days after treatment for grain and straw and of 30 days after treatment for hay. Observe a minimum of 7 days before grazing livestock on crops treated with **VIKING Pinoxaden 50 Herbicide**.

Do not apply on any crop other than Spring Wheat or Barley, as crop damage will result. Do not allow spray to drift to adjacent fields seeded to crops other than Spring Wheat or Barley. Do not treat Spring Wheat or Barley underseeded to forages. Do not apply **VIKING Pinoxaden 50 Herbicide** on highly sensitive crops such as: Tame Oats, Proso Millet, Red Millet, Crown Millet or Canary Seed.

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.

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.

Aerial application: DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT apply when wind speed is greater than 16 km/h at flying height at the site of application. DO NOT apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE S572.1) medium classification. Reduce drift caused by turbulent wingtip vortices. Nozzle distribution along the spray boom length MUST NOT exceed 65% of the wing- or rotor span.

SPRAY BUFFER ZONES:

A spray buffer zone is NOT required for:

• hand-held or backpack sprayer and spot treatment

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) and sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands).

Method of application	Сгор	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 and barley	1	0	1	
Aerial (fixed- or rotary-	Spring wheat and	1	0	25	
wing)	barley	1	0	25	

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 Pesticide portion of the Canada.ca website.

ROTATIONAL CROP INFORMATION

For fields treated with **VIKING Pinoxaden 50 Herbicide**, no crop may be seeded until the following year. There are no crop rotation limitations the year following application of **VIKING Pinoxaden 50 Herbicide**.

WEEDS CONTROLLED: Wild Oats, Green Foxtail, Yellow Foxtail, Barnyard Grass, Volunteer Oats, Volunteer Canary Seed and Proso Millet

Perennial grasses such as quack grass will not be controlled.

TIMING OF APPLICATION:

CROP / WEEDS	GROWTH STAGE** (ZADOKS or BBCH)
SPRING WHEAT BARLEY	1 leaf to flag leaf stage (11, 20 to 37)
WILD OATS GREEN and YELLOW FOXTAIL BARNYARD GRASS VOLUNTEER OATS VOLUNTEER CANARY SEED PROSO MILLET	1 – 6 leaf, prior to 4 th tiller (11, 20 to 16 and 23)

** Do not apply past flag leaf stage.

For optimum results, apply **VIKING Pinoxaden 50 Herbicide** to actively growing weeds. An early application will maximize crop yields by reducing weed competition. Weeds emerging after application of **VIKING Pinoxaden 50 Herbicide** will not be controlled.

Weed control following application of **VIKING Pinoxaden 50 Herbicide** alone, or in combination with broadleaf weed herbicides, can be reduced or delayed under stress conditions such as drought, heat, insufficient fertility, flooding or prolonged cool temperatures. Grass escapes or re-tillering may occur if application is made during prolonged stress conditions. Optimum weed control will be obtained if application of **VIKING Pinoxaden 50 Herbicide** is delayed until the stress conditions have ended and weeds are once again actively growing.

VIKING Pinoxaden 50 Herbicide alone can be used one hour before rainfall.

Do not apply to crop that is stressed by conditions such as frost, low fertility, drought, flooding, disease or insect damage as crop injury may result.

RATE OF USE:

Apply the recommended rate of **VIKING Pinoxaden 50 Herbicide** in 50 L to 100 L of water per hectare for ground application and in a minimum of 30 L of water per hectare for aerial application. **VIKING Pinoxaden 50 Herbicide** has a built- in adjuvant; thus, no additional adjuvant is required. 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 of all tank mix partners.

CROP	WEEDS CONTROLLED	USE RATES	
SPRING WHEAT BARLEY			1200 mL/ha (0.5 L/acre)

NOTE: Do not mix with any other adjuvant, chemical additive or fertilizer that is not recommended on this label.

TANK MIXTURES

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 Viking Crop Production Partners Inc. at 1-587-743-1029 or <u>www.vikingcropproduction.com</u> for information before applying any tank mix that is not specifically recommended on this label.

TANK MIXES WITH BROADLEAF WEED HERBICIDES AND FUNGICIDES:

For broad spectrum weed control of annual grasses and broadleaf weeds, VIKING Pinoxaden 50 Herbicide can be tank-mixed with broadleaf herbicides as described in the following table.. VIKING Pinoxaden 50 Herbicide can also be tank-mixed with TILT[®] 250E Fungicide for suppression or control of diseases in spring wheat and barley listed on the TILT 250E Fungicide label. For the appropriate rate of VIKING Pinoxaden 50 Herbicide, refer to the 'RATE OF USE' section of the label.

Tank-Mix Partner	Product Rates	
Refine [®] SG Herbicide	30 g/ha	
Refine SG Herbicide + MCPA Ester ^{2,3}	30 g/ha + 560 - 700 mL/ha ⁴	
Refine SG Toss-N-Go [®] Herbicide	30 g/ha	
Refine SG Toss-N-Go Herbicide + MCPA Ester ^{2,3}	30 g/ha + 560 - 700 mL/ha⁴	
Buctril [®] M ³	1.0 L/ha	
Spectrum [™] Herbicide Tank Mix ^{2,3}	100 mL/ha of Spectrum A + 1.5 L/ha of Spectrum B	
Trophy [®] Herbicide Tank Mix ³	0.6 L/ha of Trophy A + 1.12 L/ha of Trophy B	
Mextrol 450 ³	1.25 L/ha	
MCPA Ester ³	840 mL to 1.1 L/ha ⁴	
TILT 250E Fungicide	250 – 500 mL	

Product Rates	
0.83 L/ha	
1.25 L/ha	
308 mL/ha	
308 mL/ha + 583 mL/ha ⁶	
	0.83 L/ha 1.25 L/ha 308 mL/ha

²Suppression only of green foxtail.

³A reduction in barnyard grass control may be observed when **VIKING Pinoxaden 50 Herbicide** is tank mixed with these broadleaf herbicides.

⁴This rate is for MCPA Ester 500 therefore rates must be adjusted accordingly for other concentrations. ⁵For control of common ragweed and suppression of round-leaved mallow.

⁶This rate is for MCPA Ester 600 (600 g a.e./L) therefore rates must be adjusted accordingly for other concentrations.

Temporary crop injury may occur with tank-mixes under extreme weather conditions or when the crop is suffering from stress due to inadequate or abnormally high moisture levels or extreme temperatures.

MIXING INSTRUCTIONS FOR GROUND APPLICATION:

- 1. Ensure that the sprayer interior is clean, then fill the spray tank with ½ the required amount of water and engage gentle agitation. Good agitation is indicated by a rippling or rolling action on the surface of the water.
- 2. Add any WG or DF formulation mix partners and agitate to ensure complete mixing.
- 3. Add any SC formulation mix partners and agitate to ensure complete mixing.
- 4. Add VIKING Pinoxaden 50 Herbicide and agitate to ensure complete mixing.
- 5. Add any additional EC formulation mix partners and agitate to ensure complete mixing.
- 6. Fill the tank to ³/₄ the required amount of water.
- 7. Add any solution (SN) formulation mix partners and agitate to ensure complete mixing.
- 8. Finish filling the sprayer with water, maintaining good agitation.
- 9. After any break in spraying operations, agitate thoroughly before spraying again.
- 10. Spray the herbicide suspension the same day as mixing.
- 11. Do not mix, load or clean spray equipment where there is a potential to contaminate wells or aquatic systems.

SPRAYING INSTRUCTIONS FOR GROUND APPLICATION:

- 1. <u>Water Volume:</u> 50 to 100 litres per hectare.
- Spray Nozzles: 80° or 110° pre-orifice flat fan or air induction nozzles are recommended. Use 50 mesh nozzle screens. Do not use flood type nozzles, controlled droplet application equipment, spray foils or hollow cone nozzles.
- 3. <u>Pressure:</u> As recommended by the nozzle manufacturer.
- 4. Apply uniformly at 6 8 km/hr and avoid overlapping. Shut off spray boom while starting, turning, slowing or stopping to avoid potential crop injury from over application.

SPRAYER CLEAN-UP FOR GROUND APPLICATION:

Clean Up Before Spraying:

• Prior to using VIKING Pinoxaden 50 Herbicide, ensure that the spray tank, lines and filter are thoroughly clean.

Clean Up After Spraying:

- Thoroughly clean application equipment immediately after spraying. To avoid subsequent injury to other crops, immediately after spraying and before spraying other crops, thoroughly remove all traces of **VIKING Pinoxaden 50 Herbicide** from mixing and spraying equipment.
- When using tank mixes, consult the tank-mix partner label for additional cleanup instructions.
- The following recommendations are provided:
 - 1. Drain and flush tank walls, boom and all hoses for ten minutes with a clean water/detergent mixture. Rinse with clean water. **Do not** clean the sprayer near desirable vegetation, wells or other water sources.
 - 2. Remove all nozzles and screens and wash separately.
 - 3. Dispose of all rinsings in accordance with provincial regulations.

AERIAL APPLICATION

Instruction for Aerial Application

Apply **VIKING Pinoxaden 50 Herbicide** alone or in tank mixes (ONLY with the recommended tank mix partners that are registered for aerial use) in no less than 30 litres of water per hectare.

Apply only by fixed-wing or rotary aircraft equipment which has been functionally and operationally calibrated for the atmospheric conditions of the area and the application rates and conditions of this label.

Label rates, conditions and precautions are product specific. Read and understand the entire label before opening this product. Apply only at the rate recommended for aerial application on this label. Where no rate for aerial application appears for the specific use, this product cannot be applied by any type of aerial equipment.

Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices.

Use Precautions

Apply only when meteorological conditions at the treatment site allow for complete and even crop coverage. Apply only under conditions of good practice specific to aerial application as outlined in the *National Aerial Pesticide Application Manual*, developed by the Federal/Provincial/Territorial Committee on Pest Management and Pesticides.

Do not apply to any body of water. Avoid drifting of spray onto any body of water or other non- target areas. Specified spray buffer zones should be observed.

Coarse sprays are less likely to drift, therefore, avoid combinations of pressure and nozzle type that will result in fine particles (mist). Do not apply during periods of dead calm or when wind velocity and direction pose a risk of spray drift. Do not spray when wind is blowing towards a nearby sensitive crop, garden, terrestrial habitat (such as shelter-belt) or aquatic habitat.

Operator Precautions

Do not allow the pilot to mix chemicals to be loaded onto the aircraft. Loading of premixed chemicals with a closed system is permitted.

It is desirable that the pilot have communication capabilities at each treatment site at the time of application.

The field crew and the mixer/loaders must wear chemical resistant gloves, coveralls and goggles or face shield during mixing/loading, cleanup and repair. Follow the more stringent label precautions in cases where the operator precautions exceed the generic label recommendations on the existing ground boom label.

All personnel on the job site must wash hands and face thoroughly before eating and drinking. Protective clothing, aircraft cockpit and vehicle cabs must be decontaminated regularly.

Product Specific Precautions

Read and understand the entire label before opening this product. If you have questions, call Viking Crop Production Partners Inc. at 1-587-743-1029 or obtain technical advice from the distributor or your provincial agricultural representative. Application of this specific product must meet and/or conform to the following:

Apply in at least 30 litres of water per hectare.

Avoid spraying when the wind is blowing towards a nearby sensitive crop, garden, terrestrial habitat (such as shelter-belt) or aquatic habitat.

Resistance-Management Recommendations

For resistance management, **VIKING Pinoxaden 50 Herbicide** is a Group 1 herbicide. Any weed population may contain or develop plants naturally resistant to **VIKING Pinoxaden 50 Herbicide** and other Group 1 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 **VIKING Pinoxaden 50 Herbicide** or other Group 1 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 resistancemanagement and/or integrated weed-management recommendations for specific crops and weed biotypes.
- For further information or to report suspected resistance, contact Viking Crop Production Partners Inc. at 1-587-743-1029.

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