

(Container)

Vantage[®] 480

GROUP	9	HERBICIDE
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Water soluble herbicide for nonselective weed control in CROPLAND SYSTEMS AND IN FORESTRY AND OTHER NON-CROPLAND AREAS.

COMMERCIAL (AGRICULTURAL and INDUSTRIAL) AND RESTRICTED USES

**READ THE LABEL AND BOOKLET BEFORE USING
KEEP OUT OF REACH OF CHILDREN**

ACTIVE INGREDIENT: Glyphosate (present as dimethylamine salt) 480 g/L

solution

REGISTRATION NO. 35670 PEST CONTROL PRODUCTS ACT

**CAUTION: EYE AND SKIN IRRITANT
POTENTIAL SKIN SENSITIZER**

Net Contents: 7.5 L- 1050L

Albaugh LLC
1525 NE 36th Street
Ankeny, IA USA 50021
1-800-247-8013

For medical or treatment information from exposure to this product, call 1-888-347-6732 (7 days/week, 24-hr).

For 24-hour chemical spill, leak, fire, exposure, or accident response information, call CHEMTREC toll free at 1-800-424-9300.

Vantage is a registered trademark of Albaugh, LLC

PRECAUTIONS

May irritate eyes and skin
Avoid contact with eyes or with skin

KEEP OUT OF REACH OF CHILDREN

Airblast

Wear a long-sleeved shirt, long pants, chemical-resistant gloves, socks, shoes and protective eyewear (goggles or face shield) during mixing, loading, application, clean-up and repair. Gloves are not required during application within a closed cab.

All other application equipment

Wear a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes during mixing, loading, application, clean-up and repair. In addition, wear protective eyewear (goggles or face shield) during mixing, loading, clean-up and repair. Gloves are not required during application within a closed cab and/or cockpit.

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

PHYSICAL OR CHEMICAL HAZARDS

Spray solutions of this product should be mixed, stored and applied only in stainless steel, aluminum, fibreglass, plastic and plastic-lined steel containers. **DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED STEEL OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS.** This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

FIRST AID

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

No specific antidote. Employ supportive care. Treatment should be based on judgment of the physician in response to reactions of the patient.

AGRICULTURAL CHEMICAL

Do not ship or store with food, feeds, drugs or clothing.

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. Additional guidance can be found on the Runoff Mitigation portion of the Canada.ca website.

STORAGE

Store this product away from food or feed. Soak up small amounts of spill with absorbent clays.

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.
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Returnable Containers

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Refillable Containers

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For information on disposal of unused, unwanted product, contact the registrant or the provincial or territorial regulatory agency. Contact the registrant and the provincial or territorial 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.

(Booklet)

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DIRECTIONS FOR USE

GENERAL INFORMATION

DO NOT enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours. For non-crop areas, **DO NOT** enter or allow worker entry into treated areas until sprays have dried.

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.

Glyphosate is not to be applied using hand-wicking or hand-daubing methods.

Do not apply this product using aerial spray equipment except under conditions as specified within this label.

Field sprayer application: **DO NOT** apply when wind speed is less than 1 km/h. Avoid application of this product when winds are gusty. **DO NOT** apply with sprays finer than the American Society of Agricultural and Biological Engineers (ASABE) S572 (572.1 to 572.3) coarse classification. Boom height must be 60 cm or less above the crop or ground.

Airblast or mist blower application: **DO NOT** apply when wind speed is less than 1 km/h. Avoid application of this product when winds are gusty. **DO NOT** direct spray above plants to be treated. Turn off outward pointing nozzles at row ends and outer rows. **DO NOT** apply when wind speed is greater than 16 km/h at the application site as measured outside of the treatment area on the upwind side.

Conventionally piloted aircraft application: **DO NOT** apply when wind speed is less than 1 km/h. 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 sprays finer than the American Society of Agricultural and Biological Engineers (ASABE) S572 (572.1 to 572.3) coarse classification. Reduce drift caused by turbulent wingtip vortices. Nozzle distribution along the spray boom length **MUST NOT** exceed 65% of the wing- or rotorspan.

Vantage 480, a water soluble liquid, mixes readily with water for application as a foliage spray for the control or destruction of most herbaceous plants. It may be applied through most standard industrial or field type sprayers after dilution and thorough mixing with water in accordance with the booklet instructions.

This herbicide moves through the plant from the point of foliage contact to and into the root system. Visible effects on most annual weeds occur within 2 to 4 days but on most perennial weeds may not occur until 7 to 10 days. Extremely cool or cloudy weather at treatment time may slow down activity of this product and delay visual effects of control. Visible effects are a gradual wilting and yellowing of the plant which advances to complete browning of above ground growth and deterioration of underground plant parts.

Delay application until vegetation has emerged to the stages described for control of such vegetation under the annual and perennial weed control sections of this booklet to provide adequate leaf surface to receive the spray. Unemerged plants arising from underground rhizomes or root stocks of perennials will not be affected by the spray and will continue to grow. For this reason best control of most perennial weeds is obtained when treatment is made at late growth stages approaching maturity.

Always use the higher rate of this product per hectare within the recommended range when weed growth is heavy or dense, or weeds are growing in an undisturbed (non-cultivated) area.

Do not treat weeds under poor growing conditions such as drought stress, disease or insect damage, as reduced weed control may result. Reduced results may also occur when treating weeds heavily covered with dust.

This product does not provide residual weed control. For subsequent residual weed control follow a label approved herbicide program. Read and carefully observe the cautionary statements and all other information appearing on the labels of all herbicides used.

Heavy rainfall immediately after application may wash the chemical off the foliage and a repeat treatment may be required. Do not apply if rainfall is forecast for the time of application.

Do not mix with any surfactant, pesticide, herbicide oils or any other material other than water unless specified in this booklet. For best results, spray coverage should be uniform and complete. Do not spray weed foliage to the point of runoff.

Tank Mixtures

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 Albaugh LLC at 1-800-247-8013 for information before mixing any pesticide or fertilizer that is not specifically recommended on this label.

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.

MIXING AND APPLICATION

PRECAUTIONS

ATTENTION: AVOID CONTACT WITH FOLIAGE, GREEN STEMS, OR FRUIT OF CROPS, DESIRABLE PLANTS AND TREES SINCE SEVERE INJURY OR DESTRUCTION MAY RESULT.

APPLY THESE SPRAY SOLUTIONS IN PROPERLY MAINTAINED AND CALIBRATED EQUIPMENT CAPABLE OF DELIVERING DESIRED VOLUMES.

AVOID DRIFT - EXTREME CARE MUST BE USED WHEN APPLYING THIS PRODUCT TO PREVENT INJURING DESIRABLE PLANTS AND CROPS. Even minute quantities of spray drift can cause severe damage or destruction to nearby crops, plants or other areas on which treatment is not intended, or may cause other unintended consequences.

DO NOT USE IN GREENHOUSES. REDUCED RESULTS MAY OCCUR IF WATER CONTAINING SOIL IS USED, SUCH AS WATER FROM PONDS AND UNLINED DITCHES.

Clean sprayer and parts immediately after using this product by thoroughly flushing with water. Do not contaminate water sources by disposal of wastes or cleaning of equipment.

NOTE: Use of this product in any manner not consistent with this booklet may result in injury to persons, animals or crops, or other unintended consequences. Keep container closed to prevent spills and contamination.

MIXING AND APPLICATION EQUIPMENT INFORMATION

MIXING

For ground or industrial type sprayers, fill the spray tank with one-half the required amount of water. Add the proper amount of herbicide (see "Weed Control" sections of this booklet) and mix well before adding the remaining portion of water. Placing the filling hose below the surface of the liquid solution will prevent excessive foaming. Removing hose from tank immediately will avoid back siphoning into water source. Use of mechanical agitators may cause excessive foaming. Bypass lines should terminate at the bottom of the tank.

For use in knapsack sprayers, it is suggested that the proper amount of this herbicide be mixed with water in a larger container. Fill sprayer with the mixed solution.

APPLICATION EQUIPMENT

BOOM EQUIPMENT

For control of perennial weeds and woody brush and trees listed on this booklet using conventional boom equipment-- Apply this product in 50 to 300 L of clean water per hectare as a broadcast spray using no more than 275 kPa pressure. See "**Weed Control**" sections of this booklet for rates to control specific weeds.

For control of annual weeds listed on this booklet using conventional boom equipment-- Apply this product in 50 to 100 L of clean water per hectare as a broadcast spray, except as otherwise stated on this label using no more than 275 kPa pressure. See "**Weed Control**" sections of this booklet for rates to control specific weeds.

HAND HELD AND HIGH VOLUME EQUIPMENT (use coarse sprays only)

For control of weeds and woody brush and trees listed in the "Weed Controlled" section of this label using knapsack sprayers or high volume spraying equipment utilizing handguns or other suitable nozzle arrangements. Unless otherwise specified, make a 0.75% solution of this product in water (0.75 litre of this product in 100 litres of water) and apply to foliage of vegetation to be controlled. For best results, use a 1.5% solution (1.5 litres of this product in 100 litres of water) on harder to control perennials such as field bindweed, hemp dogbane, milkweed and Canada thistle.

Applications should be made on a spray-to-wet basis. Spray coverage should be uniform and complete. Do not spray to point of runoff. Hand gun applications should be properly directed to avoid spraying desirable plants.

SELECTIVE EQUIPMENT

Selective equipment such as **WIPER** and **ROLLER** applicators can be used for weed control in soy and dry beans, orchards, vineyards, cranberries, strawberries and non-crop areas. For information regarding use of this product with selective equipment, refer to "**Selective Equipment**" section of this label.

AERIAL EQUIPMENT

Aerial Equipment can be used for cropland and non-cropland application only as indicated in this label. For further information, refer to specific aerial application sections under each use.

WEEDS CONTROLLED

This product controls many annual and perennial grasses, broadleaf weeds, and woody brush and trees when applied as recommended and under conditions described. For information on how to control specific weeds including herbicide rate refer to the "**Annual Weed Control**" and "**Perennial Weed Control**" sections of this label. The following is a partial list of weeds controlled:

ANNUAL WEEDS

Annual Grasses

Barnyard Grass

Echinochloa crusgalli

Blue Grass (annual)

Poa annua

Crab Grass (large)

Digitaria sanguinalis

Crab Grass (smooth)

Digitaria ischaemum

Downy Brome

Bromus tectorum

Fall Panicum

Panicum dichotomiflorum

Giant Foxtail

Setaria faberii

Green Foxtail

Setaria viridis

Persian Darnel

Lolium persicum

Volunteer Barley

Hordeum spp.

Volunteer Corn

Zea Mays

Volunteer Wheat

Triticum spp.

Wild Oats

Avena fatua

Wild Proso Millet

Panicum miliaceum

Yellow Foxtail

Setaria glauca

Other

Dodder

Cuscuta spp.

Annual Broadleaf Weeds

Chickweed

Stellaria media

Cleavers

Galium aparine

Cocklebur

Xanthium strumarium

Corn Spurry

Spergula arvensis

Cowcockle

Pennsylvania Smartweed

Polygonum pensylvanicum

Prickly Lettuce

Lactuca scariola

Ragweed (common)

Ambrosia artemisiifolia

Redroot Pigweed

Amaranthus retroflexus

Round-Leaved Mallow

Saponaria vaccaria
Eastern Black Flowering Nightshade
Solanum ptycanthum
Fleabane (Canada)
Erigeron canadensis
Flixweed
Descurania sophia
Green Smartweed
Polygonum scabrum
Hempnettle
Galeopsis tetrahit
Kochia
Kochia scoparia
Lady's-Thumb
Polygonum persicaria
Lamb's-Quarters (common)
Chenopodium album
Narrow-leaved Hawk's Beard
Crepis tectorum
Narrow-leaved Vetch
Vicia angustifolia
Night-flowering Catchfly
Silene noctiflora

Malva pusilla
Russian Thistle
Salsola pestifer
Shepherd's Purse
Capsella bursa-pastoris
Smooth Pigweed
Amaranthus hybridus
Sowthistle (annual)
Sonchus oleraceus
Stinkweed
Thlaspi arvense
Storksbill
Erodium cicutarium
Volunteer Canola
Brassica spp
Volunteer Flax
Linaria spp
Wild Buckwheat
Polygonum convolvulus
Wild Mustard
Sinapsis arvensis
Wild Tomato
Solanum triflorum
Velvetleaf
Abutilon theophrasti

PERENNIAL WEEDS

Perennial Grasses / Sedges

Blue Grass (Canada)
Poa compressa
Blue Grass (Kentucky)
Poa pratensis
Brome Grass (smooth)
Bromus inermis
Cattail (common)
Typha latifolia

Foxtail Barley
Hordeum jubatum
Quackgrass
Agropyron repens
Yellow Nutsedge
Cyperus esculentus
Wire-stemmed Muhly
Muhlenbergia frondosa

Perennial Broadleaved Weeds

Alfalfa
Medicago spp.
Cottontop
Eriophorum chamissionis
Curled Dock
Rumex crispus
Dandelion
Taraxacum officinale
Field Bindweed
Convolvulus arvensis
Hemp Dogbane
Apocynum cannabinum
Hoary Cress
Cardaria draba
Knotweed (Japanese)
Polygonum cuspidatum

Milkweed (common)
Asclepias syriaca
Poison Ivy
Rhus radicans
Purple Loosestrife
Lythrum salicaria
Sow Thistle (perennial)
Sonchus arvensis
Thistle (Canada)
Cirsium arvense
Toad Flax
Linaria vulgaris
Wormwood (Absinth)
Artemisia absinthium

Woody Brush And Trees

Alder

Alnus spp.

Birch

Betula spp.

Broadleaved meadowsweet

Spiraea latifolia

Canadian rhododendron

Rhododendron canadenses

Cedar

Thuja spp.

Cherry

Prunus spp.

Douglas Fir

Pseudotsuga spp.

Hemlock

Tsuga spp.

Maple

Acer spp.

Mountain-fly honeysuckle

Lornica villosa

Pine

Pinus spp.

Poplar

Populus spp.

Raspberry / Salmonberry

Rubus spp.

Sheep laurel

Kalmia angustifolia

Snowberry (Western)

Symphoricarpos occidentalis

Sweet fern

Comptonia peregrina

Willow

Salix spp.

Withrod

Viburnum cassinoides

CROPLAND USES

CROPLAND USES INCLUDE:

In cropping systems before planting of all crops; in minimum tillage systems, post emergent in glyphosate tolerant soybean, canola and corn; preharvest applications in wheat, barley, oats, canola (rapeseed), flax (including low linolenic acid varieties), peas, lentils, dry beans, soybeans and forages; in pasture renovation; in forage, legume and grass establishments; in tree crops including apple, pear, cherry, plum, peach, apricot, filbert, hazelnut, walnut, chestnut; in grapes, cranberries, blueberries and strawberry; in sugar beets; in tree plantings; and grasses for seed production.

ALWAYS READ PRECAUTIONARY STATEMENTS, GENERAL INFORMATION and MIXING and APPLICATION PRECAUTIONS PRIOR TO SPECIFIC APPLICATION INFORMATION IN ANY LABEL SECTION.

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.

ANNUAL WEED CONTROL

The following tables provide rates and specific application instructions for control of the annual weeds listed.

ANNUAL WEED CONTROL WITH VANTAGE 480

RATE L/HA	GROWTH STAGE	WEEDS CONTROLLED	COMMENTS (Apply in 50 - 100 L/ha water)
0.56	weeds up to 8 cm in height	wild oats, green foxtail, volunteer barley, volunteer wheat volunteer canola (rapeseed), wild mustard, lady's-thumb, stinkweed	for wild oats apply at 1 - 3 leaf stage add 350 mL of the surfactant Agral 90 or Ag Surf for heavy wild oat infestations use 0.75 L/ha rate.
0.75	weeds 8 cm to 15 cm in height	all annual grasses listed above all annual broadleaved	add 350 mL of surfactant registered for use as listed above. † suppression only. Refer to higher rates of

		weeds listed above plus flixweed [†] and kochia [†]	this table or tank-mix table for control options.
0.94 - 1.4	weeds up to 15 cm in height	all annual grasses listed above plus downey brome, giant foxtail, and Persian darnel all annual broadleaved weeds listed above plus chickweed, cleavers, shepherd's purse, lamb's quarters, redroot pigweed, hempnettle, flixweed, Russian thistle, volunteer flax, common ragweed [†] , Canada fleabane [†] , wild buckwheat ^{††} , narrow-leaved hawk's beard ^{†††} ,	no surfactant required for tank-mix weed control options see annual weed control with tank mixture section [†] DO NOT use these rates on plants greater than 8 cm in height ^{††} for 3 - 4 leaf stage use 1.4 L/ha rate ^{†††} for weeds 8 cm to 15 cm in height use 1.4 L/ha rate
1.69	weeds up to 15 cm in height	all annual grasses listed above plus crab grass and annual blue grass. all annual broadleaved weeds listed above plus kochia, prickly lettuce, annual sow thistle, and narrow-leaved vetch	for additional annual broadleaved weed control options, refer to tank-mix table
2.63	weeds over 15 cm in height	all annual grasses and broadleaved weeds listed above	for additional annual broadleaved weed control options refer to tank-mix table

NOTE: For spot treatment, 0.56 – 2.63 L/ha is approximately equivalent to 6-26 mL/100 m², respectively.

ANNUAL WEED CONTROL WITH VANTAGE 480 TANK MIXTURES FOR SUMMERFALLOW & MINIMUM TILLAGE SYSTEMS

TANK MIXTURES	RATE L/ha	WEEDS CONTROLLED	COMMENTS (Apply in 50 - 100 L/ha water; add 350 mL/ha of surfactant)
Vantage 480 + Banvel II	0.56 – 0.75 + 0.29	Volunteer cereal, wild oats, green foxtail, Volunteer canola (rapeseed), wild mustard, flixweed [†] , lamb's quarters, lady's thumb, stinkweed, kochia, Russian thistle, cow cockle, redroot pigweed ^{††} , wild buckwheat ^{††} .	This tank-mix is registered for summerfallow use only . Weeds should be less than 15 cm tall and actively growing for best results. Use higher rate if weeds are beyond 8 cm in height. [†] Vantage 480 applied at 0.75 L/ha rate only. ^{††} Suppression only. See other tank mixtures for control options.
Vantage 480	0.56 – 0.75	Volunteer cereals, green foxtail, volunteer canola (rapeseed), wild mustard, lady's thumb, stinkweed, wild	This tank-mix is registered only for use in summerfallow, and prior to wheat, oats and barley in minimum tillage systems .

<p>+ Pardner</p>	<p>+ 1.25</p>	<p>buckwheat[†] Redroot pigweed^{††}, kochia^{††}, wild oats^{††}</p>	<p>Weeds should be less than 15 cm tall and actively growing for best results. Use higher rate if weeds are beyond 8 cm in height. [†] use Vantage 480 at 0.75 L/ha rate only for wild buckwheat control. ^{††} 0.75 L rate, suppression only. See other tank mixtures for control options.</p>
<p>Vantage 480 + 2,4-D#</p>	<p>0.56 – 0.75 + 1.2</p>	<p>Volunteer cereals, wild oats[†] and green foxtail[†] volunteer canola (rapeseed), wild mustard, flixweed, redroot pigweed, lady's thumb, stinkweed, kochia. Lamb's quarters^{††}, Russian thistle^{††}.</p>	<p>This tank-mix is registered for summerfallow use only. Weeds should be less than 15 cm tall and actively growing for best results. Use higher rate if weeds are beyond 8 cm in height [†] use Vantage 480 at 0.75 L/ha rate only for wild oat and green foxtail control. ^{††} suppression only. See other tank mixtures for control options.</p>
<p>Vantage 480 + 2,4-D ##</p>	<p>0.94-1.4 + 0.6-0.9⁴ or 1.2-1.5⁵</p>	<p>Volunteer cereals, wild oats, green foxtail, downy brome, giant foxtail, and Persian dandel. Volunteer canola, (rapeseed) (non-glyphosate tolerant), wild mustard, flixweed, redroot pigweed, lady's-thumb, stinkweed, kochia, lamb's-quarters, hempnettle, Russian thistle, volunteer flax, common ragweed[†], Canada fleabane, wild buckwheat^{††}, narrowleaved hawk's beard^{†††} Glyphosate tolerant volunteer canola (1-4 leaf stage)⁴, bluebur⁴, burdock⁴, cocklebur⁴, common plantain⁴, daisy fleabane⁴, false flax⁴, false ragweed⁴, goat's beard⁴, mustards⁴ (except dog and tansy), prickly lettuce⁴, ragweeds⁴, Russian pigweed⁴, shepherd's purse⁴, stinging nettle⁴, sweet clover⁴, thymeleaved spurge⁴, wild radish⁴, wild sunflower⁴ Glyphosate tolerant volunteer canola (4-6 leaf stage)⁵, annual sow thistle⁵, common</p>	<p>Weeds should be less than 15 cm tall and actively growing for best results. Use higher rate if weeds are beyond 8 cm in height. No surfactant required. [†] DO NOT use these rates on plants greater than 8 cm in height. ^{††} For 3-4 leaf stage use 1.4 L/ha rate. ^{†††} For weeds 8 cm to 15 cm in height use 1.4 L/ha rate. ⁴ 2,4-D at 0.6 – 0.9 L/ha (280 – 420 g ai/ha). ⁵ 2,4-D at 1.2 – 1.5 L/ha (560 – 700 g ai/ha). Use this tank mix prior to seeding or after seeding but before crop emergence in wheat, winter wheat, barley and rye.</p>

		chickweed ⁵ , common purslane ⁵ , dog and tansy mustard ⁵ , oakleaved goosefoot ⁵ , groundsel ⁵ , hairy galinsoga ⁵ , hawkweed ⁵ , heal-all ⁵ , knotweed ⁵ , peppergrass ⁵ , pineapple weed ⁵ , prostrate pigweed ⁵ , purslane ⁵ , sheep sorrel ⁵ , smartweed ⁵ , tumble pigweed ⁵ , velvetleaf ⁵ , volunteer canola ⁵	
Vantage 480 + MCPA### 500 g/L formulation, if another formulation is used, adjust rate accordingly	0.94-1.4 + 0.5 –0.7 ¹ OR 0.5 –1.0 ²	<p>Volunteer cereals, wild oats, green foxtail, downy brome, giant foxtail, and Persian darnel.</p> <p>Volunteer canola (rapeseed) (non-glyphosate tolerant), wild mustard, flixweed, redroot pigweed, lady's thumb, stinkweed, kochia, lamb's quarters, hempnettle, Russian thistle, volunteer flax, common ragweed[†], Canada fleabane, wild buckwheat^{††}, narrowleaved hawk's beard^{†††}</p> <p>Volunteer glyphosate tolerant canola (1-4 leaf stage)^{1,2}, bluebur³, burdock³ (before 4 leaf stage), false flax³, flixweed³, lamb's quarters³, mustards³ (except dog and tansy), prickly lettuce³, ragweeds³, redroot pigweed³, Russian pigweed³, shepherd's purse³, stinkweed (field pennycress)³, vetch³, wild radish³, wild sunflower³</p>	<p>Weeds should be less than 15 cm tall and actively growing for best results.</p> <p>Use higher rate if weeds are beyond 8 cm in height.</p> <p>No surfactant required.</p> <p>[†] DO NOT use these rates on plants greater than 8 cm in height.</p> <p>^{††} For 3-4 leaf stage use 1.4 L/ha rate.</p> <p>^{†††} For weeds 8 cm to 15 cm in height use 1.4 L/ha rate.</p> <p>¹MCPA amine at 0.5 – 0.7 L/ha (250-350 g ai/ha) prior to peas.</p> <p>² MCPA at 0.5 – 1.0 L/ha (250- 500 g ai/ha) prior to wheat, barley, oats, corn (field and sweet)###, rye and flax.</p> <p>³ MCPA at 0.7 – 1.0 L/ha (350 – 500 g ai/ha) only.</p> <p>Use this tank mix prior to seeding in wheat, barley, rye, oats, corn (field and sweet)###, flax, and field peas###.</p>
Vantage 480 + Buctril M herbicides	0.94-1.4 + 0.5 –1.0 ¹	<p>Volunteer cereals, wild oats, green foxtail, downy brome, giant foxtail, and Persian darnel.</p> <p>Volunteer canola (rapeseed) (non-glyphosate tolerant), wild mustard, flixweed, redroot pigweed, lady's thumb, stinkweed, kochia, lamb's quarters, hempnettle, Russian thistle, volunteer flax, common ragweed[†], Canada fleabane, wild buckwheat^{††}, narrowleaved hawk's beard^{†††}</p> <p>Volunteer glyphosate tolerant Canola (1-4 leaf stage)^{1,2}</p>	<p>Weeds should be less than 15 cm tall and actively growing for best results.</p> <p>Use higher rate if weeds are beyond 8 cm in height.</p> <p>No surfactant required.</p> <p>[†] DO NOT use these rates on plants greater than 8 cm in height.</p> <p>^{††} For 3-4 leaf stage use 1.4 L/ha rate.</p> <p>^{†††} For weeds 8 cm to 15 cm in height use 1.4 L/ha rate.</p> <p>¹ Buctril M at 0.5 – 1.0 L/ha (280-560 g ai/ha) for all crops listed.</p>

		<p>Seedlings up to the 4-leaf stage²: green smartweed, pale smartweed, lady's thumb, cow cockle, redroot pigweed, flixweed, bluebur, shepherd's purse, kochia³, Russian thistle³, scentless chamomile⁴, volunteer sunflower, night flowering catchfly, cocklebur, velvetleaf⁵, ball mustard, American nightshade</p> <p>Seedlings up to the 6-leaf stage²: wild tomato Seedlings up to the 8-leaf stage²: wild buckwheat, tartary buckwheat, common buckwheat, stinkweed, wild mustard, wormseed mustard, lamb's quarters, common ragweed, common groundsel</p> <p>Perennials (top growth)²: Canada thistle, perennial sow thistle</p>	<p>² Buctril M at 1.0 L/ha (560 g ai/ha only).</p> <p>³ Spray before plants are 5 cm high.</p> <p>⁴ Spring annuals only.</p> <p>⁵ Spray before plants are 8 cm high.</p> <p>Use this tank mix prior to seeding in wheat, barley, rye, oats, corn, flax, canary seed and seedling grasses (including brome grass, crested wheatgrass, intermediate wheat grass, slender wheatgrass, tall wheatgrass, Russian wild rye, Timothy, orchard grass, creeping red fescue, meadow fescue, meadow foxtail, seedling tall fescue, seedling meadow brome grass, seedling streambank wheatgrass and reed canary grass.</p>
<p>Vantage 480 + MCPA Amine (500 g/L formulation, if another formulation is used, adjust rate accordingly)</p>	<p>0.94-1.4 + 0.5 –0.7</p>	<p>Volunteer cereals, wild oats, green foxtail, downy brome, giant foxtail, and Persian darnel.</p> <p>Volunteer canola (rapeseed) (non-glyphosate tolerant), wild mustard, flixweed, redroot pigweed, lady's thumb, stinkweed, kochia, lamb's quarters, hempnettle, Russian thistle, volunteer flax, common ragweed[†], Canada fleabane, wild buckwheat^{††}, narrowleaved hawk's beard^{†††}</p> <p>Volunteer glyphosate tolerant canola (1-4 leaf stage)³, bluebur⁴, burdock⁴ (before 4 leaf stage), false flax⁴, flixweed⁴, lamb's quarters⁴, mustards⁴ (except dog and tansy), prickly lettuce⁴, ragweeds⁴, redroot pigweed⁴, Russian pigweed⁴, shepherd's purse⁴, stinkweed⁴ (field pennycress), vetch⁴, wild radish⁴, wild sunflower⁴</p>	<p>Weeds should be less than 15 cm tall and actively growing for best results.</p> <p>Use higher rate if weeds are beyond 8 cm in height.</p> <p>No surfactant required.</p> <p>[†]DO NOT use these rates on plants greater than 8 cm in height.</p> <p>^{††} For 3-4 leaf stage use 1.4 L/ha rate.</p> <p>^{†††} For weeds 8 cm to 15 cm in height use 1.4 L/ha rate.</p> <p>³ MCPA amine at 0.5 – 0.7 L/ha (250 – 350 g ai/ha) prior to lentils and chickpeas.</p> <p>⁴ MCPA amine at 0.7 L/ha (350 g ai/ha) only.</p> <p>• Use this tank mix prior to seeding in lentil and chickpea.</p>

For foxtail barley suppression, refer to “Annual Weed Control” table

0.56 kg ai/ha of 2,4-D

#, ## Adjust rates accordingly for other 2,4-D formulations. Use only low volatile ester or amine formulations of 2,4-D.

Use only amine formulations of MCPA prior to seeding in corn and field peas.

ADDITION OF SURFACTANT

All Vantage 480 tank mixtures for annual weed control require the addition of the surfactant Agral 90 or Ag Surf. Surfactant should be added at a rate of 350 mL per hectare, in 50 – 100 L of clean water.

Additional Important Information for Annual Weed Control

Allow at least 1 day after treatment before tillage

Annual weeds generally will continue to germinate from seed throughout the growing season. Repeat treatments may be necessary to control later germinating weeds, in some situations.

For additional information and precautions, refer to the "General Information" and "Mixing and Application" sections of this label.

WEED CONTROL IN OPTIMUM™ GLY CANOLA VARIETIES

WARNING: APPLY VANTAGE 480 ONLY TO OPTIMUM GLY CANOLA VARIETIES USING THE RATES OUTLINED IN THE TABLE BELOW. For all other glyphosate tolerant canola, please refer to the section following on WEED CONTROL IN GLYPHOSATE TOLERANT CANOLA

NOTE: ALWAYS USE PEDIGREED (I.E. CERTIFIED) GLYPHOSATE TOLERANT CANOLA SEED. CANOLA WHICH IS NOT DESIGNATED AS OPTIMUM GLY GLYPHOSATE TOLERANT WILL BE DAMAGED OR DESTROYED BY THIS TREATMENT.

- For additional information and precautions refer to the “General Information” and “Mixing and Application” sections of the Vantage 480 label.
- Apply Vantage 480 in glyphosate tolerant canola only as directed in the following weed control table.
- Some short-term, visual yellowing may occur when Vantage 480 is applied at the late application 4 to 6 leaf stage of the crop. This effect is temporary and will not influence crop growth, maturity or yield.

DO NOT APPLY BY AIR

The following table describes the rate and specific application instructions for control of annual and perennial weeds in Optimum Gly glyphosate tolerant canola varieties.

WEED CONTROL IN OPTIMUM GLY CANOLA VARIETIES

Rate (L/ha)	Growth Stage Of Crop	Weeds Controlled	Comments (Apply in 50 - 100 L/ha water)
0.60 - 1.4 Single application	Emergency to first flower*	Annual Grasses wild oats, green foxtail, volunteer barley, volunteer wheat, barnyard grass Annual Broadleaves stinkweed, redroot pigweed, wild mustard, Russian thistle, lamb's-quarters, non-glyphosate tolerant volunteer canola (rapeseed), hempnettle, lady's thumb, kochia, chickweed, corn spurry, wild tomato, cleavers, wild buckwheat,	† The 0.60 L/ha rate can be used for control of shepherd's purse, cow cockle, and night-flowering catchfly at the 1-3 leaf stage of the crop or for control of smartweed at the 4-6 leaf stage. Repeat applications may be required if a second flush of

		<p>shepherd's purse[†], cow cockle[†], night-flowering catchfly[†], smartweed[†], storksbill, flixweed, narrow-leaved hawk's beard</p> <p>Perennials (suppression) Canada thistle, Perennial sow thistle, Dandelion</p> <p>Perennials (season long control) Quackgrass</p>	weeds germinates prior to canopy closure.
1.4 Single application	Emergency to first flower*	All the above weeds plus: Perennials (season-long control) Canada thistle, foxtail barley, and perennial sow thistle	
0.94 Sequential applications	Emergency to first flower*	All the above weeds plus: Annual Broadleaves Round-leaved mallow	For sequential applications, ensure the crop has not advanced beyond the recommended growth stage.
1.88 Single application	Emergency to first flower*	All the above weeds plus: Foxtail barley, smooth pigweed, common ragweed, cocklebur, eastern black nightshade, Pennsylvania smartweed, foxtail (yellow and giant), fall panicum, wild proso millet, crabgrass (smooth and large), velvet leaf, biennial wormwood ^{††} , wire-stemmed muhly, volunteer adzuki beans ^{†††} .	<p>†† Biennial wormwood should be at 2-8 leaf stage and actively growing.</p> <p>††† For control of volunteer adzuki beans (unifoliolate to 4th trifoliolate leaf stage) apply 1.88 L/ha. A second 1.88 L/ha application may be used for late flushes emerging after the initial treatment. Adzuki beans should be at unifoliolate to fourth trifoliolate leaf stage and actively growing.</p>
1.88 Sequential applications	Emergency to first flower*	All the above weeds plus: Perennials (season-long control) Dandelion Common Milkweed Field Bindweed Yellow nutsedge Horsenettle Tall waterhemp Bur cucumber	<p>A sequential application may be made at least 2 weeks after the first application.</p> <p>A second 1.88 L/ha application may be used for late weed flushes emerging after the initial treatment.</p> <p>Common milkweed should be 15-60 cm in height and actively growing.</p> <p>Yellow nutsedge should be 5-15 cm in height and actively growing.</p>
3.75 Single application	Emergency to 6 leaf	All the above weeds.	One application allowed in crop per season

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*First flower is when 50% of the plants in the field have no more than one flower.
Ensure the crop has not advanced beyond the recommended growth stage for all applications.

Guidelines:
Repeat applications may be required if a second flush of weeds germinates prior to canopy closure.

Maximum 3.75 L/ha is allowed for postemergence use.

WEED CONTROL IN GLYPHOSATE TOLERANT CANOLA

WARNING: APPLY VANTAGE 480 ON GLYPHOSATE TOLERANT CANOLA VARIETIES ONLY.

NOTE: ALWAYS USE PEDIGREED (I.E. CERTIFIED) GLYPHOSATE TOLERANT CANOLA SEED. CANOLA WHICH IS NOT DESIGNATED AS GLYPHOSATE TOLERANT WILL BE DAMAGED OR DESTROYED BY THIS TREATMENT.

- For additional information and precautions refer to the “General Information” and “Mixing and Application” sections of the Vantage 480 label.
- Apply Vantage 480 in glyphosate tolerant canola only as directed in the following weed control table.
- Some short-term, visual yellowing may occur when Vantage 480 is applied at the late application 4 to 6 leaf stage of the crop. This effect is temporary and will not influence crop growth, maturity or yield.

DO NOT APPLY BY AIR

The following table describes the rate and specific application instructions for control of annual and perennial weeds in glyphosate tolerant canola varieties.

WEED CONTROL IN GLYPHOSATE TOLERANT CANOLA

Rate (L/ha)	Growth Stage Of Crop	Weeds Controlled	Comments (Apply in 50 - 100 L/ha water)
0.60 - 1.4	0 to 6 leaf	<p>Annual Grasses wild oats, green foxtail, volunteer barley, volunteer wheat, barnyard grass</p> <p>Annual Broadleaves stinkweed, redroot pigweed, wild mustard, Russian thistle, lamb's-quarters, non-glyphosate tolerant volunteer canola (rapeseed), hempnettle, lady's thumb, kochia, chickweed, corn spurry, wild tomato, cleavers[†], wild buckwheat[†], shepherd's purse[†], cow cockle[†], night-flowering catchfly[†], smartweed[†], storksbill[†], flixweed[†], narrow-leaved hawk's beard[†], round-leaved mallow^{†††}</p> <p>Perennials (suppression) ^{††}</p> <p>Canada thistle, Perennial sow thistle, Dandelion</p> <p>Perennials (season long control)</p> <p>Quackgrass^{††}, foxtail barley ^{†††}Canada thistle^{††††}, Perennial sow thistle^{††††}</p>	<p>No additional surfactant is required</p> <p>Repeat applications may be required if a second flush of weeds germinates prior to canopy closure.</p> <p>Ensure the crop has not advanced beyond the recommended growth stage.</p> <p>[†] Use the 0.94 L/ha rate for control of these weeds at all crop growth stages. The lower rate can be used for control of shepherd's purse, cow cockle and night-flowering catchfly at the 1-3 leaf stage of the crop, or for control of smartweed at the 4-6 leaf stage.</p> <p>^{††} A single application at the 0.94 L/ha rate is required</p>

			<p>††† Sequential applications at the 0.94 L/ha rate are required.</p> <p>†††† Sequential applications at the 0.94 L/ha rate are required or a single application of 1.4 L/ha.</p> <p>For sequential applications, ensure the crop has not advanced beyond the recommended growth stage. Maximum 1.88 L/ha is allowed for the postemergence use.</p>
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Vantage 480 plus Lontrel™ 360 Herbicide Tank Mixture

For hard-to-control weeds (see list below) in glyphosate tolerant canola apply a tank mixture of 0.28 L/ha of Lontrel 360 with 0.94 L/ha of Vantage 480 in 100 L of water per hectare. Apply when canola is in the 2 - 6 leaf stage. Refer to the Lontrel 360 and the Vantage 480 labels for lists of other weeds controlled, timing of application, water volumes and use precautions. **Apply this tank-mixture in glyphosate tolerant canola only.**

Weeds Controlled

- Canada thistle (season-long top growth)
- dandelions <15cm diameter (season-long top growth)
- dandelions >15cm diameter (suppression)
- perennial sowthistle (season-long top growth)
- wild buckwheat

WEED CONTROL IN GLYPHOSATE TOLERANT SOYBEAN (ROUNDUP READY®2 YIELD®) SOYBEAN VARIETIES

WARNING: APPLY VANTAGE 480 ON ROUNDUP READY2 YIELD SOYBEAN VARIETIES ONLY.

NOTE: ALWAYS USE PEDIGREED (CERTIFIED) SOYBEAN SEED DESIGNATED AS ROUNDUP READY2 YIELD. SOYBEANS WHICH ARE NOT DESIGNATED AS ROUNDUP READY2 YIELD WILL BE DAMAGED OR DESTROYED BY THIS TREATMENT.

DO NOT APPLY BY AIR

WEED CONTROL IN GLYPHOSATE TOLERANT SOYBEAN

Rate (L/ha)	Growth Stage of Crop	Weeds Controlled*	Comments (use 100-200 L/ha water volumes)
1.88	First trifoliolate leaf stage through to flowering.	velvetleaf, common ragweed, common lambsquarters, redroot pigweed, smooth pigweed, cocklebur, green smartweed, lady's-thumb, Pennsylvania smartweed, eastern black flowering nightshade, wild mustard, wild buckwheat, foxtail (green, yellow, giant), barnyard grass, crabgrass (smooth, large), quackgrass, fall	<p>† A single application of 1.88 L/ha will provide suppression only.</p> <p>†† For control of common milkweed, yellow nutsedge, round-leaved mallow and field bindweed, a second sequential application may be used at least 2 weeks after the first application.</p> <p>A second 1.88 L/ha application may be used for late weed flushes emerging after</p>

		<p>panicum, wild proso millet, wild oats, volunteer barley, volunteer wheat, stinkweed, Russian thistle, non-glyphosate tolerant canola (rapeseed), hemp nettle, kochia, chickweed, corn spurry, wild tomato, cleavers, shepard's purse, cow cockle, night flowering catchfly, stork's bill, flixweed, narrow-leaved hawk's-beard</p> <p>common milkweed^{†.††}, yellow nutsedge^{†.††}, field bindweed^{††}, perennial sow thistle, Canada thistle, wire-stemmed muhly</p> <p>Bur cucumber^{†††} (<i>Sicyos angulatus</i>)</p> <p>Volunteer adzuki beans^{††††} (<i>Vigna angularis</i>)</p> <p>Biennial wormwood^{†††††} (<i>Artemisia biennis</i>)</p>	<p>the initial treatment.</p> <p>Any second application made must be applied no later than the flowering stage of the soybean crop.</p> <p>Common milkweed should be 15-60 cm in height and actively growing.</p> <p>Yellow nutsedge should be 5-15 cm in height and actively growing.</p> <p>Perennial sow thistle and Canada thistle should be from the rosette stage to 50 cm in height and actively growing.</p> <p>Wire-stemmed muhly should be 10-20 cm in height and actively growing. Plants not fully emerged at the time of application will escape treatment.</p> <p>††† Sequential applications of 1.88 L/ha followed by 1.88 L/ha at the 1-18 leaf stage. Applications should be at least 2 weeks apart for best results.</p> <p>†††† For control of volunteer adzuki beans (unifoliolate to the 4th trifoliolate leaf stage) apply 1.88 L/ha. A second 1.88 L/ha application may be used for late flushes emerging after the initial treatment. Adzuki beans should be at unifoliolate to 4th trifoliolate leaf stage and actively growing.</p> <p>††††† For control of biennial wormwood – apply only one application per season at 1.88 L/ha. Biennial wormwood should be at 2-8 leaf stage and actively growing.</p>
<p>3.75</p>	<p>First trifoliolate leaf stage through to flowering.</p>	<p>All weeds listed above plus horse-nettle^{††††††} and tall waterhemp^{††††††}</p>	<p>Only one application per season at 3.75 L/ha.</p> <p>Common milkweed should be 15-60 cm in height and actively growing.</p> <p>Yellow nutsedge should be 5-15 cm in height and actively growing.</p> <p>Plants not fully emerged at the time of application will escape treatment.</p> <p>†††††† For season-long control of horse nettle (<i>Solanum carolinense</i>) (2 to 12- leaf stage) or, for control of tall waterhemp (<i>Amaranthus tuberculatos</i>) (up to and including the 18-leaf stage) apply 3.75 L/ha. Alternatively, sequential applications of 1.88 L/ha followed by 1.88</p>

			L/ha may be applied. Applications should be at least 2 weeks apart for best results. For the control of Tall waterhemp use the higher rate if weeds are beyond the 6-leaf stage.
5.21	First trifoliolate leaf stage through to flowering.	All weeds listed above, plus control of volunteer alfalfa and bromegrass	Only one application per season at 5.21 L/ha. Alfalfa should be 9 or more leaves and be at least 10-15 cm tall. Bromegrass should have at least 3-5 leaves and be at least 10-15 cm tall. Short term yellowing may occur in sprayer overlap areas with the 5.21 L/ha application rate. This effect is temporary and will not influence crop growth or yield.

* Weeds will be more easily controlled and early crop competition avoided with applications made when the weeds are small. Control of annual weeds greater than 25 cm in height will be inconsistent, although some weeds may be controlled.

WEED CONTROL IN GLYPHOSATE TOLERANT SOYBEAN

WARNING: APPLY VANTAGE 480 ON GLYPHOSATE TOLERANT SOYBEAN VARIETIES ONLY. DO NOT APPLY THE 5.21 L/HA RATE TO GLYPHOSATE TOLERANT SOYBEAN VARIETIES THAT DO NOT CONTAIN ROUNDUP READY®2 YIELD® SOYBEAN TRAIT.

NOTE: ALWAYS USE PEDIGREED (CERTIFIED) SOYBEAN SEED DESIGNATED AS GLYPHOSATE TOLERANT. SOYBEANS WHICH ARE NOT DESIGNATED AS GLYPHOSATE TOLERANT WILL BE DAMAGED OR DESTROYED BY THIS TREATMENT.

DO NOT APPLY BY AIR

WEED CONTROL IN GLYPHOSATE TOLERANT SOYBEAN

Rate (L/ha)	Growth Stage of Crop	Weeds Controlled*	Comments (use 100-200 L/ha water volumes)
1.88	First trifoliolate leaf stage through to flowering.	velvetleaf, common ragweed, common lambsquarters, redroot pigweed, smooth pigweed, cocklebur, green smartweed, ladythumb, Pennsylvania smartweed, eastern black flowering nightshade, wild mustard, wild buckwheat, foxtail (green, yellow, giant), barnyard grass, crabgrass (smooth, large), quackgrass, milkweed†, yellow nutsedge†, fall panicum, wild proso millet	A second application may be used for late weed flushes emerging after the initial treatment † suppression only. This second application must be made no later than the flowering stage of the soybean.
1.88-3.75	First trifoliolate leaf stage through to flowering.	Perennial sow thistle, Canada thistle, wire- stemmed muhly	A single application at the higher rate or a second (sequential) application of 1.88 L/ha will

			<p>improve control in heavy weed infestations.</p> <p>If sequential applications of 1.88 L/ha are used they should be at least 2 weeks apart for best results on perennial weeds.</p> <p>This second application must be made no later than the flowering stage of the soybean.</p> <p>Perennial sow thistle and Canada thistle should be from the rosette stage to 50 cm in height and actively growing.</p> <p>Wire-stemmed muhly should be 10-20 cm in height and actively growing.</p> <p>Plants not fully emerged at the time of application will escape the treatment.</p>
3.75	First trifoliolate leaf stage through to flowering.	All weeds listed above, plus milkweed ^{††} , yellow nutsedge ^{††} , field bindweed ^{††}	<p>Only one application per season at 3.75 L/ha.</p> <p>^{††} Will also be controlled by sequential applications of 1.88 L/ha. Applications should be at least 2 weeks apart for optimum control.</p> <p>This second application must be made no later than the flowering stage of the soybean.</p> <p>Milkweed should be 15-60 cm in height and actively growing; nutsedge should be 5-15 cm in height and actively growing.</p> <p>Plants not fully emerged at the time of application will not be controlled</p>

*Weeds will be more easily controlled and early crop competition avoided with applications made when the weeds are small. Control of weeds greater than 25 cm in height will be inconsistent, although some weeds may be controlled.

Vantage 480 plus Pursuit Herbicide Tank Mixture

For added residual control of late germinating eastern black nightshade, common lamb's quarters, redroot pigweed, velvetleaf, fall panicum and wild proso millet, Pursuit herbicide may be tank mixed with Vantage 480 at a rate of 1.88 litres per hectare. Use 0.16 to 0.21 litres per hectare of Pursuit Herbicide and apply up to and including the 3rd trifoliolate leaf stage of the glyphosate tolerant soybeans in 100-200 litres per hectare of clean water. The higher rate is recommended for heavier infestations. This tank mix is recommended primarily for soybean systems with row spacings of 50 centimetres (20 inches) or more where a single application timing is desired.

Mixing: Add and mix Pursuit Herbicide as per instructions on the Pursuit Herbicide label and then add Vantage 480 as per instructions on this label.

A PHI of 100 days is required for the tank mix of Vantage 480 and Pursuit herbicide on glyphosate tolerant soybeans.

Only one application per season of Vantage 480 at 1.88 litres per hectare tank mixed with Pursuit herbicide at 0.16 to 0.21 litres per hectare is permitted.

Refer to the Pursuit herbicide label for further safety precautions and handling instructions.

Vantage 480 plus Assure II Tank Mixture

For control of volunteer glyphosate tolerant corn, Assure II Herbicide may be tank mixed with Vantage 480. Use 1.88 – 3.75 litres per hectare Vantage 480 and 0.38 litre per hectare of Assure II Herbicide.

Apply in 100 – 300 litres per hectare of clean water.

Mixing: Add and mix Assure II Herbicide as per instructions on the Assure II Herbicide label and then add Vantage 480 as per instructions on this label.

This tank mix is to be applied when the crop is from the first trifoliate leaf stage through flowering and when the volunteer glyphosate tolerant corn is at the 2-6 leaf stage.

A PHI (preharvest interval) of 80 days is required for the tank mix of Vantage 480 and Assure II Herbicide on glyphosate tolerant soybeans.

Refer to the Assure II Herbicide label for further safety precautions and handling

WEED CONTROL IN GLYPHOSATE TOLERANT CORN

WARNING: APPLY VANTAGE 480 ON GLYPHOSATE TOLERANT CORN VARIETIES ONLY. DO NOT APPLY THE 3.75 L/HA RATE TO GLYPHOSATE TOLERANT CORN VARIETIES THAT ARE NOT ROUNDUP READY®2 TECHNOLOGY OR EQUIVALENT.

NOTE: ALWAYS USE PEDIGREED (CERTIFIED) CORN SEED DESIGNATED AS GLYPHOSATE TOLERANT. CORN WHICH IS NOT DESIGNATED AS GLYPHOSATE TOLERANT WILL BE DAMAGED OR DESTROYED BY THIS TREATMENT.

DO NOT APPLY BY AIR

Rate (L/ha)	Growth Stage of Crop	Weeds Controlled†	Comments (use 100-200 L/ha water volumes)
1.88	Up to and including 8 leaf stage.	Velvetleaf, common ragweed, common lambsquarters, redroot pigweed, smooth pigweed, cocklebur, green smartweed, ladythumb, Pennsylvania smartweed, eastern black flowering nightshade, wild mustard, wild buckwheat, foxtail (green, yellow, giant), barnyard grass, crabgrass (smooth, large), quackgrass, fall panicum, wild proso millet Wild oats, volunteer barley, volunteer wheat, stinkweed, wild mustard,	A second application may be used for late weed flushes emerging after the initial treatment. This second application must be made no later than the 8 leaf stage of the corn.

		Russian thistle, nonglyphosate tolerant canola (rapeseed), hempnettle, kochia, chickweed, corn spurry, wild tomato, cleavers, shepherd's purse, cow cockle, nightflowering catchfly, stork's-bill, flixweed, narrow-leaved hawk's beard	
1.88		Common milkweed, yellow nutsedge, roundleaved mallow, field bindweed	<p>For control of common milkweed, yellow nutsedge, roundleaved mallow and field bindweed use two applications of 1.88 L/ha.</p> <p>This second application must be made no later than the 8 leaf stage of the corn.</p> <p>Milkweed should be 15-60 cm in height and actively growing.</p> <p>Yellow nutsedge should be 5-15 cm in height and actively growing.</p>
1.88		Perennial sow thistle, Canada thistle, wire-stemmed muhly	<p>A second (sequential) application of 1.88 L/ha will improve control in heavy weed infestations.</p> <p>If sequential applications are used they should be at least 2 weeks apart for best results on perennial weeds.</p> <p>This second application must be made no later than the 8 leaf stage of the corn.</p> <p>Perennial sow thistle and Canada thistle should be from the rosette stage to 50 cm in height and actively growing.</p> <p>Wire-stemmed muhly should be 10-20 cm in height and actively growing.</p> <p>Plants not fully emerged at the time of application will escape treatment.</p>
3.75	Up to and including 6 leaf stage	All weeds listed above	<p>Only one application per season at 3.75 L/ha</p> <p>Common milkweed should be 15-60 cm in height and actively growing.</p> <p>Yellow nutsedge should be 5-15 cm in height and actively growing.</p> <p>Plants not fully emerged at the time of application will escape treatment.</p>
1.88 Vantage	Up to and including 5th	Residual control of lamb's-quarters, redroot pigweed, common ragweed	Tank mix should be used when only a single application timing is

480 + 0.75–1.0 kg ai/ha atrazine††	leaf stage.		desired. Use higher rate of atrazine for heavier weed infestations.
1.88 Vantage 480 + 2.5-3.7 Marksman Herbicide	Up to and including 5th leaf stage.	Residual control of lamb's-quarters, redroot pigweed, common ragweed, velvetleaf	Tank mix should be used when only a single application timing is desired. Use higher rate Marksman Herbicide for heavier weed infestations.

†† 0.75-1.0 kg ai atrazine/ha is equivalent to 1.56-2.08 L/ha of Aatrex Liquid 480

† Weeds will be more easily controlled and early crop competition avoided with applications made when the weeds are small. Control of weeds greater than 25 cm in height will be inconsistent, although some weeds may be controlled.

PERENNIAL WEED CONTROL

ALWAYS READ PRECAUTIONARY STATEMENTS, GENERAL INFORMATION and MIXING and APPLICATION SECTIONS PRIOR TO SPECIFIC APPLICATION INFORMATION IN ANY LABEL SECTION.

When applied as recommended under the conditions described, this product will control the perennial weeds listed in the following table:

PERENNIAL WEED CONTROL WITH VANTAGE 480

WEED	APPLICATION			COMMENTS
	GROWTH STAGE	RATE (L/ha)	WATER VOLUME (L/ha)	
Quackgrass (control, light to moderate infestations)	3 to 4 green leaves or more	1.88	50 - 300	Apply in clean water using flat fan nozzles. Allow 3 or more days after treatment before tillage. Refer to " Quackgrass " notes for more information. For higher water volumes (i.e. 150 - 300 L/ha) an approved surfactant must be added at 0.5 litres per 100 litres of clean water (0.5% v/v). Refer to list of surfactants. See also below.
Quackgrass (long term control, heavy infestations, high water volumes)	3 to 4 green leaves or more	1.88 – 5.25	50 - 300	Allow 3 or more days after treatment before tillage. Rates higher than 1.88 L/ha will provide more consistent, longer term control, especially with heavier infestations and/or higher water volumes (i.e. 150-300 L/ha) Refer to " Quackgrass " notes for more information.

Canada Thistle	rosette stage (summer-fallow)	1.88	50 - 100	Apply in clean water using flat fan nozzles. Allow 10 or more days after treatment before tillage. Refer to notes in "Canada Thistle" section for more information.
Canada Thistle	bud stage or beyond	3.56 – 5.25	100 - 300	Allow 5 or more days after treatment before tillage.
Field Bindweed	full bloom or beyond	5.25 – 9	100 - 300	Allow 7 or more days after treatment before tillage.
Common Milkweed†	bud to full bloom (preharvest)	1.88	50 - 100	See preharvest application section Allow 7 or more days after treatment before tillage. Reduced control may occur after full bloom.
	bud to full bloom	9	100 - 300	Milkweed may not all be in the correct stage, therefore, repeat treatments may be required.
Toadflax	Vegetative Stage (summerfall ow)	1.88	50-100	Apply in clean water using flat fan nozzles Allow 7 or more days after treatment before tillage in summerfallow For more information, see summerfallow control, or preharvest control
	Bud to Full Bloom (preharvest)			
Alfalfa	Early bud to full bloom stage. Fall applications only	2.8 – 3.75	50 - 300	Allow 5 or more days after treatment before tillage. Use the higher rates when alfalfa populations are high or when heavy grass infestations are also present. For spring applications and control in minimum tillage systems using a 2,4-D tank-mix
Dandelion	< 15 cm	1.88	50 - 100	Allow 3 or more days after treatment before tillage for all rates. Use the higher rate when infestations are heavy.
	> 15 cm	2.78 – 3.75	50 - 300	Refer to notes in Dandelion Section for more information. Allow 7 or more days after treatment before tillage. For more information, see preharvest control section.
	Rosette to full bloom (preharvest)	1.88	50 - 100	

Foxtail barley	Seedling to heading	1.88 – 3.75	50 - 100	Allow a minimum of 1 day after treatment before tillage or seeding. Use higher rates for larger, more established plants, heavy infestations or if plants are stressed
Other Perennials (see perennial weeds listing)	early heading or early bud stage	5.25 – 9	100 - 300	Allow 7 or more days after application before tillage.

†**NOTE:** For spot treatment, mix 90 mL of product in 5 L clean water per 100 m². (1.88 – 9 L/ha is approximately equivalent to 19 – 90 L/100 m², respectively).

SPECIAL NOTES FOR PERENNIAL WEED CONTROL

QUACKGRASS

For **season-long control on fall tilled ground:** Apply 1.88 L/ha of this product in spring prior to seeding. Apply in 50 to 100 L/ha of clean water as described in the preceding table. Delay application until the majority of quackgrass plants have 4-5 green leaves. This stage usually occurs 1 to 4 weeks later on fall tilled ground than on undisturbed ground. Reduced control may result on ground tilled deeper than 15 cm.

NOTE:

This treatment will provide season-long control of quackgrass on fall tilled ground. Reduced control will be experienced versus this product on non-fall tilled ground. Repeat treatments may be necessary.

Applications on forages should be followed by tillage 3 days or later and should be made when good growing conditions exist.

If a frost has occurred, wait several days to determine if the quackgrass has recovered. Quackgrass can be treated after a mild frost provided there are 3 to 4 green leaves actively growing at the time of application. Do not apply after the first damaging frost in the fall.

Surfactant Information:

The following is a list of approved surfactants for use with Vantage 480 for control of quackgrass:
Agral 90
Ag Surf

Always refer to surfactant label for specific instructions regarding use of that product.

CANADA THISTLE

Control of Canada Thistle at the rosette stage: To ensure the proper timing of application the following steps must be followed:

1. Conduct summerfallow tillage as usual and perform the last tillage operation between July 15th and August 1.
2. Allow the thistles to regrow for a minimum of 5 weeks until they are a minimum of 15cm in diameter and in the rosette stage of growth.

NOTE: Canada thistle can be treated after a mild frost provided the leaves are still green and actively growing at the time of application. Do not apply after the first damaging frost in the fall.

Vantage 480 plus Banvel II Tank Mixtures

For control of Canada thistle (and perennial sow thistle) in summerfallow or in post-harvest stubble, apply 1.28 L/ha Vantage 480 plus 1.25 L/ha Banvel II in 100 – 200 L/ha of clean water. In addition, add 350 mL/ha of a non-ionic surfactant registered for use with this product, such as Agral 90 Ag Surf.

For best results in summerfallow, cultivate in the spring and apply when the majority of thistles are 15 cm to 25 cm tall and before the bud stage. Cultivate 3 weeks after application.

In post harvest stubble, apply this tank mixture to actively growing thistles at least 2 weeks prior to a killing frost.

NOTE:

Grow only cereals, canola (including rapeseed), soybeans, field corn, sweet corn, or white beans after application of this tank mixture.

If application is made after September 1st, or if soil moisture levels are extremely low after application, crop injury may occur in the spring following application.

TOADFLAX

Control of Toadflax in a Summerfallow Vegetative Stage

To ensure the proper timing of application, the following steps must be followed:

1. Conduct summerfallow tillage as usual and perform the last tillage operation between July 10-21.
2. Allow toadflax to regrow for a minimum of 4-5 weeks until they are minimum of 15 cm tall and at a lush green vegetative stage.

NOTE: Toadflax can be treated after a mild frost provided the leaves are still green and actively growing at the time of application. Do not apply after the first damaging frost.

DANDELION

Applications should be made up to and including bloom for best results. Follow-up control measures should be used to manage new dandelions germinating from seed to maintain control throughout the season.

ALFALFA CONTROL WITH 2,4-D TANK-MIX:

The addition of 2,4-D may improve alfalfa control in situations where control may be more difficult to obtain, such as in minimum tillage systems where populations are heavy, and with spring applications.

For fall control of established stands of alfalfa, apply 1.88 – 3.75 L/ha Vantage 480 – and 1.2 – 2.4 L/ha of any 500 g/L 2,4-D amine or low volatile ester formulation in 100 – 200 L water/ha. (Adjust product rates accordingly for other 2,4-D formulations).

For spring applications, use only the low rate of 2,4-D (i.e. 1.2 L/ha) and 1.88 – 3.75 L/ha Vantage 480. Only cereal crops not underseeded to legumes may be planted following spring applications of this tank-mix, and a 14 day interval between application and planting is required.

Use the higher Vantage 480 rates when perennial grasses are prevalent.

ALL PERENNIAL WEEDS

Weed Stages: Weeds must be at the proper stage for effective control. Refer to "**Perennial Weed Control with Vantage 480**"

Nozzle Type: For best results with conventional boom equipment apply this product with 50 to 300 L/ha of clean water using flat fan nozzles and no more pressure than 275 kPa.

Rhizome Dormancy: Reduced control may result if rhizomes have become dormant. Dormancy may occur if soil fertility is low and/or the land has not been tilled for several years.

Mowing Effects: Mowing prior to application will reduce effectiveness unless weeds are allowed to regrow to the proper stage before application.

Tillage Effects: Fall or spring tillage prior to spring applications and tillage between harvesting and fall applications will reduce the effectiveness on perennial weeds. Follow-up tillage after application should be delayed 5-7 days for best results (see Weed Control Table for specific tillage interval for each weed).

Rainfall Effects: Heavy rainfall immediately after application may wash the chemical off the foliage and a repeat treatment may be required. Do not apply if rainfall is forecast for the time of application.

Regrowth from Germinating Seeds: This product only controls emerged plants. Repeat treatments or other weed control measures may be required to control weeds regenerating from seeds or other underground parts.

Frost Effects: Heavy frosts prior to application may reduce control. Do not apply after the first damaging frost in the fall.

CROPLAND SITUATIONS

ALWAYS READ PRECAUTIONARY STATEMENTS, GENERAL INFORMATION and MIXING and APPLICATION SECTIONS PRIOR TO SPECIFIC APPLICATION INFORMATION IN ANY LABEL SECTION.

This product can be applied as a broadcast spray or spot treatment prior to planting all crops, post harvest to annual crops, preharvest in wheat, barley, oats, canola (rapeseed), flax (including low linolenic acid varieties), lentils, peas, soybeans, dry beans and forages, and in summerfallow. It may also be applied as a broadcast spray in glyphosate tolerant canola, soybean or corn (refer to sections on Weed Control in Glyphosate Tolerant Canola, Soybean or Corn). It can also be applied as a directed spray in orchards, vineyards, blueberries and strawberry, and using selective equipment in soy and dry beans, orchards, vineyards, cranberries and strawberry (refer to specific sections below for more information).

For specific instructions on weed control in the following cropping situations, always refer to the Annual and Perennial Weed Control sections for more information.

Prior to Planting - All Crops

This product may be applied prior to planting all crops for control of emerged weeds listed on this label. Ensure weeds are at the desired stage at the time of application. This product does not provide pre-emergent weed control and newly germinating weeds may be a problem in the crop. **APPLY BEFORE SEEDING OR TRANSPLANTING.**

Post Harvest Stubble Treatment

This product may be applied in the fall as a postharvest stubble treatment for control of perennial weeds such as quackgrass and Canada thistle. Allow weeds to regrow to the desired stage (20-25 cm tall for quackgrass and Canada thistle) before application and ensure they have a high proportion of green coloration. Straw should be removed or evenly spread to allow for proper regrowth and spray coverage. Heavy frosts prior to application may decrease control.

Spot Treatment (In-Crop)

This product can be applied as an in-crop spot treatment in barley, corn, oats, soybeans, wheat, strawberry, blueberry, forage grasses and legumes including seed production. Applications should be made using the same rates and at the same growth stages as listed in the weed control tables or use a 0.75% solution for annual weeds and quackgrass and a 1.5% solution for other perennial weeds (a 0.75% solution equals 0.75 litre Vantage 480 in 100 litres of spray solution). The 0.75 or 1.5 per cent solutions should be applied to wet, but not run-off. Applications can be made using a boom sprayer, hose and handgun, or hand sprayer in accordance with instructions in the "Application Equipment" section.

Grazing Restrictions

Applications can be made up to heading of small grains, initial pod set on soy and dry beans, silking of corn and emergence of seed heads. The crop in the treated area will be killed. Take care to avoid drift for the same reason. **DO NOT APPLY IF CROP GROWTH HAS ADVANCED BEYOND SEED SET. ALLOW 3 TO 5 DAYS FOR VANTAGE 480 TO TRANSLOCATE INTO ALL PLANT PARTS BEFORE**

GRAZING OR HARVESTING TREATED AREAS IN FORAGES.

Summerfallow Treatment

This product, or labelled tank mixtures, may be applied in summerfallow to control weeds listed on this label. Ensure weeds are at the desired growth stage and actively growing at application for best results. Reduced control may result if weeds are drought stressed. Weeds will continue to germinate from seed throughout the growing season. Repeat treatments may be necessary to control later germinating weeds.

Minimum and Zero Tillage Cropping Systems (All Field Crops, including cereals, oilseeds, pulses, forages, corn and potatoes)

This product may be applied prior to seeding or after seeding, but before crop emergence for control of emerged weeds in minimum and zero tillage cropping systems for all field crops. Applications made too far in advance of seeding may allow weeds to emerge between application and crop emergence, as this product does not provide residual weed control.

Minimum and Zero Tillage Tank Mixtures

Vantage 480 plus bromoxynil (Pardner) can be applied prior to seeding or after seeding, but before crop emergence in **wheat, barley and oats**. Refer to “**Annual Weed Control with Vantage 480 Tank Mixtures**” table for information.

Vantage 480 plus Pursuit can be applied prior to, or after, seeding, but before crop emergence in soybeans. Vantage 480 will control emerged weeds listed on this label when applied as directed (refer to Annual and Perennial Weed Control sections). Pursuit will control weeds germinating from seed. Add the recommended rates of both products in 100 L of water/ha, following the instructions on the Pursuit herbicide label.

ALWAYS REFER TO THE PURSUIT LABEL FOR FURTHER INFORMATION ON WEEDS CONTROLLED, APPLICATION DIRECTIONS, AND USE PRECAUTIONS. ONLY SOYBEANS, FIELD CORN, SPRING BARLEY, SPRING WHEAT AND WINTER WHEAT MAY BE PLANTED THE SEASON FOLLOWING A PURSUIT APPLICATION. WINTER WHEAT MAY BE PLANTED THE SAME YEAR AS A PURSUIT APPLICATION TO SOYBEANS, BUT NOT EARLIER THAN 120 DAYS AFTER THE APPLICATION.

DO NOT APPLY AFTER CROP EMERGENCE

Vantage 480 plus MCPA can be applied prior to seeding in wheat, barley, rye, oats, corn (field and sweet; MCPA amine only), flax and field peas (MCPA amine only). Refer to “**Annual Weed Control with Vantage 480 Tank Mixtures**” table for information.

Vantage 480 plus Buctril M. can be applied prior to seeding in **wheat, rye, corn, barley, oats, flax, canary seed and seedling grasses (including brome grass, crested wheatgrass, intermediate wheat grass, slender wheatgrass, tall wheatgrass, Russian wild rye, Timothy, Orchard grass, creeping red fescue, meadow fescue, meadow foxtail, seedling tall fescue, seedling meadow brome grass, seedling streambank wheatgrass and reed canary grass** Refer to “**Annual Weed Control with Vantage 480 Tank Mixtures**” table for information.

Vantage 480 plus MCPA amine can be applied prior to seeding in **lentil and chickpea** Refer to “**Annual Weed Control with Vantage 480 Tank Mixtures**” table for information.

Forage Legumes and Grasses

This product may be applied for control of emerged weeds prior to emergence of forage legumes and grasses. If the forages are to be under-seeded with a cover crop, this product must be applied prior to planting the cover crop.

Pasture Renovation

Use this product to control or suppress existing vegetation for zero-tillage seeding of legumes into established sod for pasture renovation. Delay spraying until weed growth is at least 20 cm in height and a maximum number of seedlings or shoots have emerged. Application can be made immediately before, during or after seeding, but before crop emergence.

Forage Seed Production

For spot treatment control of perennial weed problems such as quackgrass and Canada thistle in seed fields, apply as directed to vegetation that is at least 20 to 25 cm in height but before emergence of seed head. The crop in the treated areas will be killed. Take care to avoid drift outside target area for the same reason.

PRE-HARVEST CONTROL OF QUACKGRASS, CANADA THISTLE, MILKWEED, TOADFLAX and DANDELION; SEASON-LONG CONTROL OF PERENNIAL SOW THISTLE, AND HARVEST MANAGEMENT

For control of quackgrass, Canada thistle, common milkweed, toadflax and dandelion; and season-long control of perennial sow thistle, Vantage 480 can be applied prior to harvest of wheat, barley (including malting barley), oats, canola (rapeseed), flax (including low linolenic acid varieties), lentils, peas, dry beans, soybeans and forages. DO NOT apply to crops if grown for seed production.

This treatment may also provide harvest management benefits, by drying down crop and weed vegetative growth, for example, where late flushes of annual weeds, green vegetative crop growth, or late tillering may interfere with harvest operations. EXTREMELY COOL, WET AND/OR CLOUDY WEATHER CONDITIONS BETWEEN THE TIME OF APPLICATION AND THE ANTICIPATED HARVEST DATE MAY SLOW DOWN ACTIVITY OF THIS PRODUCT, THEREBY DELAYING CROP DRYDOWN AND HARVEST DATE.

Vantage 480 should be applied pre-harvest at 1.88 L/ha in 50 to 100 L/ha of clean water, by ground application only. Apply only when the crop has 30% or less grain moisture content. This stage typically occurs 7 to 14 days before harvest. For forage crops, apply this product at 1.88 – 3.75 L/ha 3-7 days prior to the last cut before rotation or forage renovation. Consult the table "Guidelines for Timing of Preharvest Applications" for visual indicators of this stage in each crop. For the best weed control results quackgrass should be actively growing and have at least 4 to 5 green leaves. Canada thistle and perennial sow thistle should be actively growing and at or beyond the bud stage for best results. Common milkweed should be at the bud to bloom stage and actively growing for best results. Applications for weed control (not for harvest management) must be made at the correct stage of both weed and crop growth.

Apply only during the period 7-14 days (or 3-7 days for forage applications) before harvest to ensure best weed control and to maximize harvest management benefits. Earlier application may reduce crop yield and/or quality, and may lead to excess glyphosate residues in the crop.

Do not expose or contaminate any body of water or non-target vegetation by direct application, spray drift, or when cleaning and rinsing spray equipment.

DO NOT APPLY BY AIR

GUIDELINES FOR TIMING OF PREHARVEST APPLICATIONS

CROP(S)	PERCENT GRAIN MOISTURE	VISUAL SYMPTOMS
WHEAT/BARLEY/ OATS	Less than 30	Hard dough stage; a thumbnail impression remains on seed.
CANOLA	Less than 30	Pods are green to yellow; most seeds are yellow to brown.
FLAX (INCLUDING LOW LINOLENIC ACID VARIETIES)	Less than 30	Majority (75%-80%) of bolls are brown.
PEAS	Less than 30	Majority (75%-80%) of pods are brown.

LENTILS	Less than 30	Lowermost pods (bottom 15%) are brown and seeds rattle.
DRY BEANS	Less than 30	Stems are green to brown in colour; pods are mature (yellow to brown in colour); 80%-90% leaf drop (original leaves).
SOYBEANS	Less than 30	Stems are green to brown in colour; pod tissue is dry and brown in appearance; 80%-90% leaf drop.
FORAGES	Not applicable	Normal stage for forage harvesting.

**RESTRICTED USE AERIAL PREHARVEST APPLICATION FOR PRAIRIE PROVINCES ONLY
(Including PEACE RIVER REGION OF B.C.)**

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.

NATURE OF RESTRICTION: This product is to be used only in the manner authorized. For use only by aerial applicators and aerial application services approved by the provincial regulatory agency to apply this product with aerial application equipment. To qualify for consideration of provincial approval, the following requirements must be demonstrated to the provincial regulatory agency:

1. Aircraft used in the application of this product must have been configured and calibrated to acceptable standards at a recognized calibration (patternation) clinic within 20 months of the date of application. The spray system must not have been subjected to major changes (new nozzles, booms or configurations) since the calibration, and must meet critical drift management standards e.g. maximum boom width 65% of wing span; nozzle type, size and orientation to minimize drift and deliver droplet size VMD in the coarse (400-600 microns) or very coarse (600 - 1000 microns) range.
2. Aircraft used in the application of this product must carry a minimum of \$25,000 drift insurance in addition to any provincial requirements for general comprehensive insurance coverage.
3. Aerial application services applying this product must employ on staff at least one pilot applicator with at least 250 hours of actual aerial application time and a minimum of 100 hours within the last 24 month period. All pilots who do not meet the minimum experience standard must work under the direct daily supervision of a qualified pilot.

DIRECTIONS FOR USE

Vantage 480 may be applied with aerial application equipment for control of quackgrass, Canada thistle, common milkweed, toadflax and dandelion, and season-long control of perennial sow thistle. Vantage 480 can be applied prior to harvest of wheat, barley (including malting barley), oats, canola (rapeseed), flax (including low linolenic acid varieties), lentils, peas, dry beans, and soybeans. DO NOT apply to any crops if grown for seed production.

This treatment may also provide harvest management benefits, by drying down crop and weed vegetative growth, for example, where late flushes of annual weeds, green vegetative crop growth, or late tillering may interfere with harvest operations.

EXTREMELY COOL, WET AND/OR CLOUDY WEATHER CONDITIONS BETWEEN THE TIME OF APPLICATION AND THE ANTICIPATED HARVEST DATE MAY SLOW DOWN ACTIVITY OF THIS PRODUCT, THEREBY DELAYING CROP DRYDOWN AND HARVEST DATE.

Vantage 480 should be applied at 1.88 L/ha in 20 - 50 L/ha of clean water with aerial application equipment. Apply only when the crop has 30% or less grain moisture content. This stage typically occurs 7 to 14 days before harvest. Consult the table "Guidelines for Timing of Preharvest Applications" for visual indicators of this stage in each crop. For the best weed control results quackgrass should be actively growing and have at least 4 to 5 green leaves. Canada thistle and perennial sow thistle should be actively growing and at or beyond the bud stage for best results. Common milkweed should be at the bud to bloom stage and actively growing for best results. Applications for weed control (not for harvest

management) must be made at the correct stage of both weed and crop growth.

Apply only during the period 7 - 14 days before harvest to ensure best weed control and to maximize harvest management benefits. Earlier application may reduce crop yield and/or quality, and may lead to excess glyphosate residues in the crop.

USE PRECAUTIONS

AVOID DRIFT ON TO IMPORTANT WILDLIFE HABITATS. EXTREME CARE MUST BE TAKEN WHEN APPLYING THIS PRODUCT TO PREVENT INJURING DESIRABLE PLANTS AND CROPS.

Apply only in wind conditions in compliance with local and/or provincial regulations. Do not apply when other climatic conditions, including lesser wind velocities, will allow significant drift to occur.

Coarse sprays are less likely to drift, therefore do not use nozzles or nozzle configurations which disperse spray as fine spray droplets. Do not angle nozzles forward into the airstream and do not increase spray volume by increasing nozzle pressure. See # 1 of the Nature of Restrictions for additional details.

Do not overspray or allow drift on to bodies of water, wetlands[†] and/or wetland vegetation (e.g., sloughs, swamps, bogs, marshes, potholes), shelterbelts, woodlots and other cover on the edge of fields.

IN ORDER TO REDUCE THE DRIFT HAZARD TO NON-TARGET PLANTS AND AQUATIC VEGETATION IN THE HABITATS LISTED ABOVE, DO NOT APPLY WITHIN 100 METRES OF THE EDGE OF ANY OF THESE HABITATS.

Do not apply directly to roadside ditches, or apply under conditions that would favour drift into roadside ditches.

[†]A wetland is any land where the water table stands at or above the land surface for at least part of the year, and contains vegetation associated with wetlands such as bulrushes, sedges, cattails, etc.

Ensure uniform application - To avoid streaked, uneven or overlapped application, use appropriate marking devices, or equivalent electronic positioning systems (GPS).

Thoroughly wash aircraft, especially landing gear, after each day of spraying to remove residues of this product accumulated during spraying or from spills. **PROLONGED EXPOSURE OF THIS PRODUCT TO UNCOATED STEEL SURFACES MAY RESULT IN CORROSION AND POSSIBLE FAILURE OF THE PART. LANDING GEAR ARE MOST SUSCEPTIBLE.** The maintenance of an organic coating (paint) which meets aerospace specification MIL-C 38412 may prevent corrosion.

Tree Plantings

Shelterbelts and Nursery Stock (Woody Ornamentals)

This product may be used to control listed annual or perennial weeds prior to planting, or as a post directed spray in established nurseries or shelterbelts of the following species:

Deciduous

Ash - Fraxinus spp.
Caragana - Caragan spp.
Cherry - Prunus spp.
Elm - Ulmus spp.
Lilac - Syringa spp.
Maple - Acer spp.
Mountain Ash - Sorbus spp.
Poplar - Populus spp.
Russian Olive - Elaeagnus spp.
Willow - Salix spp.

Coniferous

Fir – Abies spp.
Juniper - Juniperus spp.
Pine - Pinus spp.
Spruce - Picea spp.
Yew - Taxus spp.

NOTE: This product is not recommended for use as an over-the-top broadcast spray in forest tree nurseries or in Christmas tree plantations. Application in such sites should be limited to directed sprays.

DO NOT treat Christmas tree plantations in the year of anticipated harvest.

TREE, VINE and BERRY CROPS

This product is recommended for annual and perennial weed control in established vineyards or orchards, in blueberry, cranberry and strawberry, or for site preparation prior to transplanting tree and vine crops. Applications may be made with boom equipment, shielded sprayers, hand-held and high volume orchards guns, or with wiper applicator equipment (orchards, vineyards, cranberry and strawberry only). See the "Mixing and Application Equipment Information" section of this label and the following table for specific information on the use of equipment.

Repeat treatments may be necessary to control weeds originating from underground parts of untreated weeds or from seeds. This product does not provide residual or pre-emergent weed control. For subsequent weed control, follow a program using residual herbicides or use repeated applications of this product. Do not apply more than 26 litres of this product per hectare per year.

EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT OF HERBICIDE SOLUTION, SPRAY, DRIFT, OR MIST WITH FOLIAGE OR GREEN BARK OF TRUNK, BRANCHES, SUCKERS, FRUIT, CANES OF BLUEBERRY BUSHES, OR OTHER PARTS OF TREES OR VINES. CONTACT OF THIS PRODUCT WITH OTHER THAN MATURED BROWN BARK CAN RESULT IN SERIOUS CROP DAMAGE.

Reduced control may result when applications are made to annual or perennial weeds that have been mowed, grazed or cut and have not been allowed to regrow to the recommended stage for treatment.

WEED CONTROL IN TREE, VINE and BERRY CROPS

Crop	Rate (L/ha)	Pre-Harvest Interval (days)	Max. Appl. per Yr.	Weeds Controlled	Comments (Refer to annual weed control and perennial weed control sections for specific rates for weed control)
Apples Apricot Cherry (Sweet/sour) Peaches Pears Plums	1.69 - 9	30	3	Annual and perennial weeds	
Apples Grapes	Tank Mix 1.69 - 9 + Simazine 2.0 - 4.5 kg ai/ha	-	1	Annual and perennial weeds	Will provide season-long pre-emergent control Do not apply to coarse, sandy or gravelly soil Use according to the more restrictive label direction for each product in the mix DO NOT apply to orchards or vineyards that have been established less than 1 or 3 years, respectively Simazine rate is equivalent to 2.25 – 5.0 kg/ha Princep Nine-T, or 4.0-9.0 kg/ha Simadex

Grapes	1.69 – 9	14	3	Annual and perennial weeds	Remove all sucker growth from the spray zone before spraying, except for the Concord variety of grape Suckering should be conducted within 2 weeks prior to application Do not apply to vines which have been established less than 3 years
Highbush (cultivated) blueberry	2.1 – 4.2	30	1	Quack-grass	Use as a directed spray, with no more than 275 kPa pressure
Lowbush blueberry	0.75 – 1.5% solution (spot application)	Apply in non-bearing year only	1	Woody brush	Apply as a directed spray in mid-summer of the vegetative (non-bearing) year See spot treatment section for instructions
Filberts Hazelnut (established plantations)	1.69 – 2.63	14	-	Annual weeds	Use as a directed spray, with no more than 275 kPa pressure
Walnut Chestnut Japanese heartnut	1.69 – 9	-	2	Annual and perennial weeds	Apply late spring and fall, post-harvest but prior to a killing frost Apply in 200-300 L water as a directed spray, using no more than 275 kPa pressure Apply alternatively as a 1.5% wiper solution (see Wiper Applications section)
Cranberry	15% Solution (0.75 L Vantage 480 + 4 L water)	30	1	Annual and perennial weeds	Apply using wick or wiper applicators
Strawberry	0.75 – 1.5% solution (spot application) 25% solution (wiper application)	30	1	Emerged perennial weeds	Apply when weeds are at a susceptible growth stage (see perennial weed control section) See spot treatment section for instructions See wiper application section for instructions
Sugar beets	0.75 – 1.5% solution (spot application)	Treated crop MUST NOT be harvest	1	Dodder species	Apply when dodder is vigorously growing but before flowering. See spot treatment section for instructions.

	n)	ed			
Asparagus	0.94-1.88	7	1	Fall seeded rye grass	Apply in spring before emergence of crop shoots.

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

DIRECTIONS FOR USE

ALWAYS REFER TO THE PRODUCT LABEL FOR FURTHER INFORMATION ON WEEDS CONTROLLED, APPLICATION DIRECTIONS, AND USE PRECAUTIONS.

NORTH AMERICAN GINSENG

New Gardens (British Columbia only): Apply this product in the fall after seeding but before freeze-up in new gardens only to control volunteer cereals. Apply when weeds are at the growth stages listed on the product label. Use a single application of 1.88 litres per hectare in 50 to 100 litres water per hectare. **DO NOT USE A FALL APPLICATION IN ESTABLISHED/EXISTING GARDENS.**

Existing/Established Gardens: Apply this product in the spring before the crop has emerged from the soil. Apply when weeds are at the growth stages described in the product label. A maximum of two 1.88 litres per hectare applications in 50 to 100 litres water per hectare may be made in a season. **DO NOT USE A FALL APPLICATION IN ESTABLISHED/EXISTING GARDENS.**

SELECTIVE EQUIPMENT

WIPER APPLICATORS

This product may be applied with a wiper applicator, after dilution and thorough mixing with water, to listed weeds in soy and dry beans, grapes, orchards, cranberries and strawberry. Applications must be made before initial pod set in soy and dry beans. (It may also be used in any industrial, tree planting and non-crop site specified on this label.)

A wiper applicator applies the herbicide solution onto weeds by rubbing the weed with an absorbent material containing the herbicide solution. Wiper applicators include either roller or wick devices which physically wipe appropriate concentrations or amounts of this product directly onto the weed. Equipment must be designed, maintained and operated to prevent the herbicide solution from contacting desirable vegetation. Performance may be improved by reducing speed in areas of heavy weed infestations to insure adequate wiper saturation. Best results may be obtained if 2 applications are made in opposite directions.

AVOID CONTACT WITH DESIRABLE VEGETATION. Contact of the herbicide solution with desirable vegetation may result in damage or destruction. Applicators used above desired vegetation should be adjusted so that wiper contact point is at least 5 cm above the desirable vegetation. Droplets or foam of the herbicide solution settling on desirable vegetation may result in discoloration, stunting or destruction.

Applications should be made when the weeds are a minimum of 15 cm above the desirable vegetation. Best results may be obtained when more of the weed is exposed to the herbicide solution. Weeds not contacted by the herbicide solution will not be affected. This may occur in dense clumps, severe infestations, or when the height of the weeds varies so that not all weeds are contacted. In these instances, repeat treatments may be necessary. See the Weed Control tables in this label for recommended stage of growth for specific weeds.

NOTES

- Maintain equipment in good operating condition. Avoid leakage or dripping onto desirable vegetation.
- Adjust height of applicator to insure proper contact with weeds.
- Keep wiping surfaces clean.
- Maintain recommended roller RPM on roller applicators while in use.
- Keep wiper material at proper degree of saturation with herbicide solution.
- DO NOT use wiper equipment when weeds are wet.
- DO NOT operate equipment at ground speeds below 4 and greater than 10 km/h. Weed control may be affected by speed of application equipment. As weed density increases, reduce equipment ground speed to insure good coverage of weeds.
- Be aware that on sloping ground the herbicide solution may migrate, causing dripping on the lower end and drying on the upper end of the wiper applicator.
- Variation in equipment design may affect weed control. With wiper applicators, the wiping material and its orientation must allow delivery of sufficient quantities of the recommended herbicide solution directly to the weed.
- Care must be taken with all types of wipers to insure that the absorbent material does not become over-saturated, causing the herbicide to drip onto desirable vegetation.
- With all equipment, drain and clean wiper parts immediately after using this product, by thoroughly flushing with water.

For Roller Applicators--Mix 0.38 to 0.75 L of this product in 10 L water to prepare a 3.8 to 7.5% solution. Roller speed should be maintained at 50 to 150 rpm.

For Wick or other Wiper Applicators--Mix 1 litre of this product in 3 litres of water to prepare a 25% solution.

NON-CROPLAND USES

NON-CROPLAND USES INCLUDE:

Industrial; military bases, recreational, rights-of-way, and public areas; turf grass renovation.

ALWAYS READ PRECAUTIONARY STATEMENTS, GENERAL INFORMATION and MIXING and APPLICATION SECTIONS PRIOR TO SPECIFIC APPLICATION INFORMATION IN ANY LABEL SECTION.

This product can be used to control annual and perennial weeds and woody brush and trees listed on this label in non-crop areas such as railroad, pipeline, highway, power and telephone rights-of-way; petroleum tank farms and pumping installations; roadsides; storage areas; lumberyards; fence rows; military impact zones; artillery/small arms ranges; troop training areas; ammunition storage bunkers; industrial plant sites; parking areas; school yards, parks, golf courses, other public areas; airports and similar industrial or non-crop areas.

NOTE: For all industrial, military bases, rights-of-way, recreational and public areas, repeat treatments may be necessary to control regeneration or new growth. When applied as recommended under the conditions described, this product will control weeds in non-cropland areas as listed in the following table.

WEED CONTROL IN NON-CROPLAND AREAS WITH VANTAGE 480

WEEDS	GROUND APPLICATION			COMMENTS
	BOOM APPLICATION		Hand Held High Volume Application % Solution	
	Rate † L / ha	Water Vol. † L /ha		
Annual grasses and broadleaves	1.69 – 2.63	50 - 100	1	Actively growing weeds
Perennial Weeds				

Quackgrass	1.88	50 - 300	1	Actively growing weeds
	3.56 - 5.25	50 - 300	2	Add 0.5% v/v of a recommended surfactant when using water volumes greater than 150 L. Higher rate for long term control and for heavy infestations
Canada Thistle (Bud Stage)	3.56 - 5.25	100 - 300	2	See section on purple loosestrife control for application instructions
Purple loosestrife	4.5	300-600	0.75 - 1.5 (or 25% for wiper application)	Summer through fall is optimum
Other Perennials	5.25 - 9	100 - 300	2	
<u>Brush and Trees†</u>				Summer through early fall
Birch, Cherry, Poplar, Western Snowberry, Willow	2.25 - 4.5	100 - 300	1 - 2	Late Summer through fall
Maple, Raspberry/ Salmonberry, Alder	4.5	100 - 300	2	Fall is optimum
<u>Turf Renovation</u>	1.88 - 9.0	100 - 300	1 - 2	Use higher end of the rate range for perennials
Annual and Perennial Weeds				

<p><u>Roadside Vegetation</u> (1-2 m wide along shoulders) Annual Weeds (refer to Tank-Mix sections on product labels for specific weeds controlled)</p>	<p>1) 0.56-0.75 + 1.25-2.5 L Vanquish or 2) 0.56-0.75 + 0.30 L DyClear Agricultural Herbicide + 1.2 L 2,4-D Amine 500</p>	<p>25-150</p>	<p>-</p>	<p>Refer to annual weed control table in this label for appropriate product rate for specific weeds For 2,4-D amine formulations with a different guarantee, adjust the rate accordingly No application to standing water</p>
<p><u>Residual Control</u> Annual and Perennial Weeds (the simazine component of this tank mixture will provide season long control of most germinating broadleaf weeds and grasses. It may also provide post-emergent activity on certain annual weeds)</p>	<p>1.88 – 9 + 4.0-9.0 L Simadex Flowable</p>	<p>200-400</p>	<p>-</p>	<p>Do not apply to coarse, sandy or gravelly soil. One application per year. Use according to the most restrictive label directions for each product in the mixture. For other simazine formulations registered for industrial/non-cropland areas, use equivalent rates; i.e. 2.0-4.5 kg simazine/ha</p>

† For more information on rates, water volumes and application, refer to the "Annual and Perennial Weed Control" sections of this booklet.

†† Aerial application may be used for brush and tree control in Industrial rights-of-way and military bases only. See aerial application section.

VANTAGE 480 TANK MIXTURES FOR NON-CROPLAND USES.

Add and mix as per instructions on the tank mix label(s)

TANK MIXTURES	PRODUCT RATE	SURFACTANT
<p>Vantage 480 + Milestone Herbicide</p>	<p>1.69 – 9.0 L/ha + 0.25 – 0.5 L/ha</p>	<p>Surfactant is not required</p>
<p>Vantage 480 + Milestone Herbicide + Torpedo EZ Herbicide</p>	<p>1.69 – 9.0 L/ha + 0.25 – 0.5 L/ha + 0.88 – 1.215 L/ha</p>	<p>Surfactant is not required</p>
<p>Vantage 480</p>	<p>1.69 – 9.0 L/ha</p>	<p>Surfactant is not required</p>

+ Clearview Herbicide	+ 135 – 230 g/ha	
Vantage 480 + Clearview Herbicide + Torpedo EZ Herbicide	1.69 – 9.0 L/ha + 135 – 230 g/ha + 0.88 – 1.215 L/ha	Gateway adjuvant at 0.25% - 1.0 % v/v
Vantage 480 + Torpedo EZ Herbicide	1.69 – 9.0 L/ha + 0.88 – 1.215 L/ha	Surfactant is not required
Vantage 480 + Sightline A Herbicide + Sightline B Herbicide + Torpedo EZ Herbicide	1.69 – 9.0 L/ha + 135 – 230 g/ha + 0.42 – 0.84 L/ha + 0.88 – 1.215 L/ha	Gateway adjuvant at 0.25% - 1.0 % v/v
Vantage 480 + Octtain XL Herbicide + Torpedo EZ Herbicide	1.69 – 9.0 L/ha + 1.1 – 3.1 g/ha + 0.88 – 1.215 L/ha	Gateway adjuvant at 0.25% - 1.0 % v/v

APPLICATION INFORMATION FOR NON-CROPLAND USES

Foliar Applications

Spray coverage should be uniform and complete. Do not spray to the point of runoff. Do not allow spray drift to contact desirable vegetation as severe injury or destruction may occur. For woody brush and trees, early season applications may take 30-45 days for symptoms to develop on target species. Late season application may be made to species that have some autumn colours provided no major leaf drop has occurred. Control will be observed the following spring.

EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT OF SPRAY WITH FOLIAGE OF DESIRABLE TURFGRASSES, TREES, SHRUBS, OR OTHER DESIRABLE VEGETATION SINCE SEVERE DAMAGE OR DESTRUCTION MAY RESULT.

This product does not provide residual weed control. For subsequent weed control, follow a label approved herbicide program. Read and carefully observe the cautionary statements and all other information appearing on the labels of all herbicides used.

GROUND APPLICATIONS: For all non-cropland uses

For woody brush and trees, apply 2.25 to 4.5 L of this product per hectare. Use ground boom or boomless, or mist blower equipment, or apply as a 0.75 to 1.5% solution using hand-held high volume equipment. Apply as directed in the recommended volume of clean water to foliage of actively growing vegetation. Use the 4.5 L/ha rate for Maple, Alder and Willow† species, as well as for hard to control perennial weed species.

(† Suppression only)

Spray coverage should be uniform and complete. Do not spray to the point of runoff. Do not allow spray

drift to contact desirable vegetation as severe injury or destruction may occur. If weeds have been mowed or tilled, do not treat until regrowth has reached the recommended stages.

CONVENTIONALLY PILOTED AIRCRAFT APPLICATIONS: For industrial, rights-of-way and military bases only

DIRECTIONS FOR USE

Apply only by 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 specified 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 device.

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.

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.

Application Rates

For woody brush and trees, apply 2.25 to 4.5 L of this product per hectare. Use the 4.5 L/ha rate for Maple, Alder and Willow[†] species, as well as for hard to control perennial weed species. Use the recommended rates of this herbicide in 30 to 100 L of water per hectare. As density of vegetation increases, spray volume should be increased within the recommended range to ensure complete coverage. This product may also be applied by aerial application for the control of annual and perennial weeds, woody brush and trees in artillery impact zones on military bases.

([†] Suppression only)

Thoroughly wash aircraft, especially landing gear, after each day of spraying to remove residues of this product accumulated during spraying or from spills. **PROLONGED EXPOSURE OF THIS PRODUCT TO UNCOATED STEEL SURFACES MAY RESULT IN CORROSION AND POSSIBLE FAILURE OF THE PART. LANDING GEAR ARE MOST SUSCEPTIBLE.** The maintenance of an organic coating (paint) which meets aerospace specification MIL-C-38412 may prevent corrosion.

Product Specific Precautions

Read and understand the entire label before opening this product. If you have questions, call the registrant at 1-800-247-8013 or obtain technical advice from the distributor or your provincial or territorial agricultural representative. Application of this product must meet and or conform to the following:

Volume: Apply the specified rate in a spray volume of 30 to 100 litres per hectare. Do not angle nozzles forward into the airstream and do not increase spray volume by increasing nozzle pressure.

PURPLE LOOSESTRIFE CONTROL

- DO NOT TREAT PLANTS OVER OPEN WATER. Vantage 480 is not registered for direct application to bodies of water.
- Treat when plants are actively growing at or beyond the bloom stage. If using hand-held equipment, spray-to-wet.
- For wiper applications, see specific section on this label.
- Where feasible, remove flower heads before treatment to ensure prevention of seed set.
- For large (>1.6 ha) monocultures of loosestrife, work from the periphery inward in successive years to allow competing vegetation to invade the treated area.
- A long-term control strategy should include measures to control both established plants and seedlings. Sprayed areas should be monitored to determine the appropriate follow-up management. Early detection and treatment of second and third generation seedlings is important to prevent re-infestation of purple loosestrife. Desirable native plant communities will then have a chance to become re-established.

Selective Application for All Non-Cropland Uses

Selective equipment such as **WIPER** and **ROLLER** applicators can be used to control emerged weeds in non-crop areas and tree plantings. See "Selective Equipment" for more information.

Turfgrass

When applied as directed, under conditions described, this product controls most existing vegetation. Apply this product at rates specified in the "Weed Control in Non-Cropland Areas" section.

DO NOT DISTURB SOIL OR UNDERGROUND PLANT PARTS BEFORE TREATMENT.

Where existing vegetation is growing in a field or unmowed situation, apply this product to actively growing weeds at the stages of growth given in the "Weeds Controlled" section of this booklet. Where existing vegetation is growing under mowed turfgrass management, apply this product after omitting at least one regular mowing to allow sufficient growth for good interception of the spray and proper translocation into underground plant parts. Tillage or renovation techniques such as vertical mowing, coring or slicing should be delayed for 7 days after application to allow proper translocation into underground plant parts.

For maximum control of existing vegetation, delay establishment to determine if regrowth from escaped underground plant parts occurs. When repeat treatments are necessary, sufficient regrowth must be attained prior to application. Desirable turfgrasses may be established following the above procedures.

Injection Applications - for all non-cropland uses

Woody vegetation may be controlled by injection application of this product. Apply using suitable equipment, which must penetrate into living tissue, at a rate of at least 0.38 mL (either undiluted or 1:1 with water) per

5 cm tree diameter at breast height (DBH). The cuts should be spaced evenly around the tree and below all major branches. Application may be made at any time of year, except when cold temperatures prevent adequate penetration of injection equipment, or in the spring during periods of heavy sap flow. Control of tree species with tree diameters greater than 20 cm may not be acceptable at this rate.

Total control may not be evident for 1-2 years following treatment.

A list of species controlled includes:

ALDER

Alnus spp.

BIRCH

Betula spp.

CEDAR

Thuja spp.

CHERRY

Prunus spp.

HEMLOCK

Tsuga spp.

MAPLE†

Acer spp.

PINE

Pinus spp.

POPLAR

Populus spp.

DOUGLAS FIR
Pseudotsuga spp.

WILLOW
Salix spp.

†This treatment may only provide suppression of Big-Leaf Maple. Late fall applications will provide optimum suppression of Big- Leaf Maple

Cut Stump Application

Woody vegetation may be controlled by the application of this product to freshly cut stumps to prevent regrowth. Because the treatment uses a concentrated solution, application must be made using low-pressure equipment, e.g. squirt bottle or similar device. This product must be applied immediately to the surface of the freshly cut stump i.e. within 5 minutes for optimum control at the prescribed rates. Only the cambial tissues of the cut surface should be treated. Apply the herbicide solution at a rate equivalent to at least 0.38 mL product for every 5 cm DBH. Do not cover the remaining area nor any exposed roots, as this product does not penetrate bark well. This treatment may be used at any time of year, except during periods of heavy sap flow or when low temperatures prevent solution application due to freezing. A water soluble colourant may be added to the solution as a means of indicating which surfaces have been treated. Total control may not be evident until 1-2 years after treatment.

See the "Injection Applications" section of this label for the list of species controlled.

FORESTRY USES

DO NOT APPLY BY AIR

Unless otherwise specified under a restricted use.

Application Rates (Forest and Woodland Management, Conifer/Deciduous/Pasture Release)

To control or suppress most herbaceous weeds, woody brush and trees, apply 2.25 to 4.5 litres of this product per hectare using ground boom or boomless, or mist blower equipment, or apply as a 1 to 2% solution using hand-held high volume equipment. For control of perennial herbaceous weeds, woody brush and trees in site preparation applications using ground boom or boomless, or mist blower equipment, apply 5.25 to 9 litres of this product per hectare as directed in the recommended volume of clean water to the foliage or actively growing vegetation. Use the 4.5 L/ha rate for control of maple, alder or willow species.

WOODLAND MANAGEMENT (Treatment of 500 ha or less)

SITE PREPARATION and FOREST ROADSIDE (Ground Only) and RIGHTS-OF-WAY VEGETATION MANAGEMENT

Use this product as broadcast treatment at recommended rates, to control herbaceous weeds, woody brush and tree species. For control of herbaceous weeds, apply when most perennial broadleaf weeds have reached the early head of early bud stage of growth. For perennial grasses, apply when most weeds are 20 cm in height. Apply when brush and tree species are actively growing and when foliage is full and well-developed. For best results apply in late summer or early fall. Some autumn colours on undesirable deciduous species are acceptable provided no major leaf fall has occurred. Following site preparation application of this product, any silvicultural species may be planted.

For control of vegetation on sites with infestations of ericaceous species (e.g. Kalmia spp - sheep laurel, lamb kill), use 4.5 L/ha VP480 in the recommended water volume and an additional silicon-based surfactant (such as Sylgard 309) as per label instructions. Apply between mid-August and mid-September for maximum performance.

CONIFER RELEASE (Ground Only)

Use this product as a broadcast spray at recommended rates, to control herbaceous weeds, woody brush and tree species, to release from competition the coniferous species listed below:

DOUGLAS FIR
Pseudotsuga spp.
FIR
Abies spp.
HEMLOCK

PINE
Pinus spp.
SPRUCE
Picea spp.

Tsuga, spp.

For conifer release of spruce seedlings in the year of transplanting, apply 1.5 to 4.5 litres of this product per hectare in plantations of summer planted spruce species (*Picea glauca*, *P. Engelmannii* and their hybrids). Conifers must be planted in the same year as treatment and in the field for at least 18 days prior to treatment. Seedlings to be treated must clearly show bud set and bud hardening following a dormancy induction regime in the nursery. The need for such early release treatments is expected on sites which are subject to the rapid development of herbaceous and shrub communities.

Most annual and perennial weeds will be controlled or suppressed. Applications must be made after formation of final conifer resting buds. Applications made during period of active conifer growth may result in conifer injury. Avoid application during Lammas or late season conifer growth. Some autumn colours are acceptable provided no major leaf fall has occurred on undesirable brush and tree species.

For conifer release, apply where conifers have been established for more than a year. Vegetation should not be disturbed immediately prior to treatment or until visual signs appear after treatment. Symptoms of treatment are slow to appear, especially in woody species treated in late fall. Injury may occur to conifers treated for release, especially where spray patterns overlap or the higher rates are applied or when applications are made during periods of active conifer growth.

NOTE: This product is not recommended for use as an over-the-top broadcast spray in forest tree nurseries, or in Christmas tree plantations. Applications in such sites should be limited to directed sprays. DO NOT TREAT Christmas tree plantations in the year of anticipated harvest.

Conifer Release by Directed Spraying

Use this product to control herbaceous and woody species. Apply when the undesirable species are actively growing and the foliage is full and well-developed. This product does not provide pre-emergent weed control. Repeat treatments may be necessary to control weeds that generate from underground parts or seed.

Undesirable deciduous species may be treated when they already have autumn colours, provided there has been no major leaf fall. For perennial broadleaf species, apply when most weeds have reached early head or early bud stage of growth. For annual and perennial grasses, apply when most weeds are 20 cm in height (3-4 leaf stage of growth).

Direct spray so that the foliage of undesired vegetation is thoroughly wetted. Do not spray foliage to the point of run-off. Applying the product to conifers during their period of active growth (before lignification) may cause tree injury. Under such conditions, take the necessary precautions to ensure that spray, mist or spray drift does not come into contact with the foliage or green bark of conifers being cultivated.

The product may be applied on sites regenerated by the following species (partial list): SPRUCE (*Picea* spp.), PINE (*Pinus* spp.), HEMLOCK (*Tsuga* spp.), DOUGLAS FIR (*Pseudotsuga* spp.). No time interval is required between tree planting and application of the product. See vegetation controlled, specific rates and application and mixing instructions elsewhere on this label.

Do not allow spray to come in contact with foliage, green stems or fruit of non-target crops, since they may be killed or severely damaged.

DECIDUOUS RELEASE (Ground Only)

Use this product to control herbaceous weeds and woody brush. Apply when the undesirable species are actively growing, and the foliage is well developed. This product has no pre-emergent activity. Repeat treatments may be required for species which regenerate from underground stems or from seeds. Applications may be made to undesirable deciduous species with some autumn colours, provided that major leaf fall has not yet occurred.

Use a directed spray to thoroughly cover the foliage of the undesirable vegetation. Take all necessary precautions to prevent contact of the spray, spray mist or spray drift with the foliage or green bark of desirable species.

A partial list of species for use with this product on regenerated sites includes: ASH (*Fraxinus* spp.); WALNUT (*Juglans* spp); LINDEN or BASSWOOD (*Tilia* spp); CHERRY (*Prunus* spp.); OAK (*Quercus* spp); ELM (*Ulmus* spp) and POPLAR (*Populus* spp). Product may be applied immediately after transplanting.

See use rates and application instructions elsewhere on this label.

RESTRICTED USE

FOREST and WOODLANDS MANAGEMENT

Ground/Aerial Application for Sites Greater Than 500 ha (Forestry Use)

Aerial Application for Sites 500 ha or Less (Woodlands Use)

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.

NATURE OF RESTRICTION: This product is to be used only in the manner authorized; consult local pesticide regulatory authorities about use permits which may be required.

Do not apply to any body of water populated with fish or used for domestic purposes. Do not use in areas where adverse impact on domestic water or aquatic species is likely.

In order to reduce the drift hazard to non-target plants and aquatic species when aerially treating silvicultural sites, ensure that appropriate buffer zones are maintained.

SITE PREPARATION

Use this product as broadcast treatment at recommended rates, to control herbaceous weeds, woody brush and tree species listed on this label. Apply when brush and tree species are actively growing and when foliage is full and well-developed. For best results apply in late summer or early fall. Some autumn colours on undesirable deciduous species are acceptable provided no major leaf fall has occurred. Following site preparation application of this product, any silvicultural species may be planted.

CONIFER RELEASE

Use this product as a broadcast spray at recommended rates, to control herbaceous weeds, woody brush and tree species listed on this label, to release from competition the coniferous species listed below:

DOUGLAS FIR
Pseudotsuga spp.
FIR
Abies spp.
HEMLOCK
Tsuga spp.

PINE
Pinus spp.
SPRUCE
Picea spp.

For conifer release of spruce seedlings in the year of transplanting, apply 1.5 to 4.5 litres of this product per hectare in plantations of summer planted spruce species (*Picea glauca*, *P. Engelmannii* and their hybrids). Conifers must be planted in the same year as treatment and in the field for at least 18 days prior to treatment. Seedlings to be treated must clearly show bud set and bud hardening following a dormancy induction regime in the nursery. The need for such early release treatments is expected on sites which are subject to the rapid development of herbaceous and shrub communities.

Most annual and perennial weeds will be controlled or suppressed. Applications must be made after formation of final conifer resting buds. Applications made during period of active conifer growth may result in conifer injury. Avoid application during Lammas or late season conifer growth. Some autumn colours are acceptable provided no major leaf fall has occurred on undesirable brush and tree species.

For conifer release, apply where conifers have been established for more than a year. Vegetation should not be disturbed immediately prior to treatment or until visual signs appear after treatment. Symptoms of treatment are slow to appear, especially in woody species treated in late fall. Injury may occur to conifers

treated for release, especially where spray patterns overlap or the higher rates are applied or when applications are made during periods of active conifer growth.

NOTE: This product is not recommended for use as an over-the-top broadcast spray in forest tree nurseries or in Christmas tree plantations. Applications in such cities should be limited to directed sprays. DO NOT TREAT Christmas tree plantations in the year of anticipated harvest.

DIRECTIONS FOR USE

Aerial Application

Apply only by 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 rates specified 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 or equivalent electronic positioning systems (GPS).

Aerial Application 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.

Aerial Application 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.

Aerial Application Product Specific Precautions

Read and understand the entire label before opening this product. If you have questions, call the registrant at 1-800-247-8013 or obtain technical advice from the distributor or your provincial or territorial agricultural representative. Application of this specific product must meet and/or conform to the following:

Volume: Apply the recommended rate in 20-100 L of water per ha as listed on the full label.

Thoroughly wash aircraft, especially landing gear, after each day of spraying to remove residues of this product accumulated during spraying or from spills. **PROLONGED EXPOSURE OF THIS PRODUCT TO UNCOATED STEEL SURFACES MAY RESULT IN CORROSION AND POSSIBLE FAILURE OF THE PART. LANDING GEAR ARE MOST SUSCEPTIBLE.** The maintenance of an organic coating (paint) which meets aerospace specification MIL-C-38412 may prevent corrosion.

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

DIRECTIONS FOR USE

FIELD GROWN CONIFERS (including CHRISTMAS TREES)

For the control of horsetail, *Equisetum arvense*, apply 9 L/ha of Vantage 480 plus Agral 90 adjuvant 0.5 % vv. Use spray volume at 200-300 L/ha (banded application).

The application is not recommended for an over-the-top broadcast spray and should be limited to directed sprays ONLY. DO NOT treat conifer plantations (including Christmas trees) in the year of anticipated harvest.

DO NOT apply more than 1 application per year. Apply when the horsetail is fully emerged.

Refer to the main Vantage 480 product label for Spray Buffer Zone information, additional details and instructions.

SPRAY BUFFER ZONES

A spray buffer zone is NOT required for:

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

For application to rights-of-way and for forestry uses, spray buffer zones for protection of sensitive terrestrial habitats are not required; however, the best available application strategies which minimize off-site drift, including meteorological conditions (for example, wind direction, low wind speed) and spray equipment (for example, coarse droplet sizes, minimizing height above canopy), should be used.

Applicators must, however, observe the specified spray buffer zones for protection of sensitive aquatic habitats.

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 aquatic habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs, wetlands and estuarine/marine water bodies).

Method of Application	Crop	Maximum number of applications	Spray Buffer Zones (metres) required for protection of:	
			Aquatic Habitat	Terrestrial Habitat
Agricultural, forestry and non-cropland systems				
Agricultural crop system and ground boom application method	Pre-seeding applications for rye, cranberry, filberts, hazelnut and all other crops only . Established pasture. Ginseng new garden.	1	1	1
	Ginseng - existing established garden, Canola – Roundup Ready hybrid for seed production	2	1	1
	Filberts or hazelnut	4	1	1
	Corn (glyphosate non-tolerant varieties including grain, silage and ornamental types), sugar beet (glyphosate non-tolerant varieties), strawberry, blueberry highbush and lowbush, walnut, chestnut, Japanese heartnut, Turf grass (prior to establishment or renovation)	2	1	2
	Wheat, barley, oats, soybean (glyphosate non-tolerant varieties), canola (glyphosate	3	1	2

	non-tolerant varieties), peas, dry beans, flax (including low linoleic acid varieties), lentils, chickpea, lupin (dried), fava bean (dried), mustard (yellow/white, brown, oriental), asparagus, corn (glyphosate tolerant varieties), forage grasses and legume including seed production				
	Canola (glyphosate tolerant varieties), soybean (glyphosate tolerant varieties)	4	1	2	
	Apple, apricot, cherry (sweet/sour), peaches, pears, plums, grapes	3	1	3	
	Field grown conifers (including Christmas trees)	1	1	1	
Agricultural crop system and airblast application method (including mist blower)	Pasture	1	20	30	
	Turfgrass (Prior to establishment or renovation)	2	25	35	
	Field grown conifers (including Christmas trees)	Early growth stage	1	20	30
		Late growth stage	1	10	20
Forest plant system and ground boom application method	<i>Forest and woodlands > 500 ha</i> Site preparation	2	1	NR	
Forest plant system and airblast application method (including mist blower)	<i>Forest and woodlands > 500 ha</i> Site preparation	2	1	NR	
Non-cropland system and ground boom application method	Non-crop land and industrial uses: Industrial and rights of way areas, Recreational and public areas	3	1	3*	
Non-cropland system and airblast application method (including mist blower)	Non-crop land and industrial uses: Industrial and rights of way areas, Recreational and public areas	3	1	30*	
Agricultural crop system and aerial application method	Wheat, barley, oats, soybean (glyphosate non-tolerant varieties), canola (glyphosate non-tolerant varieties), peas, dry beans, flax (including low linoleic acid varieties), lentils	Fixed wing	2	20	35
		Rotary wing	2	20	30
Forestry system and aerial application method	<i>Forest and woodlands >500 ha</i> Site preparation	Fixed wing	2	10	NR
		Rotary wing	2	1	NR
	<i>Forest and woodlands <500 ha</i> Site preparation	Fixed wing	2	5	NR
		Rotary wing	2	1	NR
Non-cropland system and aerial application method	Non-crop land and industrial uses: rights-of way areas and military bases only	Fixed wing	3	100	NR
		Rotary wing	3	60	NR

* Spray buffer zones for the protection of terrestrial habitats are not required for forestry uses or for use on rights-of-way including railroad ballast, rail and hydro rights-of-way, utility easements, roads, and training grounds and firing ranges on military bases.

NR = Not Required

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 (ASABE) category indicated on the labels for those tank mix partners.

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

RESISTANCE MANAGEMENT RECOMMENDATIONS

For resistance management, Vantage 480 is a Group 9 herbicide. Any weed population may contain or develop plants naturally resistant to Vantage 480 and other Group 9 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 Vantage 480 or other Group 9 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 treated 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 Albaugh, LLC at 1-800-247-8013.

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.

Vantage is a registered trademark of Albaugh, LLC.

All other products listed are registered trademarks of their respective companies.