POISON

KEEP OUT OF REACH OF CHILDREN
READ SAFETY DIRECTIONS BEFORE OPENING OR USING

QA

Haloxyfop 520 EC

HERBICIDE

ACTIVE CONSTITUENT:
520 g/L HALOXYFOP present as the HALOXYFOP-P METHYL ESTER

GROUP **1** HERBICIDE

For the post-emergent control of a wide range of annual and perennial grass weeds in grain legume and oilseed crops, lucerne, medic and clover pasture and seed crops, forestry, bananas, citrus, grapes, pineapples, pome and stone fruit, pyrethrum, tropical fruit and nut crops as specified in the Directions for Use.

APVMA Approval No.: 90835/149902

EC Formulation Type **Emulsifiable Concentrate**

BE PROUDLY AUSTRALIAN

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QUANTUM AGROSCIENCES

DIRECTIONS FOR USE

RESTRAINTS:

DO NOT apply to weeds which may be stressed (not actively growing) due to prolonged periods of extreme cold, moisture stress (waterlogged or drought affected), poor nutrition or previous herbicide treatment as reduced levels of control may result.

DO NOT spray if rain is likely to occur within one hour.

Table 1a. Winter crops – Canola, Chickpeas, Faba beans, Field peas, Lentils, Linola, Linseed, Lupins, Lucerne, Vetch, Medic and Clover pastures or seed crops.

WEEDS CONTROLLED	WEED GROWTH STAGE	RATE (mL/ha)	
		With Uptake Spraying Oil	With a Non-ionic Wetter
Annual ryegrass	2 to 4 leaf	75	100
	Early Tillering	100	100
Barley grass, Brome grass, Paradoxa grass, Volunteer cereals	2 to 4 leaf	50	75
	Early Tillering	75	100
Wild oats WA, SA, Vic, Tas, Southern and Central NSW	2 to 4 leaf	37.5	50
	Early Tillering	50	75
Wild oats Northern NSW & Qld	2 to 4 leaf	50	75
	Early Tillering	75	100

CRITICAL COMMENTS

CANOLA, LINOLA AND LINSEED

DO NOT apply after the 8 leaf stage of the crop.

DO NOT apply after the commencement of stem elongation.

This means that application must not occur after the 8 leaf stage, or if stem elongation commences before the 8 leaf stage, application must not occur after stem elongation has commenced.

DO NOT apply more than 1 application of herbicide containing haloxyfop per crop.

DO NOT apply after grazing.

See GENERAL INSTRUCTIONS, Spraying oils/wetters section.

FIELD PEAS AND CANOLA

The only oil recommended for use with QA Haloxyfop 520 EC is Uptake* Spraying Oil. QAHaloxyfop 520 EC + Lontrel*750 SC + Uptake* Spraying Oil are compatible and selective to canola. This tank-mix is also compatible with atrazine and selective to triazine tolerant canola.

LUPINS AND FIELD PEAS

Mixtures with Brodal* or simazine may cause crop yellowing and separate applications are recommended.

CHICKPEAS, FABA BEANS, LENTILS AND VETCH, LINOLA, LINSEED

Broadleaf herbicides should not be added to QA Haloxyfop 520 EC. Apply QA Haloxyfop 520 EC and broadleaf herbicides at least a week apart.

LUCERNE, CLOVER OR MEDIC PASTURES

If grazed or cut for hay immediately prior to treatment delay application until all grasses have fully expanded leaves. Use 75 mL + spraying oil or 100 mL + wetter/ha. (See GENERAL INSTRUCTIONS, Spraying Oils/wetters section). If silver grass (Vulpia spp.) is present in pasture, simazine should be tank mixed with the higher rate of QA Haloxyfop 520 EC plus a non-ionic wetter.

Table 1b. Winter crop growth stage application windows.	
Crop	**Crop growth Stage**
Lucerne, Medic and Clover pastures or seed crops	Apply from 2nd trifoliate leaf onwards. For *Erodium* spp. spraying, apply from cotyledon crop stage onwards.
Canola, Linola and Linseed	Apply from 2 leaf to 8 leaf stage of crop growth. DO NOT apply after the commencement of stem elongation. This means that application must not occur after the 8 leaf stage, or if stem elongation commences before the 8 leaf stage, application must not occur after stem elongation has commenced.
Chickpeas, Faba beans, Field peas, Lentils, Lupins, Vetch	Apply from 2ndleaf, 2nd node or 2nd branch to prior to flowering.

Table 2a. Lucerne, Medic and Clover seed crops and pastures. See table 1b for crop stages.			
WEEDS CONTROLLED	**WEED GROWTH STAGE**	**RATE(mL/ha) with Uptake Spraying Oil**	**CRITICAL COMMENTS**
Prairie grass (*Bromus catharticus*)	Up to early tillering	100	See GENERAL INSTRUCTIONS, Spraying oils/ wetters section. [3] Use lower rate when growing conditions and crop or pasture competition are good and when weed populations are below 100 plants/ m^2. Use the higher rate when weed populations are above 100 plants/m^2 or when crop or pasture competition is poor. **NOTE:** Storksbill may not be controlled if simazine or Broadstrike* are tank-mixed with QA Haloxyfop 520 EC. **LUCERNE, CLOVER OR MEDIC PASTURES:** If grazed or cut for hay immediately prior to treatment delay application until all grasses have fully expanded leaves. Use 75 mL + spraying oil or 100 mL + wetter/ha. (See GENERAL INSTRUCTIONS, Spraying Oils/ wetters section). If silver grass (*Vulpia* spp.) is present in pasture, simazine should be tank mixed with the higher rate of QA Haloxyfop 520 EC plus a non-ionic wetter.
Musky or ferny leaf Storksbill (*Erodium moschatum*), Common Crowsfoot or Common Storksbill (*Erodium cicutarium*)	Up to 6 leaf or 5 cm diameter	50 - 75	
Long or shiny leaf storksbill (*E. botrys*)	Up to 8 leaf or 5 cm diameter	75 - 100	

Table 2b. Lucerne, Medic and Clover seed crops only - not to be used for stockfeed. See table 1b for crop stages.			
WEEDS CONTROLLED	**WEED GROWTH STAGE**	**RATE(mL/ha) with Uptake Spraying Oil**	**CRITICAL COMMENTS**
Couch grass (suppression), Rhodes grass (control)	Tillering seedlings	150 + 150	For best suppression of couch or control of Rhodes grass, make 2 applications of QA Haloxyfop 520 EC 2-4 weeks apart. Time second application to coincide with tillering stage of weeds and just after irrigation or significant rain. Only treat actively growing weeds which are not moisture stressed. Use these rates for control of couch and Rhodes grass.
Couch grass (control) Rhodes grass (control)	Established stands	400 - 800	

Table 3a. Summer crops – Cotton, Cowpea, Lucerne, Mung bean, Navy beans, Peanuts, Soybeans, Sunflowers.			
WEEDS CONTROLLED	**WEED GROWTH STAGE**	**RATE(mL/ha) with Uptake Spraying Oil**	**CRITICAL COMMENTS**
Australian millet	2 leaf to tillering up to 15 cm	150	**See GENERAL INSTRUCTIONS, Spraying oils/ wetters section.** **NAVY BEANS, PEANUTS, SOYBEANS:** For broadleaf weed control, QA Haloxyfop 520 EC at 150 mL/ha plus wetter may be tank mixed with Blazer* (except on navy beans) or Basagran*. Tank mixtures may cause transient leaf spotting on the crop but do not normally affect yield. DO NOT tank mix broadleaf herbicides with QA Haloxyfop 520 EC if grasses have begun tillering or if the grasses are under moisture stress. DO NOT add Uptake Spraying Oil when mixing with Blazer* or Basagran*. DO NOT use Blazer or Basagran* tank-mixes on Cowpeas.
Barnyard grass	2 to 5 leaf	100	
	Tillering up to 15 cm	150	
Crowsfoot grass, Green panic, Johnson grass (rhizome)	2 leaf to tillering up to 15 cm	150	
Johnson grass (seedling), Liverseed grass (seedling), Mossman river grass	2 to 5 leaf	100	
	Tillering and up to 15cm	150	
Summer grass	2 leaf to tillering up to 15 cm	150	
Volunteer cereals	2 to 4 leaf	100	
	Tillering up to 15 cm	150	

Table 3b. Summer crop growth stage application windows.	
Crop	**Crop Growth Stage**
Lucerne	Apply from 2nd trifoliate leaf onwards.
Cowpea, Mung beans, Navy Beans, Soybeans	Apply from 2nd leaf to flowering.
Peanuts	Apply from 2nd leaf to pegging.
Cotton	Apply from 2nd leaf to before the onset of flowering.
Sunflowers	Apply from 2nd leaf to head initiation.

Table 4. Annual and Perennial grasses and *Erodium* spp. in Orchard, Vine and Plantation crops, forestry and pyrethrum.

CROPS	CROP GROWTH STAGE	WEEDS CONTROLLED	WEED GROWTH STAGE	RATE (mL/ha) with Uptake Spraying Oil	CRITICAL COMMENTS
Orchard, vine and plantation crops including: Apples, Avocado, Banana, Blueberry, Citrus, Custard apple, Feijoa, Grapevines, Guava, Kiwifruit, Litchi (Lychee), Longan, Mango, Nashi, Nut trees, Passionfruit, Paw paw, Pear, Persimmon, Pineapple, Rambutan, Stone fruit.	All growth stages	Perennial grasses: Couch, Rhodes grass, Slender rats tail grass	Established stands	400 - 800	**See GENERAL INSTRUCTIONS, Spraying oils/wetters section.** Spray should be directed to the base of the tree or vine avoiding contact with fruit and foliage. **Spot spray:** Use 25 mL to 50 mL/100 L of water. Use higher rate on late tillering mature grasses. **Annual Grasses:** Where treated in association with perennial grasses, these annual grasses will be controlled. **Forestry:** For annual grasses apply lowest rate to newly emerged grasses, increasing the rate as they develop. *Pyrethrum Tasmania only:* For *Erodium* spp. apply 75 - 100 mL/ha if the main weed is *E. botrys*. Use 50 - 75 mL/ha if either *E. cicutarium* or *E. moschatum* are the main weeds.
		Buffel grass, Green panic, Johnson grass, Kikuyu, *Paspalum* spp., *Setaria* spp.	Vegetative to early tillering	200	
			Late tillering	400	
Forestry. *Pinus radiata*, *Eucalyptus* spp.		Annual grasses: Annual ryegrass, Barley grass, Barnyard grass, Brome grass, Crowsfoot grass, Lesser canary grass, Liverseed grass, Mossman river grass, Paradoxa grass, Summer grass, Volunteer cereals, Wild oats	2 leaf to tillering	200	
Forestry: *Pinus pineaster*		Annual grasses as above	Vegetative to tillering	125 - 250	
Pyrethrum		Barley grass, Brome grass, Rope twitch, Barnyard grass, *Erodium* spp., Volunteer cereals.	Vegetative to tillering	100 - 250	

Table 5. QA Haloxyfop 520 EC and Select® Herbicide tank-mixes — Canola, Chickpeas, Faba beans Field peas, Lupins, Lentils.

WEEDS CONTROLLED	WEED GROWTH STAGE	RATE (mL/ha)		CRITICAL COMMENTS
		QA Haloxyfop 520 EC	Select Herbicide	
FOP/DIM susceptible Annual ryegrass + Volunteer barley, Volunteer wheat, Brome grass, Wild oats, Barley grass, Phalaris.	2 to 4 leaf	25	150	**See GENERAL INSTRUCTIONS, Spraying oils/wetters section.** Use Uptake* Spraying Oil at 500 mL/100 L or Hasten* at 1 L/100 L. Apply at the same crop growth stages as those in Table 1b Winter Crops. **Lentils:** Apply up to 7 node-early branching crop growth stage only. **Lupins:** Not for Qld.
	Early Tillering	38	150	
FOP resistant Annual ryegrass + Volunteer barley, Volunteer wheat, Brome grass, Wild oats, Barley grass, Phalaris.	2 to 4 leaf	25	200	
	Early Tillering	38	250	

NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION.

HARVESTING WITHHOLDING PERIODS:
Canola, chickpeas, cotton, cowpea, faba beans, field peas, lentils, linola, linseed, lupins, mung beans, navy beans, orchard crops, peanuts, plantation crops, soybeans, sunflowers, vetch or vine crops:

NOT REQUIRED WHEN USED AS DIRECTED.

Medic and clover seed crops:
DO NOT HARVEST FOR 7 DAYS AFTER APPLICATION.

STOCK FOOD WITHHOLDING PERIODS:
Medic and clover pasture: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 7 DAYS AFTER APPLICATION.
Lucerne: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 21 DAYS AFTER APPLICATION.
Canola chickpeas, cotton, cowpea, faba beans, field peas, lentils, linola, linseed, lupins, mung beans, navy beans, peanuts, soybeans, sunflowers and vetch: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 4 WEEKS AFTER APPLICATION.

COTTON GIN TRASH MUST NOT BE FED TO ANIMALS.

GENERAL INSTRUCTIONS
MIXING
Add water to the spray tank to 10 cm above the level of agitation and ensure the agitation device is working vigorously. (There must be a minimum of 100 L of water in the tank before any pesticide is added.) If tank mixing, firstly, add any soluble liquid formulations (e.g. LONTREL* Herbicide) and allow agitation for approximately one minute. Then add QAHaloxyfop 520 EC at the point where agitation is strongest. (Do not add QAHaloxyfop 520 EC through a strainer or sieve). Allow further agitation for one minute. Half fill the spray tank. If using wettable powder or water dispersible granules, or other emulsifiable concentration formulations (e.g. LORSBAN* 750WG or Omethoate) these should be added after the QA Haloxyfop 520 EC to the half full spray tank ensuring vigorous agitation. Finally add Uptake* Spraying Oil or approved alternate spraying oil/wetter. (See section on spraying oils/wetters) and continue filling the tank to the required volume maintaining agitation at all times. Only mix sufficient solution for immediate use. QA Haloxyfop 520 EC and any other tank mixes should be applied immediately for best results.

Spraying Oils/wetters
Spraying Oils: It is essential to add an adjuvant to QA Haloxyfop 520 EC. Best results will be achieved with Uptake* Spraying Oil at 0.5 L/100 L of spray solution. Alternatively, other oils plus a non-ionic wetter may also be used. When other crop spraying oils are used, mix at 1.0 L/ 100 L and add a non-ionic wetter (surfactant) at 200 mL/100 L of spray solution. Use of oil is not always recommended. See Critical Comments for specific situation recommendations.

Non-ionic Wetters: When Uptake or other oils are not used, a 100% concentrate non-ionic wetting agent such as BS-1000* at 200 mL/100 L must be used along with the higher rate of QA Haloxyfop 520 EC as specified in the Directions for Use.

Where water volumes of less than 50 L/ha are used, DO NOT use less than 250 mL/ha of Uptake or 500 mL/ha for oils other than Uptake or less than 100 mL/ha of wetter.

CANOLA, LUCERNE, MEDIC AND CLOVER PASTURES AND SEED CROPS
When tank mixing QA Haloxyfop 520 EC with Lontrel herbicides (canola only) or Broadstrike (lucerne, clover and medics), use Uptake Spraying Oil with the lower rates of QA Haloxyfop 520 EC or a wetting agent with the higher rates of QA Haloxyfop 520 EC unless otherwise specified. When mixing QA Haloxyfop 520 EC with other broadleaf herbicides on these crops, DO NOT use an oil, use a wetter instead.

FIELD PEAS AND CANOLA
The oil recommended is Uptake Spraying Oil. Hasten is also recommended for use with tank-mixtures of QA Haloxyfop 520 EC and Select Herbicide. For canola, QAHaloxyfop 520 EC + Lontrel 750SG + Uptake Spraying Oil are compatible and selective to canola. This tank-mixture is also compatible with atrazine or simazine and selective to triazine tolerant canola.

NAVY BEANS, PEANUTS, SOYBEANS
When mixing with Blazer or Basagran DO NOT add spraying oil to these mixtures. DO NOT use these tank-mixes on cowpea.

COMPATIBILITY
Ground use only: QA Haloxyfop 520 EC Herbicide can be tank mixed with:
Insecticides: dimethoate, Lorsban* 500 EC Insecticide, Lorsban* 750WG Insecticide, omethoate
Herbicides: atrazine, Basagran*, Blazer*, Broadstrike Herbicide, Lontrel* Herbicide, Lontrel* 750SG, MCPA ester (LVE) – DO NOT exceed 700 mL/ha of MCPA LVE, Oryzalin, Select* Herbicide, simazine, Starane 200 Herbicide
Fungicides: Dithane*, Dithane Rainshield
Trace elements: magnesium sulphate, zinc sulphate
QA Haloxyfop 520 EC Herbicide is NOT COMPATIBLE with 2,4-D or MCPA as sodium or amine salts.
Aerial use: No product other than a recommended crop oil or wetter should be mixed with QA Haloxyfop 520 EC Herbicide when applied by air except for addition of Lontrel Forestry Herbicide for use in forestry and Lontrel 750SG for use in canola only.

APPLICATION
Apply QAHaloxyfop 520 EC Herbicide in sufficient water to obtain good coverage. It should be applied by an accurately calibrated ground rig or aircraft delivering droplets with a a MEDIUM-COARSE droplet spray category.
The following spray volumes are recommended.
Ground application: 50 - 150 L/ha
Aerial application: 30 L/ha minimum
Use higher water volumes in orchards and in dense crops where the weeds may be shielded by the crop canopy.

CLEANING SPRAY EQUIPMENT
If broadleaf herbicides, particularly sulfonylureas have been used in the spray equipment at any time prior to QAHaloxyfop 520 EC, particular care should be taken to follow the directions on the relevant broadleaf herbicide label for equipment cleaning, or damage to susceptible crops may occur. After using QA Haloxyfop 520 EC, empty the tank completely and drain the whole system. Thoroughly wash inside the tank using a pressure hose, drain the tank and clean any filters in the tank, pump, line and nozzles.
To rinse: After cleaning the tank as above, quarter fill the tank with clean water and circulate through the pump, lines, hoses and nozzles. Drain and repeat the rinsing procedure twice.
To decontaminate: Before spraying cereals, maize, sorghum or other sensitive crops, wash the tank and rinse the system as above. Then quarter fill the tank and add an alkali detergent (e.g. SURF*, Cold Water SURF Concentrate*, DynamoMatic Concentrate*, OMO* or DRIVE*) at 500 mL/100 L of water or the powder equivalent at 500 g/100 L of water, and circulate throughout the system for at least fifteen minutes. Drain the whole system. Remove filters and nozzles and clean them separately. Finally flush the system with clean water and allow to drain. Chlorine based cleaners are not recommended.
Rinse water should be discharged onto a designated disposal area, or if this is unavailable, onto unused land away from desirable plants and water sources.

RESISTANT WEEDS WARNING
GROUP 1 HERBICIDE
QA Haloxyfop 520 EC Herbicide is a member of the aryloxyphenoxy propionate group of herbicides. The product has the acetyl CoA carboxylase inhibitor mode of action. For weed resistance management QA Haloxyfop 520 EC Herbicide is a Group 1 herbicide. Some naturally occurring weed biotypes resistant to the product and other inhibitors of acetyl CoA carboxylase herbicides may exist through normal genetic variability in any weed population. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds will not be controlled by the product or other inhibitors of acetyl CoA carboxylase. Since the occurrence of resistant weeds is difficult to detect prior to use, Quantum Agrosciences Holdings Pty Ltd accepts no liability for any losses that may result from the failure of the product to control resistant weeds. Strategies to minimise the risk of herbicide resistance are available. Contact your farm chemical supplier, consultant, local Department of Agriculture, or local Quantum Agrosciences Holdings representative.

PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS
Haloxyfop 520 EC Herbicide damages cereals and grasses. DO NOT apply under weather conditions, or from spraying equipment, that may cause spray to drift onto nearby susceptible plants/crops, cropping lands or pastures. Cereal crops or grasses planted

within twelve weeks of application may be damaged by the residual effects of Haloxyfop 520 EC Herbicide particularly on light and red soils.

PROTECTION OF LIVESTOCK
DO NOT graze or cut treated crops for stock food except as specified under withholding periods.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT
QA Haloxyfop 520 EC Herbicide is toxic to fish. DO NOT contaminate streams, rivers or waterways with the chemical or used container.

STORAGE AND DISPOSAL
Store in the closed, original container, in a cool, well-ventilated area. DO NOT store for prolonged periods in direct sunlight. DO NOT store near feedstuffs, fertilisers or seeds. Triple-rinse containers before disposal. Add rinsings to spray tank. DO NOT dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush, or puncture and deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots, in compliance with relevant local, state or territory government regulations. DO NOT burn empty containers or product.

SMALL SPILL MANAGEMENT
Wear protective equipment (see SAFETY DIRECTIONS). Apply absorbent material such as earth, sand, cat litter or clay granules to the spill. When absorption is complete, sweep up material and contain in a refuse vessel for disposal (see STORAGE AND DISPOSAL section). If necessary wash the spill area with an alkali detergent and water and absorb this wash liquid for disposal as described above.

SAFETY DIRECTIONS
Harmful if swallowed. Will irritate the eyes and skin. Avoid contact with the eyes and skin. When preparing spray wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow-length PVC gloves and face shield or goggles. After each day's use, wash gloves, face shield or goggles and contaminated clothing. Wash hands after use

FIRST AID
If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 13 11 26. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

SAFETY DATA SHEET
Additional information is listed in the Safety Data Sheet (SDS) which is available from the supplier.

CONDITIONS OF SALE: Quantum Agrosciences Holdings Pty Ltd shall not be liable for any loss injury damage or death whether consequential or otherwise whatsoever or howsoever arising whether through negligence or otherwise in connection with the sale supply use or application of this product. The supply of this product is on the express condition that the purchaser does not rely on Quantum Agrosciences Holdings Pty Ltd's skill or judgement in purchasing or using the same and every person dealing with this product does so at his own risk absolutely. No representative of Quantum Agrosciences Holdings Pty Ltd has any authority to add to or alter these conditions.

Additional information required under the Globally Harmonised System (GHS) classification of the substance/mixture: **Very toxic to aquatic life with long lasting effects.** Harmful if swallowed. Causes serious eye irritation. Suspected of damaging fertility. Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure.

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