Product Name: Pegasi Haloxyfop 520 EC Herbicide
APVMA Approval No: 93773/140424

Label Name:	Pegasi Haloxyfop 520 EC Herbicide

Signal Headings:	POISON KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING

Constituent Statements:	ACTIVE CONSTITUENT: 520 g/L HALOXYFOP present as the haloxyfop-P methyl ester

Mode of Action:	GROUP 1 HERBICIDE

Statement of Claims:	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.

Net Contents:	CONTENTS: 1 L - 110 L

Restraints:	RESTRAINTS DO NOT apply to weeds which may be stressed (not actively growing) due to prolonged periods of extreme cold, moisture stress (water-logged 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. SPRAY DRIFT RESTRAINTS Specific definitions for terms used in this section of the label can be found at apvma.gov.au/spraydrift DO NOT allow bystanders to come into contact with the spray cloud. DO NOT apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.

	DO NOT apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application. DO NOT apply if there are hazardous surface temperature inversion conditions present at the application site during the time of application. Surface temperature inversion conditions

Directions for Use:	This section contains file attachment.

Other Limitations:	

Withholding Periods:	HARVESTING WITHHOLDING PERIODS NOT REQUIRED WHEN USED AS DIRECTED FOR: 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. DO NOT HARVEST FOR: Medic and clover seed crops: 7 DAYS AFTER APPLICATION STOCK FOOD WITHHOLDING PERIODS DO NOT GRAZE OR CUT FOR STOCK FOOD FOR: Canola, chickpeas, cotton, cowpea, faba beans, field peas, lentils. linola, linseed, lupins, mung beans, navy beans, peanuts, soybeans, sunflowers, vetch: 28 DAYS AFTER APPLICATION Lucerne: 21 DAYS AFTER APPLICATION and Medic and clover pasture: 7 DAYS AFTER APPLICATION COTTON GIN TRASH MUST NOT BE FED TO ANIMALS.

Trade Advice:	

General Instructions:	This section contains file attachment.

Resistance Warning:	RESISTANT WEEDS WARNING GROUP 1 HERBICIDE Pegasi Haloxyfop 520 EC Herbicide is a member of the aryloxyphenoxy propionate group of herbicides. Pegasi Haloxyfop 520 EC Herbicide has the acetyl CoA carboxylase inhibitor mode of action. For weed resistance management, Pegasi Haloxyfop 520 EC Herbicide is a Group 1 Herbicide. Some naturally-occurring weed biotypes resistant to Pegasi Haloxyfop 520 EC Herbicide 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 Pegasi Haloxyfop 520 EC Herbicide or other inhibitors of acetyl CoA carboxylase.

	Since the occurrence of resistant weeds is difficult to detect prior to use, Nagarjuna Agrichem (Australia) Pty Ltd accepts no liability for any losses that may result from the failure of this product to control resistant weeds. Strategies to minimize the risk of herbicide resistance are available. Contact your farm chemical supplier, consultant, local Department of Agriculture, or Nagarjuna Agrichem (Australia) Pty Ltd representative.

Precautions:	

Protections:	PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS • Pegasi 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 (12) weeks of application may be damaged by the residual effects of Pegasi 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 Pegasi Haloxyfop 520 EC Herbicide is toxic to fish. DO NOT contaminate streams, rivers or watercourses with the chemical or used container.

Storage and Disposal:	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, clay granules or cat litter 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 the wash liquid for disposal as described above.

Safety Directions:	SAFETY DIRECTIONS Harmful if swallowed. Will irritate the eyes and skin. Avoid contact with eyes and skin. When opening the container, preparing the spray and using the prepared 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 Instructions:	FIRST AID

	If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 13 1126. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

First Aid Warnings:	

DIRECTIONS FOR USE

Table 1a: **Winter Crops – Canola, Chickpeas, Faba beans, Field peas, Lentils, Linola, Linseed Lupins, Lucerne, Vetch, Medic and Clover pastures or seed crops(See *table 1b* for crop stages):**

WEEDS CONTROLLED	WEED GROWTH STAGE	RATE		CRITICAL COMMENTS
		With Penatrol [1] Spray Oil	With a Non-ionic Wetter [2]	
Annual Ryegrass	2 to 4 leaf	75 mL/ha	100 mL/ha	**CANOLA, LINOLA AND LINSEED** DO NOT apply after the 8th 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. **[1] [2] See GENERAL INSTRUCTIONS Spraying oils/wetters section.** **<u>FIELD PEAS AND CANOLA:</u>** The only oil recommended for use with Pegasi Haloxyfop 520 EC is Penatrol Spray Oil*. Pegasi Haloxyfop 520 EC + Lontrel* 750SG + Penatrol Spray Oil are compatible and selective to canola. This tank-mix is also compatible with atrazine and selective to triazine tolerant canola. **<u>LUPINS AND FIELD PEAS:</u>** Mixtures with Brodal* or simazine may cause crop yellowing and separate applications are recommended. **<u>CHICKPEAS, FABA BEANS, LENTILS AND VETCH, LINOLA, LINSEED:</u>** Broadleaf herbicides should not be added to Pegasi Haloxyfop 520. Apply Pegasi Haloxyfop 520 EC and broadleaf herbicides at least a week apart. **<u>LUCERNE, CLOVER OR MEDIC PASTURES:</u>** 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 Pegasi Haloxyfop 520 EC plus a non-ionic wetter.
	Early tillering	100 mL/ha	100 mL/ha	
Barley grass Brome grass Paradoxa grass Volunteer cereals	2 to 4 leaf	50 mL/ha	75 mL/ha	
	Early tillering	75 mL/ha	100 mL/ha	
Wild oats WA, SA, Vic, Tas, Southern and Central NSW	2 to 4 leaf	37.5 mL/ha	50 mL/ha	
	Early tillering	50 mL/ha	75 mL/ha	
Wild oats Northern NSW & Qld	2 to 4 leaf	50 mL/ha	75 mL/ha	
	Early tillering	75 mL/ha	100 mL/ha	

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, Linseed	Apply from 2nd 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 2nd leaf, 2nd node or 2nd branch prior to flowering.

Table 2a: **Lucerne, Medic and Clover seed crop s and pastures.**
See *table 1b* for crop stages.

WEEDS CONTROLLED	WEED GROWTH STAGE	RATE With Penatrol[1] Spray Oil	CRITICAL COMMENTS
Prairie grass *(Bromus catharticus)*	Up to early tillering	100 mL/ha	**[1] 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/m². Use the higher rate when weed populations are above 100 plants/m² or when crop or pasture competition is poor. **NOTE:** Storksbill may not be controlled if simazine or Broadstrike* are tank-mixed with Pegasi Haloxyfop 520. **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/Wetter section). If silver grass (*Vulpia* spp.) is present in pasture, simazine should be tank-mixed with the higher rate of Pegasi 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 to 75 mL/ha [3]	
Long or shiny leaf Storksbill *(E. botrys)*	Up to 8 leaf or 5 cm diameter	75 to 100 mL/ha	

Table 2b: **Lucerne, Medic and Clover seed crops only – not to be used for stockfeed. See *Table 1b* for crop stages.**

Couch grass (suppression), Rhodes grass (control)	Tillering seedlings	150 mL/ha + 150 mL/ha [4]	[4] For best suppression of couch or control of Rhodes grass, make two (2) applications of Pegasi Haloxyfop 520 EC Herbicide 2 to 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 to 800 mL/ha	

Table 3a: **Summer crops – Cotton, Cowpea, Lucerne, Mung beans, Navy beans, Peanuts, Soybeans, Sunflowers.**

WEEDS CONTROLLED	WEED GROWTH STAGE	RATE With Penatrol [1] Spray Oil	CRITICAL COMMENTS
Australian millet	2 leaf to tillering up to 15 cm	150 mL/ha	**[1] See GENERAL INSTRUCTIONS, Spraying Oils/wetters section.** **<u>NAVY BEANS, PEANUTS, SOYBEANS:</u>** For broadleaf weed control, Pegasi 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 Pegasi Haloxyfop 520 EC if grasses have begun tillering or if the grasses are under moisture stress. **DO NOT** add Penatrol Spray Oil when mixing with Blazer or Basagran. **DO NOT** use Blazer or Basagran tank-mixes on cowpea.
Barnyard grass	2 to 5 leaf	100 mL/ha	
	Tillering up to 15 cm	150 mL/ha	
Crowsfoot grass Green panic Johnson grass (rhizome)	2 leaf to tillering up to 15 cm	150 mL/ha	
Johnson grass (seedling) Liverseed grass (seedling) Mossman river grass	2 to 5 leaf	100 mL/ha	
	Tillering and up to 15 cm	150 mL/ha	
Summer grass	2 leaf to tillering up to 15 cm	150 mL/ha	
Volunteer cereals	2 to 4 leaf	100 mL/ha	
	Tillering up to 15 cm	150 mL/ha	

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 With Penatrol Spray Oil [1]	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	<u>*Perennial grasses*</u>*:* Couch Rhodes grass Slender rats tail grass	Established stands	400 to 800 mL/ha	**[1] See GENERAL INSTRUCTIONS, Spraying Oils/Wetter 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 to 100 mL/ha if the main weed is *E. botrys*. Use 50 to 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 mL/ha	
			Late tillering	400 mL/ha	
		<u>*Annual grasses:*</u> 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 mL/ha	
Forestry: *Pinus radiata* *Eucalyptus* spp.					
Forestry: *Pinus pineaster*		<u>*Annual grasses:*</u> As above	Vegetative to tillering	125 to 250 mL/ha	
Pyrethrum		Barley grass Brome grass Rope twitch Barnyard grass *Erodium* spp. Volunteer cereals	Vegetative to tillering	100 to 250 mL/ha	

Table 5: **Pegasi Haloxyfop 520 EC and Clethodim Herbicide tank-mixes – Canola, Chickpeas, Faba beans, Field peas, Lupins, Lentils.**

WEEDS CONTROLLED	WEED GROWTH STAGE	RATE		CRITICAL COMMENTS
		Pegasi Haloxyfop 520 EC	Clethodim Herbicide	
FOP/DIM susceptible **Annual ryegrass +** Volunteer barley Volunteer wheat Brome grass Wild oats Barley grass Phalaris	2 to 4 leaf	25 mL/ha	150 mL/ha	**See GENERAL INSTRUCTIONS, Spraying Oils/wetters section.** Use Penatrol Spray Oil at 500 mL/100L or Effectivoil* at 1 L/100L. 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 mL/ha	150 mL/ha	
FOP resistant **Annual ryegrass +** Volunteer barley Volunteer wheat Brome grass Wild oats Barley grass Phalaris	2 to 4 leaf	25 mL/ha	200 mL/ha	
	Early tillering	38 mL/ha	250 mL/ha	

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 (eg: Clopyralid 300 Herbicide) and allow agitation for approximately one minute.
- Then add Pegasi Haloxyfop 520 EC at the point where agitation is strongest. (**DO NOT add Pegasi Haloxyfop 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 (eg: Clopyralid 750 WG or Mite-Master, these should be **added after the Pegasi Haloxyfop 520 EC** to the half-full spray tank ensuring vigorous agitation.
- Finally add Penatrol Spray 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. Pegasi Haloxyfop 520 EC and any other tank mixes should be applied immediately for best results.

Spraying Oils/wetters

[1] **Spraying Oils:** It is essential to add an adjuvant to Pegasi Haloxyfop 520 EC. Best results will be achieved with Penatrol Spray 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 L/100 L and add a non-ionic wetter (surfactant) at 200 mL/100 L of spray solution. **Use of an oil is not always recommended.** See Critical Comments for specific situation recommendations.

[2] **Non-ionic Wetters:** When Penatrol 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 Pegasi 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 Penatrol or 500 mL/ha for oils other than Penatrol or less than 100 mL/ha of wetter.

CANOLA, LUCERNE, MEDIC AND CLOVER PASTURES AND SEED CROPS:

When tank mixing Pegasi Haloxyfop 520 EC with Clopyralid herbicides (canola only) or Broadstrike (lucerne, clover and medics), use Penatrol Spray Oil with the lower rates of Pegasi Haloxyfop 520 EC or a wetting agent with the higher rates of Pegasi Haloxyfop 520 EC unless otherwise specified. When mixing Pegasi 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 Penatrol Spray Oil. Effectivoil is also recommended for use with tank mixtures of Pegasi Haloxyfop 520 EC and Clethodim Herbicide.

For canola, Pegasi Haloxyfop 520 EC + Clopyralid 750SG + Penatrol Spray 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: Pegasi Haloxyfop 520 EC Herbicide can be tank mixed with:

Insecticides:	dimethoate Chlorpyrifos Mite Master 290 Insecticide
Herbicides:	atrazine Basagran Blazer Broadstrike Herbicide Clopyralid 300 Clopyralid 750SG MCPA ester (LVE) – **DO NOT** exceed 700 mL/ha of MCPA LVE Oryzalin Clethodim Herbicide simazine Fluroxypyr 200 Herbicide
Fungicides:	mancozeb 750 WG Dithane Rainshield Neo Tec
Trace Elements:	magnesium sulphate Zinc sulphate

Pegasi 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 Pegasi Haloxyfop 520 EC Herbicide when applied by air, except for addition of Lontrel Forestry Herbicide for use in forestry and Clopyralid 750 SG for use in canola only.

Application
Apply Pegasi Haloxyfop 520 EC Herbicide in sufficient water to obtain good coverage. It should be applied by an accurately calibrated ground rig or aircraft delivering droplets of a MEDIUM or MEDIUM TO COARSE spray droplet size category.

The following spray volumes are recommended:	Ground application:	50 to 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 Pegasi Haloxyfop 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 Pegasi 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 (eg: 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.