

Product Name: Agro-Essence Clopyralid 600 Herbicide  
APVMA Approval No: 95549/146318



Label Name:	Agro-Essence Clopyralid 600 Herbicide
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Signal Headings:	CAUTION KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING
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Constituent Statements:	ACTIVE CONSTITUENT: 600 g/L CLOPYRALID present as the acid and triisopropanolamine salt
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Mode of Action:	GROUP 4 HERBICIDE
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Statement of Claims:	For the control of a wide range of broadleaf weeds in wheat, barley, triticale, oats, pastures, canola, fallow land, forests and industrial situations as specified in the Directions for Use.
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Net Contents:	5 – 1000 L
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Restraints:	<p><b>CROPS PASTURES AND FALLOW LAND RESTRAINTS</b></p> <p>DO NOT apply to weeds, which may be stressed (inactive growth) due to prolonged periods of extreme heat or cold, moisture stress (water logging or drought) or previous herbicide treatment as reduced levels of control may result.</p> <p>DO NOT spray if rain is likely within 3 hours.</p> <p>DO NOT apply immediately before sowing susceptible crops, or sow susceptible crops into paddocks treated the previous year with Agro-Essence Clopyralid 600 Herbicide until after the required plantback period has elapsed (see PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS section).</p> <p>DO NOT compost material from treated plants or crops before reading the PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS section.</p> <p><b>FORESTS RESTRAINTS</b></p> <p>DO NOT apply to weeds which may be stressed (inactive growth) due to prolonged periods of extreme heat or cold, moisture stress (waterlogging or drought) or previous herbicide treatment as reduced levels of control may result.</p> <p>DO NOT spray if rain is likely.</p>
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	<p><b>SPRAY DRIFT RESTRAINTS</b></p> <p>Specific definitions for terms used in this section of the label can be found at <a href="http://apvma.gov.au/spraydrift">apvma.gov.au/spraydrift</a></p> <p>DO NOT allow bystanders to come into contact with the spray cloud.</p> <p>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.</p> <p>DO NOT apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.</p> <p>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 exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.</p>
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Directions for Use:	This section contains file attachment.
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Other Limitations:	
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Withholding Periods:	<p><b>Harvest</b></p> <p>Cereals: DO NOT HARVEST FOR 10 WEEKS AFTER APPLICATION.</p> <p>Canola: DO NOT HARVEST FOR 12 WEEKS AFTER APPLICATION.</p> <p>Forest: NOT REQUIRED WHEN USED AS DIRECTED.</p> <p><b>Grazing</b></p> <p>Cereals, canola, pastures and fallow land: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 7 DAYS AFTER APPLICATION.</p> <p>Forests, except Pinus radiata plantations: DO NOT GRAZE FOR 7 DAYS AFTER APPLICATION.</p> <p>Pinus radiata plantations: DO NOT GRAZE FOR 14 DAYS AFTER APPLICATION.</p>
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Trade Advice:	
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General Instructions:	This section contains file attachment.
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Resistance Warning:	<p><b>RESISTANT WEEDS WARNING</b></p> <p><b>GROUP 4 HERBICIDE</b></p> <p>Agro-Essence Clopyralid 600 Herbicide is a member of the Pyridines group of herbicides. Agro-Essence Clopyralid 600 Herbicide has the disrupters of plant cell growth mode of action. For weed resistance management, Agro-Essence Clopyralid 600 Herbicide is a Group 4 herbicide. Some naturally occurring weed biotypes resistant to Agro-Essence Clopyralid 600 Herbicide and other Group 4 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 Agro-Essence Clopyralid 600 Herbicide or other Group 4 herbicides. Since occurrence of resistant weeds is difficult to detect prior to use, Agro-Alliance (Australia) Pty Ltd accepts no liability for any losses that may result from the failure of Agro-Essence Clopyralid 600 Herbicide to control resistant weeds. Strategies to minimise the risk of</p>
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	herbicide resistance are available. Contact your farm chemical supplier, consultant, local Department of Agriculture, or Agro-Alliance (Australia) Pty Ltd representative.
Precautions:	<p><b>Re-entry periods</b>  DO NOT allow entry into treated areas until the spray has dried when applying to barley, oats, triticale, wheat, forests (except in control of cape ivy), rights-of-way, industrial situations, and canola, unless wearing cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Clothing must be laundered after each day's use. DO NOT allow entry into treated areas until the spray has dried to undertake low exposure activities (i.e. irrigation, or weeding) and for 8 days after application to undertake high exposure activities (i.e. pruning, training) when applying to control cape ivy in forests, unless wearing cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Clothing must be laundered after each day's use. DO NOT allow entry into treated areas until the spray has dried to undertake low exposure activities (i.e. irrigation) and for 9 days after application to undertake high exposure activities (i.e. hand weeding, transplanting) when applying to pastures and fallow land, unless wearing cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Clothing must be laundered after each day's use. DO NOT allow entry into treated areas until the spray has dried to undertake low exposure activities (i.e. irrigation, scouting or weeding) and for 17 days after application to undertake high exposure activities (i.e. pruning, training) when applying to Pinus radiata plantations, unless wearing cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Clothing must be laundered after each day's use.</p> <p><b>Precautions</b>  When applying to plantation trees including Pinus radiata plantations the following restriction statement applies: Must use closed mixing and loading for aerial application. When applying to forests to control groundsel bush, ragwort, silver wattle and cape ivy, the following restriction statement applies: DO NOT apply by using spraying equipment carried on the back of the user.</p>
Protections:	<p><b>PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS</b>  DO NOT apply under weather conditions, or from spraying equipment that may cause spray drift onto nearby susceptible plants/crops, cropping lands or pastures.</p> <p>Composts and mulches - DO NOT apply Agro-Essence Clopyralid 600 Herbicide to crops or pastures that will be used for the production of compost or mulches or mushroom substrate. Such compost or mulch made from plant material treated with Agro-Essence Clopyralid 600 Herbicide may cause damage to susceptible crops and plants. Susceptible crops and plants include, but are not limited to chickpeas, clover, cotton, faba beans, field peas, fruit trees, lentils, lupins, lucerne, medics, ornamentals, potatoes, safflower, tomatoes, vegetables, grape and kiwifruit vines, vetches, and wattles. Field peas, faba beans, lentils and vetches are particularly susceptible and should not be sown the season following an application of Agro-Essence Clopyralid 600 Herbicide at 250 mL/ha.</p> <p><b>PROTECTION OF LIVESTOCK</b>  DO NOT graze or cut treated crops for stock food except as specified under WITHHOLDING PERIODS.</p> <p><b>PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT</b>  Agro-Essence Clopyralid 600 Herbicide has low toxicity to fish, birds, honey bees, livestock, earthworms and aquatic organisms. DO NOT contaminate streams, rivers or watercourses with chemical or used containers.</p>
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 seed. Triple rinse containers before disposal. Add rinsings to spray tank. DO NOT dispose

	<p>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 disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots, in accordance with relevant Local, State or Territory government regulations. DO NOT burn empty containers or product.</p> <p><b>SMALL SPILL MANAGEMENT</b></p> <p>Wear protective equipment (See SAFETY DIRECTIONS). Apply absorbent material such as earth, sand, clay granules or cat litter to the spill. Sweep up material for disposal when absorption is completed 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 as above, the wash liquid for disposal.</p>
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Safety Directions:	<p>Will irritate the skin. Will damage the eyes. May irritate the nose and throat. Avoid contact with eyes and skin. DO NOT inhale spray mist. When opening the container and preparing the product for use and using the prepared spray wear cotton overalls buttoned to the neck and wrist [or equivalent clothing], elbow-length chemical resistant gloves, goggles, and a disposable (mist) face mask covering mouth and nose.</p> <p>In addition, when opening the container and preparing the product for use for aerial spraying equipment, wear cotton overalls, over normal clothing, buttoned to the neck and wrist, elbow-length chemical resistant gloves, goggles, and a disposable (mist) face mask covering mouth and nose.</p> <p>In addition, if applying by spray equipment carried on the back of the user, wear cotton overalls, over normal clothing, buttoned to the neck and wrist and a washable hat, elbow-length chemical resistant gloves, goggles, and a disposable (mist) face mask covering mouth and nose.</p> <p>If product on skin immediately wash area with soap and water. If product or spray in eyes wash it out immediately with water. Wash hands after use. After each day's use wash gloves, goggles and contaminated clothing.</p>
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First Aid Instructions:	<p>If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 13 11 26, New Zealand 0800 764 766.</p>
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First Aid Warnings:	
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## DIRECTIONS FOR USE

IT IS ESSENTIAL to select a rate appropriate to weed size. Best results will be obtained when weeds are actively growing at treatment.

**Table 1. CROPS, PASTURES AND FALLOW LAND**

Crop	Crop stage	Weed	Weed stage	Rate mL/ha	State	Critical Comments
Barley, Oats, Triticale, Wheat	Pre-sowing	Capeweed	Up to 8 leaf and maximum 10 cm diameter	75 plus knockdown herbicide	WA only	<b>Pre-sowing:</b> This rate should only be used in tank mixture with formulations of paraquat/diquat or glyphosate.
	Post-sowing pre-emergence through to 3 leaf			75 plus diuron at labelled rates		<b>Post sowing pre-emergent to 3 leaf:</b> This rate should only be used in tank mixture with diuron for control of transplants. Refer to diuron label for specific rates.
	Early post-emergence (2 leaf to jointing)		Cotyledons to 6 leaf and maximum 5 cm diameter	75		<b>Early post-emergent:</b> Weeds should be growing actively and not larger than 5 cm diameter.
	4 to 5 leaf onwards	Capeweed, Soldier thistle	Up to 10 cm diameter (4 to 8 leaf)	150	NSW, ACT, Vic, SA, Tas, WA only	Weeds should be young and actively growing. Weeds will become stunted and not be competitive soon after application although final results may not show for some weeks.  Faba beans and lupins will only be suppressed.  Use 75 mL/ha rate only in combination with MCPA LVE.
		Volunteer chickpeas, lentils and safflower	Up to 6 leaf	125		
			Volunteer faba beans and lupins			
		Volunteer field peas	Maximum 10 cm high or 6 nodes	75		
				40 plus 700 mL/ha MCPA LVE		
		Volunteer medics and seedling lucerne	Up to 8 leaf	75		
		Volunteer sub-clover	Up to 6 leaf			

Crop	Crop stage	Weed	Weed stage	Rate mL/ha	State	Critical Comments
		Volunteer vetch	Runners up to 10 cm maximum 16 leaf	50 40 plus 700 mL/ha MCPA LVE		
Barley, Oats, Triticale, Wheat	4 to 5 leaf onwards	Prickly lettuce	4 to 6 leaf and maximum 8 cm diameter	75 plus 700 mL/ha MCPA LVE	NSW, ACT, Vic, SA, Tas, WA only	Weeds should be young and actively growing. Weeds will become stunted and will not be competitive soon after application although final results may not show for some weeks.
		Thistles including: Nodding, Saffron, Scotch, Slender, Spear, Stemless, Variegated	Rosettes up to 10 cm maximum diameter	25 plus 1.0 L/ha MCPA amine (500 g/L) or 25 plus 700 mL/ha MCPA LVE	NSW, ACT, Vic, SA, Tas, Qld, WA only	Use 75 mL/ha rate only in combination with MCPA LVE.
	5 leaf to late tillering	Skeleton weed	5 to 15 cm rosettes	250 plus 1.0 L/ha MCPA amine (500 g/L)	NSW, ACT, Vic, SA only	Weeds should be a minimum 5 cm in diameter, and growing actively. This rate will give control until harvest and substantially reduce weed numbers the following season.
Canola	2 to 8 leaf	Capeweed, Saffron thistle, Skeleton weed, Soldier thistle	Up to 10 cm diameter (4 to 8 leaf)	150	NSW, ACT, Vic, SA, Tas, WA, Qld only	Weeds should be young and actively growing. Weeds will become stunted and will not be competitive soon after application although final results may not show for some weeks. Skeleton weed will only be controlled until harvest.
		Volunteer chickpeas, Lentils, Safflower	Up to 6 leaf	125		Faba beans and lupins will only be suppressed.
		Volunteer faba beans, Lupins	Up to 4 leaf	125		For the control of annual grasses, Agro-Essence Clopyralid 600 Herbicide may be tank mixed with haloxyfop herbicides.
		Volunteer field peas	Maximum 10 cm high or 6 nodes	75		
		Volunteer medics, Seedling lucerne	Up to 8 leaf	75		
		Volunteer sub-clover	Up to 6 leaf	75		
		Volunteer vetch	Runners up to 10 cm maximum 16 leaf	50		
Pastures and fallow land	Post-emergence	Hardhead thistle (Creeping knapweed,	Actively growing plants	<b>Hand gun:</b> 250 mL/100 L of water <b>Boom spray:</b> 1 or 2 L/ha	Vic only	<b>NOTE: DO NOT USE ON LUCERNE. CLOVERS AND MEDICS WILL BE ELIMINATED FOR AT LEAST ONE YEAR. Victoria only:</b> Use the lower rate only on light soils (sand and sandy loam) where a

Crop	Crop stage	Weed	Weed stage	Rate mL/ha	State	Critical Comments
		Russian knapweed)		<b>Hand gun:</b> 250 mL/100 L of water <b>Boom spray:</b> 2 L/ha	Qld only	slightly lower degree of control is acceptable. Use the higher rate on all soil types where complete control is required. Addition of a wetting agent at label rates is recommended for treatment of hardhead thistle. Spray between September and April on actively growing plants for effective control. Thorough coverage is essential. Apply in 200 to 250 L of water/ha.
		Thistles including: Nodding, Variegated, Scotch, Spear, Slender, Saffron	Rosette stage prior to stem elongation. Treat rosette stage prior to stem elongation.	25 or 35 mL/ha plus 1 to 1.5L MCPA amine (500 g/L)/ha  <b>Drench gun:</b> 25 mL/1 L of water  <b>Hand gun:</b> 125 mL/100 L of water	NSW, ACT, Vic, Tas, SA, Qld only	<b>BOOM SPRAYING:</b> Use the higher rates of Agro-Essence Clopyralid 600 plus MCPA on multi-crowned plants or rosettes larger than 30 cm in diameter. Spraying may be done at any time during active growth, usually in early winter or spring. Avoid spraying during the dormant winter period or at any time when thistles are not actively growing. DO NOT spray flowering thistles.  <b>PRE-SPRAY MANAGEMENT:</b> The pasture should be slightly grazed prior to spraying to reduce clover and grass cover and expose the smaller thistles to the spray. The grazed pasture should be left for seven days to allow thistles to freshen prior to treatment.  <b>POST-TREATMENT MANAGEMENT:</b> Response of thistles to treatment with the Agro-Essence Clopyralid 600 plus MCPA mixture will be slow compared to the standard treatments with 2,4-D or MCPA. If possible delay grazing of sprayed thistles for 14 days after treatment.  <b>CLOVER DAMAGE:</b> The Agro-Essence Clopyralid 600 plus MCPA mixture can be very damaging to subterranean clover. The lower rate is no more damaging than label rates of 2,4-D or MCPA. The higher rate of the Agro-Essence Clopyralid 600 plus MCPA mixture will reduce the clover component of the pasture for about two months. Clover recovery will be quicker during periods of active growth.  <b>HANDGUN (Spot spray):</b> Treat from rosette stage to early flowering. Thorough spraying is necessary. <b>DRENCHGUN:</b> Apply 5 mL to rosette crown. To multicrown plants, apply 5 mL to each crown.
Pastures and fallow land	Post-emergence	Nodding thistle	Rosettes up to 20 cm diameter	50	NSW, ACT only	Apply the spray from September to October. Apply by boom spray only. DO NOT apply to thistles over 20 cm in diameter. When thistles are over 20 cm in diameter use Agro-Essence Clopyralid 600 plus MCPA (referred to above). <b>Clover Damage:</b> Damage to white clover will be no greater than damage with MCPA alone and less than damage from Agro-Essence Clopyralid 600 plus MCPA mixtures. Damage to sub-clover may be greater than with MCPA or 2,4-D alone. DO NOT use for spot treatment.

Crop	Crop stage	Weed	Weed stage	Rate mL/ha	State	Critical Comments
		Californian thistle	From early buds to flowering (December to February)	<b>Hand gun:</b> 125 mL/100 L of water <b>Boom spray:</b> 1 L/ha	Vic, Tas only	Addition of a wetting agent at label rates is recommended. Re-treatment of re-growth in the year following treatment will usually be necessary to achieve a high level of control. NOTE: Clovers and medics will be eliminated for at least one year.
Pasture, Forests, Rights-of Way, Industrial Situations	Post-emergence	Groundsel bush	Young seedlings to mature plants	<b>Hand gun:</b> 165 or 250 mL/100 L of water	Qld, NSW, ACT only	Spray foliage when growth is active. Use the lower rate on young seedlings and the higher rate on plants more than 2 m tall or when growth is slow.
Pastures		Silver wattle	Active growth spring to summer	<b>Hand gun:</b> 250 mL/ 100 L of water  <b>Boom and aerial spray:</b> 2.5 L/ha (weeds 30 cm to 2 m)  3.5 L/ha (weeds 2 to 4 m)  4.25 L/ha (weeds 4 to 8 m)	NSW, ACT, Vic, Tas only	For effective control apply when bushes are growing actively. Large trees will not show complete necrosis.  <b>HANDGUN:</b> Means high volume NOT low volume knapsack. Spray to give full coverage of leaves and stems. Add organosilicone surfactant at 200 mL/100L for optimum results. See General Instructions for handgun spraying.  <b>BOOM AND AERIAL SPRAYING:</b> For boom spraying apply in 150 to 200 L of water/ha. For aerial treatment apply in a minimum of 50 L/ha of water containing 25 to 50% by volume of anti evaporant oil. Must use closed mixing and loading for aerial application. Mix Agro-Essence Clopyralid 600 and water first and then add anti evaporant oil. Maintain continuous agitation. Clovers and other legumes will be eliminated for at least one year.

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

## Table 2. FORESTS

**DIRECTIONS FOR USE:** It is essential to select a rate appropriate to weed size. Best results will be obtained when weeds are actively growing at treatment.

### Pre-Planting: Boom and Aerial Application

**IMPORTANT NOTE:** For aerial application on plantation trees including *Pinus radiata* plantations, a closed mixing and loading system MUST be used.

FORESTS AND PLANTATION TREES INCLUDING <i>EUCALYPTUS</i> SPP., <i>CORYMBIA MACULATA</i> AND <i>PINUS RADIATA</i>				
Weeds controlled	Weed growth stage	Rate/ha	State	Critical Comments
Capeweed Thistles, Volunteer legumes, Flatweed, Fleabanes	Pre-emergent	1-3 L	All States	Use the higher rate for extended pre-emergence control (>3 months).
<b><i>PINUS RADIATA</i> only</b>				



Silver Wattle (suppression only)	Pre-emergence from seeds	3 L	NSW, ACT, Vic, Tas, SA only	For best results apply Agro-Essence Clopyralid 600 to bare soil just prior to Spring rain or when wattles are expected to germinate. Avoid application to heavy trash situations. A high level of suppression may not be achieved where rain does not fall for an extended period after application (>1 month), or where very high rainfall occurs after application (>1200 mm/yr).
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### Post-Planting: High Volume Spraying by Hand Gun

FORESTS AND PLANTATION TREES INCLUDING <i>EUCALYPTUS SPP.</i> , <i>CORYMBIA MACULATA</i> AND <i>PINUS RADIATA</i>				
Weeds controlled	Weed growth stage	Rate/100 L water	State	Critical Comments
Groundsel Bush	Young seedlings to mature plants	165-250 mL	Qld, NSW, ACT only	DO NOT apply by using spraying equipment carried on the back of the user. Spray foliage when growth is active. Use the lower rate on young seedlings and the higher rate on plants more than 2 m tall or when growth is slow.
Ragwort	Actively growing rosettes up to stem elongation and before flowering	100 to 150 mL	All States	DO NOT apply by using spraying equipment carried on the back of the user. Spray from the rosette to the shooting stage of growth. Use the higher rate on large multi-crown plants. Addition of a 1000 g/L non-ionic surfactant at 0.1% v/v is recommended. Add diquat (200 g/L) at 1 L/100 L water plus a surfactant after opening of the first flowers, to prevent the formation of viable seed. Where diquat is added use a directed spray to avoid tree injury.
Silver Wattle	Active growth Spring to Summer	250 mL	NSW, ACT, Vic, Tas, SA only	For effective control apply when bushes are growing actively. Large trees will not show complete necrosis. <b>Handgun:</b> Means high volume NOT low volume knapsack. DO NOT apply by using spraying equipment carried on the back of the user. (See General Instructions, Application). Spray to the point of run-off to give full coverage of leaves and stems. Add Pulse (organosilicone surfactant) at 200 mL/100 L for optimum results.
Cape Ivy	Any Growth Stage	1.65 L	Vic, Tas only	DO NOT apply by using spraying equipment carried on the back of the user. Apply by hand held weed wiper or CDA at dilutions with water at 1:3. Application may be made at any time of the year provided foliage is dry at the time. Avoid spraying non-target plants.

## Post-Planting: Boom and Aerial Application

**IMPORTANT NOTE:** For aerial application on plantation trees including *Pinus radiata* plantations, a closed mixing and loading system MUST be used.

FORESTS AND PLANTATION TREES INCLUDING <i>EUCALYPTUS</i> SPP., <i>CORYMBIA MACULATA</i> AND <i>PINUS RADIATA</i>				
Weeds controlled	Weed growth stage	Rate/ha	State	Critical Comments
Capeweed, Flatweed, Thistles (except Hardhead Thistle), Volunteer Legumes, Skeleton Weed	Actively growing rosettes, seedlings up to 15 cm diameter or height.	250 to 500 mL	All States	Cupping of the tip leaves and “weepy leader” symptoms may occur on certain <i>Eucalyptus</i> spp. and <i>Corymbia maculata</i> and are generally transient and DO NOT result in long-term injury. These symptoms may be more obvious at rates of 1 L/ha or higher or where mixtures are used on blue gum, shining gum and spotted gum. Where “weepy leader” effect is a concern use a directed spray. Use the 250 mL rate until 3 months post planting and the 500 mL rate for trees 3 months and older. Use the low rate only under ideal conditions with excellent weed growth and where knockdown control of small weeds is desired. Use the high rate where longer control is required of larger weeds. For the control of annual and certain perennial grasses, Agro-Essence Clopyralid 600 can be tank mixed with 520 g/L haloxyfop products. See also comments in Mixing section. Do not use paraffin oil adjuvants, use a 1000 g/L non-ionic surfactant at 0.1% v/v in tank mixes with 520 g/L haloxyfop products and Agro-Essence Clopyralid 600 on sensitive species such as blue gum, shining gum or spotted gum where rates of Agro-Essence Clopyralid 600 are more than 1 L/ha.
Capeweed, Flatweed, Fleabane, Thistles including Hardhead Thistle, Volunteer Legumes, Skeleton Weed	Actively growing rosettes and seedlings greater than 15 cm diameter or height up to stem elongation and before flowering.	1 L		
Californian Thistle	From early bud to flowering (December to February)	1 L	All States	For best control of California Thistle use a 1000 g/L non-ionic surfactant at 0.1% v/v. A second annual application may also be required for the best control.
Ragwort	Small rosettes to larger rosettes up to stem elongation and before flowering	500 mL to 1 L		Spray from the rosette to the shooting stage of growth. For small rosette seedling plants use the lower rate. For large rosette multicrown and/or perennial plants use the higher rate. Addition of a 1000 g/L non-ionic surfactant at 0.1% v/v is recommended. Add diquat (200 g/L) at 1 L/100L water plus a surfactant after opening of the first flowers, to prevent the formation of viable seed. Where diquat is added use a directed spray to avoid tree injury.
Sorrel (suppression only)	Actively growing rosettes, seedlings up to 15 cm diameter or height	3 to 4.25 L		Higher rates give better suppression. At rates greater than 3 L use a directed spray to avoid tree injury.
Silver Wattle	Active growth Spring to Summer (0.5 to 2 m tall)	2.5 L	NSW, ACT, Vic, Tas, SA only	For effective control apply when bushes are growing actively. Large trees will not show complete necrosis. For boom spraying apply in
	Active growth Spring to Summer (2 to 4 m tall)	3.5 L		

FORESTS AND PLANTATION TREES INCLUDING <i>EUCALYPTUS SPP.</i> , <i>CORYMBIA MACULATA</i> AND <i>PINUS RADIATA</i>				
Weeds controlled	Weed growth stage	Rate/ha	State	Critical Comments
	Active growth Spring to Summer (4 to 8 m tall)	4.25 L		150 to 200 water/ha. For aerial treatment apply in a minimum of 50 L/ha of water containing 25 to 50% by volume of anti-evaporant / petroleum spray oil. Mix Agro-Essence Clopyralid 600 and water first and then add petroleum spray oil. Maintain continuous agitation. At rates of 3.5 L and 4.25 L for <i>Eucalypt spp.</i> use a directed spray to avoid tree injury.

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## **GENERAL INSTRUCTIONS**

### **MIXING**

Half fill the spray tank with water and add the required amount of Agro-Essence Clopyralid 600 Herbicide and complete filling. Agitate continuously to ensure thorough mixing before and during application. Only mix sufficient chemical for each day's work.

**Aerial Application** – Plantation trees including *Pinus radiata* plantations: Closed mixing and loading system MUST be used.

### **Tank mixtures**

Wettable powder or dry flowable formulations should be added to the spray tank first, followed by suspension concentrates (flowables), aqueous concentrates, emulsifiable concentrate formulations (e.g. haloxyfop or MCPA LVE).

### **COMPATIBILITY**

Agro-Essence Clopyralid 600 Herbicide is compatible with the following:

**BROADLEAF HERBICIDES:** diuron 500 g/L, glyphosate 540 g/L K, glyphosate 360 g/L, glyphosate 450 g/L, MCPA amine, MCPA LVE, paraquat 250 g/L, paraquat/diquat, 2,4-D 625 amine.

**GRASS HERBICIDES ON BROADLEAF CROPS:** haloxyfop 520 g/L.

### **APPLICATION**

#### **BOOM SPRAYING CROPS and PASTURES**

Apply Agro-Essence Clopyralid 600 Herbicide in sufficient water to obtain good coverage. It should be applied by an accurately calibrated ground rig or aircraft, delivering Medium to Coarse droplets size and not less than 50 L/ha water volume for boom sprayers or not less than 20 L/ha for aerial applications.

**Hardhead thistle** – Use a spray volume of 200 to 250 L/ha of water.

**Silver wattle** – Use a spray volume of 150 to 200 L/ha of water by ground boomspray and a minimum spray volume of 50 L/ha by aircraft.

#### **Boom Spraying Plantation Trees**

Apply Agro-Essence Clopyralid 600 Herbicide in sufficient water to obtain good coverage. It should be applied by an accurately calibrated ground rig or aircraft, delivery Medium to Coarse droplets size and not less than 50 L/ha water volume for boom sprayers or not less than 20 L/ha for aerial application.

#### **HIGH VOLUME HAND GUN**

Apply the recommended mix to give full coverage of leaves and stems through a No. 6-8 tip at 700 to 1500 kPa. Spray volume for effective coverage of dense two metre high silver wattle should be 30 to 40 litres of spray per 100 m<sup>2</sup> (10 m x 10 m) of infestation. For larger areas an equivalent would be 3000 to 4000 litres per infested hectare.

### **CLEANING SPRAY EQUIPMENT**

Rinse water should be discharged onto a designated disposal area or, if this is unavailable, onto unused land away from desirable plants and water courses.

#### **PARTIAL CLEANING (before spraying other labelled or tolerant crops):**

After using Agro-Essence Clopyralid 600 Herbicide, empty the tank completely and drain the whole system. Thoroughly wash inside the tank using a pressure hose. Quarter fill the tank with clean water and circulate through the pump, line, hoses and nozzles. Drain and repeat procedure twice.

#### **COMPLETE CLEANING (before spraying susceptible crops):**

After using Agro-Essence Clopyralid 600 Herbicide, empty the tank completely and drain the whole system. Thoroughly wash inside the tank using a pressure hose. Quarter fill the tank with clean water and circulate as above, then drain. Quarter fill the tank again and add a liquid alkali detergent (e.g. Surf®, Omo®, Drive®) at 500 mL/100 L water and circulate throughout the system for at least fifteen

minutes. Drain, remove filters and nozzles and clean separately. Rinse inside the tank thoroughly using a pressure hose and flush system with clean water.

#### Plantback Periods:

Where Agro-Essence Clopyralid 600 Herbicide residue carry over from use rates of less than 250 mL/ha is suspected and susceptible crops are to be planted, test the treated area as follows:

- **Field bioassay** - where rain allows, plant a small area of the susceptible crop 4 to 6 weeks before desired planting date and take note of any symptoms of injury. If any herbicide symptoms are observed, only plant either canola or a cereal (see recommendation for northern and southern Australia below).
- **Pot bioassay** - where not practical to do field bioassay, plant a small number of seeds of the susceptible crop into pots containing soil from the treated field. Do this 4 to 6 weeks before desired planting date. If any herbicide symptoms are observed, only plant either canola or cereal (see recommendation for northern and southern Australia below).

#### Stubble from treated crops

Ensure that harvesters effectively spread crop straw and DO NOT leave a heavy 'header trail' after harvest. Burn (if legal in the area), bale and remove, slash or incorporate stubble as soon as practical after harvest and as long as possible before planting next year to allow microbial breakdown of any residues in straw. Heavy stubble loads may carry more residue into the following season. Where heavy stubble burdens and/or non-wetting soils exist and less than recommended rain amount have occurred from application to planting the susceptible crop (see below), only plant a Winter or Summer cereal or canola.

#### Planting crops following use of Agro-Essence Clopyralid 600 Herbicide in previous crop

Planting crops 'dry' without significant rain (see below) in the 'Autumn break' increases the risk of injury to susceptible crops. This practice should be avoided, or only plant a Winter or irrigated Summer cereal crop or canola. In severely dry conditions, where less than 30% of average annual rainfall and/or less than the minimum rain (see below) has fallen between application and planting the next year, only plant a Winter or irrigated Summer cereal or canola.

#### PLANTBACK PERIODS FOR SOUTHERN AUSTRALIA WINTER DOMINANT RAINFALL AREAS (Sth NSW, VIC, SA, WA):

**Required rain** – A minimum 25 mm rain event in the post harvest summer to autumn period, with a subsequent extended period of at least 1 week where the top 10 cm of the soil stays moist is required to enable breakdown of soil residues. Fastest residue breakdown will occur under good soil moisture and warm conditions, which promote microbial activity. Where significant rain (>25 mm) has fallen in Summer to Autumn, with soil wetting for at least one week, the following plantback periods apply:

Following Crops	Rate (mL/ha)	Plantback Interval (months)
Clover, chickpea, faba bean, field pea, lentils, lupins, medics and vetch	Up to 150	9
	150 to 250	12
	>250	24
Barley, canola, wheat, oats	All label rates	1 week

#### PLANTBACK PERIODS FOR NORTHERN AUSTRALIA SUMMER DOMINANT RAINFALL AREAS (Nth NSW, QLD):

Required rainfall before plantback:

**If planting susceptible summer crops** – at least 100 mm rain.

**If planting susceptible winter crops** – at least 150 mm rain.

This rain or irrigation should wet the soil for extended periods (at least one week). This is essential for breakdown of soil residues prior to planting susceptible crops.

**If planting a cereal or canola crop** - at least 50 mm of rain or irrigation is required to enable soil wetting for at least one week. Where these requirements have been met, the following plantback periods apply:

Following Crops	Rate and plantback interval	
	Up to 37.5 mL/ha	37.5 to 150 mL/ha
Chickpea, Cotton, Soybean, Sunflower	3 months	6 months
Lucerne	9 months	9 months
Maize, sorghum	1 week	2 weeks
Wheat, barley, oats, canola	1 week	1 week

Note: Susceptible crops should not be sown for at least 2 years where Agro-Essence Clopyralid 600 Herbicide at more than 150 mL/ha has been used in northern Australia.