

Company Name: AXICHEM PTY LTD
 Product Name: AC HOWL 360 BIO HERBICIDE
 APVMA Approval No: 65117/103663



Label Name:	AC HOWL 360 BIO 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:	360 g/L GLYPHOSATE PRESENT AS THE ISOPROPYLAMINE SALT
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Mode of Action:	GROUP M HERBICIDE
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Statement of Claims:	A non-selective herbicide for the control of a broad range of annual, perennial and aquatic weeds as indicated in the Directions for Use.
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Net Contents:	1000L 110L 200L 20L 5L 1L
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Restrains:	DO NOT disturb weeds by cultivation, sowing or grazing for 1 day after treatment of annual weeds and 7 days after treatment for perennial weeds. DO NOT treat weeds under poor growing conditions or dormant conditions as occur in drought, waterlogging, disease, insect damage or following frost. Reduced control may also occur when treating weeds heavily covered with dust or silt. Rainfall occurring up to 6 hours after application may reduce effectiveness. Heavy rainfall within 2 hours of application may wash the chemical off the foliage and a repeat treatment may be required.
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Directions for Use:	
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Withholding Periods:	NOT REQUIRED WHEN USED AS DIRECTED.
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General Instructions:	
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Resistance Warning:	<p>GROUP M HERBICIDE AC Howl 360 Bio Herbicide is a member of the glycine group of herbicides. AC Howl 360 Bio Herbicide has the inhibitors of EPSP synthase herbicides mode of action. For weed resistance management AC Howl 360 Bio Herbicide is a group "M" herbicide. Some naturally occurring weed biotypes resistant to AC Howl 360 Bio Herbicide and other group "M" 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 AC Howl 360 Bio Herbicide or other group "M" herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use, Axichem Pty Limited accepts no liability for any losses that may result from the failure of AC Howl 360 Bio Herbicide to control resistant weeds.</p>
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Precautions:	<p>DRIFT WARNING: DO NOT apply under meteorological conditions or from spraying equipment that could be expected to cause spray drift onto nearby susceptible plants, adjacent crops, crop lands or pastures. Equipment settings that produce fine droplets (150micron or less), winds over 8km/hr, inversion conditions, still air and hot dry days all contribute to drift.</p>
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Protections:	<p>PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS: DO NOT apply under meteorological conditions or from spraying equipment that could be expected to cause spray drift onto nearby susceptible plants, adjacent crops, crop lands or pastures. Avoid contact with foliage, green stems or fruit of crops, desirable plants and trees, since severe injury or destruction may result.</p> <p>PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT: DO NOT contaminate dams, rivers or streams with the product or used container. When controlling weeds near water, refer to label directions to minimise the entry of spray into the water.</p> <p>PROTECTION OF LIVESTOCK: There is no withholding period for grazing stock, but to give the product a chance to be efficiently absorbed by sprayed vegetation, it is recommended that livestock be kept clear of treated annual weeds for one day after spraying and for perennial weeds 7 days. For certain plants known to be toxic to stock, it is advisable to keep livestock away until complete browning occurs.</p>
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Storage and Disposal:	<p>Do not store the product in galvanised steel or unlined steel containers, as the product may react to produce hydrogen gas, which in turn could form a highly combustible gas that could explode if ignited by an open flame, or spark, lit cigarette etc. Store in the closed, original container in a cool, well ventilated area. DO NOT store for prolonged periods in direct sunlight. Triple or preferably pressure 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 and puncture containers and deliver empty packaging for appropriate disposal to an approved waste management facility. If an approved waste management facility is not available,</p>
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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.
Refillable Containers: Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.

Safety Directions:

Product will irritate the eyes and skin. Avoid the contact with eyes and skin. When preparing product for use wear elbow-length PVC gloves and face shield or goggles. When using controlled droplet applicator wear protective waterproof clothing and impervious footwear. After each use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use wash gloves and face shield or goggles and contaminated clothing.

First Aid Instructions:

If poisoning occurs contact a doctor or Poisons Information Centre (Phone Australia 13 11 26).

First Aid Warnings:

DIRECTIONS FOR USE

ANNUAL WEEDS – ALL STATES

WEEDS CONTROLLED	APPLICATION RATE	CRITICAL COMMENTS
<p>Amaranth (<i>Amaranthus</i> spp.) Barley grass (<i>Hordeum leporinum</i>) Barnyard grass (<i>Echinochloa crus-galli</i>), Brome grass (<i>Bromus</i> spp.) Caltrop (<i>Tribulus terrestris</i>) Canary grass (Annual phalaris) (<i>Phalaris</i> spp.), Capeweed (<i>Arctotheca calendula</i>), Cereals (volunteer wheat, barley, oats, sorghum), Chickweed (<i>Stellaria media</i>), Cobbler's pegs (<i>Bidens pilosa</i>), Deadnettle (<i>Lamium amplexicaule</i>) Doublegee (<i>Emex australis</i>) Fumitory (<i>Fumaria officinalis</i>) Ground cherry (<i>Physalis angulata</i>) Lesser swinecress (<i>Coronopus didymus</i>) Liverseed grass (<i>Urochloa panicoides</i>) Mintweed (<i>Saliva reflexa</i>) Paradoxa grass (<i>Phalaris paradoxa</i>) Paterson's Curse (<i>Echium plantineum</i>) Pigweed (<i>Portulaca oleracea</i>) Potato weed (<i>Galinsoga parviflora</i>) Ryegrass (<i>Lolium rigidum</i>) Saffron thistle (<i>Carthamus lanatus</i>) Spear thistle (<i>Cirsium vulgare</i>) Spiny burrgrass (<i>Cenchrus</i> spp.) Spurge (<i>Euphorbia</i> spp.) Sub. clover (<i>Trifolium subterraneum</i>) Thornapple (<i>Datura</i> spp.) Variegated thistle (<i>Silybum marianum</i>) Wild mustard (<i>Sisymbrium officinale</i>) Wild oats (<i>Avena</i> spp.) Wild turnip (<i>Brassica tournefortii</i>) Winter grass (<i>Poa annua</i>)</p>	<p>BOOM: 2-3L/ha</p> <p>HANDGUN: 500-700mL/100L</p> <p>KNAPSACK: 75-100mL/15L</p> <p>WIPER EQUIPMENT AND CONTROLLED DROPLET APPLICATIONS: See Application Section</p>	<p>All Weeds Spray actively growing plants. The taller the weed the higher the rate. As a guide use the higher rate when weeds are higher than 15cm.</p> <p>If residual activity is required, see section titled "Compatibility". To use a residual herbicide, use the herbicides that have been recommended as being compatible in accordance with their label rates.</p> <p>Use AC Howl 360 Bio Herbicide at rates indicated in the adjacent column.</p>

PERENNIAL WEEDS

WEEDS CONTROLLED	RATE			CRITICAL COMMENTS
	Boom L/ha	Knapsack mL/15L	Handgun Vol/100L	
Bamboo (<i>Bambusa</i> spp.)	-	150mL	1L	Apply to actively growing foliage and/or re-growth, which is between 1m and 2m tall. Cut stump: Dilute to 1:6 ie mix 1 part AC Howl 360 Bio Herbicide plus 6 parts water. Cut stems back to 20cm high, pour mixture hollow stem or wet the cut.
Bent grass (<i>Agrostis capillaries</i>)	2.5L	75mL	500mL	Apply to actively growing plants in late Spring when they have some seed-head development, but before Summer drought stress. Bent grass should NOT be grazed heavily at spraying. Follow-up management is required to limit seedling re-establishment. Full disturbance with a tyned implement should follow 10-21 days after spraying. Application of this product should be followed by a Summer crop and/or re-seeded pasture or crop in the following autumn.
Blady grass (<i>Imperata cylindrica</i>)	9L	200mL	1.3L	Spray at head stage while plants are in active growth stage.
Bracken (<i>Pteridium esculentum</i>)	9L	225mL	1.5L	For boom application, always add an organosilicone penetrant, (200mL per 100L spray) otherwise reduced results will occur. Addition of an organosilicone penetrant (200mL/100L spray) may also improve control with handgun application. Wiper application is recommended (see Wiper Equipment). Double pass application is required for PickWick equipment. Bracken should be slashed in Winter/Spring prior to treatment. Apply AC Howl 360 Bio Herbicide in March/May to fully unfurled actively growing fronds but prior to frosts. Visible symptoms may not be fully apparent until the next season. Complete control will not be achieved from one application. Repeat treatment is recommended, preferably associated with pasture improvement.
Carpet grass (<i>Axonopus</i> spp.)	3L	75mL	500mL	Spray at early head stage while in active growth stage.
Cocksfoot (<i>Dactylis glomerata</i>)	3L	100mL	700mL	Spray at early head stage while in active growth stage.
Couch (<i>Cynodon dactylon</i>)	9L	200mL	1.3L	Spray at early head stage (late Spring).
Flatweed (Cats Ear) (<i>Hypochoeris radicata</i>)	3L	100mL	700mL	Spray at early flowering stage to fully developed rosettes.
Glyceria (<i>Glyceria maxima</i>)	6L	150mL	1L	Apply to actively growing plants at mature head stage in late summer/autumn. Add a non-ionic surfactant (50-60% ai) at 200-250mL/100L. NOTE: Control of Glyceria is only allowable in dry drains and channels and margins of dams, lakes and streams. DO NOT apply to weeds growing in or over water. DO NOT spray across open bodies of water, and DO NOT allow spray to enter water. DO NOT allow water to return to dry channels within 4 days of application.
Guinea grass (<i>Panicum maximum</i>)	9L	200mL	1.3L	Spray at early head stage. Refer to Application Equipment section of the label: sub-heading Wiper Equipment as it can also be used.
Hoary Cress (<i>Cardaria draba</i>)	1.5L	75mL	500mL	Spray at late rosette to flowering stage, late July to September. At this time of year ensure frosts, waterlogging or possibly drought stress are not a restraint as plants need to be in active growth stage. Refer to Wiper Equipment section of this booklet if this use technique can be applied to the situation.

WEEDS CONTROLLED	RATE			CRITICAL COMMENTS
	Boom L/ha	Knapsack mL/15L	Handgun Vol/100L	
Johnson grass (<i>Sorghum halepense</i>), Kangaroo grass (<i>Themeda australis</i>), Kikuyu grass (<i>Pennisetum clandestinum</i>)	6L	150mL	1L	Spray at early head stage when plants are actively growing or refer to Wiper Equipment section of this booklet if that application technique is to be used on Johnson Grass.
Lovegrass, African (<i>Eragrostis curvula</i>)	6L	150mL	1L	Apply to actively growing plants. Re-treatment and/or pasture improvement is recommended to restrict seedling re-establishment.
<i>Ludwigia peruviana</i>	-	150mL	1L	Apply when actively growing and at or beyond the early bloom stage of growth, but before autumn colour changes occur. Thorough coverage is essential for best control.
Nutgrass (<i>Cyperus rotundus</i>) Does not refer to other Cyperus species which may be locally known as Nutgrass	6L	150mL	1L	Non-cultivated Situations - Apply to actively growing plants in late Summer/Autumn (Feb/Apr) when at least 20% have reached the head stage.
	3L+3L	100mL + 100mL	700mL + 700mL	If spraying is to be done on crop growing land, apply first spray in February which is about the time that 20-25% of plants have reached the heading stage. Then a second application is necessary about 2 months later which gives adequate time for full emergence to occur. Because underground runners are broken up by cultivation, individual nuts may spring up and repeat treatments may be needed to obtain a total control situation. On land that is primarily grazing or urban, spray in Feb/April period, so long as correct growing conditions are present. Again ensure that 20-50% of plants have reached the head stage.
Pampas grass (<i>Cortaderia</i> spp.)	-	150-195mL	1L-1.3L	Apply to actively growing plants during Spring, Summer or Autumn. Ensure complete coverage of the foliage. For best results apply after flowering. For easier access, large plants may be cut or burnt prior to spraying, but first allow regrowth to reach 1m. Use the higher rate on plants over 1m high. Low Volume Applications: Use 1:9 (10%) mixture of AC Howl 360 Bio Herbicide: water. Apply 2 x 2mL per 0.5m height. Ensure spray contacts all foliage.
Paragrass (<i>Brachiaria mutica</i>)	9L	195mL	1.3L	Apply to actively growing plants at the early head stage.
Paspalum (<i>Paspalum dilatatum</i>)	6L	150mL	1L	Spray at early head stage when plants are in active growth.
Pellitory (<i>Parietaria judaica</i>)	-	150mL	1L	Apply to actively growing plants prior to seeding. Repeat applications may be necessary to control seedlings and/or regrowth.
Phalaris (<i>Phalaris aquatica</i>)	3-6L	75-150mL	500mL-1L	For medium to longer term control, use the high rates while plants are in active growth phase during Winter/Spring. The lower rates may be used in conjunction with burning (fire breaks). This will give a brow out and better burning conditions. Leave for 2-3 weeks after spraying before burning.
Plantains (<i>Plantago</i> spp.)	3L	100mL	700mL	Spray when plants have reached the early head stage. Bear in mind that plantains are slow to develop toxicity symptoms.
Prairie grass (<i>Bromus unioloides</i>), Qld Blue grass (<i>Dichanthium sericeum</i>), Red-leg grass (<i>Bothriochloa ambigua</i>), Rhodes grass (<i>Chloris gayana</i>)	6L	150mL	1L	Spray at early head stage of heading while plants are in active growth phase.
Rope Twitch (<i>Agropyron repens</i>)	6L	150mL	1L	Leave ground in a dormant state for 8 months prior to spraying in late Summer/Autumn, so that the foliage to uptake the product is fully available (at least 20cm in height). Ensure drought stress conditions do not exist at time of spraying.

WEEDS CONTROLLED	RATE			CRITICAL COMMENTS
	Boom L/ha	Knapsack mL/15L	Handgun Vol/100L	
Silverleaf Nightshade (<i>Solanum eleagnifolium</i>)	-	300mL	2L	Spray actively growing plants when good soil moisture is present. Spray when plants are in the late flowering to berry stage. Follow up sprays will be required to maximise control.
Sorrel (<i>Rumex acetosella</i>)	6L	150mL	1L	Spray at bud stage so long as plants are in an active growth phase. See also Conservation Tillage section.
Soursob (<i>Oxalis pes-caprae</i>)	1.5L	75mL	500mL	Best results can be obtained by late Winter/early Spring sprays. Ensure that foliage is in a healthy, actively growing stage at time of spraying. See also Conservation Tillage section.
St. John's Wort (<i>Hypericum perforatum</i>)	3L	75mL	500mL	Spray at the flowering to post-flowering stage in the Summer/Autumn period. As spraying is only part of the total management concept of pasture improvement, follow-up sprays may be needed.
Thistle, Artichoke (<i>Cynara cardunculus</i>)	3L	75mL	500mL	Spray when plants have reached rosette/early heading stage. Plant should be free of soil deposits, particularly when spraying along roadsides.
Thistle, Californian (<i>Cirsium arvense</i>)	6L	150mL	1L	Spray at the flowering stage. As spraying is only part of the total management concept of pasture improvement, follow-up sprays may be needed.
Yorkshire Fog (<i>Holcus lanatus</i>)	3L	100mL	700mL	Spray when plants have reached the early heading stage and are in an active growth phase.

BRUSH AND WOODY WEEDS

WEEDS CONTROLLED	RATE		CRITICAL COMMENTS
	Handgun/ knapsack Vol/1L	Low Volume AC Howl 360 Bio Herbicide: Water	
Bitou Bush/ Boneweed (<i>Chrysanthemoides monilifera</i>)	5 or 10mL	1:29 or 1:19	Apply to actively growing plants. Do not treat plants which are stressed, particularly drought stressed. Spray to wet all foliage. Best results achieved when treated during winter at peak flowering. Use the higher rate on bushes over 1.5m. Follow-up treatment may be required to prevent re-establishment. Low Volume Applications (gas gun and splatter gun); ensure spray contacts all foliage. Use the higher rate (1:19L) on bushes over 1.5m high.
Blackberry (<i>Rubus fruticosus L.agg</i>)	10-13mL	-	Apply from flowering to leaf fall (generally Jan- May). Spray plants which are not under stress due to high temperatures, drought or frost. Spray thoroughly to wet all foliage. Use the higher rate for dense old stands over 2m high. Further treatment may be needed to control seedlings and regrowth. Symptoms may be slow to appear and may not be apparent until next season. Burning (after complete brownout), pasture improvement and/or further treatment are recommended to control seedlings and/or regrowth. Use of CDA equipment is not recommended. In Tasmania, do not treat bushes bearing mature fruit.
Boxthorn, African (<i>Lycium ferocissimum</i>)	7-10mL	-	Spray to wet all foliage. Use the lower rate for young bushes and the higher rate for bigger bushes. DO NOT spray if conditions are hot and dry. Burning (after complete brownout), pasture improvement and/or further treatment are recommended to control seedlings and/or regrowth. Use of CDA equipment is not recommended.
Gorse (Futze) (<i>Ulex europaeus</i>)	10mL plus organosilicone penetrant 2mL	-	May be applied at any time of year but plants must be actively growing. Always add an organosilicone penetrant to ensure good results. Spray to wet all foliage. Burning (after complete brownout), pasture improvement and/or further treatment is recommended to control seeding and/or regrowth.

WEEDS CONTROLLED	RATE		CRITICAL COMMENTS
	Handgun/ knapsack Vol/1L	Low Volume AC Howl 360 Bio Herbicide: Water	
Groundsel Bush (<i>Baccaris halmifolia</i>)	7-10mL	1:9	Apply to actively growing plants using the higher rate on bushes over 2m tall. Do not apply during Summer drought stress conditions or in Winter. Spray to wet all foliage. Further treatment and/or pasture improvements are recommended to control seedlings and/or regrowth. Low Volume Application (eg splatter gun and gas gun): Use 1:9 (10%) mixture of AC Howl 360 Bio Herbicide: water. Apply 2 x 2mL dose per 0.5m bush height. Ensure spray contacts all foliage. Use of CDA equipment is not recommended.
Hawthorn (<i>Crataegus</i> spp)	10-13mL	1:9	Spray from flowering to leaf fall when plants are actively growing. Use the higher rate for plants over 2m high. Spray to thoroughly wet all foliage. Burning (after complete brownout), pasture improvement and/or further treatment is recommended to control seeding and regrowth. Low Volume (eg splatter gun and gas gun): Use 1:9 (10%) mixture of AC Howl 360 Bio Herbicide: water. Apply 2 x 5mL dose per 0.5m bush height. Ensure spray contacts all foliage.
Lantana (<i>Lantana camara</i>)	10mL	1:9	Apply to plants with full foliage which are actively growing. Spray to thoroughly wet all foliage and individual plants. Do not spray during periods of summer drought stress. Burning (after complete brownout), pasture improvement and/or further treatment is recommended to control seeding and regrowth. The addition of an organosilicone penetrant (200mL/100L) may improve control. Low Volume Application (eg splatter gun and gas gun): Apply 2 x 2mL dose per 0.5m bush height. Ensure spray contacts all foliage. Sprinkler Sprayer: Apply 6mL of a 1:9 (10%) solution to every square metre of treated area. Use of CDA equipment is not recommended.
Mistflower (<i>Eupatorium riparium</i>)	5mL	1:9	Apply to plants with full foliage which are actively growing. Spray to thoroughly wet all foliage. Further treatment and/or pasture improvement are recommended to restrict seedling re-establishment. Sprinkler Sprayer: Apply 3mL at 1:9 (10%) solution to every square metre of treated area.
Sifton Bush/Chinese Scrub (<i>Cassina arcutata</i>)	10 or 13mL	1:9	Apply to actively growing plants ensuring complete coverage. Further treatment and/or pasture improvement are recommended to restrict seedling re-establishment and/or regrowth. For High Volume Application: Use the higher rate on bushes over 1m. Wiper Application: Double pass application is required. Best results are achieved if bushes are less than 1m tall and are green at time of application. Low Volume Application: Apply 40mL per 0.5m height.
Sweet Briar (<i>Rosa rubiginosa</i>)	15-20mL	1:9	Apply from late flowering to leaf fall to actively growing plants. Spray to thoroughly wet all foliage. Use the higher rate on bushes over 1.5m high. Burning (after complete brownout), pasture improvement and/or further treatment is recommended to control seeding and regrowth. Low Volume (eg splatter gun and gas gun): Apply 2 x 5mL dose per 0.5m bush height. Ensure spray contacts all foliage.

UNWANTED TREES

RESTRAINTS:

DO NOT apply to trees under stress or to trees that are not actively growing.

METHOD	TREE SPECIES CONTROLLED	TREE SIZE	RATE	CRITICAL COMMENTS
Stem injection	Flooded gum (<i>Eucalyptus grandis</i>), Ghost gum (<i>E. papuana</i>), Gum Topped Bloodwood (<i>E. dichromophlora</i>), Messmate Stringybark (<i>E. obliqua</i>), Narrowleaf Ironbark (<i>E. crebra</i>), Poplar Box (<i>E. poulnea</i>), Privet (<i>Ligustrum</i> spp), Rhus (<i>Toxicodendron succedaneum</i>), Silverleaf Ironbark (<i>E. melanophlora</i>), Swamp Mahogany (<i>Tristania suaveolens</i>), White Mahogany (<i>E.acmenoides</i>), Willows (<i>Salix babylonica</i>)	Basal diam to 25cm	Undiluted 1mL/cut	Use a specially calibrated applicator which can deliver 1 or 2mL. Make a cut at an oblique angle about 5cm deep. Ensure cut penetrates the bark to the sap stream and that AC Howl 360 Bio Herbicide is injected as soon as possible after the cut has been made. Cuts should be 13cm apart around the tree below any branching. Remove or treat branches below the cut. For multi-stemmed trees, treat each stem as an individual tree.
		Basal diam 25cm-60cm	Undiluted 2mL/cut	
	Camphor laurel (<i>Cinamonum camphora</i>)	Basal diam to 25cm	Mixture 1:1 Apply 2mL/cut	
		Basal diam 25cm-60cm	Undiluted 2mL/cut	
Foliar Application Low Volume (Gas Gun or splatter gun)	Bullich (<i>Eucalyptus megacarpa</i>), Marri (<i>E. calophylla</i>), Jarrah (<i>E. marginata</i>)	0-1.5m height	1:15 Add an organosilicone penetrant at 20mL/10L spray mixture	Dilute AC Howl 360 Bio Herbicide with water in the recommended ratio. Calibrate splatter gun to apply 5mL of AC Howl 360 Bio Herbicide per dose, as a fine spray. Apply 5mL per 0.5m of tree height. Ensure spray contacts all foliage.
	Eucalyptus spp.		1:5 Add an organosilicone penetrant at 20mL/10L spray mixture	
Foliar Application High Volume (Knapsack or handgun)	Eucalyptus spp. Willows (<i>Salix babylonica</i>)	0-2.0m height	1.0-1.3L per 100L For Eucalyptus spp. Add an organosilicone penetrant at 200mL/100L spray mixture	Spray to wet all foliage. Use the higher rate for trees 1.0-2.0m high.
Cut Stump	Jarrah (<i>Eucalyptus marginata</i>), Long Leaf Box (<i>E. gonioclayx</i>), Marri (<i>E. calophylla</i>), Messmate Stringy-Bark (<i>E. obliqua</i>) Narrowleaf Peppermint (<i>E. radiata</i>)	1-10cm basal diam	1:15	Dilute AC Howl 360 Bio Herbicide with water in the recommended ratio. Cut the tree close to the ground and immediately wet stump surface using a splatter gun spray, swab or brush. Remove any branches on the stump and treat cut surface.
	Privet (<i>Ligustrum</i> spp), Rhus (<i>Toxicodendron succedaneum</i>)	0-30cm basal diam	1:1	

AQUATIC WEEDS

WEEDS CONTROLLED	RATE			CRITICAL COMMENTS
	Boom L/ha	Knapsack mL/15L	Handgun Vol/100L	
				Reduction in effectiveness may result if more than ¼ of the above ground portion of the weed is submerged at treatment. Submerging the treated plants following treatment may result in the spray being washed from the plant surface, thus reducing the effectiveness. DO NOT apply this product within 0.5km of potable water intake in flowing water (ie River or streams, etc) or within 0.5km of a potable water intake in a standing body of water such as a lake, pond or reservoir. Applications to moving bodies of water should be made while travelling up-stream, whenever possible to prevent concentration of this herbicide in water. When making any bankside applications, DO NOT overspray more than 0.5m into open water. Avoid spraying across moving bodies of water or where weeds do not exist. DO NOT ADD EXTRA SURFACTANT /WETTER, UNLESS IT IS APPROVED IN AQUATIC SITUATIONS. When spraying floating weeds, use a low volume, low pressure boom spray, CDA or sprinkler sprayer. DO NOT submerge the weeds when spraying as this may wash the herbicide off the leaves. When emerged infestations require the treatment of the total surface area of impounded water, treating the area in strips may avoid sudden impact on habitat.
Alligator Weed	-	150mL	1L	Apply when actively growing, from Summer through Winter. Floating form only.
Brown Beetle Grass	3L	75mL	500mL	Apply to actively growing plants. DO NOT apply to partially submerged plants.
Cumbungi (<i>Typha</i> spp),	9L	200mL	1.3L	Spray during Summer or Autumn period during the heading stage. Except for Tasmania, wiper equipment can be used. Refer to information on Application Equipment section of the label.
Paragrass (<i>Brachiara mutica</i>),				Spray at early head stage when plants are in active growth.
Phragmites Common Reed (<i>Phragmites australis</i>)				If the Wiper Technique is to be used, refer to Wiper Equipment section. Spray when plants are getting close to early head stage and actively growing. Spray symptoms may not be observed for a season or more.
Rushes (<i>Juncus</i> spp), Sedge – Tall (<i>Cyperus gracilis</i>)	See Critical Comments			Use Wiper technique ensuring a high percentage of green matter is present. Refer to Wiper Equipment section for directions for use.
Water Couch (<i>Paspalum distichum</i>)	9L	200mL	1.3L	Spray actively growing plants in February/March period. 75% of plants should be visible above the water line at time of spraying.
Water Hyacinth	6-9L	150-195mL	1-1.3L	Apply to actively growing plants at or beyond the early bloom stage of growth. Use the higher rate on dense infestations.
Water Lettuce	-			Best results are obtained from mid-Summer through to Winter. Use the higher rate on dense infestations.
Waterlilly, yellow	6L	150mL	1L	Apply when there is a maximum emergence of floating leaves. Allow 2-3 weeks for symptoms to develop, and then re-treat any unaffected plants. Use a low volume sprayer.

Conservation Tillage Situations - Land preparation prior to sowing:

Includes directions for use for: Land preparation prior to sowing (Winter crops, summer crops, fallow)	Situation	Weeds Controlled	Rate L/ha	Critical Comments
<ul style="list-style-type: none"> - pasture renovation - pasture topping - pasture manipulation - rice (direct drilling) - sugar cane (ratoon control) 	Where weed control is desired prior to sowing PASTURE or a WINTER CROP and prior to disturbing the area to be sown with cultivation or tyned implements at sowing	Amsinkia (<i>Amsinkia</i> spp), Fumitory (<i>Fumaria officinalis</i>), Lupins (volunteer) (<i>Lupinus albus</i>), Paterson's Curse/ Salvation Jane (<i>Echium plantagineum</i>), Saffron Thistle (<i>Carthamus lanatus</i>), Scotch Thistle (<i>Onopordum acanthium</i>), Spear Thistle (<i>Cirsium vulgare</i>), Variegated Thistle (<i>Silybum marianum</i>)	<12cm diameter: 1L-1.25L >12cm diameter: 1.25L-1.5L	<p>All Weeds: Spray when weeds are actively growing. Ensure regrowth is 6-8cm in height if intensive grazing occurred prior to spray time. Use higher rate if intensive grazing occurred prior to spraying OR if spraying is being carried out late in the season OR cold/overcast conditions are present at the time of spraying.</p> <p>Cultivation of Sowing: This may start 1-21 days after spraying. If Dock, Phalaris, Skeleton Weed, Soursob or Sorrel are present do not cultivate or sow for at least 7 days after spraying. Product will normally only give knockdown reduction in plant numbers and seasonal suppression of these weeds. If cultivation does not take place within 21 days, re-treatment may be necessary.</p> <p>Tank Mixes: Refer to section entitled Compatibility of this booklet if it is planned to spray in conjunction with a herbicide for residual control, improved performance of if you wish to uses an insecticide. Read label carefully for conditions of use.</p> <p>Tasmania Only: Use 1.5L/ha on annual weeds. Increase to 3L/ha where perennial weeds are being treated. Added surfactant is recommended at all spray volumes. To control clover and improve control of Sorrel and Dock, add 400mL/ha dicamba (500g/L). Observe plant back periods and directions on Dicamba label.</p> <p>Successful Crop Establishment: Early sprays to control young weeds will lead to establishing an ideal seed bed. If weed growth is heavy, sowing should be delayed until matter has decayed as the emerging crop shoots may be smothered and set back. Light cultivation to leave decaying matter on surface may help. If using residual type pre-emergent herbicides, seek out label directions that advise of risks associated with crop emergence.</p> <p>Perennial Weeds: For perennial Phalaris, Soursob, Skeleton Weed and Sorrel, this product will provide knockdown, seasonal suppression and reduction in treated plant numbers.</p>
	SOUTHERN AUSTRALIA	Annual Phalaris (<i>Phalaris paradoxa</i>), Annual Ryegrass (<i>Lolium rigidum</i>), Silver Grass (<i>Vulpia</i> spp)	Pre-tillering: 1L-1.25L Post-tillering: 1.25L-1.5L	
	Barley Grass (<i>Hordeum leporinum</i>), Brome Grass (<i>Bromus</i> spp), Cereals (volunteer)	Pre-tillering: 500mL-1L Post-tillering: 1L-1.25L		
	Capeweed (<i>Arctotheca calendula</i>), Doublegee (<i>Emex australis</i>)	<8cm diameter: 500mL – 1L >8cm diameter: 1L-1.25L		
	Perennial Phalaris (<i>Phalaris aquatica</i>), Skeleton Weed (Chondrilla juncea) (Spray only rosettes that have fully emerged – NSW only), Sorrel (<i>Rumex acetosella</i>), Soursob (<i>Oxalis pes-caprae</i>), Sub Clover (<i>Trifolium subterraneum</i>)	1.5L		
	Dock (Seedlings) (<i>Rumex obtusifolius</i>)	1L-1.25L		
	Where weed control is desired prior to sowing a Summer Crop or prior to the preparation of a fallow	Annual Ryegrass (<i>Lolium rigidum</i>), Brome Grass (<i>Bromus</i> spp), Capeweed (<i>Arctotheca calendula</i>), Paterson's Curse/ Salvation Jane (<i>Echium plantagineum</i>), Saffron Thistle (<i>Carthamus lanatus</i>), Scotch Thistle (<i>Onopordum</i>), Silver Grass (<i>Vulpia</i> spp), Spear Thistle (<i>Cirsium vulgare</i>), Wild Mustard (<i>Sisymbrium officinale</i>), Wild Radish (<i>Rhapanus raphanistrum</i>), Wild Turnip (<i>Brassica tournefortii</i>)	1.5L-2L	<p>All Weeds: Spray when weeds are actively growing. Ensure regrowth is 6-8cm in height if intensive grazing occurred prior to spraying. Add wetting agent to spray solutions at the recommended rate if Ryegrass is present. Use higher rates under following conditions: Grasses – full tillering.</p> <p>Broadleaf weeds – Stem elongation or budding. Lower rates should be used on younger stages of the weeds or where cultivation is to follow within three weeks.</p> <p>Tank Mixes: Refer to section entitled Compatibility if it is planned to spray in conjunction with a residual herbicide. Read label carefully for conditions of use.</p> <p>Hoary Cress: Spray from late rosette to early flowering stage.</p> <p>Soursob: Spray at tuber exhaustion.</p>
	SOUTHERN AUSTRALIA	Barley Grass (<i>Hordeum leporinum</i>), Cereals (volunteer), Wild Oats (<i>Avena</i> spp)	1L -1.5L	
	Hoary Cress (<i>Cardaria draba</i>), Soursob (<i>Oxalis pes-caprae</i>)	1.5L		

<p>Includes directions for use for: Land preparation prior to sowing (Winter crops, summer crops, fallow)</p> <ul style="list-style-type: none"> - pasture renovation - pasture topping - pasture manipulation - rice (direct drilling) - sugar cane (ratoon control) 	<p>Situation</p> <p>Where weed control is desired prior to sowing a SUMMER OR WINTER CROP in fallow situations</p> <p>NORTHERN AUSTRALIA</p>	<p>Weeds Controlled</p> <p>Amaranth (<i>Amaranthus macrarpus</i>), Annual Ground Cherry (<i>Physalis angulata</i>), Australian Bluebell (<i>Wahlenbergia gracilis</i>) (Qld only), Barnyard Grass (<i>Echinochloa</i> spp), Cudweed (<i>Gnaphalium</i> spp), Caltrop (<i>Tribulis terrestris</i>), Fumitory (<i>Fumaria officinalis</i>), Lovegrass (<i>Eragrostis curvula</i>), Mexican poppy (<i>Argemone ochroleuca</i>), Mintweed (<i>Salvia reflexa</i>), New Zealand Spinach (<i>Teratogonia tetragonoides</i>), Noogoora Burr (<i>Zanthium pungens</i>), Saffron Thistle (<i>Carthamus lanatus</i>), Sow Thistle (<i>Sonchus oleraceus</i>), Sorghum (Volunteer), Spear Thistle (<i>Cirsium vulgare</i>), Spurge (<i>Euphorbia</i> spp), Sunflower (volunteer) (<i>Helianthus annuus</i>), Turnip Weed (<i>Rapistrum rugosum</i>), Variegated Thistle (<i>Silybum marianum</i>), Wild Lettuce (<i>Lactuca serriola</i>), Wild Turnip (<i>Brassica tournefortii</i>)</p>	<p>Rate L/ha</p> <p>1L-1.5L</p>	<p>Critical Comments</p> <p>All Weeds: Spray when weeds are actively growing. Ensure regrowth is 6-8cm in height if intensive grazing occurred prior to spray time. DONOT spray weeds under stress from low moisture, frost, cold disease or waterlogging. Note that Barnyard Grass and Liverseed Grass are particularly prone to moisture stress.</p> <p>Rate Selection: Use lower rate on young weeds. Increase to higher rates as grasses gain fill tillering or as broadleaf weeds gain elongation/budding. At more advanced stages, some broadleaf weeds need a higher rate range or addition of 2,4-D.</p> <p>Tank Mixtures: Read label directions, restraints, plant back and withholding periods and safety directions. See Compatibility Section.</p> <p>Crop Establishment: Sowing should not proceed until conditions allow the formation of a satisfactory seedbed.</p> <p>All Weeds – Aerial Application: See Aerial Equipment section for instructions for use in high temperatures and dry conditions. DO NOT apply this product when temperatures exceed 30°C.</p> <p>For Annual Ground Cherry, Sow Thistle, Turnip Weed, Wild Lettuce, Wild Turnip use higher rate after stem elongation or budding.</p>
		<p>Annual Phalaris (<i>Phalaris paradoxa</i>), Barley Grass (<i>Hordeum leporium</i>), Cereals (volunteer), Wild Oats (<i>Avena</i> spp)</p>	<p>Rate L/ha</p> <p>500mL-1L</p>	

Pasture Renovation

SITUATION	APPLICATION RATE	CRITICAL COMMENTS
<p>A high predominance of Poa Tussock (<i>Poa labillardieri</i>) associated with annual weed situations.</p>	<p>3L-4L/ha</p>	<p>TIMING: Graze heavily, then remove stock at least 2 weeks before spraying to allow new growth. Apply to actively growing plants after the Autumn break but before heavy frosts (March-May).</p> <p>APPLICATION: Increasing to the higher rate may give more effective reductions. If aerial spraying see Aerial Equipment.</p> <p>FOLLOW-UP MANAGEMENT: Sowing may start from 2 weeks after spraying. It is essential that correct follow-up pasture establishment and management occurs after treatment. Spot treatment will limit re-infestation.</p>
<p>A high predominance of Bent Grass (<i>Agrostis tenuis</i>) associated with Annual weeds.</p>	<p>2.5L/ha</p>	<p>This rate will give control/suppression prior to planting improved pasture or crops. Spray in late Spring when weeds are in active growth phase and have a degree of seed head development. Remove stock to ensure full leaf growth 2-3 weeks after spraying using a tyned implement to disturb the soil and break up vegetative matter. Follow up by planting a summer crop and/or re-seeding pasture or crop next Autumn.</p>

Pasture Topping

SITUATION	WEEDS CONTROLLED	APPLICATION RATE	CRITICAL COMMENTS
Pasture topping to reduce seed set of Annual Grasses and Capeweed (<i>Arctotheca calendula</i>)	Annual Ryegrass (<i>Lolium rigidum</i>)	450mL/ha	Apply at flowering stage and prior to plants "haying off".
	Barley Grass (<i>Hordeum leporinum</i>), Brome Grass (<i>Bromus</i> spp), Silver Grass (<i>Vulpia</i> spp)	300mL-450mL/ha	Apply at the head to milky dough stage.
	Capeweed (<i>Arctotheca calendula</i>)		Apply at flowering stage and prior to plants "haying off". All Weeds: Ensure even regrowth by removing all stock prior to treatment. If pasture legumes are present their populations may be reduced. DO NOT apply if clover or medic crops, intended for seed are present. Water volumes of 50L/ha or less are preferable. If excess of this is required, add a wetting agent at recommended label rates.

Pasture Manipulation

SITUATION	STATE	WEEDS CONTROLLED	APPLICATION RATE	CRITICAL COMMENTS
Where certain pasture species need to be controlled or suppressed prior to the drilling of forage species of soybeans	NSW, Vic, WA only	Carpet Grass (<i>Xonopus</i> spp), Kikuyu Grass (<i>Pennisetum clandestinum</i>), Paspalum (<i>Paspalum dilatatum</i>)	1.4L-6L/ha	Use higher rates for control. Use lower rates for suppression.
	Qld only	Carpet Grass (<i>Xonopus</i> spp), Paspalum (<i>Paspalum dilatatum</i>)		
		Kikuyu Grass (<i>Pennisetum clandestinum</i>),	625mL-6L/ha	

Rice (Direct Drilling)

SITUATION	WEEDS CONTROLLED	APPLICATION RATE	CRITICAL COMMENTS
Sites where direct drilling of rice if to be carried out and site sprayed prior to direct drilling.	Annual Phalaris (Canary Grass) (<i>Phalaris</i> spp), Annual Ryegrass (<i>Lolium rigidum</i>), Barley Grass (<i>Hordeum leporinum</i>), Burr Medic (<i>Medicago</i> spp), Clover (sub) (<i>Trifolium subterraneum</i>), Winter Grass (<i>Poa annua</i>)	1L-1.3L/ha	All Weeds: Site preparation should ensure that if grazing has taken place regrowth should be 6-8cm tall before spraying. If drought conditions are present, pre-watering prior to spraying is recommended. If Ryegrass is present, use a wetting agent at recommended rates. When to sow: Direct drilling can be carried out 1day to 2 weeks after spraying. If a residual herbicide is to be used, refer to product's label instructions on mixtures and Rice application.

Sugar Cane (Ratoon Control)

SITUATION	VARIETY	APPLICATION RATE	CRITICAL COMMENTS
Sites where control of ratoon cane is required.	Q63, Q87, Q90, Q102, Q117, Q120, Q129, Q130, H56-752, Pindar, Triton	3L- 4L/ha	Spray only if ratoons are in active phase and are 60-100cm in height. DO NOT apply if plants are drought stressed or suffering effects of waterlogging. Ensure boom is at a height above the ratoon canopy that allows the correct overlap of the spray pattern. Use higher rates for control. Use lower rates for suppression if it is planned to follow up with cultivation.
	Q86, Q96, Q113	4L-5L/ha	
	Cassius, Q115, Q122, Q94	5L-6L/ha	
	NCQ 310, Q107	6L-9L/ha	

Vines and Tree Crops

SITUATION	WEEDS CONTROLLED	APPLICATION RATE	CRITICAL COMMENTS
Nuts (includes Almond, Pistachio, Macadamia, Pecan and Walnut), Pome Fruit, Litchi, Stone Fruit, Vineyards and Citrus Fruit	See specific weed tables	See specific weed tables	<p>All Trees and Vines: DO NOT spray near trees/vines less than 3 years old. DO NOT allow Wiper contact.</p> <p>AVOCADO, BANANA, GUAVA, KIWIFRUIT, LITCHI, MANGO, PAW PAW AND STONE FRUIT: Spray drift can cause damage if allowed to contact any part of the vine palm, trunk or tree. Be careful to avoid contact with split bark on Kiwifruit and green stems on Paw Paw.</p> <p>Citrus, Litchi, Olives, Pome Fruit, Nuts and Vineyards. DO NOT allow spray to contact any part of the plant.</p>
Avocado, Guava, Kiwifruit, Mango and Paw Paw			
Bananas			

General Uses

SITUATION	WEEDS CONTROLLED	APPLICATION RATE	CRITICAL COMMENTS
Dry Drains and Channels, Dry Margins of Dams, Lakes and Streams	For weeds controlled refer to list of species under Annual Weed Control and Perennial Weed Control.	For Application Rates refer to rates shown under Annual Weed Control and Perennial Weed Control	<p>See Critical Comments show for section and individual weeds under Annual Weed Control and Perennial Weed Control.</p> <p>Use situations include prior to nursery establishment, site preparation prior to planting and in established tree areas using shielded or directed sprays or selective wiper equipment.</p> <p>DO NOT allow spray or spray drift to come into contact with foliage or green bark of desirable trees or severe damage may occur. DO NOT allow wiper surface to come into contact with any part of the tree.</p> <p>This product does not provide residual control.</p>
Forestry			
Rights-of-Way, Domestic and Public Service Areas, Commercial and Industrial Areas and Around Buildings.			

Onions

SITUATION	WEEDS CONTROLLED	APPLICATION RATE	CRITICAL COMMENTS
Post-planting or pre-emergent applications	For weeds controlled refer to list of species under Annual Weed Control and Perennial Weed Control.	1L-3L/ha	Ensure that spraying is carried out well in advance of emergence of onion shoots (7 days). Otherwise severe phytotoxicity will occur if onion plant comes into contact with herbicide. Take into consideration height and type of weeds present in determining the exact rate. For small annual weeds use lower rates and for large annual weeds (as a guide greater than 15cm in height) and where perennial weeds are present, use the higher rates.

Pasture Situations

SITUATION	WEEDS CONTROLLED	APPLICATION RATE	CRITICAL COMMENTS
Where boom applications are used in pasture control prior to re-seeding of improved pasture crop.	For weeds controlled refer to list of species under Annual Weed Control and Perennial Weed Control.	For Application Rates refer to rates shown under Annual Weed Control and Perennial Weed Control	See Protection of Livestock, Wiper Equipment and Conservation Tillage sections.

Row Crops (Cotton, Peanuts, Soybeans, Sugar Cane)

SITUATION	WEEDS CONTROLLED	APPLICATION RATE	CRITICAL COMMENTS
Where Wiper Equipment is used to control weeds in row crops.	For weeds controlled refer to list of species under Annual Weed Control and Perennial Weed Control.	1L in 2L water.	See Wiper Equipment section. Apply to weeds growing 15cm above the crop canopy or weeds growing between rows. DO NOT allow AC Howl 360 Bio Herbicide to come into direct contact with crops or solution to drip onto crops.

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

GENERAL INSTRUCTIONS:

PRODUCT INFORMATION

AC Howl 360 Bio Herbicide is translocated throughout the plant where it kills both foliage and roots. Ideally the best time to use AC Howl 360 Bio Herbicides is when target species are in a state of active growth, moderate climatic conditions are present and plants are free of disease and dirt cover. While cool and cloudy conditions can sometimes delay the appearance of chemical activity, it can generally be expected that symptoms of chemical effect will appear 2-7 days after spraying of annual species and 2-3 weeks after spraying of perennial species. The symptoms are demonstrated by a yellowing and accompanying wilting, progressing to a brown out.

SAFETY TO CROPS

DO NOT allow AC Howl 360 Bio Herbicide to come in contact with the foliage, fruit or green stems of desirable crops, plants or trees as the nature of the chemical is non-selective. Some useful guidelines that can help in this regard are:

1. Do not use if the wind is blowing towards desirable plants in close proximity.
2. Avoid fine droplet settings (150 micron or less) when calibrating.
3. Avoid spraying in winds greater than 8km/hr, still air and hot days.

While the product is rapidly inactivity on contact with the soil, it is important that certain factors are kept in mind:

1. Where there is a light presence of unwanted vegetative matter sowing can commence from one day after spraying.
2. Where the plant cover is heavy it is better to allow vegetative matter to decay prior to sowing to allow formation of a satisfactory seedbed.

SPRAY PREPARATION

1. Make sure the tank is clean and residues from previous usage have been removed.
2. Half fill the tank with clean water bearing in mind that less than perfect results may occur if water containing soil particles or hard water containing calcium salt is used. Glyphosate may be inactivated by water which is contaminated with clay particles or soil.
3. Add the appropriate amount of product as per the Directions for Use Tables.
4. Mix well keeping filling hose below surface to avoid foaming.
5. Add water to fill vat.
6. Remove hose from tank as soon as full to prevent back siphoning.

DO NOT use mechanical agitators as these may cause excessive foaming.

DO NOT add nonapproved herbicides and insecticides.

Use only plastic, plastic lined, stainless steel, aluminium, brass, copper or fibreglass containers or spray tanks.

Galvanised steel or unlined steel containers or spray tanks can react with the product to produce hydrogen gas, which can form a combustible gas mixture which can be flashed by ignition sources.

SURFACTANT

The addition of surfactant may improve weed control where water rates are high or product rates are low.

Suggested surfactant rates are 200mL/100L of 1000g/L non-ionic surfactant or 250-500mL of 700g/L surfactant.

DO NOT add spraying oils, agricultural chemicals or any other material except as directed on the label.

ORGANOSILICONE PENETRANT

In certain situations (as indicated in the Directions for Use table) weed control may be enhanced by the addition of an organosilicone penetrant 200mL/100L spray solution.

RANINFALL EFFECTS

Heavy rain within 2 hours of spraying can mean that the chemical may be washed off the plant, with the result that the herbicide may not be totally effective. Re-spraying may be needed. Normal rain up to 6 hours after application may reduce the effectiveness. Adequate results may not be achieved if the product is applied when weeds are stressed by conditions such as drought conditions, water logging or frost.

SOIL PERSISTANCE

This product is not persistent in soils and is rapidly broken down by microbes present in the soil, as well as by hydrolysis caused by free standing moisture or soil moisture that may be present in soil particles. Should residual activity be needed refer to the Compatibility section.

APPLICATION EQUIPMENT:

HIGH VOLUME APPLICATION:

(eg knapsack/handgun equipment)

For maximum efficiency a D6 spray tip (Spraying Systems Australia P/L) or equivalent and an operating pressure of 400-700kPa are recommended. As the product is translocated through contact points on the plant, good coverage is needed to maximise uptake by the plant. Volume used per given area will vary according to the density of the target species present.

BOOM EQUIPMENT:

Maximum efficiency can be achieved by using fan nozzles at a pressure of 240-280kPa. Water volumes per hectare of treated area can vary depending on density of target species but no more than 200L would be necessary. In conservation tillage situations volumes in the 50-100L range would suffice.

AERIAL EQUIPMENT:

Using micronair and boom equipment a droplet size of 250-350 micron diameter is recommended. A swath width in the range of 15-17metres is most appropriate for this form of spraying. Minimum spray volume would be 15L/ha. When using this form of application give consideration to the fact that the product is highly non-selective and if desirable plants, trees etc are in the vicinity of the area to be sprayed, they could be effected by drift or targeted contact. This would limit usage via this technique to such situations as weed control on fallows or pasture, control prior to establishment of crops or pasture. Another point to bear in mind is that on sloping terrain height above the ground may vary from point-to-point, and also at any given point, from boom tip to boom tip. It is also worth remembering that there is more land area on a hilly block than a flat block, even though the perimeter distance may be the same. In such situations increase the water volume to 30-80L/ha and increase the droplet size to a minimum of 300 micron average size.

Note: In high temperatures and dry conditions, evaporation of droplets prior to reaching target species can occur and it is therefore important to increase water volume to at least 30L/ha and average droplet size to 300 micron if temperatures are in excess of 25°C. DO NOT spray if temperature is above 30°C.

FOR WIPER EQUIPMENT:

For wiper equipment such as ropewick applicators etc, detailed information should be obtained from the manufacturers. As a general guide 500mL of AC Howl 360 Bio Herbicide should be mixed with 1L of water. Weeds should ideally be 15cm above the crop or pasture. One pass in each direction, commonly referred to as a "double pass" will maximise effectiveness. The lower the vehicle speed the better the result. Certainly no faster than 8km/hr is recommended. Where weeds are of variable height, or occur in clumps or in dense infestations, some plants may not be contacted by the herbicide solution and re-treatment may be necessary. Mix only enough solution for immediate requirements. DO NOT store mixed solution for more than a couple of days. Rate: Mix 1L of AC Howl 360 Bio Herbicide with 2L clean water to prepare a 33% solution. Refer to the Weeds Controlled section of the label for specific recommendations.

LOW VOLUME APPLICATION:

(eg Gas Gun or Splatter Gun)

Apply as an even spray to cover all foliage. Refer to weeds controlled for the dilution and volume of mixture to be applied. If the dilution rate is specified as 1:9 this equals one part AC Howl 360 Bio Herbicide plus 9 parts water.

CONTROLLED DROPLET APPLICATION (CDA):

Use the following table as a guide for determining the correct application rates using the Micron Herbi or similar equipment. See Weeds Controlled tables for specific rates and use recommendations. For hand held equipment a walking speed of approximately 1m/sec (4km/hr) is recommended:

Rate of AC Howl 360 Bio Herbicide delivered at 1m/sec	3L/ha	6L/ha	9L/ha
Mixture by volume AC Howl 360 Bio Herbicide: Water	1:3	1:1	2:1
Micron Herbi Nozzle	Blue	Blue	Yellow

DO NOT add oils to AC Howl 360 Bio Herbicide/water mixture as application may be difficult and reduced weed control may occur.

NOTE: CDA equipment produces a fine spray pattern which is not easily visible. Ensure spray pattern or drift does not contact foliage or green tissue of desirable plants, as severe injury or destruction may result.

SPRAYER CLEAN UP:

After use, clean all spray equipment thoroughly washing with clean water, in order to prevent corrosion to tanks, lines and nozzles. Aircraft used in application should be thoroughly washed with particular attention to wheels and landing gear.

COMPATIBILITY:

AC Howl 360 Bio Herbicide may be tank mixed with the following pesticides and additives. Read and follow all label directions, restraints, withholding periods, regional use restrictions and safety directions for the tank-mix products.

ADDITIVES:

Crystalline Ammonium Sulphate

Assists in minimising the antagonism in tank mixes of AC Howl 360 Bio Herbicide and flowable triazine herbicides. Use only crystalline ammonium sulphate not the prilled or granulated forms. To test the quality, dissolve 2 tablespoons in 2 litres of water and swirl gently for 2 minutes. If undissolved particles remain it is advisable to pre-dissolve the ammonium sulphate in the water prior to adding to the spray tank through a screen.

HERBICIDES:

Atrazine, flowable* or granular (do not apply the tank mix for control of barnyard grass), 2,4-D Ester, dicamba, Chlorsulfuron, Simazine flowable *, sulfometuron methyl, Oryzalin/trifluralin, Pendimethalin, Metsulfuron methyl, oxyfluorfen, Triasulfuron, LVE MCPA.

*Add crystalline ammonium sulphate as per directions above.

The addition of oxyfluorfen at 75mL/ha to recommended rates of AC Howl 360 Bio Herbicide prior to planting wheat or barley will improve knockdown and increase the speed at which treated weeds develop visible signs of phytotoxicity.

INSECTICIDES:

Phosmet, methoate, chlorpyrifos, fenitrothion ULV and emulsifiable concentrates of dimethoate and fenitrothion. Other insecticides have not been tested.