

Product Name: Hyena 960 Herbicide  
APVMA Approval No: 81278/141027



Label Name:	Hyena 960 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: 960 g/L S-METOLACHLOR
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Mode of Action:	GROUP 15 HERBICIDE
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Statement of Claims:	For Pre-Emergent Control of Certain Annual Grasses and Broadleaf Weeds in Crops
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Net Contents:	5 - 1000 L
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Restraints:	<p>Restraints</p> <p>DO NOT apply to waterlogged soils.</p> <p>DO NOT apply if heavy rains or storms that are likely to cause runoff are forecast within 2 days of application.</p> <p>DO NOT irrigate to the point of runoff for at least 2 days after application.</p> <p>DO NOT apply by aircraft.</p> <p>Additional Restraints - TURF</p> <p>DO NOT apply using irrigation equipment.</p> <p>DO NOT apply using spraying equipment carried on the back of the user.</p> <p>DO NOT apply to turf under heat or moisture stress.</p> <p>DO NOT apply to waterlogged soils or to areas where prolonged periods of water-logging are expected.</p> <p>DO NOT irrigate to the point of runoff for at least 3 days after application.</p> <p>DO NOT apply if heavy rain has been forecast within 48 hours.</p> <p>DO NOT apply to golf putting greens or bowling greens.</p> <p>DO NOT apply to newly laid turf sods. Wait until turf has established.</p> <p>DO NOT apply to newly seeded or recently over seeded turf. Wait until turf has established.</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 1 to 2 hours before sunset and persist until 1 to 2 hours after sunrise.</p>
Directions for Use:	This section contains file attachment.
Other Limitations:	
Withholding Periods:	<p><b>GRAZING</b></p> <p>Turf: DO NOT GRAZE TREATED TURF/LAWN OR FEED TURF/LAWN CLIPPINGS FROM ANY TREATED AREA TO POULTRY OR LIVESTOCK</p> <p>Canola, Mustard: DO NOT GRAZE TREATED FIELDS FOR 10 WEEKS AFTER APPLICATION</p> <p>Forage Crops (except Sweet Potatoes): DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 13 WEEKS AFTER APPLICATION</p> <p>Green Beans: DO NOT GRAZE FOR STOCK FOOD FOR 10 WEEKS AFTER APPLICATION</p> <p>Pastures: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 13 WEEKS AFTER APPLICATION</p> <p>Spinach, Silverbeet: DO NOT GRAZE OR USE FOR STOCKFEED FOR 8 WEEKS AFTER APPLICATION</p> <p>Sweet Potatoes: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 23 WEEKS AFTER APPLICATION</p> <p>Wheat, Barley, Oats, Triticale: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 8 WEEKS AFTER APPLICATION</p> <p>All other crops: NOT REQUIRED WHEN USED AS DIRECTED</p> <p><b>HARVEST</b></p> <p>Galangal, Turmeric: DO NOT HARVEST FOR AT LEAST 23 WEEKS AFTER APPLICATION</p> <p>Green Beans: DO NOT HARVEST FOR 8 WEEKS AFTER APPLICATION</p> <p>Herbs, Chervil, Mizuna, Rucola, Lemon Verbena: DO NOT HARVEST FOR AT LEAST 8 WEEKS AFTER APPLICATION</p> <p>Sweet Potatoes: DO NOT HARVEST FOR 23 WEEKS AFTER APPLICATION</p> <p>All other crops: NOT REQUIRED WHEN USED AS DIRECTED</p>
Trade Advice:	<p><b>Export of Treated Produce</b></p> <p>Growers should note that maximum residue limits (MRLs) or import tolerances may not exist in all markets for edible produce treated with this product. If you are growing edible</p>

produce for export, please check with Crop Culture for the latest information on MRLs and import tolerances before using this product.

General Instructions:

Hyena 960 Herbicide contains 960 g/L S-metolachlor in the form of an emulsifiable concentrate (EC).

1) TURF

Hyena 960 Herbicide is a pre-emergent herbicide, giving residual germinating weed control of up to 8 weeks for various annual grasses and broadleaf weeds. Hyena 960 Herbicide is safe to use on established and recovering turf as listed in the Situation column of the DIRECTIONS FOR USE table. The product acts mainly through shoot (coleoptile) absorption. The product is mainly absorbed by emerging shoots, especially grass coleoptiles, although some root absorption also occurs. The effectiveness depends on the occurrence of rainfall or irrigation to move it down into the top 3 to 4 cm of soil, where it must be present at the time of weed germination.

If applying Hyena 960 Herbicide to warm season turf during the transition from winter to spring, avoid applications when soil temperatures remain low. Turf recovery will be greater if applied when soils have already commenced warming.

Can be applied in:

- Late spring to early summer and summer (Summer annual grasses control)
- Late summer to autumn (Winter grass control)
- Late winter to early spring (continuing Winter grass control)

But should only be applied once per season.

Sporting fields, Golf Fairways, General Turf Applications:

- Apply when mode of action rotation is required for resistant weed control management.
- Apply when turf needs to cover over and peg down (stolons creeping and dropping roots). Hyena 960 Herbicide will not restrict stolon roots dropping into the soil and developing, compared with root action pre-emergent herbicides such as the dinitroaniline family-based herbicides.

Commercial Turf Sod Production Applications:

- Apply when mode of action rotation is required for resistant weed control management.
- Apply an application to the soil immediately post-harvest.
- Apply when turf needs to cover over and peg down (stolons creeping and dropping roots). Hyena 960 Herbicide will not restrict stolon roots dropping into the soil and developing, compared with root action pre-emergent herbicides such as the dinitroaniline family-based herbicides.

In turfgrass areas which have heavy thatch, the weed control of Hyena 960 Herbicide may be reduced.

Photodegradation and volatilisation losses can be significant if not incorporated by irrigation or rainfall immediately after application. Avoid applying under hot, dry conditions and/or if immediate incorporation by irrigation or rainfall is not possible.

In soils with low clay content and low organic matter (i.e. DO NOT use on soils containing less than 5% clay in the top 30 cm). S-metolachlor will be loosely bound and can move down the profile out of the zone of surface germinating weeds resulting in poor weed control. In these soils, there is also the potential for turf injury if the herbicide moves down in the soil profile, this is due to the product sitting deeper hence more root depth is exposed to the product (as this product does have some root absorption). It is recommended that small areas be tested for germinating weed control and turf safety before large-scale application occurs.

Mixing

Add Hyena 960 Herbicide directly to a spray tank containing 2/3 of the required spray volume with the agitation system engaged. Add the rest of the water and ensure the mix is thoroughly agitated before application. Maintain agitation during application.

#### Application

Apply prior to weed emergence.

Apply at a volume of 400 to 800 L of water per hectare (Apply at a volume of 4 to 8 L of water per 100 m<sup>2</sup>). Good even coverage with the spray is essential for optimum weed control.

Use coarse droplets (e.g. Air Induction flat fan 08 nozzles). Spray nozzles should be uniformly spaced and of the same size and should provide accurate and uniform application. To ensure accuracy, calibrate sprayer at the beginning of the season before use and recalibrate frequently. Observe sprayer nozzles frequently during the spraying operation to ensure that the spray pattern is uniform. Avoid overlapping of spray runs. Ensure that boom height does not exceed 50 cm above the leaf blades of the turf.

Soil moisture is necessary to activate Hyena 960 Herbicide.

Following an application: Incorporate the product into the soil profile with at least 3 mm irrigation/rainfall immediately.

7 days after application: A further 5 mm of irrigation is required if 5 mm rainfall has not occurred within 7 days of application.

#### Compatibility

To avoid hydrolysis Hyena 960 Herbicide needs the spray tank water to be within a pH range of 5 to 8.

As formulations of other manufacturers' products are beyond the control of Crop Culture, all mixtures should be tested for compatibility and turf safety prior to mixing and spraying commercial quantities, compatibility testing should consist of assessing both; uniformed mixtures (i.e. no separation) and no rapid sediment build up (i.e. no flocculation).

## 2) OTHER CROPS

Hyena 960 Herbicide is a short residual, pre-emergent herbicide for the control of many important annual grasses and broadleaf weeds in the crops nominated. The product does not control the important broadleaf weeds in maize, sweet corn and Concep II treated sorghum, but when mixed with atrazine (500 g/L) control of many important annual weeds and grasses is obtained without the problem of carryover of herbicides affecting succeeding crops. The product acts mainly through shoot (coleoptile) absorption. Its effectiveness depends on the occurrence of rainfall or irrigation to move it down into the top 3 to 4 cm of soil, where it must be present at the time of weed germination.

#### Application

Ground Application only: Apply in a minimum of 60 L/ha of water.

#### Mixing

Add the required amount directly to the spray tank, fill with water and mix well.

#### Compatibility

Hyena 960 Herbicide is compatible with atrazine (500 g/L), glyphosate 360 and 450 herbicides and paraquat + diquat.

#### Zero-tillage (Canola, Barley, Oats, Wheat, Triticale)

When sowing using knife points and zero-tillage, and leaving a seeding slot, do not apply post-seeding unless harrows (or similar) have filled-in the seeding slot before application. Alternatively, apply Hyena 960 Herbicide immediately before seeding.

Warning - Cotton: Heavy rain following an application of Hyena 960 Herbicide, together with below average soil temperatures, can result in crop injury, due to the inability of the germinating plant being able to metabolise the herbicide. Hyena 960 Herbicide should not be used in situations where these conditions are likely to occur.

	<p>Warning - Brassica Crops: Crop retardation may occur where Hyena 960 Herbicide is used on soils that have a low organic matter content and which contain more than 60% of fine sand and silt. On these soil types, use rates of Hyena 960 Herbicide towards the lower end of the rate range and apply onto moist soil. Irrigation after application should be limited to no more than 25 mm. DO NOT use more than once per year.</p>
Resistance Warning:	<p><b>RESISTANT WEEDS WARNING</b>  <b>GROUP 15 HERBICIDE</b>  Hyena 960 Herbicide is a member of the Chloroacetamide group of herbicides with mode of action as inhibitors of cell division / Inhibitors of very long chain fatty acids mode of action. For weed resistance management this is a Group 15 herbicide. Some naturally occurring weed biotypes resistant to Hyena 960 Herbicide and other Group 15 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 Hyena 960 Herbicide or other Group 15 herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use, Crop Culture accepts no liability for any losses that may result from the failure of Hyena 960 Herbicide to control the resistant weeds.  Advice as to strategies and alternative treatments that can be used should be obtained from your local supplier, consultant, local Department of Agriculture, or Primary Industries Department.</p>
Precautions:	<p>As S-metolachlor is known to cause some crop damage in sandy-sandy loam soils with low organic matter, it is recommended that growers test the safety of S-metolachlor on a small area of their crop before using the product on larger areas. If any adverse crop symptoms are observed within 14 days of application in which irrigation or rainfall has occurred, then the product should not be used.</p> <p>Re-entry Period  General Public: DO NOT allow public re-entry into treated areas until the spray has dried.  Workers: DO NOT enter treated areas until the spray has dried, unless wearing cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves.</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 to drift onto nearby susceptible plants/crops, cropping lands, pastures or waterbodies.  DO NOT plant crops other than broccoli, Brussels sprouts, cabbages, cauliflowers, cotton, maize, peanuts, soybeans, sunflowers, sweet corn, tobacco or Concep II treated sorghum within 6 months of application of Hyena 960 Herbicide.</p> <p><b>PROTECTION OF LIVESTOCK</b>  DO NOT graze or cut sweet potato leaves for stock food.</p> <p><b>PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT</b>  Toxic to fish. DO NOT contaminate streams, rivers or watercourses with the chemical or used containers.  DO NOT apply under meteorological conditions, or from spraying equipment, which could be expected to cause spray to drift onto adjacent areas, particularly wetlands, water bodies or watercourses lands or pastures.</p>
Storage and Disposal:	<p>Store in the closed, original container in a cool, well-ventilated area, out of direct sunlight. For refillable containers  Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.</p>

	<p>Other containers</p> <p>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.</p> <p>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.</p>
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Safety Directions:	<p>Will damage the eyes. Repeated exposure may cause allergic disorders. Sensitive workers should use protective clothing. Avoid contact with eyes. When opening the container and preparing spray wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow-length PVC gloves and goggles. When using the prepared spray wear cotton overalls buttoned to the neck and wrist and a washable hat and elbow length PVC gloves and face shield or goggles. If product in eyes, wash it out immediately with water. Wash hands after use. After each day's use, wash gloves, goggles, and face shield or 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.</p>
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First Aid Warnings:	
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## DIRECTIONS FOR USE

### 1) TURF

Crop	Weed	Rate	Critical Comments
<b>Established Turf</b> (including Commercial Turf and Sod Production) as listed: Buffalo ( <i>Senotaphrum secundatum</i> ), Carpet Grass ( <i>Axonopus affinis</i> , <i>Axonopus compressus</i> ), Couch, Common ( <i>Cynodon dactylon</i> ), Couch, Hybrid ( <i>Cynodon dactylon</i> x <i>Cynodon transvaalensis</i> ), Kikuyu ( <i>Pennisetum clandestinum</i> ), Qld Blue Couch ( <i>Digitaria didactyla</i> ), Seashore Paspalum ( <i>Paspalum vaginatum</i> ), Zoysia ( <i>Zoysia japonica</i> , <i>Zoysia matrella</i> )	African Lovegrass ( <i>Eragrostis curvula</i> ), Annual Ryegrass ( <i>Lolium rigidum</i> ), Barnyard Grass ( <i>Echinochloa spp</i> ), Burr Medic ( <i>Medicago polymorpha</i> ), Carrot Weed ( <i>Cotula australis</i> ), Crowsfoot Grass ( <i>Eleusine indica</i> ), Liverseed Grass ( <i>Urochloa panicoides</i> ), Pigeon Grass ( <i>Setaria spp</i> ), Summer Grass ( <i>Digitaria sanguinalis</i> ), Winter grass ( <i>Poa annua</i> )  <b>Suppression of:</b> Pigweed ( <i>Portulaca oleracea</i> )	2 L/ha  or  20 mL per 100 m <sup>2</sup>	Apply prior to weed emergence for residual control of <b>up to 8 weeks</b> .  Soil moisture is necessary to activate Hyena 960 Herbicide.  <u>Following an Application:</u> Incorporate the product into the soil profile with at least 3 mm of irrigation or rainfall immediately, if possible, to reduce photodegradation and volatilisation losses. The longer incorporation is delayed the larger the potential photodegradation and volatilisation losses.  <u>7 days after Application:</u> If 5 mm of irrigation or rainfall has not occurred within 7 days of application, a further 5 mm of irrigation or rainfall is required.  Refer to Application section for detailed information.

## 2) OTHER CROPS

Crop	Weeds Controlled	State	Rate	Critical Comments
<b>Brassica Leafy Vegetables</b> including: Chinese white cabbage, Chinese flowering cabbage, Chinese broccoli, Indian mustard cabbage, Chinese cabbage, Mizuna greens, Red mustard, Curled mustard, Chinese flat cabbage, Mustard greens, Turnip greens, Rutabaga greens, and Mibuna greens)	Barnyard Grass, Blackberry Nightshade, Chickweed (suppression), Deadnettle, Fat Hen, Lovegrass, Pigeon Grass, Pigweed (suppression), Potato Weed, Shepherds Purse, Stinging Nettle, Summer Grass, Wireweed (suppression)	All states	1 to 2 L /ha	<p>Apply one treatment only, immediately after transplanting. Apply in a minimum of 60 L water per hectare.</p> <p>Apply sufficient irrigation after application to wet the upper 3 to 4 cm of soil with 24 hours.</p> <p>Use rates towards the higher end of the range where blackberry nightshade, chickweed, fat hen, love grass, pigweed, potato weed and wire weed are major problems (Refer Brassica use pattern on product label).</p> <p>See general instructions for warning – Brassica crops</p>
Broccoli, Brussels Sprouts, Cabbages, Cauliflowers	Barnyard Grass, Blackberry Nightshade, Chickweed (suppression), Deadnettle, Fat Hen, Lovegrass, Pigeon Grass, Pigweed (suppression), Potato Weed, Shepherds Purse, Stinging Nettle, Summer Grass, Wireweed (suppression)	NSW, ACT, Vic, Qld, Tas, NT only	1.5 to 2 L/ha	<p>Apply immediately after transplanting.</p> <p>Sufficient irrigation to wet the top 3 to 4 cm of soil should be applied within 24 hours.</p> <p>Use rates towards the higher end of the range where Blackberry Nightshade, Chickweed, Fat Hen, Lovegrass, Pigeon Grass, Pigweed, Potato Weed and Wireweed are the major problem.</p> <p>See Warning - Brassica crops.</p>
	Crowsfoot Grass, Fierce Thornapple (suppression), Liverseed Grass, Winter grass	NSW, ACT only		<p>Apply immediately after transplanting.</p> <p>Sufficient irrigation to wet the top 3 to 4 cm of soil should be applied within 24 hours.</p>
	Apple of Peru, Awnless Barnyard Grass, Fierce Thornapple (suppression), Liverseed Grass, Yellow Weed, Redroot Amaranth (suppression)	Qld only		<p>Use rates towards the higher end of the range where Apple of Peru, Common Sowthistle, Fierce Thornapple, Liverseed Grass, Redroot Amaranth, Twiggy Turnip and Nettleleaf Goosefoot are the major problems.</p> <p>WARNING: Qld. only stunting and reduced yield may occur in broccoli in red soils and light alluvial soils.</p> <p>See Warning - Brassica crops.</p>
	Annual Ryegrass, Common Cotula, Common Sowthistle (suppression), Crowsfoot Grass, Fiddle Dock, Italian Ryegrass, Liverseed Grass, Nettleleaf Goosefoot (suppression), Twiggy Turnip (suppression),	Vic, Tas only		



Crop	Weeds Controlled	State	Rate	Critical Comments
	Winter grass			
Canola, Mustard (oilseed cultivars) ( <i>Brassica juncea</i> )	Toad Rush	NSW, ACT, SA, Vic, Tas, Qld and WA only	0.15 to 0.25 L/ha	Apply at or immediately after planting and before crops and weeds emerge. Apply to moist soil. Use rates towards the higher end of the range where longer residual control is required.
Cotton	Barnyard Grass, Crowsfoot Grass, Liverseed Grass, Lovegrass, Pigeon Grass, Summer Grass, Wandering Jew	NSW, ACT, Qld only	1 L/ha	Pre-emergent: Apply before, at, or immediately after planting and before crops and weeds have germinated using a low volume boom sprayer applying 60 to 120 litres of mixture per hectare.  Rain or irrigation is necessary within 10 days of spraying to thoroughly wet the top 3 to 4 cm of soil. If rain does not occur or irrigation is unavailable, incorporate chemical to a depth of 3 to 4 cm. Use rates towards the higher end of the range on heavy soils or where a heavy grass population is expected.  DO NOT throw untreated soil onto treated areas, as this will reduce weed control.  DO NOT use on soils where the sand content exceeds 70%. Use lower rate where sand content of the soil is within the range 50% to 70%.  See Warning - Cotton.
<b>Culinary Herbs:</b> Basil, Bay Leaves, Borage, Chives, Coriander, Dill, Fennel, Lemon Balm, Lemon Grass, Kaffir Lime Leaves, Marigold Flowers, Marjoram (Oregano), Mints, Nasturtium Leaves, Parsley, Rosemary, Sage, Salad Burnett, Sorrel, Tarragon, Thyme.  <b>Savoury Root Vegetable:</b> Galangal  <b>Leafy Vegetables:</b> Rucola (Rocket), Chervil, Mizuna.  Teas: Lemon Verbena.  Spice: Turmeric.  <b>Edible Flowers:</b> Dianthus, Roses.	Barnyard Grass, Blackberry Nightshade, Chickweed (suppression), Deadnettle, Fat Hen, Lovegrass, Pigeon Grass, Pigweed (suppression), Potato Weed, Shepherds Purse, Stinging Nettle, Summer Grass, Wireweed (suppression)	All states	1.5 to 2 L/ha	Apply before, at, or immediately after planting/transplanting and before crops and weeds have germinated.  Sufficient irrigation to wet the top 3 to 4 cm of soil should be applied within 24 hours.  DO NOT use more than once per season

Crop	Weeds Controlled	State	Rate	Critical Comments
Green Beans, Navy Beans	Blackberry Nightshade, Common Sowthistle, Fat Hen, Potato Weed, Barnyard Grass, Crowsfoot Grass, Liverseed Grass, Lovegrass, Pigeon Grass, Summer Grass and <b>Suppression of Pigweed</b>	All states	1.5 to 2 L/ha	Pre-emergent: Apply before, at, or immediately after planting and before crops and weeds have germinated.  Rain or irrigation is necessary within 10 days of spraying to thoroughly wet the top 3 to 4 cm of soil. If rain does not occur or irrigation is unavailable, incorporate chemical to a depth of 3 to 4 cm.  DO NOT throw untreated soil onto treated areas, as this will reduce weed control.  DO NOT use on soils where the sand content exceeds 70%. Use lower rate where the sand content is within the range 50% to 70%.
	Powell's Amaranth	Tas only	2 L/ha	Pre-emergent: Apply before, at, or immediately after planting and before crops and weeds have germinated. For sufficient Amaranth control, the Hyena 960 Herbicide application should be followed by 1 L/ha Basagran* (2-leaf Amaranth) plus 2L/ha Basagran* (4-leaf Amaranth).  Rain or irrigation is necessary within 10 days of spraying to thoroughly wet the top 3 to 4 cm of soil. If rain does not occur or irrigation is unavailable, incorporate chemical to a depth of 3 to 4 cm.  DO NOT throw untreated soil onto treated areas, as this will reduce weed control.
Maize, Sweet Corn	Barnyard Grass, Crowsfoot Grass, Liverseed Grass, Lovegrass, Pigeon Grass, Summer Grass, Wandering Jew	NSW, ACT, Vic, Qld, SA, NT, Tas only	1 to 2 L/ha	Pre-emergent: Apply before, at, or immediately after planting and before crops and weeds have germinated using a low volume boom sprayer applying 60 to 120 litres of mixture per hectare.  Rain or irrigation is necessary within 10 days of spraying to thoroughly wet the top 3 to 4 cm of soil. If rain does not occur or irrigation is unavailable, incorporate chemical to a depth of 3 to 4 cm. Use rates towards the higher end of the range on heavy soils or where a heavy grass population is expected.  DO NOT throw untreated soil onto treated areas, as this will reduce weed control.  DO NOT use on soils where the sand content exceeds 70%.  Use lower rate where the sand content of the soil is within the range of 50% to 70%.
	Blackberry Nightshade, Caltrop, Common Thornapple, Mintweed, Needle Burr, Noogoora Burr, Pigweed, Redroot Amaranth, Slim Amaranth		1 to 2 L plus 2.5 L of atrazine (500 g/L) per ha	
Pastures - Trikkala sub- clover, Haifa White	Toad Rush	Vic, NSW, ACT, NT, SA, WA only	200 to 250 mL/ ha	Apply at or immediately after planting and before pasture species and weeds emerge. Application should be made to a moist

Crop	Weeds Controlled	State	Rate	Critical Comments
clover, Maral Persian clover, Paradana Balansa clover, Redquin Red clover, Phalaris and Cocksfoot				seedbed. Sufficient rain to thoroughly wet the top 3 to 4 cm of soil should occur within 10 days of spraying. Use rates towards the higher end of the range in wet areas or when longer residual control is required.  DO NOT use in soils where prolonged waterlogging is anticipated, otherwise unacceptable crop retardation will occur.  Avoid damage to pasture species by avoiding overlaps and double spraying in headlands where White, Persian and Balansa clovers are sown if the 250 mL rate is being used.
Peanuts	Barnyard Grass, Crowsfoot Grass, Liverseed Grass, Lovegrass, Pigeon Grass, Summer Grass, Wandering Jew	Qld, NSW, ACT, NT only	1 to 2 L/ha	Apply pre-irrigation where soil crusting is likely. Apply before, at or immediately after planting and before weeds germinate. Rain or irrigation is necessary within 10 days of spraying to thoroughly wet the top 3 to 4 cm of soil. If rain does not occur or irrigation is unavailable, incorporate chemical to a depth of 3 to 4 cm. DO NOT throw untreated soil onto treated areas as this will reduce weed control. Use rate toward the higher end of the range on heavy soils or where a heavy grass population is expected.
Rhubarb	Barnyard Grass, Blackberry Nightshade, Chickweed (suppression), Deadnettle, Fat Hen, Lovegrass, Pigeon Grass, Pigweed (suppression), Potato Weed, Shepherds Purse, Stinging Nettle, Summer Grass, Wireweed (suppression)	All states		Pre-emergent: Apply one (1) application only, immediately before or after transplanting crowns and before weeds have germinated.  Sufficient irrigation to wet the soil through the weed zone should be applied within 24 hours.  Further weed germination may occur following re-hilling due to exposure of untreated soil.
Soybeans, Sunflowers	Barnyard Grass, Crowsfoot Grass, Liverseed Grass, Lovegrass, Pigeon Grass, Summer Grass, Wandering Jew	NSW, ACT, Vic, Qld, SA, NT only		Apply pre-irrigation where soil crusting is likely. Apply before, at or immediately after planting and before weeds germinate. Rain or irrigation is necessary within 10 days of spraying to thoroughly wet the top 3 to 4 cm of soil. If rain does not occur or irrigation is unavailable, incorporate chemical to a depth of 3 to 4 cm. DO NOT throw untreated soil onto treated areas as this will reduce weed control. Use rate toward the higher end of the range on heavy soils or

Crop	Weeds Controlled	State	Rate	Critical Comments
				where a heavy grass population is expected.
Sorghum treated with Concep II Sorghum Seed Safener		NSW, ACT, NT, Qld only	1 to 2 L/ha	Pre-emergent: Apply before, at or immediately after planting and before crops and weeds have germinated using a low volume boom sprayer applying 60 to 120 litres of mixture per hectare. DO NOT apply to sorghum seed not previously treated with Concep II Sorghum Seed Safener.
	Blackberry Nightshade, Caltrop, Common Thornapple, Mintweed, Needle Burr, Noogoora Burr, Pigweed, Redroot Amaranth, Slim Amaranth		1 to 2 L/ha plus 2.5 L/ha of atrazine (500 g/L) per ha	Rain or irrigation is necessary within 10 days of spraying to thoroughly wet the top 3 to 4 cm of soil. If rain does not occur or irrigation is unavailable, incorporate chemical to a depth of 3 to 4 cm. DO NOT throw untreated soil onto treated areas as this will reduce weed control. Use rate toward the higher end of the range on heavy soils or where a heavy grass population is expected. Use the lower rate on sandy soils.
Spinach, Silverbeet	Barnyard Grass, Blackberry Nightshade, Chickweed (suppression), Deadnettle, Fat Hen, Lovegrass, Pigeon Grass, Pigweed (suppression), Potato Weed, Shepherds Purse, Stinging Nettle, Summer Grass, Wireweed (suppression)	All states	1.5 to 2 L/ha	Apply with a boom spray, in a minimum of 60 L water/ha. Apply immediately before, at, or immediately after sowing If transplanting the crop, apply immediately before transplanting. DO NOT apply herbicide over the transplants Crop retardation may occur where the herbicide is used on soils that have low organic matter content and which contain more than 60% of fine sand and silt. On these soil types, use rates towards the low end of the rate range, and apply to moist soil. Irrigation after application on these types of soils should be limited to no more than 25 mm. Also, on these soils, DO NOT use more than once per year (as on product label for brassicas); For other relevant instructions, see Broccoli (etc) section of Directions for Use table.
Spring onions ( <i>Allium fistulosu m</i> ), Shallots ( <i>Allium cepa. var. aggregatum</i> )			1 L/ha	DIRECT SEEDED CROPS: Apply one application before, at or immediately after planting and before crops and weeds have germinated. TRANSPLANTED CROPS: Apply one application before planting and before weeds have germinated.
Sugarcane plant and ratoon	Awnless Barnyard Grass, Barnyard Grass, Bellvine, Billygoat Weed (Blue Top), Blackberry		1.1 to 1.45 L/ha plus 2.7 to 3.6 L/ha of a	Apply as a pre- or post-emergent application to crop. Apply once per year only. Application should be made to a moist soil before weeds and grasses have germinated. If conditions remain dry for a period of

Crop	Weeds Controlled	State	Rate	Critical Comments
	Nightshade, Caltrop, Common Sowthistle (Milk Thistle), Common Thornapple, Crowsfoot Grass, Green Summer Grass, Guinea Grass, Mexican Clover, Mintweed, Needle Burr, Passionfruit Vines, Pigeon Grass, Pigweed, Redroot Amaranth, Square Weed, Star of Bethlehem, Summer Grass, Wild Rose		atrazine (500 g/L)	10 days after spraying, irrigation or a shallow cultivation (2.5 cm) may assist results. DO NOT throw untreated soil on to treated areas as this will reduce weed control. In Southern Queensland, use rates toward the higher end of the range on heavy soils where a high grass population is expected.  In Northern Queensland, application must be made to moist soil and rainfall or irrigation should occur within 24 hours of application. Use rates toward the higher end of the range where high Green Summer Grass population is expected. Where broadleaf weeds and grasses have emerged and are in the 2 to 4 true leaf stage, knockdown herbicides such as ametryn (500 g/L) at 2 L/ha, flowable diuron (500 g/L) at 1 L/ha or paraquat (250 g/L) at 1.2 to 1.6 L/ha, applied as a post directed spray, can be added.
		Northern Qld only (Mackay North)	1.45 to 1.8 L/ha plus 3.6 to 4.5 L of a atrazine (500 g/L) or 2 to 2.5 kg/ha of atrazine (900 g/kg)	Where broadleaf weeds only have emerged and are at the 2 to 4 true leaf stage then 2,4-D amine (500 g/L) at 2 L/ha should be added. In all cases add a non-ionic surfactant. Follow all instructions and restrictions on the atrazine labels.
Sweet Potatoes	Black pigweed, Red Shank, Potato Weed, Barnyard Grass, Crowsfoot Grass, Liverseed Grass, Lovegrasses, Pigeon Grass, Summer Grass, <b>Suppression of Evening Primrose</b>	NSW, ACT, Qld, Vic, NT, SA only	1.5 L/ha	Pre-emergent: Apply immediately after transplanting before weeds have germinated. Sufficient irrigation to wet the soil through the weed zone should be applied within 24 hours.  Further weed germination may occur following re-hilling due to exposure of untreated soil.
Tobacco (transplanted in field)	Barnyard Grass, Lovegrass, Pigeon Grass, Summer Grass and <b>Suppression of Common Thornapple (<i>Datura stramonium</i>) and Nightshades (<i>Solanum sarrachoides</i> and <i>S. nigrum</i>)</b>	Vic, NSW, ACT only	1.5 L/ha	Apply by low volume boom spray prior to transplanting and before weeds and grasses germinate. The seedbed should be fine and free of large clods. Thoroughly incorporate within 7 days of spraying using a rotary hoe or similar equipment set to work to a depth of 7.5cm. DO NOT use disc-cultivating implements. An even coverage of the herbicide is essential.  The herbicide needs to be activated by moisture through to the top 3 to 4 cm of soil at the time of application or within 4 days of incorporation. This can be achieved by applying to moist soil, irrigating

Crop	Weeds Controlled	State	Rate	Critical Comments
				soon after incorporation or irrigating immediately after transplanting. Avoid boom overlaps as double treatment may cause growth suppression. Temporary crop retardation may be observed when soil conditions remain dry after application or where black root rot may occur.
Barley, Oats	Suppression of Annual Ryegrass	NSW, ACT, Vic, Tas, SA, WA only	375 to 500 mL/ ha	Apply to moist soils immediately after planting and before crop and weeds emerge. Use the lower rate on light soils. Application should be made to a moist seedbed and sufficient rain to thoroughly wet the top 3 to 4 cm of soil should occur within 10 days after spraying. Damage may occur if crop is sown too shallow (less than 4 cm). Damage can occur on light sandy soil types after heavy rain. <b>See General Instructions</b> for use in zero-tillage systems.
Wheat, Barley, Oats, Triticale	Toad Rush	Vic, NSW, ACT, SA, WA only	150 to 250 mL/ ha	Apply at or immediately after planting and before crop and weeds emerge. Application should be made to a moist seedbed and sufficient rain to thoroughly wet the top 3 to 4 cm of soil should occur within 10 days after spraying. Use rates towards the higher end of the range in wet areas or when longer residual control is required or in situations where crop competition is minimal.  When mixed with triasulfuron formulations, apply pre-sowing and incorporate by sowing operation (for Wheat only). <b>See General Instructions</b> for use in zero-tillage systems.

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