DANGEROUS POISON

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

Sierra®

Herbicide

ACTIVE CONSTITUENT:

160 g/L SAFLUFENACIL

GROUP 14 HERBICIDE

Crops: Almonds, barley, chickpeas, citrus, cowpeas, faba/broad beans, fallow, field peas, forestry plantations, lentils, lucerne, lupins, non-agricultural areas, oats, pome fruit, sub clover, sorghum, soybeans, wheat

Controls/Suppresses: Various broadleaf weeds and grasses as per the Directions for Use

Formulation type
Soluble Concentrate
SL

ADAMA

adama.com

CONTENTS: 5 L - 1000 L

DIRECTIONS FOR USE

RESTRAINTS

DO NOT apply by fixed-wing aircraft.
DO NOT apply tank mix with paraquat by aircraft.

SPRAY DRIFT RESTRAINTS

Specific definitions for terms used in this section of the label can be found at apvma.gov.au/spraydrift.
DO NOT allow bystanders to come into contact with the spray cloud.
DO NOT apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. The buffer zones in the buffer zone table below provide guidance but may not be sufficient in all situations. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.
DO NOT apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.
DO NOT apply if there are hazardous surface temperature inversion conditions present at the application site during the time of application. Surface temperature inversion conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.
DO NOT apply by a boom sprayer unless the following requirements are met:

- Spray droplets not smaller than a COARSE spray droplet size category
- Minimum distances between the application site and downwind sensitive areas (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for boom sprayers') are observed.

Buffer zones for boom sprayers

Application rate	Boom height above the target canopy	Mandatory downwind buffer zones				
		Bystander areas	Natural aquatic areas	Pollinator areas	Vegetation areas	Livestock areas
Up to 115 mL/ha SIERRA®	0.5 m or lower	0 metres	0 metres	0 metres	50 metres	0 metres
	1.0 m or lower				150 metres	15 metres
Up to 150 mL/ha SIERRA®	0.5 m or lower				65 metres	0 metres
	1.0 m or lower				200 metres	15 metres
Up to 150 mL/ha SIERRA® + up to 1080 g ai/ha glyphosate	0.5 m or lower				65 metres	0 metres
	1.0 m or lower				200 metres	15 metres
Up to 115 mL/ha SIERRA® + up to 595 g ai/ha paraquat	0.5 m or lower				50 metres	0 metres
	1.0 m or lower				250 metres	15 metres

DO NOT apply by aircraft unless the following requirements are met:

- Spray droplets are not smaller than a COARSE spray droplet size category
- For maximum release height above the target canopy of 3 metres or 25 per cent of rotor diameter, whichever is the greatest, minimum distances between the application site and downwind sensitive areas are observed (see the following table titled 'Buffer zones for aircraft')

Buffer zones for aircraft

Application rate	Type of aircraft	Mandatory downwind buffer zones				
		Bystander areas	Natural aquatic areas	Pollinator areas	Vegetation areas	Livestock areas
Up to 150 mL/ha SIERRA®	Helicopter	0 metres	10 metres	0 metres	375 metres	70 metres
Up to 150 mL/ha SIERRA® + up to 1080 g ai/ha glyphosate			15 metres			

Table 1. FALLOW, FORESTRY, COMMERCIAL AND INDUSTRIAL, PUBLIC SERVICE AREAS AND AROUND BUILDINGS AND YARDS

SITUATION	WEEDS	RATE	CRITICAL COMMENTS
Ground application only Prior to sowing the following broadacre crops Cereals - Barley - Oats - Wheat Pulses - Chickpeas - Faba/broad beans - Field peas - Lentils - Lupins - Cowpeas Legumes - Sub clover Sorghum Soybeans **Ground application only** To assist in weed control in commercial, industrial and public service areas, around agricultural buildings and yards when applied by small boom **Ground and aerial application** Prior to starting a fallow, fallow maintenance and prior to establishment of forestry plantations	See Weed Table A	75-115 mL/ha plus a blended methylated/ ethylated seed oil at 1% e.g. Hasten†, Plantocrop† or Kwickin†	**DO NOT apply post-sowing pre-emergent** **ALWAYS apply SIERRA® with 1% v/v of a blended methylated/ethylated seed oil e.g., Hasten, Plantocrop or Kwickin Spray Adjuvant.** Use the lower rates on younger and smaller (up to six leaf) plants or plants growing under good conditions and the higher rates on older plants (up to 10 leaves) or plants growing under less optimum conditions. For marshmallow, bladder ketmia, volunteer canola and volunteer cotton use lower rates for plants up to 4 leaf and higher rates when targeting weeds up to maximum of 6 leaves. The following rates of SIERRA® are recommended for volunteer cotton control: 75 mL/ha from cotyledon up to 4 leaf, 115 mL/ha from cotyledon up to 6 leaf. To ensure uptake of SIERRA®, DO NOT sow crops for at least 1 hour after application. Crop tolerance to SIERRA® by the IBS sowing method is very good and is maximised if the seeder is fitted with knifepoints and press wheels to remove treated soil from above the seed. Sow crops with a seeder that will move treated soil away from crop row. This is particularly important with lentils and faba beans, cowpeas, sorghum and soybeans. Use of seeders, or planting under conditions that do not move treated soil from the crop row may increase the level of early crop damage. Also be careful when applying SIERRA® to fields just prior to sowing that will be soon after irrigated as soil water may move herbicide into crop row resulting in injury. Refer to the plant-back interval table on this label and also refer to the appropriate companion product label, in case a longer re-crop sowing period is required.
	See Weed Table B	115-150 mL/ha plus a blended methylated/ ethylated seed oil at 1% e.g. Hasten, Plantocrop or Kwickin	
	Fleabane (*Conyza* spp.) 1-6 leaf	75-150 mL/ha plus a blended methylated/ ethylated seed oil at 1% e.g. Hasten, Plantocrop or Kwickin	For control of Fleabane use the lower rates for plants up to 4 leaf and the higher rates when targeting weeds up to maximum of 6 leaves. For plants greater than six leaf to bolting stage efficacy of SIERRA® may be reduced and regrowth may occur. Fleabane can germinate all year round and it is important to establish size and age (check tap root as an indication) to ensure control. Fleabane that appears small may in fact be older and have an established tap root and may not be completely controlled. **Note:** For suppression of fleabane in the rosette stage (6-30 leaf) before bolting use the 115-150 mL/ha rate.

SITUATION	WEEDS	RATE	CRITICAL COMMENTS
Continued –	For the control of broadleaf weeds listed in Table A and B as well as: Amsinckia (*Amsinckia* spp.), Annual ryegrass (*Lolium* spp.), Barley grass (*Hordeum* spp.), Brome grass (*Bromus* spp.), Charlock (*Sinapis arvensis*), Clovers (*Trifolium* spp.), Cowvine/peachvine (*Ipomoea lonchophylla*), Indian hedge mustard (*Sisymbrium orientale*), Kochia (*Kochia scoparia*), Penny cress (*Thlaspi arvense*), Prickly lettuce (*Lactuca serriola*), Silver grass (*Vulpia* spp.), Snoutbean (*Rhynchosia minima*), Volunteer/wild oat (*Avena* spp.)	75-150 mL/ha plus recommended rate of glyphosate* plus a blended methylated/ethylated seed oil at 1% e.g. Hasten, Plantocrop or Kwickin	Refer to Critical Comments above and in addition: Weed growth stage should be 2 to 10 leaf. Reduction of glyphosate activity on summer grasses may occur from the tank mix, which may result in reduced control of certain grass weeds. *If grass weeds are present and their control is important, it is recommended that a high rate of glyphosate in 100 L water/ha be used for the use situation encountered – refer COMPATIBILITY section. If grass weeds recover, a follow up application of a knockdown herbicide with another mode of action may be required. Refer also to the product label for the knockdown herbicide used. Use the lower rates on younger plants or plants growing under good conditions and the higher rates on older plants or plants growing under less optimum conditions. Refer to the plant-back interval table on this label and also refer to the appropriate companion product label, in case a longer re-crop sowing period is required.
Ground application only Prior to sowing crops and for fallow maintenance	For the control of broadleaf weeds listed in Weed Table A as well as: Annual ryegrass (*Lolium* spp.), Brome grass (*Bromus* spp.), Chickweed (*Stellaria* spp.), Silver grass (*Vulpia* spp.)	75-115 mL/ha plus recommended label rate of paraquat* plus a blended methylated/ethylated seed oil at 1% e.g. Hasten, Plantocrop or Kwickin	Refer to Critical Comments above and in addition: Use of SIERRA® with paraquat may increase the speed at which broadleaf and grass weeds develop visible symptoms and improve control of a range of grass and broadleaf weeds (compared to results achieved with paraquat applied alone). *Apply only as a tank mix with recommended label rates of paraquat e.g. Spraytop® 250 or Spraytop® 330 – refer COMPATIBILITY section. Ensure to observe and understand all restraints, rates, safety directions, first aid instructions and general instructions on the paraquat label. A blended methylated/ethylated seed oil e.g. Hasten, Plantocrop or Kwickin at 1% v/v must be added when applying SIERRA® with paraquat.
Optical spot spray application for fallow weed control	Weeds in Table A, Weeds in Table B, Fleabane (*Conyza* spp.) 1-6 leaf	150 mL/100 L of water plus a blended methylated/ethylated seed oil at 1% e.g. Hasten, Plantocrop or Kwickin	Apply SIERRA® using Optical Spot Spray Technologies where sprayers are calibrated to apply an equivalent spray volume of 100 L/ha. **Note:** The 150 mL/100 L rate will provide suppression of fleabane in the rosette stage (6-30 leaf) and prior to bolting.

Table 2. LEGUME/PULSE CROPS

CROP	WEEDS	RATE	CRITICAL COMMENTS
Ground application and aerial application with glyphosate only Prior to harvest of Field Pea, Faba/Broad Bean, Chickpea, Lentils, Lupins	Harvest-aid to: avoid uneven maturity, improve speed of maturity, reduce broadleaf weed biomass and increase harvest efficiency	150 mL/ha plus recommended rate of glyphosate* or paraquat plus a blended methylated/ ethylated seed oil at 1% e.g. Hasten, Plantocrop or Kwickin	**ALWAYS apply SIERRA® with 1% v/v of a blended methylated/ ethylated seed oil e.g. Hasten, Plantocrop or Kwickin Spray Adjuvant.** ***For recommended rate of glyphosate, refer COMPATIBILITY section.** Apply at crop maturity at least 7 days before harvest as per growth stage timings described below. Earlier applications than described below may results in grain yield penalties. **Desiccation timing** *Faba/Broad bean:* Hilum black in the pods at the top of the canopy (30–80% of pods ripe and dark). *Field pea:* 30% seed moisture or when lower 75% of pods are brown with firm seeds and leathery pods. *Chickpea:* 80–85 % of pods within crop have turned yellow-brown. *Lentil:* just after crop starts to yellow (or senesce). *Narrow leaf lupin:* at 80% leaf drop. Apply SIERRA® to direct harvested lupin, application prior to windrowing will result in severe loss of grain yield. In order to guarantee good coverage it is recommended to apply SIERRA® in a minimum spray volume of 100 L/ha. SIERRA® may have a negative effect on lentil germination. Do not use SIERRA® on lentil crops for seed production.

Table 3. LUCERNE

CROP	WEEDS	RATE	CRITICAL COMMENTS
Ground application only Lucerne (Established Crops – at least 12 months old)	See Weed Table A	75-115 mL/ha plus a blended methylated/ ethylated seed oil at 1% e.g. Hasten, Plantocrop or Kwickin	**ALWAYS apply SIERRA® with 1% v/v of a blended methylated/ ethylated seed oil e.g. Hasten, Plantocrop or Kwickin Spray Adjuvant.** Use the lower rates on younger and smaller (up to six leaf) weeds or weeds growing under good conditions and the higher rates on older weeds (up to 10 leaves) or weeds growing under less optimum conditions. For marshmallow and bladder ketmia use lower rates for plants up to 4 leaf and higher rates when targeting weeds up to maximum of 6 leaves. For khaki weed, use the lower rate for control of young weeds and the higher rate for suppression of older weeds. SIERRA® will control subterranean clover in lucerne. In order to increase spray coverage and consequently improve weed control is recommended to apply SIERRA® following grazing or hay cut. This will also reduce the impacts of the spray on lucerne. Crop damage will be visible as soon as few days following the application of SIERRA®. The lucerne crop fully recovers by 6 to 10 weeks after the application.
	See Weed Table B	115-150 mL/ha plus a blended methylated/ ethylated seed oil at 1% e.g. Hasten, Plantocrop or Kwickin	
	Fleabane (*Conyza* spp.) 1-6 leaf **Note:** For suppression of fleabane in the rosette stage (6-30 leaf) before bolting use the115-150 mL rate.	75-150 mL/ha plus a blended methylated/ ethylated seed oil at 1% e.g. Hasten, Plantocrop or Kwickin	For control of Fleabane use the lower rates for plants up to 4 leaf and the higher rates when targeting weeds up to maximum of 6 leaves. For plants greater than six leaf to bolting stage efficacy of SIERRA® may be reduced and regrowth may occur. Fleabane can germinate all year round and it is important to establish size and age (check tap root as an indication) to ensure control. Fleabane that appears small may in fact be older and have an established tap root and may not be completely controlled.
	For the control of broadleaf weeds listed in Weed Table A as well as: Annual ryegrass (*Lolium* spp.), Brome grass (*Bromus* spp.), Chickweed (*Stellaria* spp.), Silver grass (*Vulpia* spp.)	75-115 mL/ha plus recommended label rate of paraquat* plus a blended methylated/ ethylated seed oil at 1% e.g. Hasten, Plantocrop or Kwickin	Refer to Critical Comments above and in addition: Use of SIERRA® with paraquat may increase the speed at which broadleaf and grass weeds develop visible symptoms and improve control of a range of grass and broadleaf weeds (compared to results achieved with paraquat applied alone). *Apply only as a tank mix with recommended label rates of paraquat e.g. Spraytop 250 or Spraytop 330 – refer COMPATIBILITY section. Refer to the appropriate label for weed sizes and follow all label directions. A blended methylated/ethylated seed oil e.g. Hasten, Plantocrop or Kwickin at 1% v/v must be added when applying SIERRA® with paraquat.

Table 4. ORCHARD AND TREE CROPS

SITUATION	WEEDS	RATE	CRITICAL COMMENTS
Ground application only Established Almond, Citrus and Pome orchards	See Weed Table A	75-115 mL/ha plus a blended methylated/ ethylated seed oil at 1% e.g. Hasten, Plantocrop or Kwickin	For use in established citrus, pome and almond orchards, apply as a directed or shielded spray or using wiper equipment. DO NOT allow wiper surface to contact any part of the tree or plant. DO NOT allow spray or spray drift to contact green bark or stems, canes, laterals, suckers, fresh wounds, foliage or fruit. DO NOT apply as spray near trees less than 3 years old unless they are effectively shielded from spray and spray drift.
	See Weed Table B	115-150 mL/ha plus a blended methylated/ ethylated seed oil at 1% e.g. Hasten, Plantocrop or Kwickin	
	Fleabane (*Conyza* spp.*)* 1-6 leaf **Note:** For suppression of fleabane in the rosette stage (6-30 leaf) before bolting use the 115-150 mL rate	75-150 mL/ha plus a blended methylated/ ethylated seed oil at 1% e.g. Hasten, Plantocrop or Kwickin	For control of Fleabane use the lower rates for plants up to 4 leaf and the higher rates when targeting weeds up to maximum of 6 leaves. For plants greater than six leaf to bolting stage efficacy of SIERRA® may be reduced and regrowth may occur. Fleabane can germinate all year round and it is important to establish size and age (check tap root as an indication) to ensure control. Fleabane that appears small may in fact be older and have an established tap root and may not be completely controlled.
	For the control of broadleaf weeds listed in Table A and B as well as: Amsinckia (*Amsinckia* spp.), Annual ryegrass (*Lolium* spp.*),* Barley grass (*Hordeum* spp.*),* Brome grass (*Bromus* spp.*),* Charlock *(Sinapis arvensis),* Clovers (*Trifolium* spp.), Cowvine/peachvine (*Ipomoea lonchophylla),* Indian hedge mustard (*Sisymbrium orientale),* Kochia (*Kochia scoparia),* Penny cress (*Thlaspi arvense)*	75-150 mL/ha plus recommended rate of glyphosate* plus a blended methylated/ ethylated seed oil at 1% e.g. Hasten, Plantocrop or Kwickin	Refer to Critical Comments above and in addition: Weed growth stage should be 2 to 10 leaf. Reduction of glyphosate activity on summer grasses may occur from the tank mix, which may result in reduced control of certain grass weeds. *If grass weeds are present and their control is important, it is recommended that a high rate of glyphosate in 100 L water/ha be used for the use situation encountered – refer COMPATIBILITY section. If grass weeds recover, a follow up application of a knockdown herbicide with another mode of action may be required. Refer also to the product label for the knockdown herbicide used. Use the lower rates on younger plants or plants growing under good conditions and the higher rates on older plants or plants growing under less optimum conditions.

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

WITHHOLDING PERIODS

Harvest

PULSES: **DO NOT HARVEST FOR 7 DAYS AFTER APPLICATION.**

OTHER CROPS: **NOT REQUIRED FOR SIERRA® WHEN USED AS DIRECTED HOWEVER, REFER ALSO TO THE WITHHOLDING PERIOD OF PRODUCTS MIXED WITH SIERRA®.**

Grazing

DO NOT ALLOW LIVESTOCK TO GRAZE TREATED WEEDS.

PULSES: **DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 7 DAYS AFTER APPLICATION.**

LUCERNE: **DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 4 WEEKS AFTER APPLICATION.**

OTHER CROPS: **DO NOT GRAZE OR CUT FOR STOCKFOOD FOR 5 WEEKS AFTER APPLICATION.**

EXPORT TRADE ADVICE

Growers should note that suitable Maximum Residue Limits (MRLs) or import tolerances may not exist in all export markets for crops treated with SIERRA®. Additionally, some export markets have established MRLs different to those in Australia. Please check with your peak industry body or Adama Australia for the latest information on MRLs and import tolerances before using SIERRA®.

LIVESTOCK DESTINED FOR EXPORT MARKETS

The grazing withholding period only applies to stock slaughtered for the domestic market. Some export markets apply different standards. To meet these standards, ensure that in addition to complying with the grazing withholding period, the Export Slaughter Interval is observed before stock are sold or slaughtered.

EXPORT SLAUGHTER INTERVAL (ESI) – 30 DAYS
Livestock that has grazed on or been fed treated forage, fodder or stubble should be placed on clean feed for 30 days prior to export slaughter. This ESI requirement must be declared on any Commodity Vendor Declaration accompanying traded fodder.

WEED TABLES

Weed Table A	
Amaranth	*Amaranthus* spp.
Australian crassula	*Crassula sieberiana*
Bindweed/climbing buckwheat	*Fallopia convolvulus*
Blackberry nightshade	*Solanum nigrum*
Caltrop	*Tribulus terrestris*
Capeweed	*Arctotheca calendula*
Common Catsear	*Hypochaeris radicata*
Crassula/stonecrop	*Crassula colorata*
Fat Hen	*Chenopodium album*
Heliotrope	*Heliotropium europaeum*
Marshmallow/Small-flowered mallow	*Malva parviflora*
Medics	*Medicago* spp.
Mexican poppy	*Argemone ochroleuca*
Muskweed	*Myagrum perfoliatum*
Paterson's curse	*Echium plantagineum*
Prickly lettuce	*Lactuca serriola*
Red pigweed	*Portulaca oleracea*
Scarlet Pimpernel	*Anagallis arvensis*
Slender thistle	*Carduus pycnocephalus*
Sowthistle	*Sonchus oleraceus*
Spiny emex	*Emex australis*
Stinging nettle	*Urtica dioica*
Volunteer canola max 4 leaf including Roundup Ready† varieties	*Brassica napus*
Volunteer cotton seedlings including Roundup Ready Flex† varieties	*Gossypium* spp.
Volunteer pulse crops including lupin and chickpea	*Lupinus angustifolius* *Cicer arietinum*
Wild turnip/turnip weed	*Rapistrum rugosum*

Weed Table B	
Khaki Weed	*Alternathera repens*
Shepherd's purse	*Capsella bursa pastoris*
Storksbill	*Erodium* spp.
Wild radish	*Raphanus raphanistrum*
Wireweed	*Polygonum aviculare*

GENERAL INSTRUCTIONS
SIERRA® is a post-emergence herbicide that is used to improve the control of certain broadleaf weeds including fleabane prior to the establishment of fallows, prior to establishing winter and summer broadacre crops, in commercial, industrial and public service areas, around agricultural buildings, yards and other farm situations. SIERRA® can be applied solo or in a tank mix with glyphosate products, or paraquat products (such as Spraytop) in situations described in the Directions for Use tables. SIERRA® may be used alone with a suitable adjuvant for control of volunteer cotton seedlings including Roundup Ready Flex cotton. SIERRA® is a fast acting contact herbicide and aids in control of weeds through a process of membrane disruption. The foliar uptake of SIERRA® is rapid and plant desiccation can occur within 4 days of application. Application of SIERRA® should target small actively growing weeds. Subsequent germinations will not be controlled.

SYMPTOMS
SIERRA® is rapidly absorbed through the foliage of plants. Within a few hours following application, the foliage of susceptible weeds will show signs of desiccation, and in subsequent days necrosis and death of the plant.

COMPATIBILITY
SIERRA® should always be used with a high quality blended methylated/ethylated seed oil such as Hasten, Plantocrop or Kwickin.
SIERRA® is compatible with a range of Adama herbicides and other crop protection products. Always follow the correct mixing order. Refer to the SIERRA® physical compatibility guide and correct mixing order guide at adama.com before use.

TIMING
Application should be made to small, actively growing weeds up to 10 leaf in stage (Note: Fleabanes, small-flowered mallow, bladder ketmia and volunteer cotton, maximum 6 leaf; volunteer canola, maximum 4 leaf).
As SIERRA® is a contact herbicide, best control is achieved when weeds are exposed and are not shielded by other weeds and/or stubble.

MIXING
Completely fill spray tank with water, leaving sufficient room for the addition of products and start agitation. Add any partner WG or SC herbicide if it should be added, before an EC, and allow sufficient time for any granular products to completely disperse. Add the measured amount of SIERRA®, followed by SL formulations of glyphosate e.g. Wipe-Out® Pro or those specified in the SIERRA® physical compatibility guide, or paraquat e.g. Spraytop (if required). Add a high quality blended methylated/ethylated seed oil such as Hasten, Plantocrop or Kwickin at 1%. Maintain good agitation at all times until spraying is completed.

APPLICATION
The best application conditions are when soil is moist, weather fine and rain unlikely within one hour or as specified for the knockdown herbicide.
SIERRA® is rainfast one hour after application.
Burndown activity may be reduced if rain or irrigation occurs within one hour of application. Extremes in environmental conditions e.g. temperature and moisture, soil conditions and/or cultural practices may affect the activity of SIERRA®.
SIERRA® is a light activated herbicide and under intense light, warm and moist conditions, herbicide symptoms may be accelerated. Under very dry conditions, the expression of herbicidal symptoms is delayed and weeds hardened off by drought are less susceptible to SIERRA®.
Stubble loads will interfere with coverage and could affect the performance of SIERRA®. Reduced performance may also occur where weeds are covered with dust or silt.
Refer COMPATIBILITY section and SIERRA® physical compatibility guide if intending to tank-mix with other products by ground sprayer or aerial application.

Ground sprayers
Apply SIERRA® as a broadcast application using a conventional boom sprayer with either mechanical or by-pass agitation.
SIERRA® can also be applied using Optical Spot Spray Technologies where sprayers are calibrated to apply an equivalent spray volume of 100 L/ha.

Aerial application
SIERRA® is a contact foliar-absorbed herbicide. It is important to apply in sufficient water to achieve thorough coverage of target foliage or weeds.

Nozzle selection
Spray equipment should be properly calibrated to ensure correct and uniform application. Use a spray volume of 80 to 250 litres per hectare (minimum 80 L/ha for volunteer cotton). Increase water volume if weed infestation is dense and/or tall. To minimise off-target drift use the lowest pressure and boom height which provides uniform coverage.

CROP PLANT BACK & ROTATION RECOMMENDATIONS
SIERRA® does not provide long-term residual activity; however, certain crops show sensitivity to soil residues. Refer to the following table for application-to-sow intervals applicable to the maximum label rate.

1 hour	1 day	6 weeks	16 weeks
Barley	Cowpea	Cotton	Sunflower
Wheat	Sorghum	Canola	Other crops
Oats	Soybean		
Faba/broad bean			
Corn			
Chickpea			
Field pea			
Lentil			
Lupin			
Sub clover			

Check the label of any product mixed with SIERRA® to determine any plant back periods or restrictions on use.

RESISTANT WEEDS WARNING
GROUP 14 HERBICIDE
SIERRA® is a member of the N-phenyl imides group of herbicides. Its mode of action is through a process of membrane disruption, which is initiated by the inhibition of the enzyme protoporphyrinogen oxidase. This inhibition interferes with the chlorophyll biosynthetic pathway. For weed resistance management SIERRA® is a Group 14 herbicide. Some naturally occurring weed biotypes resistant to SIERRA® and other Group 14 herbicides may exist through normal genetic variability in any weed population and increase if these herbicides are used repeatedly. These resistant weeds will not be controlled by SIERRA® or other Group 14 herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use, Adama Australia Pty Ltd accepts no liability for any losses that may result from the failure of SIERRA® or other Group 14 herbicides.

RE-ENTRY
DO NOT allow entry into treated areas until the spray has dried, 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.

PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS
DO NOT apply under weather conditions, or from spray equipment, which may cause spray drift onto nearby susceptible plants, adjacent crops, or pastures.
Off-target drift of SIERRA® onto foliage and green stems of cotton and grapevines and other sensitive plants will cause marked damage.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT
Very toxic to aquatic life. DO NOT contaminate wetlands or watercourses with this product or used containers.

INTEGRATED PEST MANAGEMENT
Not compatible with integrated pest management (IPM) programs utilising beneficial arthropods.

STORAGE AND DISPOSAL
Store in the closed, original container in a cool, well-ventilated area. Do not store for prolonged periods in direct sunlight.
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.
***drumMUSTER* Containers:** This container can be recycled if it is clean, dry, free of visible residues and has the *drumMUSTER* logo visible. Triple rinse container for disposal. Dispose of rinsate by adding it to the spray tank. DO NOT dispose of undiluted chemical on site. Wash outside of the container and the cap. Store cleaned container in a sheltered place with cap removed. It will then be acceptable for recycling at any *drumMUSTER* collection or similar container management program site. The cap should not be replaced, but may be taken separately.

SAFETY DIRECTIONS
Harmful if inhaled or swallowed. May irritate the eyes and skin. Repeated exposure may cause allergic disorders. Sensitive workers should use protective clothing. Avoid contact with eyes and skin. Do not inhale vapour or spray mist.
When using together with other products, consult their label safety directions.
When opening the container and preparing spray, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), elbow-length chemical gloves and a half face piece respirator.
Wash hands after use. After each day's use, wash gloves, respirator (if rubber wash with detergent and warm water) and contaminated clothing.

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

ADDITIONAL USER SAFETY INFORMATION
WARNING: DO NOT use if pregnant.

SDS
Additional information is listed in the safety data sheet (SDS). A safety data sheet for SIERRA® is available from adama.com or call Customer Service on 1800 423 262.

CONDITIONS OF SALE: The use of SIERRA® Herbicide being beyond the control of the manufacturer, no warranty expressed or implied is given by Adama Australia Pty. Ltd., regarding its suitability, fitness or efficiency for any purposes for which it is used by the buyer, whether in accordance with the Directions for Use or not. Adama Australia Pty. Ltd. accepts no responsibility for any consequence whatsoever resulting from the use of this product.

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† Other trademark.

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