

Product Name: Sero-X Pesticide
APVMA Approval No: 81070/129496



Label Name:	Sero-X Pesticide
Signal Headings:	READ SAFETY DIRECTIONS BEFORE OPENING OR USING
Constituent Statements:	400 g/L CLITORIA TERNATEA EXTRACT
Mode of Action:	
Statement of Claims:	For the control or suppression of a range of insect pests, including green mirids, silver leaf white fly (biotype b), heliothis, diamondback moth and two spotted spider mite, in cotton, lucerne, brassicas, cucurbits and tomatoes as specified in the Directions for Use table. Also for use in cotton for the reduction in formation of the microsclerotia of <i>Verticillium dahliae</i> assisting in the management of Verticillium wilt.
Net Contents:	1 L - 1000 L
Restrains:	This section contains file attachment.
Directions for Use:	This section contains file attachment.
Other Limitations:	
Withholding Periods:	WITHHOLDING PERIODS HARVEST: Not required when used as directed.
Trade Advice:	

General Instructions:

GENERAL INSTRUCTIONS

Sero-X Pesticide contains the active constituent Clitoria ternatea Extract. Clitoria ternatea extract includes many different biologically active compounds which in combination reduce the economic damage caused by target pests through insecticidal and behaviour modification activity such as egg laying disruption and anti feeding. Sero-X Pesticide does not rely solely on direct mortality to provide crop protection.

It can be used as a protective treatment when applied at regular intervals or as a knockdown treatment to control existing pests. This product is suitable for use in Integrated Pest Management (IPM) programs. Effects on insect predators or parasites have been demonstrated as low.

The biological extract in Sero-X is comprised of many bioactive compounds and as a result will have different modes of action. The likelihood of resistance developing to all of the bioactive compounds is considered low. However, as the product requires repeated treatment for good results, it is suggested that this product is incorporated into an Integrated Pest Management plan where insect management products are rotated during the growing season to minimise resistance development to any insecticide product being used.

MONITORING

Detailed checks of pest numbers as per best practice pest management requirements are recommended to ensure application can be made at the earliest suitable time to achieve the best result.

MIXING

Shake or agitate the container prior to mixing with water. Add the required quantity of Sero-X Pesticide to clean water in half filled spray tank with agitator or by-pass in operation. Maintain agitation while filling tank with remainder of water. Agitation must also be maintained throughout the spray operation.

COMPATIBILITY

Sero-X Pesticide is an emulsifiable concentrate and is likely compatible with commonly used organic liquid fertilizers. Always check the physical compatibility with other products using a jar test in the correct proportions. Do not mix Sero-X with paraffinic oils.

SURFACTANTS

Sero-X Pesticide contains a surfactant, so no additional surfactant is required.

APPLICATION

Sero-X Pesticide may be applied by ground rig or aircraft. Thorough coverage is essential to ensure adequate control. Applications should be made using nozzles, pressures and other spray conditions to produce a fine / medium spray.

Ground Application: An application volume of 50-200 L/ha is recommended for cotton and Lucerne. A spray volume of 100-500 L/ha is recommended for brassicas. For cucurbits and tomatoes, and brassica crops at a later stage of development, e.g. after head formation, apply Sero-X on a per 100L rate with total spray volumes from 300 L – 1000 L/ha.

Aerial Application: Apply in a minimum of 30 L/ha water. Use appropriate water volume to achieve thorough coverage. A strategy to minimise spray drift should be employed at all times when aurally applying sprays near sensitive areas. Such a strategy is illustrated by the cotton industry's Best Management Practice Manual.

Resistance Warning:

Precautions:	<p>PRECAUTIONS For PROFESSIONAL use only. Re-entry: 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. Clothing must be laundered after each days use.</p>
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Protections:	<p>INTEGRATED PEST MANAGEMENT Brassicas, Cucurbits, Lucerne and Tomatoes: The effect on insect predators or parasites of Sero-X at rates exceeding 2 L/ha has not been established and may not be compatible with integrated pest management (IPM) programs utilising beneficial arthropods. Minimise spray drift to reduce harmful effects on beneficial arthropods in non-crop areas.</p> <p>PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT DO NOT contaminate wetlands or watercourses with this product or used containers.</p>
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Storage and Disposal:	<p>STORAGE AND DISPOSAL KEEP OUT OF REACH OF CHILDREN. Store in the closed, original container in a cool, well-ventilated area. Do not store for prolonged periods in direct sunlight.</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. 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>SAFETY DIRECTIONS Will irritate eyes. Avoid contact with eyes. When opening the container and preparing spray wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), elbow length chemical resistant gloves and goggles. When using the prepared diluted spray, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing). If product in eyes, wash it out immediately with water. Wash hands after use. After each day's use, wash gloves, goggles and contaminated clothing.</p>
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First Aid Instructions:	<p>FIRST AID INSTRUCTIONS First aid is not generally required. If in doubt, contact a Poisons Information Centre (phone Australia 13 11 26; or a doctor.</p>
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First Aid Warnings:	
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RESTRAINTS

DO NOT apply if heavy rains or storms are forecast within 3 days.

DO NOT irrigate past the point of water runoff from the treatment area for at least 3 days after application. Tail drains which flow from treated areas should be prevented from entering river systems.

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 relevant buffer zone table/s 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 1 to 2 hours before sunset and persist until 1 to 2 hours after sunrise.

DO NOT apply by a boom sprayer unless the following requirements are met:

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

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 10 L/ha	0.5 m or lower	0 m	0 m	0 m	0 m	0 m
	1.0 m or lower	0 m	10 m	0 m	0 m	0 m
Up to 4 L/ha	0.5 m or lower	0 m	0 m	0 m	0 m	0 m
	1.0 m or lower	0 m	0 m	0 m	0 m	0 m

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

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

Buffer zones for aircraft

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 10 L/ha	Fixed-wing	0 m	35 m	0 m	0 m	0 m
	Helicopter	0 m	40 m	0 m	0 m	0 m
Up to 4 L/ha	Fixed-wing	0 m	0 m	0 m	0 m	0 m
	Helicopter	0 m	0 m	0 m	0 m	0 m

DIRECTIONS FOR USE

CROP	PEST	RATE	CRITICAL COMMENTS
Brassicas	Diamondback moth (<i>Plutella xylostella</i>)	2 L / ha (or 2/100L)	Apply as soon as diamondback moth appear and approach threshold levels. Ensure good coverage with a maximum 7 day retreatment interval to ensure that there is a constant exposure of new larvae to Sero-X. Use the /100L rate for higher pest pressure or large crops and ensure good coverage.
Cotton	Cotton bollworm (<i>Helicoverpa armigera</i>) Native budworm (<i>Helicoverpa punctigera</i>) Silverleaf whitefly (biotype b) (<i>Bemisia tabaci</i>) Green mirid (<i>Creontiades dilutus</i>)	2 L / ha	Apply as indicated by field checks and pest presence thresholds to a maximum of 5 applications per growing season. Ensure good coverage. Note treatment effects may not be seen for 3 or more days. Suppression of pest numbers rather than control may occur if sufficient exposure is not possible. Best results are obtained when Sero-X Organic Pesticide is applied before pest populations build up to damaging levels. Budworm and Bollworm: Applications should be timed to coincide with egg hatch and when small larvae up to 5 mm are present. A second application at 7 days may be required if conditions favour pest development. Silver leaf white fly, Green mirid: Apply at recommended threshold levels as indicated by field checks. A repeat application may be required at 14-20 days if conditions favour pest development.
	<i>Verticillium dahliae</i> microsclerotia	2 L / ha	Applications in the current season will reduce levels of <i>Verticillium dahliae</i> microsclerotia in soil following harvest. Mix with water and apply in 30-50L spray mix per hectare. Three applications are required at the following timing: 1. When majority of plants are between first square and first flower 2. When majority of plants are between mid to peak flowering 3. With the first defoliation
Cucurbits	Silverleaf whitefly (biotype b) (<i>Bemisia tabaci</i>)	800mL/100L	Apply at recommended threshold levels as indicated by field checks. Additional applications at 7 day intervals may be required if conditions favour pest development.
Lucerne	Cotton bollworm (<i>Helicoverpa armigera</i>)	2-4 L / ha	Apply as indicated by field checks and pest presence thresholds. Ensure good coverage. Note treatment effects may not be seen for 3 or more days. Suppression of pest numbers rather

	<p>Native budworm (<i>Helicoverpa punctigera</i>)</p> <p>Green mirid (<i>Creontiades dilutus</i>)</p>		<p>than control may occur if sufficient exposure is not possible. Best results are obtained when Sero-X Organic Pesticide is applied before pest populations build up to damaging levels.</p> <p>Applications should be timed to coincide with egg hatch and when small larvae up to 5 mm are present. Additional applications at 7 day intervals may be required if conditions favour pest development. Use the higher rate for late applications.</p>
Tomato	<p>Cotton bollworm / Tomato grub / corn earworm (<i>Helicoverpa armigera</i>)</p> <p>Native budworm (<i>Helicoverpa punctigera</i>)</p> <p>Silverleaf whitefly (biotype b) (<i>Bemisia tabaci</i>)</p> <p>Two spotted mite (<i>Tetranychus urticae</i>)</p>	800mL/100L	<p>Apply as indicated by field checks and pest presence thresholds. Ensure good coverage. Note treatment effects may not be seen for 3 or more days. Suppression of pest numbers rather than control may occur if sufficient exposure is not possible. Best results are obtained when Sero-X Organic Pesticide is applied before pest populations build up to damaging levels.</p> <p>Budworm and Bollworm: Applications should be timed to coincide with egg hatch and when small larvae up to 5 mm are present. Additional applications at 7 day intervals may be required if conditions favour pest development.</p> <p>Other pests: Apply at recommended threshold levels as indicated by field checks. A repeat application may be required at 7-14 days if conditions favour pest development.</p>

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