



# Brassica Use Technical Update

Sero-X® is a world first plant extract natural chemical pesticide which has a revolutionary set of peptides as the primary active compounds.

The active constituent of Sero-X is *Clitoria ternatea* extract, is the worlds first approved active constituent to contain the bioactive peptides known as cyclotides. Ultra stable peptides like cyclotides meet the challenge of providing environmentally positive and socially acceptable food security to the world's growing population.

The product is formulated from *Clitoria ternatea*, a plant that exhibits insect pest behaviour modification (semiochemical) and insecticidal properties. It minimises damage caused by a range of insect pests in a number of target fibre and food crops.

Sero-X and its bio-active compounds are the centre of much global research but brought to you in a product for the very first time right here in Australia by a regional company. Never before has Australian R&D had a new active constituent pass the regulatory approval requirements here first, to give Australian growers first access to an exciting new product.

## General Instructions

Sero- X includes many different biologically active compounds which in combination reduce the economic damage caused by target pests through

1. **Direct Toxicity:** target pests, only those that feed of plant material, will be killed when exposed directly to the bio-active peptide compounds.
2. **Anti-feedant and repellency:** Non-toxic to mammals and non target species, the Sero-X residue on treated plants both deters pest feeding or repels them for the crop. Pests will make an alternative choice on where to land or chose to starve rather than eat a crop treated with Sero-X.
3. **Mating disruption:** The presence of the residues of Sero-X on treated plants disrupts the mating behaviour of pests. Pests will avoid landing, or laying eggs, or simply behave in a different way that reduces their reproductive success on areas treated with Sero-X.

With these three modes of action the likelihood of resistance developing amongst target pests is highly unlikely. 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.

**APVMA Approval No:**  
81070/120291



**Allowed Input**  
Cert. No. 20021



**Innovate Ag & Growth Agriculture**

77a Rose Street, Wee Waa NSW 2388

FREE CALL 1800 440 438

e: [info@innovate-ag.com.au](mailto:info@innovate-ag.com.au) w: [innovate-ag.com.au](http://innovate-ag.com.au)



# SERO- INSECTICIDE



## Directions for Use

CROP	PEST	STATE	RATE	CRITICAL COMMENTS
Brassicas	Diamondback moth ( <i>Plutella xylostella</i> )	All states	2 L / ha	Apply as soon as diamondback moth appears 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.

## Water rates and Application

The main active compounds in Sero-X are not systemic or translaminar - so thorough coverage is essential.

An application volume of 300 L/ha for brassicas early stage is recommended.

For crops at a later stage of development, e.g. after head formation, apply Sero-X at 2 L per 100 L of water.  
**(equivalent to 2% v/v)**

## Withholding period and MRL

The extremely low mammalian and non target species toxicity of Sero-X means there is

- No maximum residue limit
- No withholding periods
- Re-entry permissible as soon as product has dried

## Pollinators and Predators

The actives in Sero-X are understood to only have an impact on plant eating insects.

There has been no impact observed on pollinators and either no or extremely low impact observed on predators.

The fact that peptides denature into amino acids and do not persist in the environment means chronic impact on pollinators and predators is also not observed.

## Contact us for more information



**Innovate Ag & Growth Agriculture**

77a Rose Street, Wee Waa NSW 2388

FREE CALL 1800 440 438

e: [info@innovate-ag.com.au](mailto:info@innovate-ag.com.au) w: [innovate-ag.com.au](http://innovate-ag.com.au)