

SERO-
PESTICIDE



400 g/L *Clitoria Ternatea* Extract

INNOVATE AG

VERTICILLIUM WILT TECHNICAL GUIDE



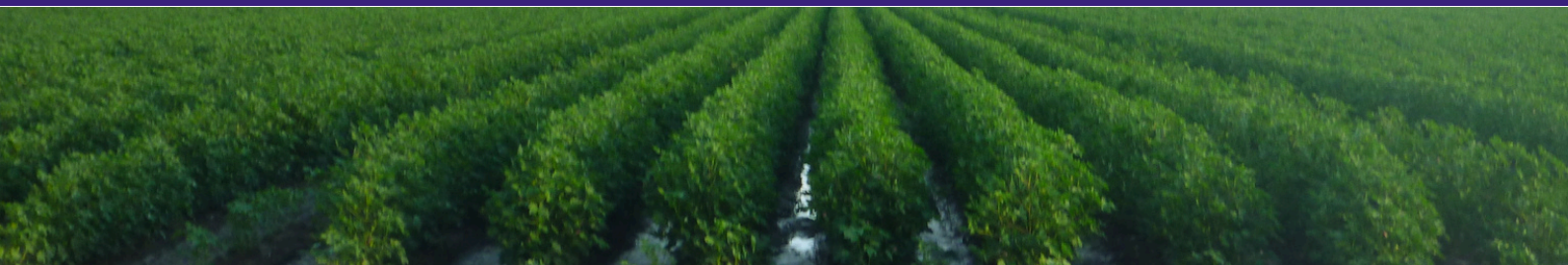
LABEL CLAIM:

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 *Verticillium dahliae* assisting in the management of Verticillium wilt.



AUSTRALIAN RESEARCH COUNCIL CENTRE OF EXCELLENCE FOR
INNOVATIONS IN PEPTIDE AND PROTEIN SCIENCE



CROP	PEST	RATES L/HA	WATER L/HA	CRITICAL COMMENTS
COTTON	Cotton bollworm, Native budworm (<i>Helicoverpa spp</i>) Silverleaf whitefly (biotype b) (<i>Bemisia tabaci</i>) Green mirid (<i>Creontiades dilutus</i>) Qld, NSW and WA Only	2L/Ha	50-200L water/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. Best results are obtained when Sero-X Insecticide is applied before pest populations build up to damaging levels. See Label for more details.
COTTON	<i>Verticillium dahliae</i> microsclerotia Qld, NSW and WA Only	2L/Ha	50-200L water/Ha	Applications in the current season will reduce levels of <i>Verticillium dahliae</i> microsclerotia in the soil following harvest. Mix with water and apply in 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

SERO-X vs Verticillium Wilt

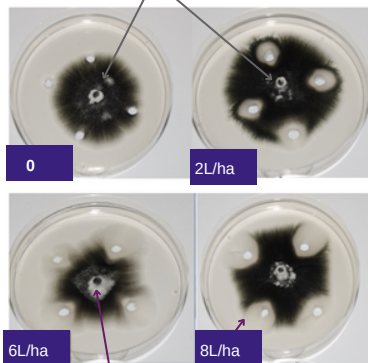
Years of research established the claim that Sero-X will aid in the management of Verticillium wilt by reducing the formation of microsclerotia in the dying plant tissue of cotton.

By reducing the amount of the survival structure of the pathogen returning to the soil Sero-X can prevent or limit an increase in inoculum in the soil in those seasons where it would normally increase, and just as importantly speed up the reduction that would be seen in naturally decreasing years.

Research continues on mode of action with our CIPPS colleagues and measurement tools available at a commercially scalable level.

Innovate Ag recommends using Sero-X alongside other Verticillium Wilt management practices.

Verticillium dahliae microsclerotia the long term survival structure



Sero-X inhibition zones

Courtesy of Dr Karen Kirkby Plant Pathologist



Terminology

Pathogen - *Verticillium dahliae*
Inoculum - included all parts of the pathogen (conidia, hyphae or microsclerotia)

Microsclerotia – mass of melanised cells (**propagule**).

- This is the survival structure
- Contain food reserves for extended survival (>14 years)
- Resistant to harsh conditions

PPG - propagules per gram of dry soil

SERO-X vs Herbivorous Arthropods

Sero-X is registered in cotton against *Helicoverpa spp*. Silverleaf whitefly (biotype b) (*Bemisia tabaci*) and Green mirid (*Creontiades dilutus*). It has three distinct modes of action that provide control.



- Anti-feedant: Resulting in reduced plant damage and leading to starvation and decreased viability of the pest.
- Direct Mortality: The specific active peptide will disrupt the membrane wall in the cells of the pest
- Ovipositing deterrent: Altering pest behaviour to adversely affect egg lay.

FIND OUT MORE

Scan the QR code for more information including APVMA label and technical guides
APVMA Approval no: 81070/129496

