


Spear T LC and Spear-Lep

Daniel Peck
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Vestaron Corporation
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Spear T LC and Spear-Lep

- Biological Insecticide/Miticide
 - Approved Aug 2017 (Spear-T)
 - Approved Sep 2018 (Spear Lep)
- Peptide active ingredient
 - GS-omega/kappa-Hctx-Hv1a
 - New IRAC Group 32 awarded Nov 2018



SPEAR-T
LIQUID CONCENTRATE

Biological Insecticide

Active Ingredient:
GS-omega/kappa-Hctx-Hv1a

Other Ingredients:

Total:

Contains 0.17 lb active ingredient per gallon.


**KEEP OUT OF REACH OF CHILDREN
CAUTION/PRECAUCION**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)
See inside booklet for additional Precautionary Statements and Storage and Disposal.

FIRST AID	
If in eyes	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15 – 20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If on skin or clothing	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 – 20 minutes. • Call a poison control center or doctor for treatment advice.

HOTLINE NUMBER
Have the product container or label with you when calling a poison control center or doctor, or when going for treatment. You may also contact 1-800-535-5053 (and +1-352-323-3500 for International) for emergency medical treatment information and chemical emergency assistance.

Produced for:
Vestaron Corporation
600 Park Offices Drive, Suite 117
Research Triangle Park, NC 27709



SPEAR-LEP
For Control of Lepidopterans

Biological Insecticide

GROUP 32 INSECTICIDE

Active Ingredient:
GS-omega/kappa-Hctx-Hv1a

Other Ingredients:

Total:

Contains 0.17 lb of active ingredient per gallon.

**KEEP OUT OF REACH OF CHILDREN
CAUTION/PRECAUCION**

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**EPA Reg. No.: 88847-6
EPA Est. No.: Printed on Container
Made in USA**

NET CONTENTS: 1 GALLON (3.78 L)

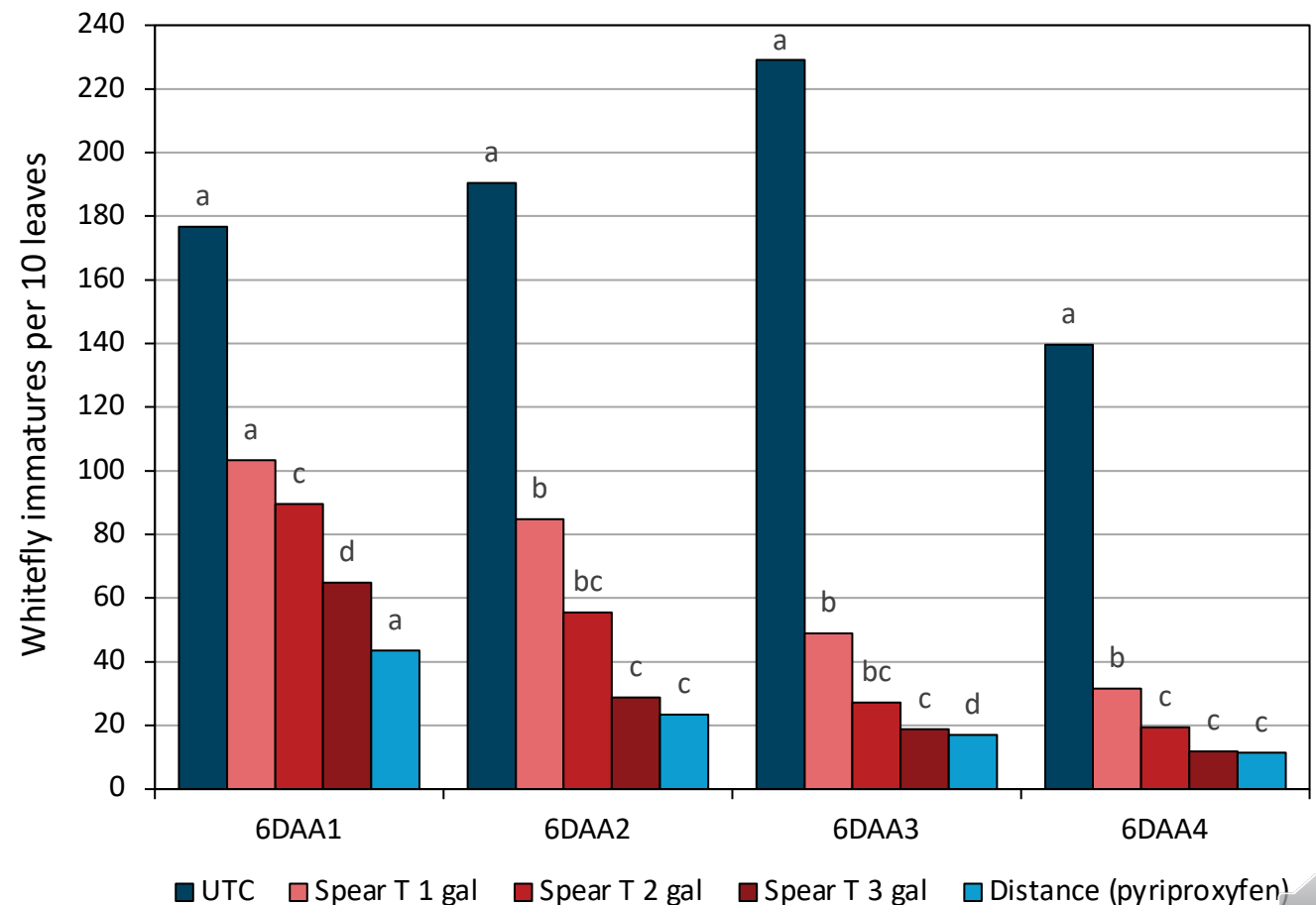
SAL030421 REV031121v1.0



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 - New IRAC Group 32 awarded Nov 2018
- Spear-T works through contact
 - Aphids, mites, thrips, whiteflies
 - 1-3 gallons per 100 gallons (or per acre)

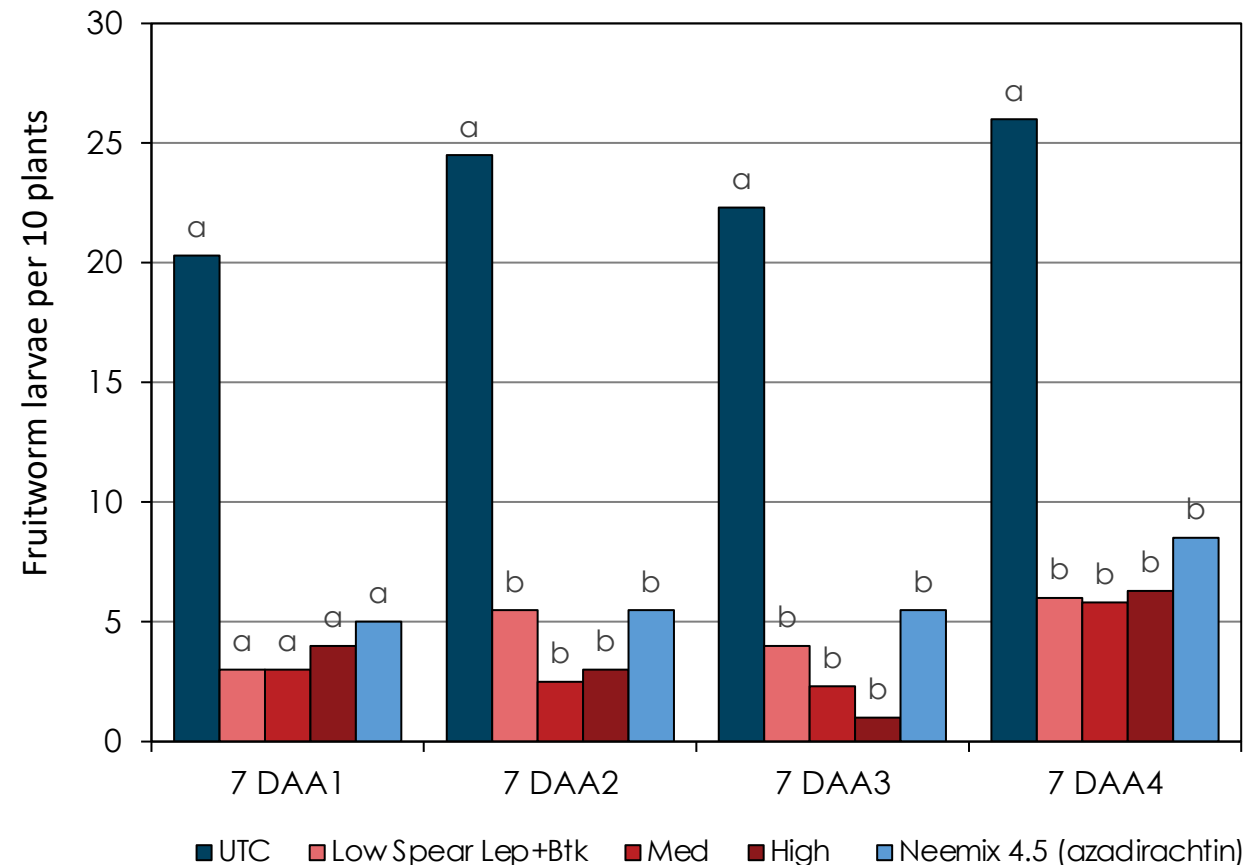
Silverleaf whitefly Immatures (*Bemisia tabaci*) on GH Tomato
AgroSci, Merced, CA 2019



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- Spear-T works through contact
 - Aphids, mites, thrips, whiteflies
 - 1-3 gallons per 100 gallons (or per acre)
- Spear Lep works through ingestion
 - Must be combined with gut disrupting facilitator
 - Targets lepidopteran larvae (with Btk, Bta)
 - 1-2 pt per acre

Tomato Fruitworm Larvae (*Helicoverpa zea*) on Field Tomato
Conviviendo con la Naturaleza, Michoacán, MEX 2020



Spear T LC and Spear-Lep

- 0-day PHI, 4-hour REI, no MRLs
- Min 2-year shelf life; no refrigeration
- Non-toxic to bees; soft on beneficials
- New tool for insecticide resistance management
- Low risk of phytotoxicity
- Versatility for fogging and dipping (Spear-T)
- Reduce reliance on conventional products with less favorable safety profiles



Spear T LC Needs Going Forward

- Additional target species
 - Lewis mites, Eriophyid mites
 - Chili thrips, Echinothrips
 - Aphids, Mealybugs, Scales (any)
- Expansion into outdoor uses
 - Landscape ornamentals, Nurseries
- Improving best use practices
 - Fogging
 - Role of surfactants/adjuvants
 - Feasibility of lower use rates
- Role as rotational product
 - Resistance management programs



<https://www.greenhousegrower.com/production/ornamentals-production/tips-on-holding-plants-in-the-greenhouse-during-covid-19/>





<https://www.nurserymag.com/article/amleo-burlap/>

Spear-Lep Needs Going Forward

- Broader performance data for certain labelled use sites
 - Flowers, bedding plants, container plants, nurseries
 - Forest, ornamental and shade trees
- Co-application with facilitators (gut disruptors) besides *Bt kurstaki*
 - *Bt ssp. aizawai* for other lep species
 - *Bt ssp. tenebrionis* or *ssp. galleriae* for beetle species
- Role as rotational product
 - Resistance management programs

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