



SPEAR® LEP | Insecticide for Tree Nuts

THE POWER OF SYNTHETICS. THE SAFETY AND SUSTAINABILITY OF BIOLOGICALS.

Peptide
emPOWERed
Insecticide

Spear® LEP is Vestaron's revolutionary insecticide for almonds, pistachios, walnuts, hazelnuts, and pecans. Targeting worms such as Navel Orangeworm, Peach Twig Borer, and Codling Moth, field trials with Spear LEP show performance that is equivalent to conventional insecticides. With no known resistance or cross resistance, Spear LEP works as a standalone or in rotation with conventional insecticides. Spear LEP is an excellent IPM and resistance management tool.

PRODUCT INFORMATION

EPA REG #	88847-6
AI	GS-OMEGA/ KAPPA-HXTX-HV1A
FORMULATION	LIQUID
IRAC GROUP	32
SIGNAL WORD	CAUTION
REI	4 HOURS
PHI	0 DAYS
PACKAGE SIZE	1 GAL, 4 X 1 GAL CASE
USE RATE	2 PT/ACRE PLUS Btk
SURFACTANT	For best performance, use with a NIS or spreader/sticker at 0.125% v/v

PESTS CONTROLLED

- NAVEL ORANGEWORM
- PEACH TWIG BORER
- CODLING MOTH
- FILBERTWORM
- PECAN NUT CASEBEARER

KEY FACTS

- Insecticide based on a naturally occurring peptide
- Highly specific for lepidopteran larvae with very low risk to beneficials
- Control equivalent to synthetic options
- Vital new tool for sustainable pest management
- New IRAC Group 32 supporting resistance management
 - Mode of Entry: Ingestion
 - Mode of Action: Disruption of the nicotinic acetylcholine receptor
- Spear LEP is effective when tank-mixed with a gut disrupting facilitator such as *Bacillus thuringiensis* (Btk) (*we recommend Leprotec®*)
- Excellent environmental and worker safety profile
- 0-Day PHI, 4-Hour REI, & MRL Exempt
- Low risk of phytotoxicity



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An MRL exemption indicates residue levels on food are not required to be measured or enforced when the product is used as directed by the label.

MRL EXEMPT

0-DAY PHI

Spear LEP can be applied and crops can be harvested within the same day, providing a tool that allows growers flexibility in the field.

A short Restricted-Entry Interval (REI) provides flexibility and desired worker safety profiles.

4-HOUR REI

NEW IRAC GROUP 32

Spear LEP works on a unique neuromuscular receptor qualifying as the first product in IRAC Group 32.



HOW IT WORKS



Caterpillar ingests plant tissue treated with Spear LEP and a low dose of Btk.



The open channel causes persistent depolarization of the nerve cell.



Btk crystal proteins damage the gut cells allowing Spear LEP access to the nervous system.



The affected cells are unable to reset and transmit new electrical signals.



Spear LEP helps neurotransmitters to bind and open the receptor's ion channels.



This causes paralysis and death of the insect.

* Leprotec is Vestaron's OMRI Certified Btk insecticide that is the ideal partner for use with Spear LEP. When ingested together, the non-lethal dose of Btk proteins perforate the insect mid-gut allowing the Spear peptide to access the target receptor in the nervous system, killing the pest.

TANK MIXING

- **TANK MIX ORDER**

- 1st: Powder/dry products
- 2nd: Non-EC liquid, flowable, soluble concentrate products
- 3rd: Emulsifiable concentrates (EC)
- 4th: Adjuvants and surfactants

- **WATER, AGITATE, SPEAR-LEP**

Do not add Spear LEP to the mix tank before introducing the desired amount of water. Start mechanical/hydraulic agitation before adding Spear LEP.

- **ADJUVANTS & SURFACTANTS**

Always use adjuvant and/or surfactant to improve spray coverage. Check/adjust the spray solution pH to 5.5-6.5, then add adjuvant/surfactant to the dilute spray solution.

- **CIRCULATE**

Maintain circulation while loading and spraying solution.

SPEAR-LEP

A SOLUTION BY
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THE POWER OF PEPTIDES

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