Spear®-Lep is Vestaron’s revolutionary bioinsecticide for pome and stone fruit, tree nuts, vegetables and other high-value field and orchard crops. Targeting lepidopteran pests such as loopers, worms and caterpillars, field trials with Spear-Lep show performance that is equal or superior to conventional insecticides. With no known resistance or cross-resistance, Spear-Lep works as a standalone, or in rotation with conventional insecticides as an excellent IPM and resistance management tool.

**REVOLUTIONARY CONTROL**

- ALMOND
- APPLE
- BLUEBERRY
- CHERRY
- CRANBERRY
- GRAPES
- HAZELNUT
- HOPS
- PEAR
- POTATO
- STONE FRUIT
- STRAWBERRY
- TOMATO
- TREE NUTS
- VEGETABLES

**KEY FACTS**

- Bioinsecticide based on a naturally occurring peptide
- Highly specific for lepidopterans with very low risk to beneficials
- Control that equals or surpasses conventional options
- Vital new tool for sustainable pest management
- New IRAC group 32 supporting resistance management
- Spear-Lep is effective when tank-mixed with its synergist, Bacillus thuringiensis (Btk)
- Excellent environmental and worker safety profile
- Zero-day PHI, 4-hour REI, MRL exempt
- Mode of entry - ingestion
- Mode of action - disruption of the nicotinic acetylcholine receptor
- Low risk of phytotoxicity
- Registered in all 50 states

**QUICK INFO**

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

**POME FRUIT AND OTHER**

(see label for full list)

- ALMOND
- APPLE
- BLUEBERRY
- CHERRY
- CRANBERRY
- GRAPES
- HAZELNUT
- HOPS
- PEAR
- POTATO
- STONE FRUIT
- STRAWBERRY
- TOMATO
- TREE NUTS
- VEGETABLES

Vestaron is The Peptide Company dedicated to improving the safety, efficacy and sustainability of crop protection through migration from synthetic pesticides to biological peptides. Initially, Vestaron is focused on a class of peptides that kills insect pests efficiently, but is safe for humans, birds, fish, pollinators and the environment. As part of this, the company has developed a proprietary platform for peptide optimization and fermentation-based peptide production that will allow development of a wide variety of effective crop protection solutions. Vestaron brands are emPOWERed by Peptides – providing new technology with a unique mode of action in a biological solution equal to, and often better, than the synthetic options; creating the opportunity to incorporate a new IRAC Group 32 into rotation recommendations for resistance management.

**THE POWER OF SYNTHETICS. THE SAFETY AND SUSTAINABILITY OF BIOLOGICALS.**
TRIALIST:
- Michigan State University (Dr. Larry Gut), 2017

DESIGN:
- Leaf disc bioassay
- 10-18 replications
- 10 first instars per replication

TREATMENTS:
- Untreated check: water only
- Spear-Lep: Spear-Lep (4.76 mL) and Leprotec (Bt ssp. kurstaki, 3.75 mL) in 1 L water
- Conventional: Delegate 25WG (spinetoram, 1.09 mL) in 1 L water

APPLICATIONS:
- Single exposure leaf dip into treatment solutions
- Larval survival assessed at 48 hr

RESULTS SUMMARY:
- Spear-Lep/Leprotec is active against four of the major lepidopteran pests of apples
- Within 48 hr, 46-72% of larvae were killed after feeding on leaves dipped into Spear-Lep/Leprotec spray solution, compared to 89-100% for the conventional standard
- Mortality from the conventional standard was numerically higher than Spear-Lep/Leprotec for all four species, but not statistically different for Codling Moth and Oblique-banded Leafroller

TRIALIST:
- LABServices (James Steffel), PA, 2019

DESIGN:
- Outdoor orchard trial
- RCBD, 4 replications
- Single-tree plots with unsprayed border trees

TREATMENTS:
- Untreated check: water only
- Spear-Lep at low and high label rates, each with a matching volume of Leprotec (Bt ssp. kurstaki)
- Spear-Lep rotation: Spear-Lep/Leprotec (2/1 pt/A) rotated with Altacor (chlorantraniliprole, 3.5 oz wt/A)
- Conventional rotation: Assail (acetamiprid, 8 oz wt/A) rotated with Altacor (chlorantraniliprole) (4.0 oz wt/A)
- All treatments included NIS (Induce and LI-700)

APPLICATIONS:
- May 7, 22; Jun 5, 22; Jul 5, 19; Aug 2, 16
- Insects rated mid-season (Jul 25) and end-season (Sep 6)

RESULTS SUMMARY:
- Spear-Lep/Leprotec was highly effective at controlling internal damage caused by Codling Moth and Oriental Fruit Moth in apples
- Protection from fruit entries was equivalent to the conventional rotation
  - For both rates of Spear-Lep/Leprotec used as season long standalone
  - When Spear-Lep/Leprotec replaced Assail (acetamiprid) in the rotation
- With respect to fruit entries, Spear-Lep can replace Assail in a season-long rotation program for Codling Moth and Oriental Fruit Moth.
- Spear-Lep brings a new IRAC group to your resistance management program, and it has the versatility and efficacy to fit your rotation

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