

Spear® T Liquid Concentrate

Daniel Peck
Field Development Biologist
Vestaron Corporation

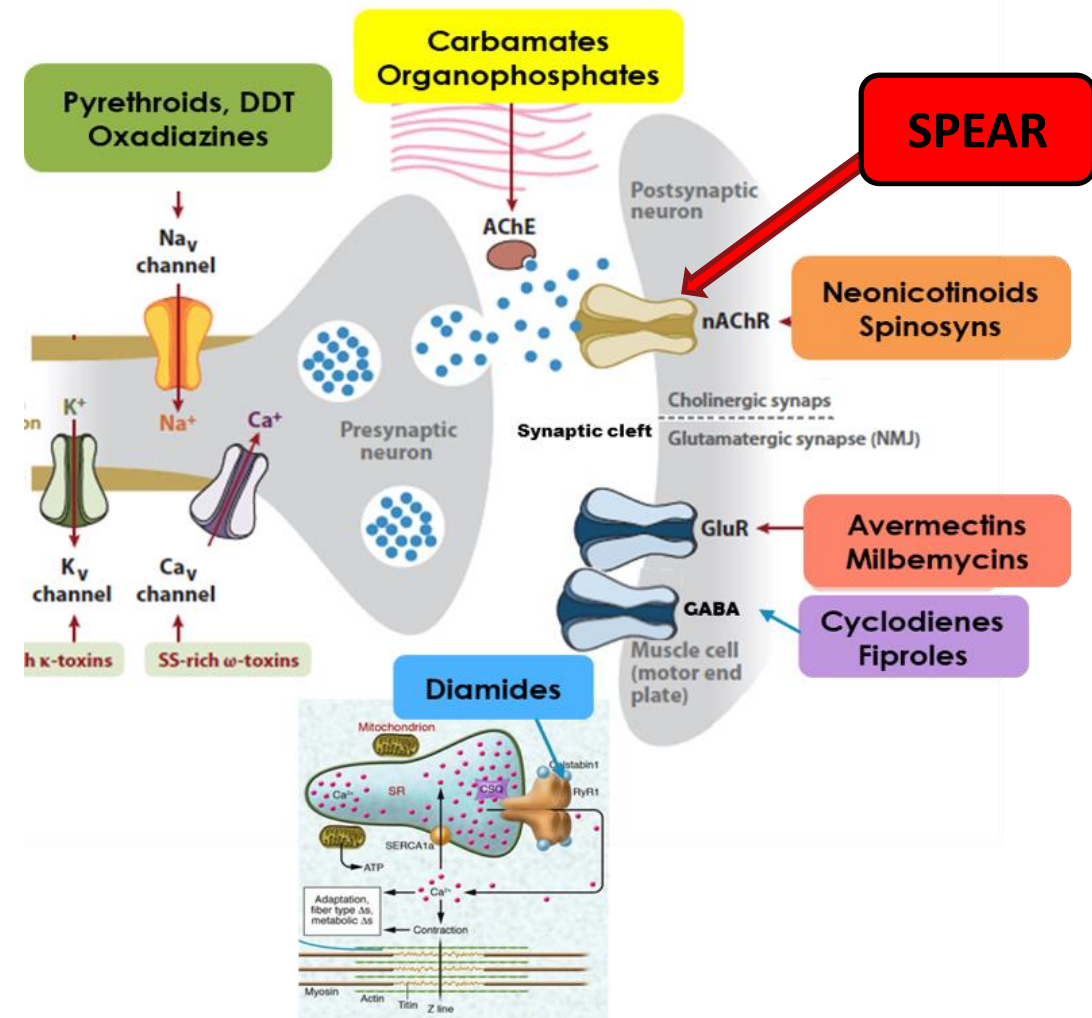
Background

- Approved Aug 2017
 - VST 006340 Sublabel A
 - Preceded by dry formulation (VST-006330 EP) in 2014
- Biological Insecticide/Miticide
- Peptide active ingredient
 - GS-omega/kappa-Hctx-Hv1a
- Greenhouse use only
 - Works through contact
 - Broad spectrum
 - Aphids, Mites, Thrips, Whiteflies
 - 2-3 gallons per 100 gallons



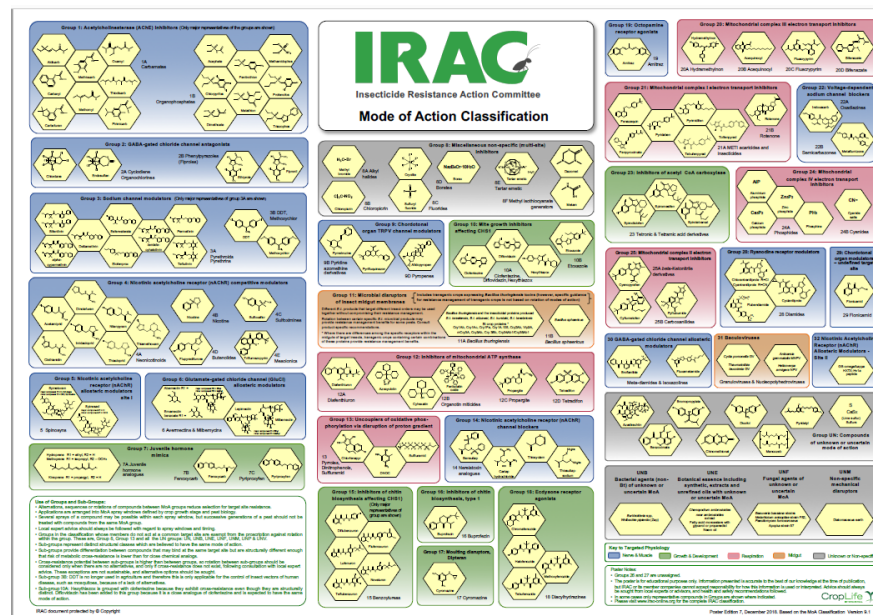
Background (cont)

- New IRAC Group 32
 - Awarded in Nov 2018
 - Nicotinic Acetylcholine Receptor (nAChR) Allosteric Modulators - Site II
 - Novel Mode of Action
 - Disrupts the nAChR of the nervous system
 - Binding site is distinct from neonicotinoids and spinosyn
 - Only the 14th “nerve and muscular” MoA



Fit in Env't Hort

- 0-day PHI, 4-hour REI
- 2-year shelf life; no refrigeration
- Non-toxic to bees
- Soft on beneficials
- No known phytotoxicity
- Versatility for ULV and dipping
- New tool for insecticide resistance management
- Reduce reliance on conventional products with less favorable safety profiles

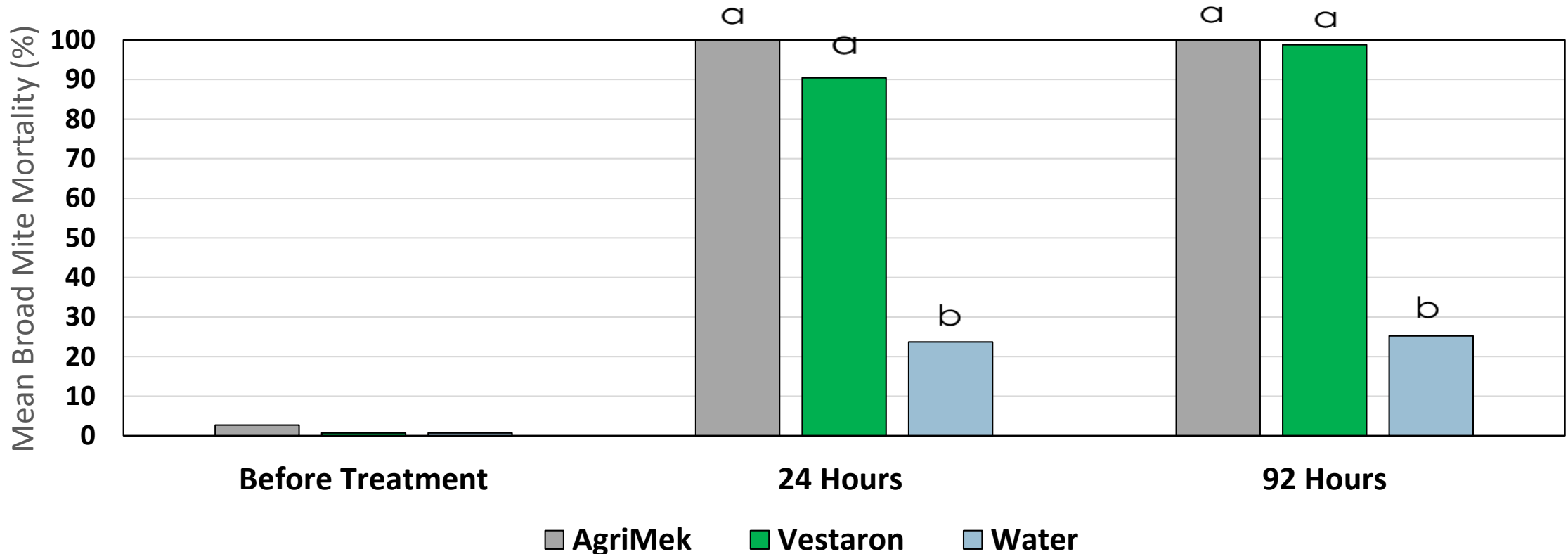


32 Nicotinic Acetylcholine Receptor (nAChR) Allosteric Modulators - Site II

GS-omega/kappa HXTX-Hv1a peptide

Performance Example

Efficacy of Spear T against Broad Mites



Data Support Needed in Env't Hort

- Additional target species
 - Lewis mites, Russet mites
 - Chilli thrips, Echinothrips
 - Aphids (any), Mealybugs (any)
- Expansion into outdoor uses
 - Landscape ornamentals, Nurseries
- Best use practices
 - Water volume, ULV
 - Role of surfactants/adjuvants
 - Feasibility of lower use rates
- Role as rotational product
 - Resistance management programs



Chilli Thrips Injury to Indian Hawthorne
(Steven Arthurs)

Spear®-Lep

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Background

- Approved Sept 2018 Sublabel B
 - VST 006340
 - Preceded by 006340 Sublabel A
- Biological Insecticide for caterpillars
- Co-applied with Bt ssp. *kurstaki*
 - Sublethal rates of both actives have synergistic interaction
 - Gut disruption from Bt allows peptide into hemocoel
 - Works through ingestion
 - 1-2 pints per acre with 1-2 pints Leprotec (Vestaron's branded Btk product)



Fit in Env't Hort Program

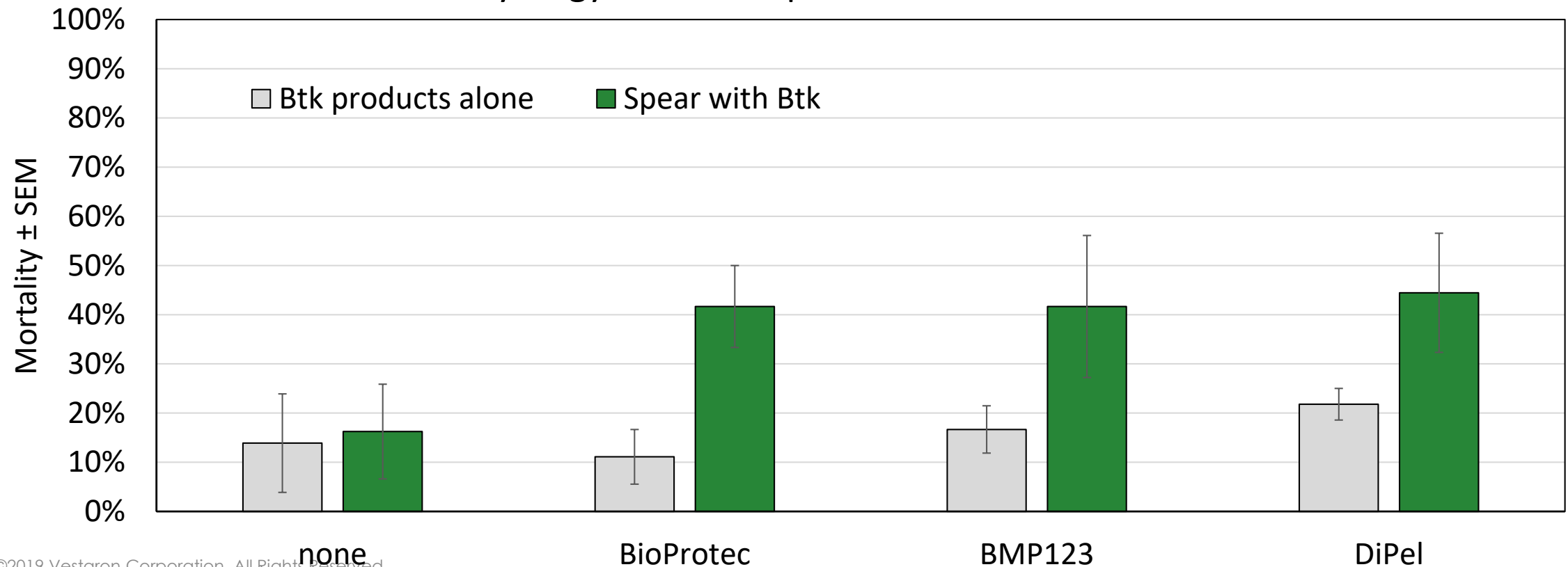
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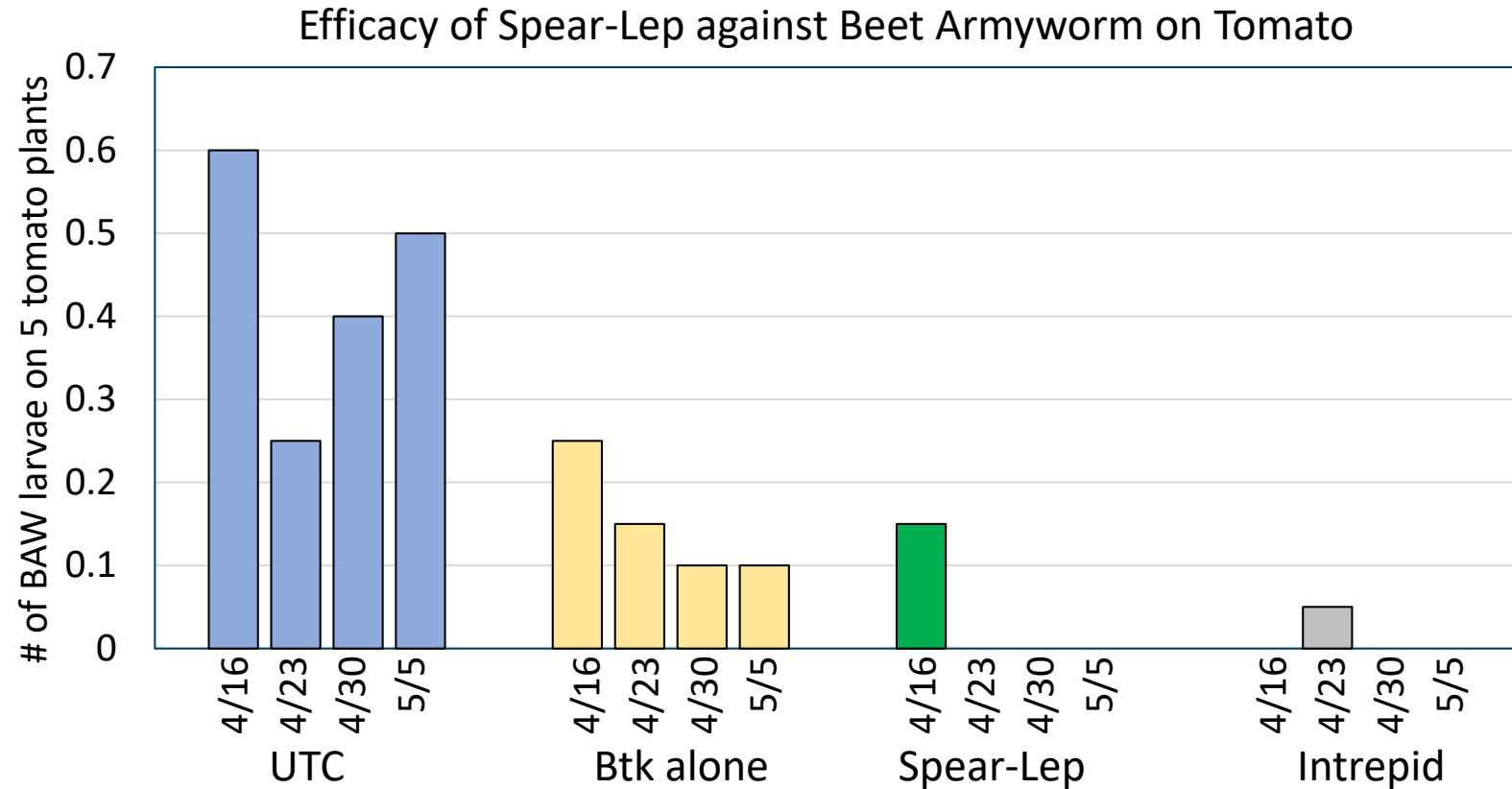
Flowering Hypericum
(gardenia.net)

Performance Example

Synergy Between Spear and Btk Products



Performance Example



Data Support Needed in Env't Hort

- On label, but no performance data
 - Flowers, bedding plants, container plants, nurseries
 - Forest, ornamental and shade trees
- Co-application with other synergists (gut disruptors)
 - Bt ssp. *aizawai* for other lep species
 - Bt ssp. *tenebrionis* or ssp. *galleriae* for beetle species
- Role as rotational product



Injury from Orangestriped Oakworm
(Erich Vallery, USDA, Bugwood)

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Spear®-Lep

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(dpeck@vestaron.com)