IR-4 Workshop

Emily Fuerst
St. Louis, MO
Sept. 19-21, 2018
Our Crop Technologies team thrives on providing commercial growers with unique alternative products to overcome horticultural challenges and help ensure a healthy growing environment for healthy growing plants.
Biopesticides for Consideration

All are FIFRA 25(b) Minimum Risk

- TetraCURB™ Concentrate
- TetraCURB™ Organic
- KOC22018
TetraCURB™ – Miticide + Repellent

A rosemary oil-based contact biopesticide designed to kill and repel spider mites on all plants including food crops

- **50% active ingredient in the concentrate**
- **Multiple MoA for lower insect resistance**
- **Longer interval between synthetic pesticide applications**
- **No phytotoxicity**
- **Quick knockdown**

**EFFECTIVE CONTROL OF SPIDER MITES WITH MORTALITY AND REPELLENCY**
Multiple MoA

Rosemary oil components are octopamine receptor agonists with neurological activity:
Contact exposure overstimulates neurons and induces paralysis,

Disrupts cuticular waxes and allows better rosemary oil penetration,

Water loss results in desiccation and death

Vapor exposure to the rosemary oil induces hyperactivity and avoidance behavior, thus providing repulsion,

Ability to suffocate by blocking air from entering the spiracles

SOAP DESICCANT

QUICK KNOCKDOWN

EMULSIFIER WETTING AGENT

ECONOMICAL SOLUTION AND TIME-SAVER

ROSEMARY OIL PARALYZER + REPELLENT + SUCCIFER

CONSISTENT EFFICACY

TETRACURB KILLS MITES

SMART BLEND
Trial results

TetraCURB Kills Two Spotted Spider Mites

Material and Methods

- **Plant:** Tagetes erecta
- **Duration:** 6 weeks
- **Infestation:** inoculation with two-spotted spider mites (~10 mites/plant) each week
- **Application:** Spray until run off
- **Treatment rates:**
  - 32 oz., 64 oz. and 128 oz. v/v
  - 8 plants/treatment
- **Negative control:** water spray
- **Randomized trial:**
  - 8 plants/treatment
  - 4 randomized replicate blocks per treatment
- **Measurements:** Plants monitored for mite damage, mite count score, and mite egg count score
Trial results

TetraCURB shows a dose response for different usage rates

Mite Score / Week

% Mite Damage / Week
TetraCURB™ Organic

An OMRI Listed®, essential oil-based blend, (rosemary, clove, and peppermint) contact biopesticide designed to kill and repel spider mites on all plants including food crop.

- Approved for organic crop use
- 54.95% active ingredients in the concentrate
- Quick knockdown
- No phytotoxicity
- Environmentally friendly alternative to synthetic pesticides
TetraCURB™ Organic

An OMRI Listed® rosemary oil-based contact biopesticide designed to kill and repel spider mites on all plants including food crops

- Approved for use on organic crops
- 54.95% active ingredient in the concentrate
- Quick knockdown
- No phytotoxicity
- Good spreadability, but enhanced efficacy with addition of a wetting agent
Hypothesis: TetraCURB™ can effectively control multiple insect orders

- **Lepidoptera** - moth/butterfly/caterpillar
  - Cabbage looper (*Trichoplusia ni*)

- **Hemiptera** – true bugs
  - Asian citrus psyllid (*Diaphorina citri*)
  - Western tarnished plant bug (*Lygus hesperus*)

- **Coleoptera** – beetle
  - Japanese beetle (*Popillia japonica*)

- **Diptera** – fly
  - Spotted wing drosophila (*Drosophila suzukii*)
An oil-based blend (thyme, spearmint, corn) **contact biopesticide** designed to kill and repel thrips and small, soft-bodied, plant sucking insects (i.e. aphids, whitefly, etc.) on all plants including food crops

- 60% active ingredients in the concentrate
- Multiple MoA for lower insect resistance
- Quick knockdown
- No phytotoxicity
- Environmentally friendly alternative to synthetic pesticides
Thank you