Marrone Bio Innovations

Natural Products
For Pest Management

Governor's Environmental and Economic Leadership Award
2008

2008 Cleantech Innovator Award

AGROW AWARDS SHORTLISTED

ASTIA

Geela
Early Stage Insecticides Currently in Development

Russell Blair
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MBI-203
*Chromobacterium substrugae*

**Product Description**

- Motile, purple-pigmented bacterium isolated from a forest soil in Maryland.
- First new microbacterial since Bt.
- Marrone Bio Innovations has licensed this technology based on a novel species of *Chromobacterium* from USDA and is developing it into a microbial bioinsecticide.
MBI-203

Chromobacterium substugae

Basic Characteristics

• Mode-of-Action - Unknown, but it is not an infectious process.

• Toxicity - No mammalian or avian toxicity.

• Field Testing - Initial field testing in Fall of 2009.
Spectrum of Activity - Interesting spectrum of activity from laboratory and greenhouse testing:

- Coleoptera – Leaf-feeding Coleoptera including Colorado Potato Beetle larvae and Striped Cucumber Beetle adults.
- Lepidoptera (Trichoplusia ni, Plutella xylostella, etc.).
- Aphids and Two-Spotted Spider Mites – Moderate Activity.
- Whiteflies – Currently confirming USDA’s initial good lab efficacy data.
**MBI-203**

*Chromobacterium substugae*

**Two-Spotted Spidermite Mortality**

- Untreated
- 0.5x CFD
- 1x CFD
- 2x CFD
- Pylon (+)
MBI-203
Chromobacterium substugae

Tobacco Budworm Mortality Diet Incorporation Assay

Mortality (%) vs Days

- 0.5x CFD
- 1x CFD
- 2x CFD
- Bioneem (+)
- Negative
MBI-203
Chromobacterium substantiae

Cabbage Looper Mortality Mustard Assay

Mortality (%)

Days

0 2 4 6 8

0.5x CFD 1x CFD 2x CFD Bioneem (+) Water
MBI-205

_Eucalyptus sp._

- **Product Description** – Extract of _Eucalyptus sp._ from India (not eucalyptus oil)

- **Basic Characteristics** - Mode-of-action is feeding inhibitor

- **Spectrum of Activity** - Silverleaf whitefly
  Two-spotted spider mite (suppression)
  Caterpillars – Broad spectrum
  Aphids

- **Field Testing** - Initial field testing in Fall of 2009.
Thank you!

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