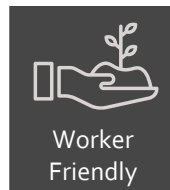




# MBI Bioinsecticides & Beneficial Arthropod Safety

Date • NASDAQ: MBII





# Inspecting & Using Beneficial Arthropods

## Best Practices








- ④ Source beneficials from a high-quality supplier
- ④ Inspect upon receipt
- ④ Watch temperatures – some beneficials don't work in hot weather
- ④ Check shipping crate temperatures – Heat kills!
- ④ Distribution/release technique will impact success



# Safety for Beneficial Insect Species

## Short-Term Studies

Eurofins Agrosience Services evaluated Grandevo WDG Bioinsecticide and Venerate XC Bioinsecticide for acute mortality over 24 hours to the following beneficial species at 3X the maximum label rate. No significant mortality was observed.

-  Rove beetle, *Atheta coriaria*
-  Minute pirate bug, *Orius insidiosus*
-  Aphid midge, *Aphidoletes aphidimyza*
-  Mealybug destroyer, *Cryptolaemus montrouzieri*
-  Sweet potato whitefly, *Delphastus catalinae*
-  Whitefly Parasitoid, *Encarsia formosa*
-  Aphid Parasitoid, *Aphidius colemani*



# Safety Studies

## Beneficials





- ④ Sweet Potato Whitefly Destroyer – *Delphastus catalinae*
- ④ Mealybug Destroyer – *Cryptolaemus montrouzieri*
- ④ Predatory Mites –
  - *Amblyseius californicus* & *A. swirskii*
  - *Neoseiulus californicus*
  - *Phytoseiulus persimilis*
- ④ Bumblebee – *Bombus sp.*
- ④ Parasitic Wasp – *Encarsia Formosa*
- ④ Predatory Midge – *Aphidoletes sp.*
- ④ Rove Beetle – *Atheta sp.*
- ④ Aphid Parasitoid – *Aphidius colemani*
- ④ True Bug – *Orius insidiosus*



# Safety for Beneficial Mite Species

## Long-Term Studies

Vineland Research Institute in Guelph, Ontario evaluated Grandevo WDG Bioinsecticide and Venerate XC Bioinsecticide for mortality and effects on reproduction over 96 hours of exposure at 3X the maximum label rate. No effect was observed from Grandevo WDG Bioinsecticide and Venerate XC Bioinsecticide.

-  *Neoseiulus californicus*
-  *Neoseiulus cucumeris*
-  *Amblyseius swirskii*
-  *Phytoseiulus persimilis*