Chemical Factsheet

Bacillus Thuringiensis (Bt)

including *israelensis, kurstaki, aizawai, tenebrionis* strains

General Information

- Fact Sheet: bacillus thuringiensis.pdf
- Product Names:
  Grubgone! G (Phyllom Bioproducts Corp)
  Phyllom (Phyllom Bioproducts Corp)
  Bonide Mosquito Beater (Bonide Products Inc)
  BTI Granule Larvicide (Certis USA, LLC)
  Thuricide (Valent BioSciences Crop)
  BMP (Becker Microbial Products Inc)
  Cutlass (Certis USA)
  Condor (Certis USA)
  Agree (Certis USA)
  CryMax (Certis USA)
  Lepinox (Certis USA)
  Florbac Slurry Biological Larvicide (Valent Biosciences Corp)
  Security BT Dust (Wellmark International)
  Green Light BT Worm Killer (Swiss Farms Prds)
  Javelin (Certis USA)
  Allpro Sustain (Value Gatrdens Supply)
  Summit Mosquito Bits (Summit Chemical Co.)
  Meridian (B2E Microbials)
  Fourstar (Fourstar Microbial Products)
  Dipel (Bonide Products)
  Britz Bt Dust (J.R. Simplot Co.)
  Ringer vegetable Insect Attack (Woodstream Corp)
  Safer Bt Caterpillar Killer (Safer Inc)
  Xentari Biological Insecticide (Valent Biosciences Corp)
  Novodor (Valent Biosciences Corp)
  Chemsico Insect Granules (Chemsico)
  Vectobac (Valent Biosciences Corp)
- Chemical Class: Microbial insecticide; Soil bacterium
- Uses: Used to control Coleoptera, Lepidoptera or Diptera insects in field, greenhouse, water-grown crops, ornamentals, nursery, forest, food/nonfood storage, and standing waters. Approved uses in Organic Agriculture, Aquaculture, Least-toxic mosquito control.
- Beyond Pesticides rating:

Health and Environmental Effects

See citations at end of document.

- Cancer: No
- Endocrine Disruption: Insufficiently Studied

- Reproductive Effects: Insufficiently Studied
- Neurotoxicity: Insufficiently Studied
- Kidney/Liver Damage: Insufficiently Studied
- Sensitizer/ Irritant: Possible (**1**)
- Birth/Developmental: Insufficiently Studied
- Detected in Groundwater: Not Likely
- Potential Leacher: Insufficiently Studied
- Toxic to Birds: Not Likely
- Toxic to Fish/Aquatic Organisms: Possible: kurstaki and israelensis [moderate]; aizawai [high] (**1**)
- Toxic to Bees: Yes: aizawai strain (**2**)

Residential Uses as Found in the ManageSafe™ Database

- Bagworms
- Mosquitoes
- Gypsy Moths
- Pantry Moths

Additional Information

- Regulatory Status:
  - EPA Regulatory Documents
  - EPA Regulation of Bt Crops
  - Plant Incorporated Protectants (PIPs)
  - Corn Rootworm Resistance
  - Beyond Pesticides GMO BT crops comments
- Supporting information:
  - Beyond Pesticides' GE page
  - Bt Factsheet (National Pesticide Information Center)
  - Bt Fact Sheet (Northwest Coalition for Alternatives to Pesticides)
  - PAN Pesticides Database: Bt (Pesticide Action Network)
- Studies [compiled from the Pesticide-Induced Diseases Database]
  - Field-evolved resistance by western corn rootworm to multiple Bacillus thuringiensis toxins in transgenic maize [Gassmann, A., et al. PNAS. 111(14):5141-5146]
  - Bt Corn and Insect Resistance: An Economic Assessment of Refuges. Hurley, T.M., Babcock, B.A. and Hellmich, R.L. (2001) Bt Corn and Insect Resistance: An Economic Assessment of Refuges, Journal of Agricultural and Resource Economics. Available at: https://www.jstor.org/stable/40987102.
  - Resistance to Bt Maize by Western Corn Rootworm: Effects of Pest Biology, the Pest–Crop Interaction and the Agricultural Landscape on Resistance. Gassmann, A.J. (2021) Resistance to BT maize by western corn rootworm: Effects of pest biology, the Pest–crop interaction and the agricultural landscape on resistance, Insects. Available at: https://www.mdpi.com/2075-4450/12/2/136.
  - A Th2-type immune response and low-grade systemic inflammatory reaction as potential immunotoxic effects in intensive agriculture farmers exposed to pesticides . Lozano-Paniagua, D. et al. (2024) 'A th2-type immune response and low-grade systemic inflammatory reaction as potential immunotoxic effects in intensive agriculture farmers exposed to pesticides', Science of The Total Environment, 938, p. 173545. doi:10.1016/j.scitotenv.2024.173545.

Gateway Health and Environmental Effects Citations

1. Perez, J.; Bond, C.; Buhl, K.; Stone, D. 2015. *Bacillus thuringiensis (Bt) General Fact Sheet*; National Pesticide Information Center, Oregon State University Extension Services. http://npic.orst.edu/factsheets/btgen.html.

2. Beyond Pesticides ChemWatch Factsheets. (Cited under factsheets on Beyond Pesticides Gateway; see top of individual chemical page)

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