

Chemical Factsheet

Emamectin Benzoate

General Information

- Product Names:
 - Denim** (Syngenta)
 - Emamectin** (Syngenta)
 - Optigard** (Syngenta)
 - Proclaim** (Syngenta)
- Chemical Class: Avermectin insecticide
- Uses: Agriculture
- Alternatives: [Organic Agriculture](#)
- Beyond Pesticides rating: [Toxic](#)

Health and Environmental Effects

See citations at end of document.

- Cancer: Not documented
- Endocrine Disruption: Not documented
- Reproductive Effects: Not documented
- Neurotoxicity: Yes (1)
- Kidney/Liver Damage: Not documented
- Sensitizer/Irritant: Not documented
- Birth/Developmental: Yes (1)
- Detected in Groundwater: Not documented
- Potential Leacher: Not documented
- Toxic to Birds: Not documented
- Toxic to Fish/Aquatic Organisms: Yes (2)
- Toxic to Bees: Yes (2)

Residential Uses as Found in the ManageSafe™ Database

- [Emerald Ash Borer](#)

Additional Information

- Supporting information:
 - [PAN Pesticides Database](#): (Pesticide Action Network)
- Studies [compiled from the [Pesticide-Induced Diseases Database](#)]
 - [The potential immunotoxicity of emamectin benzoate on the human THP-1 macrophages](#). Wei, Z., Wang, W., Fu, W., Zhang, P., Feng, H., Xu, W., Tao, L., Li, Z., Zhang, Y. and Shao, X., 2022. Environmental Toxicology.
 - [Insecticide Mixtures Could Enhance the Toxicity of Insecticides in a Resistant Dairy Population of Musca domestica L.](#) Khan HAA, Akram W, Shad SA, Lee JJ (2013) Insecticide Mixtures Could Enhance the Toxicity of Insecticides in a Resistant Dairy Population of Musca domestica L. PLOS ONE 8(4): e60929.

<https://doi.org/10.1371/journal.pone.0060929>

- [Contrasting Toxicity Classes Differentially Affect Gut Microbiota Composition in Honey Bees](#). Kan, Y. et al. (2026) Contrasting Toxicity Classes Differentially Affect Gut Microbiota Composition in Honey Bees, *Insects*. Available at: <https://www.mdpi.com/2075-4450/17/4/437>.

Gateway Health and Environmental Effects Citations

1. The Pesticide Management Education Program at Cornell University. Pesticide Active Ingredient Information. <http://pmep.cce.cornell.edu/profiles/index.html>.
2. Pesticide Action Network Pesticide Database. http://www.pesticideinfo.org/Search_Chemicals.jsp.

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