

Chemical Factsheet

Flupyradifurone

General Information

- Product Names:
 - Fpf Plus Fertilizer Granule Insecticide** (Sbm Life Science Corp.)
 - Altus** (Environmental Science U.S., Llc)
 - Sivanto 200 SI** (Bayer Crop Science Lp)
 - Sivanto 400 SI** (Bayer Crop Science Lp)
 - Fdf 50 SI Concentrate** (Sbm Life Science Corp.)
 - Byi 02960 480 Fs** (Bayer Crop Science Lp)
 - Flupyradifurone Tc** (Bayer Crop Science Lp)
- Chemical Class: Butenolide insecticide
- Uses: Used as a systemic insecticide to control piercing and sucking insect pests, such as aphids and whiteflies, on a wide range of crops including fruits, vegetables, and cotton.
- 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: Not documented
- Kidney/Liver Damage: Yes (1)
- Sensitizer/ Irritant: Yes (1)
- Birth/Developmental: Not documented
- Detected in Groundwater: Not documented
- Potential Leacher: Not documented
- Toxic to Birds: Not documented
- Toxic to Fish/Aquatic Organisms: Yes (1)
- Toxic to Bees: Yes (1)

Additional Information

- Regulatory Status:
 - [EPA 2018 Flupyradifurone Review](#)
- Supporting information:
 - [NIH PubChem Database](#) (National Library of Medicine)
- Studies [compiled from the [Pesticide-Induced Diseases Database](#)]
 - [Bees under interactive stressors: the novel insecticides flupyradifurone and sulfoxaflor along with the fungicide azoxystrobin disrupt the gut microbiota of honey bees and increase opportunistic bacterial pathogens](#). Al Naggar, Y., Singavarapu, B., Paxton, R.J. and Wubet, T., 2022. *Science of The Total Environment*, 849, p.157941.
 - [Field rates of Sivanto™ \(flupyradifurone\) and Transform® \(sulfoxaflor\) increase oxidative](#)

- [stress and induce apoptosis in honey bees \(Apis mellifera L.\)](#). Chakrabarti P, Carlson EA, Lucas HM, Melathopoulos AP, Sagili RR (2020) Field rates of Sivanto™ (flupyradifurone) and Transform® (sulfoxaflor) increase oxidative stress and induce apoptosis in honey bees (Apis mellifera L.). PLOS ONE 15(5): e0233033. <https://doi.org/10.1371/journal.pone.0233033>
- [Exposure to the novel insecticide flupyradifurone impairs bumblebee feeding motivation, learning, and memory retention](#). Siviter, Harry, and Felicity Muth. "Exposure to the novel insecticide flupyradifurone impairs bumblebee feeding motivation, learning, and memory retention." Environmental pollution (Barking, Essex : 1987) vol. 307 (2022): 119575. doi:10.1016/j.envpol.2022.119575
 - [Lethal and sublethal synergistic effects of a new systemic pesticide, flupyradifurone \(Sivanto®\), on honeybees](#). Tosi S. and Nieh J. C. 2019 Lethal and sublethal synergistic effects of a new systemic pesticide, flupyradifurone (Sivanto®), on honeybees Proc. R. Soc. B.28620190433 <http://doi.org/10.1098/rspb.2019.0433>
 - [Currently used and legacy pesticides in the marine atmosphere from Patagonia to Europe](#). Debler, F., Gandrass, J., Paul Ramacher, M. O., Koenig, A. M., Zimmermann, S., & Joerss, H. (2025). Currently used and legacy pesticides in the marine atmosphere from Patagonia to Europe. Environmental pollution (Barking, Essex : 1987), 373, 126175. Advance online publication. <https://doi.org/10.1016/j.envpol.2025.126175>
 - [Single and combined exposure to 'bee safe' pesticides alter behaviour and offspring production in a ground-nesting solitary bee \(Xenoglossa pruinosa\)](#). Rondeau, S. and Raine, N. (2024) Single and combined exposure to 'bee safe' pesticides alter behaviour and offspring production in a ground-nesting solitary bee (Xenoglossa pruinosa), Proceedings of the Royal Society Biological Sciences. Available at: <https://royalsocietypublishing.org/doi/10.1098/rspb.2023.2939>.
 - [Do novel insecticides pose a threat to beneficial insects?](#). Siviter Harry and Muth Felicity 2020 Do novel insecticides pose a threat to beneficial insects? Proc. R. Soc. B.28720201265 <http://doi.org/10.1098/rspb.2020.1265>
 - [Urinary pesticide biomarkers from adolescence to young adulthood in an agricultural setting in Ecuador: Study of secondary exposure to pesticides among children, adolescents, and adults \(ESPINA\) 2016 and 2022 examination data](#). Parajuli, R. et al. (2025) Urinary pesticide biomarkers from adolescence to young adulthood in an agricultural setting in Ecuador: Study of secondary exposure to pesticides among children, adolescents, and adults (ESPINA) 2016 and 2022 examination data, Data in Brief. Available at: <https://www.sciencedirect.com/science/article/pii/S2352340925006067>.
 - [Acute oral toxicity, apoptosis, and immune response in nurse bees \(Apis mellifera\) induced by flupyradifurone](#). Gao J, Guo Y, Chen J, Diao Q-Y, Wang Q, Dai P-L, Zhang L, Li W-M and Wu Y-Y (2023) Acute oral toxicity, apoptosis, and immune response in nurse bees (Apis mellifera) induced by flupyradifurone. Front. Physiol. 14:1150340. doi: 10.3389/fphys.2023.1150340

Gateway Health and Environmental Effects Citations

1. National Library of Medicine. PubChem Hazardous Substances Database. [PubChem \(nih.gov\)](https://pubchem.ncbi.nlm.nih.gov)

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