Chemical Factsheet

Pyriproxyfen

General Information

- Product Names:
  Archer Insct Growth Regulator (Sygenta)
  Country Vet Roach Embargo with Growth Inhibitor (FMC) formulated with Esfenvalerate
  Nylar (McGlaughin Gomrly King)
  Seper Nylar E.C. (Wellmark)
  Sumilarv (Sumitomo)
  Unicorn IGR (Phaeton)
  I.G. Regulator (Control Solutions)
  Knack (Valent)
  Distance Insect Growth Regulator (Valent)
  Esteem Insect Growth Regulator (Valent)
  Proxy (Makhteshim)
- Chemical Class: Unclassified
- Uses: Agriculture, structural pest control
- Alternatives: Organic agriculture, Organic lawn care
- Beyond Pesticides rating: Toxic

Health and Environmental Effects

See citations at end of document.

- Cancer: Insufficiently Studied
- Endocrine Disruption: Likely (**1**, **2**)
- Reproductive Effects: Likely (**3**, **4**)
- Neurotoxicity: Possible (**5**)
- Kidney/Liver Damage: Yes (**6**)
- Sensitizer/ Irritant: Not Likely
- Birth/Developmental: Likely (**4**, **5**)
- Detected in Groundwater: Low (**7**)
- Potential Leacher: Parent = Slight; Metabolite = Yes (**8**)
- Toxic to Birds: Possible (**9**)
- Toxic to Fish/Aquatic Organisms: Yes (**10**, **2**)
- Toxic to Bees: Yes (**11**, **12**, **13**)

Residential Uses as Found in the ManageSafe™ Database

- Fleas
- Ants
- Cockroaches
- Carpet Beetle
- Fire Ants

Additional Information

- Supporting information:
  - PAN Pesticides Database: Pyriproxyfen
- Studies [compiled from the Pesticide-Induced Diseases Database]
  - Fate of pyriproxyfen in soils and plants. Devillers, J., 2020. *Toxics*, *8*(1), p.20.
  - Determination by chromatography and cytotoxotoxic and oxidative effects of pyriproxyfen and pyridalyl. de Oliveira, M.D.D.A., de Almeida, P.M., Martins, F.A., Cavalcante, A.A.D.C.M., dos Santos, T.D.J.A., Feitosa, C.M., Rai, M., dos Reis, A.C. and da Costa Júnior, J.S., 2019. *Chemosphere*, *224*, pp.398-406.
  - The enantioselective environmental behavior and toxicological effects of pyriproxyfen in soil. Liu, H., Yi, X., Bi, J., Wang, P., Liu, D. and Zhou, Z., 2019. *Journal of hazardous materials*, *365*, pp.97-106.
  - The pyriproxyfen metabolite, 4′–OH–PPF, disrupts thyroid hormone signaling in neural stem cells, modifying neurodevelopmental genes affected by ZIKA virus infection. Vancamp, P., Spirhanzlova, P., Sébillot, A., Butruille, L., Gothié, J.D., Le Mével, S., Leemans, M., Wejaphikul, K., Meima, M., Mughal, B.B. and Roques, P. Environmental Pollution, 285, p.117654.
  - The potential endocrine disruption of pesticide transformation products (TPs): The blind spot of pesticide risk assessment. Ji, C., Song, Q., Chen, Y., Zhou, Z., Wang, P., Liu, J., Sun, Z., & Zhao, M. (2020). The potential endocrine disruption of pesticide transformation products (TPs): The blind spot of pesticide risk assessment. Environment international, 137, 105490. https://doi.org/10.1016/j.envint.2020.105490

Gateway Health and Environmental Effects Citations

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3. Shahid, A., Zaidi, S.D.E.S., Akbar, H. and Saeed, S., 2019. An investigation on some toxic effects of pyriproxyfen in adult male mice. *Iranian journal of basic medical sciences*, *22*(9), p.997. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6880530/

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5. Truong, L., Gonnerman, G., Simonich, M.T. and Tanguay, R.L., 2016. Assessment of the developmental and neurotoxicity of the mosquito control larvicide, pyriproxyfen, using embryonic zebrafish. *Environmental pollution*, *218*, pp.1089-1093. https://www.sciencedirect.com/science/article/abs/pii/S0269749116309794

7. European Food Safety Authority (EFSA), Arena, M., Auteri, D., Barmaz, S., Brancato, A., Brocca, D., Bura, L., Carrasco Cabrera, L., Chiusolo, A., Court Marques, D. and Crivellente, F., 2018. Peer review of the pesticide risk assessment of the active substance spinosad. *EFSA Journal*, *16*(5), p.e05252. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7009054/

8. Devillers, J., 2020. Fate of pyriproxyfen in soils and plants. *Toxics*, *8*(1), p.20. https://www.mdpi.com/2305-6304/8/1/20/htm

9. The University of Hertfordshire. 2021. Pesticide Properties DataBase (PPDB): Pyriproxyfen. https://sitem.herts.ac.uk/aeru/ppdb/en/Reports/574.htm

10. Pesticide Action Network Pesticide Database. http://www.pesticideinfo.org/Search_Chemicals.jsp.

11. Chen, Y.W., Wu, P.S., Yang, E.C., Nai, Y.S. and Huang, Z.Y., 2016. The impact of pyriproxyfen on the development of honey bee (Apis mellifera L.) colony in field. *Journal of Asia-Pacific Entomology*, *19*(3), pp.589-594. https://www.sciencedirect.com/science/article/abs/pii/S1226861516300012

12. Fourrier, J., Deschamps, M., Droin, L., Alaux, C., Fortini, D., Beslay, D., Le Conte, Y., Devillers, J., Aupinel, P. and Decourtye, A., 2015. Larval exposure to the juvenile hormone analog pyriproxyfen disrupts acceptance of and social behavior performance in adult honeybees. *PloS one*, *10*(7), p.e0132985. https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0132985

13. Devillers, J. and Devillers, H., 2020. Lethal and Sublethal Effects of Pyriproxyfen on Apis and Non-Apis Bees. *Toxics*, *8*(4), p.104. https://www.mdpi.com/2305-6304/8/4/104

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