Chemical Factsheet

Maneb

General Information

- Product Names:
  Manex (Du Pont)
  Rigo Maneb Special Fungicide (Value Gardens Supply)
  Cover-Up Grain Seed Protectant (Castle Chemical)
  Manzate Fungicide (Du Pont)
  De-Pester Maneb Sulfur (Chemtura USA), formulated with Sulfur
- Uses: Targets various downy mildews, late blights, leaf spots, root rots, twig and blossom blights, seedling diseases, fruit molds/rots, root rots, and leaf/stem blights in agricultural crops including almond, apple, banana, bean (dry), broccoli, Brussels sprout, cabbage (including Chinese cabbage), cauliflower, collard, corn (sweet and pop), cranberry, cucumber, eggplant, endive, fig, garlic, grape, kale, kohlrabi, lettuce (head and leaf), melon (cantaloupe, casaba, crenshaw, honeydew, and watermelon), mustard greens, onion (dry bulb and green), papaya, pepper, potato, pumpkin, squash (summer and winter), sugar beet, tomato, and turnip grown for greens, barley, corn (field), cotton, flaxseed, oat, potato, rice, rye, safflower, sorghum, and wheat, also used in greenhouses, nurseries, and sod farms.
- Alternatives: Organic agriculture
- Beyond Pesticides rating: Toxic

Health and Environmental Effects

See citations at end of document.

- Cancer: Probable (**1**), Yes (**2**)
- Endocrine Disruption: Probable (**3**), Yes (**4**)
- Reproductive Effects: Yes (**5**)
- Neurotoxicity: Yes (**6**)
- Kidney/Liver Damage: Yes (**5**)
- Sensitizer/ Irritant: Yes (**5**)
- Birth/Developmental: Yes (**6**)
- Detected in Groundwater: Not documented
- Potential Leacher: Yes (**7**)
- Toxic to Birds: Not documented
- Toxic to Fish/Aquatic Organisms: Yes (**5**)
- Toxic to Bees: Not documented

Additional Information

- Regulatory Status:
  - EPA Reregistration Eligibility Decision (RED) signed (8/2005)
  - Beyond Pesticides' RED comments.
- Supporting information:
  - Extoxnet Maneb Factsheet (Extension Toxicology Network)
  - PAN Pesticides Database:Maneb (Pesticide Action Network)

    - Scorecard Maneb Factsheet (Environmental Defense Fund)
- Studies [compiled from the Pesticide-Induced Diseases Database]
    - A fetal risk factor for Parkinson's disease.. Barlow, B.K., et al. 2004. Dev Neurosci 26(1):11-23
    - Age-related irreversible progressive nigrostriatal dopaminergic neurotoxicity in the paraquat and maneb model of the Parkinson's disease phenotype.. Thiruchelvam, M., et al. 2003. Eur J Neurosci 18(3):589-600
    - Aldehyde dehydrogenase variation enhances effect of pesticides associated with Parkinson disease.. Fitzmaurice AG, Rhodes SL, et al. 2014. Neurology.82(5):419-26.
    - Combined exposure to agriculture pesticides, paraquat and maneb, induces alterations in the N/OFQ-NOPr and PDYN/KOPr systems in rats: Relevance to sporadic Parkinson's disease.. Bastías-Candia S, Di Benedetto M, D'Addario C, Candeletti S, Romualdi P. 2013. Environ Toxicol. doi: 10.1002/tox.21943
    - Developmental exposure to the pesticides paraquat and maneb and the Parkinson's disease phenotype.. Thiruchelvam, M., et al. 2002. Neurotoxicology 23(4-5):621-633
    - Developmental pesticide exposures and the Parkinson's disease phenotype.. Cory-Slechta D.A., et al. 2005. Birth Defects Res A Clin Mol Teratol 73:136–139
    - Dopamine Transporter Genetic Variants and Pesticides in Parkinson’s Disease. Ritz BR, et al. 2009. Environ Health Perspect 117(6)
    - Exposure to pesticides or solvents and risk of Parkinson disease.. Pezzoli G, Cereda E. 2013. Neurology. 80(22):2035-41
    - Headache caused by pesticides--a review of the literature. Titlić, M., Josipović-Jelić, Z. and Punda, A., 2008. Acta medica Croatica: casopis Hravatske akademije medicinskih znanosti, 62(2), pp.233-236.
    - Pesticides expenditures by farming type and incidence of Parkinson disease in farmers: A French nationwide study. Perrin, L., Spinosi, J., Chaperon, L., Kab, S., Moisan, F. and Ebaz, A. Environmental Research, 197, p.111161.
    - Prenatal residential proximity to endocrine disrupting agricultural pesticides and menstrual cycle characteristics among Latina adolescents in California. Paul, J. et al. (2025) Prenatal residential proximity to endocrine disrupting agricultural pesticides and menstrual cycle characteristics among Latina adolescents in California, American Journal of Epidemiology. Available at: https://academic.oup.com/aje/advance-article/doi/10.1093/aje/kwaf059/8083004.
    - Chronic exposure to the fungicide maneb may produce symptoms and signs of CNS manganese intoxication. Ferraz, H. B., Bertolucci, P. H., Pereira, J. S., Lima, J. G., & Andrade, L. A. (1988). Chronic exposure to the fungicide maneb may produce symptoms and signs of CNS manganese intoxication. Neurology, 38(4), 550–553. https://doi.org/10.1212/wnl.38.4.550
    - Exposure to the environmentally toxic pesticide maneb induces Parkinson's disease-like neurotoxicity in mice: A combined proteomic and metabolomic analysis. Liu, C., Liu, Z., Fang, Y., Du, Z., Yan, Z., Yuan, X., Dai, L., Yu, T., Xiong, M., Tian, Y., Li, H., Li, F., Zhang, J., Meng, L., Wang, Z., Jiang, H., & Zhang, Z. (2022). Exposure to the environmentally toxic pesticide maneb induces Parkinson's disease-like neurotoxicity in mice: A combined proteomic and metabolomic analysis. Chemosphere, 308(Pt 2), 136344. https://doi.org/10.1016/j.chemosphere.2022.136344
    - Role of cytochrome c in α-synuclein radical formation: implications of α-synuclein in neuronal death in Maneb- and paraquat-induced model of Parkinson's disease. Kumar, A., Ganini, D., & Mason, R. P. (2016). Role of cytochrome c in α-synuclein radical formation: implications of α-synuclein in neuronal death in Maneb- and paraquat-induced model of Parkinson's disease. Molecular neurodegeneration, 11(1), 70. https://doi.org/10.1186/s13024-016-0135-y

- 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.
- Incident thyroid disease in female spouses of private pesticide applicators. Shrestha, S., Parks, C. G., Goldner, W. S., Kamel, F., Umbach, D. M., Ward, M. H., Lerro, C. C., Koutros, S., Hofmann, J. N., Beane Freeman, L. E., & Sandler, D. P. (2018). Incident thyroid disease in female spouses of private pesticide applicators. Environment international, 118, 282–292. https://doi.org/10.1016/j.envint.2018.05.041

Gateway Health and Environmental Effects Citations

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2. California Environmental Protection Agency. Proposition 65: Chemicals Known to the State to Cause Cancer or Reproductive Toxicity. Office of Environmental Health Hazard Assessment. February 25, 2022.https://oehha.ca.gov/media/downloads/proposition-65//p65chemicalslistsinglelisttable2021p.pdf

3. Illinois EPA, Endocrine Disruptors Strategy, February 1997. https://nepis.epa.gov/Exe/ZyNET.exe/910140ZK.txt

4. European Commission. Endocrine Disruptors: Study on Gathering Information on 435 Substances with Insufficient Data. Final Report. EU DG Environment: B4-3040/2001/325850/MAR/C2. BKH Consulting Engineers: M0355037. November 2002. http://ec.europa.eu/environment/chemicals/endocrine/pdf/bkh_report.pdf#page=76.

5. Extension Toxicology Network (EXTOXNET) Pesticide Information Profiles. http://extoxnet.orst.edu/pips/ghindex.html

6. Gosselin, R.E., R.P. Smith, and H.C. Hodge. 1984. Clinical Toxicology of Commerical Products, 5th edition. Baltimore, MD: Williams and Wilkins.

7. National Library of Medicine. PubChem Hazardous Substances Database. PubChem (nih.gov)

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