

# Chemical Factsheet

## Mesotrione

### General Information

- Product Names:
  - Callisto** (Syngenta)
  - Tenacity** (Syngenta)
  - Realm Q** (Du Pont) formulated with [Rimsulfuron](#)
  - Instigate** (Du Pont) formulated with [Rimsulfuron](#)
  - 0.08% Meso + fertilizer** (Scotts)
- Chemical Class: Herbicide
- Uses: Pre- and post-emergence control of broad leaf weeds
- Alternatives: [Organic agriculture](#)
- Beyond Pesticides rating: [Toxic](#)

### Health and Environmental Effects

See citations at end of document.

- Cancer: Possible (1, 2)
- Endocrine Disruption: Not Likely (3)
- Reproductive Effects: Not Likely (3)
- Neurotoxicity: Not Likely (3)
- Kidney/Liver Damage: Yes (3)
- Sensitizer/ Irritant: No (3)
- Birth/Developmental: Not Likely (3)
- Detected in Groundwater: Possible (4)
- Potential Leacher: Possible (4)
- Toxic to Birds: Not Likely (3)
- Toxic to Fish/Aquatic Organisms: Yes (5)
- Toxic to Bees: Low (6)

### Additional Information

- Regulatory Status:
  - [EPA Factsheet](#)
- Supporting information:
  - [PAN Pesticide Database](#) (Pesticide Action Network)
- Studies:
  - [Mesotrione herbicide does not cause genotoxicity, but modulates the genotoxic effects of Atrazine when assessed in mixture using a plant test system \(Allium cepa\)](#) Felisbino, K., Santos-Filho, R., Piancini, L.D., Cestari, M.M. and Leme, D.M., 2018. *Pesticide biochemistry and physiology*.

### Gateway Health and Environmental Effects Citations

1. Jabłońska-Trypuć, A., Wydro, U., Wołejko, E., Rodziewicz, J., and Butarewicz, A., 2020. Possible

Protective Effects of TA on the Cancerous Effect of Mesotrione. *Nutrients*, 12(5), p.1343.

<https://doi.org/10.3390/nu12051343>

2. Jabłońska-Trypuć, A., Krętowski, R., Świdorski, G., Cechowska-Pasko, M. and Lewandowski, W., 2020. Cichoric acid attenuates the toxicity of mesotrione. Effect on in vitro skin cell model.

*Environmental Toxicology and Pharmacology*, p.103375. <https://doi.org/10.1016/j.etap.2020.103375>

3. U.S. EPA, Office of Prevention, Pesticides and Toxic Substances, New Active Ingredients Factsheets:

<http://web.archive.org/web/20120107215849/http://www.epa.gov/opprd001/factsheets/index.htm>

4. Albaugh, LLC, 2017. Safety Data Sheet for Mesotrione. <http://www.cdms.net/ldat/mpE7L001.pdf>

5. Piancini, L.D.S., Guiloski, I.C., de Assis, H.S. and Cestari, M.M., 2015. Mesotrione herbicide promotes biochemical changes and DNA damage in two fish species. *Toxicology reports*, 2, pp.1157-1163.

<https://doi.org/10.1016/j.toxrep.2015.08.007>

6. Pesticide Action Network Pesticide Database. [http://www.pesticideinfo.org/Search\\_Chemicals.jsp](http://www.pesticideinfo.org/Search_Chemicals.jsp).

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