

Determining the Risk of Pesticide Residues in Drinking Water¹

EPA assesses risk from consumption of pesticides in drinking water by estimating the amount of the chemical found in water, and the quantity of water consumed.

To estimate the amount of pesticide found in water, EPA uses a combination of computer modeling and actual monitoring data for ETU to predict how much chemical moves from the treatment site into water considered to be a source for drinking water. The monitoring data will be used for the chronic and cancer assessment, while model and monitoring data are used to predict surface water amounts.

Chemical movement can happen through three main pathways—

- Through downward movement through the soil, resulting in contamination of wells.
- Spray particles can drift in the wind and land in drinking water reservoirs or streams.
- Rainstorms can transport chemical in runoff and eroded soil or drainage into the same reservoirs or streams.

The models predict amounts of chemical in water each day over multiple years (surface water) or longer-term average amounts (groundwater).

These predictions are then compared against human health concerns for short-term, long-term, or lifetime effects. If the predicted amounts exceed the level considered dangerous (after accounting for exposure through food and residential uses), then additional data is evaluated. For example, pesticide products currently in use may have been monitored by chemical analysis of water samples. These measured values can be used to better understand the actual exposure. Sometimes a new chemical will have such a monitoring program initiated to obtain the data. It is also possible to use measurement data from food and residential sites to further refine the total estimate of exposure.

For more information, contact info@EBDCS.com

¹See USEPA Science Policy Issues & Guidance Documents at <http://www.epa.gov/oppfead1/trac/science/>