December 14, 2015

Ms. Monet Vela
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Dear Ms. Vela:

The American Congress of Obstetricians and Gynecologists (ACOG) California Chapter, distinguished atrazine researcher Dr. Tyrone Hayes, and the following 19 scientists and health professionals thank you for the opportunity to comment on the proposed Maximum Allowable Dose Level (MADL) of 100 micrograms per day for exposure to atrazine and other triazines. Atrazine is one of the most widely used herbicides in the U.S. Therefore, we strongly support the establishment of an appropriately protective MADL by the Office of Environmental Health Hazard Assessment (OEHHA). The establishment of a MADL should encourage businesses to reduce exposures to this chemical. As scientists, academics, health professionals, and others who work to improve public health, we strongly support this goal.

At the same time, we recommend that OEHHA reconsider recent research about the reproductive effects of exposure to low doses of atrazine. We have identified four important studies demonstrating that low-level exposure to atrazine causes endocrine effects in mammals. All four studies show Lowest Observable Adverse Effect Levels (LOAELs) below the No Observable Adverse Effect Level (NOAEL) currently being considered by the OEHHA. These studies are as follows:

* No NOAEL identified.
* LOAEL = .09 mg/kg of body weight per day.
* Endpoint - delayed mammary gland development.
* Test material - atrazine plus metabolites.

* NOAEL = .001 mg/kg of body weight per day.
* LOAEL = 0.1 mg/kg of body weight per day.
* Endpoint - gender specific neuronal damage.
* Test material - atrazine.
* No NOAEL identified.
* LOAEL = 1.4 mg/kg of body weight per day.
* Endpoint - decreased cognitive ability and altered neurotransmitter levels.
* Test material - atrazine.

* No NOAEL identified.
* LOAEL = 1.0 mg/kg of body weight per day.
* Endpoint - decreased pre-estrus estradiol levels.
* Test material - atrazine.

All of these studies meet high standards of scientific quality and have been published in respected peer-reviewed journals.

Based on these data, our suggested MADL is no higher than 8 micrograms per day. Further, given the LOAELs in the above studies and the low exposure levels in the supplemental studies outlined below, we recommend OEHHA consider an even lower MADL of less than 1 microgram per day.

The importance of a health protective MADL is reinforced by epidemiological studies in the U.S. that have correlated low-level atrazine exposure with adverse pregnancy outcomes and reproductive toxicities in women. These studies are as follows:


Additional epidemiological studies also indicate that atrazine is a developmental toxin at environmentally relevant exposures:

In addition, we have included multiple studies in aquatic model systems that observed atrazine-induced reproductive toxicities, such as hermaphroditism, feminized behavior in males and the presence of eggs in the testes, and decreased fertility in both sexes. Many of these adverse effects were seen with atrazine concentrations as low as 0.1 µg/L, 30-fold lower than the legal limit in U.S. drinking water.


Finally, we note that the current Maximum Contaminant Level (MCL) for atrazine in drinking water established by the U.S. EPA based on reproductive effects is 3.0 micrograms per liter (ppb). With the primary mode of exposure to atrazine likely being through water consumption, and the average person consuming about 2 liters of water per day, a MADLoral of 100 micrograms per day is an exposure 16x greater than that resulting from EPA's MCL. Therefore, a considerably lower MADL would more closely correlate with exposure criteria set forth by the federal government.

Thank you for consideration of our comments.
Sincerely,

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