

Researchers find no link between atrazine use and cancer overall among pesticide applicators

Pesticide & Chemical Policy

31 May 2011

Relying on data from the Agricultural Health Study, federal government researchers have found no association between atrazine use and cancer overall among pesticide applicators, although they did find limited evidence of an association between use of the herbicide and thyroid and ovarian cancer -- neither of which were statistically significant.

This latest report, published online May 27 ahead of print in *Environmental Health Perspectives*, updates a previous analysis -- which found non-statistically significant associations among atrazine use and non-Hodgkin lymphoma, multiple myeloma, and lung and bladder cancer -- with six additional years of cancer incidence and follow-up data.

The AHS is a large, prospective cohort of licensed pesticide applicators and their spouses, which includes 57,310 applicators in Iowa and North Carolina, who were recruited from 1993 to 1997. Participants provided information on the use of 50 pesticides, pesticide application and mixing methods, equipment repair and the use of personal protective equipment (PPE). They also provided information on smoking, alcohol consumption, family cancer history, certain medical conditions and demographics.

The researchers used this information to calculate atrazine "lifetime days of use" by multiplying the years of reported atrazine use by the average number of days of use per year. They also calculated "intensity-weighted lifetime days of use" by multiplying the lifetime days of use by a measure of exposure intensity -- this metric includes factors that impact exposure levels, such as application methods and PPE use.

Of the 57,310 applicators in the AHS, the researchers excluded those who provided no or insufficient information on atrazine use, and those with a cancer diagnosis prior to enrolling in the study, among others, leaving 53,662 applicators available for analyses.

The researchers from the National Institutes of Health, the Uniformed Services University of the Health Sciences and the National Institute for Occupational Safety and Health found an increased risk of ovarian cancer among female applicators who reported ever using atrazine compared to those who did not. But the link was not statistically significant and was based on only four applicators. The researchers also found an increased risk of thyroid cancer for those with the highest intensity-weighted lifetime days of use of atrazine, but when only lifetime days of use was used as the metric, the association was not statistically significant.

Little evidence was observed to support a link between atrazine and non-Hodgkin lymphoma, leukemia, breast cancer and prostate cancer -- the latter two have been suggested by other studies as risk factors given atrazine's hormonal properties.

###