



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460
OFFICE OF
PREVENTION, PESTICIDES, AND
TOXIC SUBSTANCES

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MEMORANDUM:

SUBJECT: Potential Effects of Atrazine on Amphibian Gonadal Development

To: Eric Olson, Ph.D., Chemical Review Manager
Robert McNally, Branch Chief
Special Review Branch
Special Review and Reregistration Division (7508C)

FROM: Thomas Steeger, Ph.D., Senior Biologist
Stephanie Irene, Ph.D., Senior Advisor
Environmental Risk Branch IV
Environmental Fate and Effects Division (7507C)

THRU: Steven Bradbury, Ph.D., Director
Environmental Fate and Effects Division (7507C)

The Environmental Fate and Effects Division (EFED) has conducted a comprehensive evaluation of the available data regarding the potential effects of atrazine on amphibian gonadal development and presented its assessment for external peer review to a FIFRA Scientific Advisory Panel (SAP) in June 2003. In a white paper (dated May 29, 2003) EFED, in conjunction with the Mid-continent Ecology Division (MED) of the Office of Research and Development, summarized seventeen studies consisting of both open literature and registrant-submitted laboratory and field studies involving both native and non-native species of frogs (see: <http://www.epa.gov/oscpmont/sap/2003/June/finaljune2002telconfreport.pdf>). Individual data evaluation records for each of the studies discussed in the white paper can be found at <http://www.epa.gov/oscpmont/sap/2003/june/dataevaluationreports.htm>. In its white paper EFED/MED concluded that none of the studies fully accounted for environmental and animal husbandry factors capable of influencing endpoints that the studies were attempting to measure. They also concluded that the current weight-of-evidence did not show that atrazine produced consistent effects across a range of exposure concentrations and amphibian species tested.

Based upon this assessment, EFED concluded and the SAP agreed (<http://www.epa.gov/oscpmont/sap/2003/June/junemeetingreport.pdf>) that there is sufficient evidence to formulate a hypothesis that atrazine exposure may impact gonadal development in amphibians, but there are insufficient data to refute or confirm the hypothesis. At this time there is no conclusive evidence to show that atrazine produces a consistent, reproducible effect on amphibian development. Because of the inconsistency and lack of reproducibility across studies and an absence of a dose-

response relationship in the currently available data, EFED does not recommend changing the ecological risk assessment in support of the interim reregistration eligibility decision (IRED) on atrazine with regard to amphibians. Instead, EFED recommends that additional data are needed to evaluate the potential causal relationship between atrazine exposure and gonadal development in amphibians. EFED also recommends that the additional data should follow the multi-tiered process of data collection proposed in the white paper. This data collection process, which was endorsed by the SAP, can be used to address uncertainties associated with the potential causal relationships between atrazine exposure and gonadal development and characterize the nature of any concentration-response relationship.