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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON D.C., 20460

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

October 24, 2005

SUBJECT: FIFRA 6(a)2 Submission on the Effects of Glyphosate on Amphibian Larvae
(MRID 466505-01)
PC Code: 417300

FROM: Thomas M. Steeger, Ph.D., Senior Biologist *Thomas M Steeger 10/24/05*
Environmental Risk Branch 4

To: Jim Thompkins, PM Team Reviewer
Registration Division (7505C)

THROUGH: Elizabeth Behl, Chief *EBehl 10/24/05*
Environmental Risk Branch 4
Environmental Fate and Effects Division

The Environmental Fate and Effects Division has reviewed a paper entitled "*Toxicity of Glyphosate-based Pesticides to Four North American Frog Species*" (MRID 466505-01) submitted under FIFRA 6(a)2 adverse effects reporting by Mr. Norman Spurling (U. S. EPA, OPP, ITRMD, ISB; September 9, 2005). This paper reports on a series of studies conducted over roughly a seven-year period examining the acute and chronic effects of glyphosate alone, the surfactant polyethoxylated tallowamine (POEA) and glyphosate-based products on four aquatic-phase amphibian (anuran) species. A data evaluation record was completed on this study and is attached. The study contains a number of uncertainties associated with the quality of water used in the study and high control mortality that limit the study's utility in ecological risk assessment. In spite of the uncertainties, the study results indicate that the surfactant polyethoxylated tallowamine (POEA) and formulations of glyphosate containing POEA are toxic to amphibian larvae [under the conditions tested] on both an acute and chronic exposure basis. Effects on metamorphosis, gonadal morphology and thyroid hormone gene expression, suggest that POEA and glyphosate formulations containing POEA can impact endocrine-mediated processes.

