From: on behalf of	FARMER, DONNA R ( FARMER, DONNA R (	Redacted		
Sent:	6/7/2013 5:39:11 PM			
To:	PETERS, DAVID W	Redacted	GOLDSTEIN, DANIEL A [AG/1000]	
	Redacted	KRONENBERG, JOEL M	Redacted	
	WEBB, ELIZABETH G	Redacted	SALTMIRAS, DAVID A [AG/1000]	
	Redacted			
Subject:	RE: Web of Knowledge Alert -	CRITICAL REVIEWS IN TOXICOLO	GY	

Yes.

David Saltmiras did a nice job of working with Redacted (Monsanto's previous gentox expert) on this publication that filled in the studies/data since the 2000 Williams et al paper.

----Original Message----From: PETERS, DAVID W Redacted Sent: Friday, June 07, 2013 12:31 PM

To: FARMER, DONNA R Redacted GOLDSTEIN, DANIEL A Redacted KRONENBERG, JOEL M Redacted WEBB,

ELIZABETH G Redacted

Subject: FW: Web of Knowledge Alert - CRITICAL REVIEWS IN TOXICOLOGY

Importance: Low

FYI. I assume you saw this but just in case. - Dave

\*Pages: 283-315 (Review)

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## Title:

Review of genotoxicity studies of glyphosate and glyphosate-based formulations

## Authors:

## Redacted

Source:

\*CRITICAL REVIEWS IN TOXICOLOGY\*, 43 (4):283-315; APR 2013

## Abstract:

An earlier review of the toxicity of glyphosate and the original Roundup (TM)-branded formulation concluded that neither glyphosate nor the formulation poses a risk for the production of heritable/somatic mutations in humans. The present review of subsequent genotoxicity publications and regulatory studies of glyphosate and glyphosate-based formulations (GBFs) incorporates all of the findings into a weight of evidence for genotoxicity. An overwhelming preponderance of negative results in well-conducted bacterial reversion and in vivo mammalian micronucleus and chromosomal aberration assays indicates that glyphosate and typical GBFs are not genotoxic in these core assays. Negative results for in vitro gene mutation and a majority of negative results for chromosomal effect assays in mammalian cells add to the weight of evidence that glyphosate is not typically genotoxic for these endpoints in mammalian systems. Mixed results were observed for micronucleus assays of GBFs in non-mammalian systems. Reports of positive results for DNA damage endpoints indicate that glyphosate and GBFs tend to elicit DNA damage effects at high or toxic dose levels, but the data suggest that this is due to cytotoxicity rather than DNA interaction with GBF activity perhaps associated with the surfactants present in many GBFs. Glyphosate and typical GBFs do not appear to present significant genotoxic risk under normal conditions of human or environmental exposures.