

Message

From: AH HOOI LIM
Sent: 6/23/1999 4:49:36 PM
To: RICHARD W SCHUMACHER; B K CHIU; YEEW THAI TENG; GUI MEI CHONG; TET JONG CHANG; ENG GUAN LIM;
RICHARD A GREUBEL; DONNA R FARMER
CC: LISA M DRAKE; JOHN F ACQUAVELLA
Subject: Re: Popular herbicide Linked To Cancers

Donna,

Thanks for the info.

Teng and Chang, let's meet on May 28, morning to determine our rebuttal and other communication. Teng, we could use Prestige Communication to handle the media part and I am leaving the contact to you.

Rgds...LAH

Reply Separator

Subject: Popular herbicide Linked To Cancers
Author: DONNA R FARMER at MONSL125
Date: 6/22/99 3:58 PM

Rich and all:

In response to your e-mail request for information on what we call the "Swedish or Hardell study." John Acquavella and I have been doing the technical work on this issue. Here is what we have been sending around when we receive information requests.

Let us know if you have further questions or need additional help.

Best Regards,

Donna

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Please find below an update on the Hardell situation

Also please note the following 3 attachments:
critique.doc
letter.doc
newscientist.doc

Please don't hesitate to contact us if you need additional information.

Donna and John

WHAT WAS THE EPIDEMIOLOGIC PUBLICATION LINKING GLYPHOSATE AND NON-HODGKINS LYMPHOMA (NHL)?

In April 1999, a Swedish epidemiologic study entitled "A Case-Controlled Study of Non-Hodgkin's Lymphoma and Exposure to Pesticides" was published

<p>UNITED STATES DISTRICT COURT NORTHERN DISTRICT OF CALIFORNIA</p> <p>TRIAL EXHIBIT <u>444</u></p> <p>Case No. 3:16-cv-0525-VC</p> <p>Date Entered _____</p> <p>By _____ Deputy Clerk</p>

in the journal Cancer, by Lennart Hardell. This study found statistically significant associations between NHL and reported use of fungicides and herbicides. "Reported use of" glyphosate, along with reported use of several other herbicides, showed a weak, not statistically significant association with NHL. Despite the obvious weakness of the paper (detailed below), the finding was rapidly picked up in the popular press (e.g. New Scientist) and became the basis for allegations against the safety of Roundup herbicides and, indirectly, against Roundup ready crops.

WHO IS LENNART HARDELL?

Hardell has a long history with Monsanto. Our former colleagues in Solutia tell us that "Hardell hates Monsanto." Hardell started the controversy over dioxin and soft tissue sarcoma 20+ years ago based on some flawed epidemiologic research. He also worked to link Agent Orange to cancer based on its presumed dioxin content. Hardell continues to be an expert witness against Solutia in toxic tort cases. Dr. Ralph Cook, the retired Medical Director of Epidemiology at Dow Chemical, told us that Hardell is very arrogant. He has a history of resorting to ad hominem attacks when challenged by industry, so if he feels threatened he may resort to linking us with old allegations made against Monsanto Chemical Company (on dioxin, PCBs and the like). Our Monsanto registration manager in Sweden has indicated that Hardell is personally calling the journalists to inform them of his study.

Hardell likes being in the middle of controversial issues. He recently released a report linking the use of mobile phones and brain tumors.

WHAT IS INDUSTRY DOING?

A Swedish industry group, IVT, has been trying to arrange a meeting with Hardell. June 1, 1999, IVT received a letter from Hardell in which he claimed to be too busy to meet with industry in June, July and August.

WHAT IS THE CONCLUSION OF OUR INTERNAL EXPERT REVIEW OF HARDELL'S PAPER?

Our Monsanto epidemiologist, John Acquavella, has reviewed the NHL paper and prepared the attached critique (critique.doc). The study was found to have several important limitations including reliance on memory of pesticide use from subjects or their next of kin, inability to control for confounding factors, and the very small number of subjects reporting glyphosate use (4 cases). Dr. Acquavella has concluded that the alleged findings are inconsistent with what is known about glyphosate, and that systematic error or chance seem to be the most likely explanations for the glyphosate findings in this study.

IMPACTS TO DATE?

We are not aware of any documented impact on business. What we do know is the story has been picked up in the popular press. It is also being used against us by groups such as Greenpeace, and it has resulted in numerous inquiries around the world.

Feedback from the UK and Swedish regulators indicates that they don't consider the study to be a credible basis for changing their position on glyphosate-containing products.

WHAT HAVE WE DONE TO DEFEND GLYPHOSATE?

Monsanto scientists and a Yale M.D. collaborated to submit a letter to the editor of Cancer critiquing the Hardell paper (see attachment - letter.doc). The letter has been accepted for publication and will appear in the August 15th edition. In addition our former medical director in Europe and two consulting European scientists collaborated to submit a letter to the editor of the New Scientist (see attachment - newscientist.doc, published May 29, 1999).

We have supplied technical support to Monsanto PR, regulatory and business representatives around the world. In addition we have circulated the critique of the paper and the letters to the editors to relevant parties.

We are creating a scientific outreach network of prominent epidemiologists in Europe and the U.S., including Dimitrios Trichopoulos (Harvard/Greece)

and Hans-Olov Adami (Harvard/Sweden), who will assist us in defending glyphosate. We are planning meetings with them and with four prominent epidemiologists in each of the following areas; UK (this meeting is set for August 17th), Scandinavia (targeting Sept.), Italy/Greece (targeting August), Netherlands/France/Germany (targeting Sept.) and the US (targeting October). The purpose of these meetings is to raise awareness of the limitations of Hardell's research and gain support for glyphosate in the epidemiologic community worldwide.