

Message

From: GOLDSTEIN, DANIEL A [AG/1000] [/O=MONSANTO/OU=NA-1000-01/CN=RECIPIENTS/CN=527246]
Sent: 5/18/2007 5:32:36 PM
To: SACHS, ERIC S [AG/1000] [REDACTED]@monsanto.com]; WALLIS, DARREN [AG/1000] [REDACTED]@monsanto.com]; STEVENER, SCOTT E [AG/1000] [REDACTED]@monsanto.com]; GLICK, HARVEY L [AG/5340] [REDACTED]@monsanto.com]; HEDGECOCK, F ANDY [AG/1000] [REDACTED]@monsanto.com]; MARSHALL, KAREN K [AG/1000] [REDACTED]@monsanto.com]; CARR, KATHERINE H [AG/1000] [REDACTED]@monsanto.com]
CC: FARMER, DONNA R [AG/1000] [REDACTED]@monsanto.com]
Subject: RE: FYI - Aerial spraying of herbicide 'damages DNA' - SciDev.Net

All-

Donna will be in, I believe, Monday. We have local business contacts, but have also been in contact with the US State Department and may need to coordinate communications efforts. I would note that the symptoms noted in the article are those of O-P insecticide poisoning and are not consistent with glyphosate in any event. The results do not frankly sound credible on the face of it- it is not easy to generate a 6 to 8 fold increase in genetic injury- presumably sister chromatid exchange. This may also be new publication of older data as the allegation is not new and the date of application now some 5 years ago. (These types of testing cannot generally be done on stored samples, suggesting that data themselves are older, even if not previously published.)

The publication is in a Brazilian journal and is not yet available on line as best I can tell. The journal operates in English and provides free access PDF's- but this volume is not yet posted. As a 1-page reference (unless they are just giving the first page of a multi-page article), this could not have a lot of detailed content.

Dan

-----Original Message-----

From: SACHS, ERIC S [AG/1000]
Sent: Friday, May 18, 2007 12:08 PM
To: WALLIS, DARREN [AG/1000]; STEVENER, SCOTT E [AG/1000]; GLICK, HARVEY L [AG/5340]; HEDGECOCK, F ANDY [AG/1000]; MARSHALL, KAREN K [AG/1000]
Cc: GOLDSTEIN, DANIEL A [AG/1000]; FARMER, DONNA R [AG/1000]
Subject: RE: FYI - Aerial spraying of herbicide 'damages DNA' - SciDev.Net

Darren and Andy,

Please engage Donna and Dan as this is an old issue and they have extensive experience and information on this topic.

Eric

-----Original Message-----

From: WALLIS, DARREN [AG/1000]
Sent: Friday, May 18, 2007 9:59 AM
To: STEVENER, SCOTT E [AG/1000]; GLICK, HARVEY L [AG/5340]; HEDGECOCK, F ANDY [AG/1000]; MARSHALL, KAREN K [AG/1000]; SACHS, ERIC S [AG/1000]
Subject: RE: FYI - Aerial spraying of herbicide 'damages DNA' - SciDev.Net

Can we get a copy of the study? Sounds like it will be published in Genetics and Molecular Biology. Seems like we might be able to get out in front of this one. Wondering if we might be able to also send clarifying information on glyphosate to the author of this article through our regional contact in Latin America?

-----Original Message-----

From: STEVENER, SCOTT E [AG/1000]
Sent: Friday, May 18, 2007 8:43 AM
To: WALLIS, DARREN [AG/1000]; GLICK, HARVEY L [AG/5340]; HEDGECOCK, F ANDY [AG/1000]; MARSHALL, KAREN K [AG/1000]; SACHS, ERIC S [AG/1000]



MONGLY03101108

Subject: FYI - Aerial spraying of herbicide 'damages DNA' - SciDev.Net

[SciDev.Net](#)
17 May 2007

Aerial spraying of herbicide 'damages DNA'

<http://www.scidev.net/news/index.cfm?fuseaction=readnews&itemid=3622&language=1>

By Lisbeth Fog

BOGOTA - Aerial spraying of a herbicide by the Colombian government on the border of Colombia and Ecuador has caused a high degree of DNA damage in local Ecuadorian people, according to a study.

The research will be published in the next issue of *Genetics and Molecular Biology*.

The scientists, from the Pontificia Catholic University in Ecuador, analysed blood samples from 24 Ecuadorians living within three kilometres of the border of the two countries. **Aerial spraying of a herbicide formulation containing glyphosate — sold under the name Roundup by Monsanto** — took place there between late 2000 and early 2001.

The Colombian government sprays illegal coca plantations — used to make cocaine — as part of its 'war on drugs'.

According to the paper, the application rate of the herbicide (litres per hectare) was 20 times the maximum recommended rate for the formulated product.

Half the individuals in the group received spraying directly over their houses, and the blood samples were taken within two months of the spraying taking place.

For comparison, blood samples were taken from 21 Ecuadorian individuals living 80 kilometres away from the border, where aerial spraying of the herbicide formulation did not take place.

In addition to expected symptoms — including vomiting and diarrhoea, blurred vision, and difficulty in breathing — the researchers found a significantly higher degree of DNA damage — 600 to 800 per cent higher — in the people living near the border compared with those 80 kilometres away.

The researchers ruled out tobacco, alcohol, non-prescription drugs and asbestos as causing the DNA damage. None of the individuals used or had been exposed to other herbicides or pesticides when the samples were taken.

DNA damage may activate genes associated to the development of cancer, lead researcher Cesar Paz y Miño told SciDev.Net, and may also lead to miscarriage or malformations in embryos.

Both Colombia and Ecuador have formed national scientific and technical commissions to study the effects of aerially spraying this herbicide formulation, with the Ecuadorian commission concluding it does affect humans and the Colombian commission refuting this claim (see [Pesticides used in Colombian war on drugs 'not harmful'](#)).

President of the Colombian commission, Alberto Gómez Mejía, told SciDev.Net that it is difficult to establish the real cause of the effects of agrochemicals in humans.

Reference: *Genetics and Molecular Biology* 30, 456 (2007)

Scott E. Stevener
Information & Research Manager
Commercial Acceptance
[Monsanto Company](#)