



**EARTHJUSTICE**

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**International Program**

**To:**

**From:** Anna Cederstav, Ph.D.  
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**Re:** **Validity of the reports presented by the US Department of State as evidence that no human health impacts are caused by the “Plan Colombia” aerial herbicide spraying in coca-producing regions.**

The US Department of State has repeatedly asserted that the aerial herbicide spraying conducted to eradicate coca-crops in Colombia does not cause human health harms. To support this claim and promote the use of aerial spraying in the Andean nations, the Department of State has presented two health studies from Colombia (one of which is available only in part), one peer-reviewed scientific paper on glyphosate and Roundup herbicides, and one publication about the environmental problems caused by coca production. This memo describes why these studies cannot be used to justify a conclusion of “no human health harm” for the coca-eradication program.

In brief, these studies present no credible scientific evidence that the spraying is safe for human health. The first health study is irrelevant because it does not consider the impacts of the coca eradication program, focusing instead on the much less hazardous poppy eradication program. The second health study was conducted too long after spraying and therefore was inconclusive. The peer-reviewed publication does not apply because it assesses the risk of health impacts only under exposure conditions that are likely to be greatly surpassed in Colombia.

In spite of these grave flaws, Rand Beers, assistant secretary of state for international narcotics and law enforcement affairs, cited these studies in congressional testimony as proof that the aerial spraying coca-eradication program does not cause human health harms. Other information disseminated by the Department of State is also considerably biased towards the use of aerial herbicide spraying even though the Department has not evaluated the environmental and human health impacts of the program: and has failed to provide a valid rationale for the decision to promote aerial spraying over alternative programs.

1) *The “Nariño report” (A Study of the Health Complaints Related to Aerial Eradication in Colombia – Department of Nariño, Municipality of El Tablón Gómez, September 2001)*

The title of this report is misleading because it fails to convey that the study is limited to the impact of spraying to control illicit opium poppy. Putting the quality of the study aside,<sup>1</sup> the conclusion that “in the vast majority of cases, reported health problems are not caused by aerial

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<sup>1</sup>Numerous questions as to the quality of this report and the validity of conclusions drawn have been raised. but these will not be addressed here because the report is irrelevant to impacts of the coca-eradication program.

spraying” is unsubstantiated with regard to the coca-eradication program of Plan Colombia because the report does not address impacts from spraying to control coca crops.

The spraying programs used to control opium and coca crops differ radically because the coca plant is much more resistant than the opium plant to Roundup herbicides. Thus, according to information from the National Anti-Narcotics Police of Colombia,<sup>2</sup> poppy crops are sprayed with 2.5 liters per hectare of a 5% herbicide solution, while coca crops are sprayed with 10.4 liters per hectare of a 44% herbicide solution. In other words, the herbicide solutions used to control coca are nine times as concentrated as those used to control poppy, and the total amount of herbicide deposited per area in coca fields is 37 times greater than that applied to poppy fields. Clearly, with much greater herbicide quantities and more concentrated solutions being used to control coca, any study of health impacts due to spraying of poppy crops is largely irrelevant to potential impacts in coca-producing regions. Thus, the Nariño report can in no way be taken as proof that the coca-eradication aerial spraying program does not cause significant human health harm.

2) *The “Putumayo Report” (Commissioned by the Colombian US Embassy Anti-Narcotics Section for preparation by the Uribe Cualla Toxicology Clinic, July of 2001.)*

The Executive Summary<sup>3</sup> of this report identifies grave methodological flaws of the study. As stated in paragraph three of the summary, the Clinic did not carry out the type of prospective study required for a proper epidemiological evaluation, and the retrospective study undertaken did not permit the researchers to “confirm or refute a link between the exposure to and environmental concentration of an implicated chemical and the clinical symptoms potentially caused by such exposure.” In other words, the data was not of sufficient quality for the Clinic to draw any statistically valid conclusions regarding the human health impacts of the spraying. In fact, both the CDC and the EPA have indicated that “because there are no reliable biomarkers of glyphosate exposure” it is impossible to determine whether aerial spraying is making people sick without testing subjects before and immediately after the spraying.<sup>4</sup> Thus, this study cannot accurately be cited as proving that the spraying program is safe.

Lacking conclusive epidemiological data, the Uribe Cualla Clinic nevertheless used the information obtained together with the “existing toxicological and scientific information about glyphosate” to infer that the spraying cannot be the cause **of the** reported human health harms. To make this inference, the Clinic relied on a series of entirely inappropriate assumptions. The Clinic assumed that:

- a) historical medical data from these poor, remote areas is sufficiently detailed to be appropriately used as baseline data for this type of study;
- b) there is little or no aerial drift of the herbicide mixture when applied;
- c) consumption of contaminated food and water is not a significant exposure route;
- d) five months after the fact, community members can accurately recall their whereabouts and the types of symptoms suffered during spraying episodes that were spread over a number of months;

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<sup>2</sup> Information provided by the Policia Nacional de Colombia-Direccidn Antinarcóticos.to the office of Colombian Congresswoman Dra. Jaramillo in August of 2001.

<sup>3</sup> Only the Executive Summary has been released by the US Department of State to the public.

<sup>4</sup> April 17,2001 letter from Colombian Ambassador Anne Patterson to Senator Patrick Leahy.

- e) urine and blood samples taken five months after the spraying accurately indicate whether or not excessive exposure occurred; and
- f) the herbicide mixture sprayed, and the manner in which it is sprayed, poses a low risk of human health impacts.

Because the above are by no means certain and in some cases blatantly incorrect, there is no basis for the Clinic's supposition that the spraying is not be the cause of the reported human health harms.

3) *Safety Evaluation and Risk Assessment of the Herbicide Roundup and Its Active Ingredient, Glyphosate, for Humans* ( Williams, G.M; Kroes, R; Munro, I. C; *Regulatory Toxicology and Pharmacology* 31,117-165 (2000)

This relatively comprehensive scientific review of toxicological studies of glyphosate and Roundup products concludes that “under present and expected conditions of use, Roundup herbicide does not pose a health risk to humans.” In other words, the determination of acceptable risk is valid only in cases where a series of assumptions can be made with regard to conditions of use. The assumptions made in the study include that: the herbicide is used according to label instructions (as of year 2000); aerial drift is limited by appropriate application procedures; drinking water is purified prior to ingestion; only small volumes of contaminated surface waters are consumed; only very small quantities of contaminated food is consumed; workers wear protective clothing; etc. Until the Department of State proves that the eradication program complies with these “present and expected conditions of use” and exposure, it is inappropriate for the Department of State to claim that there is scientific evidence indicating that Roundup use for coca-eradication poses no human health risk in Colombia.

There is significant reason to believe that the aerial spraying program is conducted in ways that would clearly make the above assumptions invalid. The EPA has indicated<sup>5</sup> that the herbicide product used for the Colombian eradication program is Roundup SL Herbicide,<sup>6</sup> a product that was prohibited for use in the United States until November of 2001 because it is known to cause severe and irreversible eye damage.<sup>7</sup> (Monsanto states that this product is still not being sold in the United States.) According to the recently approved EPA label for Roundup SL Herbicide, the herbicide is only permitted for use in non-agricultural sites such as non-cropped rangelands, industrial sites, and along roads and utility rights of ways. The label was only recently modified to permit application of concentrations as strong as those used in Colombia, and again – only for use in non-agricultural areas. Further, in rural Colombia it is extremely likely that contaminated surface waters are consumed without purification, and that recently sprayed crops are contacted or consumed. Given the drastic differences in exposure routes and application rates between normal Roundup use in the United States and the eradication program in Colombia, the Williams study cannot be considered to justify a conclusion that the program poses an acceptable level of risk to human health.

4) *“Los Andes en Peligro Consecuencias Ambientales del Narcotráfico” (“The Andes in Danger: Environmental Consequences of the Narcotics Trade,” a publication of the Office of International*

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<sup>5</sup> January 10, 2002 letter from Francis Mann with the Office of Pesticide Programs, in response to a Freedom of Information Act request filed by Scott Pasternack of Earthjustice on behalf of the Amazon Alliance.

<sup>6</sup> EPA registration number 000524-00308

In November 2000, the US Attorney's Office prosecuted a case investigated by EPA's Criminal Investigation Division, and convicted Larry Johnson of Kremlin Montana on 35 counts of violating federal law by scheming to illegally import Roundup Export, “ the sale of which is prohibited in the United States because it can cause severe and irreversible eye damage.” (EPA Headquarters press release, November 21,2000.)

*Information Programs of the Department of State, intended for “international audiences only” and “not for distribution in the United States, ”)*

This publication argues that the environmental damage from coca production is far worse than that caused by the eradication program. The publication focuses on three main environmental problems attributed to coca production in Colombia:

- Deforestation and the resulting loss of biodiversity;
- Chemical contamination from coca laboratories; and
- Oil spills that result from guerrilla attacks on oil pipelines.

Unfortunately, rather than presenting a balanced account of and thoroughly evaluating the environmental and health impacts of both coca production and the Plan Colombia eradication program, this publication is clearly biased in favor of aerial eradication. Because it is not referenced, it is impossible to verify the accuracy of the claims made.

There is absolutely no doubt that coca production is a significant contributor to forest and biodiversity loss in the tropical regions of the Andean nations. There is also no doubt that chemical contamination from coca laboratories causes environmental problems or that guerrilla attacks on pipelines in Colombia have caused grave environmental damage. However, the important questions not addressed in this publication are whether aerial eradication using highly concentrated solutions of Roundup SL herbicide is a morally acceptable and effective means to reduce coca cultivation, and whether the militarization of coca producing regions will decrease the frequency of guerrilla attacks on US-owned petroleum installations.

This report simply presumes -- and presents no data to substantiate the assertion -- that aerial eradication is effective for combating drug production. Further, with regard to biodiversity loss caused by relocation of coca-plots, the authors fail to consider the possibility that aerial eradication may simply make relocation more prevalent. The report does not consider or discuss potentially effective alternatives such as manual eradication programs and economic incentives for crop substitution.

While the publication provides a detailed account of the chemical wastes and environmental damage generated by the cocaine production process, it does not consider the contamination and environmental or health harms caused by the widespread spraying of potent Roundup herbicides in tropical ecosystems inhabited by poor and relatively uneducated citizens. The section titled “Glyphosate and the Environment” is misleading in that it discusses only glyphosate – the active but not the most harmful ingredient in Roundup products. While extolling the benefits of glyphosate, this critical section fails to discuss the potentially harmful effects of the surfactants added to these products, or the fact that the prescriptions for safe use of the herbicide are not followed.

This State Department publication does not present any scientific support for the conclusions drawn. Rather, it appears intended to persuade the undiscerning reader that the aerial eradication program is safe for human health and the environment and thus constitutes the best alternative for solving the complex problems surrounding coca-cultivation in Colombia.