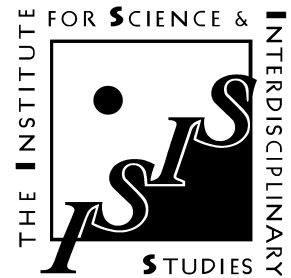


AERIAL SPRAYING IN COLOMBIA: HEALTH AND ENVIRONMENTAL EFFECTS¹

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The U.S. State Department says its "crop eradication" spray campaigns are not harming Colombian citizens, but has refused to provide complete information on herbicide ingredients, concentrations, and conditions of application. Meanwhile, substantial evidence indicates that aerial spray campaigns in Colombia are damaging food crops, delicate tropical ecosystems, and human health.

What is being sprayed in Colombia?

The herbicides sprayed over Colombia are a chemical mixture that has never been tested. They are being sprayed in concentrations that exceed the manufacturer's recommendations, in combination with other additives not approved for use in the U.S., and, in many if not all cases, with methods that would be illegal in the U.S.

According to the U.S. State Department, "the spray mixture [used] against coca throughout Colombia...contains three components: water, a commercially available formulation of the herbicide glyphosate, and the surfactant cosmo-flux 411f."² There is strong evidence that the herbicide formulation used is Roundup Ultra, made by the agrochemical company Monsanto, although this has not been officially confirmed by the U.S. Government.³ Information distributed by the State Department focuses on the active ingredient, glyphosate. However:

- 14.5% of Roundup Ultra is a surfactant, the precise identity of which has not been disclosed. Surfactants can be a significant source of toxicity of glyphosate herbicides.⁴
- In Colombia, herbicides are applied over acres at a time with no prior warning to farmers and their families, in a manner clearly not in accordance with the manufacturer's label recommendations. In the U.S., such failure to follow the label instructions would be a violation of Federal law.⁵
- In Colombia, the surfactant Cosmo-Flux 411F is added to the mix even though the label for Roundup Ultra also warns that "this is an end-use product. Monsanto does not intend and has not registered it for reformulation."⁶ The ingredients of Cosmo-Flux 411F have not been disclosed. Neither the U.S. nor the Colombian government has made available any studies on this additive's effects, alone or in combination with Roundup Ultra; thus there is no basis for assuming it is safe to spray on people, food crops, and water sources.
- The herbicides used against coca crops in Colombia are both more concentrated and applied in greater doses than the maximum levels recommended by the manufacturer on the U.S. label. The spray mixture used in Colombia contains 44% Roundup Ultra by volume.⁷ In contrast, the U.S. label for Roundup Ultra allows concentrations of 1.6% to 7.7%⁸. The U.S. label states that in most situations aerial application should not exceed 1 quart per acre of the formulated product.⁹ In Colombia, the rate is almost 4 ½ times that amount.¹⁰

Health Effects

There are many reports of illnesses associated with exposure to the spray chemicals. For example:

- The Health Department in Putumayo published a preliminary health report in three municipalities targeted by spray campaigns from December 22, 2000 to February 2, 2001. According to the report, medical personnel in three local hospitals reported increased visits due to skin problems, gastrointestinal infections, acute respiratory infection, and conjunctivitis following spraying.¹¹
- In August 2001, a commission from a European Human Rights Organization found in a visit to the Province of Santander that: “contrary to official declarations about the harmlessness of glyphosate, we were able to verify skin conditions (rashes and itching caused by the skin drying to the point of cracking) in both children and adults who were exposed directly to spraying while they worked their land or played outside their homes.”¹²
- Even in neighboring Ecuador, communities near the border have reported illnesses after aerial spraying on the Colombian side. In October 2000, the health center in Mataje (population 154), Esmeraldas, treated 44 local residents for skin and eye irritation, vomiting and diarrhea in the aftermath of spraying.¹³ The Ecuadorian press also reported in June 2001, that the Marco Vinicio Iza hospital, in Sucumbíos Province, was treating 10 to 15 patients a day for skin, respiratory, and other problems that local doctors attributed to the spraying.¹⁴ In September 2001, a class action suit was filed in U.S. federal court in Washington D.C. against DynCorp Corporation—the private contractor conducting the spraying in Colombia alleging that the spray campaign “caused severe physical and mental damage to Plaintiffs, their children, and other similarly situated lawful residents of Ecuador who have nothing whatever to do with the production of illegal drugs in Colombia.”¹⁵

Economic Effects

Numerous reports indicate that the spray campaigns have destroyed or damaged legal farming production, including food crops, aquaculture projects, pasture, and other agricultural resources. Colombian farmers rely on these resources to feed their families from day to day.

- The United Nations Drug Control Programme has collected extensive evidence confirming widespread reports that herbicides are being sprayed directly on small farmers' food plots.¹⁶
- The Colombian Human Rights Ombudsman has reported that spraying destroyed crops in eleven government-sponsored crop substitution and alternative development programs, programs specifically intended to provide poor farmers with economic alternatives to drug crop production.¹⁷
- An inspection and accounting by the municipal police in the single township of Valle del Guamuez (population 4289) in the Province of Putumayo found that 17,912 acres had been sprayed with herbicides as of February 21, 2001. Of this area, less than 12% was dedicated to coca cultivation. Crop losses included thousands of acres of bananas, yucca, corn, pasture, coffee, peanuts, fruit trees, timber, and vegetables. Forest cover was also destroyed and poultry, livestock, and farmed fish were made sick or killed.¹⁸

Environmental Effects

By design, broad-spectrum herbicides such as glyphosate kill a wide range of plants; thus they may destroy rare plant species and disrupt habitats. Since Colombia is one of the world's biologically richest countries¹⁹, the threat from spraying is particularly great.

- Colombia is home to the greatest number of bird species in the world, with 60% of the bird species in South America and 19% of the bird species found worldwide; Colombia has 55,000 plant species, the second highest number of plants in the world.²⁰ Many of Colombia's plant, bird, and other species are found nowhere else, so the destruction of their habitats could well mean their extinction.
- Studies show that glyphosate formulations have toxic effects on aquatic organisms including fish, amphibians, insects, crawfish and water fleas. Glyphosate can also affect soil organisms including earthworms, fungi, and microbes. A New Zealand study showed that glyphosate significantly affected growth and survival of earthworms; several studies have found that glyphosate can enhance the growth of disease-causing fungi; and one recent study found that glyphosate can interfere with beneficial mycorrhizal relationships between fungi and plants.²¹
- The spray campaigns also lead to habitat loss when farmers respond to the destruction of legal or illegal crops by clearing new areas of previously undisturbed forest. The Colombian Human Rights Ombudsman has described a process of "triple deforestation," whereby forest clearing for coca production is followed by poorly regulated spraying which affects forest land and legal food crops. The third wave of deforestation comes when the small farmers move deeper into the forest to new areas to grow both coca and food for their families.²²

Calls for an Alternative

Governmental, intergovernmental, and civil society sources in Colombia, the U.S., and Europe have called for an alternative to the spray campaigns. All share a common concern that the spray campaigns are damaging the health and livelihoods of Colombian citizens and damaging delicate tropical environments. For example:

- The governors of the six provinces most affected by the spraying have called for a halt to fumigation and propose voluntary manual eradication of coca crops as an alternative.²³
- Colombia's Comptroller-General, Carlos Ossa, has called for a halt to spraying until environmental effects can be measured, and proposed that greater emphasis be put on economic and social programs to encourage farmers to switch to legal crops.²⁴
- Colombia's Human Rights Ombudsman has called for the suspension of aerial spraying pending the development of plans to protect alternative economic projects, population centers and water resources, and the creation of contingency and compensation plans.²⁵
- The UN Drug Control Programme's representative in Colombia and Ecuador, Klaus Nyholm, argues that aerial eradication is neither just nor efficient. Nyholm has called for a halt to the spraying of small producers and for a program of voluntary manual eradication.²⁶
- In August 2001, over 100 physicians, scientists, and other professionals signed an open letter to the U.S. Senate expressing concern about environmental and human health effects of the spray campaigns. The signatories express concern that "we are exposing ecosystems and citizens of another country to a toxic chemical mixture, while failing to disclose the composition of the mixture and the conditions of exposure."²⁷

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² U.S. State Department, written answer to questions from U.S. Representative James McGovern (D, MA), (March 14, 2002.)

³ The State Department has acknowledged that a Roundup product is being used (Bureau for International Narcotics and Law Enforcement Affairs, U.S. Department of State, "Fact Sheet: Eradication of Illicit Crops: Frequently Asked Questions," November 30, 2001) but has not specified which. Frequent reports in the press of the use of Roundup Ultra have been confirmed by the Narcotics Division of the Colombian National Police in information provided to the Colombian People's Ombudsman. [Eduardo Cifuentes Muñoz, Colombian Human Rights Ombudsman, "Responses to questions from the Colombian Congress" (July 2001)]. Also, the the composition of Roundup Ultra provided in its Material Safety Data Sheet available at <http://www.cdms.net/ldat/mp178020.pdf> is 41% glyphosate, 14.5% surfactant, and 44.5% water, which corresponds exactly to the description provided by the U.S. Embassy in Bogotá of the herbicide [Information provided by William Duncan of the Anti-Narcotics Section of the U.S. Embassy, to Lisa Haugaard of Latin America Working Group. (February 20, 2002)]. However, Dr. Anna Cederstav (pers. comm.) of the Interamerican Association for Environmental Defense reports that recent information from the EPA's Office of Prevention, Pesticides, and Toxic Substances points to the use of a different glyphosate herbicide, Roundup SL, considerably more toxic than Roundup Ultra. This requires further clarification from the government.

⁴ See, for example, Sawada, Y., et al., "Probable toxicity of surface-active agent in commercial herbicide containing glyphosate," *The Lancet* 1:8580 (1988), p. 299.

⁵ Roundup Ultra sample label, 1999. available at <http://www.cdms.net/ldat/ld178005.pdf> (visited March 12, 2002).

⁶ Roundup Ultra sample label, 1999.

⁷ U.S. State Department, written answer to questions from U.S. Representative McGovern Op. Cit. See also Narcotics Division of the Colombian National Police. "Dosis De Aplicación y Composición de la Mezcla Utilizada Según Tipo de Cultivo" (table provided to members of the Colombian Congress, reproduced in Anna Cederstav, "Rejoinder to the State Department's Nariño Study," <http://www.usfumigation.org>, visited March 1, 2002.)

⁸ Roundup Ultra sample label, 1999, p.3. Section 7.1. (The label calls for mixing one quart of herbicide with 3 to 15 gallons of water "unless otherwise specified in this label." None of the exceptions appear to apply to the wide ranging, aerial spraying of coca crops as carried out in Colombia.)

⁹ Ibid.

¹⁰ U.S. State Department, written answer to questions from U.S. Representative McGovern Op. Cit. See also Narcotics Division of the Colombian National Police. Op. Cit.

¹¹ Departamento Administrativo de Salud, Oficina de Planeación, Sección Epidemiología, "Efectos de la fumigación: Valle del Guamuez y San Miguel Putumayo," (February 2001).

¹² Red Europea de Hermandad y Solidaridad con Colombia, "Informe Sobre Los Efectos de las Fumigaciones y las Constantes Violaciones a los DDHH en el Valle del Río Cimitarra," Equipo Nizkor--Serpaj Europa, September 3, 2001. (Contact nizkor@derechos.org for more information.)

¹³ *El Comercio*, Quito, (October 22, 2000) cited in Adolfo Maldonado, Ricardo Buitrón, Patricia Granda, Lucía Gallardo, *Reporte de la Investigación de los Impactos de las Fumigaciones en la Frontera Ecuatoriana*. June 2001.

¹⁴ "La muerte viene del cielo," *La Hora*, Quito, (June 27, 2001).

¹⁵ *Aguasanta Arias et al. vs. DynCorp*, Class Action Complaint For Equitable Relief and Damages, Filed in the United States District Court for the District of Columbia, September 11, 2001.

¹⁶ Cesar García, "U.N. Calls for Drug Crop Monitors," Associated Press (July 24, 2001).

¹⁷ Eduardo Cifuentes Muñoz, Human Rights Ombudsman, "Sobre el impacto de fumigaciones en 11 proyectos de desarrollo alternativo en el Putumayo," Resolución Defensorial No. 004, February 12, 2001.

¹⁸ Luz Angela Pabón, España, Municipal Police Inspector, Valle de Guamuez, Putumayo, Colombia "General Summary of Losses due to Fumigation through 21 February 2001."

¹⁹ William Eichbaum (Vice-President, Endangered Spaces Program, World Wildlife Fund), letter to Senator Russ Feingold, November 21, 2001.

²⁰ Colombian Ministry of the Environment web page: <http://www.minambiente.gov.co/biogeo/menu/ingles/number.htm>, visited March 1, 2002.

²¹ See literature review in Jeremy Bigwood, "A Brief Overview of the Scientific Literature Regarding Reported Deleterious Effects of Glyphosate Formulations on Aquatic and Soil Biota," document prepared for the Ministry of the Environment of Ecuador, March 6, 2002. Available at <http://www.usfumigation.org/Literature/Scientific%20Papers/ReviewRoundup.pdf>, visited March 18, 2002.

²² Jose Fernando Castro Caycedo, Nelson Caicedo Rodríguez, Luis Fernando Maldonado Guerrero, and others. *Los Cultivos Ilícitos, Política Mundial y Realidad en Colombia*. Defensoría del Pueblo. Bogotá. August 2000. pp. 88-89.

²³ Juan Forero, Poor Region's Governors in Colombia Unite to Oppose Drug Plan. *New York Times* (May 6, 2001).

²⁴ Michael Easterbrook, "Government Study Raises Doubts on Drugs," Associated Press (September 2, 2001).

²⁵ Eduardo Cifuentes Muñoz, Colombian Human Rights Ombudsman, letter to Rómulo González Trujillo, Colombian Minister of Justice (July 12, 2001).

²⁶ "ONU Crítica Fumigación Aérea," *El Tiempo*, Bogotá (July 24, 2001).

²⁷ Open Letter to the U.S. Senate, available at http://www.usfumigation.org/NGOsign-onletter/open_letter_to_the_u.htm