

## PARAQUAT ERADICATION: LEGAL MEANS FOR A PRUDENT POLICY?

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### I. INTRODUCTION

In recent years, the United States government has expressed growing concern over the increase in the production and use of marijuana.<sup>1</sup> The government believes that a significant portion of the crime in the United States is related to the trafficking of illicit drugs.<sup>2</sup> Furthermore, the government feels that the use of marijuana presents a long-term health hazard to those who consume it.<sup>3</sup> Federal officials agree that the most effective way to eliminate both the crime and the adverse health effects associated with marijuana production and use is to reduce the supply of marijuana.<sup>4</sup> Thus, the United States Drug Enforcement Administration (DEA)<sup>5</sup> recently embarked on a nationwide program to eradicate the growth of marijuana.<sup>6</sup> The goal of this program was to eliminate marijuana crops in the United States by the aerial spraying of the toxic herbicide paraquat over national forests and public lands where marijuana fields have been spotted by the DEA.<sup>7</sup>

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<sup>1</sup> See U.S. STATE DEPARTMENT, CANNABIS ERADICATION IN FOREIGN WESTERN HEMISPHERE NATIONS, FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT OF THE EFFECTS IN THE UNITED STATES, 23-27 (Nov. 1982). [hereinafter cited as CANNABIS ERADICATION STATEMENT]

<sup>2</sup> *Id.* at 33.

<sup>3</sup> *Id.* at 41.

<sup>4</sup> *Id.* at 37-39.

<sup>5</sup> The United States Drug Enforcement Administration (DEA), located in the District of Columbia, is an agency within the U.S. Department of Justice. The agency was created by Reorganization Plan No. 2 of 1973, 38 Fed.Reg. 15,932 (1973). The Federal Bureau of Investigation oversees the activities of the DEA.

<sup>6</sup> N. Y. Times, Aug. 16, 1983, at A7, col. 1.

<sup>7</sup> Memorandum in Opposition to Plaintiffs' Motions for Temporary Restraining Or-

In August of 1983, the DEA carried out its first paraquat spraying mission. The DEA sprayed paraquat over marijuana fields in the Chattahoochee National Forest in Georgia<sup>8</sup>, and the Daniel Boone National Forest in Kentucky<sup>9</sup>. The public opposition to these spraying missions was immediate and vocal. In Georgia a group of citizens banded together and persuaded a federal judge in Atlanta to grant a preliminary injunction, temporarily halting any further spraying.<sup>10</sup> Three environmental groups and a group advocating the legalization of marijuana subsequently joined together to seek a permanent injunction against the DEA program in the District Court of the District of Columbia.<sup>11</sup> The plaintiffs in this suit alleged that the DEA program violated the National Environmental Policy Act of 1969 (NEPA).<sup>12</sup> NEPA requires that a detailed statement that describes all the environmental effects of a program be prepared for all major federal actions which have a substantial impact on the environment.<sup>13</sup> Plaintiffs alleged that because the DEA failed to prepare such an environmental statement it was in violation of NEPA.<sup>14</sup> The plaintiffs further alleged that the DEA paraquat program violated the Federal Insecticide Fungicide and Rodenticide Act (FIFRA), which regulates pesticide and herbicide use.<sup>15</sup> FIFRA requires that all pesticides and herbicides used in this country be registered with the Environmental Protection Agency (EPA)<sup>16</sup> and be labeled with an EPA approved label.<sup>17</sup> FIFRA further provides that a herbicide may only be used in accordance with the directions set forth on the

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ders, at 6, *Sierra Club, et. al v. Francis Mullen, Jr., et. al*, No. 83-2592; *NORML v. United States Drug Enforcement Administration*, No. 83-2595 (D.D.C. filed Sept. 8, 1983) [hereinafter cited as *DEA's Memorandum*].

<sup>8</sup> Shipp, *Georgia Divided Over Spraying to Curb Marijuana*, N.Y. Times, Aug. 18, 1983, at A20, col. 1.

<sup>9</sup> N.Y. Times, Aug. 20, 1983, at A6, col. 6.

<sup>10</sup> *North Georgia C.O.P.S. v. William French Smith*, No. C83-1710A (N.D. Ga. Aug. 15, 1983) (Order granting temporary restraining order).

<sup>11</sup> Complaint, *Sierra Club, National Coalition Against the Misuse of Pesticides, and Friends of the Earth v. Francis M. Mullen, Jr.*, No. 83-2592 (D.D.C. filed Sept. 1, 1983) [hereinafter cited as *Sierra Club Complaint*]; *NORML v. United States Drug Enforcement Administration*, No. 83-2595 (D.D.C. filed Sept. 1, 1983) [hereinafter cited as *NORML Complaint*].

<sup>12</sup> *Sierra Club Complaint* at 15; *NORML Complaint* at 17.

<sup>13</sup> 42 U.S.C. § 4332(2)(c) (1982).

<sup>14</sup> *Sierra Club Complaint* at 15; *NORML Complaint* at 17.

<sup>15</sup> *Sierra Club Complaint* at 16.

<sup>16</sup> 7 U.S.C. § 136a(a) (1982).

<sup>17</sup> *Id.* at § 136a(c)(5)(B) (1982).

label.<sup>18</sup> The plaintiffs in this suit alleged that the DEA's use of paraquat in the national forests was inconsistent with the paraquat label and thus a violation of FIFRA.<sup>19</sup>

In October, 1983, only a month after plaintiffs instituted suit and obtained a preliminary injunction, the DEA and the plaintiffs settled the suit by entering into a Consent Judgment.<sup>20</sup> Pursuant to this Consent Judgment the DEA agreed not to use, or allow the use of paraquat to eradicate marijuana on federal lands until they prepare an EIS in compliance with the NEPA.<sup>21</sup> Furthermore, the DEA agreed not to use paraquat on federal lands under the current paraquat label.<sup>22</sup>

This article will focus on the legality of the DEA's eradication program under NEPA and FIFRA. In analyzing the environmental impact of the DEA program, Section II examines the herbicidal characteristics of paraquat and the dangers inherent in the use of such a toxic herbicide. Section III explores the extent of marijuana use in the United States and the health risks associated with it. This section also discusses the hazards involved in smoking marijuana contaminated with paraquat. The analysis illustrates that although the widespread use of marijuana in the United States justifies serious concern, the ill health effects of marijuana use are far outweighed by the risks presented to man and the environment by the broad aerial application of paraquat. A discussion of the United States' involvement in a paraquat eradication program in Mexico, and its concomitant success in reducing the supply of marijuana from that country follows.

The article then turns to an analysis of the plaintiffs' claims in their suit against the DEA. The legality of the DEA program is first analyzed under the National Environmental Policy Act. The Federal Insecticide, Fungicide and Rodenticide Act and its application to the DEA program is fully examined. The article concludes by suggesting that the facts of the present suit indicate that the DEA did indeed violate both NEPA and FIFRA and, therefore, the paraquat program was properly halted.

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<sup>18</sup> *Id.* at § 136j(a)(2)(G) (1982).

<sup>19</sup> Sierra Club Complaint at 15-16.

<sup>20</sup> Judgment, *Sierra Club, et. al v. Francis Mullen, Jr., et. al*, No. 83-2592, *NORML v. United States Drug Enforcement Administration*, No. 83-2595 (D.D.C. filed October, 1983).

<sup>21</sup> *Id.* The DEA is now preparing an EIS for paraquat spraying both on federal and nonfederal lands.

<sup>22</sup> *Id.*

## II. DESCRIPTION OF PARAQUAT

The DEA's decision to use paraquat in its effort to halt the growth of marijuana has received severe criticism from environmentalists and the general public. The DEA claims that paraquat can be used to eradicate marijuana without harm to the environment or the public.<sup>23</sup> Although paraquat is used extensively as a herbicide on many American crops,<sup>24</sup> its extreme toxicity makes it a risky candidate for an aerial spraying program over much of the nation's forests.<sup>25</sup>

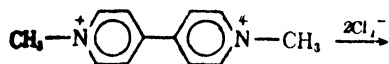
Paraquat,<sup>26</sup> which is manufactured and distributed by Chevron Chemical Company,<sup>27</sup> is a widely used herbicide, effective in destroying most broadleaved weeds and grasses.<sup>28</sup> It kills weeds within approximately seventy two hours by disrupting the process of photosynthesis.<sup>29</sup> Paraquat destroys only those weeds with which it comes into contact.<sup>30</sup> The paraquat that lands on the fields is rapidly absorbed by clay minerals in the soil and rendered ineffective.<sup>31</sup> Therefore, if paraquat is used on fields whose soil contain clay, the paraquat can be sprayed between rows of crops to eliminate weeds without damaging the growing crops.<sup>32</sup> Paraquat can also be used before planting instead of plowing to rid the field of weeds. Because paraquat binds so tightly to clay minerals in the soil, it will not be absorbed by subsequent growth.<sup>33</sup> Killing weeds without leaving any residue in the soil to

<sup>23</sup> DEA's Memorandum, *supra* note 7, at 19.

<sup>24</sup> See *infra* text and note at note 35.

<sup>25</sup> See *infra* text and notes at notes 239-46.

<sup>26</sup> Paraquat is the common name for 1,1'-dimethyl-4,4' bipyridium ion. The structural formula of paraquat is:



ENCYCLOPEDIA OF CHEMICAL TECHNOLOGY: HERBICIDES 339 v. 12 (3rd ed. 1982).

<sup>27</sup> Revkin, *Paraquat: A Potent Weed Killer Is Killing People*, 91 SCIENCE DIGEST 36, 42 (1983).

<sup>28</sup> *Id.* at 36.

<sup>29</sup> Garmon, *Pot-Smokers May Be Imperiled by Paraquat-Spraying Program*, 124 SCIENCE NEWS 55 (1983).

<sup>30</sup> Revkin, *supra* note 27, at 100.

<sup>31</sup> Joyce, *U.S. May Resume Paraquat Spraying of Marijuana*, 94 NEW SCIENTIST 197, 198 (1982). If paraquat is sprayed on fields whose soil contains little or no clay minerals, the paraquat will remain active and will harm the growing crop. Therefore, paraquat may not be used on fields containing gravelly sand or loamy sand soil. See *infra* text and notes at notes 279-80.

<sup>32</sup> Revkin, *supra* note 27, at 38.

<sup>33</sup> *Id.*

harm growing crops, paraquat is of major importance to agriculture.<sup>34</sup> Currently, the chemical is sprayed on more than ten million acres of American crops, including soybeans, wheat and corn.<sup>35</sup>

An effective herbicide for agriculture, paraquat is also an extremely toxic poison.<sup>36</sup> Ingestion of paraquat causes death in humans and animals due to respiratory failure.<sup>37</sup> Soon after paraquat is swallowed it is absorbed from the stomach into the bloodstream.<sup>38</sup> The lungs then actively collect the paraquat molecules present in the circulatory system.<sup>39</sup> Once paraquat accumulates in the lungs, it causes the lungs to produce scar tissue.<sup>40</sup> This build up of scar tissue blocks the passage of oxygen to the lungs and results in slow suffocation.<sup>41</sup> An irreversible process is initiated, so that even if the paraquat molecules could be removed from the lungs at this point, the lungs would continue to produce scar tissue.<sup>42</sup>

The dosage level at which paraquat becomes lethal to humans varies, depending on how paraquat enters the body.<sup>43</sup> Paraquat can be fatal if swallowed, inhaled or absorbed through the skin.<sup>44</sup> If it is swallowed, as little as a teaspoon of the substance can be fatal.<sup>45</sup> Larger doses are needed to cause fatality from inhalation or dermal exposure.<sup>46</sup>

Spokesmen for paraquat manufacturers acknowledge that between six hundred and one thousand persons worldwide have died from paraquat poisoning since its commercial introduction in

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<sup>34</sup> *Id.* at 36.

<sup>35</sup> The U.S. Environmental Protection Agency has set levels at which paraquat residue will be acceptable in food crops. Corn, lettuce, peppers and small fruits cannot contain more than .05 parts per million (ppm). The EPA has not set tolerance levels for paraquat residue on marijuana. *Id.*

<sup>36</sup> *Id.*

<sup>37</sup> Barnes, *Poisons That Hit and Run*, 38 NEW SCIENTIST 619 (1968).

<sup>38</sup> *Paraquat Poisoning*, 7968 THE LANCET 1057 (1976).

<sup>39</sup> One major function of the lung is to remove substances from the circulatory system. The lungs act like a pump to remove substances from the blood plasma, which are then stored in the lungs. *How Paraquat Gets into the Lung*, 64 NEW SCIENTIST 797 (1974).

<sup>40</sup> *Id.*

<sup>41</sup> This condition is known as pulmonary fibrosis. Revkin, *supra* note 27, at 100.

<sup>42</sup> Barnes, *supra* note 37, at 619.

<sup>43</sup> Revkin, *supra* note 27, at 100.

<sup>44</sup> *Id.*

<sup>45</sup> *Id.*

<sup>46</sup> *Id.*

1963.<sup>47</sup> Many scientists disagree with this figure, however, contending that these estimates drastically understate the actual number of deaths caused by paraquat.<sup>48</sup>

Paraquat may also pose a threat to the long term health of farmworkers who are frequently exposed to it by inhaling paraquat while applying it to crops, or by handling crops which have been sprayed with paraquat.<sup>49</sup> A recent study conducted by a team of researchers at the University of Cape Town, South Africa, concluded that this kind of regular exposure to even small amounts of paraquat may have a cumulative effect that can lead to death.<sup>50</sup> The study reports that a vineyard worker had died because of his constant exposure to paraquat.<sup>51</sup> The researchers noted that the worker's lungs were filled with small blood clots and that the small pulmonary arteries had developed thickened walls and constricted passages.<sup>52</sup>

At present, there is no effective antidote for paraquat poisoning.<sup>53</sup> The closest thing to a cure for paraquat poisoning is a mixture of fine clay.<sup>54</sup> If the victim swallows the clay mixture immediately after paraquat is ingested, the clay mixture may be successful in absorbing the paraquat and saving the victim's life.<sup>55</sup> Similar to the reaction in the soil, paraquat molecules form nearly unbreakable bonds with the clay particles and thus are not ab-

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<sup>47</sup> *Id.* at 36. Paraquat was first introduced commercially as a herbicide in the United Kingdom by Imperial Chemical Inc. *Id.* Bipyridium salts had been known for a long time, but the herbicidal activity of paraquat was not discovered until the late 1950s. *ENCYCLOPEDIA OF CHEMICAL TECHNOLOGY: HERBICIDES* 339, v. 12 (3d ed. 1982).

<sup>48</sup> Revkin, *supra* note 27, at 36.

<sup>49</sup> *Id.* at 103.

<sup>50</sup> *Id.* The study was reported in the South African journal *THORAX*.

The study was cited in a landmark case in Washington, D.C. for recovery from paraquat poisoning. In November, 1982, a jury awarded \$137,500 to the family of an agricultural worker who frequently handled paraquat at the Beltsville Agricultural Research Center in Maryland. The plaintiff's decedent died of pulmonary fibrosis at age 52. Dr. Ronald Crystal, chief of the pulmonary branch of the National Heart, Lung and Blood Institute, testified in this case that death was almost certainly caused by exposure to paraquat; Chevron Chemical Company, the defendant, has appealed the case. *Lauter, \$137G Awarded by Jury in Paraquat Death Case*, 5 NAT. L.J., Nov. 29, 1982, at 33, col. 4.

<sup>51</sup> Revkin, *supra* note 27, at 103.

<sup>52</sup> *Id.* The research team recreated the conditions to which the vineyard worker had been exposed and subjected the rats to those conditions. After nine weeks, tissue samples were taken from the rats' lungs. The tissue samples looked very similar to the ones taken from the vineyard worker. *Id.*

<sup>53</sup> *Id.*

<sup>54</sup> *Id.*

<sup>55</sup> *Id.*

sorbed into the victim's bloodstream.<sup>56</sup> Most EPA scientists disagree, however, with the term "antidote,"<sup>57</sup> contending that this characterization is misleading.<sup>58</sup> The clay mixture is useless a few hours after ingestion of paraquat, because once the paraquat enters the victim's bloodstream, the lungs begin to accumulate it.<sup>59</sup> Unfortunately, symptoms of paraquat poisoning often do not appear for days;<sup>60</sup> as a result, a correct diagnosis often comes too late to render the clay mixture useful.<sup>61</sup>

A toxic substance with no effective antidote, paraquat has been classified by the EPA as a "restricted use herbicide."<sup>62</sup> Any chemical placed in this category is considered to have unreasonable effects on the environment even when it is applied in accordance with its directions for use.<sup>63</sup> Therefore, a restricted use herbicide such as paraquat may only be sold to, and used by, persons licensed by the EPA.<sup>64</sup>

Notwithstanding the abundant evidence that paraquat has adverse health effects for both humans and animals, the DEA plans to spray paraquat on marijuana plants throughout the United States.<sup>65</sup> Sprayed from helicopters, paraquat can drift and settle on land other than marijuana fields.<sup>66</sup> This presents a risk to animals and persons who come into contact with the settled spray.<sup>67</sup> The government, acknowledging these dangers, contends

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<sup>56</sup> Dr. Ellen Silbergeld, an expert on the effects of paraquat, stated that human enzymes might separate paraquat from the clay, rendering the paraquat potentially harmful once again. *Id.*

<sup>57</sup> *Id.* A promotional brochure published by the Chevron Chemical Corporation entitled *Paraquat CL: Facts About Its Use*, claims that the clay treatment is an antidote. Chevron avers that "[p]araquat gained a certain amount of notoriety as a 'poison without an antidote.' This reputation was probably never justified, but it is clearly no longer the case. The treatment for paraquat poisoning incorporates the use of an antidote, bentonite clay. . . ."

<sup>58</sup> *Id.*

<sup>59</sup> *Paraquat Poisoning*, *supra* note 38, at 1057.

<sup>60</sup> The only clinical features may be ulceration of the tongue, throat and esophagus. *Id.*

<sup>61</sup> Dr. Edward Block, a lung specialist who has treated paraquat victims, contends that "[f]irst comes gastric distress, then kidney failure and then the lungs pop up. Any reasonable internist should be thinking paraquat, but by that time, you're almost a week into the illness; you've lost it." Revkin, *supra* note 27, at 101-02.

<sup>62</sup> 7 U.S.C. § 136(a) (1982) provides that all pesticides and herbicides used in the United States must be registered with the EPA.

<sup>63</sup> *Id.* at § 136a(d)(1)(c).

<sup>64</sup> *Id.*

<sup>65</sup> N. Y. Times, Aug. 16, 1983, at A7, col. 1.

<sup>66</sup> Revkin, *supra* note 27, at 102.

<sup>67</sup> *Id.*

that the ill health effects of marijuana outweigh the dangers of paraquat.<sup>68</sup> To evaluate this view, it is necessary to examine the extent of marijuana use in this country and its health hazards.

### III. THE HEALTH RISKS OF MARIJUANA

Marijuana use has been a problem of national concern for over a decade.<sup>69</sup> Marijuana is the most widely used illicit drug in the United States.<sup>70</sup> Studies estimate that over 55 million Americans have tried marijuana,<sup>71</sup> and more than 30 million smoke the substance regularly.<sup>72</sup> The drug is particularly popular among teenagers.<sup>73</sup> Surveys directed by the University of Michigan show that the number of high school seniors reporting daily marijuana use rose from six percent in 1975 to a peak of eleven percent in 1978, then decreased to seven percent in 1981.<sup>74</sup> Since that time, marijuana use has continued to decline. Nevertheless, more high school seniors abuse marijuana on a daily basis than alcohol or any other substance except tobacco.<sup>75</sup>

Marijuana gained popularity partly because it was relatively cheap and available, and partly because there were no definitive studies showing that marijuana use was dangerous.<sup>76</sup> Over the last decade, the health reports on the effects of marijuana use have come to varying conclusions.<sup>77</sup> While some reports argued that marijuana use was safe, others concluded that marijuana presented a serious hazard to the health of its users.<sup>78</sup>

In an attempt to provide some definitive answers about the dangers of marijuana use, the Department of Health and Human

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<sup>68</sup> CANNABIS ERADICATION STATEMENT, *supra* note 1, at 6.

<sup>69</sup> Relman, *Marijuana and Health*, 306 THE NEW ENGLAND JOURNAL OF MEDICINE 603 (1982).

<sup>70</sup> P.M. FISHBURNE, H.J. ABELSON, & I. CISIN, NATIONAL SURVEY ON DRUG ABUSE MAIN FINDINGS, NATIONAL INSTITUTE ON DRUG ABUSE (1980)

<sup>71</sup> Walsh, *Frank Press Takes Exception to NAS Panel Recommendation on Marijuana*, 217 SCIENCE 228, 229 (1982).

<sup>72</sup> *Booming Busts: Pot is Still Legally Hazardous*, 123 TIME 26 (1984).

<sup>73</sup> Maugh, *Marijuana "Justifies Serious Concern,"* 215 SCIENCE 1488 (1982).

<sup>74</sup> JOHNSON, J. BACHMAN, & P. O'MALLEY, HIGHLIGHTS FROM STUDENT DRUG USE IN AMERICA 1975-1981, THE UNIVERSITY OF MICHIGAN INSTITUTE FOR SOCIAL RESEARCH (1981). The document was prepared under a Research Grant from the National Institute on Drug Abuse, Rockville, Maryland.

<sup>75</sup> Relman, *supra* note 69, at 603.

<sup>76</sup> *Id.*

<sup>77</sup> Maugh, *supra* note 73, at 1488.

<sup>78</sup> *Id.*



Services contracted with the National Academy of Sciences (NAS) in 1980 for a study of the available scientific information about the health effects of marijuana use.<sup>79</sup> The NAS did not perform any new research.<sup>80</sup> Rather, it carried out a systematic review of all relevant literature about marijuana published since 1975 and consulted experts.<sup>81</sup>

The NAS report summed up the findings of the available data on the health effects of marijuana. The NAS report noted that short term use of marijuana causes dilation of the bronchial passages of the lungs.<sup>82</sup> The report noted that because marijuana smoke contains many of the same components as tobacco smoke, prolonged heavy smoking of marijuana probably leads to lung cancer.<sup>83</sup> The study further stated that marijuana use affects mood and perception, impairs short term memory, and impedes the learning process.<sup>84</sup> The report concluded, however, that there was no indication that marijuana use produces permanent changes in the nervous system or on behavioral patterns.<sup>85</sup>

The NAS report briefly discussed the health effects of smoking marijuana coated with paraquat. The NAS estimated that as much as one quarter of the marijuana entering the United States during the late 1970s was contaminated with paraquat as a result of a joint U.S.-Mexican paraquat eradication program.<sup>86</sup> The study declared that the continuous use of paraquat contaminated marijuana could cause fatal respiratory problems.<sup>87</sup> The NAS report noted, however, that no deaths have been reported in the United States due to smoking paraquat contaminated marijuana.<sup>88</sup>

The Center for Disease Control (CDC) estimates that .2 percent

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<sup>79</sup> The study was actually performed by the Institute of Medicine (IOM), which is a department of the NAS. The IOM appointed a panel of twenty-two scientists chaired by Arnold S. Relman, editor of *THE NEW ENGLAND JOURNAL OF MEDICINE*. The IOM published its findings in *MARIJUANA AND HEALTH* (1982). Maugh, *supra* note 73, at 1488.

<sup>80</sup> *Id.*

<sup>81</sup> The purpose of the report was to give more information to the public about marijuana and to provide a factual basis for future government action, but not to deal with issues of law or public policy. Relman, *supra* note 69, at 603-04.

<sup>82</sup> *Id.* at 1488.

<sup>83</sup> *Id.* at 1489; Relman, *supra* note 69, at 604.

<sup>84</sup> *Id.*

<sup>85</sup> *Id.*

<sup>86</sup> Maugh, *supra* note 73, at 1489. For a full discussion of the Mexican paraquat spraying program, see *infra* text and notes at notes 111-43.

<sup>87</sup> *Id.*

<sup>88</sup> *Id.*

of paraquat on marijuana is inhaled by a marijuana user through smoke.<sup>89</sup> In other words, 99.8 percent of the paraquat on marijuana is burned off during the smoking and does not reach the lungs of the smoker. A CDC survey conducted during the period when Mexico was using paraquat to kill marijuana indicated that 3.6 percent of the marijuana in the United States contained detectable levels of paraquat.<sup>90</sup> The CDC estimated that during the years 1975 to 1979, between 150 and 300 marijuana smokers in the United States annually were exposed to a level of paraquat that could produce lung damage.<sup>91</sup> The CDC estimated that an additional 9000 marijuana smokers annually consumed paraquat contaminated marijuana.<sup>92</sup> No clinical cases of paraquat poisoning caused by smoking marijuana were detected during the study.<sup>93</sup> The CDC report noted, however, that this did not mean that exposure to paraquat contaminated marijuana did not cause damage to the lungs of marijuana smokers.<sup>94</sup> The CDC explained that paraquat had not been used on imported marijuana long enough for lung damage to appear.<sup>95</sup>

In contrast to the CDC, the United States government contends that there is virtually no possibility of lung damage due to smoking marijuana containing paraquat residue.<sup>96</sup> The government argues that only .03 percent of paraquat contained in a marijuana cigarette would be inhaled.<sup>97</sup> This figure is almost ten times lower than the percent of paraquat the CDC estimated is inhaled through marijuana smoke.

While marijuana does pose some health risks to its users, the seriousness of these risks is less than clear. Yet, the DEA emphasizes that the net result of reducing marijuana availability would be the removal of an identified health hazard to almost 30 million Americans.<sup>98</sup> The DEA believes the most effective way to

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<sup>89</sup> Garmon, *supra* note 29, at 55. The CDC prepared a report under the directive of the United States Congress. The report was published in the *AMERICAN JOURNAL OF PUBLIC HEALTH* in July, 1983. *Id.*

<sup>90</sup> *Id.*

<sup>91</sup> *Id.* The CDC noted that it did not consider the possible additional lung damage which might result from the inhalation of 4,4'-dipyridil, the principle combustion product of paraquat, which is also a pulmonary toxin. *Id.*

<sup>92</sup> *Id.*

<sup>93</sup> *Id.*

<sup>94</sup> *Id.*

<sup>95</sup> *Id.*

<sup>96</sup> CANNIBIS ERADICATION STATEMENT, *supra* note 1, at 21.

<sup>97</sup> *Id.*

<sup>98</sup> *Id.* at 6.

reduce the supply and consumption of marijuana is through a herbicidal eradication program.<sup>99</sup> In order to evaluate the wisdom of the DEA's decision to use paraquat in the United States, it is necessary to examine both the effectiveness of the DEA's efforts to combat marijuana cultivation and use through state and federal laws and its success through previous efforts to halt the foreign supply of marijuana through herbicidal eradication programs.

#### IV. DEA EFFORTS TO CONTROL THE PRODUCTION AND USE OF MARIJUANA PRIOR TO THE DOMESTIC PARAQUAT PROGRAM

Despite the popularity and widespread use of marijuana, the health effects of the drug remain somewhat unknown.<sup>100</sup> The lack of consensus over its dangers poses a difficult problem for public policy.<sup>101</sup> State laws prohibiting marijuana use, cultivation, sale and possession vary widely in their severity.<sup>102</sup> Eleven states have decriminalized marijuana use and have made it only a minor offense.<sup>103</sup> To add to these regulatory inconsistencies, local enforcement of state laws is uneven.<sup>104</sup>

Under federal law, simple possession of marijuana is a misdemeanor punishable by up to one year imprisonment, a fine of up to \$5,000, or both.<sup>105</sup> The cultivation or distribution of marijuana is a criminal offense punishable by up to five years imprisonment, a fine of up to \$15,000, or both.<sup>106</sup> A violation involving more than 10,000 pounds of marijuana is punishable by up to fifteen years imprisonment and a fine of up to \$125,000.<sup>107</sup>

Federal laws with respect to use and possession of marijuana are all but unenforceable.<sup>108</sup> Consequently, the federal government has long contended that it is easier to stop the use of marijuana by preventing its growth.<sup>109</sup> The DEA believes that a herbicidal spraying program to eliminate the marijuana supply is

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<sup>99</sup> *Id.* at 33-36.

<sup>100</sup> Herbert, *Marijuana Dangers: Teen Use Down*, 121 SCIENCE NEWS 150 (1982).

<sup>101</sup> Relman, *supra* note 69, at 603.

<sup>102</sup> *Id.*

<sup>103</sup> *Booming Busts: Pot is Still Legally Hazardous*, *supra* note 72, at 26.

<sup>104</sup> Relman, *supra* note 69, at 603.

<sup>105</sup> 21 U.S.C. § 844(a)(1982).

<sup>106</sup> *Id.* § 841(a) & (6).

<sup>107</sup> *Id.* § 841(b)(6).

<sup>108</sup> Relman, *supra* note 69, at 603.

<sup>109</sup> CANNIBIS ERADICATION STATEMENT, *supra* note 1, at 33-36.

a more effective and less costly method of reducing marijuana use than traditional law enforcement efforts.<sup>110</sup> The DEA's success in reducing the supply of Mexican marijuana through a paraquat program conducted there in the mid 1970s supports the DEA's contention. The following subsection will discuss the United State's involvement in the Mexican paraquat program and the resulting decrease in the supply of Mexican marijuana.

*A. U.S. Involvement in Mexican Paraquat  
Spraying Program*

During the 1970s, the United States government, acting on the fact that most of the marijuana consumed in this country during that decade was imported,<sup>111</sup> was primarily interested in reducing the supply of marijuana from foreign nations. Mexico was the main supplier of marijuana to the United States during the 1970s.<sup>112</sup> In order to combat importation from this source, the United States Department of State began providing financial assistance to Mexico in 1972 to control cultivation.<sup>113</sup> This financial assistance was provided pursuant to Section 481 of the Foreign Assistance Act of 1961<sup>114</sup> and the obligations of the United States under the Single Convention on Narcotic Drugs.<sup>115</sup> Between 1972 and 1975, marijuana plants were destroyed manually by uprooting and burning them.<sup>116</sup> Since marijuana plants were often grown on small plots scattered throughout the rough Mexican

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<sup>110</sup> *Id.*

<sup>111</sup> *Id.* at F-3.

<sup>112</sup> *Id.*

<sup>113</sup> See *NORML v. U.S. Department of State*, 452 F. Supp. 1226 (D.D.C. 1978).

<sup>114</sup> 22 U.S.C. § 2291 (1982) Section 481 of the Foreign Assistance Act of 1961, as amended, authorizes the President of the United States to conclude agreements with other countries and to furnish assistance to other countries and to international organizations for the purpose of controlling the production, processing, transportation, and distribution of narcotic drugs and other "controlled substances" as defined in the Comprehensive Drug Abuse Prevention and Control Act of 1970, 21 U.S.C. § 812(c), Schedule I(c)(10)(1982). Marijuana is such a controlled substance as listed in Schedule I(c)(10).

<sup>115</sup> The United States and 116 other countries are parties to the Single Convention on Narcotic Drugs signed in 1961. The Single Convention obligates signatory countries to cooperate in suppressing the illegal production of and trafficking in narcotic drugs, including marijuana.

<sup>116</sup> HOUSE SEL. COMM. ON NARCOTIC ABUSE AND CONTROL, A REPORT OF A STUDY GROUP ON METHODS FOR THE ERADICATION OF ILLICIT MARIJUANA CROPS AND THE HEALTH IMPLICATIONS OF PARAQUAT CONTAMINATED MARIJUANA ON THE U.S. MARKET, 96th Cong., 2d Sess. 80-88 (1979).

terrain, this manual destruction was both slow and costly.<sup>117</sup> Consequently, the Mexican government's efforts to halt the growth of marijuana were largely ineffective during the early 1970s.<sup>118</sup>

In November of 1975, at the United States' request, the Mexican government agreed to aurally spray paraquat over fields of marijuana crops.<sup>119</sup> Under this agreement, the United States provided financial assistance. American dollars were used primarily to purchase and maintain the aircraft used in the aerial eradication program.<sup>120</sup> The United States did not supply funding directly for the purchase of paraquat. All of the paraquat used in the Mexican eradication program was purchased directly by the Mexican government from Imperial Chemical Incorporated, a British concern.<sup>121</sup> Between 1972 and 1979, the United States government contributed almost \$80 million to Mexico for marijuana control,<sup>122</sup> roughly \$35 million of the amount was used to support the paraquat program.<sup>123</sup> The Mexican government's use of paraquat was extremely successful in decreasing the cultivation of marijuana in that country.<sup>124</sup> As a result, the supply of marijuana from Mexico to the United States decreased by seventy-five percent.<sup>125</sup>

### *B. The Percy Amendment: American Funding Halted*

Despite the success of the Mexican eradication program, public opposition to the paraquat spraying began to form in the late 1970s. Opposition to the program developed because the Department of Health Education and Welfare (HEW) determined that marijuana with paraquat residue was entering this country from Mexico.<sup>126</sup> In response to the public concern, Congress amended

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<sup>117</sup> *Id.*

<sup>118</sup> *Id.*

<sup>119</sup> *International Narcotics Trafficking: Hearings Before the Permanent Subcommittee on Investigations Before the Comm. on Governmental Affs.*, 97th Cong., 1st Sess. 547 (1981).

<sup>120</sup> *NORML v. U.S. Department of State*, 452 F. Supp at 1231 (1978).

<sup>121</sup> Joyce, *supra* note 31, at 197.

<sup>122</sup> CANNIBIS ERADICATION STATEMENT, *supra* note 1, at F-4.

<sup>123</sup> N.Y. Times, June 22, 1979, at A1, col. 6.

<sup>124</sup> CANNIBIS ERADICATION STATEMENT, *supra* note 1, at E-3.

<sup>125</sup> *Id.*

<sup>126</sup> *NORML v. U.S. Department of State*, 508 F. Supp 1, 2 (D.D.C. 1979). Paraquat contaminated marijuana reached the U.S. because many Mexican growers realized that paraquat must be activated by sunlight, and thus they harvested their crop immediately after the marijuana had been sprayed, saving the crop. Garmon, *supra* note 29, at 55.

the Foreign Assistance Act in September, 1978, to restrict the ways in which U.S. funds could be employed to assist in drug control programs in foreign countries.<sup>127</sup> The legislation, known as the Percy Amendment, prohibited the use of American financial assistance for marijuana eradication programs if such programs involved the use of herbicides which could cause harm to the health of American marijuana smokers.<sup>128</sup> If the Secretary of HEW<sup>129</sup> made a determination that such a herbicide could be harmful, Congress would be prohibited from granting further aid for the use of that herbicide on marijuana.<sup>130</sup>

Early in 1979, the Secretary of HEW determined that consumption of paraquat contaminated marijuana posed a threat to the health of marijuana users.<sup>131</sup> Yet Congress had already authorized funds for the Mexican paraquat operation through December, 1979. The National Organization for the Reform of Marijuana Laws (NORML)<sup>132</sup> brought suit to enjoin the State Department and the DEA from providing this financial assistance to Mexico for the spraying of paraquat on marijuana crops.<sup>133</sup> NORML argued that pursuant to the finding of the Secretary of HEW, such financial assistance violated the terms of the Percy Amendment.<sup>134</sup>

While this suit was pending, Congress further amended the Foreign Assistance Act in order to clarify the Percy Amendment.<sup>135</sup> The purpose of the 1979 amendment was to make clear that, in the original Percy Amendment, Congress had not intended to eliminate all drug control funds, but only financial support of the paraquat program.<sup>136</sup> Pursuant to this amendment,

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<sup>127</sup> 22 U.S.C. § 2291(d) (1978).

<sup>128</sup> *Id.* at § 2291(d)(1).

<sup>129</sup> Currently the Department of Health and Human Services.

<sup>130</sup> 22 U.S.C. § 2291(d)(2) (Supp. 1983).

<sup>131</sup> N.Y. Times, June 22, 1979, at A1, col. 6.

<sup>132</sup> NORML is a non profit corporation incorporated in Washington, D.C. It has over 7,000 members. NORML's principal goal is to eliminate criminal penalties for the possession and use of marijuana. Representatives of NORML regularly appear before state and federal legislative and administrative bodies to advocate marijuana decriminalization.

<sup>133</sup> *NORML v. U.S. Department of State*, 508 F. Supp. 1 (D.D.C. 1979).

<sup>134</sup> *Id.* at 2.

<sup>135</sup> 22 U.S.C. § 2291(d)(1) (1982). The 1979 Amendment eliminated the phrase "[a]ssistance . . . may not be made available or used for any program involving the spraying of a herbicide, . . ." and substituted the phrase "[a]ssistance may not be made available for the purpose of the spraying of a herbicide. . . ." 22 U.S.C. § 2291 (d)(1) (1982).

<sup>136</sup> The Conference Report, dated October 4, 1979, describes the purpose of the clarifying amendment as follows:

Congress cut off funding for the Mexican paraquat program effective December 31, 1979.<sup>137</sup>

In light of the 1979 amendment, the United States district court denied NORML's request, in November 1979, for an injunction to bar the United States government assistance for the Mexican paraquat program.<sup>138</sup> The court was unwilling to become involved in what it felt was an issue of foreign policy,<sup>139</sup> particularly since Congress had already terminated funding effective December 31, 1979.

During its existence, the Mexican paraquat program was extremely successful in decreasing the supply of marijuana from Mexico.<sup>140</sup> The State Department estimated that, in 1977, Mexican marijuana accounted for forty percent of total United States imports of marijuana.<sup>141</sup> By 1980, Mexican marijuana constituted only nine percent of imported marijuana.<sup>142</sup> The State Department attributed this drastic decrease in the supply of Mexican marijuana to the use of paraquat in that country.<sup>143</sup>

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With regards to international narcotics control, the committee of conference wishes to clarify the intent of Congress concerning an amendment adopted in last year's international security assistance legislation and incorporated into law as section 481(d)(1) of the Foreign Assistance Act of 1961 [the Percy Amendment].

Over two years ago it was learned that a substantial percentage of the marijuana seized at the Mexican border was contaminated with the highly toxic paraquat. In 1978, the Congress amended section 481 of the Foreign Assistance Act of 1961 to prohibit assistance for the purpose of spraying marijuana with herbicides that are likely to cause serious harm to the health of potential users. In a subsequent study, HEW determined that paraquat-contaminated marijuana did present a serious health hazard to users.

There has been concern expressed among some government officials as to the action required in order to be in compliance with the terms of the amendment, and questions raised regarding the intent of Congress with respect to implementation. . . .

Section 481(d)(1) is not intended to jeopardize the Mexican poppy eradication program. It demonstrates the concern of the Congress and the people of America about the health risks of paraquat. Unless the law is observed, the spraying of paraquat could spread to other nations, such as Colombia, that will see paraquat as a viable and U.S. Government-approved means for stopping their marijuana problem. If this takes place, the United States will be facing a serious health epidemic, far beyond present circumstances.

<sup>137</sup> 22 U.S.C. § 2291(d)(1) (1982).

<sup>138</sup> NORML v. U.S. Department of State, 508 F. Supp. at 3.

<sup>139</sup> *Id.*

<sup>140</sup> CANNIBIS ERADICATION STATEMENT, *supra* note 1, at E-3.

<sup>141</sup> *Id.* By 1977, Mexico had been using paraquat for almost two years. Thus the percent of U.S. imported marijuana from Mexico was most likely higher than 40 percent in 1975 when the paraquat program was initiated.

<sup>142</sup> *Id.*

<sup>143</sup> *Id.*

*C. Shift From Mexico To Columbia*

As the supply of Marijuana from Mexico dwindled due to the effectiveness of the paraquat program, marijuana imports from other nations increased.<sup>144</sup> Colombia is now the major exporter of marijuana to the United States.<sup>145</sup> Colombian marijuana represents about seventy-five percent of the domestic marijuana supply.<sup>146</sup> Because the reduction in Mexican marijuana imports did not decrease the total supply of marijuana to the United States, but rather only shifted the source of supply, the United State government continues to be interested in herbicidal eradication programs for foreign nations.<sup>147</sup>

Congress repealed the Percy Amendment in December of 1981.<sup>148</sup> The change of administration and the new Republican majority in the Senate swung against the Amendment.<sup>149</sup> In place of the Percy Amendment, Congress enacted legislation which allows the United States government to fund paraquat eradication programs in foreign nations.<sup>150</sup> Consequently, the State De-

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<sup>144</sup> *Id.* at 6.

<sup>145</sup> *Id.*

<sup>146</sup> *Id.*

<sup>147</sup> *Id.*

<sup>148</sup> 22 U.S.C. § 2291(d) (1981).

<sup>149</sup> Joyce, *supra* note 31, at 197.

<sup>150</sup> 22 U.S.C. § 2291(d)(1982)

Salient features of § 481(d), as amended, include:

(d)(1) The Secretary of State shall inform the Secretary of Health and Human Services of the use or intended use by any country or international organization of any herbicide to eradicate marijuana in a program receiving assistance under this chapter.

(2) The Secretary of Health and Human Services shall monitor the impact on the health of persons who may use or consume marijuana of the spraying of a herbicide to eradicate such marijuana in a program receiving assistance under this chapter, and if the Secretary determines that such persons are exposed to amounts of such herbicide which are harmful to their health, the Secretary shall prepare and transmit a report to the Congress setting forth such determination together with any recommendations the Secretary may have.

(3) Of the funds authorized to be appropriated for the fiscal year 1982 under section 482, the President is urged to use not less than \$100,000 to develop a substance that clearly and readily warns persons who may use or consume marijuana that it has been sprayed with the herbicide paraquat or other herbicide harmful to the health of such persons.

(4) If the Secretary of Agriculture determines that a substance has been developed that clearly and readily warns persons who may use or consume marijuana that it has been sprayed with the herbicide paraquat or other herbicide harmful to the health of such persons, such substance shall be used in conjunction with the spraying of paraquat or such other herbicide in any program receiving assistance under this chapter.



partment intends to expand its narcotic efforts to include assistance to foreign nations to destroy marijuana crops with paraquat.<sup>151</sup> The federal government estimates that an American funded paraquat eradication program in Western Hemisphere countries, particularly Colombia, could reduce the domestic marijuana supply by seventy percent.<sup>152</sup>

In addition to the increase in marijuana imported from Colombia, domestic cultivation has increased significantly during the last several years in order to compensate for the reduced supply of marijuana from Mexico.<sup>153</sup> The DEA anticipates a further increase in domestic marijuana production if the United States begins to fund eradication programs in other foreign nations.<sup>154</sup> The DEA, therefore, contends that herbicidal eradication efforts are needed in the United States, as well as foreign countries, not only to eliminate current production, but also to ensure that new domestic sources do not develop.<sup>155</sup> The following section will examine the recent DEA efforts to use paraquat throughout the United States.

#### V. DEA PARAQUAT PROGRAM IN THE UNITED STATES

In response to the increase in illegal domestic marijuana production, the DEA launched a Domestic Marijuana Eradication Program in 1978.<sup>156</sup> Under this program, the DEA and state and local police agencies have engaged in a cooperative effort to reduce the domestic marijuana supply.<sup>157</sup> Such coordinated law enforcement efforts have included locating marijuana fields

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<sup>151</sup> CANNIBIS ERADICATION STATEMENT, *supra* note 1, at 1.

<sup>152</sup> *Id.* at vi.

<sup>153</sup> *Id.* at 20. See also DEA's Memorandum, *supra* note 7, at 6.

<sup>154</sup> CANNIBIS ERADICATION STATEMENT, *supra* note 1, at 21.

<sup>155</sup> *Id.*

<sup>156</sup> All but ten states are participating in the Program. The states not participating include Nevada, Alaska, New York, Vermont, New Hampshire, Maine, Massachusetts, Connecticut, Rhode Island and New Jersey. Most of the states not in the Program produce only small amounts of marijuana. N.Y. Times, Aug. 16, 1983, at A7, col. 1.

<sup>157</sup> The Comprehensive Drug Abuse Prevention and Control Act of 1970, as amended, Pub. L. No. 91-513 (1970), 21 U.S.C. § 801, directs the Attorney General to cooperate with local, state and federal agencies concerning traffic in controlled substances and authorizes the Attorney General to arrange for the exchange of information between governmental officials concerning the use and abuse of controlled substances; conduct training programs on controlled substance law enforcement for local, state and federal personnel; and conduct programs of eradication aimed at destroying wild or illicit growth of plant species from which controlled substances may be extracted.

through the use of planes, manual uprooting and burning of marijuana plants, and the arrest and prosecution of cultivators and distributors. When the program was initiated, there were no plans to use paraquat. In 1982, however, the DEA encouraged states to use paraquat. Florida was the only state that agreed to its use,<sup>158</sup> and in August of that year, Florida officials manually sprayed the chemical on over 100 marijuana plants.<sup>159</sup>

In the same year, the United States Forest Service requested the DEA's assistance to combat illegal marijuana cultivation in several of the National Forests.<sup>160</sup> The DEA concluded that herbicidal eradication would be effective and efficient in combatting the growth of marijuana in the National Forests.<sup>161</sup> The DEA thus initiated a nationwide program to destroy marijuana plants in the National Forests through the aerial spraying of paraquat.<sup>162</sup> The DEA planned to use paraquat in all the states participating in the Domestic Marijuana Eradication Program.<sup>163</sup>

On Friday, August 12, 1983, the DEA conducted its first spraying mission.<sup>164</sup> DEA officials directed the spraying on marijuana plants in the Chattahoochee National Forest in Georgia.<sup>165</sup> The spraying was conducted from a helicopter over two hundred fifty acres of federal land.<sup>166</sup> After the spraying was completed, federal agents guarded the sprayed marijuana plants until they died to ensure that the marijuana would not be harvested before the paraquat killed the plants.<sup>167</sup> Only sixty marijuana plants were

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<sup>158</sup> Marshall, *Pot-Spraying Plan Raises Some Smoke*, 217 SCIENCE 429 (1982). California, the largest marijuana producing state, declined to use paraquat because it feared the spray could not be confined to marijuana fields alone. Florida, which has a suitable terrain, was the first state to use paraquat on marijuana crops. *Id.*

<sup>159</sup> *Id.* See *infra* text and notes at notes 230-32.

<sup>160</sup> DEA's Memorandum, *supra* note 7, at 11.

<sup>161</sup> *Id.*

<sup>162</sup> *Id.*

<sup>163</sup> N.Y. Times, Aug. 16, 1983, at A7, col. 1.

<sup>164</sup> Shipp, *supra* note 8.

On August 11, 1983, the DEA published in the Federal Register a finding of no significant impact (FONSI) with respect to the paraquat spraying program. 48 Fed. Reg. 38542 (1983).

A finding of no significant impact is a document prepared by the federal agency initiating a program which briefly presents the reasons why the program will not have a significant effect on the human environment. When an agency issues a FONSI, it does not prepare an environmental impact statement. 40 C.F.R. 1508.13 (1984).

<sup>165</sup> N.Y. Times, Aug. 13, 1983, at A6, col. 6.

<sup>166</sup> Motion for Temporary Restraining Order, North Georgia C.O.P.S. v. William French Smith, No. C83-1710A (N.D. Ga. filed Aug. 15, 1983).

<sup>167</sup> N.Y. Times, Aug. 13, 1983, at A6, col. 6.

destroyed.<sup>168</sup> A similar operation was conducted in the Daniel Boone National Forest in Kentucky on August 19, 1983.<sup>169</sup>

Opposition to the DEA spraying in Georgia was immediate and vocal. Within three days of the spraying in Georgia, a group of local citizens from White County, Georgia, called the North Georgia C.O.P.S. (Citizens Opposed to Paraquat Spraying), filed a lawsuit against the federal government alleging that the paraquat spraying had endangered the health of White County citizens.<sup>170</sup> The group persuaded a federal judge in Atlanta to temporarily enjoin any further spraying operations in the Chattahoochee National Forest.<sup>171</sup> A similar suit in Kentucky was unsuccessful in getting a temporary restraining order.<sup>172</sup>

The Sierra Club,<sup>173</sup> the National Coalition Against the Misuse of Pesticides (NCAMP),<sup>174</sup> Friends of the Earth,<sup>175</sup> and the National

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<sup>168</sup> The Providence Sunday Journal, Aug. 21, 1983, at A6, col. 1. The DEA estimated that the 20 minute mission cost the government approximately one million dollars. *Id.*

The aerial spraying mission was filmed by the federal government in order to display the film to officials of Colombia. The Colombian government has expressed reluctance to use paraquat in their efforts to halt marijuana cultivation in their nation until the chemical is first used by the United States. Shipp, *supra* note 8.

<sup>169</sup> N.Y. Times, Aug. 29, 1983, at A6, col. 6.

<sup>170</sup> Plaintiffs' Memorandum in Support of Motion for Temporary Restraining Order, at 1. North Georgia C.O.P.S. v. William French Smith, No. C83-1710A (N.D. Ga. filed Aug. 15, 1983).

<sup>171</sup> North Georgia C.O.P.S. v. William French Smith, No. C83-1710A (N.D. Ga. Aug. 15, 1983) (order granting temporary restraining order). Phone conversation with Paul Hermann, attorney for the plaintiffs, North Georgia C.O.P.S. The plaintiffs' primary aim was to get a temporary injunction, enjoining further sprayings over the Chattahoochee National Forest. They lacked the financial resources necessary to fully litigate the matter.

<sup>172</sup> N.Y. Times, Aug. 20, 1983, at A6, col. 6.

<sup>173</sup> The Sierra Club is a nonprofit corporation organized and existing under the laws of California. A national conservation organization with over 320,000 members, its purpose is to explore, enjoy and protect wild places of the earth. Preservation, protection and proper administration of the nation's public lands has been the highest priority of the Sierra Club. Sierra Club representatives have participated in numerous legislative, administrative and judicial proceedings.

<sup>174</sup> NCAMP is an association formed in February, 1981 to serve as a broad-based information and advocacy network of organizations and individuals across the United States. Headquartered in Washington, D.C., its membership includes approximately 500 organizations and individuals who share common concerns about pesticide hazards and safety. NCAMP promotes alternatives to excessive pesticide use.

<sup>175</sup> Friends of the Earth is a non-profit corporation organized under the laws of the state of New York. Its principal place of business is San Francisco, California. Its membership includes about 30,000 individuals located in all 50 states. Friends of the Earth is dedicated to the preservation and rational use of the earth's natural resources. Since its inception, it had put the use and abuse of toxic pesticides and herbicides at the top of its agenda.

Organization for the Reform of Marijuana Laws (NORML)<sup>176</sup> sued the DEA to permanently enjoin paraquat spraying over any National Forest in the United States. The Sierra Club, NCAMP and Friends of the Earth joined together as plaintiffs seeking a declaratory judgment<sup>177</sup> that the aerial spraying of paraquat over public lands violates two federal statutes, the National Environmental Policy Act of 1969 (NEPA)<sup>178</sup> and the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).<sup>179</sup> NORML's suit against the DEA, filed on the same day, alleged a violation of NEPA, a violation of constitutional rights against cruel and unusual punishment, and intentional infliction of emotional distress.<sup>180</sup> NORML's suit and that of the Sierra Club, NCAMP and Friends of the Earth were joined by the District Court of the District of Columbia to be heard together.

In order to assess the strength of the position of the plaintiffs in these suits, each claim should be examined in detail. The remainder of this article will focus on the two claims advanced by the Sierra Club, NCAMP and Friends of the Earth: that the DEA program violates NEPA and FIFRA. The next section will discuss the applicable provisions of NEPA and explore whether the DEA program ran contrary to its mandates. The article will then turn to a discussion of FIFRA and whether it has been violated by the DEA paraquat operation.

## VI. VALIDITY OF THE DEA PROGRAM UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT

The National Environmental Policy Act was this country's first broad environmental act.<sup>181</sup> The purpose of NEPA was to declare a national policy to protect the environment and promote harmony between the public and the environment.<sup>182</sup> The primary

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<sup>176</sup> See *supra* note 132.

<sup>177</sup> Sierra Club Complaint, *supra* note 11.

<sup>178</sup> 42 U.S.C. § 4332(2)(c) (Supp. 1983).

<sup>179</sup> 7 U.S.C. § 136j(a)(2)(G) (1982).

<sup>180</sup> NORML Complaint, *supra* note 11, at 20.

<sup>181</sup> Legislation to establish some sort of national environmental policy was first introduced in the Congress in 1959 and was reintroduced several times during the 1960s. The real movement leading to the enactment of such a policy did not gain momentum until 1968. N. L. ANDREWS, ENVIRONMENTAL POLICY AND ADMINISTRATIVE CHANGE: IMPLEMENTATION OF THE NATIONAL ENVIRONMENTAL POLICY ACT (1976).

<sup>182</sup> 42 U.S.C. § 4321 (1982).

method for achieving this legislative goal is the environmental impact statement (EIS) requirement.<sup>183</sup> The plaintiffs in the suit against the DEA alleged that the DEA had not complied with the EIS requirement and was thus violating NEPA.<sup>184</sup> In order to determine the soundness of this contention, the EIS requirements will be examined in detail and then applied to the DEA program.

### A. *The EIS Requirement*

Section 102(2)(c) of NEPA imposes a nondiscretionary duty upon federal agencies to prepare an EIS before undertaking any project with significant environmental effects.<sup>185</sup> The EIS must discuss to the fullest extent possible:

- (i) the environmental impact of the proposed action;
- (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented;
- (iii) alternatives to the proposed action;
- (iv) the relationship between local short term uses of man's environment and the maintenance and enhancement of long term productivity; and
- (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.<sup>186</sup>

These requirements make it clear that all federal agencies must consider the ecological, social and economic effects of their program in an EIS. Furthermore, as illustrated by these requirements, the EIS is more than a mere disclosure of environmental consequences. NEPA requires full consideration of the alternatives to the proposed action.<sup>187</sup> The EIS should, at a minimum,

<sup>183</sup> *Id.* at § 4332(2)(c).

NEPA also created the Council on Environmental Quality (CEQ). The CEQ has promulgated regulations to implement the procedural requirements of NEPA. These regulations are set forth in the Code of Federal Regulations, Title 40, section 1500. These regulations are binding on all federal agencies. Furthermore, the CEQ regulations and guidelines have had persuasive power for the courts on NEPA interpretation. *See Andrus v. Sierra Club*, 442 U.S. 347, 358 (1979). The U.S. Court of Appeals for the District of Columbia Circuit has held that NEPA's procedural requirements, as determined by the CEQ regulations, are not flexible, but rather establish a strict standard which must be complied with. *Calvert Cliffs' Coordinating Committee v. Atomic Energy Commission*, 449 F.2d 1109, 1121 (D.C. Cir. 1971), *cert. den.*, 404 U.S. 942 (1972).

<sup>184</sup> *Sierra Club Complaint*, *supra* note 11.

<sup>185</sup> 42 U.S.C. § 4332(2)(c).

<sup>186</sup> *Id.*

<sup>187</sup> *Calvert Cliffs' Coordinating Committee v. Atomic Energy Commission*, 449 F.2d at 1121.

contain such information as will alert the public and Congress to all known possible consequences of and alternatives to the proposed agency action.<sup>188</sup>

Pursuant to section 102(2)(c) of NEPA, an EIS must be prepared by a federal agency only when its program is a major federal action and when that program will significantly affect the quality of the human environment.<sup>189</sup> Therefore, if a federal program is not a major federal action, regardless of its environmental impact, no EIS is required. Similarly, even if a program is a major federal action, if it will not significantly affect the human environment, no EIS need be prepared. Thus any federal agency that declines to prepare an EIS would base its decision either on a determination that the program is not a major federal action or that the program will not have a significant environmental impact. Each of these components must be examined before determining whether the DEA's paraquat program necessitated the preparation of an EIS.

### 1. What Constitutes A Major Federal Action

To be deemed a major federal action,<sup>190</sup> a federal agency does not have to be the sole participant in the program at issue. Programs only partially controlled or funded by the federal agency may still involve enough federal activity to render the action a major federal action. In *Ely v. Velde*,<sup>191</sup> for example, the Law Enforcement Assistant Administration (LEAA) was required to prepare an EIS for its role in funding a prison medical facility, even though only twenty percent of the project was federally financed and the LEAA could not attach conditions to the grant.<sup>192</sup> Similarly, in *McLean Gardens Civic Association v. National Capital Planning Commission*,<sup>193</sup> the U.S. Court of Appeals for the District of Columbia Circuit held that the Commission was required to submit an EIS because its review and approval of a rezoning request constituted a major federal action. The court

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<sup>188</sup> *Environmental Defense Fund v. Corps of Engineers*, 325 F. Supp. 749, 759 (E.D. Ark. 1971).

<sup>189</sup> 42 U.S.C. § 4332(2)(c) (1982).

<sup>190</sup> See, e.g., *Ely v. Velde*, 451 F.2d 1130 (4th Cir. 1971); *McClean Gardens Civic Association v. National Capital Planning Commission*, 2 ELR 20659 (D.D.C. 1972), *motion for stay of injunction and summary reversal denied*, 2 ELR 20662 (D.C. Cir. 1972).

<sup>191</sup> 451 F.2d 1130 (4th Cir. 1971).

<sup>192</sup> 451 F.2d at 1138.

<sup>193</sup> 2 ENVTL. L. REP. (ENVTL. L. INST.) 20659 (D.D.C. 1972).

held that there was sufficient federal action to require compliance with NEPA even though the federal government's role was only advisory and the local zoning board had final authority to approve or disapprove the rezoning request.<sup>194</sup>

The U.S. District Court for the District of Columbia reached a different conclusion, however, in *NORML v. Drug Enforcement Administration*,<sup>195</sup> which involved paraquat spraying over marijuana fields in Florida.<sup>196</sup> The spraying was carried out by Florida officials who sprayed paraquat from backpack sprayers while on foot.<sup>197</sup> The DEA had given Florida financial and technical assistance for marijuana law enforcement, including the training of Florida agents in aerial spotting techniques and the provision of funds for aerial spotting equipment.<sup>198</sup> None of these federal funds were applied to the actual herbicidal spraying, and DEA personnel were not involved in the application of the paraquat.<sup>199</sup>

NORML sued the DEA to enjoin spraying in Florida.<sup>200</sup> NORML argued that the DEA's failure to prepare an EIS was a violation of NEPA because the DEA's involvement rendered the Florida paraquat operation a major federal action.<sup>201</sup> The court held that the Florida program was not a major federal action since no DEA funds or personnel were involved in the operation.<sup>202</sup> Although the federal government does not have to be the sole participant in the program in order for it to be a major federal action, the court concluded that the federal agency must have some sort of a controlling or financial interest in the program.

Once an agency determines that its program is a major federal action, the agency must then consider whether the program will have a significant impact on the human environment to establish whether an EIS is required. In making this determination, the agency should look to the case law for some guidance. The following subsection will analyze what constitutes a significant impact on the human environment.

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<sup>194</sup> *Id.* at 20662.

<sup>195</sup> 545 F. Supp. 981 (D.D.C. 1982).

<sup>196</sup> See *supra* text and notes at notes 158-59.

<sup>197</sup> 545 F. Supp. at 983.

<sup>198</sup> *Id.*

<sup>199</sup> *Id.*

<sup>200</sup> *Id.*

<sup>201</sup> *Id.* at 982.

<sup>202</sup> *Id.* at 985.

## 2. Significantly Affecting The Quality Of The Human Environment

It is not necessary that a federal program have definite adverse effect on the environment in order for the program to create a significant impact.<sup>203</sup> If the proposed agency action has the potential to create an environmental impact, it will be considered to significantly affect the quality of the human environment within the meaning of NEPA.<sup>204</sup>

The Code of Federal Regulations requires an agency to consider whether the action is likely to be "controversial" in determining whether the proposed action will have a significant environmental impact.<sup>205</sup> Courts have interpreted the term "controversial" to refer to situations where there is substantial disagreement as to the size or effect of a federal program.<sup>206</sup> The more disagreement that exists concerning a proposed action, the more likely it is that the program will be determined to have a significant effect on the environment.<sup>207</sup>

When an agency's determination that its program will not have a significant environmental impact is challenged, the agency has the burden of proving that the impact of the program is insignificant.<sup>208</sup> This is in marked contrast to the usual practice of judicial deference to administrative action,<sup>209</sup> and is based largely on both the importance of NEPA in protecting the environment and the risk of error which results from not preparing an EIS on a project that requires one.<sup>210</sup>

Courts have consistently held that broad, aerial herbicidal spraying programs may cause significant adverse effects, thereby requiring the federal agencies involved to prepare an EIS prior to

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<sup>203</sup> See *Foundation for North American Wild Sheep v. Department of Agriculture*, 681 F.2d 1172, 1178 (9th Cir. 1982) (Impacts that may be significant require an EIS). *Maryland National Capital Park and Planning Commission v. U.S. Postal Service*, 487 F.2d 1029, 1039 (D.C. Cir. 1973) (Arguably significant impacts require an EIS). See also, 40 C.F.R. § 1508.3 (1984).

<sup>204</sup> *Id.*

<sup>205</sup> 40 C.F.R. § 1508.27(b)(4) (1984).

<sup>206</sup> *Rucker v. Willis*, 484 F.2d 158, 162 (4th Cir. 1973). See also, *Foundation for North American Wild Sheep v. Block*, 681 F.2d 1172, 1182 (9th Cir. 1982), citing *Rucker v. Willis* 484 F.2d at 162.

<sup>207</sup> *Id.*

<sup>208</sup> *Maryland National Capital Park and Planning Commission v. U.S. Postal Service*, 487 F.2d 1029, 1040 n.10 (D.C. Cir. 1973).

<sup>209</sup> *Id.*

<sup>210</sup> *Id.*



proceeding with such spraying programs.<sup>211</sup> In *Wisconsin v. Butz*,<sup>212</sup> for example, the court considered a proposal by the United States Forest Service to aerially spray the defoliants 2,4-D and 2,4,5-T over portions of the Chequamegon and Nicolet National Forests in Wisconsin.<sup>213</sup> The Forest Service planned to spray red pine and spruce trees to kill various mosses damaging the trees.<sup>214</sup> The target areas were all extensive in size, the smallest site being eleven acres.<sup>215</sup> Many of the proposed target areas were in close proximity to private lands and navigable rivers.<sup>216</sup> The Forest Service asserted, however, that it would not spray any herbicide within 100 feet from streams, lakes or ponds.<sup>217</sup> In light of this restriction, the Forest Service concluded that an EIS was not required for the proposed spraying.<sup>218</sup>

The district court took a different view of the matter, finding that the quality of the environment would be significantly affected.<sup>219</sup> It noted that the proposed spraying would kill vegetation, a primary food source for wildlife.<sup>220</sup> Additionally, the court estimated that some of the herbicide would probably drift and settle on private lands and in waters which were customarily used for drinking and fishing.<sup>221</sup> The court noted that 2,4,5-T was so highly toxic that there was considerable scientific concern about whether it should be employed under any circumstances.<sup>222</sup> The court held that the proposed spraying would significantly affect the environment, and ordered the Forest Service to prepare an EIS prior to implementing the program.<sup>223</sup>

In *NORML v. U.S. Department of State*,<sup>224</sup> the District Court for the District of Columbia found that the State Department's in-

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<sup>211</sup> See, e.g., *Lee v. Resor*, 348 F. Supp. 389 (M.D. Fla. 1972) (Army Corps of Engineers required to prepare an EIS for program involving the spraying of 2,4-D over rivers in Florida in order to kill water hyacinths).

<sup>212</sup> 389 F. Supp. 1065 (E.D. Wisc. 1975).

<sup>213</sup> *Id.* at 1066.

<sup>214</sup> *Id.*

<sup>215</sup> *Id.* at 1067.

<sup>216</sup> *Id.*

<sup>217</sup> *Id.*

<sup>218</sup> *Id.*

<sup>219</sup> *Id.* at 1068.

<sup>220</sup> *Id.*

<sup>221</sup> *Id.*

<sup>222</sup> *Id.*

<sup>223</sup> *Id.* at 1069.

<sup>224</sup> 452 F. Supp. 1226 (D.D.C. 1978).

volvement in the Mexican paraquat program<sup>225</sup> was a major federal action that had a significant effect on the human environment.<sup>226</sup> Because much of the marijuana entering the United States from Mexico was contaminated with paraquat, which was determined to be harmful to marijuana users, the spraying program significantly affected the quality of the human environment in this country.<sup>227</sup> The court declared that the State Department's failure to prepare a detailed EIS on the effects of the Mexican spraying program within the United States violated section 102(2)(c) of NEPA.<sup>228</sup>

In contrast to the cases discussed above, courts have generally declined to require federal agencies to prepare an EIS for herbicidal spraying programs which have involved only geographically limited, nonaerial spraying.<sup>229</sup> In *NORML v. DEA*,<sup>230</sup> the court stated in dicta that the ground spraying of paraquat on a single field of marijuana plants in Florida would not significantly affect the human environment.<sup>231</sup> Therefore, even if the spraying had been a major federal action,<sup>232</sup> an EIS would not have been required.<sup>233</sup>

If a federal agency fails to prepare an EIS when one is required, the agency action will generally be enjoined until an EIS is completed.<sup>234</sup> In order to determine whether the DEA program should have been enjoined until an EIS is prepared, it is necessary to

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<sup>225</sup> See *supra* text and notes at notes 111-25.

<sup>226</sup> 452 F. Supp. at 1232.

<sup>227</sup> *Id.*

<sup>228</sup> The court declined, however, to issue an injunction barring the government participation in the program; strong foreign policy interests and Mexico's continuing desire to halt the spraying without U.S. aid influenced the court's decision. *Id.* at 1235.

Prior to the decision in this case, the Department of State agreed to prepare an EIS on the effects of Mexico's eradication program in the United States. *Id.* at 1229. In April, 1979 the Department of State published a final EIS. The EIS analyzed the extent of contamination of marijuana imported into the United States resulting from the spraying in Mexico. The study also described the potential impacts of the Mexican program on marijuana users in the United States.

<sup>229</sup> See, e.g., *Citizens Against 2,4-D v. Watt*, 527 F. Supp. 465 (W.D. Okla. 1981) in which the court held that the hand application of 2,4-D at a single site in Oklahoma did not require an EIS.

<sup>230</sup> 545 F. Supp. 981 (D.D.C. 1982).

<sup>231</sup> *Id.* at 985.

<sup>232</sup> See *supra* text and notes at notes 195-202.

<sup>233</sup> *NORML v. Drug Enforcement Administration*, 545 F. Supp. at 985.

<sup>234</sup> Consistent with public interest, actions are generally enjoined until compliance with NEPA is forthcoming. *Jones v. District of Columbia Redevelopment Land Agency*, 162 U.S. App. D.C. 366, 377, 499 F.2d 502, 513 (1974).

examine whether the DEA program was a major federal action that would significantly affect the quality of the human environment.

*B. EIS Requirement Applied To The DEA Program*

The DEA program to aerially spray paraquat over marijuana plants grown in National Forests appears to be a major federal action. Major federal action exists where there is substantial federal control or financial support involved.<sup>235</sup> Unlike the Florida program, in which no federal funds or personnel were directly involved in the spraying, the DEA program is federally funded and exclusively controlled by DEA agents.<sup>236</sup> In the recent DEA program, only marijuana plants on federal lands have been sprayed. The DEA determined what plots were to be sprayed, hired the helicopters, and guarded the fields after the spraying.<sup>237</sup> It thus appears probable that the DEA's role in the eradication program would be found to render the program a major federal action.

Contrary to the DEA's own determination,<sup>238</sup> its paraquat program would most likely have a significant effect on the human environment. Paraquat is an extremely toxic substance which is poisonous to man and animals. The National Forests contain a wide variety of wildlife.<sup>239</sup> Uses of the forests are varied and include the protection and controlled harvesting of wildlife, livestock grazing and human recreational activities.<sup>240</sup> When paraquat is sprayed over National Forests, animals who live in the forests and humans who visit the forests for recreational purposes are exposed to a risk of paraquat poisoning.<sup>241</sup>

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<sup>235</sup> See *supra* notes and text at 190-94.

<sup>236</sup> Brief in Support of Motion for Summary Judgement at 2, North Georgia C.O.P.S. v. William French Smith, No. C83-1710A.

The only notification given to state officials before the spraying mission in Georgia was a telephone call to the Governor and a few other state officials two days before the spraying occurred. *Id.* at 1. The telephone call was made by an official of the DEA as a courtesy. The official merely advised that the DEA would spray paraquat sometime in the near future on federal forest lands. *Id.*

<sup>237</sup> *Id.*

<sup>238</sup> See *supra* note 164.

<sup>239</sup> Memorandum of Points and Authorities in Support of Plaintiffs' Motion for a Temporary Restraining Order, at 15, Sierra Club, NCAMP, Friends of the Earth v. Francis Mullen, No. 83-2592 (D.D.C. filed Sept. 1, 1983) [hereinafter cited as Plaintiffs' Memorandum].

<sup>240</sup> *Id.*

<sup>241</sup> *Id.*

Furthermore, paraquat spray could drift onto nearby private lands during its application over the National Forests.<sup>242</sup> Such drifting could result in the destruction of nontargeted vegetation and present a health hazard to neighboring landowners. In 1978, wheat growers in Washington state sprayed paraquat by airplane to destroy weeds in the fields before planting.<sup>243</sup> A study by the Washington State Department of Agriculture confirmed that paraquat had drifted and caused damage as far as fifteen to twenty miles from the sprayed fields.<sup>244</sup> The study indicated that even with drift control equipment, the herbicide can drift as far as eight miles.<sup>245</sup>

After the spraying in Georgia, nearby residents of the National Forest claimed that some of the paraquat drifted onto their lands, destroying vegetation on their property, and causing irritation of their eyes, digestive problems and other symptoms of minor paraquat poisoning.<sup>246</sup> Despite these claims, the DEA contended that the paraquat operation could be carried out without the possibility of drift.<sup>247</sup> Yet the DEA has the burden of proving that the drift will be negligible in order to establish that the impact of the program is insignificant. It does not appear as though the DEA would be able to carry this burden.

The fact that the DEA program was controversial also makes it likely that the program would have a significant environmental impact. An action is more likely to be determined to have a significant effect when there is substantial disagreement as to the size and effect of such action.<sup>248</sup> There is considerable controversy as to the effect of the DEA paraquat program. In addition to the direct dispute as to the likelihood of drift, there are other areas of disagreement. There is inconclusive data on the amount of paraquat that causes death in humans.<sup>249</sup> The amount of paraquat that will be inhaled when smoking a paraquat contaminated marijuana cigarette is also disputed.<sup>250</sup> The sizeable con-

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<sup>242</sup> *Id.* at 14.

<sup>243</sup> Revkin, *supra* note 27, at 102.

<sup>244</sup> *Id.*

<sup>245</sup> *Id.*

<sup>246</sup> Motion for Temporary Restraining Order, at 10, North Georgia C.O.P.S. v. William French Smith, No. C83-1710A (N.D. Ga. filed Aug. 15, 1983).

<sup>247</sup> DEA's Memorandum, *supra* note 7, at 21.

<sup>248</sup> See *supra* text and notes at notes 205-07.

<sup>249</sup> See *supra* text and notes at notes 43-46.

<sup>250</sup> See *supra* text and notes at notes 89-97.

troversy over the use of paraquat over the National Forests supports the conclusion that the program would have a major impact on the human environment.

The DEA program appears to have been a major federal action that would significantly affect the quality of the human environment. As such, an EIS was required. Because the DEA had not prepared an EIS, the DEA was in violation of NEPA and the program was halted until an EIS was prepared.

#### VII. THE VALIDITY OF THE DEA PROGRAM UNDER THE FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE ACT

The Sierra Club, NCAMP and Friends of the Earth also alleged in their suit against the DEA that the paraquat spraying program was a violation of FIFRA.<sup>251</sup> They contended that the aerial application of paraquat over National Forests violates the labeling provisions of FIFRA because such aerial spraying is in conflict with paraquat's label restrictions. In order to assess the strength of this claim, the labeling provision of FIFRA and the paraquat label should be examined.

##### *A. FIFRA's Labeling Provision and the Paraquat Label*

FIFRA is the primary federal statute regulating the use of herbicides.<sup>252</sup> Its purpose is to protect the public and the environment from the misuse of these hazardous chemicals.<sup>253</sup> FIFRA vests the EPA with authority to register, set standards for, and remove or suspend herbicides from the domestic market.<sup>254</sup> Section 3(a) of FIFRA requires all herbicide products to be registered by the Administrator of the EPA before these substances may be sold or distributed.<sup>255</sup> The EPA requires that a manufacturer applying to register a herbicide must present the health data to support the safety of the product.<sup>256</sup> The manufacturer generally

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<sup>251</sup> 7 U.S.C. § 136 (1982).

<sup>252</sup> Federal regulation of pesticides and herbicides began with the enactment of the Federal Insect Act of 1910. This Act prevented the manufacture, sale or transportation of adulterated or misbranded insecticides and authorized regulation of insecticide sales. In June 1947, the Federal Insecticide Act of 1910 was repealed and replaced by FIFRA. 1972 U.S. CODE CONG. & AD. NEWS, 3993.

<sup>253</sup> *Id.*

<sup>254</sup> 7 U.S.C. § 136a (1982).

<sup>255</sup> *Id.*

<sup>256</sup> *Id.*

hires a commercial laboratory to perform studies of the substance and develop the health data which will be submitted to the EPA.<sup>257</sup> Thus, most of what is understood about paraquat originates from data produced for Chevron Chemical Company.

As part of the registration process, the manufacturer of the herbicide must submit a complete copy of the proposed label from the herbicide, which includes any directions for its use, to the EPA.<sup>258</sup> This label must be approved for use by the EPA before the herbicide's registration becomes effective.<sup>259</sup> If the label does not comply with FIFRA's requirements, the EPA is required to deny registration.<sup>260</sup>

In 1972, Congress made labels enforceable for the first time by adding section 12(a)(2)(G) to FIFRA.<sup>261</sup> Pursuant to this section, a registered herbicide may only be used as specified on its label. Section 12(a)(2)(G) provides that it is illegal for any person to use any registered herbicide in a manner inconsistent with its labeling.<sup>262</sup>

As a registered herbicide,<sup>263</sup> paraquat may only be used in accordance with its label directions. Paraquat is currently approved for limited agricultural purposes.<sup>264</sup> Paraquat is classified as a restricted use herbicide under FIFRA.<sup>265</sup> It thus may be applied only to certain crops as specified by the EPA.<sup>266</sup>

The EPA has the authority to cancel a herbicide's registration if the agency no longer believes the product can be used safely.<sup>267</sup> In 1982 the EPA made a study of the adverse health effects of

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<sup>257</sup> The data which underlines the original EPA approval of paraquat was fraudulently developed. The company which performed several long term studies of paraquat's health effects on behalf of Chevron was Industrial Bio-Test Laboratories (IBT) of Northbrook, Illinois. IBT was then the nation's largest commercial laboratory, having run more than 22,000 tests on pesticides and drugs. In 1976, several government audits of IBT research found evidence of fictitious data, samples improperly preserved, and improperly designed experiments. All of IBT's tests were invalidated, including those done on paraquat. Revkin, *supra* note 27, at 103.

<sup>258</sup> 7 U.S.C. § 136a(c)(1)(C) (1982).

<sup>259</sup> *Id.*

<sup>260</sup> *Id.* at § 136a(a)(c)(6).

<sup>261</sup> *Id.* at § 136j(a)(2)(G).

<sup>262</sup> *Id.*

<sup>263</sup> Ortho Paraquat CL, EPA Reg.No. 239-2186AA; Ortho Gramoxone CL, EPA Reg.No. 239-2286.

<sup>264</sup> See *supra* text and notes at notes 63-64.

<sup>265</sup> 7 U.S.C. § 136a(d)(1)(c) (1982).

<sup>266</sup> *Id.*

<sup>267</sup> *Id.*

paraquat.<sup>268</sup> The purpose of the study was to determine whether paraquat's registration should be reconsidered through a process called a Rebuttable Presumption Against Registration (RPAR).<sup>269</sup> Paraquat came under intensive EPA review due to a widely held belief that no commonly accepted first aid treatment existed for paraquat poisoning.<sup>270</sup> When the EPA issues a RPAR, the manufacturer of the controversial herbicide must establish that the substance could be used safely under certain conditions.<sup>271</sup> Therefore, had an RPAR issued against paraquat, Chevron would have had to submit data to establish that paraquat could be used safely for some purposes.

The EPA concluded that the available data did not support the need to issue an RPAR in the case of paraquat.<sup>272</sup> The EPA did conclude, however, that paraquat does pose a significant risk to wildlife, and that the use of paraquat should no longer be permitted in any situation where wildlife potentially could be exposed to the sprayed area.<sup>273</sup> Thus, although the EPA did not revoke paraquat's registration, the EPA did express the need to further restrict the areas upon which paraquat could be sprayed.

As a result of the EPA's study and decision, Chevron was required to develop a new label for paraquat.<sup>274</sup> This new label was formally approved by the EPA on May 19, 1983.<sup>275</sup> The new label contains a warning that paraquat is toxic to wildlife and should be kept out of lakes, ponds and streams.<sup>276</sup> The label also warns against using paraquat in situations where it would be possible for paraquat to drift onto nearby lands and waters.<sup>277</sup> The only non-crop locations where paraquat can be sprayed, according to this new label, are "Public Airports, Electric Transformer Sta-

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<sup>268</sup> 43 Fed. Reg. 30613 (1982).

<sup>269</sup> A RPAR is a presumption by the EPA that the herbicide should no longer be registered because it has been found to be unsafe. After an RPAR is issued, the manufacturer of the substance has 45 days to submit evidence to establish the safety of its product. If such evidence is not submitted to the EPA, the substance's registration will be cancelled. Regulations governing the RPAR process are set forth in 40 C.F.R. 162.11.

<sup>270</sup> 43 Fed. Reg. 30613 (1982).

<sup>271</sup> 40 C.F.R. 162.11 (1984).

<sup>272</sup> OFFICE OF PESTICIDES AND TOXIC SUBSTANCES, ENVIRONMENTAL PROTECTION AGENCY, PARAQUAT DECISION DOCUMENT (July 1, 1982).

<sup>273</sup> *Id.* at 44.

<sup>274</sup> *Id.*

<sup>275</sup> EPA Reg. No. 239-2186AA.

<sup>276</sup> *Id.*

<sup>277</sup> *Id.*

tions and Substations, Pipeline Pumping Stations Around Commercial Buildings, Storage Yards and Other Installations, Fence Lines, and Similar Non-Crop Areas.”<sup>278</sup> Essentially, the non-crop uses of paraquat are now geographically limited to certain industrial and commercial installations where wildlife is unlikely to be present.

The new paraquat label also warns against applying paraquat on gravelly sand or loamy sand soil.<sup>279</sup> This mandate is intended to ensure that paraquat is applied in the presence of neutralizing clay particles.<sup>280</sup> The label also warns not to inhale the spray mist or get any paraquat on one’s skin or clothing.<sup>281</sup> In order to determine how these label directives apply to the DEA’s use of paraquat, it is necessary to consider how they should be interpreted by exploring the legislative history of the FIFRA labeling provision and the courts’ interpretation of this provision.

### *B. Labels Should Be Construed Broadly*

Congress has suggested a broad reading of FIFRA labels. The legislative history preceding the FIFRA amendment that made labels enforceable contains references to Congress’ intent to protect individual citizens from having to bear the risks inherent in careless herbicide use.<sup>282</sup> Congress’ concern for the safety of the public would logically require labels to be interpreted in a broad and protective fashion.

Enforcement actions brought by the federal government against private citizens for violations of label provisions establish that courts will read labels broadly so that they may achieve their protective purpose. In *George’s Pest Control Service v. Environmental Protection Agency*, for example, the Ninth Circuit upheld a civil penalty against a pesticide applicator for a violation of section 12(a)(2)(G) of FIFRA, even though proof of the violation was entirely circumstantial.<sup>283</sup> The applicator had sprayed the registered pesticide Diazinon on the crevices between the wall and the floor of a meat processing room in which fresh cut meat was hanging.<sup>284</sup> The pesticide label said to avoid “contamination of

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<sup>278</sup> *Id.*

<sup>279</sup> *Id.*

<sup>280</sup> See *supra* text and note at note 31.

<sup>281</sup> EPA Reg. No. 239-2186AA.

<sup>282</sup> H.R. REP. NO. 91-637, 91st Cong., 1st Sess. 16 (1969).

<sup>283</sup> 572 F.2d 204, 205 (9th Cir. 1977) (*per curiam*).

<sup>284</sup> *Id.*



food or food processing surface.”<sup>285</sup> The only evidence that the meat and exposed surfaces of the room were contaminated by the pesticide was that an employee present in the room during the spraying experienced a burning sensation in his eyes, and samples of sawdust collected from the room contained Diazinon.<sup>286</sup> The fact that the court upheld the penalty against the applicator based only on this circumstantial evidence indicates that courts construe the label provisions on registered pesticides in a protective fashion.

Similarly, in *United States v. Corbin Farm Service*, the Ninth Circuit upheld a criminal conviction for violations of a label restriction.<sup>287</sup> The defendant had applied a registered herbicide to an alfalfa field.<sup>288</sup> The herbicide subsequently caused the death of a number of waterfowl.<sup>289</sup> The herbicide label prohibited its use in fields where “water fowl are known to repeatedly feed.”<sup>290</sup> The defendant had, relying on his general knowledge of water fowl habits, assumed that water fowl did not feed on the alfalfa field.<sup>291</sup> In upholding the conviction of the defendant, the court declared that he could not rely on his existing knowledge of water fowl habits, but had a duty to ascertain whether water fowl fed on the field in question prior to spraying.<sup>292</sup> The court thus interpreted the label which read “known to repeatedly feed” broadly, so that proof of actual knowledge was not required.

The courts have thus emphasized that FIFRA, which was designed to protect the public health and welfare, will be interpreted broadly. The next section will apply the labeling provisions of paraquat to the DEA program and will examine whether the aerial application of paraquat over National Forests violates FIFRA.

### *C. Paraquat Label Restrictions Applied To the DEA Program*

The aerial spraying of paraquat over National Forests to eradicate marijuana is contrary to the express provisions of paraquat's

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<sup>285</sup> *Id.*

<sup>286</sup> *Id.*

<sup>287</sup> 444 F. Supp. 510 (E.D. Cal. 1978) *aff'd in part* 578 F.2d 261 (9th Cir. 1981).

<sup>288</sup> *Id.*

<sup>289</sup> *Id.*

<sup>290</sup> *Id.*

<sup>291</sup> *Id.*

<sup>292</sup> *Id.*

new label. Marijuana is a weed, not a crop,<sup>293</sup> and the only non-crop locations where paraquat can be used are areas where wildlife is unlikely to be present.<sup>294</sup> One of the purposes of the National Forests is to provide a refuge for wildlife. The DEA operation also disregards those portions of the paraquat label that prohibit its application over areas where animals graze. Wildlife and livestock often feed on the vegetation in National Forests.

The DEA was in violation of the label directive which prohibits the application of paraquat on gravelly sand or loamy sand soil. Much of the National Forests contain sandy soils. Yet the DEA had not established restrictions on the soil characteristics of the areas to be sprayed.<sup>295</sup> The DEA program also violated the label restrictions which warn not to inhale the spray mist or get the spray on skin, eyes or clothing, because there is a possibility that the paraquat will drift and settle on private lands neighboring the forests. If the owners of these private lands are outdoors while the spraying is being conducted, they might come into contact with the drifting paraquat spray.

The DEA paraquat spraying program thus appears to violate many of the prohibitions contained on the EPA approved paraquat label. Therefore, the DEA program violated section 12(a)(2)(G) of FIFRA which prohibits the use of any registered herbicide in a manner which is inconsistent with its label.

### VIII. CONCLUSION

The DEA announced a plan to spray paraquat aerially over the National Forests to eradicate marijuana growing there and carried out two spraying missions. The DEA's program met with much opposition from citizens and environmental groups. Three environmental groups banded together in a suit against the DEA,

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<sup>293</sup> In *NORML v. Drug Enforcement Administration*, 545 F.Supp. 981 (1982), plaintiffs argued that FIFRA was violated because paraquat was not registered for use on marijuana. The court disagreed, finding that marijuana was a weed, not a crop, and that paraquat was registered for use on weeds. *Id.* at 986 n.10.

In the present suit against the DEA, the plaintiffs did not contend that FIFRA prohibits the use of paraquat on marijuana, but rather that pursuant to the new label effective on May 19, 1983, paraquat cannot be used for non-crop purposes in areas which contain wildlife. See Plaintiffs' Memorandum, *supra* note 239, at 22 n.4.

<sup>294</sup> See *supra* text at notes 276-78.

<sup>295</sup> Plaintiffs' Memorandum, *supra* note 279, at 22.

seeking a permanent injunction to halt the operation. The parties entered into a Consent Judgment which prohibits the use of paraquat on federal lands until an EIS is prepared and the paraquat label is amended.

While the DEA has a valid interest in decreasing the cultivation and use of marijuana, an eradication program involving the aerial application of the toxic herbicide paraquat poses risks to man and the environment. Paraquat is an extremely toxic substance which can be fatal to humans and animals. Furthermore, there is no known antidote for paraquat poisoning. Although paraquat is widely used in the United States for agricultural purposes, the EPA has classified it as a restricted use herbicide because of its potential harmful effects to man and the environment. Therefore, paraquat may only be used on certain crops and may only be applied by licensed applicators.

The increase in domestic marijuana production and use is a cause for national concern. Marijuana use does pose a risk to the health of those who consume it. The DEA believes that the most effective way to reduce the use of marijuana is by decreasing the cultivation of marijuana. The DEA was successful in reducing the supply of marijuana from Mexico through a paraquat spraying program conducted in Mexico during the mid 1970s. The DEA is anxious to replicate this success in the United States by conducting a similar operation. Yet the adverse health effects of marijuana use appear to be less significant than the potential dangers inherent in the aerial spraying of paraquat in a domestic eradication program.

Not only was the DEA paraquat program potentially hazardous to both the public and the environment, it also violated two federal environmental acts. The DEA program violated the National Environmental Policy Act of 1969 because the DEA failed to prepare an environmental impact statement prior to implementing the spraying operation. The DEA program was a major federal action which would have a significant effect on the quality of the human environment, and therefore, NEPA requires an EIS.

The DEA program also violated the Federal Insecticide, Fungicide and Rodenticide Act because the DEA used paraquat in a manner proscribed by the paraquat label. Under FIFRA, the only valid uses of a registered herbicide are those allowed by the product's label. Because the paraquat label restricts its uses to those areas where wildlife is not present, the use of paraquat in the

National Forests, which are wildlife habitats, was contrary to paraquat's express label provisions. The DEA paraquat program presents a risk to the public health and the environment. Violative of two major environmental statutes, the paraquat program should be permanently enjoined.