

Agricultural Pesticide Legislation and Issues on Dominica

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Abstract

The issue of pesticide use and legislation has been around since the 20th Century. There are hundreds of man-made chemicals that are so far thought to be harmless. Others however may cause cancer and damage the nervous system, reproductive system, immune systems, or livers of animals. Large amounts of long-term scientific evidence is beginning to confirm that some of these chemicals do the same to humans. Over the past 50 years we have all been participants in a vast, uncontrolled, worldwide chemistry experiment involving the oceans, air, soils, plants, animals, and human beings. Chemicals have greatly contributed to the well being of humans, such as raising production yields by killing crop pests and revealing an endless array of useful products. Once some chemicals are released they can cause toxic reactions, persist in the environment for years, travel thousands of miles from where they were used, and have long-term health and environmental consequences that weren't anticipated or intended. There must be worldwide consensus and legislation set forth in all countries to prevent the use of toxic and hazardous chemicals. Alternatives must be found to reduce the misuse of pesticides, and ultimately make the world a safer place.

Introduction

The Commonwealth of Dominica is a 754 sq mi island located between the Caribbean Sea and the North Atlantic Ocean (CIA, 2006). 6.67% of the island is arable land and 21.33% is in permanent crops (CIA, 2006). 40% of the working force labors agriculturally (CIA, 2006). This information indicates that Dominica is an agriculturally dependent country. Dominica's agricultural crops are bananas, citrus, mangoes, root crops, coconuts, and cocoa. Bananas are primarily produced and exported internationally

making it the “cash” crop of choice for producers. There are currently large price differences between the local market and the international market for bananas. Much of the legislation and regulations on Dominica are focused towards banana production. High banana production has led to the rise of organizations such as Dominica Banana Marketing Corporation (DBMC) and Dominica Banana Producers Limited (DBPL), all of which are developed organizations that control exportation regulations of bananas. The regulations are only externally audited by the European GAP and Free Trade Organization. There is no internal auditing to speak of. According to Kervin Stephenson of the Inter-American Institute for Cooperation on Agriculture (IICA) and the Pesticide Control Board, approximately 90% of the pesticides in Dominica are used for agricultural purposes and the other 10% is used for industrial purposes, this information was supplied by the Dominica Customs, which controls importation of chemicals. A list of the names and amounts in liters and kilograms of agricultural pesticides imported into Dominica can be obtained through the Central Statistics Office in Roseau, Dominica. Information on Yearly Statistics by Commodity, which was provided by the Central Statistics Offices estimated in 2005 that a net weight of 216,874 Kg of pesticides were imported into Dominica with a CIF (cost, insurance, and freight) value of EC\$ 2,848,982. This indicates a CIF value increase of EC\$ 259, 325 and a net weight increase of 30, 246 Kg from 2004 to 2005. According to the Monthly Statistics by Commodity information, provided by the Central Statistics Office, there was a CIF value of EC\$ 640, 715 and net weight of 77, 316 Kg of pesticides imported into Dominica between 01/2006 and 04/2006. If this trend continues there will be a large increase of pesticides imported into Dominica for the year 2006, demonstrating another large increase from 2005 to 2006.

There is a continuing large increase in pesticide importation from 2005 to 04/2006 according to the information provided from the Central Statistics Office, which indicates that more pesticides are being used in either agriculture or industry. The importation data can be misinterpreted and lead to false indications of pesticide use. As pesticide use is possibly increasing, health and the environment are more at risk.

Discussion

Persistent Organic Pollutants (POPs), a particular class of substances, pose a significant threat to health and the environment. These chemicals are Aldrin, Chlordane, DDT, Dieldrin, Dioxins, Endrin, Furans, Heptachlor, Hexachlorobenzene (HCB), Mirex, Polychlorinated biphenyls (PCBs), and Toxaphene (UNEP, 2001). These chemicals are highly toxic, very persistent, sometimes lasting years or decades before degrading into less dangerous forms, they evaporate and travel long distances through air and water, and they accumulate in fatty tissue, otherwise known as “bioaccumulation”. On May 22, 2001 the world’s governments met in Sweden and adopted an international treaty that restricted and ultimately eliminated the production, use, release, and storage of these chemicals (UNEP, 2001). The treaty was called the Stockholm Convention on Persistent Organic Pollutants. It not only deals with the twelve toxic POPs, but also other chemicals that pose serious hazards. Nine of these POPs are the pesticides Aldrin, Chlordane, DDT (which is widely known for decimating bald eagles, ospreys, and other predatory birds and for contaminating the milk of nursing mothers), Dieldrin, Endrin, Heptachlor, Hexachlorobenzene, Mirex, and Toxaphene (UNEP, 2001). Two of the chemicals are industrial chemicals, Hexachlorobenzene (HCB) and Polychlorinated Biphenyls (PCBs), which are known for polluting rivers and lakes in industrial regions, killing or poisoning

fish, and causing several human health scandals (UNEP, 2001). The Convention also deals with two families of unintentional chemical by-products, Polychlorinated dioxins and Furans (UNEP, 2001). The Convention recognizes that a particular effort might be needed to phase out certain chemicals for certain uses and seeks to ensure that the effort is made (UNEP, 2001). It also focuses resources into cleaning up existing stockpiles and dumps of POPs. Ultimately the Convention focused on pointing a way towards a world free of dangerous POPs and to reshape the economy's reliance on toxic chemicals. The Convention became international law on May 17, 2004 (UNEP, 2001). Over 90 countries have joined the Convention and many more are expected to do the same over the next few years (UNEP, 2001). Dominica's own POPs project was started under the Environmental Coordinating Unit (ECU) of the Ministry of Agriculture and the Environment. The project started in January 2006 and ended May 2006. The POPs project was created to make recommendations for the National Implementation Plan (NIP) for persistent organic pollutants, other hazardous materials, and wastes. The Pesticide Action Network (PAN), located at www.pesticideinfo.org, inspired me to pursue my research on the pesticide legislation and issues of Dominica. The Pesticide Action Network (PAN) directly stated that Dominica imported persistent organic pollutants, or POPs, that are listed under the Stockholm Convention. The websites data was gathered in November 2001 from the United Nations Environment Programme and the Food and Agriculture Organization of the United Nations (FAO) in December 2001. The currency of their data set for Dominica was last checked on June 24, 2002. The chemicals listed under PAN for Dominica are: Aldrin, Chlordane, Chlordimeform, DDT, Dieldrin, Dinoseb and dinoseb salts, Ethylene dibromide, Fluoroacetamide, Heptachlor,

Hexachlorocyclohexane, and Mercury and mercury compounds. The main question was whether or not Dominica still imported the POPs listed under the Stockholm Convention, and stated on the PAN website. Andrea Marie who is the coordinator of the POPs project under the Environmental Coordinating Unit (ECU) stated, “no POPs were found in the survey given to farmers by the POPs project.” Claudia Bellot who is the Chief Technical Officer of the Ministry of Agriculture and the Environment and the Chairperson of the Pesticide Control board also stated, “we stopped importing these products (POPs) in the 1970’s, in fact even before the Stockholm Convention was even drawn up.” All of my highly credible sources precisely stated that POPs listed under the Stockholm Convention are no longer imported into Dominica. Sometimes illegal pesticides can come into Dominica because lack of government funding doesn’t give officials the resources needed to enforce pesticide regulations. Two external auditing units, the Free Trade Organization and Europe GAP, regulate most pesticide use in Dominica. The Ministry of Agriculture and the Environment is requiring Dominica to become 100% Europe GAP certified by September 2006.

Under the Europe GAP certification process there is a strict guideline, which follows the Stockholm Convention for the application and use of pesticides. Certified producers that want to sell and export their product must comply with the standards of Europe GAP. Training seminars are made available to producers. Through Europe GAP producers must be trained in the use of pesticides, or hire trained applicators to apply chemicals to their produce. A Farmer Record Sheet must also be kept by all producers to record their pesticide application. Application recommendations are given to the producers and they must make a self-assessment of the crop being produced to decide

which pesticide to use and the amount to be used. Producers are also trained how to handle an accident in the case that a pesticide is spilled and must own a first aid kit in the case of a human related accident. They also encourage farmers to own and wear protective equipment when using pesticides. When Mocap, a nematicide/insecticide, was sold on Dominica the distributor dispensed to farmers the recommended protective equipment when a pesticide was purchased, but Mocap is no sold on Dominica. There are also recommendations given for proper disposal of pesticides or materials used to apply pesticides. Some examples are the plastic sleeves impregnated with Dursban to cover bananas, which are required to be disposed of in a 55 gal. steel drum and burned, and charcoal pits are required for the disposal of fungicides in order for the fungicide to decay properly. Most of the regulations for pesticide use in Dominica follow those of the banana producers.

Dominica's current legislation is the Pesticide Control ACT no. 15, 1974. The Act provides for control of the importation, sale, storage, and use of pesticides. The Act establishes a Board called the Pesticides Control Board and provides for appointment of officers, administrative expenses, guidelines for authorization of entry, powers of the inspectors, regulations and its provisions which the Minister may make, offences and their penalties, and taking samples from owners without compensation. Under the section of Licensing of Pesticides Regulations, 1974 the Act covers application of regulations, licensing of pesticides, labeling of pesticides, experimental permits, restriction of sale, inferior production, false advertising, containing, storage, and transportation of pesticides. Under Section 7 of the Pesticides Control Act no. 15, 1974 there is a Pesticide Control Regulations Statutory Rules and Orders no. 56, 1986 which provides more detail

for the registration, licensing, and labeling regulations for pesticides. Part II of the document discusses the registration of pesticides including which are to be registered as approved pesticides, the concession of a research institute or organization to used unapproved pesticides, and the considerations of application and registration of pesticides by the Pesticide Control Board. Part III of the document discusses the licensing of pesticides for the manufacture, importation, and sale of approved pesticides. Part IV of the document discusses decisions of the Board such as the notice given to persons for licensing of pesticides given by the Pesticide Control Board, and application for reconsideration in the case of a refusal. Part V discusses miscellaneous topics such as the case in which pesticides are sold or distributed and the certain conditions which accompany them. These documents may be obtained through the Ministry of Agriculture and the Environment.

Currently the Ministry of Agriculture and the Environment is reviewing a new draft called the Pesticides and Toxic Chemicals Bill. The Bill is a proposal to the National Implementation Plan (NIP) that started in January 2006, which was recommended by the POPs project of the Environmental Coordinating Unit. The Bill will not only cover pesticides, but other hazardous chemicals as well. Claudia Bellot stated, “the Ministry is not completely ready to pass the Pesticides and Toxic Chemicals Bill, and the draft is still going to be looked at to see how we can make it meet our needs.” Six outside consultants were recently hired to do fine editing of the draft. The National Implementation Plan will also give funding for pesticide education and public awareness programs. Agricultural extension agents currently give infrequent community consultations. Several radio programs and panel discussions have also taken place to

make people aware of POPs and its goals. The National Implementation Plan also identified alternatives for pesticides, in which extension agents could train growers to use pesticides and produce products for the market in a correct manner. The project also recommended proper disposal facilities, a hazardous waste landfill, and that Dominica Solid Waste Management Corporation help implement these waste disposal plans. The National Implementation Plan will also put strict requirements on the registration of products for either agricultural or industrial uses. There is currently no information available on the chemicals imported for industrial uses. Claudia Bellot stated, “a inventory of all the chemicals used by industry will also be done in order to get a good handle on the substances they use.” A preliminary survey was taken when the POPs project started to receive an overall view of the pesticide use in Dominica. The surveys were given by non-technical personnel, to prevent biased information. Out of the seven agriculture districts on Dominica, the personnel went to the more agriculturally focused districts. Out of the 1500 surveys given, 1448 were returned. One indication of Mirex and Aldrin was reported, but a consultant later determined that they were false indications. Two cases of PCBs were found in two transformers from Dominica Electricity Cooperation. In the survey they found that Paraquat, which is imported into Dominica as Gramaxione and Herbadox, is used frequently. It is a highly toxic compound and in the United States that is classified under the Environmental Protection Agency (EPA) as a class I Restricted Use Pesticide (RUP) (Extonet, 2006). It is known to cause health risks to humans and hazardous environmental effects. The surveys were somewhat biased because the producers primarily farmed bananas, thus making it an incomplete survey of all producers. Many challenges have been given against the survey because of

indications of biased information. Andrea Marie stated, “Paraquat is used more than we would like for it to be used on Dominica, but we currently have no standards on what is acceptable.” The percentage of surveys returned is an outstanding number, which indicates that people are willing to commit to the POPs project and its goals. Andrea Marie stated, “multilateral environmental agreements are projected.”

Organic farming is also an alternative to pesticide use that Dominicans support, as well as the Ministry of Agriculture and the Environment. Organic produce must be grown and processed according to a uniform set of standards. These standards must be regulated by either government or private organizations. Dominica has no regulations, standards, or certification processes for organic producers. A producer can easily mislead buyers at the local market and distribute a product that is not organic. False advertisement is due to a lack of regulations for producers and awareness programs for buyers. If done properly organics can give producers a marketing edge locally and internationally. Many countries in the world have trends leaning towards organic produce and buyers are willing to pay top dollar for organic products. It requires a large input in order to produce organic products and the producer might not receive an output,, especially because Dominica is located in a tropical region where fungus, diseases, and many other forms of crop destruction are prevalent and often difficult to deal with. The majority of producers are also very low income and must have produce to sell at the market in order to survive in the economy. This puts the producer in a bind where the decision of organics or more traditional farming methods takes place. People will not be willing to change unless they know that the system will work and that they will be able to financially support their

families. Producers must still be given a reasonable alternative either for health or economic reasons.

The Dominica Organic Agricultural Movement (DOAM) is an incorporated non-profit private organization. There are currently 60 members, who are mostly organic farmers, and some are just people that have a interest in organic farming or the lifestyle. Vannessa Prevost, the President of DOAM stated, “the organization is trying to put some order to the organic movement and set some standards to organic farming in Dominica.” On the newly created organization’s agenda are many well-defined goals. The first and most important goal is the formulation of organic standards and a certification process. These standards and certifications will be based on the Jamaica Organic Agricultural Movement (JOAM) and other International Federation of Organic Agricultural Movements (IFOAM) models. DOAM also wants institutional development to take place. There is already an elected President, Vice President, Secretary, and Treasurer. Also a designated location for the bureaucracy will be made so services can be made readily available. People will be able to obtain information on what the organization is about, organic farming methods, and standards. DOAM has also set goals to enhance the local and international market. A local market survey will also be completed in order to have statistics showing whether or not buyers are willing to purchase organic products. A databases of members, producers, what they produce, how many acres they own, where they are located, and many other types of basic information are to be created. Apart from the international market and standards they would like to find out more about the organic practices that are already taking place in Dominica. DOAM wants to catalog indigenous and traditional organic farming methods. This will allow them to successfully produce by

following methods that have been proven to work. Development of an organic educational program is also a high priority. Education will be made available for members and non-members on organic farming and its benefits. In my opinion public awareness is a number one priority when a “movement” is taking place. People must be educated in order to make them understand a situation and change their view on that situation.

Conclusions

Dominica has a very good position on the situation at hand with pesticides and what needs to be done in order to improve the country’s current status. The current legislation has protected the country well for the past 32 years, but enforcement of these laws and regulation has been lacking. In many “third world” countries the funding for government activity tends to be a difficult task when there are high poverty levels present. The key to ridding Dominica of hazardous pesticides and other toxic chemicals is making the public aware of health and environmental consequences. The Caribbean Single Market and Economy will play a large role in the economy of Dominica in the next few years leading to many unknown consequences. The Ministry of Agriculture and the Environment has set forth the National Implementation Plan for Persistent Organic Pollutants, which is coordinated by the POPs project of the Environmental Coordinating Unit. They are currently trying to push through legislation a Bill called the Pesticides and Toxic Chemicals Bill, which will not only cover pesticides, but other hazardous chemicals as well. Organizations like the Inter-American Institute for Cooperation on Agriculture, the Dominica Organic Agricultural Movement, and other organizations are pushing for higher regulations in pesticide use. Overall Dominica is moving forward into

a much brighter and safer future for the people and the environment of this beautiful country.

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