

GAO

Testimony

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Five Latin American Countries' Controls
Over the Registration and Use of Pesticides

Statement for the Record by
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Submitted to the Committee on Agriculture,
Nutrition, and Forestry
United States Senate



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Mr. Chairman and Members of the Committee:

We are pleased to submit, for your hearing record on the proposed "Pesticide Export Reform Act of 1990," this statement on five Latin American countries' controls over the registration and use of pesticides. The information is based on a report we did at the request of Representatives Leon Panetta and Frank Horton (GAO/RCED-90-55, Mar. 22, 1990).

As part of that review, we visited Chile, Mexico, Costa Rica, Guatemala, and the Dominican Republic during 1988 to determine what their governments, exporters, and export growers were doing to ensure that produce grown for U.S. markets would meet U.S. pesticide requirements. We also obtained information on (1) assistance that U.S. agencies have provided to help these countries meet U.S. pesticide requirements and (2) U.S. agencies' responsibilities for safety and quality of imported produce and international agencies' roles in developing food safety systems. In addition, we identified issues for congressional consideration related to these objectives.

As you requested, this statement focuses on the five governments' regulatory controls over the registration and use of pesticides. It includes information about the regulatory status, in these five countries, of pesticides whose registrations the Environmental Protection Agency (EPA) has canceled or suspended or whose registrations U.S. chemical companies have voluntarily withdrawn.

Overall, we found that each of the five countries has laws and regulations controlling pesticide availability and use. However, government officials in all of the countries, except Chile, told us that government monitoring and enforcement activities, particularly monitoring of pesticide availability and field sampling for residue testing, were generally limited. For example, these

countries lacked resources, such as inspectors, transportation to monitor distributors and perform field sampling, and adequate residue testing facilities. Resource constraints had also limited some of these governments' ability to obtain information on U.S. pesticide requirements and disseminate it to export growers.

Although some of these countries did not have adequate information about U.S. pesticide/crop requirements, we found that they have all prohibited, restricted, or not registered many pesticides that EPA has canceled or suspended or that U.S. chemical manufacturers have withdrawn. The constraints in the countries' monitoring and enforcement capabilities may, however, promote lingering concern that these pesticides, although not allowed, may be available for use on the countries' domestic and exported produce.

By way of background, a rapid growth in U.S. fruit and vegetable imports during the 1980s raised concerns about the safety and quality of imported foods and the presence of pesticide residues. In May 1988 we reported that, from 1980 to 1986,¹ the import share of the U.S. market for major fresh and frozen fruits rose from about 26 percent to about 33 percent, while the share for major fresh vegetables rose from about 5 percent to about 7 percent. Latin American and Caribbean countries supply most U.S. imports of fruits and vegetables--5.5 million metric tons, or 77 percent, in 1988. The countries we visited accounted for over half of the Latin American/Caribbean import volume in 1988.

While international guidelines on the registration and use of pesticides on food exist, their adoption by individual countries is voluntary. Each country sets its own laws for pesticide registration and use. These laws vary considerably in sophistication and degree of implementation among countries.

¹Agricultural Trade: Causes and Impacts of Increased Fruit and Vegetable Imports (GAO/RCED-88-149Br, May 10, 1988).

We looked at the five governments' practices that may affect the presence and composition of pesticide residues on U.S. imported produce. These practices included (1) registering pesticides; (2) considering a pesticide's U.S. status during registration; (3) canceling, restricting, or not registering pesticides that EPA has canceled or suspended; and (4) registering pesticides that do not have EPA tolerances.²

FIVE COUNTRIES' PESTICIDE REGULATORY MECHANISMS

Registration is necessary to provide for the proper and safe use of pesticides and to protect people and the environment from ineffective or detrimental chemicals. Each of the five countries has laws and regulations requiring pesticides to be registered before they can be sold or used, and--with the exception of the Dominican Republic--each country required pesticide registrations to specify crop use.³ Because each country registers pesticides based on its own climate, crops, and pest problems an exporting country may have different pesticides registered than its importing countries. Furthermore, pesticides may be approved for use on a certain crop in the exporting country and a different crop or no crops in the importing country.

In these five countries the registrants (usually chemical manufacturers) had to provide much of the same type of information EPA requires for a U.S. registration. This information includes the pesticide's name, chemical composition, and use instructions; health and environmental safety studies; and residue information. Officials of four of the five countries told us, however, that because of a lack of scientific and budgetary resources, their

²A pesticide residue tolerance is the maximum legal level of a pesticide residue that may exist in or on a food.

³The Dominican Republic revised its pesticide statute in 1988 to include, among other things, a requirement for a pesticide registration to be crop-specific. At the time of our visit, however, the statute had not received final approval.

governments generally do not validate the scientific studies presented by the registrants.

Instead, government officials require registrants to submit, as part of the registration application, a "certificate of free sale" from the country of origin. The certificate is the registrant's certification that the pesticide is legal for use in the country where it is manufactured--usually an industrialized country--where the pesticide's health effects will probably have been independently validated. The government officials use these certificates to protect their countries from registration and indiscriminate sale of untested chemicals or chemicals that have been proven unsafe. While each of the five countries required a certificate of free sale, verification by the corresponding government agency--such as EPA--in the country of origin was not required in any of these countries. We did not verify the countries' registration processes or their use of information during those processes.

All five countries use international maximum residue limits (tolerances) in establishing the amount of acceptable pesticide residue on foods. These international standards are developed by the Codex Alimentarius Commission, a subsidiary body of the U.N.'s Food and Agriculture Organization (FAO) and World Health Organization (WHO). Codex sets international food standards to protect the health of consumers and to facilitate international trade in food.⁴ The United States is an active participant in Codex.

⁴Codex has published international standards for the hygienic and nutritional quality of food; food additives; pesticide residues, including maximum residue limits (tolerance levels); contaminants; labeling and presentation; and methods of analysis and sampling.

CONSIDERING PESTICIDES' U.S. STATUS DURING REGISTRATION

In each country, government officials told us that, during the registration process, they try to determine, through use of the certificates of free sale and other available information, the pesticide's status in industrialized countries, including the United States. However, the use of information other than the certificates of free sale varied among the five countries, depending on the degree of access to this information.

Three of the countries--Costa Rica, the Dominican Republic, and Guatemala--lacked official U.S. regulatory information, such as title 40, part 180, of the Code of Federal Regulations (which provides tolerances and exemptions from tolerances for pesticide chemicals in or on raw agricultural commodities), or other comprehensive commercial publications that incorporate U.S. regulatory information. Government officials in these countries said that they would like more information on U.S. pesticide requirements.

Officials of all five countries said that they consider such information as EPA notifications to foreign governments about exports of unregistered pesticides and about changes in a pesticide's U.S. status, such as cancellation or suspension, if available, when making pesticide registration decisions.⁵ However,

⁵Section 17(a) of the Federal Insecticide, Fungicide, and Rodenticide Act establishes notification requirements for the export of pesticides that are not registered for domestic use in the United States. In a series of steps, the foreign purchaser must acknowledge, and the government is subsequently notified, that the pesticide is not registered and cannot be sold for use in the United States. Section 17(b) requires EPA to notify foreign governments and appropriate international agencies about significant changes in a pesticide's U.S. status, such as cancellation or suspension. The notices generally contain information on when EPA took the action, background on what precipitated the action, an explanation of the action, and the basis EPA had for taking the action. The notices also identify EPA contacts.

in an April 1989 report,⁶ we said that EPA had not issued notices to foreign governments for all pesticides when significant action had been taken and that EPA's 1985 booklet entitled Suspended, Cancelled, and Restricted Pesticides was outdated. We said that the type of information in this booklet, if updated and disseminated, would alert countries using the included pesticides to initiate actions or request additional data as a basis for making their own risk/benefit analysis concerning use.

We believe that EPA's notices of exports of unregistered pesticides and about changes in a pesticide's U.S. status can be valuable to foreign countries in properly evaluating the risk of registering or continuing use of a pesticide. They alert these countries to imports of pesticides into their countries that are not registered for use in the United States because of health concerns or other reasons or about the reasons for significant regulatory actions the United States has taken.

On February 12, 1990, EPA published a notice in the Federal Register on proposed changes in its notification process. The notice cited our April 1989 report recommendations and issues discussed in May 1989 hearings on pesticide exports before the Environment, Energy, and Natural Resources Subcommittee of the House Committee on Government Operations as some of the reasons for the changes.

CANCELING OR RESTRICTING PESTICIDES
THAT ARE ILLEGAL IN THE UNITED STATES

While the five countries do not generally register pesticides to meet another country's import requirements, we found that the governments have prohibited, restricted, or not registered many pesticides that the United States has canceled or suspended,

⁶Pesticides: Export of Unregistered Pesticides Is Not Adequately Monitored by EPA (GAO/RCED-89-128, Apr. 25, 1989).

usually because of health or environmental reasons. As a result, the legal availability of these pesticides, as well as the potential for their use on export crops destined for the United States, is decreased.

We reviewed the 1987-88 registration status in the 5 countries of 52 pesticides whose U.S. registrations EPA said it had canceled and/or suspended, for various reasons, as of October 25, 1988. These 52 pesticides included 26 whose registrations had been voluntarily withdrawn by chemical manufacturers. We analyzed the five countries' registration data to determine if these pesticides were registered in those countries. As the tables in appendixes I and II show, the five governments had prohibited, restricted, or not registered many of these pesticides. For example, Chile had not registered or had prohibited use of 49 of the 52 pesticides, or 94 percent; Guatemala and Costa Rica, 47, or 90 percent; the Dominican Republic, 44, or 85 percent; and Mexico, 42, or 81 percent.

Each of the five governments' regulations provided for (1) reregistration procedures or reviews and/or (2) procedures for revoking a pesticide's registration when adverse health, safety, or environmental factors become known. However, these countries--like the United States--do not always remove canceled pesticides from registration lists or from commercial channels at the time of cancelation. As a result, pesticides that are not approved for use in a country may sometimes be legally found in distribution channels.

For example, some countries' regulations, such as the Dominican Republic's and Costa Rica's, specify that if a chemical is voluntarily canceled by a manufacturer, the registration will be maintained for 2 years until existing stocks are used. In Mexico, when officials determine that a pesticide should be removed from the official pesticide list, it is still legal for use for 2 years. In Guatemala, pesticides that have had their registrations canceled

are allowed to remain in commercial channels for a time to allow existing supplies to be depleted.

For example, Guatemala canceled 18 pesticides in 1987. As of May 1988 its list of registrations continued to include several of these chemicals because, according to government officials, they gave the chemical companies 6 months to sell existing stocks, and use of these pesticides was to be allowed to continue until supplies were exhausted. Similarly, the Dominican Republic canceled a series of pesticides during the 1970s; some, however, had not been removed from the government's list of registered products as of October 1988. For example, distribution and sale of the pesticide 2,4,5-T is prohibited; yet the chemical's registration was still listed in 1988.

PESTICIDES REGISTERED WITHOUT EPA TOLERANCES

We identified 110 pesticides that had been legally registered for use as of 1987-88 in 1 or more of the 5 countries, but which do not have EPA tolerances established for a food use in the United States. (See app. III.) Although we do not know the reasons EPA has not established tolerances for these pesticides, in some cases, EPA may not have evaluated these pesticides or may have denied a U.S. tolerance or registration. However, it may be appropriate to register these pesticides in these countries because of the countries' specific pest problems, crops, and climates; because the pesticides are suitable for nonfood uses; or because exporters need alternative pesticides to be legally available to enable them to meet their export markets' differing requirements. While registering these pesticides may therefore be appropriate to the countries' needs, using such pesticides on exported produce could result in the produce being refused entry into the United States if the Food and Drug Administration (FDA) detects residues.

Most Violations on Imported Produce
Are No-Tolerance Violations

According to FDA, which samples imported foods for illegal pesticide residues and other prohibited substances, its data have consistently shown that most pesticide residue violations on imported produce involve no-tolerance violations rather than residue levels that exceed EPA tolerance levels. No-tolerance violations result when FDA detects residues of pesticides that do not have U.S. tolerances established for use on a particular crop in the United States. In contrast, over-tolerance violations-- which are far fewer--result when pesticide residues exceed EPA's established tolerances on permitted pesticides. The over-tolerance violations most often occur because of pesticide misuse, unusual weather conditions, or poor agricultural practice.

Each of the five countries has experienced no-tolerance violations on produce exported to the United States. In many cases, U.S. tolerances had not been established for the specific export crop, although a tolerance may have been established for a related crop. Some commodities, such as chayote, yucca, and Chinese vegetables, either are not grown or are not grown commercially in significant quantities in the United States and tend to have few, or no, U.S. tolerances. As a result, these countries' growers may have their produce rejected at U.S. entry points because of no-tolerance pesticide violations if FDA detects the pesticides.

Our analysis of FDA import monitoring data for 1986 (the most readily accessible at the time of the analysis), which covered all countries exporting produce to the United States, showed that 230, or 90 percent, of that year's 256 import violations occurred because U.S. tolerances had not been established for the food commodities sampled. The remainder resulted from residues that exceeded established EPA tolerance levels. About two-thirds of the no-tolerance violations involved pesticides that had U.S.

tolerances for commodities, including fruits and vegetables, other than the type cited for violation.

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In summary, much of the difficulty the five countries we visited had in considering U.S. pesticide requirements related to the absence of U.S. pesticide tolerances for certain export crops and incomplete information about what pesticides are acceptable for use on produce destined for the United States. These countries have designed pesticide regulatory systems to control the registration and use of pesticides in their countries. They have expressed an interest in knowing more about the status of pesticides in the United States--which they try to incorporate into their registration decisions--and in keeping known pesticides of concern from being available in their countries for use on either domestic or export crops.

Despite a general lack of information about U.S. pesticide/crop requirements in some of these countries, they have all prohibited, restricted, or not registered a large number of pesticides EPA has canceled or suspended and that U.S. chemical manufacturers have withdrawn. While pesticide registration systems are in place and many known chemicals of concern are not legally sanctioned in these countries, constraints in the countries' monitoring and enforcement capabilities may contribute to concern that these pesticides may be available for use on the countries' domestic and exported produce. The extent to which, and in what ways, U.S. agencies should increase their involvement in dealing with these countries' need for more information and additional U.S. tolerances are issues with implications for food safety, U.S. competitiveness, and U.S. agencies' responsibilities and resources.

Status in Five Countries of Pesticides on EPA's October 25, 1988,
Revised List of Canceled and/or Suspended Chemicals

<u>Pesticide</u>	<u>Chile</u>	<u>Costa Rica</u>	<u>Dominican Republic</u>	<u>Guatemala</u>	<u>Mexico</u>
Aldrin ^a	P/L	P	P	P	NR
Aspon	NR	NR	NR	NR	NR
Brominated salicylanilide	NR	NR	NR	NR	NR
Carbophenothion ^b	NR	NR	R	NR	R
Chlordane ^a / Heptachlor ^c	P	R	RS ^d	P/L	R
Cycloheximide ^b	NR	NR	NR	NR	NR
DBCP (dibromochloropropane)	NR	P	P/L	P/L	NR
DDD (TDE) (1,1-dichloro-2,2 bis [p-chlorophenyl] ethane)	NR	NR	NR	NR	NR
DDT (dichloro diphenyl trichloroethane)	P	P	NR	P	R ^e
Demeton ^b	NR	NR	NR	NR	NR
Dialifor ^b	NR	NR	NR	NR	NR
Dieldrin ^a	P/L	P	P/L	P	NR
Dinitramine ^b	NR	NR	NR	NR	NR
Dinoseb ^b	NR	P	NR	P/L	NR
EDB ^b (ethylene dibromide)	P	P	P	P	R
Fenaminosulf	R	R	NR	R	NR
Fluchloralin ^b	NR	NR	R	NR	NR
Kepone (Chlordecone)	NR	P	RS	NR	NR

<u>Pesticide</u>	<u>Chile</u>	<u>Costa Rica</u>	<u>Dominican Republic</u>	<u>Guatemala</u>	<u>Mexico</u>
Mirex	NR	NR	NR	R	NR
Monuron TCA (trichloroacetic acid)	NR	NR	NR	NR	NR
Perfluidone ^b	NR	NR	NR	NR	NR
Potassium permanganate	NR	NR	NR	NR	NR
Silvex ^b	NR	P	NR	NR	NR
2,4,5-T (2,4,5-trichlorophenoxy-acetic acid)	NR	P	P/L	P/L	NR
Thiophanate	NR	NR	NR	NR	NR
Toxaphene ^b	NR	P	NR	P/L	R

Legend

NR = Not registered for use

P = Prohibited or suspended

P/L = Prohibited; not removed from country's list of registered pesticides

R = Registered for use

RS = Restricted

^aEPA has action levels for this pesticide.^bEPA has a tolerance(s) for this pesticide.^cEPA has tolerances and action levels for this pesticide.^dThe Dominican Republic permits use only for termites.^eMexico's health ministry uses DDT to control malaria.

Source: EPA's Office of Pesticide Programs' Oct. 25, 1988, revised list of canceled and/or suspended chemicals; official pesticide registration documents, statutes, resolutions, and proclamations from five countries; 40 C.F.R. parts 180 and 185 (revised as of July 1, 1989); and The Pesticide Chemical News Guide (Washington, D.C.: Louis Rothschild, Jr.), June 1, 1988.

Status in Five Countries of Pesticides on EPA's October 25, 1988,
Revised List of Voluntarily Canceled Chemicals of Significance

<u>Pesticide</u>	<u>Chile</u>	<u>Costa Rica</u>	<u>Dominican Republic</u>	<u>Guatemala</u>	<u>Mexico</u>
Acrylonitrile	NR	NR	NR	NR	NR
Arsenic trioxide	NR	NR	NR	NR	NR
Benzene (all products)	NR	NR	NR	NR	NR
BHC (benzene hexachloride)	NR	NR	NR	P	R
Captafol ^a	R	R	R	R	R
Carbon tetrachloride	NR	NR	R	NR	NR
Chloranil	NR	NR	NR	NR	NR
Copper acetoarsenite	NR	NR	NR	NR	NR
Copper arsenate (basic)	NR	NR	NR	NR	NR
Cyhexatin ^a	R	R	NR	NR	R
Endrin ^b	P	R	P/L	P	NR
EPN ^a (O-ethyl O-p-nitrophenyl phenylphosphonothioate)	NR	NR	R	R	R
Erbon	NR	NR	NR	NR	NR
Hexachlorobenzene	NR	NR	NR	NR	NR
Lead arsenate ^a	NR	NR	NR	NR	NR
Monuron	NR	NR	NR	NR	NR
Nitrofen (TOK ^c)	NR	P	R	NR	NR
OMPA (Octamethylpyro- phosphoramidate)	NR	NR	NR	NR	NR

<u>Pesticide</u>	<u>Chile</u>	<u>Costa Rica</u>	<u>Dominican Republic</u>	<u>Guatemala</u>	<u>Mexico</u>
Pentachlorophenol (some nonwood uses continue)	NR	NR	NR	RS	R
Perthane	NR	NR	NR	NR	NR
Phenarsazine chloride	NR	NR	NR	NR	NR
Ronnel ^a	NR	NR	NR	NR	NR
Safrole	NR	NR	NR	NR	NR
Sodium arsenite ^a	NR	NR	NR	NR	NR
Strobane	NR	NR	NR	NR	NR
Trysben	NR	NR	NR	NR	NR

Legend

NR = Not registered for use

P = Prohibited

P/L = Prohibited; not removed from country's list of registered pesticides

R = Registered for use

RS = Restricted

^aEPA has a tolerance(s) for this pesticide.^bEPA has action levels for this pesticide.^cTrade name.

Source: EPA's Office of Pesticide Programs' Oct. 25, 1988, revised list of voluntarily canceled chemicals of significance; official pesticide registration documents, statutes, resolutions, and proclamations from five countries; 40 C.F.R. parts 180 and 185 (revised as of July 1, 1989); and The Pesticide Chemical News Guide, June 1, 1988.

Status in Five Countries of Pesticides That Do Not
Have EPA Tolerances Established for the Active Ingredients

<u>Pesticide</u>	<u>Chile</u>	<u>Costa Rica</u>	<u>Dominican Republic</u>	<u>Guatemala</u>	<u>Mexico</u>
Alachlor ^a + Nudolin	NR	NR	R	NR	NR
Aldrin ^b	R ^c	NR	NR	NR	NR
Amitrole	NR	NR	R	NR	NR
Azamethiphos	NR	NR	NR	NR	R
Azinphos-ethyl	R	NR	R	NR	NR
Azocyclotin ^d	R	NR	NR	NR	NR
BHC (benzene hexachloride) ^e	NR	NR	NR	NR	R
Bioallethrin	NR	R	NR	NR	NR
Bitertanol ^d	R	NR	NR	NR	R
Blasticidin-S	NR	R	R	NR	NR
BPMC (Fenobucarb)	NR	R	NR	NR	NR
Brodifacoum	NR	R	NR	R	R
Bromadiolone	NR	NR	NR	NR	R
Bupirimate	R	NR	NR	NR	NR
Buprofezin	NR	NR	NR	R	NR
Buthidazole	NR	NR	R	R	NR
Butocarboxim	NR	NR	NR	R	NR
Caldo Bordeles + Cufranab	NR	NR	R	NR	NR
Captan ^f + Metoxicloro	NR	NR	R	NR	NR
Carbaxim + Captan ^f	NR	NR	R	NR	NR

APPENDIX III

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<u>Pesticide</u>	<u>Chile</u>	<u>Costa Rica</u>	<u>Dominican Republic</u>	<u>Guatemala</u>	<u>Mexico</u>
Cartap ^d	NR	R	NR	NR	NR
Chlordane ^g	NR	R	R	R ^c	R
Chlordane ^g + Pentacl	NR	R	NR	NR	NR
Chlorophacinone	NR	R	R	NR	NR
Chlorotoluron	NR	NR	NR	NR	R
Ciometrinilo	NR	R	NR	NR	NR
Citrolina	NR	NR	NR	NR	R
Colecalciferol	NR	NR	NR	NR	R
Coumachlor	NR	NR	NR	NR	R
Coumachlor + Sulfamilamide	NR	NR	R	NR	NR
Coumatetralyl	NR	R	R	R	R
Cyfloxylate	NR	NR	R	NR	NR
Cymoxanil + Mancozeb ^f	NR	NR	R	NR	NR
DBCP (dibromochloropropane)	NR	NR	R ^c	R ^c	NR
Demeton-(O or S)- methyl	R	R	R	R	R
Dichlofluanid ^d	R	R	NR	R	NR
Dieldrin ^b	NR	NR	R ^c	NR	NR
Dienochlor	R	R	R	R	R
Dietanolamina	NR	R	NR	NR	NR
Difenacoum	NR	NR	R	NR	NR
Dimethirimol	NR	NR	R	NR	NR

APPENDIX III

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<u>Pesticide</u>	<u>Chile</u>	<u>Costa Rica</u>	<u>Dominican Republic</u>	<u>Guatemala</u>	<u>Mexico</u>
Dimethylamine	NR	R	NR	R	NR
Dimethyl urea	NR	NR	R	R	NR
Dinobuton	NR	NR	R	NR	NR
Diocil Sulfosun.	NR	R	NR	NR	NR
Diphacinone	NR	NR	R	R	R
Dodemorph	NR	R	R	R	R
Edifenphos ^d	NR	R	R	R	R
Epibloc	NR	NR	NR	R	NR
Ethidimuron	NR	NR	NR	NR	R
Ethiofencarb ^d	R	NR	NR	NR	NR
Fenaminosulf	R	R	NR	R	NR
Fentin acetate	R	R	R	R	R
Flamprop-methyl	NR	NR	NR	NR	R
Flocoumafen	NR	NR	NR	R	NR
Flubenzimine	R	NR	NR	NR	NR
Flumetrina	NR	NR	NR	NR	R
Fluorodifen	NR	NR	R	NR	NR
Fluosilicato	NR	NR	R	NR	NR
Flutriafol	R	NR	NR	NR	NR
Fonofos	NR	NR	R	NR	NR
Glufosinate	NR	NR	NR	NR	R
Guazatine ^d	NR	NR	R	NR	NR
Hexaconazole	NR	NR	NR	R	NR
IBP (Iprobenfos)	NR	R	NR	NR	NR

APPENDIX III

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<u>Pesticide</u>	<u>Chile</u>	<u>Costa Rica</u>	<u>Dominican Republic</u>	<u>Guatemala</u>	<u>Mexico</u>
Ioxynil + 2,4-D ^f	NR	R	NR	NR	NR
Ioxynil octanoate	NR	NR	R	NR	NR
Isazofos	NR	R	R	R	NR
Isoforona	NR	R	NR	NR	NR
Isoproturon	NR	NR	NR	NR	R
Kasugamycin	R	R	R	R	R
MAFA	NR	R	NR	R	NR
MCCEP	NR	NR	R	NR	NR
Mephosfolan	NR	R	R	R	NR
Metaldehyde ^h + Tri. Arsenate	NR	NR	R	NR	NR
Methabenzthiazuron + Amitrole	NR	R	NR	NR	NR
Metham-sodium	NR	NR	R	R	R
Methyl isothiocyanate	NR	NR	NR	NR	R
Mirex	NR	NR	NR	R	NR
Naptalam	NR	NR	R	NR	NR
Nitrofen (DCP)	NR	NR	R	NR	NR
Ofurace	NR	R	NR	NR	NR
Omethoate ^d	R	NR	NR	NR	R
Oxycarboxin	NR	R	R	R	R
Penconazole	NR	NR	NR	R	NR
Penconazole + Mancozeb ^f	R	NR	NR	NR	NR
Pentachlorophenol	NR	NR	NR	R	R

APPENDIX III

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<u>Pesticide</u>	<u>Chile</u>	<u>Costa Rica</u>	<u>Dominican Republic</u>	<u>Guatemala</u>	<u>Mexico</u>
Phenothiol	NR	R	NR	NR	NR
Phenothrin ⁱ	NR	R	NR	NR	NR
Phenthoate ^d	R	NR	R	R	R
Phoxim ^d	R	R	R	R	R
Piperophos + Dimethametryn	NR	R	R	R	NR
Pirimicarb ^d	R	R	NR	R	R
Pirimidil	NR	NR	R	NR	NR
Propamocarb ^d	NR	NR	R	R	NR
Prothiofos	R	R	NR	R	NR
Prothoate	NR	NR	R	NR	NR
Pyracarbolid	NR	NR	NR	R	NR
Pyrazophos	R	R	R	NR	R
Quinalphos	R	NR	NR	NR	NR
Sal Sodio Disp	NR	R	NR	NR	NR
Sal Sodio Naft.	NR	R	NR	NR	NR
Tetracloruro de Carbono + Acrylo	NR	NR	R	NR	NR
Tetramethrin	NR	R	NR	NR	R
Thiometon ^d	R	NR	NR	NR	NR
Tiocarbazil	NR	NR	R	NR	NR
Tolclofos-methyl	NR	R	NR	NR	NR
Triazophos ⁱ	NR	NR	R	R	R
Triflumuron	R	NR	NR	NR	R
Xiligen	NR	R	NR	NR	NR

Legend

NR = Not registered for use

R = Registered for use

^aEPA has tolerances for this chemical, but not for combination shown.

^bEPA has action levels and Codex has maximum residue limits (MRLs) for this chemical.

^cThis pesticide is on the country's registration list but has been officially prohibited.

^dCodex has MRLs for this chemical.

^eEPA has action levels for this chemical.

^fEPA has tolerances and Codex has MRLs for this chemical.

^gEPA has action levels and Codex has extraneous residue limits for this chemical.

^h40 C.F.R. 185.4025 allows preharvest use of this chemical on strawberries, but sets a zero tolerance for residues.

ⁱCodex has temporary MRLs for this chemical.

Source: Government pesticide registration lists for Chile, Costa Rica, the Dominican Republic, Guatemala, and Mexico for 1987 or 1988. EPA verified in 1989 that, according to its records, the pesticides (except as shown in the footnotes) do not have tolerances established for any food use in the United States. Where possible, English spellings and other information on chemicals were obtained from the Code of Federal Regulations, title 40 parts 180 and 185 (revised as of July 1, 1989); Farm Chemicals Handbook (Willoughby, Ohio: Meister Publishing Co.), 1987; Glossary of Pesticide Chemicals, FDA, Sept. 1988; Guide to Codex Maximum Limits for Pesticide Residues, Part 2, CAC/PR 2 - 1988, Apr. 1988, issued by The Netherlands; The Pesticide Chemical News Guide, Reo, P.D., and M.B. Duggan, eds. (Washington, D.C.: Louis Rothschild, Jr.), June 1, 1988; and The Pesticide Manual, A World Compendium, 8th ed., C.R. Worthing, ed. (Thornton Heath: The British Crop Protection Council), 1987.