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Report to the Chairman, Committee on Agriculture, House of Representatives

September 1994

U.S.-CHILEAN TRADE

Pesticide Standards and Concerns Regarding Chilean Sanitary Rules

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General Government Division

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The Honorable E (Kika) de la Garza
Chairman, Committee on Agriculture
House of Representatives

Dear Mr. Chairman:

This report responds to your request that we compare U.S. and Chilean pesticide standards and enforcement and review Chilean sanitary and phytosanitary (animal and plant health) rules to determine if they restrict agricultural imports from the United States. Specifically, we (1) compared U.S. and Chilean processes for registering pesticides, setting pesticide residue tolerances (maximum legal limits) on foods, and monitoring compliance with these tolerances; and (2) examined whether Chilean sanitary and phytosanitary rules restrict potential U.S. agricultural exports. As requested, we also describe the structure of Chile's environmental regulatory arrangements. In addition, we discuss rules for importing Monterey pine logs from Chile and the risks that residues of the pesticide methyl bromide may pose to U.S. workers who handle these logs.

As you requested, we plan no further distribution of this report until 30 days from its issue date unless you publicly announce its contents earlier. At that time, we will send copies to the Secretary of Agriculture; the U.S. Trade Representative; the Administrator of the Environmental Protection Agency; the Commissioner of the Food and Drug Administration; the Embassy of Chile; and other interested parties. Copies will also be made available to others on request.

Please contact me on (202) 512-4812 if you have any questions concerning this report. The major contributors to this report are listed in appendix IV.

Sincerely yours,

Allan I. Mendelowitz

Allan I. Mendelowitz, Managing Director
International Trade, Finance, and Competitiveness

Executive Summary

Purpose

The United States and Chile are preparing to negotiate a free trade agreement that would eliminate tariffs and other import barriers and should promote increased bilateral trade. Agricultural products account for a significant portion of U.S.-Chilean bilateral trade, although Chile exports far more agricultural products to the United States than it imports from this country. In view of the extensive worldwide use of pesticides in fruit and vegetable production, the Chairman of the House Committee on Agriculture requested that GAO (1) compare U.S. and Chilean processes for registering pesticides, setting pesticide residue tolerances (maximum legal limits) on foods, and monitoring compliance with these tolerances; and (2) determine whether Chilean sanitary and phytosanitary (animal and plant health) rules restrict potential U.S. agricultural exports.

Background

Recent administration and congressional initiatives indicate a willingness on the part of the United States to enter into negotiations leading to a free trade agreement with Chile. Since fresh produce accounts for a significant share of Chilean exports to the United States, questions have arisen about Chile's pesticide standards and enforcement.

In June 1992, GAO issued a report comparing U.S. and Mexican pesticide standards and enforcement.[1] That report was prepared in response to congressional concern that pesticide use may increase and that residue levels on produce may exceed U.S. limits if growers attempt to maximize production with the new opportunity for agricultural exports.

Results in Brief

The United States and Chile appear to have relatively open, or transparent, processes for setting pesticide standards. There are differences between the two countries' processes for registering pesticides, setting pesticide tolerances, and monitoring pesticide residues in foods, but these differences have not impeded agricultural trade. Certain pesticides that are either banned or not registered in the United States are registered in Chile, and vice versa. While the United States sets pesticide residue tolerances independently, Chile accepts internationally established pesticide tolerance standards. In the United States, there is routine monitoring for pesticide residues on all types of domestic and imported foods, but in Chile only certain dairy products and samples of mothers' milk are monitored on a routine basis. Nevertheless, Chilean exporters have

[1]Pesticides: Comparison of U.S. and Mexican Pesticide Standards and Enforcement (GAO/RCED-92-140, June 17, 1992).

established extensive controls to ensure that exports to the United States comply with U.S. pesticide residue tolerances.

On the other hand, certain Chilean restrictive sanitary or phytosanitary rules, or the lack thereof, impede or have the potential to impede imports of some agriculture and related products from the United States. Such products cannot be imported in the absence of Chilean regulations specifying entry terms. Chile's process for establishing sanitary and phytosanitary regulations is not always transparent, according to U.S. officials. Chile also lacks several formal procedures that would facilitate efforts to gain access to the Chilean market for U.S. agricultural commodities. The U.S. Trade Representative and officials of the U.S. Department of Agriculture have been working, with some success, to resolve these issues in advance of formal negotiations on a free trade agreement.

Principal Findings

Pesticide Registration, Tolerance-Setting, and Monitoring in the United States and Chile

Both the United States and Chile have established laws and regulations that define how pesticide standards are set. These laws and regulations clearly define the processes that must be followed in each country to register pesticides, set residue tolerances, and monitor residues on foods. U.S. and Chilean officials have not raised any pesticide issues that affect bilateral trade.

Although neither U.S. nor Chilean pesticide standards pose barriers to agricultural trade at this time, there are differences in the processes followed in each country to register pesticides, set tolerances, and monitor pesticide residues in commercial trade. There are differences between the United States and Chile in the pesticides that are registered. The United States bans or has not registered certain pesticides that are registered in Chile. U.S. officials responsible for monitoring pesticide residues on foods said that these differences do not affect trade nor impede the ability of Chilean produce exporters to comply with U.S. pesticide tolerance standards. Moreover, Chilean officials explained that they register pesticides that are not registered in the United States because Chile exports crops to markets other than the United States, where these pesticides are allowed.

Tolerance-setting practices in the United States and Chile also differ, because the United States establishes pesticide residue tolerances independently, while Chile's pesticide tolerances are based on internationally established standards. Sometimes these tolerance levels are not the same. Also, certain pesticides have been assigned tolerances by international authorities but are not registered in the United States and have no U.S. tolerances. The reverse is also true.

Finally, there are differences between U.S. and Chilean pesticide monitoring and enforcement activities. Monitoring in the United States is undertaken on a routine basis and entails sampling and analysis of imported as well as domestic foods by federal and state agencies. In contrast, in Chile there is no routine monitoring of imported food for pesticide residues. Only specific domestic dairy products and samples of mothers' milk are subject to recurrent monitoring in Chile.

While Chilean authorities do not monitor pesticide residues on imported foods, Chilean exporters have established extensive controls to ensure that exports comply with U.S. pesticide residue tolerances. In fact, U.S. officials point to Chilean exporters' efforts for ensuring compliance with U.S. pesticide tolerances as a model for other exporters of horticultural commodities to the United States. According to Food and Drug Administration data, Chile's violation rates for pesticide residue tolerances averaged 1.7 percent during the period 1989-1993. Other countries that export agricultural commodities to the United States averaged between 3.0 and 5.0 during a comparable period.

How Sanitary and Phytosanitary Issues Affect U.S.-Chilean Trade

U.S. officials acknowledge that Chile has a right to protect its agricultural resources from the introduction of pests and diseases. Nevertheless, they say that Chile's sanitary and phytosanitary requirements have restricted certain U.S. agricultural exports. Specifically, U.S. fruits, poultry meat, and salmonid (various salmon and trout species) eggs have been or could be affected by Chilean sanitary or phytosanitary rules or the lack thereof. Such rules define the entry requirements that permit imports of these commodities. In the absence of such rules for fresh fruit and vegetables, imports of these commodities from the United States have in effect been banned from the Chilean market. Also, Chile has established a sanitary regulation on poultry meat imports that U.S. officials believe is unduly restrictive and constitutes a nontariff trade barrier. Further, Chilean authorities have proposed sanitary regulations for live salmonid egg imports that raised concerns about market access among U.S. exporters;

however, Chilean officials have indicated a willingness to revise the regulations to address some of these concerns.

According to U.S. officials GAO interviewed, Chile does not always establish sanitary and phytosanitary regulations in a transparent manner. They argue that it is sometimes not apparent to U.S. plant and animal health authorities and U.S. exporters what steps they must follow to meet Chilean sanitary or phytosanitary requirements and gain access to the Chilean market.

Chile also lacks several formal procedures for establishing sanitary and phytosanitary regulations. Specifically, Chile does not have (1) a standardized system for setting entry rules for fresh fruit and vegetable imports; (2) a quarantine treatment protocol to identify appropriate measures that would address concerns about the potential introduction of hazardous pests; (3) a formal procedure for interested parties, including foreigners, to appeal regulatory decisions or provide foreign-generated test data to contest decisions; and (4) a formal process for hearing public comment on import regulations. In addition, U.S. officials have expressed concern that Chile does not always officially announce proposed rule changes before they are promulgated.

Officials of the U.S. Trade Representative and Department of Agriculture have been working with Chilean officials since at least 1991 to attempt to resolve these issues in advance of U.S.-Chile negotiations to seek a free trade agreement. They have made some progress, for example, in developing entry rules and clarifying Chilean phytosanitary concerns for several U.S. fresh fruit crops. Also, Chilean authorities have indicated a willingness to accept comments from interested parties on proposed entry rules for salmonid egg imports. However, the two sides have not made progress on the issue of poultry meat.

Recommendations

GAO is making no recommendations in this report.

Agency Comments

GAO discussed the facts and analysis presented in the report with responsible officials of the U.S. Department of Agriculture, the U.S. Trade Representative, the Food and Drug Administration, and the Environmental Protection Agency. Their views were in the form of suggested changes to GAO's descriptions of various processes, and were considered in completing the report.

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Abbreviations

APHIS	Animal and Plant Health Inspection Service
BKD	bacterial kidney disease
CONAMA	Comision Nacional del Medio Ambiente (National Commission on the Environment)
DDT	dichloro diphenyl trichlorethane
EPA	Environmental Protection Agency
FAS	Foreign Agricultural Service
FDA	Food and Drug Administration
FSIS	Food Safety and Inspection Service
GATT	General Agreement on Tariffs and Trade
IHN	infectious hematopoietic necrosis
IPN	infectious pancreatic necrosis
ISP	Instituto de Salud Pública (Institute of Public Health)
NAFTA	North American Free Trade Agreement
OSHA	Occupational Safety and Health Administration
OMV	onchorhynchus masou viral
SAG	Servicio Agrícola y Ganadero (Agriculture and Livestock Service)
SERNAP	Servicio Nacional de Pesca (National Fisheries Service)
USDA	U.S. Department of Agriculture
USTR	U.S. Trade Representative
VHS	viral hemorrhagic septicimia

Introduction

A free trade agreement between the United States and Chile[1] may offer opportunities for expanding U.S. agricultural exports. While U.S. agricultural exports to Chile have increased in recent years, U.S. agricultural trade with Chile is still characterized by an imbalance in Chile's favor. Although reductions in Chilean tariffs could help reduce this imbalance, it is due primarily to factors, such as the close proximity of competing countries, that are unrelated to government trade policy. On the other hand, in an earlier report[2] we described certain Chilean agricultural sector policies, such as price support mechanisms, that represent significant barriers to U.S. agricultural exports.

Background

Recent initiatives from the administration and Congress have focused attention on the potential for a free trade agreement between the United States and Chile. Such an agreement would aim to reduce tariffs and nontariff (such as licensing requirements, quotas, etc.) barriers and encourage the expansion of U.S. agricultural exports. As the United States and Chile consider whether to enter into free trade negotiations, Congress has expressed concern about the impact of pesticide, sanitary, and phytosanitary (animal and plant health) regulations on bilateral agricultural trade.

A bill referred to as the Chile Free Trade Agreement Negotiating Act of 1994 (H.R. 4375) was introduced by Representative Richard Gephardt and others in May 1994 to clear the way for the President to begin formal negotiations for a free trade agreement with Chile. Also, in a report to the President and Congress in May 1994, the Office of the U.S. Trade Representative (USTR) indicated that the United States is committed to a free trade agreement with Chile. And the United States has already concluded framework agreements on trade and investment with Chile to pave the way for broader free trade discussions.

According to a report by the U.S. Agricultural Attaché in Chile, reductions in Chilean tariffs resulting from a bilateral free trade agreement would encourage the expansion of several U.S. agricultural exports, such as cotton, soybean oil, soy meal, dry milk, and meat. Other commodities that may benefit from reduced tariffs are wheat, vegetable oils, sugar, and corn.

[1]Both the United States and Chile were undecided as of July 1994 on whether to negotiate a bilateral agreement or to take steps needed for Chile's accession to the North American Free Trade Agreement (NAFTA).

[2]See U.S.-Chilean Trade: Developments in the Agriculture, Fisheries, and Forestry Sectors (GAO/GGD-93-88, Apr. 1, 1993).

U.S.-Chilean Agricultural Trade Patterns

Since 1989, U.S. agricultural exports to Chile have grown substantially and been diversified. The United States ranks among Chile's top agricultural suppliers. However, Chilean agricultural exports to the United States still far exceed imports from the United States (see table 1.1). About half of Chile's total agricultural exports go to the United States.

Table 1.1: Value of U.S.-Chilean Bilateral Agricultural Trade, 1989-93

U.S. dollars in millions

Year	U.S. exports to Chile	Chilean exports to the United States
1989	$36.9	$494.9
1990	63.7	625.9
1991	72.0	603.8
1992	93.6	685.3
1993	112.0	734.5

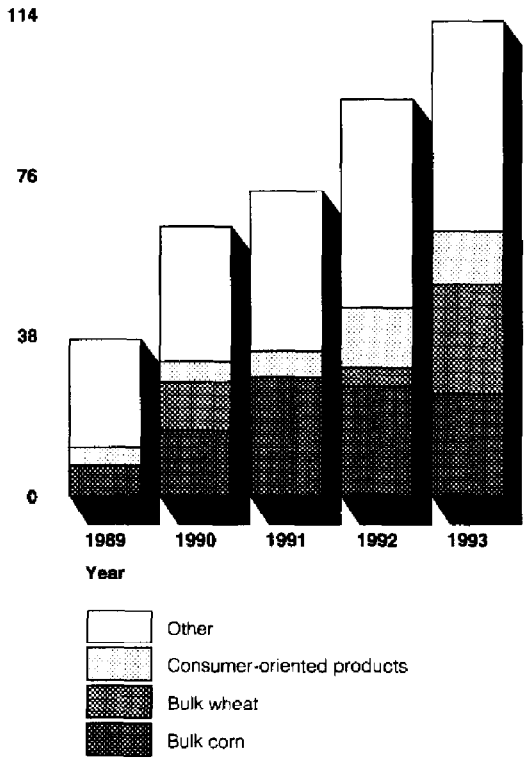
Note: Agricultural trade includes agriculture, livestock, fisheries, and forestry products.

Source: U.S. Bureau of the Census trade data.

U.S. Exports to Chile

Data on U.S. agricultural trade in recent years indicate a trend toward expansion and diversification of U.S. agricultural exports to Chile (see fig. 1.1). In 1993, the United States exported $112 million in agricultural products to Chile, an increase of 204 percent over 1989. Furthermore, the U.S. share of Chile's market for imported agricultural commodities has grown from 13 percent in 1991 to 16 percent in 1993, according to the U.S. Agricultural Attaché in Chile. The United States ranks among Chile's top agricultural suppliers and is the principal source of three of Chile's top agricultural imports: edible corn, sweetened condensed milk, and prepared foods (see table 1.2).

Figure 1.1: U.S. Agricultural Exports to Chile, 1989-93



Note Agricultural exports include agriculture, forestry, and fisheries products.

Source U.S. Bureau of the Census trade data.

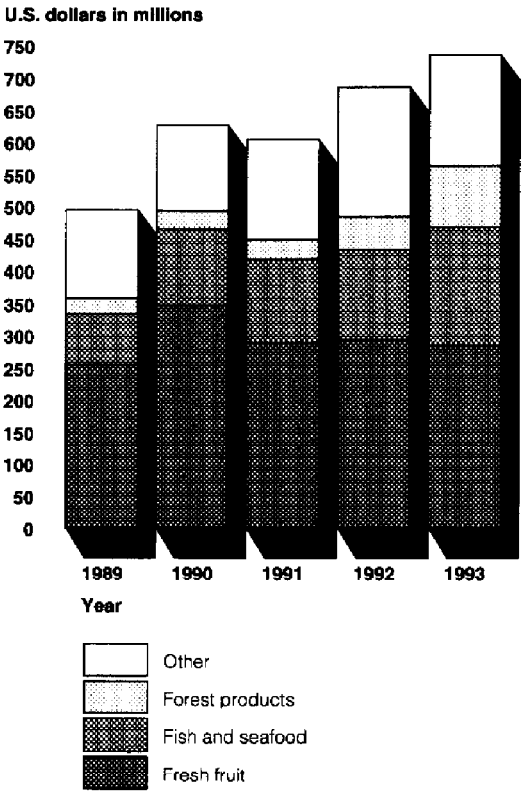
According to U.S. officials, the increased purchasing power of Chilean citizens is one reason for the recent expansion of U.S. exports. Other factors contributing to the growth in agricultural exports include new opportunities for wheat and rice. Wheat exports to Chile reached $26 million in 1993, up from zero in 1989 and 1991. Corn was the principal U.S. export commodity to Chile until 1993, when it was surpassed by wheat.

Chilean Exports to the United States

Chilean agricultural exports to the United States far exceed imports from the United States. In 1993, Chile exported $735 million in agricultural

products to the United States, making it one of the major suppliers of U.S. agricultural imports (see fig. 1.2). Chile is the principal supplier of many fresh fruit commodities to the United States, including table grapes, peaches and nectarines, plums, and pears. About half of Chile's total agricultural exports go to the United States.

Figure 1.2: Chilean Agricultural Exports to the United States, 1989-93



Note: Agricultural exports include agriculture, forestry, and fisheries products.

Source: U.S. Bureau of the Census trade data.

Factors Unrelated to Government Policy That Limit U.S. Exports to Chile

Certain demographic, economic, and geographic factors that are unrelated to government trade policy limit U.S. agricultural exports to Chile. With only 14 million inhabitants, Chile offers a much smaller market than the United States. Chile is also still a developing country with limited purchasing power. In addition, Chile and its neighboring countries are

efficient agricultural producers, and all share a transportation cost advantage over the United States. For example, Argentina is the leading supplier of 8 of Chile's top 20 agricultural imports. Paraguay and Brazil also figure prominently among Chile's top suppliers of agricultural commodities (see table 1.2).

Table 1.2: Top 20 Chilean Agricultural Imports and Major Suppliers, 1993

U.S. dollars in millions

Commodity	Value	Major supplier
Edible wheat	$60.1	Canada
Raw soy oil	46.9	Argentina
Edible corn	43.2	United States
Frozen beef	38.5	Argentina
Soy cake	36.0	Paraguay
Fresh or chilled beef	35.5	Argentina
Bananas	35.1	Ecuador
Cotton	32.0	Paraguay
Powdered milk	29.0	Ireland
Sunflower oil	20.1	Argentina
Sweetened condensed milk	17.9	United States
Bleached wheat flour	17.2	Canada
Black tea	16.0	Argentina
Raw coffee	12.0	Brazil
Maté tea	10.6	Brazil
Sorghum	9.7	Argentina
Prepared foods	9.6	United States
Bleached rice	9.3	Uruguay
Combed wool	9.2	Argentina
Cowhides & skins	5.1	Argentina

Source: ProChile, Chilean Government Statistical Data Bureau.

Chilean Agricultural Sector Policies That Limit U.S. Exports

Chile is recognized by USTR as having a relatively liberal trade regime. However, in April 1993, we reported that several Chilean agricultural sector policies represented trade barriers to U.S. agricultural exports.

For example, Chile has imposed "price bands" on various agricultural imports to shield Chilean producers from price fluctuations in international market prices. These "price support mechanisms," or variable import levies, are imposed on wheat, wheat flour, vegetable oils,

and sugar when their prices fall below a minimum price level set by the government. The price bands are imposed in addition to Chile's standard 11-percent tariff rate and therefore represent a burdensome tax on U.S exports of these commodities.

Chile also maintains a system of "minimum customs value requirements" that constitutes a barrier to U.S. agricultural exports. Under this policy, Chilean authorities temporarily set minimum import prices for valuing imports of certain commodities in response to low world prices. Tariffs are assessed on this higher price, thereby raising the effective tariff above the amount that would have been imposed on the lower actual transaction price. In February 1993, Chile announced minimum customs values for rice and corn. In the past, Chile has also imposed minimum customs values on spun cotton, milk, and wheat flour.

In addition, Chile grants preferential tariffs on certain agricultural commodities from fellow members of the Latin American Association for Integration. Members of this association receive as much as 30- to 50-percent reductions on tariffs on their oilseed and cotton exports to Chile. Since the United States does not enjoy these tariff preferences, its products are at a competitive disadvantage compared to those of the association.

Objectives, Scope, and Methodology

Given the prospects of a free trade agreement between the United States and Chile, and the impact that such an agreement may have on bilateral agricultural trade, the Chairman of the House Committee on Agriculture asked us to (1) compare U.S. and Chilean processes for registering pesticides, setting pesticide residue tolerances on foods, and monitoring compliance with these tolerances; and (2) determine whether Chilean sanitary and phytosanitary rules restrict potential U.S. agricultural exports. The Chairman also asked us to describe the structure of Chilean environmental regulatory arrangements (see app. I) as well as rules for importing Monterey pine logs from Chile and the risks that residues of the pesticide methyl bromide may pose to U.S. workers who handle these logs (see app. II).

For information on pesticide registration, tolerance-setting, and monitoring procedures in the United States, we referred to our past

reports.[3] To update our information on these processes, we interviewed Environmental Protection Agency (EPA) officials from the Office of Pesticide Programs, Registration Division; and Food and Drug Administration (FDA) officials from the Office of Regulatory Affairs.

To learn about pesticide registration, tolerance-setting, and monitoring procedures in Chile, we met with officials from the Chilean Agriculture and Livestock Service (Servicio Agrícola y Ganadero—SAG), the Ministry of Health, and the Public Health Institute. We obtained and reviewed Chilean legislation and regulations governing these processes. We also consulted U.S. officials familiar with Chile's pesticide regulatory arrangements, and we referred to our past work in this area.[4]

We met with representatives of Chile's Exporters Association and the Chilean Fruit Growers Federation to learn about Chilean efforts to meet U.S. pesticide tolerance requirements. We discussed with FDA officials Chile's violation record for pesticide tolerances and its pesticide practices. We also reviewed data provided by FDA on surveillance and compliance violation rates for both the United States and Chile.

To determine whether Chilean sanitary and phytosanitary rules restrict U.S. agriculture and fisheries exports, we interviewed officials of USTR, the Department of Agriculture's Foreign Agricultural Service (FAS) and its Animal and Plant Health Inspection Service (APHIS), and the Department of the Interior's Fish and Wildlife Service. We obtained and reviewed documentation provided by some of these agencies on Chilean policies that have impeded or have the potential to impede U.S. agriculture and fisheries exports. We reviewed the impediments identified by these agencies with representatives of concerned U.S. private sector groups, including the Agriculture Technical Advisory Committee, the U.S. Poultry and Egg Export Council, and the Washington Fish Growers[5] Association. We discussed with Chilean National Fisheries Service (Servicio Nacional de Pesca—SERNAP) and SAG officials the issues raised by U.S. government and private sector officials regarding Chile's sanitary and phytosanitary

[3]See Pesticides: A Comparative Study of Industrialized Nations' Regulatory Systems (GAO/PEMD-93-17, July 30, 1993); Pesticides: Comparison of U.S. and Mexican Pesticide Standards and Enforcement (GAO/RCED-92-140, June 17, 1992); and Food Safety and Quality: Who Does What in the Federal Government (GAO/RCED-91-19A & B, Dec. 21, 1990).

[4]See Food Safety and Quality: Five Countries' Efforts to Meet U.S. Requirements on Imported Produce (GAO/RCED-90-55, Mar. 22, 1990).

[5]The Washington Fish Growers Association is a group of farmers or producers of salmon and trout in Washington State.

regulations. Subsequently, we examined with APHIS and FAS officials the arguments made by Chilean officials regarding these issues.

To understand the structure of Chilean environmental regulatory arrangements, we met with the Director of Chile's National Commission on the Environment (CONAMA). We reviewed legislation establishing CONAMA and documents provided by CONAMA regarding its activities. We also coordinated our research in this area with EPA's Office of the General Counsel.

We met with USDA's Forestry Service and APHIS officials to learn about the rules for importing Monterey pine logs from Chile. We discussed with officials from APHIS, EPA, and the Department of Labor's Occupational Safety and Health Administration (OSHA) the potential risks that residues of the pesticide methyl bromide may pose to U.S. workers who handle these logs. We reviewed data provided by OSHA on the legal and recommended exposure levels for methyl bromide, and APHIS' Plant Protection and Quarantine Treatment Manual with directions on fumigation procedures for methyl bromide.

Our report compares different processes for pesticide registration, tolerance-setting, and monitoring in the United States and Chile. However, we did not evaluate the implementation or effectiveness of these processes in either country.

We did our work from March through August 1994 in Washington, D.C., and Santiago, Chile, in accordance with generally accepted government auditing standards.

In a series of exit interviews in July and August 1994, we discussed the facts and analysis presented in the report with responsible officials of EPA, FDA, the Interior Department's Fish and Wildlife Service, OSHA, the U.S. Department of Agriculture (USDA), and USTR.[6] We considered their comments in preparing the final report. This report contains no conclusions or recommendations, and therefore the officials' comments were in the form of suggested changes to our descriptions of various processes.

[6]The principal officials involved in these discussions included the GAO Liaison, Office of Pesticide Programs, EPA; the Associate Commissioner for Legislative Affairs, FDA; the National Aquaculture Coordinator, Fish and Wildlife Service; the Program Analyst, Office of Congressional Relations, OSHA; the Biotechnology Trade Officer, International Services, APHIS; the Compliance Review Staff Director, FAS; and the Deputy Assistant U.S. Trade Representative for Latin America and the Caribbean.

Comparison of Pesticide Registration, Tolerance-Setting, and Monitoring Processes in the United States and Chile

Both the United States and Chile appear to have relatively open or transparent processes for setting pesticide standards. However, there are differences between the two countries in registering pesticides, setting pesticide tolerances, and monitoring pesticide residues in foods. Some pesticides that are either banned or not registered in the United States are registered in Chile. The United States sets pesticide residue tolerances independently. In contrast, Chile accepts internationally established pesticide tolerance standards. In the United States there is routine monitoring of pesticide residues on all types of domestic and imported foods, but only certain dairy products and samples of mothers' milk are monitored on a routine basis in Chile. None of these differences appear to affect trade nor impede the ability of Chilean produce exporters to comply with U.S. pesticide tolerance standards. FDA and Chilean officials said that Chilean exporters have established controls to ensure that exports to the United States conform with the tolerance levels that the United States sets for pesticide residues.

Pesticide Standards and Enforcement

The United States and Chile appear to have relatively open processes for setting pesticide standards. Neither U.S. nor Chilean pesticide standards pose barriers to agricultural trade at this time. Since Chile does not routinely monitor pesticide residues on imported food, Chilean pesticide tolerances have not emerged as a concern for U.S. food exports to Chile. Similarly, U.S. pesticide residue tolerances do not present a barrier to Chilean agricultural exports, because they are generally able to meet U.S. standards.

Both countries have established laws and regulations that define how such standards are set, including processes that must be followed to register pesticides, set residue tolerances, and monitor residues on foods. While there are certain differences in each of these processes between the two countries, U.S. officials responsible for monitoring pesticide residues on foods emphasized that past experience with their Chilean counterparts has been very positive. FDA officials explained that there are currently no efforts to harmonize U.S. and Chilean differences in this area, because Chilean pesticide usage controls on U.S.-destined crops are sufficient to guarantee with a high degree of confidence that violations of the U.S. tolerances will not occur. U.S. officials also noted that current U.S. pesticide tolerances would still apply to food imported from Chile even under a free trade agreement.

Pesticide Registration Processes

In accordance with U.S. federal law, EPA is responsible for registering pesticides for use in the United States. In Chile, SAG has responsibility for registering pesticides used in agricultural production in that country. There are certain differences between U.S. and Chilean pesticide registration practices. Some pesticides registered for use in Chile are not registered in the United States, and vice versa.

EPA's Pesticides Registration Process

Under the Federal Insecticide, Fungicide, and Rodenticide Act passed in 1947, as amended (7 U.S.C. 136), EPA is required to register pesticide products, specify the terms and conditions of their use before they are marketed, and remove unreasonably hazardous pesticides from the marketplace. EPA can register a pesticide only if it determines that the pesticide will perform its intended function without causing any unreasonable adverse effect on humans or the environment, taking into account the economic and environmental costs and benefits of the pesticide's use. To register a pesticide, EPA requires the manufacturer to provide health and environmental effects data,[1] product labeling information, a confidential statement of the chemical formula of the pesticide, and child-resistant packaging (if applicable). This process can take 9 months to a year, if all the necessary data have been provided, but much longer if the data are incomplete and additional data are needed.

A pesticide generally must be registered with EPA before it may be sold or distributed in either intrastate or interstate commerce. However, a pesticide produced solely for export is not required to be registered with EPA and may be exported regardless of its U.S. regulatory status, subject to certain labeling, production reporting, and notification requirements.

SAG's Pesticide Registration Process

In 1980, the Chilean government enacted Decree Law 3557, giving SAG the authority to regulate the production, importation, distribution, sale, and application of pesticides used in agricultural production in Chile. Resolution 1178 of August 8, 1984, proceeding from Decree Law 3557, sets forth SAG's requirements for registering pesticides. According to SAG officials, Chile's regulations for registering pesticides are based on the international Food and Agriculture Organization's guidelines.

Resolution 1178 requires that the party desiring to register a pesticide for agricultural production submit data identifying, among other things (1) the

[1]These data include information on toxicology, residue chemistry, environmental fate, worker exposure, product chemistry, oncogenicity (quality or property of causing tumors), potential birth defects, efficacy, and environmental effects.

manufacturer; (2) the physical and chemical properties of the pesticide and its active ingredient(s); (3) the biological impact and residue degradation rates; (4) the usage instructions and preharvest intervals; (5) the pesticide's toxicology, risks, and antidotes; and (6) the pesticide's tolerance levels in major market countries, including the United States. The registration process also requires that the registrant submit certain documents, such as proof of registration in the country of origin, and the proposed label for marketing the product in Chile.

The product label is a key element in Chile's process for registering pesticides. Resolution 1179 of August 14, 1984, sets forth pesticide-labeling requirements. Each product label must be in Spanish.[2] A label must be color coded according to the pesticide's level of toxicity. It must include directions for use, such as the pests it is meant to control and the crops on which it can be used. It must also include information on preharvest application intervals and residue tolerance levels for principal market countries.

Differences in Pesticide Registration Practices Between the United States and Chile

The United States and Chile have similar requirements for registering pesticides. To register a pesticide, both countries require basic data such as the product's chemical properties, environmental impact, residue chemistry or degradation rates, and toxicology. However, the Chilean process depends to a greater extent on data regarding the product's registration status in its country of origin, and tolerance levels in market countries. This is primarily due to the export orientation of Chilean agricultural production and the fact that Chile does not manufacture its own pesticides.

There are also differences between the United States and Chile in the pesticides that are registered in each country. Chile does not manufacture pesticides, so it must import the pesticides it uses in agricultural production. SAG requires that a pesticide registered in Chile must be registered in the pesticide's country of origin. SAG officials explained that this requirement was instituted to eliminate the use of dangerous pesticides in Chile that have been banned in the country where they are manufactured.[3] However, since Chile imports pesticides from various

[2]According to SAG officials and private sector agrochemical importers, there are serious penalties, including fines and confiscation of products, for marketing pesticides in Chile that do not conform with label regulations, such as printing labels in a language other than Spanish.

[3]Representatives of a Chilean environmental group explained that some foreign chemical companies circumvent this requirement by manufacturing certain pesticides in a third country with more liberal registration standards, registering it there, and then registering it in and exporting it to Chile.

countries, there are a number of pesticides registered in Chile that are either banned or not registered in the United States (see app. III).

Chilean officials explained that they register pesticides that are not registered in the United States because Chile exports crops to markets other than the United States, where these pesticides are allowed. FDA officials added that the United States also has registered pesticides that are not registered in Chile and that there is nothing improper or unusual about this situation. They noted that all major U.S. trading partners have pesticides registered that are not registered in the United States, and vice versa. FDA officials said that the fact that Chile has registered pesticides that are not registered in the United States is not a problem, since these pesticides are not used on foods exported to the United States, and that Chile's excellent compliance history with U.S. tolerances is evidence of this circumstance.

Tolerance-Setting Processes

Federal law directs EPA to set tolerance levels for pesticides used on food for human or animal consumption marketed in the United States. The Chilean Ministry of Health establishes tolerances for pesticides under a general mandate to set safety standards for food marketed for domestic consumption in Chile. Tolerance-setting practices in Chile differ from those of the United States because the United States independently evaluates data to set pesticide residue tolerances, which may differ from international standards; Chile's tolerances are based on internationally established standards.

EPA's Tolerance-Setting Process

Under the Federal Food, Drug, and Cosmetic Act passed in 1938, as amended (21 U.S.C. 301), EPA is responsible for setting maximum allowable residue levels, or tolerances, for pesticide residues on food commodities and animal feed marketed in the United States. Establishing tolerances or exemptions from tolerances is a prerequisite to granting registrations for pesticides used in agricultural production in the United States. The tolerance program's purpose is to ensure that U.S. consumers are not exposed to unsafe levels of pesticide residues. U.S. tolerances apply to imported commodities as well as to domestically produced food commodities and animal feed.

If a pesticide is being considered for use on a food or feed crop, the registrant (the party seeking to register the pesticide) must petition EPA for a tolerance. It then must submit appropriate data so that EPA can define a

safe and realistic tolerance level or grant an exemption from the tolerance requirement. Registrants are required to submit toxicology and residue data in their tolerance petitions (applications) to assess possible health and environmental risks, to identify the nature and amount of residue that could occur with proper pesticide use, and to present analytical methods that FDA can use to test the food for residues of the pesticide.

While EPA requires tolerances to be set before registering pesticides for use on food domestically, in some cases EPA sets tolerances for residues of pesticides that are not registered. Such tolerances may be referred to informally as "import" tolerances. These tolerances acknowledge other countries' needs for some pesticides not registered in the United States. For example, such a pesticide could be employed to control a pest that is not a problem in the United States or for use on a crop that is not grown domestically.

Chilean Ministry of Health's Tolerance-Setting Process

According to a spokesman for Chile's Ministry of Health, Chile's food safety law—Supreme Decree 60 from April 5, 1982—directs the Ministry to set safety standards for food marketed for domestic consumption. Under this general mandate, the Ministry of Health has responsibility for setting maximum residue limits, or tolerances, for pesticides. The Ministry of Health sets tolerances only for foods consumed domestically in Chile. Chilean authorities do not establish tolerances for foods to be exported.

In setting tolerances, Chile accepts standards established by the international Codex Alimentarius Commission.[4] The spokesman for the Ministry of Health explained that Chile does not have the resources to undertake comprehensive studies on the impact of pesticide residues on consumers. Instead, the Ministry relies on Codex standards and on other information from the U.S. EPA or the World Health Organization. Chile's food safety regulations were being updated in May 1994 to reflect recent changes in Codex standards.

The Ministry of Health spokesman also explained that only pesticides registered by SAG are authorized for use in agricultural production in Chile. The product label required by SAG to register a pesticide is critical in providing guidance to Chilean farmers about how pesticides should be used to meet applicable tolerances. It should be noted that while Chilean pesticide labels list tolerances for major export markets, they do not list

[4]In 1962, the Codex was created under the auspices of the United Nations to establish international standards for food quality and safety concerns, including pesticide uses. Both the United States and Chile are members of Codex.

Chilean tolerances. According to the Ministry of Health official, this omission is due to the export orientation of Chilean agricultural production.

Differences in Tolerance-Setting Practices Between the United States and Chile

Tolerance-setting practices in Chile are different from those followed in the United States because Chile's pesticide tolerances are based on the Codex, while the United States establishes pesticide residue tolerances independently. The Codex sets standards, referred to as "maximum residue limits," for pesticides. Although Codex maximum residue limits are comparable to EPA tolerances, they are not always the same. EPA officials explained that sometimes the Codex's maximum residue limit for a given pesticide may be lower than EPA tolerances, and sometimes EPA tolerances may be lower. There are also certain pesticides that have been assigned maximum residue limits by the Codex but have no tolerances in the United States. Conversely, there are pesticides that have been assigned U.S. tolerances but have not been assigned Codex maximum residue limits. In addition, there are differences between EPA and Codex definitions of "crop groupings"[5] and methods used in measuring pesticide residues that may lead to different tolerance standards.

Codex standards are voluntary and only enforceable if adopted and used as national regulations. Chile's food safety regulations are based on Codex standards. On the other hand, while the United States is also a member of the Codex, EPA does not necessarily accept Codex standards. The United States may accept some Codex maximum residue limits, after independent assessment to ensure compliance with U.S. health standards. Thus, EPA evaluates and sets pesticide residue tolerances independently.

Pesticide Residue Monitoring Process

In the United States, FDA is responsible for monitoring and enforcing EPA tolerances on domestic and imported food products, except for meat, poultry, and some egg products, which are the responsibility of USDA. In Chile, the Institute of Public Health (Instituto de Salud Pública—ISP) is charged with monitoring pesticide residues on food. While the United States conducts routine monitoring on all types of domestic and imported foods, Chile routinely monitors only certain dairy products and samples of mothers' milk.

[5]Crop groupings are categories of related commodities such as stonefruit (peaches, nectarines, and prunes) or citrus (lemons, oranges, grapefruit, and tangerines). Differences in what EPA and Codex include under these groupings can result in certain crops having tolerances set for a given pesticide by one agency but not by the other.

FDA and USDA Share Responsibility for Monitoring Pesticide Residues in the United States

FDA is responsible for ensuring that domestic and imported food products (except meat, poultry, and some egg products) are safe, sanitary, nutritious, and wholesome; it also has responsibility for ensuring honest labeling. USDA has monitoring and enforcement responsibilities for pesticide residues in meat, poultry, and egg products. FDA, USDA, and state enforcement agencies are involved in enforcing tolerances. These agencies test samples of various types of foods to determine if they contain residues for which no tolerance has been set or residues exceeding tolerance levels, rendering the food adulterated. Food commodities with residues in excess of tolerance levels or residues for which no tolerance has been set are subject to seizure.

To ensure that the consumer is protected against undue risk from pesticides in the food supply, FDA enforces EPA tolerances on most foods. FDA activities range from developing an analytical methodology for measuring trace amounts of pesticides in food to determining the frequency and level of occurrence of pesticides in the food supply. FDA carries out toxicological studies to determine the toxic behavior of chemical contaminants and their effects on humans. In addition, FDA establishes regulatory limits for nonpesticide chemical contaminants in food and carries out field-monitoring programs for other chemical contaminants, and can take regulatory action where warranted.

FDA has established a process to coordinate with other federal agencies, such as EPA, as well as USDA's Food Safety and Inspection Service (FSIS) and its Agricultural Marketing Service. FDA's goal is to promote more effective, efficient, and coordinated federal regulatory activities concerning residues of pesticides and other contaminants that may adulterate food. FDA is responsible for notifying EPA of possible misuse of pesticides or chemical substances that may indicate a violation of laws that EPA administers. FDA is also to notify USDA of illegal residues of pesticides or other contaminants in food for human consumption or animal feed, for USDA consideration in planning meat and poultry inspections.

USDA is responsible for notifying FDA of findings of illegal residues in edible meat, poultry, or egg products. USDA is also to keep FDA and EPA informed of all FSIS and Agricultural Marketing Service sampling and testing programs for illegal residues. FSIS administers a comprehensive system of inspection laws to ensure that meat and poultry products moving in interstate and foreign commerce for use in the food supply are safe. Such inspection includes checking, on a sample basis, for drug and chemical residues in slaughtered animal tissue. Residues can result from the

improper use of pesticides, animal drugs, and medicated feeds, as well as from industrial accidents that may contaminate animal feeds or the environment where food animals are raised. The Agricultural Marketing Service's only responsibilities with regard to regulating food safety are in the egg products and egg shell surveillance programs.

ISP's Pesticide Residues Monitoring

Chile's ISP, an agency of the Ministry of Health, monitors compliance for pesticide residues on some foods. According to ISP and Ministry of Health officials, Chilean law does not specifically require monitoring of pesticide residues on foods. The law is phrased more broadly and simply sets forth the Ministry of Health's responsibility to make sure that food is safe for human consumption. Pesticide residue monitoring is undertaken within the context of the Ministry of Health's efforts to ensure the safety of food under Supreme Decree 60. ISP does not have the resources to conduct routine pesticide residue monitoring of most domestically produced Chilean foods or imports. An ISP official explained that the agency has a single lab, located in Chile's capital, Santiago, equipped to monitor pesticide residues. This lab has a staff of 14 employees who are involved in testing foods for other contaminants besides pesticide residues. Moreover, the ISP lab lacks the equipment and supplies necessary to detect certain pesticide residues. The ISP lab depends for its sampling on a system of 28 Ministry of Health regional field offices located throughout Chile. The regional offices have their own labs that monitor food for sanitary control purposes, but not for pesticide residues.

Given its limited resources, the ISP lab has focused its monitoring on organochlorine pesticide residues in certain dairy products and mothers' milk. According to an ISP official, monitoring has focused on organochlorines because they are a particularly dangerous family of pesticides that remain in the environment long after they are applied.[6] Certain dairy products, such as powdered milk and butter, have been selected for routine monitoring because they are not too perishable, and they can be readily tested for traces of pesticide residues. The ISP lab also monitors mothers' milk from various parts of Chile on a routine basis. Again, this monitoring focuses on organochlorine pesticides. The reason for monitoring mothers' milk is that it can be an indicator of the presence of pesticide residues in the food supply.

An ISP official explained that the lab also conducts studies on pesticide residues in other commodities, including imports, on an ad hoc basis, if

[6]The organochlorines include dichloro diphenyl trichloroethane (DDT). Chile banned DDT in 1984.

there is reason to suspect that the food is tainted. A Chilean environmental group recently prepared a study decrying the fact that while Chile has thorough controls over pesticide residues on food destined for export, there is no routine monitoring of pesticide residues on foods consumed domestically. Thus, it is conceivable that Chile might increase its monitoring of pesticide residues on imports in the future, particularly if it opens its markets to fresh fruits and vegetables from abroad.

Differences in Pesticide Residue Monitoring Between the United States and Chile

The previous discussion underscores the differences between U.S. and Chilean pesticide monitoring and enforcement activities. In the United States, several federal agencies and state agencies are responsible for monitoring domestically produced and imported foods for pesticide residues. Monitoring in the United States is done on a routine basis and entails sophisticated sampling and analysis. In contrast, Chile devotes few resources to monitoring pesticide residues in foods for domestic consumption. There is no routine monitoring of food imported into Chile for pesticide residues. For domestic foods, only certain dairy products and samples of mothers' milk are routinely monitored for pesticide residues in Chile.

Pesticide Regulation on Chilean Exports

FDA officials have pointed to the process followed in Chile for ensuring compliance with U.S. pesticide residue regulations as a model for other exporters of horticultural commodities to the United States. They stressed that they do not consider it to be a problem that certain pesticides registered in Chile are not registered in the United States. They explained that while FDA would be hard pressed to look for all possible pesticide residues, the agency does monitor for a very large portion of these residues. FDA officials noted that their monitoring over many years has not identified any significant pesticide residue problem with Chilean exports. Moreover, FDA officials said they have had extensive communications with Chilean fruit exporters. The officials said that these interactions have clearly demonstrated that the exporters are familiar with and dedicated to controlling pesticide usage on commodities destined for the U.S. market. Chile has been one of the few countries to respond to FDA's request for usage data under the requirements of the Pesticide Monitoring Improvements Act of 1988 (P.L. 102-585).

According to FDA records, Chile has very low violation rates for pesticide residue tolerances when compared to other countries. From 1989 to 1993, on average only 1.7 percent of food shipments imported from Chile

sampled under FDA's surveillance monitoring were found to contain pesticide residue violations (see table 2.1). While this figure is higher than the violation rate for pesticide residues on domestically produced foods, it is much lower than that of all other foreign countries, which range between 3 and 5 percent, according to FDA.

Table 2.1: Percentage of Food Samples Found With Pesticide Residue Violations Under FDA's Surveillance Sampling, Fiscal Years 1989-93

Fiscal year	Foods from Chile with violations	Domestic foods with violations
1989	3.0%	1.0%
1990	1.3	1.1
1991	1.2	0.8
1992	1.0	1.1
1993	2.2	1.1
Average (1989-93)	1.7	1.0

Source: FDA, regulatory monitoring data for pesticides.

FDA officials characterize most tolerance violations on produce from Chile as "technical" violations. This designation refers to the fact that these violations are not due to findings of pesticides that have been banned for use in the United States. Rather, they involve findings of pesticides registered in the United States for use on other commodities, or findings of a pesticide on a commodity for which no pesticide tolerance has been set. FDA officials explained that the few tolerance violations encountered on Chilean exports are usually not found on high-volume export crops, such as grapes or stonefruit (plums, peaches, and nectarines). These violations are typically found on lower-volume products, for example, boysenberries or persimmons.

There are several ways that pesticide practices of Chilean growers involved in exporting are controlled to ensure acceptable levels of pesticide residues. The Chilean Exporters Association (Asociación de Exportadores) has compiled an extensive guide on pesticide use, known as the Agenda de Pesticidas. This guide contains a comprehensive list of pesticides registered for use in fruit and vegetable production in Chile and their tolerances by commodity in principal market countries. This information is to be updated every 2 months. The guide also has recommendations on preharvest intervals for applying pesticides.

According to a spokesman for the Chilean Fruit Growers Federation (Federación de Productores de Frutas de Chile), larger Chilean growers,

who are generally also exporters and account for about 40 percent of production, rely on the data contained in the Agenda de Pesticidas to ensure that the pesticide residue levels on their produce exports meet tolerance levels set by the various market countries. The information in the guide considerably supplements the data on the labels required by SAG on pesticides marketed in Chile.

Representatives for the Chilean Fruit Growers Federation explained that smaller growers usually must follow the pesticide practices specified in their contracts with the exporting company. Often the exporters provide the growers with all chemicals used in production so that only the pesticides permitted by market countries are used. Moreover, Chilean law requires that all pesticides registered in Chile be properly labeled. This requirement should help ensure that the growers or agricultural laborers applying the pesticides are aware of recommended procedures. In addition, some exporters contract with agronomists and other technicians to advise smaller growers and to monitor pesticide use practices.

A spokesman for the Exporters Association noted that his association sometimes cooperates with members in monitoring pesticide residue levels in crops. He said the testing is typically done at private labs that have modern pesticide monitoring equipment. This type of monitoring or testing is not uncommon, but it is also not required. It is typically undertaken when the growing season has been somewhat unusual, such as when an early heat spell has hastened ripening, or if there is reason to suspect some problem in the pesticide treatment followed for a given crop.

It is also important to note the role of research undertaken by the University of Chile in helping growers meet tolerance requirements in foreign markets. The data on preharvest intervals contained in the Agenda de Pesticidas were based on field studies performed under the direction of a scientist with the University of Chile who was also a consultant for the Exporters Association. His research considerably augmented information on the degradation rates of pesticides provided by the foreign manufacturers, because it was based on observations of pesticides' performance under Chile's unique climatic and soil conditions.

This scientist also investigated cases of tolerance violations found on Chilean produce in foreign markets. He told us he maintains regular communications with FDA officials and has usually been told on an informal basis about Chilean tolerance violations as they occurred. His

investigations allowed Chilean growers to address problems leading to violations as they arise.

For example, in 1993 FDA's surveillance monitoring found that a shipment of pears from Chile was discovered to have violated U.S. pesticide residue standards. This shipment was found to contain low-level residues of iprodione, a fungicide that is not registered for use on pears in the United States and has no tolerance set for this commodity. The University of Chile scientist explained that his investigation into this case revealed that machinery used to process the pears had previously been used to process stonefruit. Iprodione is registered for use on stonefruits in the United States, and it is applied with a wax that is difficult to remove from the processing machinery. When the pears were processed, they were inadvertently contaminated with iprodione residues. Following this incident, the exporter's machinery was cleaned, and the situation was corrected.

How Chile's Sanitary and Phytosanitary Rules Limit Certain U.S. Agricultural Exports

U.S. officials recognize that Chile has legitimate reasons for protecting its agricultural resources. However, certain Chilean sanitary or phytosanitary rules, or the lack thereof, impede or have the potential to impede exports of agriculture and related products from the United States. According to U.S. trade officials we interviewed, Chile's processes for establishing sanitary and phytosanitary regulations are not always transparent and lack several formal procedures that would facilitate access to the Chilean market for U.S. agricultural commodities.

USTR and USDA have been working to resolve, in advance of negotiations for a free trade agreement, issues impeding Chilean imports of U.S. fresh fruit, poultry meat, and salmonid eggs. They have made some progress in developing entry rules and clarifying Chilean phytosanitary concerns for several U.S. fresh fruit crops. Also, Chilean authorities have indicated a willingness to accept comments from interested parties on proposed entry rules for salmonid egg imports. However, they have not made progress on the issue of poultry meat.

Chilean Regulations Generally Based on Legitimate Concerns

Chile has legitimate sanitary and phytosanitary concerns due to its special biological and geographical characteristics, according to U.S. officials. Natural barriers, such as the Andes Mountains, the Atacama Desert, and the Pacific Ocean, effectively shelter Chile from many biological pests and diseases. Furthermore, many pests found in neighboring South American countries are not present in Chile.

Agriculture and related products account for a significant portion of Chile's export earnings. For instance, Chile's agricultural, fisheries, and forestry sectors represent about 9 percent of Chile's overall gross domestic product and 46 percent of Chile's overall exports to the United States. Furthermore, some of Chile's export markets, such as Japan and South Korea, have very restrictive sanitary protection laws. Also, Chilean sanitary authorities are concerned that imported agricultural commodities might bring in certain pests and diseases that could threaten Chilean agricultural production and raise questions about the sanitary condition of Chilean exports in foreign markets.

In general, U.S. officials we interviewed said that Chilean authorities develop sanitary and phytosanitary regulations in accordance with sound scientific principles. The United States exports a number of agricultural commodities to Chile, including grains and dairy products, that do not face phytosanitary or sanitary barriers. U.S. officials repeatedly said that they

respect the professionalism of their Chilean counterparts. They noted that in some instances Chile has eliminated or liberalized sanitary requirements when presented with scientific evidence by U.S. plant or animal health officials. For example, the United States and Chile recently resolved a dispute over weed seeds in U.S. wheat exports, so that Chile is again accepting U.S. wheat.[1] However, U.S. officials also described situations in which Chile's animal and plant health requirements have unduly restricted U.S. agricultural exports.

Cases in Which Chilean Rules Impede U.S. Exports

Chile's sanitary and phytosanitary requirements have limited the export of certain U.S. agricultural products. Specifically, U.S. fruits, poultry meat, and salmonid (various salmon and trout species) eggs have been or could be affected by Chilean sanitary or phytosanitary rules.

Fresh Fruit Crops

U.S. fruit producers and Chilean importers see opportunities for certain fruit exports from the United States in the Chilean market. However, SAG has not established phytosanitary rules necessary to allow the entry of fresh fruit and vegetable imports to Chile. Intended to safeguard domestic resources, such rules define the entry requirements that imports must meet to be permitted entry into Chile. In effect, the absence of these rules bans virtually all U.S. exports of fruits and vegetables to Chile. U.S. officials have helped Chilean authorities to develop entry requirements to allow imports of several U.S. fruit crops into Chile. Although progress has been made on some of these crops, U.S. officials remain concerned over how difficult it may be to gain access for other U.S. produce exports in the future. Representatives of U.S. agricultural producers maintain that the technically complex phytosanitary issues that block U.S. produce exports to Chile must be resolved before any negotiations on a free trade agreement take place.

Until recently, there had been limited U.S. interest in exporting fresh fruit and vegetables to Chile. However, U.S. fruit producers and Chilean importers now see an opportunity for U.S. summer fruit crops in the Chilean market during the winter season in the Southern Hemisphere when there is no production in Chile. Chilean importers estimate that the potential market for quality U.S. fruit could be about $16 million annually. Importers are specifically interested in cherries, nectarines, peaches, apricots, and grapes from the United States. They expect that the market

[1]During the early 1990s, Chile restricted imports of U.S. wheat because of concerns about certain noxious weed seeds present in U.S. wheat shipments.

potential for U.S. fruits should further expand as Chile's standard of living continues to rise.

In response to interest expressed by U.S. fruit producers, USDA APHIS officials have assisted Chilean authorities in establishing phytosanitary requirements that would allow the entry of certain U.S. fruit crops into Chile.[2] APHIS first expressed an interest in gaining permission for U.S. exports of specific fruit crops at a bilateral meeting with Chile's SAG in 1991. However, SAG was unable to provide APHIS with information on what fruit and vegetable crops were allowed to be imported into Chile. It became apparent that SAG lacked phytosanitary rules to govern the entry of fresh fruits and vegetables. In the absence of such rules, virtually all U.S. fresh fruit and vegetable exports were in effect banned from the Chilean market.

SAG officials had difficulties developing entry rules because they lacked a standardized system for conducting pest risk analyses. SAG also lacked a quarantine treatment protocol that would define appropriate measures to address concerns about the introduction of potential pests with U.S. fruit and vegetable imports. APHIS had to identify many of the pests associated with the crops and suggest appropriate measures, including treatment procedures, that could be used by Chilean authorities to establish entry rules.

After 3 years of consultations between U.S. and Chilean officials, some progress has been made in developing entry rules for certain U.S. fruit crops. Specifically, SAG officials have agreed to allow entry of grapes, kiwis, and lemons from the United States after being visually inspected and found to be free of pests. Resolution is still pending on a number of other fruit crops, including apples, avocadoes, blackberries, blueberries, raspberries, strawberries, other citrus fruit, pears, and stonefruit.

Despite progress in removing restrictions on certain fruit crops, U.S. officials remain concerned over how difficult it may be to gain access for other U.S. produce exports in the future. Establishing entry rules for these fruit crops took an inordinate amount of time, according to APHIS officials. The U.S. Agricultural Technical Advisory Committee for Trade in Fruits and Vegetables, a private sector advisory panel to USTR and USDA, maintains that the phytosanitary issues that block U.S. exports of fruit and

[2]These fruit crops are apples, avocadoes, berries (blackberries, blueberries, raspberries, and strawberries); citrus (grapefruit, lemons, and oranges); grapes; kiwi; pears; and stonefruit (plums, peaches, nectarines, and cherries).

vegetables to Chile must be resolved before any formal negotiations on a free trade agreement between the United States and Chile occur.

Poultry Meat

SAG has established a sanitary regulation for poultry meat imports that U.S. officials said is unduly restrictive and constitutes a nontariff trade barrier. U.S. officials said Chile's poultry meat restrictions may in part be in response to USDA's unwillingness to approve plants in Chile to process poultry destined for the United States. SAG maintains that its sanitary regulations for poultry meat are based on legitimate concerns.

Although U.S. exports of poultry meat to Chile have been very limited, there is reason to expect increased opportunities for these products in the Chilean market. According to a report by the Office of the U.S. Agricultural Attaché, poultry consumption in Chile has risen by about 20 percent in recent years, as consumers look for alternatives to beef. However, U.S. poultry meat exports have been effectively barred from entry into Chile due to a sanitary rule imposed by SAG in October 1992. The rule requires poultry meat imports to be tested and certified as being free of salmonella.[3] FAS and APHIS officials, as well as a representative from the U.S. Poultry and Egg Export Council, believe that Chile's sanitary rule regarding salmonella is unduly restrictive and poses a nontariff trade barrier to U.S. poultry meat exports. This view is echoed by USTR. Since the rule mandates that poultry meat imports must be free of all strains of salmonella, in effect the rule represents a "zero tolerance" for salmonella.[4] According to APHIS, the rule exceeds any standards attained by any country, including Chile, because Chile itself is not entirely free of salmonella.

APHIS officials maintain that Chile's salmonella rule is not based on sound scientific principles. According to a senior APHIS veterinarian, the international scientific community has recognized that salmonella is present worldwide. Approximately 2,400 different salmonella serotypes (strains) exist. Salmonella has many carriers, including poultry, other livestock, and even humans. According to the APHIS veterinarian, Chile cannot justify a zero tolerance restriction for salmonella in poultry meat because salmonella is just as likely to be carried into Chile by other sources. For example, Chile accepts U.S. exports of live chicks and

[3]Salmonella is a bacteria that is frequently found in poultry but also is found in several other raw products of animal origin, such as pork, beef, milk, and eggs.

[4]"Zero tolerance" is a term used by APHIS and FSIS officials to describe Chile's rule that all imports must be free of all salmonella strains. The United States usually discusses the maximum level of tolerable residues in foods in terms of a tolerance level. By not accepting any salmonella in poultry at all, Chile has in effect set a "zero tolerance" level for salmonella in poultry.

hatching eggs, both of which are known carriers of salmonella. In fact, these commodities pose a greater risk of salmonella exposure to flocks than would poultry meat. According to this APHIS official, Chile's restriction of poultry meat does not represent an effective or scientifically based control for salmonella, because imports of other commodities that may carry salmonella are allowed.

According to the APHIS veterinarian, Chile should only be concerned with two strains of salmonella that are specific to poultry—gallinarum and pullorum—and have a potential impact on commercial poultry breeding operations. Salmonella gallinarum and pullorum can have a severe economic impact on flocks by lowering the hatch rate and weight gain rate and raising the mortality rate among young birds. However, gallinarum and pullorum salmonella have been effectively eliminated from U.S. commercial poultry through an industry-driven control program coordinated by each state and by APHIS. Every major U.S. poultry producer participates in this program. If Chile's sanitary rule applied only to these two dangerous strains, APHIS could certify that U.S. poultry meat exports are free of these strains of salmonella, and the United States could export its poultry meat products to Chile.

FAS and APHIS officials suggested that Chile's zero tolerance restriction was enacted in response to a USDA unwillingness to approve Chilean poultry processing plants as a source for U.S. imports. The U.S. action is a result of a February 1992 lawsuit brought by the National Broiler Council[5] against the Department of Agriculture. USDA's FSIS is responsible for making sure that foreign countries that want to export meat products, including poultry, to the United States have sanitary inspection systems that meet U.S. standards. Section 1701 (a) of the Food Security Act of 1985 (P.L. 99-198) amended section 17 of the Poultry Products Inspection Act (21 U.S.C. 466) passed in 1957 to require that foreign poultry be processed in facilities and under conditions that are "the same as" those under which similar products are processed in the United States.

Initially, FSIS interpreted this language to mean that foreign inspection systems should be "equivalent to" those found in the United States. However, the National Broiler Council in its lawsuit against USDA has insisted that foreign inspection systems must be certified as being the same as those in the United States. Subsequently, FSIS made a policy

[5]The National Broiler Council is a nonprofit corporation that represents producers and processors of broiler/fryer chickens throughout the United States.

decision to place a hold on certifying foreign inspection systems until the lawsuit is resolved.

Several countries, including Chile, that have sought FSIS certification in order to export poultry meat to the United States have been affected by this decision on the part of FSIS and have been unable to export poultry meat to the United States. U.S. officials note that Chile generally prefers to base trade relations with other countries upon the principle of reciprocity. U.S. officials believe Chile has established the salmonella rule in response to the U.S.' unwillingness to approve Chilean poultry plants.

SAG officials maintained that Chile's salmonella rule is based on legitimate sanitary concerns. They claimed that Chilean poultry producers are concerned that poultry meat imports may bring in certain strains of salmonella that are not present in Chile and that may contaminate Chilean flocks. For instance, they noted the United States has salmonella enteritidis, a serotype of salmonella that commonly infects humans. According to SAG officials, Chile is free of enteritidis. They argue that unlike the United States, where up to 45 percent of all dressed birds might be contaminated with salmonella, only 0.4 percent of all Chilean birds are contaminated with salmonella. According to SAG officials, Chile is able to keep its poultry products relatively free of salmonella because the country has a vertically integrated production system in which a small number of producers also control marketing and distribution. These producers adhere to a rigorous testing system that weeds out poultry found with salmonella.

Chilean producers use several sampling tests and procedures to detect and weed out salmonella. Whenever birds test positive for these tests, producers remove them from the flock. SAG officials claim that these tests and procedures effectively reduce the percentage of birds found to have salmonella at the time of slaughter.

This claim is disputed by APHIS. According to the senior APHIS veterinarian, these tests and procedures are designed to screen flocks for various salmonella strains, but they cannot detect all salmonella strains that might be present in the flocks. Thus, on the basis of these tests, Chilean officials would not be able to certify that flocks are entirely free of all salmonella strains. This is precisely why APHIS officials cannot certify that U.S. flocks are completely free of salmonella. Furthermore, if any birds did test positive for any salmonella strain, it would be an indication that this strain could be present in the rest of the flock as well. Simply removing

individual birds that test positive would not ensure that this salmonella strain had been eliminated; instead, the entire flock would need to be destroyed.

Regarding SAG's concern about salmonella enteritidis, an APHIS official commented that this bacteria rarely causes death in humans and is likely to be present in Chile already. This official estimated that approximately 10,000 cases of enteritidis poisoning are reported each year in the United States, but only 1 or 2 cases are fatal. Since any type of food poisoning can cause death in humans, and not just poisoning caused by salmonella contamination, the officials said that it is unreasonable for Chile to single out salmonella for food safety reasons.

Salmonid Eggs

U.S. growers view Chile as one of their most important markets for live salmonid eggs. Recently Chile proposed sanitary regulations for live salmonid egg imports that raised significant concerns among U.S. fish growers because they view the regulations as discriminatory and in excess of international standards. However, informal discussions have taken place to resolve these concerns.

According to the Washington Fish Growers Association, the United States exports approximately $2 million in fertilized salmonid eggs to Chile annually. These eggs are used in the production of farm-raised salmon and trout for human consumption. While U.S. salmonid egg exports to Chile are small in dollar terms, Chile is one of the U.S.' largest markets for this product. A representative from the Washington Fish Growers Association estimated that Chile represents about 20 percent of live egg export sales in Washington State.

In 1991, the Chilean Congress passed a comprehensive fisheries law. According to the Director of SERNAP, this law calls for the establishment of new sanitary regulations for all live fish marketed in Chile, imported as well as domestic. Under the law, SERNAP has been assigned responsibility for drafting the new regulations. SERNAP has placed priority on developing regulations for imports because of the potential for the introduction of exotic diseases associated with imports. This situation has raised concerns among U.S. producers that Chile's regulations may discriminate against imports.

In some cases, U.S. fish growers found the proposed import regulations for salmonid eggs to be highly restrictive because they exceeded international

standards followed by the aquaculture industry. They were specifically concerned with requirements that called for (1) individual testing of all salmonid broodstock (parent fish) for several high-risk viral diseases,[6] (2) certification that producers' broodstock is free of bacterial kidney disease (BKD) before any eggs from the broodstock can be exported, and (3) a disinfectant dip treatment that limits the number of eggs that could be disinfected per dip. U.S. fish growers objected to the requirement for individual testing of all broodstock because it exceeded a generally accepted international standard that calls for sampling 60 fish per lot. They argued that if the broodstock originated from a clean water source,[7] Chile should be able to accept a testing methodology that relies on sampling techniques, rather than 100-percent testing procedures. They objected to the requirement to certify that producer's broodstock is free of BKD because BKD is present in Chile as well as in the United States. Finally, they objected to a limit of 250 eggs per dip of iodine disinfectant treatment because this procedure would be excessively laborious and costly. The generally accepted international standard is approximately 2,000 eggs per dip.

The U.S. fish growers have held informal talks with SERNAP officials to express their concerns and offer suggestions for alternative controls. SERNAP officials have reviewed the U.S. fish growers' suggestions and indicated to U.S. fish growers that they were willing to revise several of the proposed provisions of the regulation. At a meeting with us in May 1994, SERNAP officials said that they had agreed to accept a standard of sampling 150 broodstock per fish lot when the broodstock originated from a clean water source. SERNAP officials also said they were willing to drop the proposal to require certification that producers' broodstock was free of BKD, as long as producers sampled 150 fish out of each lot and fewer than 10 percent of each sample tested positive for BKD. Finally, SERNAP agreed to further consider the 2,000-egg standard for the disinfectant procedure, as suggested by the U.S. fish growers. According to SERNAP officials, they had only proposed the 250-egg standard because it had been recommended by the International Epizootic Organization.[8] SERNAP officials said that, upon review, they would probably be able to accept and

[6]The viral diseases of concern to SERNAP are infectious hematopoietic necrosis (IHN), viral hemorrhagic septicemia (VHS), infectious pancreatic necrosis (IPN), and onchorhynchus masou viral disease (OMV).

[7]According to the Washington Fish Growers, a clean water source is a protected water source that is free of migratory fish.

[8]According to SERNAP officials, the International Epizootic Organization, located in Paris, is part of the United Nations' system and works on animal disease issues. It is roughly equivalent to the World Health Organization for human diseases.

incorporate the international standard of 2,000 eggs per dip into the final import regulations.

According to SERNAP's Director, in May 1994 SERNAP expected to finalize the regulations shortly. He also indicated that SERNAP would welcome an official presentation by the United States on the proposed regulations. We communicated this message to the U.S. Ambassador to Chile, and U.S. embassy officials met with SERNAP authorities in June 1994 to discuss Chile's proposed regulations. A revised draft of the regulations was expected to be ready soon. SERNAP officials indicated they would accept comments on this draft from interested parties.

Concerns About Chile's Process for Setting Sanitary and Phytosanitary Rules

USTR, FAS, and APHIS officials maintain that Chile does not always establish sanitary and phytosanitary regulations in a transparent manner. According to an official with USTR, when a country's process for making regulatory decisions is not clear, or it does not provide for public comment by outside observers, then that country's regulatory system is not transparent. Transparency of administrative processes is generally regarded by trade experts as an essential condition supporting basic trade objectives of national treatment and "most favored nation" principles. U.S. officials maintain that it is not always apparent to APHIS and U.S. exporters what steps they must follow to meet Chilean sanitary or phytosanitary requirements and gain access to the Chilean market for U.S. agricultural products. In addition, in certain cases the scientific basis for Chile's sanitary and phytosanitary regulation is not always clear or open to appeal by outside observers.

Chile lacks several formal procedures for establishing sanitary and phytosanitary regulations. For example, SAG officials do not have a standardized system to establish entry rules for fresh fruit and vegetable imports. Chile does not have a quarantine treatment protocol that would have allowed SAG officials to identify appropriate measures to address concerns about the potential introduction of hazardous pests. The absence of these procedures has delayed and hampered the ability of U.S. officials to gain access to the Chilean market for certain U.S. fresh fruit crops.

A 1991 report prepared by the USTR Trade Policy Staff Committee's Chile FTA [free trade agreement] Working Group also notes that Chile lacked formal procedures for interested parties, including foreigners, to appeal regulatory decisions or to provide foreign-generated test data to contest decisions. In the absence of such procedures, APHIS has been unable to

appeal and challenge the scientific basis of SAG's decision to require poultry meat imports to be certified free of all salmonella strains. This requirement precludes U.S. poultry meat exports to Chile.

U.S. officials point out that Chile has not always officially announced proposed rule changes before they are promulgated, even though Chile is a signatory to the General Agreement on Tariffs and Trade's (GATT) Agreement on Technical Barriers to Trade.[9] GATT requires that member countries provide official notification of rule changes to major trading partners if their exports will be affected by any rule change. In particular, U.S. officials cite the poultry meat case as an example of Chile's failure to meet GATT obligations, because Chile did not notify the United States before implementing the salmonella rule.

Finally, Chile lacks a formal forum for public comment on import regulations. Without such a forum, it is not clear to U.S. officials or other interested parties what procedures to follow to make their concerns known, whether comments would be welcome, or when it would be appropriate to raise questions or objections to proposed regulations. For example, although SERNAP informally welcomed comments on proposed salmonid egg regulations, a formal process for public comment might have clarified Chile's sanitary concerns and facilitated an official response from the United States.

[9]The Agreement on Technical Barriers to Trade obligated GATT signatories to ensure that technical regulations and standards, including packaging, labeling, and marking requirements and methods of ensuring conformity with technical regulations and standards, are not adopted or applied so as to have the effect of creating unnecessary obstacles to trade.

Chile's Environmental Regulatory Framework

On March 1, 1994, Chile enacted a new environmental framework law to coordinate the country's environmental policy, which had historically been divided among various ministries. The law formally established the National Commission on the Environment (Comision Nacional del Medio Ambiente—CONAMA) as Chile's coordinating body for setting environmental regulations, developing standards, and studying environmental issues. CONAMA is a decentralized commission under the immediate direction of the Office of the Chilean President. One of the primary tasks of CONAMA is the implementation of regulations known as the System for the Evaluation of Environmental Impact, which will verify that proposed projects and activities are in compliance with current environmental standards. Chile has conducted studies, passed legislation, and is party to international agreements in order to address environmental concerns.

Background

Before 1994, Chile lacked a comprehensive environmental framework. There was no specific regulatory agency responsible for coordinating and monitoring environmental legislation. Over 800 conflicting legal and regulatory requirements were scattered throughout the Chilean legal code, involving over 70 different government ministries and agencies.

In January 1994, the Chilean Congress passed the Basic Law on the Environment (Ley de Bases del Medio Ambiente—L. 19.300). According to Chilean officials, Chile embarked on environmental reform because it realized the important role that the environment plays in economic development.

Objectives of the Basic Law on the Environment

The Basic Law on the Environment is designed to make improvements in Chile's environmental regulatory system and help guarantee Chilean citizens the constitutional right to live in a pollution-free environment. By giving CONAMA responsibility for the coordination and enforcement of legal and regulatory requirements, the government addressed the confusion stemming from overlapping ministerial jurisdictions in Chile's environmental regulatory system. In addition, the law established a legal regime for punishing polluters and created a standard of liability and potential penalties for violators.

Under the law, designated ministries are required to develop environmental quality standards to protect the water, soil, and air. These standards aim to protect Chilean citizens' right to live in a pollution-free

environment by establishing permissible concentration levels of pollutants within designated time periods. The procedure for development of standards is to include technical and economic analysis, scientific studies, consultations with public and private agencies, analysis of comments offered, and appropriate public notification.

According to the American Chamber of Commerce, in passing and implementing recent environmental laws the Chilean government has taken great care not to overburden the economy with unreasonable or unenforceable decrees. When the Basic Law on the Environment was drafted, business lobby groups had few objections. The law is founded on the principle of gradual change and allows the market to play a large role in regulating pollution.

The Structure and Responsibilities of CONAMA

CONAMA was originally created in 1990. Formerly, CONAMA had functioned as an ad hoc commission within the Ministry of National Properties with a general mandate to advise the President on environmental policy issues. Under the Basic Law on the Environment, CONAMA was formally established as a decentralized commission immediately under the direction of the Office of the Chilean President functioning on the national and regional[1] levels.

At the national level, CONAMA will be responsible for transregional and international coordination efforts on the environment. The national-level organization will consist of a Board of Directors, an executive directorship, and a Council of Advisers. The Board of Directors is to be composed of various government ministers and is responsible for the higher administration of the commission. The Minister Secretary General of the presidency will preside as Chairman; other members will include the Minister of Economics, Promotion, and Reconstruction; the Minister of Public Works; the Minister of Agriculture; the Minister of National Properties; the Minister of Health; the Minister of Mining; the Minister of Housing and Urbanization; the Minister of Transportation and Telecommunications; and the Minister of Planning and Cooperation.

The Executive Director is responsible for coordination between regions and for daily administrative activities. He is designated by the President and is the highest authority and representative of the National Commission on the Environment.

[1]Chile is divided into 12 numbered regions for administrative purposes, plus the Santiago metropolitan region.

The Council of Advisers is to respond to environmental questions posed by the Board of Directors and issues opinions on environmental policy. The Council is to consist of two science experts, two representatives of environmental organizations, two representatives of independent academic centers who study environmental affairs, two representatives of the business community, and two representatives of labor as well as a representative of the President.

The new law also calls for the establishment of a Regional Commission on the Environment in each region of Chile. Each regional commission will be responsible for addressing problems and issues confined to the individual region. Each regional commission will parallel in structure at the regional level CONAMA's structure at the national level. Each regional commission will consist of regional officials and representatives. Each Regional Intendant[2] will preside over the environmental commission in his respective region. Other members of the regional commissions will include regional governors,[3] the regional Ministry secretaries, and the Regional Director of the National Commission on the Environment. Regional Councils of Advisers are to address questions on the environment posed by the regional commissions. The Regional Councils will have private representatives comparable to that of the Council of Advisers, and a representative of the Regional Intendant.

CONAMA has several mandates to protect the environment. CONAMA's primary functions include (1) advising the President on environmental policy, (2) coordinating all government agency activities affecting the environment, (3) collaborating with other agencies in the development of environmental quality standards, (4) imposing pollution prevention and abatement plans when necessary, and (5) administering Chile's new environmental impact system. CONAMA is also responsible for maintaining a national public information system on the environment and financing various environmental projects and activities. On environmental projects linked to international financing or assistance, CONAMA serves as the coordinator and national representative for government agencies.

System for the Evaluation of Environmental Impact

All projects or activities that are likely to affect the environment require evaluation by CONAMA to ensure compliance with environmental standards. Through the System for the Evaluation of Environmental Impact, CONAMA is to evaluate projects and activities in conjunction with the government

[2]The Regional Intendant is the supreme governing authority of the region.

[3]These are lower-level administrative officials within a region.

agencies responsible for issuing related environmental permits or decisions. CONAMA is responsible for creating the system's procedures, which are to be administered in a nondiscriminatory manner. For an evaluation, the project or activity sponsor must submit either an environmental impact study or an environmental impact statement. The type of documentation required depends upon the expected effects of the project or activity.

Projects or activities that are likely to risk human health or change the landscape, cultural heritage sites, renewable natural resources, or ways of life will require an environmental impact study. The environmental impact study must contain a description of the project and its effects, measures to be taken to eliminate or minimize risks associated with the project, and a plan for complying with environmental legislation. The Basic Law on the Environment requires CONAMA to include the following administrative procedures when evaluating environmental impact studies: (1) consultation with government agencies responsible for granting related government permits; (2) fixed deadlines for evaluating projects; (3) mechanisms for requesting clarification, rectification, and amplification of studies if necessary; (4) participation of citizens' organizations; and (5) notification to interested parties of the final approval.

Projects or activities that do not require an environmental impact study but are still likely to affect the environment will require an environmental impact statement. This statement must be in the form of a sworn affidavit declaring the project or activity to be in compliance with environmental legislation.

Chile's Environmental Activities to Date

CONAMA has worked to identify and address a number of Chile's most pressing environmental problems. In 1992, CONAMA issued a study for the United Nations on Chile's environment and economic development. The following year, CONAMA issued a summary of the country's principal environmental challenges by region. CONAMA has also developed legislative proposals and guidelines. In April 1993, CONAMA published a proposal for a national action plan on biodiversity. Also, in September 1993, CONAMA issued guidelines for the evaluation of foreign investment's impact on the environment. In addition, working in conjunction with the Ministry of Agriculture, CONAMA issued a proposal for a national soil conservation plan in January 1994.

Chile has signed several international agreements dealing with the environment. These agreements cover a wide variety of problems, including protection of the ozone layer, Antarctica, biodiversity, and marine life. Chile is also a party to international agreements on such topics as climate change and the transboundary movement of hazardous materials. The Chilean government is implementing action programs in accordance with several of these agreements. Through one of these programs, Chile expects to meet its commitment to reduce the production of certain ozone-depleting substances under the Montreal Protocol[4] to the 1985 Vienna Convention for the Protection of the Ozone Layer 4 years early.

[4]Parties to the Montreal Protocol agreed, effective January 1989, to limit and reduce the use of specific substances that deplete the ozone layer.

Methyl Bromide Fumigation of Monterey Pine Log Imports From Chile

The U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) has established interim regulations to allow imports of Monterey pine logs from Chile to the United States. These regulations require fumigation of the logs with methyl bromide, a broad-spectrum pesticide, to guard against potential introduction of exotic pests into the United States.[1] APHIS regulations require that after fumigation, the enclosure where the process takes place must be aerated until a concentration level of no greater than 5 parts per million is detected. Based on Occupational Safety and Health Administration (OSHA) recommendations, exposure to concentration levels of methyl bromide of 5 parts per million or less should not pose an undue risk to U.S. workers who handle logs that have been treated with this product. Nevertheless, methyl bromide has been internationally recognized to be an ozone depleter and is being phased out under the 1990 Clean Air Act (2 U.S.C. 7671(c)). Signatories to the Montreal Protocol have also taken steps to limit the chemical's use.

Background

The continuing expansion of the Chilean forestry sector has increased producers' ability to export a wide variety of wood products. In 1991, Chile harvested 11.4 million cubic meters of Monterey pine. It is estimated that by 2015, Chile will have 30 million cubic meters of Monterey pine available for harvest. According to forest industry and government officials, Chile intends to further develop exports of high-value-added wood products. In the past, Chile has exported lumber and furniture to the United States and is now looking to export Monterey pine logs.

Mills in the Pacific Northwest are interested in Monterey pine logs from Chile as an additional source of unprocessed wood. The Monterey pine provides high-quality timber that can serve as a substitute for domestically grown U.S. ponderosa pine and sugar pine. There have been shortages of domestically grown pines due to recent restrictions limiting the harvesting on federal lands.

In the past, the United States has received only limited log shipments from all countries. These shipments have generally been small, containing no more than 15 logs, and until recently they were only subject to a visual inspection by APHIS officials upon arrival. However, with an increased domestic demand for logs, shipments have become larger and more frequent, giving rise to concerns about the dangers of importing logs that

[1]Methyl bromide is considered a broad-spectrum pesticide because it is effective against many different types of pests.

may carry exotic pests. APHIS is concerned that log imports could infest U.S. forests with exotic pests and threaten domestic timber supplies. Therefore, regulations have been imposed to minimize the risks of importing infested logs.

APHIS Establishes Import Regulations

Before allowing importation of Monterey pine logs from Chile, APHIS called on the U.S. Forest Service to conduct a risk assessment of pests associated with Monterey pine logs grown in Chile. Specifically, the Forest Service set out to (1) identify the pests that might be introduced with Chilean logs into the United States, (2) assess the potential for the introduction and establishment of these pests, and (3) evaluate the impact these pests might have on U.S. forests. The Forest Service concluded that there were sufficient reasons to be concerned about the potential introduction of exotic pests with log imports from Chile and that mitigation measures were appropriate for Chilean pine logs entering the United States.

Based on the pest risk assessment conducted by the Forest Service, in November 1993 APHIS established interim regulations allowing log imports from Chile. To limit the introduction of pests, APHIS regulations require that all logs be de-barked before leaving Chile and undergo a methyl bromide fumigation before entering the United States. Once in the United States, the processed wood must be heat treated. According to U.S. embassy officials, as of April 1994, Chile had not exported logs to the United States since the interim regulations were established. Chile was still in the process of testing the new fumigation procedures required by APHIS.

In addition to Chile, other countries, including Russia, have expressed an interest in exporting logs to the United States. Consequently, APHIS has proposed general regulations to govern log imports from all countries. When these regulations are finalized, they will supersede the interim regulations now in effect for Chilean logs.

No Health Risks Posed to U.S. Workers

Methyl bromide is a highly toxic chemical used on many commodities for killing a wide range of agricultural pests. However, experts agree that after it has been applied, methyl bromide generally dissipates quickly, leaving negligible residues. According to APHIS and Environmental Protection Agency (EPA) officials, methyl bromide is used extensively in agricultural operations in the United States. Data provided by OSHA suggest that exposure to high concentrations of methyl bromide, or even chronic exposure to lower levels of this chemical, can be toxic to humans.

Exposure to high levels of methyl bromide can result in acute poisoning, which is characterized by lung irritation, convulsions, and coma. Chronic exposure to lower levels of methyl bromide affects the nervous system, producing muscle weakness and pain, loss of coordination, inability to focus one's eyes, and behavioral changes. The National Institute for Occupational Safety and Health recommended that methyl bromide be considered a potential occupational carcinogen, but OSHA does not believe there is currently enough evidence to support this recommendation.

APHIS requirements for treatment of Chilean logs with methyl bromide call for fumigation to take place in Chile. The logs and ambient air must be at a temperature of 40 degrees Fahrenheit or above throughout the fumigation process. Furthermore, minimum concentration levels of methyl bromide and time requirements for fumigation must be met. After the logs are fumigated, the treatment chamber must be aerated until gas concentration levels of 5 parts per million or less are detected, as stipulated by APHIS. This is based on EPA standards and is incorporated in Schedule T-404 of APHIS' Plant Protection and Quarantine Manual. According to an APHIS official, aeration can usually be completed within an hour, and commodities can be released on the market the same day.

To protect the occupational health of U.S. workers, OSHA sets permissible exposure limits for toxic substances used in the workplace, including methyl bromide. Currently, OSHA enforces a permissible exposure limit for methyl bromide of 20 parts per million or 80 milligrams per cubic meter with a skin designation.[2] According to OSHA officials, while this amount is the legally enforceable exposure limit for concentrations of methyl bromide, recent studies have shown that this limit may not protect workers from risks associated with chronic exposure.

OSHA has recommended lowering the permissible exposure limit to a 5 parts per million 8-hour time-weighted average, with a skin designation. In 1989, as part of an effort to update permissible exposure limits on over 400 chemicals, OSHA had lowered the permissible exposure limit on methyl bromide to 5 parts per million. However, according to OSHA officials, in July 1992 this decision was overturned by the Eleventh Circuit Court of Appeals in Atlanta (AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir. 1992)). OSHA is currently supporting a reform of the Occupational Safety and Health Act of 1970 that would allow it to lower the permissible exposure limit for methyl bromide. Based on OSHA recommendations, exposure to concentrations of

[2]OSHA's skin designation refers to the fact that methyl bromide can be absorbed through the skin as well as inhaled in breathing.

methyl bromide of 5 parts per million or less, as required by APHIS, should not pose an undue risk to U.S. workers who handle Chilean pine logs treated with this chemical.

Phasing Out of Methyl Bromide

Methyl bromide has been found to be an effective broad-spectrum pesticide. However, it has also been internationally recognized to be an ozone depleter and is scheduled to be phased out of use under the Clean Air Act.

EPA is responsible for regulating the use of methyl bromide under both the Federal Insecticide, Fungicide, and Rodenticide Act and the Clean Air Act. As with all pesticides, methyl bromide must be registered with EPA. EPA now requires that methyl bromide be reregistered, due to amendments to the Federal Insecticide, Fungicide, and Rodenticide Act made in 1988. Reregistration is contingent upon producers submitting data to prove that methyl bromide meets existing standards. EPA has set a schedule for phasing out methyl bromide, as required under the Clean Air Act: in 1994, production will be frozen at 1991 levels; by 2001, the production and importation of methyl bromide will be completely banned. According to APHIS officials, its use on imported products before their entry to the United States will also be prohibited. There are no interim reductions scheduled between 1994 and 2001.

In 1992, signatories of the Montreal Protocol, including the United States and Chile, agreed to limit the use of methyl bromide. According to the agreement, by 1995 production must be frozen at 1991 levels, except for quarantine and shipment uses. Exemptions from these obligations are available for developing countries. Signatories have also agreed to attempt to reduce emissions of methyl bromide into the atmosphere. An international expert assessment team is scheduled to issue a report on methyl bromide in late 1994, and the signatories are to meet in 1995 to agree on a general control scheme for the pesticide. The requirements of the Montreal Protocol are less stringent than the requirements under the Clean Air Act.

Efforts are being made to find a safe substitute for methyl bromide. In the United States, both public and private funds support this research. However, since methyl bromide is a broad-spectrum pesticide, it is doubtful that any one substitute will be able to serve all the purposes that methyl bromide does. Therefore, it will be necessary to develop multiple substitutes. According to Forest Service officials, unless alternative

pesticides are developed, Monterey pine logs from Chile will have to be heat treated before they enter the United States. As a result, because heat treatment is very expensive, Chile may be driven out of the U.S. timber market.

Pesticides Registered in Chile That Are Prohibited or Not Registered in the United States

Pesticides Registered in Chile Used in the Production of Fruits and Vegetables That Do Not Have EPA Tolerances Established for the Active Ingredients

Azinphos Ethyl
Azocyclotin
Bitertanol
Bromopropylate
Bupirimate
Carbendazim
Carbosulfan
Cartap Chlorhydrate
Demethon-S-Methyl
Dichlofluanid
Dichloran
Dithianon
Dyphonate
Ethiofencarb
Etoprophos
Fenthoate
Flufenoxuron
Flusilazol
Futriazol
Hexaconazole
Isotiazolin
Omethoate
Penconazole
Penconazole+Mancozeb
Phenamiphos
Phosfamidon
Pirimicarb
Propineb
Prothiofos
Pyrazofos
Quinalphos
Tetracyclin Oxi
Thiometon
Triflumizole
Triflumuron
Vamidothion

Note: This information is current as of July 1994.

Source: Chilean Exporters Association, Agenda de Pesticidas.

Other Pesticides Registered in Chile That Do Not Have EPA Tolerances Established for the Active Ingredients or Are Prohibited in the United States

Dienochlor
Dinoseb and salts
Fenaminosulf
Fentin acetate
Flubenzimine
Flutriafol
Kasugamycin
Phenthoate
Phoxim

Note: While these pesticides are not listed in the Agenda de Pesticidas prepared by the Chilean Exporters Association, they were identified in previous GAO work and confirmed as registered in Chile by Agriculture and Livestock Service (Servicio Agrícola y Ganadero—SAG) officials.

Source: SAG.

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