

May 1997

AGRICULTURAL INSPECTION

Improvements Needed to Minimize Threat of Foreign Pests and Diseases



**Resources, Community, and
Economic Development Division**

B-276421

May 5, 1997

Congressional Committees

Foreign pests and diseases entering the United States cost an estimated \$41 billion annually in lost production and expenses for prevention and control, according to the U.S. Department of Agriculture (USDA). USDA's Animal and Plant Health Inspection Service (APHIS) is responsible for minimizing the risks of infestation and disease and protecting the health of U.S. agriculture by, in part, inspecting passengers and cargo entering the country. As global trade and travel expand, the potential for infestations is likely to increase, and so is APHIS' inspection workload.

To assess APHIS' effectiveness in minimizing the risks to agriculture from pests and diseases entering the United States, we (1) identified recent developments that could challenge the ability of APHIS' Agricultural Quarantine and Inspection program to carry out its mission, (2) reviewed APHIS' efforts to cope with these developments, and (3) reviewed the effectiveness of the inspection program in keeping pace with workload changes.

This report is based on work we conducted at APHIS' headquarters in Washington, D.C., as well as at 12 of the 172 ports of entry where APHIS inspectors regularly inspect individuals and goods entering the United States. The ports of entry that we examined represent a high volume of traffic as measured by people or goods entering the United States and include the nation's three busiest ports of entry. Appendix I provides more details on the scope and methodology of our work.

Results in Brief

Several developments are challenging APHIS' ability to effectively manage its inspection program. Key among these is the rapid growth in international trade and travel since 1990, which has dramatically increased the amount of cargo and the number of passengers that inspectors are to examine. In addition, policy changes that emphasize facilitating trade and customer service have put pressure on APHIS to carry out its increased inspection responsibilities more quickly in order to speed the flow of passengers and trade.

APHIS has taken several steps to cope with these developments. First, it increased funding and staffing for inspections by about 78 percent and 44 percent, respectively, from fiscal year 1990 to 1996. Second, the agency

has attempted to improve the efficiency and effectiveness of its inspections by (1) using other inspection techniques in addition to visual inspections, such as x-ray technology and detector dogs, to pinpoint prohibited agricultural products, such as untreated fruits, vegetables, and meats from countries that present a higher risk for pests and diseases; and (2) coordinating with other Federal Inspection Service agencies to maximize inspection activities. Third, it began implementing its results monitoring program in fiscal year 1997 to better understand which ports of entry and commodities pose the highest risks of entry for harmful pests and disease.

Despite these changes, inspectors at the ports we visited are struggling to keep pace with increased workload. Heavy workloads have led to inspection shortcuts, which raise questions about the efficiency and overall effectiveness of these inspections. On a broader scale, APHIS' efforts to address its workload problems are hampered by inadequate information for determining how to best deploy its inspectors. In particular, its current staffing models—mathematical formulas used to help determine inspection staffing needs—are not based on reliable information and do not incorporate risk assessment factors similar to those being developed in its results monitoring program. Consequently, APHIS has little assurance that it is deploying its limited inspection resources at the nation's ports of entry that are most vulnerable to the introduction of pests and diseases.

Background

APHIS is the lead federal agency for preventing infestations of harmful foreign pests and diseases, protecting U.S. agriculture, and preserving the marketability of agricultural products in the United States and abroad. The agency's Plant Protection and Quarantine unit (PPQ) exercises regulatory authority to inspect agricultural imports,¹ as well as nonagricultural products that may carry pests, largely through its Agricultural Quarantine Inspection (AQI) activities. In fiscal year 1996, APHIS allocated an estimated \$151.9 million for AQI activities and had about 2,600 inspectors located at 172 land, sea, and air ports of entry. APHIS has other inspection duties, such as inspections of imported and exported live animals, that are not the subject of this report.

APHIS is one of the three primary Federal Inspection Service (FIS) agencies responsible for monitoring the entry of cargo and passengers into the United States. The two other FIS agencies are the U.S. Customs Service in the Department of the Treasury and the Immigration and Naturalization

¹APHIS' regulatory authority is cited in 7 U.S.C. 147-150.

Service (INS) in the Department of Justice. The U.S. Customs Service is primarily concerned with collecting duties on imports, enforcing antismuggling laws, and interdicting narcotics and drugs. INS inspects foreign visitors to determine their admissibility into the United States and guards against illegal entry.

Recent multilateral trade agreements—the North American Free Trade Agreement (NAFTA) and the results of the General Agreement on Tariffs and Trade’s Uruguay Round of Multilateral Trade Negotiations (Uruguay Round)—have provisions that affect APHIS’ inspection activities.² Both agreements contain provisions on signatories’ use of sanitary and phytosanitary standards that limit the introduction of foreign pests and diseases. To prevent the standards from impeding agricultural trade, they must be based on scientific principles and risk assessment, provide a level of protection appropriate to the risk faced, and not restrict trade more than necessary.³

Several Developments Pose Challenges to Inspection Program

APHIS’ inspection workload has increased dramatically since 1990 because of growth in imports and exports, increased travel, and increased smuggling. Furthermore, policy changes have exacerbated workload demands by increasing pressure to expedite the processing of passengers and cargo into the United States.

The workload has been directly affected by the increase in international trade and travel between fiscal years 1990 and 1995. Overall, the volume of exports and imports rose 45 percent and 52 percent, respectively, while agricultural exports and imports increased 35 percent and 31 percent, respectively. Moreover, the number of international passengers traveling to the United States increased almost 50 percent, reaching 55 million passengers in fiscal year 1995.

Furthermore, increases in the number of ports of entry, as well as increased risk at existing ports, have expanded APHIS’ workload. Along the Mexican border alone, six new border stations were approved between 1988 and 1993, while several other major facilities are scheduled for expansion. According to APHIS officials, each new port of entry requires at

²NAFTA is a trade agreement among the United States, Mexico, and Canada that was implemented in 1994, while the Uruguay Round agreements, implemented in 1995, apply to over 100 member countries of the new World Trade Organization.

³APHIS is currently developing pest-risk standards to comply with the trade agreements. These standards, based on risk assessments, form the foundation for changing inspection program procedures, including the frequency and intensity of inspections.

least five inspectors. Along the U.S.-Canadian border, changes in risks associated with passengers and cargo have created the need for increased inspections. APHIS staff at the Blaine, Washington, port told us that increased risks were responsible for an increase from 4 inspectors in 1990 to 18 in 1996.

In addition to conducting inspections, inspectors are responsible for reviewing and issuing certificates for agricultural exports, working on temporary assignments away from their normal work location, and performing other duties, such as preventing smuggling and fumigating cargo. As exports increase, inspectors have had to issue and review a growing number of certificates for U.S. exports.⁴ Temporary duty assignments range from domestic emergency eradication of pests and diseases and foreign preclearance activities to meetings and training. Studies in California and Florida have found that the smuggling of agricultural products into the United States has grown and presents a serious pest risk.⁵ As a result of increased smuggling activity across the Canadian and Mexican borders, APHIS inspectors are performing antismuggling activities, such as working on investigations and surveillance of markets and border areas.

Along with the greater inspection workload, inspectors face increasing pressure to expedite the flow of goods and people across U.S. borders. Responding to the growing importance of trade to the national economy and to recent trade agreements, APHIS has taken an active role in facilitating trade. Towards this end, APHIS and its FIS partners have adopted new customer service standards to move the increasing import and passenger volume through ports of entry within specific periods. For passengers, these standards call upon the agencies to clear international airline passengers within 45 minutes of arrival. Similarly, APHIS has adopted standards to schedule inspections of perishable cargo within 3 hours of being notified of its arrival. APHIS acknowledges the conflict between enforcement responsibilities and trade facilitation and is seeking an appropriate balance as guidance for the inspection program.

⁴APHIS is responsible for issuing certificates for agricultural exports. The certificates, known as phytosanitary certificates, attest to the fact that the goods meet the health and safety requirements of the importing country.

⁵These studies are (1) "Report of the Governor's Exotic Pest Eradication Task Force," submitted to Governor Pete Wilson, State of California, Mar. 1996; and (2) "Final Report on Cooperative Efforts to Manage Pest Risk in South Florida (draft)," prepared by the Florida Department of Agriculture and Consumer Services and the U.S. Department of Agriculture, Aug. 1996.

APHIS Changed Its Inspection Program to Address the New Challenges

APHIS made a number of changes to its inspection program to respond to the demands of its growing workload. It shifted funds and staff away from other programs to the inspection program, broadened the range of inspection techniques, and stepped up efforts to coordinate with the other FIS agencies. In addition, to help measure the effectiveness of its inspections and to form a basis for making further improvements, APHIS recently initiated an effort to compare the rate at which restricted items are entering the United States, and the risks associated with those items, with the inspection rates at individual ports of entry. This effort is designed to determine if the current inspection program is adequately addressing the risks of harmful pests and disease entering the country and to identify which of the country's ports of entry are most vulnerable to such risks.

APHIS Increased Resources for Inspection Activities

APHIS has been shifting more funds into inspection activities since fiscal year 1990. Through fiscal year 1996, the budget for AQI activities rose 78 percent to \$151.9 million, while APHIS' overall funding rose 20 percent. To provide this increased funding, APHIS reduced its spending for several other programs, such as the brucellosis eradication program, which fell from \$59 million in 1990 to \$23 million in 1996. The 1990 and 1996 farm bills also authorized the collection of and expanded access to user fees for inspections. User fees have become the principal revenue source for the AQI program, accounting for about \$127 million of program revenues in fiscal year 1996. (See app. II for more detail on funding and staffing for fiscal years 1990-96.)

Since 1990, APHIS has raised AQI staffing levels about 44 percent—from 1,785 to 2,570 positions. The agency shifted positions from other programs to meet the increased workload. In addition, as a result of the 1996 farm bill's provisions allowing greater access to user fee revenues and removing a staff ceiling, APHIS is in the process of hiring about 200 new inspectors.

APHIS Expanded Use of Alternative Inspection Practices and Increased Interagency Coordination

APHIS has taken several steps to make better use of its inspection resources. To supplement the normal practice of performing visual inspections of selected cargo and baggage, APHIS has significantly expanded the use of alternative inspection practices, such as detector dogs and x-ray equipment. APHIS increased the number of detector dog teams from 12 in 1989 to 48 in 1996. Inspectors are also periodically using inspection blitzes—highly intensive inspections of baggage or cargo—to augment their visual inspection of selected items. To improve its ability to

select passengers for inspection, APHIS is refining the list of risk characteristics that inspectors use in selecting passenger bags for inspection. Roving inspectors currently use these selection characteristics in airports to make referrals for agricultural inspection. The agency is also studying opportunities to use roving inspectors at land border ports. Finally, APHIS is funding research on new x-ray technology that will identify air passengers' baggage containing restricted items.

APHIS has also attempted to reduce the workload at entry ports by (1) inspecting passengers and products in the country of origin or (2) allowing lower-risk products to enter with less intensive scrutiny. Under the first effort, APHIS has staff oversee or conduct inspections to preclear products and passenger baggage in the country of origin so that inspectors at receiving U.S. ports primarily monitor these products or baggage. APHIS' International Services unit now operates cargo preclearance inspections in 29 countries and limited passenger preclearance programs in 2 countries. In addition, APHIS initiated a cargo release program along the Mexican border to reduce inspections of high-volume, low-risk commodities⁶ and allow the products to enter with less intensive scrutiny. For example, according to APHIS, the port of entry with the highest volume of agricultural imports from Mexico—Nogales, Arizona—had about 75 percent of its shipments in 1995 in the cargo release program.

In addition to taking steps aimed at improving the use of its own resources, APHIS is working with the other FIS agencies—Customs and INS—to improve coordination. For example, several work units are working with the FIS agencies, through Port Quality Improvement Committees, to improve port operations and are cross-training FIS staff to educate them on APHIS' inspection needs. In 1996, the FIS agencies and the Department of State issued a report with recommendations for improving screening of passengers as they arrive at U.S. borders. In 1996, APHIS began providing computer equipment to 33 maritime ports and 26 airports to enable them to link up with information in Customs' databases on cargo and prior violations.⁷ APHIS is trying to improve the linkage with the cargo manifest database to overcome early problems in obtaining and reviewing

⁶The Border Cargo Release program established different inspection procedures for high-volume, low-risk commodities entering from Mexico. APHIS defines high-volume commodities as more than 1,000 entries per year and low-risk commodities as those with no more than one harmful pest found in a 1-year period or no more than three harmful pests found over a 6-year period. Examples of high-volume, low-risk commodities are tomatoes, cucumbers, squash, and bell peppers.

⁷The Automated Commercial System provides cargo manifests for arriving shipments. The Treasury Enforcement Communications System contains a list of people and vehicles with prior violations.

cargo information. For example, APHIS is developing its Automated Targeting System, which will automatically scan Custom's cargo manifest database to identify shipments for inspection.

APHIS Implemented Program to Determine Pest and Disease Risks at Ports

In October 1996, APHIS began implementing the AQI Results Monitoring Program, which is intended to measure the effectiveness of its inspections nationwide and provide information on which ports of entry pose the highest risk of having harmful pests and diseases enter the country. At each port, the program will also identify risks of harmful pest and disease entry associated with various commodities, their country of origin, and their means of entry. APHIS expects the program to be in place at most ports of entry by September 1997.

The results monitoring program uses random surveys of cargo and passengers entering the United States to estimate the rates at which restricted items are entering the country and the risks of harmful pests and diseases associated with those items. The program allows APHIS to determine whether the number of inspections performed at a given location for a given commodity adequately address the risk posed. The program replaces the traditional measure of inspection performance, the quantity of material intercepted, with new performance indicators related to risks associated with commodities entering the country. This approach will enable APHIS to modify its inspection program to reduce the threat of harmful pests while not unduly restricting trade.

Inspection Program Has Not Kept Pace With Increasing Demands

Despite the changes in resources and activities, APHIS' inspection program at most of the ports we visited has not kept pace with the increasing pressure from its growing workload and mission. Heavy workloads have often led APHIS inspectors to shortcut cargo inspection procedures, thereby jeopardizing the quality of the inspections conducted. Furthermore, APHIS has little assurance that it is deploying its limited inspection resources efficiently and effectively because of weaknesses in the staffing models it uses for making such decisions.

Questionable Inspection Practices

APHIS' inspectors are to follow certain procedures when examining goods and passengers entering the United States in order to minimize the possibility of pest infestation and disease.⁸ However, at 11 of the 12 ports that we examined, inspectors were not always implementing these

⁸App. III discusses APHIS' inspection procedures.

procedures for the (1) number of inspections that should be conducted, (2) number of samples of a shipment that should be examined, or (3) manner in which a sample should be selected. According to regional APHIS officials and internal studies, these types of problems may not be limited to the sites we visited.

At 11 ports of entry we visited, including the 3 busiest ports in the United States, inspectors said that they are unable to examine enough vehicles or cargo containers to consider their inspection to be representative of the movement of goods, to control the flow of restricted goods, and to minimize risk of pests and disease. Several of these inspectors said that they were not confident that the frequency of inspections was adequate to manage the risks. For example:

- At the Mexican border crossing with the heaviest passenger vehicle volume in the country, a supervisory inspector said the staff were inspecting less than 0.1 percent of the passenger vehicular traffic because of the high volume of traffic and the low number of referrals from FIS officials who initially screen the vehicles. APHIS officials have set a target of inspecting about 2 percent of all passenger vehicles.
- Because of staffing shortages, one work unit along the U.S.-Mexican border can provide inspector coverage of a busy pedestrian crossing for only 8 of the 18 hours of port operations.
- As a result of a low staffing level and the numerous other duties that must be carried out at a busy U.S.-Canadian border location, an APHIS manager told us that inspectors cannot maintain a regular presence at any of the four border crossings at the port. The inspectors are available to inspect only when the other FIS agencies make referrals to APHIS.

Problems in conducting a sufficient number of inspections were not limited to the locations we visited. An APHIS headquarters official told us the agency does not conduct any inspections at 46 northern and 6 southern ports of entry. Instead, the agency relies on the other FIS agencies to perform agricultural inspections, when needed, at these low-volume ports, although the risks are unknown.

In addition, even for the inspections that they conduct, inspectors do not always examine the number of samples suggested by the guidance. For example, inspectors at two ports of entry told us that they were unable to inspect a large enough sample in a given cargo shipment to meet APHIS' inspection guidance. More specifically, during peak season at one high-volume port along the southern border, inspectors usually inspected

one box from each shipment selected for inspection, or less than 0.5 percent of the shipment. This is far less than the 2-percent sample recommended in APHIS' guidance. At another port—the second largest in the country—inspectors curtailed their inspections of cut flowers, which are considered a high-risk cargo. The APHIS port director said that inspectors are able to conduct only cursory inspections during high-volume periods because the flowers are perishable and the cut flower industry has continually pressured both political representatives and APHIS to have inspections performed more quickly.

Finally, in contrast to recommended inspection procedures, APHIS inspectors do not always select samples in a manner that ensures that the samples are representative of the shipment being inspected. APHIS' guidance emphasizes the importance of selecting representative samples and specifically cautions against “tailgate inspections”—inspections of goods that are stored near openings and that may not be representative.⁹ A random survey of refrigerated cargo containers in Miami, conducted by APHIS and the state of Florida, documented the pitfalls of such inspections. The survey found that less than 40 percent of the pests discovered in the survey were located near the container opening.¹⁰ Despite the limitations associated with tailgate inspections, inspectors at five ports said they routinely use them in inspecting cargo containers. This practice extends beyond the ports we visited: A 1996 APHIS report on cargo inspection monitoring noted that many ports have resorted to tailgate inspections because of heavy trade volume.¹¹

In addition to tailgate inspections, we found one port using another sampling practice that also reduced assurance that the samples examined represented the entire shipment. In Miami, the second busiest port in the country, we observed inspectors allowing import brokers of cut flowers to select samples for inspection. With this practice, brokers could select samples that are likely to pass inspection, which reduces the credibility of the inspection.

⁹Sampling rates vary widely, depending on the commodity, any treatment of the commodity to kill pests, and the source country. The inspection rates differ, for example, for pears from Chile and from New Zealand. As a result, the standard for a “representative” inspection sample varies. The inspection manual for fresh fruits and vegetables advises inspectors to use 2 percent as a standard sampling rate for determining the amount of an inspection sample in a particular shipment and allows adjustments on the basis of experience with the shipper and the size of the shipment.

¹⁰“Final Report on Cooperative Efforts to Manage Pest Risk in South Florida (draft),” prepared by the Florida Department of Agriculture and Consumer Services and the U.S. Department of Agriculture, Aug. 1996.

¹¹“Agricultural Quarantine Inspection Results Monitoring Project, Cargo Survey Implementation Package.” Aug. 23, 1996.

Inspection Program Lacks a Sound Resource Allocation Method

The staffing models that APHIS uses to allocate its inspection resources have several weaknesses that undermine the agency's ability to ensure that inspectors are deployed to areas that pose the highest risk of entry of pests or disease. The weaknesses fall in three areas. First, the staffing models rely on inaccurate inspection workload data, which could skew the models' analyses. Second, the models do not contain risk assessment information similar to that produced by the results monitoring program because APHIS has not determined how to include risk data in the model's design. This limitation restricts APHIS' ability to place inspection resources at the ports of entry with the highest risks of pest and disease introduction. Finally, the models are not used to allocate inspection resources on a national basis. Rather, they are used only to allocate resources within APHIS regions.

APHIS' staffing models are intended to help determine the number of inspectors that should be stationed at various locations across the country. There are four separate models for calculating staffing needs at airports, land border crossings, maritime ports, and plant inspection stations. Each of the models calculates staffing needs by, in essence, multiplying various measures of workload activity (such as number of inspections, number of vehicle arrivals, and number of pest interceptions) by the time it takes to complete these activities and converting that product into an estimate of the number of inspectors needed.

The accuracy of the workload data used in the models is key to ensuring that projected staffing needs are also accurate. However, APHIS has little assurance that the data are accurate. The inspection workload data used in the model generally comes from APHIS' Workload Accomplishment Data System (WADS). APHIS officials at all levels of the inspection program questioned the accuracy of the data in this system because of inconsistencies in the way the data were compiled at ports and reported through regional offices to APHIS headquarters. APHIS inspectors told us that some data they submitted, such as information on endangered species, was inaccurately reported or did not appear in the national WADS summaries. Officials in one region said some data were omitted because they were not useful at the national level, while inaccurate data may be due to data entry error. Furthermore, workload statistics were often estimates of activity rather than real-time information. Finally, we found that another source of inaccurate data in WADS can be traced to the poor quality of inspections. If, for example, inspectors are reporting the results of tailgate inspections rather than inspections of representative samples of cargo, WADS data on the number of interceptions could be misleading.

A second weakness with the current staffing models is that they do not take into consideration variations in the risks of harmful pests and disease entering the country. These risks can vary by several factors, such as the commodity, country of origin, port of entry and means of entry. The results monitoring program may be able to provide this type of analyses. However, APHIS officials have not yet determined how to incorporate this information into the models. Furthermore, there are some concerns about the accuracy of the results monitoring program because it too is based, in part, upon information from the WADS.

Finally, the potential benefits of using the staffing models are limited because they are not used to allocate inspection resources on a national level. APHIS has instructed its regions and ports to use the staffing models to help allocate staff at the regional and port levels. However, regional officials at two of the four regions told us that they use the staffing models primarily for budget development, not for allocating staff among the ports within their regions.

Conclusions

APHIS faces a difficult mission—to ensure that tons of cargo and millions of passengers entering the United States do not bring in harmful pests or diseases. Its mission will only become more difficult as the volume of trade increases and the pressure to facilitate trade through expedited inspections becomes greater.

In the ports we visited—which included the country’s three busiest ports of entry—APHIS inspectors are struggling to meet these challenging work demands. Unfortunately, these demands have sometimes resulted in shortcutting inspection procedures, such as performing tailgate inspections and allowing brokers to choose the samples for inspection. In turn, these shortcuts have diminished the quality of inspections and reduced assurance that an APHIS-inspected shipment entering the United States contains no harmful pests or diseases.

In view of APHIS’ increasing workload, it is critical that the agency be able to allocate its limited inspection resources to the ports of entry with the highest risks of pest and disease introduction. APHIS currently does not have the management tools to do so. Specifically, the workload information in the WADS is key to staffing allocation decisions. However, APHIS officials question the accuracy of the WADS information, noting, among other things, that the system does not include all needed workload

information and some of the information that it does include are estimates that may be inaccurate.

Beyond problems with the workload information, APHIS' current staffing models do not factor into consideration variations by commodity, country of origin, and other factors for the risk of pest or disease introduction. APHIS' results monitoring program will provide important information on risk. However, APHIS officials have not yet determined how this information will be integrated into their staffing models or staffing decisions.

Finally, APHIS has not made a commitment to using its staffing models to allocate inspection resources from a national perspective. Rather, it plans to examine resource allocations only within regions. As a result, APHIS may lack the flexibility for effectively shifting its resources to target them to the highest risks.

Recommendations

To better ensure that APHIS identifies harmful pests and diseases through the inspections that it conducts, the Secretary of Agriculture should direct the Administrator of APHIS to issue guidance that emphasizes the need for APHIS inspectors to adhere to minimum inspection standards in terms of the methods used to select samples from shipments chosen for inspection. We recognize that meeting these minimum standards may result in fewer inspections, but we believe that a smaller number of reliable inspections is preferable to a larger number of inspections that do not comply with inspection guidelines.

To strengthen APHIS' ability to allocate its inspection resources more effectively and efficiently, we recommend that the Secretary of Agriculture direct the Administrator of APHIS to develop and implement plans that will

- improve the reliability of data in the WADS;
- integrate a risk assessment factor, developed on the basis of the results monitoring program, into its staffing allocation process; and
- position APHIS to evaluate inspection resources in terms of national rather than regional needs.

Agency Comments

We provided a draft of this report to APHIS for its review and comment. Appendix IV contains APHIS' written response to our draft report. APHIS agreed that the issues identified in each of our four recommendations

needed to be addressed and indicated actions under way to address them. For example, to ensure that APHIS inspectors adhere to minimum inspection standards, APHIS said that it will provide guidance to reinforce the importance of using the best possible procedures for preventing pests from becoming established and will ensure that the inspection standards are consistent with the risk determinations conducted through the results monitoring activity. To improve the data in the WADS, APHIS plans to ensure that inspection program policies are consistently applied nationwide and that the data used in decisionmaking are accurate and reliable. To integrate a risk assessment factor into its staffing process, APHIS is developing a prototype model of staffing guidelines to integrate data from its results monitoring and risk assessments. To evaluate inspection resources in terms of national needs, APHIS is consolidating its four PPQ regions into two and believes that this will contribute significantly to achieving national consistency in all APHIS programs.

Scope and Methodology

To assess APHIS' inspection program, we reviewed various studies of pest exclusion efforts and interviewed officials at APHIS headquarters, two regional offices, and work units at 12 ports of entry around the country. At work units, we observed actual inspections; obtained data on workload, operating procedures, and mission; and discussed recent developments and changes to the inspection program. Ports we visited were on the northern and southern borders of the United States and included international airports, seaports, rail yards, and mail stations. We performed our review from May 1996 through March 1997 in accordance with generally accepted government auditing standards. Appendix I provides details on our objectives, scope, and methodology.

This report is being sent to congressional committees responsible for U.S. agriculture; the Secretaries of Agriculture and the Treasury; the U.S. Attorney General; the Administrator, APHIS; the Commissioners, U.S. Customs Service and Immigration and Naturalization Service; and other interested parties. We will also make copies available to others on request.

Please contact me at (202) 512-5138 if you or your staff have any questions. Major contributors to this report are listed in appendix V.

A handwritten signature in black ink that reads "Robert A. Robinson". The signature is written in a cursive style with a large, stylized initial "R".

Robert A. Robinson
Director, Food and
Agriculture Issues

List of Recipients

The Honorable Richard G. Lugar
Chairman

The Honorable Tom Harkin
Ranking Minority Member
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and Forestry
United States Senate

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Abbreviations

APHIS	Animal and Plant Health Inspection Service
AQI	Agricultural Quarantine Inspection
FIS	Federal Inspection Service
GAO	General Accounting Office
GSA	General Services Administration
INS	Immigration and Naturalization Service
NAFTA	North American Free Trade Agreement
PPQ	Plant Protection and Quarantine
WADS	Workload Accomplishment Data System

Objectives, Scope, and Methodology

The objective of our review was to assess the effectiveness of the U.S. Department of Agriculture’s Animal and Plant Health Inspection Service (APHIS) in minimizing the risks to agriculture from pests and diseases entering the United States. Specifically, we (1) identified recent developments that challenge the Agricultural Quarantine and Inspection (AQI) program’s resources and ability to carry out its mission, (2) reviewed APHIS’ efforts to cope with these developments, and (3) reviewed the effectiveness of the inspection program in keeping pace with workload changes. We conducted our review at APHIS headquarters, two regional offices, and work units at 12 ports of entry located in the four APHIS regions responsible for plant inspection programs. APHIS management officials guided our selection of the ports we visited in order to ensure that these locations were representative of the challenges and problems faced by APHIS inspectors at all 172 staffed ports of entry. Ports we visited were on the northern and southern borders of the United States and included international airports, seaports, rail yards, and mail stations. Table I.1 lists the work units that we visited.

Table I.1: Animal and Plant Health Inspection Service Ports of Entry Visited

APHIS region and port of entry	Type of entry
Western region	
Blaine, Washington	Air, land, maritime, rail
San Francisco, California	Air, mail, maritime
Oakland, California	Air, mail, maritime
Los Angeles, California	Air, mail
San Diego, California	Air, mail
Nogales, Arizona	Air, land, rail
Central region	
Brownsville, Texas	Air, land, maritime, rail
Pharr, Texas	Air, land
Laredo, Texas	Air, land, rail
Northeastern region	
Buffalo, New York	Air, land, mail, maritime, rail
New York, New York ^a	Air, maritime, mail
Southeastern region	
Miami, Florida	Air, maritime, mail

^aIn New York city, we visited work units at John Fitzgerald Kennedy International Airport (Jamaica, New York) and Brooklyn, New York.

To identify recent developments affecting the inspection program's workload and mission, we reviewed statistical reports on agricultural imports and exports and international air passenger arrivals from 1990 through 1995. We also reviewed reports prepared by APHIS and state agriculture agencies on trends in workload volume and changes in pest risk. APHIS provided data on the cost of foreign pest and disease infestations to U.S. agriculture, but we did not verify the accuracy of the data or the methodology used. At the ports of entry we visited, we discussed changes in the volume and complexity of the port's workload and analyzed data on the number of phytosanitary export certificates issued by the inspection staff. We also contacted APHIS' regulatory enforcement officials who analyze trends in smuggling agricultural goods into the United States. We identified increases in ports of entry by reviewing reports from the General Services Administration (GSA) and discussing these increases with GSA headquarters officials. To assess changes in APHIS' mission, we reviewed APHIS' mission statements, internal reports, and organizational initiatives. At all locations, we discussed with officials the impact of recent trade agreements or other developments on APHIS' workload and mission.

To review the changes APHIS has made to cope with recent developments, we identified changes in resource allocations to the AQI program by reviewing APHIS' budget and staffing documents for 1990 through 1996 and reports on user fees. We discussed with APHIS officials (1) shifts in staffing and funding, (2) programs used to reduce the inspection workload at U.S. ports of entry, (3) program priorities, (4) the implementation and use of the results monitoring program and staffing models, and (5) inspection coordination with the other Federal Inspection Service (FIS) agencies. We analyzed data on inspection techniques and technologies and discussed the use of various techniques with APHIS officials at all the locations we visited. At several ports of entry, we observed the use of x-ray equipment and detector dogs in inspections. We discussed border cargo release programs with APHIS field staff at U.S.-Mexican border ports we visited and preclearance programs with officials from the APHIS International Services unit.

To evaluate the overall effectiveness of the inspection program, we reviewed inspection manuals and discussed policies, procedures, and requirements with APHIS headquarters officials. At the ports of entry we visited, we discussed with port directors, supervisors, and inspectors how inspections are conducted and how they could be improved. We also reviewed studies and documents on various APHIS and FIS initiatives aimed

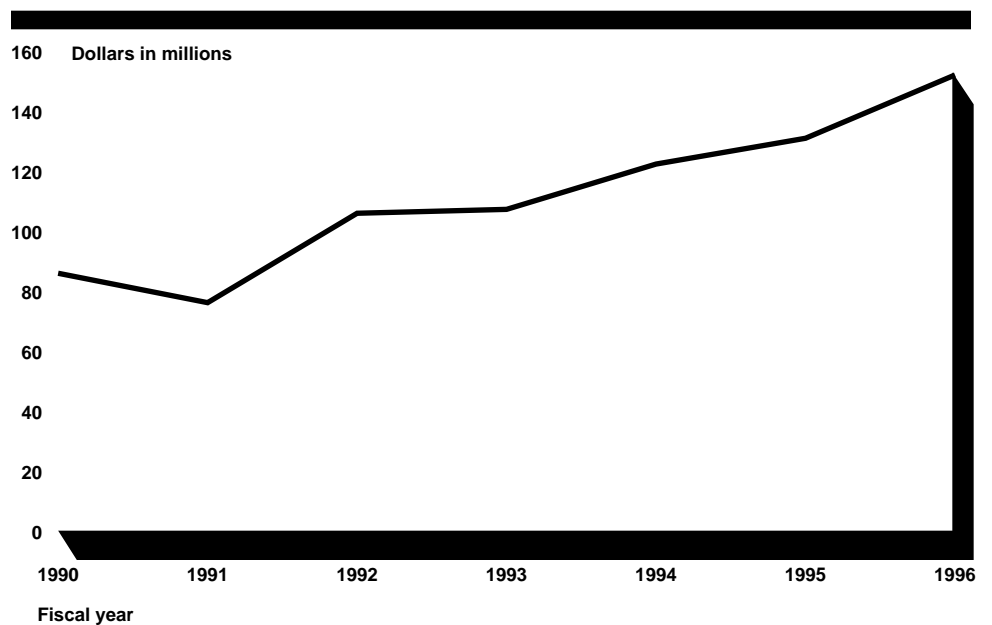
at improving inspections and discussed these initiatives with officials at the locations we visited. Additionally, we observed inspections for various modes of entry into the United States—airport cargo and arriving international air passengers; pedestrians, vehicle and bus passengers, and truck cargo at land border crossings; maritime cargo and ships at seaports; rail cars and rail passengers; and international mail stations.

We performed our review from May 1996 through March 1997 in accordance with generally accepted government auditing standards.

Inspection Program Resources

APHIS significantly increased its funding and staffing for the AQI program in the 1990s in an effort to keep pace with growing workload demands. APHIS' funding for the program rose by 78 percent from fiscal year 1990 through 1996. Figure II.1 lists the funding allocations APHIS made for the inspection program for fiscal years 1990-96.

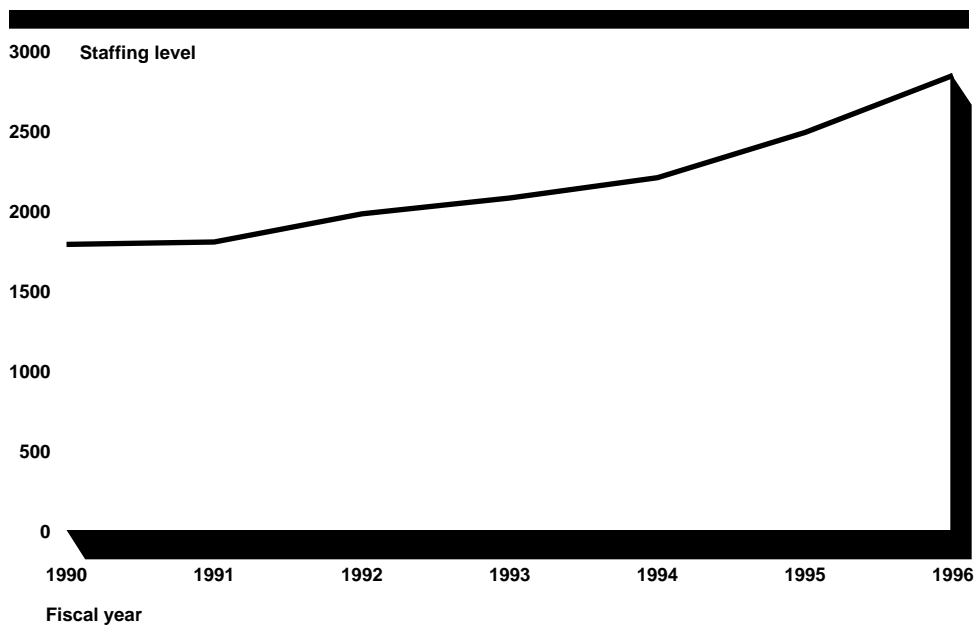
Figure II.1: AQI Funding, Fiscal Years 1990-1996



Source: APHIS.

Inspection staffing levels rose about 44 percent from fiscal year 1990 through 1996. Figure II.2 lists the authorized staffing levels for inspection activities.

Figure II.2: Authorized AQI Staffing Levels, Fiscal Years 1990-96



Source: APHIS.

Components of the Inspection Program

The AQI program is APHIS' first line of defense in protecting U.S. agriculture from harmful pests and diseases. To implement the inspection program, APHIS has prepared manuals to guide inspections of commercial shipments and passengers and developed an array of inspection techniques. These manuals show that a reliable and credible cargo inspection program requires an adequate number of inspections and the selection of individual inspection samples that are representative of whole shipments.

Inspection Procedures for Commercial Shipments

Procedures for inspecting commercial shipments vary according to such factors as the type of product, risk levels associated with the product, and country of origin. Detecting the presence of plant pests or contaminants in a commercial shipment is predicated on inspecting a sample of the shipment. The procedures include guidance for ensuring that the sample is representative of the whole shipment.

Inspection Procedures for Pedestrians, Passengers, and Passenger Vehicles

Inspection procedures for pedestrians, passengers, and passenger vehicles follow a two-stage process, primary and secondary inspection. Primary inspection involves screening passengers, their baggage, and vehicles by questioning the passengers, reviewing their written declaration, and visually observing for referral for further examination. APHIS is refining the characteristics used in the screening process to select passengers and baggage for secondary inspection. Secondary inspection involves a more detailed questioning of the passenger and a visual examination of baggage contents, if necessary. To detect pests and contraband, AQI staff use a range of strategies, such as screening, detector dogs, and x-rays. For airline flights, APHIS has also developed a list of low-, medium-, and high-risk countries of origin to help guide the selection process in the primary inspection area.

Comments From the Animal and Plant Health Inspection Service



United States
Department of
Agriculture

Animal and
Plant Health
Inspection Service

Washington, D.C.
20250

April 17, 1997

Mr. Robert A. Robinson
Director, Food and Agriculture Issues
General Accounting Office
Washington, D. C. 20548

Dear Mr. Robinson:

We appreciate the opportunity to review the draft audit entitled Agricultural Inspection: Improvements Needed to Minimize Threat of Foreign Pests and Diseases. The report was distributed to applicable officials in the Animal and Plant Health Inspection Service (APHIS) for comment and suggestions. The information below is our response to the four recommendations identified in the General Accounting Office (GAO) report.

We believe it is important to emphasize that the Agricultural Quarantine Inspection (AQI) activities of APHIS are an important, but not the only, component of our system for safeguarding plant and animal resources from exotic pests and diseases. Preclearance inspection, permit decisions, quarantine treatment, detection survey and eradication, along with AQI, only achieve maximum effect when integrated into a comprehensive safeguarding system to reduce pest risk to an acceptable level. AQI policies and procedures are best understood in this context. The observations of GAO are valuable to us as we continue to improve effectiveness and efficiency of each one of those components.

GAO Recommendation

Issue guidance that emphasizes the need for APHIS inspectors to adhere to minimum inspection standards in terms of the methods used to select samples from shipments chosen for inspection.

APHIS Response

This will be done to reinforce the importance of using the best possible procedures for preventing pests from becoming established in the United States. We will also ensure that inspection standards are consistent with risk determinations conducted through the AQI monitoring activity. Additionally, as commodity entry is facilitated through programs similar to the Border Cargo Release program, improved inspection levels on higher risk commodities will be assessed. We will evaluate the GAO premise that smaller numbers of reliable inspections is preferable to a larger number of inspections not complying with inspection guidelines.

**Appendix IV
Comments From the Animal and Plant
Health Inspection Service**

Mr. Robert A. Robinson

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GAO Recommendation:

Improve reliability of data in the Workload Accomplishment Data System (WADS).

APHIS Response:

APHIS will do more than simply improve the reliability of WADS. Each of the Plant Protection and Quarantine (PPQ) regions recently established an Agricultural Quarantine Inspection (AQI) Specialist position to conduct program analysis and risk assessment. This analysis will provide operational consistency to the AQI program and enhance review of workload analysis data, including WADS and AQI Results Monitoring. Since our AQI Results Monitoring is now operational, we plan to use monitoring results to validate WADS. AQI Specialists are part of the National AQI Team which assures that AQI policies are consistently applied nationwide and that the data used in decisionmaking is accurate and reliable.

GAO Recommendation:

Integrate a risk assessment factor, developed on the basis of the Results Monitoring Program, into the staffing allocation process.

APHIS Response:

During the past 2 years, PPQ has conducted, and will continue to conduct, risk assessment workshops for Headquarters and Regional Operations Officers, State Plant Health Directors, and Officers in Charge of larger ports of entry. With data from the AQI Results Monitoring Pilot Project and the AQI Results Monitoring Program, all levels of PPQ will have reliable data for making inspection level and staffing decisions. Presently, PPQ is using monitoring results to evaluate the need to board ships upon arrival and to board private aircraft, as these activities impact staffing. With results monitoring data and risk assessments, national and local managers can make decisions focusing more resources in high risk areas. A prototype model of staffing guidelines which integrates data from results monitoring has been developed. The prototype includes new WADS data not previously available. The prototype should be available to the field by July or August 1997.

GAO Recommendation:

Position APHIS to evaluate inspection resources in terms of national rather than regional needs.

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APHIS Response:

APHIS recognizes this as an issue in many of its programs, and in addition to establishing standards for operations to be applied throughout regions, we have also recently decided to consolidate our four PPQ regions into two. This will contribute significantly to achieving national consistency, not only in AQI, but also in all APHIS programs.

The AQI program is a major part of the PPQ mission. The program consists of more than 50 different inspection methods and technologies designed to prevent exotic plant and animal pests and diseases from entering and becoming established in the United States. AQI operations are conducted at international ports of entry. Various systems, including program manuals, criteria for hiring/training officers, x-ray technology, detector dog training, and user fee cost calculations are all based on national needs and requirements. PPQ will develop a list of organisms that present the greatest risk to U.S. agriculture and the environment. The list will be shared with trading partners and other interested parties. Identified organisms will then become the national focus of safeguarding activities including preclearance, inspections at ports of entry, exotic pest surveys, and eradication.

The very nature of the programs, which require performing AQI inspections at over 100 different ports of entry located throughout the United States and in foreign countries, considers National, regional, and local resources. Conditions such as climate, local agricultural production and host susceptibility, secondary movement of international travelers, and continuously changing international trade and travel priorities have serious impacts on resources. National allocations of workforce to regions are already based on qualitative assessments of risk. The WADS and AQI Result Monitoring will increase our ability to quantify those risks. Regional and local decisions must be made to address regional or local situations, in accord with national policy.

Thank you for soliciting our response to the recommendations in the GAO audit. We look forward to receiving the final report.

Sincerely,



Terry L. Medley
Administrator

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