



# Agriculture Resource Optimization

*January 12, 2021*

Fiscal Year 2020 Report to Congress



**Homeland  
Security**

*U.S. Customs and Border Protection*

# Message from the Deputy Commissioner of CBP

January 12, 2021

I am pleased to submit the following report, “Agriculture Resource Optimization,” which has been prepared by U.S. Customs and Border Protection (CBP).

The report has been compiled pursuant to direction set forth in House Report 116-180 accompanying the Fiscal Year 2020 Department of Homeland Security Appropriations Act (P.L. 116-93). The report provides the process that CBP uses to analyze and optimize resources to address agriculture inspection workload.

Pursuant to congressional requirements, this report is being provided to the following Members of Congress:

The Honorable Lucille Roybal-Allard  
House Appropriations Subcommittee on Homeland Security

The Honorable Chuck Fleischmann  
House Appropriations Subcommittee on Homeland Security

The Honorable Shelley Moore Capito  
Senate Appropriations Subcommittee on Homeland Security

The Honorable Jon Tester  
Senate Appropriations Subcommittee on Homeland Security

I would be pleased to respond to any questions that you may have. Please do not hesitate to contact my office at (202) 344-2001.



Sincerely,

A large, stylized handwritten signature in black ink, which appears to read "R. Perez".

Robert E. Perez  
Deputy Commissioner  
U.S. Customs and Border Protection

# Executive Summary

Every day in ports around the country, CBP agriculture specialists (CBPAS) partner with the U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service Plant Protection and Quarantine program to inspect hundreds of agricultural imports arriving daily into the United States. With the ever-increasing amount of trade, new pest pathways are discovered and the agricultural risks to the United States grow. The introduction of a single disease or pest can be a potentially deadly, infectious, or pathogenic organism that can destroy the U.S. forestry, grain, or animal (cattle, swine, and poultry) industries with consequential billions of dollars of losses in economic revenue, compounded by the length of time to recover from such catastrophe.

This report outlines how CBPAS utilize their specialized skills and training to safeguard the Nation's agriculture, natural resources, and economy. Through partnerships with USDA, CBP is able to maintain a highly skilled and trained workforce. Through the Agriculture Resource Allocation Model, CBP is able to assess risk and workload to determine staffing requirements at ports of entry. Lastly, through innovative technology and process improvement, CBP is able to deploy its resources and target high-risk shipments more effectively



# Agriculture Resource Optimization

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# I. Legislative Language

This document was compiled pursuant to direction set forth in House Report 116-180 accompanying the Fiscal Year (FY) 2020 Department of Homeland Security (DHS) Appropriations Act (P.L. 116-93), which states:

Agriculture Inspectors.—CBP is directed to continue working with USDA to better leverage existing personnel to address the agriculture inspection workload, such as through the authorization of additional work hours or dual certification, and to report back to the Committee on its efforts within 90 days of the date of enactment of this Act.

## II. Background

U.S. Customs and Border Protection (CBP) was formed on March 1, 2003, as a component of DHS, combining parts of the U.S. Customs Service, the Immigration and Naturalization Service, and the U.S. Department of Agriculture (USDA). CBP agriculture specialists (CBPAS) support CBP's mission to protect the border by preventing the entry of threats to American agriculture and natural resources and by targeting, detecting, and intercepting pests, biological material, and other agricultural products that pose a serious threat to U.S. agricultural security, natural resources, and economy.

CBPAS are the first line of defense against foreign animal diseases, exotic plant pests, biohazardous products, or other threats contained in imported products that pose a multibillion-dollar risk to the U.S. agriculture industry and natural resources. On a typical day in FY 2019, CBP processed more than 1.1 million passengers and pedestrians; more than 370,000 incoming international air passengers; more than 78,000 truck, rail, and sea containers; and approximately \$7.3 billion worth of imported goods arriving at U.S. ports of entry (POE). CBPAS prevent the entry of more than 300 pests and more than 4,500 prohibited plant materials and/or animal products at POEs daily.

### III. Education, Training, and Experience

Basic requirements for CBPAS entry-level positions include successful completion of a full 4-year course of study at an accredited college or university leading to a bachelor's or higher degree that included a major field of study in biological sciences. The list of accepted fields of study includes botany, entomology, plant pathology, agriculture, natural resource management, chemistry, or related disciplines (e.g., ecology). If the candidates have not completed the above-described education, they must have completed at least 24 semester hours in biological sciences, agriculture, natural resource management, chemistry, or a related discipline at an accredited college or university, plus appropriate experience or additional education.

CBPASs serve as experts and technical consultants in the areas of inspection, intelligence, analysis, examination, and regulatory enforcement activities related to the importation of agricultural/commercial commodities and conveyances at POEs. CBPAS apply a wide range of federal, state, and local laws and agency regulations when determining the admissibility of agriculture commodities, to prevent the introduction of harmful pests, diseases, and potential agroterrorism into the United States. This position participates in special enforcement, targeting, and/or analysis of teams charged with collecting and analyzing information and with identifying high-risk targets. CBPAS are responsible for conducting visual and physical inspections of cargo, conveyances, passenger baggage, and planning and conducting remedial actions, such as treating, disinfecting, and decontaminating prohibited commodities, conveyances, contaminants, or agricultural materials.

To prepare new CBPASs for their job, CBP, in concert with the USDA Animal and Plant Health Inspection Service (APHIS), updated and designed the CBPAS training program, which consists of 4 weeks of pre-academy training, 69 days of in-residence academy training at the USDA APHIS Professional Development Center in Frederick, Maryland, and the Federal Law Enforcement Training Centers in Glynco, Georgia, and up to 18 weeks of post-academy training.

## IV. CBPAS Duties and Responsibilities

On a typical day, CBPASs process more than 1 million passengers and 78,000 shipments of truck, rail, and sea cargo. In FY 2019, CBPASs seized a daily average of 4,695 prohibited plants, meats, animal byproducts, and soil, and intercepted 314 insect pests at the POEs. With the ever-increasing amount of trade, new pest pathways are discovered, and the agricultural risks to the United States continue to grow with “first-in-nation” pests found monthly. CBPASs are the first line of defense against foreign animal diseases, exotic plant pests, biohazardous products, or other threats that may be contained in imported products, which pose a multibillion-dollar risk to the U.S. agriculture industry and natural resources. Last year, the CBP Office of Field Operations (OFO) seized 953 kilograms (2,097 pounds) of smuggled pork products originating from China via a commercial vessel at the Port of New Jersey—the largest-ever interception of this type. The threat to crops and livestock is real, and with the added danger of potential agro/bioterrorism, the role of the CBPAS at POEs is more crucial than ever.

CBPASs are trained to analyze, detect, identify, and deter hazards associated with imported agricultural commodities. CBPASs examine agriculture-related products offered for entry and interdict prohibited and smuggled items, including biologicals and pharmaceuticals, which have the potential for spreading exotic plant pests (e.g., Asian gypsy moth) and foreign animal diseases (e.g., African and classical swine fever, foot-and-mouth disease, bovine spongiform encephalopathy). This agriculture quarantine and inspection (AQI) function occurs principally in the passenger baggage inspection area, in the cargo environment, at expedited courier facilities including U.S. international mail facilities, and in many port analytical units.

CBPASs receive specialized training regarding enforcement of AQI regulations and are a vital component of some analytical, prearrival screening units. CBPASs have continued to enhance their targeting capacity and efforts to detect agricultural and biological terrorism-related materials. Additionally, CBPASs target known smugglers and high-risk conveyances/cargo, and inspect shipments containing regulated materials. In concert with USDA employees, CBPASs perform focused special operations that have led to the interdiction of high-profile agriculture pests, such as the khapra beetle, the Asian gypsy moth, and exotic fruit flies. CBPASs also perform a wide variety of outreach activities including presentations to recruit new CBPASs and to inform travelers and the trade industry of pest exclusion activities.

Agriculture Canine (AK9) teams use an agency-certified canine to detect plant and animal materials that may be prohibited from entering the United States, or may present a threat to the agricultural industry and natural resources of the United States.

CBPASs utilize progressive knowledge, skills, and abilities that are required as they advance in each grade to the full performance level and that role shifts to incorporate more responsibilities. Position titles, grades, and level of responsibilities are varied across CBP OFO, depending on the location and size of POEs and offices.

CBPASs serve as technical consultants to provide guidance to CBP personnel, researchers, brokers, industry participants, travelers, federal/state/local agencies, and others on the



interpretative techniques and regulatory requirements pertaining to the processing of all agriculture-related cargo and material. They also routinely interact with carriers, other agencies, and foreign entities to exchange information and to provide guidance on admissibility and compliance of agriculture imports.

## V. Impact of Recent Legislation

CBP received an increase of \$19.7 million in FY 2020 appropriations to hire 240 new CBPASs. Additionally, pursuant to the codicil to Appendix 5 of the memorandum of agreement (MOA) between USDA and DHS,<sup>1</sup> CBP was planning to receive an increase in agriculture quarantine and inspection user fees before the impacts of the Coronavirus Disease 2019 Pandemic. The additional hiring resources allowed the Agriculture Programs and Trade Liaison to implement a detailed hiring plan to increase the base number of CBPASs depending on final fee levels.

On March 3, 2020, the President signed into law The Protecting America's Food and Agriculture Act of 2019 (P.L. 116-122). The goal of this act is to ensure safe and secure trade of agricultural goods across the Nation's borders by authorizing CBP to hire additional CBPASs and AK9 teams to staff America's airports, seaports, and land border POEs fully. In addition, P.L. 116-122 authorizes \$221.6 million over 3 years for CBP to hire 720 new employees. This would include 240 additional CBPASs and 200 new CBP agriculture technicians each fiscal year, for 3 fiscal years. The authorization also includes annual increases for CBP AK9 teams.

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<sup>1</sup> 21 U.S.C. 136a authorizes the Secretary of Agriculture to prescribe and collect fees to recover the costs of providing USDA APHIS services. Under an MOA between CBP and USDA, CBP receives a percent of the collections from the USDA APHIS user fee. CBP typically receives 60-63 percent of the total collections. USDA APHIS and CBP meet at least twice per year to establish collection estimates and to review actuals.

## VI. Agriculture Resource Allocation Model (AgRAM)

CBP introduced the AgRAM in the FY 2015 Resource Optimization Strategy at Ports of Entry. The AgRAM serves as one of the analytical frameworks and is a core element of CBP's Resource Optimization Strategy to ensure that informed staffing needs at POEs are identified through a thorough and validated data analysis process. Staffing models are a corporate and government standard for determining resource needs. The AgRAM is an analytical tool that provides information on optimal staffing levels, based on specific input criteria, to carry out operations and to staff priority areas adequately. The model considers all business processes required of CBPASs, the workload associated with those business processes, and the true level of effort required to carry out the daily mission effectively.

The most recent AgRAM results show an overall estimated staffing need of 3,071 CBPASs through FY 2021.

### A. AgRAM Methodology

The AgRAM is an analytical tool developed by CBP to calculate the required number of CBPASs on the basis of the volume and composition of arrivals. The model considers both the legally mandated inspection of regulated cargo as defined by USDA APHIS and the risk-based inspection of passengers and cargo. The AgRAM also utilizes USDA APHIS data to determine the various work counts in all environments and incorporates foreign animal disease and exotic plant pest risk levels as determined by USDA. The inclusion of pest risk data provided by USDA ensures that sufficient staffing is allocated for inspection of high-, medium-, and low-risk commodities, passengers, and conveyances. The travel time required of CBPASs is included in the model on a port-level basis, because the travel time in some geographic areas can be significant. The travel time required to conduct physical inspection and compliance inspection at alternate locations also has been taken into account and has been incorporated into the model. Continued and ongoing training of CBPAS is very important; therefore, training requirements have been considered and included. The AgRAM accounts for the National Agriculture Release Program, as well as the National Agriculture Inspection Program-Canadian Origin, both of which monitor the entry of very low-risk, high-volume agriculture commodities into the United States.

### B. Workload Elements Considered by AgRAM

The AgRAM draws upon various data sources to calculate the estimate. Table 1 explains the elements that form the basis for the AgRAM's calculations.

<b>Table 1</b>	
<b>AgRAM Elements</b>	
<b>Element</b>	<b>Description</b>
Volume	The annualized counts of the mutually exclusive and collectively exhaustive CBPAS activities at each location where these activities are performed. The AgRAM currently is populated with a full set of FY 2019 data for more than 80 CBPAS activities. These activities together represent the processes that CBPASs carry out in all CBP OFO operational environments including air, land, and sea environments as well as mail facilities and foreign trade zones; travel time to and from inspectional sites; agriculture mission and compliance enforcement; and secondary and enforcement actions.
Agriculture Risk	USDA APHIS defines the animal and plant health risk ratings (high, medium, low) by country of origin of each cargo commodity of agricultural interest that makes entry into the United States. USDA APHIS also defines the risk level of passengers; the risk level is based on the origination point of a flight.
Processing Times	Each activity has an associated processing time, representing the level of effort (in minutes or hours) that CBPASs expend each time that they carry out the activity.
Port-Specific Programs and Trade Initiatives	Activities that are highly specialized by port and season are added to the model, along with special trade initiatives.
Available Hours	The number of annual work hours for a full-time equivalent (FTE) CBPAS, net of time away for holidays, vacation, sick leave, training, administrative, and mission support responsibilities.
Resource Utilization	Factor that accounts for peaks and valleys in arrival volume, based on a simulation study. As the utilization factor for CBPASs increases, that resource is busy for a greater percentage of the available time.
Percentage Increases	Factors that account for anticipated increases in cargo and passenger volume.

## C. AgRAM Calculations

The AgRAM uses the input elements in Table 1 to calculate the estimated staffing needs at each POE. The main calculation is as follows: the volume, processing times, available hours, and resource utilization factor model elements are used to calculate the workload FTEs. For each activity at each location, the volume multiplied by the processing time equals the annualized work hours. These work hours are divided by the product of the available hours and the utilization factor. This quotient equals the number of CBPAS FTEs. The FTEs for all activities at each location are tallied to arrive at a total FTE estimate for each location.

The AgRAM is a performance-driven model in that its results are based on achieving performance-related goals, such as completing legally mandated inspections of regulated commodities. It also can be used to perform sensitivity analyses that help to project performance

results. The AgRAM assumes that, during peak periods, the POEs employ all CBPASs at nearly 100-percent mission-oriented work, making up for leave, training, and administrative hours during slower periods. To the extent that it is possible, the POEs schedule CBPASs who typically serve in administrative and mission support functions, such as training CBP officers (CBPO), to perform secondary inspection activities during peak times of the day and year.

## VII. Dual Certification

CBPASs are located at approximately 186 POEs and travel to nearby POEs as necessary. In those ports with a reduced agricultural risk and where an agriculture specialist is not present, CBPOs are trained to provide basic agriculture support and to reach out to CBPASs, as needed. CBP explored the possibility of dual certification with state departments of agriculture to assist in border inspections but determined that the obstacles to receive effective support from state agriculture personnel was not feasible. CBP personnel must meet stringent security requirements to access operations and systems and are authorized to execute the mission through specific legal authority. The required access, educational prerequisites, subsequent training, and regulatory authority to have non-CBP personnel support the CBPAS mission would not be efficient. CBP has determined that hiring CBP technicians to support CBPASs is more cost-effective and will be working to onboard additional CBP technicians in the future.

## VIII. Transforming Agriculture Processing

CBP is developing and deploying automated detection capabilities to identify high-risk agricultural shipments and baggage for exam by leveraging automated systems to target entities and travelers with previous agricultural noncompliance. These entities will be flagged both for increased scrutiny and to reduce inspections once a pattern of compliance is established. CBP will focus inspection resources on high-risk commodities to increase the interdiction of dangerous pests and diseases and to expedite compliant shipments by incorporating targeting and reporting needs into systems development to allow for the identification of trends in noncompliant shipments. Information-sharing between CBP and partner agencies and the streamlining of information-sharing processes within CBP enhance CBP's ability to target and detect shipments that pose a high risk of containing an agricultural threat.

### A. Agriculture Integrated Data Management System (AIDMS)

The AIDMS streamlines the CBP data-sharing and reporting processes to USDA through electronic capture of the results of AQI data, and transmission to the USDA Plant Protection and Quarantine program's Agriculture Risk Management system (ARM). During FY 2019, enhancements were added to CBP systems to improve the accuracy and ease of recording agriculture-related inspections and metrics, as well as to facilitate the capture and exchange of information with USDA. The AIDMS eliminated manual data entry by CBPASs at POEs and provided the infrastructure for cataloging, screening, and analyzing critical data for agriculture risk-based management, which will be accomplished in conjunction with USDA. Joint work is planned through FY 2021 to refine further the International Trade Data System interface between the AIDMS and ARM and to enhance the agriculture data and reporting capabilities, which will improve recording of AQI activities at the POEs and will capture the data needed as input to the AgRAM.

### B. Agro/Bio-Terrorism Countermeasures (ABTC)

The ABTC division provides operational guidance and subject matter expertise pertaining to the appropriate handling and coordinated response to encounters with biological materials. ABTC provides operational guidance, develops and deploys training, and participates in internal and external stakeholder outreach events to increase awareness on the import safety of biological materials.

At the start of FY 2020, ABTC expanded its operational capacity through the onboarding of additional personnel, referred to as biological threat exclusion coordinators (BTEC). Situated at several CBP field offices, these individuals facilitate biological interdiction responses and coordination; provide internal and external training; and conduct informed compliance via outreach with key academic universities, pharmaceutical conferences, and emergency planning and preparedness groups. CBP plans to expand BTEC into additional CBP field offices.

## C. National Agriculture Cargo Targeting Unit (NACTU)

NACTU is co-located at the CBP National Targeting Center to enhance perspectives and to promote AQI risk targeting with cross-utilization efforts. NACTU analyzes national AQI activities and applies resulting trends to import cargo shipments, vessels, passengers, express couriers, and international mail to identify quarantine risks in advance of arrival. Additionally, NACTU provides oversight of targeting and exam activities conducted by CBPAS. NACTU develops systems-based tools for field use to quantify agriculture risk in all CBP pathways and provides active field support for agriculture targeting units to ensure that information is shared expeditiously, thereby promoting consistency and uniformity. NACTU computes targeting efficiency by comparing the percentage of NACTU referrals sent to the field that result in a positive exam with the baseline percentage of field-generated exams that result in a positive exam. The unit has adopted the role of a centralized operational targeting arm for the Agriculture Programs and Trade Liaison while utilizing an all-threats approach with agriculture expertise and enforcement strategies.



## IX. Conclusion

CBP is committed to ensuring the security of our Nation's borders, while continuing to facilitate legitimate travel and trade. CBPASs are the first line of defense against foreign animal diseases, exotic plant pests, biohazardous products, and other threats that pose a multibillion-dollar risk to the U.S. agriculture industry and natural resources. Resource optimization efforts are vital to increasing capacity, to improving operations at POEs, and to contributing to economic growth. CBP utilizes data-driven analytics to assess operations and to determine resource needs at POEs and uses risk-based analytics to evaluate and prioritize those needs. Partnering with USDA, CBP is able to keep pace with emerging agricultural threats through training and continuous evaluation of operations and programs.

## Appendix - List of Abbreviations

<b>Abbreviation</b>	<b>Definition</b>
ABTC	Agro/Bio-Terrorism Countermeasures
AgRAM	Agriculture Resource Allocation Model
AIDMS	Agriculture Integrated Data Management System
AK9	Agriculture Canine (CBPAS)
APHIS	Animal and Plant Health Inspection Service
ARM	Agriculture Risk Management system
AQI	Agriculture Quarantine and Inspection
BTEC	Biological Threat Exclusion Coordinators
CBP	U.S. Customs and Border Protection
CBPAS	U.S. Customs and Border Protection Agriculture Specialist
CBPO	U.S. Customs and Border Protection Officer (GS-1895)
DHS	Department of Homeland Security
FTE	Full-Time Equivalent
FY	Fiscal Year
NACTU	National Agriculture Cargo Targeting Unit
OFO	Office of Field Operations
POE	Port of Entry
USDA	United States Department of Agriculture