

State of Arizona
Office
of the
Auditor General

PERFORMANCE AUDIT

**ARIZONA
DEPARTMENT
OF
AGRICULTURE**

**STATE
AGRICULTURAL
LABORATORY**

Report to the Arizona Legislature
By Debra K. Davenport
Auditor General

**September 2000
Report No. 00-14**

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DEBRA K. DAVENPORT, CPA
AUDITOR GENERAL

STATE OF ARIZONA
OFFICE OF THE
AUDITOR GENERAL

September 19, 2000

Members of the Legislature

The Honorable Jane Dee Hull, Governor

Mr. Sheldon Jones, Director
Arizona Department of Agriculture

Transmitted herewith is a report of the Auditor General, A Performance Audit of the Arizona Department of Agriculture's State Agricultural Laboratory. This report is in response to a June 16, 1999, resolution of the Joint Legislative Audit Committee. The performance audit was conducted as part of the Sunset review set forth in A.R.S. §41-2951 et seq. I am also transmitting with this report a copy of the Report Highlights for this audit to provide a quick summary for your convenience.

This is the fifth in a series of reports to be issued on the Arizona Department of Agriculture.

As outlined in its response, the Department does not agree with our finding that it can transfer most of its brucellosis testing to a more cost-effective regional laboratory. The Department generally agrees with our finding that it should recover the full costs of testing pesticides for the Structural Pest Control Commission.

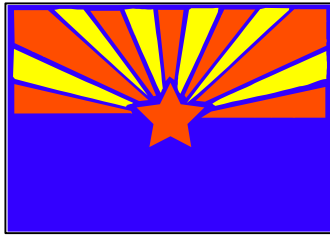
My staff and I will be pleased to discuss or clarify items in the report.

This report will be released to the public on September 20, 2000.

Sincerely,

Debbie Davenport
Auditor General

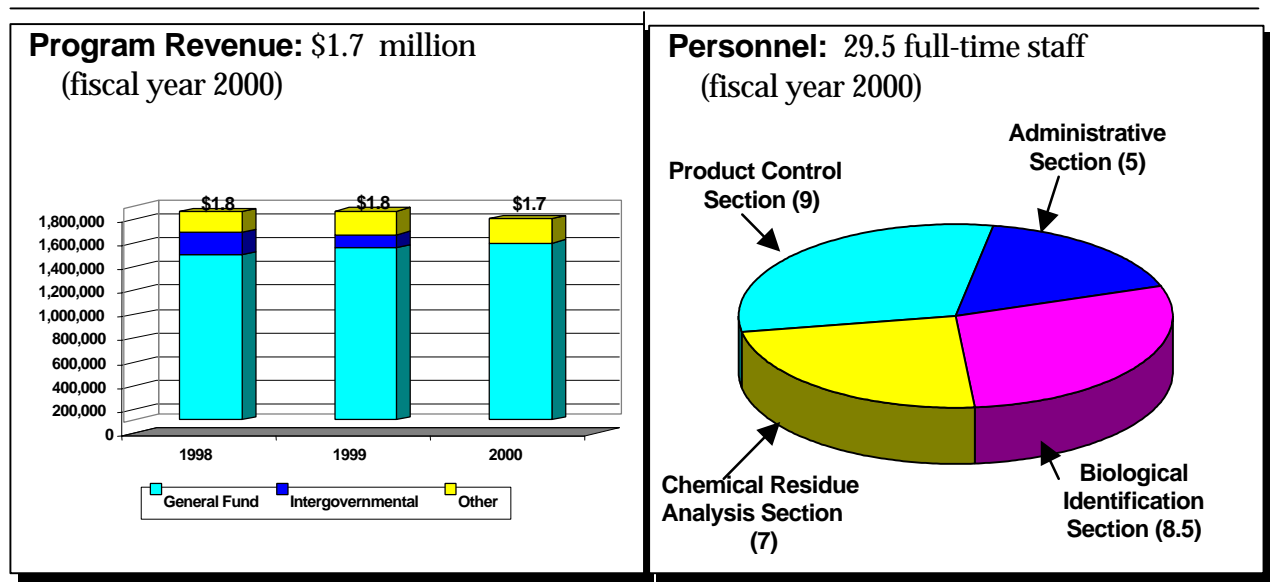
Enclosure



Program Fact Sheet

**Department of Agriculture
State Agricultural Laboratory**

Services: The State Agricultural Laboratory (Lab) provides the following services: 1) **Scientific analysis of samples**—Analyzes samples collected from meat and dairy products; fruits and vegetables; feeds, fertilizers, and pesticides; and insects and plants to provide authoritative identification and detection of biological organisms and residues that affect the public and the environment, and to ensure agricultural products meet labeling specifications; 2) **Brucellosis testing**—Tests all slaughtered cattle two years of age or older, other than steers and spayed heifers, and certain live cattle for brucellosis; and 3) **Pesticide testing on behalf of the Structural Pest Control Commission**—Tests and identifies pesticide residues in support of the Commission’s regulatory duties.



Facilities: The Lab maintains its offices and laboratory facilities at 2422 W. Holly in Phoenix. The facility houses the Lab’s administrative offices and laboratory space. The Lab also maintains a mobile trailer at its Holly Avenue facility that was previously used to conduct field tests for Karnal Bunt, a wheat infestation that the Department is working with the USDA to eradicate. The trailer is not currently being used, but the Department anticipates it will use the space for food safety testing.

Program Goals (fiscal years 2000-02):

1. To increase customer satisfaction with laboratory services.
2. To improve the quality of sample identifications and analysis performed for regulatory enforcement and other customers.
3. To improve the quality of regulatory samples received.

Adequacy of Performance Measures:

In general, the Department's goals and performance measures for the State Agricultural Laboratory appear appropriate. However, two improvements could be made.

- The Department should consider eliminating the second goal for this program. This goal overlaps with the Department's third goal, which contains measures that track the Department's performance against its quality assurance plans. Because of this overlap, the Department should combine these two goals and their associated performance measures into one goal.
- The Department should consider adding efficiency measures to track its testing costs. Currently, the Department evaluates its effectiveness and service quality by measuring customer satisfaction and sample processing time. However, it has no formal measurements reviewing the Lab's cost-efficiency. Much of the information needed to track cost-efficiency is available from the Laboratory Information Management System that became operational in January 2000.

Equipment: The Lab maintains and uses a variety of equipment, with estimated replacement costs of approximately \$3.2 million. The equipment used includes:



4 mass spectrometers, with a total replacement value of approximately \$450,000. They identify the quantity and quality of chemicals such as pesticides and drugs.



12 gas chromatographs with a combined value of approximately \$440,000. They help measure contamination caused by pesticides, and check the label accuracy of pesticide formulations.



A \$52,000 somatic cell counter used to determine the amount of white blood cells in unpasteurized dairy products to ensure product quality.



5 germinators with a total estimated replacement value of \$45,000. The germinators control the growth of seed specimens to measure seed quality.



2 autoclaves, valued at a total of \$70,000, used to sterilize laboratory equipment.

SUMMARY

The Office of the Auditor General has conducted a performance audit of the Arizona Department of Agriculture's State Agricultural Laboratory pursuant to a June 16, 1999, resolution of the Joint Legislative Audit Committee. This audit was conducted as part of the Sunset review set forth in A.R.S. §41-2951 et seq, and is the fifth in a series of audits conducted on programs within the Arizona Department of Agriculture.

The Department's laboratory provides agricultural and environmental analysis, identification, certification, and training services to the Department and others as provided by law. As part of this function, the Department tests cattle for the presence of brucellosis, a disease that can cause cattle to be slow breeders, miscarry, or become sterile. Further, the Department helps the Structural Pest Control Commission regulate licensed pesticide applicators by testing to determine if pesticides were correctly mixed and applied.

To improve the laboratory's ability to carry out these responsibilities, the Department has pursued various technological advancements. These include implementing an automated system that tracks samples throughout the testing process and allows the Department to track its testing performance, processes, and costs more effectively. This automated system should also improve customer service by expediting test results. Additionally, the Department has installed digital imaging technology at some of Arizona's ports-of-entry. This technology significantly reduces the time it takes for the Department to identify potentially hazardous insects found on trucks entering the State and thereby reduces the time a truck waits at the port while this identification process occurs.

The Department Should Pursue an Agreement to Shift Most Brucellosis Testing to the USDA (See pages 9 through 14)

The Department has an opportunity to shift most of its brucellosis testing responsibility to the United States Department of Agriculture (USDA). Since brucellosis threatens livestock production, the USDA maintains a Brucellosis Eradication Program to eliminate the disease from the United States. Under its current agreement with the USDA, the Department's laboratory will conduct an estimated 105,000 brucellosis tests in 2000, over 80 percent of which will be blood tests conducted on animals slaughtered at Arizona slaughterhouses. The State pays for one lab technician to conduct brucellosis tests, while the USDA supplies the Department with testing materials and pays for collecting blood samples. However, some states send blood samples to state/federal cooperative agricultural laboratories that provide brucellosis testing.

Transferring brucellosis testing of slaughtered cattle to a regional laboratory appears to hold several advantages for the State and the USDA. Regional agricultural laboratories have the capacity to conduct more conclusive tests at a rate that is approximately \$.80 per test cheaper than the State Agricultural Laboratory. Shipping samples to a regional lab may not result in any additional costs to the State and would allow the Department to avoid anticipated increases in brucellosis testing. Further, taking this step would permit the Department to shift staff resources to conduct more food safety and other testing. Representatives from both the USDA and regional labs indicated that such an agreement is a viable option. Therefore, the Department should pursue an agreement with the USDA that would allow the USDA and a regional laboratory to assume brucellosis testing responsibilities for slaughtered cattle in Arizona.

**The Department Does Not Recover
Pesticide Testing and Training Costs
(See pages 15 through 19)**

The Department's annual agreements with the Structural Pest Control Commission for fiscal years 1998 through 2000 have not covered all of the Department's costs for carrying out these agreements. These agreements reimbursed the Department \$47,500 annually for 290 pesticide analyses, and an additional \$7,500 for training. However, the agreements underestimated the number of actual tests conducted, particularly for the most expensive kind of tests. Further, while the agreements used test fees that appeared to cover the Department's personnel and supply costs, these fees did not include the Department's equipment costs and thus underestimated the actual cost per test. As a result, the Department has absorbed more than \$45,000 annually in costs not covered under the agreements. In addition, the service agreement may not accurately account for the training provided for in the agreement.

The Department should take several steps to recover all of its costs associated with testing and training services for the Commission. First, the Department should determine the actual costs of tests provided to the Commission, and then apply these costs in a fee-for-service agreement that bills the Commission monthly based on the Department's actual costs and number of tests conducted. Further, the Department should ensure that this agreement accurately reflects its training costs.

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INTRODUCTION AND BACKGROUND

The Office of the Auditor General has conducted a performance audit of the Arizona Department of Agriculture's State Agricultural Laboratory pursuant to a June 16, 1999, resolution of the Joint Legislative Audit Committee. This audit was conducted as part of the Sunset review set forth in A.R.S. §41-2951 et seq, and is the fifth in a series of audits to be conducted on programs within the Arizona Department of Agriculture.

In 1981, the Legislature created the State Agricultural Laboratory when it combined the separate laboratories that existed within the Arizona Agriculture and Horticulture Commission, State Chemist, and Livestock Sanitary Board. The State Agricultural Laboratory was a division within the Commission until January 1, 1991, when the Legislature created the Arizona Department of Agriculture (Department). Several separate state agencies, including the Arizona Commission of Agriculture and Horticulture, Arizona Livestock Board, the State Dairy Commissioner, and the State Egg Inspection Board, were combined to form the current Department.

State Agricultural Laboratory Activities

As defined in the Department's Annual Report, the State Agricultural Laboratory's purpose is to efficiently provide quality agricultural and environmental analysis, identification, certification, and training services to the Department and others as provided by law. To carry out this purpose, the Laboratory employs 29.5 FTEs. Five employees provide administration, support, and quality assurance and the other employees work in the following sections:

- **Biological Identification (8.5 FTEs)**—The Biological Identification section is responsible for correctly identifying insects, snails and slugs, plant pathogens, and weeds, and for providing seed germination and purity data. This section provides

Photo 1: State Agricultural Laboratory



Two chemists engaged in testing at the State Agricultural Laboratory.

testing services predominantly to the Department of Agriculture's Plant Services and Environmental Services Divisions to help protect Arizona's crops from harmful pests and to ensure the quality of seed products. For example, insect and plant samples are analyzed to identify potentially dangerous pests or noxious weeds that the Department's staff discover during vehicle inspections at ports of entry or at interior locations. This section also analyzes samples to ensure the quality of seed products. Further, Biological Identification staff serve as consultants for many of the Department's regulatory programs and provide Department personnel with training in pest identification, sample submission, and field detection.

- **Chemical Residue Analysis (7 FTEs)**—The Chemical Residue section provides regulatory pesticide analyses to the Department of Agriculture and the Structural Pest Control Commission. Most samples are analyzed to assist in investigations of alleged misuse of pesticides. Further, this section performs analyses for mycotoxin residues for both the Department of Agriculture and the Department of Health Services. Mycotoxins are highly toxic and/or carcinogenic

chemicals produced under certain environmental conditions by fungi found in cottonseed, corn, animal feeds, peanuts, and other products. This section also plays a key role in protecting Arizona's milk supply by testing milk samples for aflatoxin (a type of mycotoxin), drug, and pesticide residues.

- **Product Control (9 FTEs)**—To help ensure food safety, the Product Control section verifies the contents of various products consumed by humans and livestock, and tests food samples for the presence of certain diseases and contaminants. For example, the section analyzes feed and fertilizer samples to ensure that they are labeled correctly. Additionally, this section tests livestock blood and milk for the presence of a bacterial organism, which causes brucellosis in livestock and undulant fever in humans. Further, the Department recently initiated a program to test meat, eggs, and dairy products for foodborne pathogens, such as e-coli and salmonella.

To ensure that the Lab provides quality testing services, federal agencies and national associations accredit, certify, validate, and provide official approval to the Lab's testing services and personnel. For example, testing services for aflatoxin, animal diseases, feed, fertilizer, milk, meat, pesticide, and seed receive some form of accreditation from several federal agencies or professional organizations. These agencies and organizations include the American Association of Feed Control Officials, American Oil Chemists Society, Association of American Plant Food Control Officials, Association of Official Seed Analysts, U.S. Food and Drug Administration, U.S. Department of Agriculture, and U.S. Environmental Protection Agency.

Further, responses from Lab customers indicate that it operates efficiently and effectively. For example, in the past some customers reported delays in receiving test results. However, recent interviews with Lab customers indicated that they were satisfied with the quality and timeliness of the testing services the Lab offered.

Budget

The State Agricultural Laboratory relies upon General Fund revenues to fund the majority of its testing activities. As seen in Table 1 (see page 5), the Lab received \$1,490,100 in General Fund revenue in fiscal year 2000, and approximately \$200,000 from charges for services, licenses, permits, fees, intergovernmental aid, and other revenue. Included in this amount is \$55,000 charged to the Structural Pest Control Commission for the pesticide testing and training services the Lab provided.

Program Changes and Improvements

As a result of technological advancements, the State Agricultural Laboratory has recently undergone and continues to undergo several changes. Many of these changes offer an increased emphasis on customer service and enhanced efficiency. For example,

- **Laboratory Information Management System (LIMS)**—In January 2000, the Lab started to implement the Laboratory Information Management System (LIMS). LIMS facilitates Department efforts to track samples throughout the testing process and collect basic information, such as staff time spent conducting tests, and the number and types of sample analyses performed. This information will allow the Department to track its performance, processes, and costs more effectively. Before implementing LIMS, laboratory data was not uniformly recorded and reviewed. Additionally, LIMS should assist the Department with efforts to improve customer service by posting test results on the Lab's Web site and by electronically mailing test results to customers.

- **Digital Imaging Technology**—The Department has implemented digital imaging technology at some of Arizona's ports of entry. Digital imaging allows port staff to send images of potentially hazardous insects found on trucks to Lab staff for identification and significantly reduces the time a truck waits at the ports while the Lab identifies the pest and determines the threat and/or risk posed. Currently, the ports

Table 1

**Arizona Department of Agriculture
State Agriculture Laboratory
Statement of Revenues, Expenditures, and Transfers
Years Ended June 30, 1998, 1999, and 2000
(Unaudited)**

	1998	1999	2000
Revenues:			
State General Fund appropriations	\$1,393,100	\$1,447,400	\$1,490,100
Charges for services:			
Structural Pest Control Commission testing	55,000	55,000	55,000
Other department program testing ¹	105,590	114,651	87,227
Other ²			38,406
Licenses, permits, and fees	7,756	27,531	20,859
Intergovernmental ³	184,499	114,334	3,008
Other	<u>7,582</u>	<u>626</u>	<u>1,339</u>
Total revenues	<u>1,753,527</u>	<u>1,759,542</u>	<u>1,695,939</u>
Expenditures:			
Personal services	807,205	792,913	774,443
Employee related	184,674	175,495	160,503
Professional and outside services	36,524	15,327	24,025
Travel, in-state	8,932	7,475	4,354
Travel, out-of-state	15,354	11,961	20,698
Other operating	472,006	487,384	483,389
Equipment	<u>208,800</u>	<u>251,633</u>	<u>277,914</u>
Total expenditures	<u>1,733,495</u>	<u>1,742,188</u>	<u>1,745,326</u>
Excess of revenues over (under) expenditures	20,032	17,354	(49,387)
Operating transfers out	<u> </u>	<u>7,949</u>	<u>561</u>
Excess of revenues over (under) expenditures and transfers out	<u>\$ 20,032</u>	<u>\$ 9,405</u>	<u>\$ (49,948)</u>

¹ Consists of monies received from the Nonfood Quality Assurance and Pesticide Compliance and Worker Safety programs for feed, pesticide, and fertilizer testing the Lab performed.

² Consists of Administrative Program inspection fee monies allocated to the Lab in FY 2000 to pay for modifications to its Laboratory Information Management System (LIMs), and LIMS-related activities.

³ The significant decrease in intergovernmental revenue between 1998 and 2000 is due to the reduced need for federal assistance in the testing of Karnal Bunt.

Source: The Arizona Financial Accounting System *Accounting Event Transaction File* for the years ended June 30, 1998, 1999, and 2000.

at San Simon and Ehrenberg have digital imaging systems. This tool is especially useful in screening for Red Imported Fire Ants (RIFA), a pest considered to be a major threat to Arizona. In the past, an ant specimen had to be delivered to the Lab for identification, which could take up to 24 hours. With the implementation of digital imaging, Lab staff can receive an image of the specimen electronically and identify it in less than an hour. Lab staff provided port staff with training on how to screen for RIFA, and are examining other pests that could be identified through the digital process.

Audit Scope and Methodology

This audit focuses on the State Agricultural Laboratory's efforts to provide brucellosis testing services for the USDA and pesticide testing services for the Structural Pest Control Commission. To evaluate the Lab's performance in providing these services, several methods were used, including:

- Reviewing the Lab's fiscal year 1999 annual report to document the number of brucellosis tests conducted in fiscal years 1997, 1998, and 1999; Department LIMS reports to document the number of brucellosis tests conducted from January to July 2000; and the Lab's 1995 Program Authorization review to determine the Department's costs for brucellosis testing;
- Reviewing and analyzing Department costs for conducting pesticide testing in fiscal years 1996 through 1999 and the Department's yearly agreements with the Structural Pest Control Commission for fiscal years 1998 through 2000 to determine whether the fees provided for in these agreements adequately reimburse the Department for the testing and training services provided;
- Interviewing experts involved in the agricultural laboratory industry, State Agricultural Laboratory officials, and other stakeholders to obtain their perspective on the benefits and drawbacks of the testing services provided by the State Agricultural Laboratory. Interviewees included multiple officials from the Department, United States Department of Agricul-

Introduction and Background

ture, Federal Drug Administration, Arizona Department of Health Services, state federal cooperative agricultural laboratories in Colorado and Kansas, private agricultural laboratories, and the Structural Pest Control Commission;

- Documenting assessments of Lab performance by reviewing staff accreditations, certifications, official approvals, and validations of Lab staff and services; the Department of Agriculture Strategic Plan for Fiscal Years 2000-2002; the 1995 Program Authorization Review of the Lab; and the 1984 Auditor General's performance audit of the Lab (Auditor General Report Number 84-8); and
- Observing the blood sampling process for brucellosis test-eligible cattle at an Arizona slaughterhouse.

This report presents findings and recommendations in two areas:

- The Department should seek an agreement with the USDA that would allow the USDA and a regional lab to assume responsibility for conducting brucellosis tests on slaughtered animals.
- The Department should fully recoup the costs associated with the testing services it provides to the Structural Pest Control Commission (SPCC) by regularly determining these costs and establishing a fee-for-service agreement that charges the Commission for the actual services provided.

This audit was conducted in accordance with government auditing standards.

The Auditor General and staff express appreciation to the Director and staff of the Department of Agriculture for their cooperation and assistance throughout the audit.

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FINDING I

THE DEPARTMENT SHOULD PURSUE AN AGREEMENT TO SHIFT MOST BRUCELLOSIS TESTING TO THE USDA

While privatizing the State Agricultural Laboratory (Lab) as a whole may not be efficient, the Department could shift much of its brucellosis testing responsibility to the United States Department of Agriculture (USDA). Under its current agreement with the USDA, the Department tests thousands of cattle blood samples monthly for brucellosis. However, the USDA has established cooperative state/federal regional brucellosis laboratories that also conduct brucellosis tests. These laboratories can perform brucellosis testing at much less cost. Shifting the testing to these facilities would also free up laboratory resources for other testing and may not result in any additional shipping costs. Therefore, the Department should seek an agreement with the USDA and a regional lab to conduct these tests.

Little Opportunity for Privatizing Lab

The possibility of privatizing the State Agricultural Laboratory is limited. In 1995, the Governor's Office of Strategic Planning and Budgeting and the Joint Legislative Budget Committee conducted a Program Authorization Review (PAR) of the Lab. The PAR concluded that privatizing the entire Lab would not result in cost savings. However, the PAR indicated that privatization might be a cost-effective alternative for tests verifying the composition of animal feed and fertilizer, since the Lab's costs to perform these tests appeared higher than a private lab's costs. As a result of the PAR, in 1997 the Department issued a request for proposal to privatize these tests; however, the proposal was canceled when the Department received no bids. Department officials attribute the lack of interest to the low volume of these tests and the rigorous quality standards required.

To follow up on the PAR, auditors assessed the possibility of privatizing Lab services by contacting customers and potential contractors and reviewing current Lab testing performance. Customers generally were satisfied with the quality of Lab testing services, noting that some services were more convenient and cheaper than they would be at other laboratories, and the Lab's service quality could not be exceeded by the private sector. While one potential contractor suggested privatizing the same feed and fertilizer testing submitted for bid in 1997, recent updates to the Department's operations and increasingly stringent federal testing requirements have made it even less likely that this function could be privatized.

**Opportunity Exists to Transfer
Brucellosis Testing to
a Regional/Federal
State Laboratory**

While privatization possibilities appear limited, there is an opportunity to shift brucellosis testing to the USDA and a network of new federal/state laboratories. Currently, the Department conducts thousands of brucellosis tests for both slaughtered and live animals under an agreement with the USDA. In contrast, some states ship their brucellosis samples to a regional laboratory.

The Department conducts thousands of brucellosis tests—Under an agreement with the USDA, the Department conducts thousands of brucellosis tests annually on both live and slaughtered cattle. The Department estimates that it will conduct an estimated 105,000 brucellosis tests in 2000 with over 80 percent of these tests to be conducted on samples from slaughtered cattle. The Department and the USDA share the costs for these tests. Specifically, the Department funds and maintains one lab technician who conducts brucellosis tests, while the USDA supplies the Lab with brucellosis testing materials, and pays for two employees who collect blood samples from cattle slaughtered at a large Arizona slaughterhouse. While the Lab conducts testing for all eligible cattle from all Arizona slaughterhouses, this slaughterhouse accounts for an estimated 78 percent of all brucellosis tests conducted at the State Agricultural Lab, while most of the other

The Department will test an estimated 100,000 cattle for brucellosis this year.

testing is conducted on samples taken from live cattle being sold or shipped to states that require brucellosis test results.

**USDA Requires
Brucellosis Testing**

Brucellosis is a disease that causes some livestock, such as cattle and swine, to be slow breeders, miscarry, or become sterile. The USDA maintains a Cooperative State/ Federal Brucellosis Eradication Program to eliminate the disease from the country. Cattle are checked for brucellosis by blood-testing when they are slaughtered or sold, and before they are transported out of state. At slaughter, all cattle 2 years of age or older are tested, except steers and spayed heifers. Additionally, cattle are required to be tested for brucellosis before they enter Mexico or states that require brucellosis testing. Certain live cattle entering Arizona must also be tested.

Arizona is currently one of 44 states that the USDA has designated brucellosis free. In the last three fiscal years the Lab identified 50 blood samples that were potentially infected with brucellosis. However, more definitive testing by a national laboratory indicated that none of the animals were infected with brucellosis.

Some states ship brucellosis samples to a regional agricultural laboratory—In contrast, other states send brucellosis samples to regional laboratories that provide testing services. For example, both Iowa and Nebraska ship their brucellosis samples to a cooperative state/federal brucellosis laboratory in Topeka, Kansas. The State of Iowa no longer conducts brucellosis testing at its state agricultural lab, and as a result, sends approximately 90,000 live and slaughter brucellosis blood samples annually to the Kansas laboratory for testing. While Nebraska sends approximately 750,000 brucellosis samples annually to Kansas, it only sends slaughter samples. Since livestock owners must wait for brucellosis test results before transporting their animals, tests for live animals require a faster turnaround time. As a result, Nebraska tests blood samples for live animals locally.

The USDA typically pays for the costs associated with testing blood samples at regional laboratories. In addition to paying for the testing costs, the USDA reimburses slaughterhouses for the time they spend collecting blood from test-eligible cattle in Iowa

and Nebraska. Furthermore, the USDA pays the costs of shipping brucellosis samples from the Iowa and Nebraska slaughterhouses to the regional agricultural lab in Kansas.

Shifting Most Brucellosis Testing to a Regional Laboratory Would Have Several Advantages

Shifting the responsibility for most brucellosis testing to a regional laboratory has several advantages. Regional laboratories can conduct brucellosis testing for slaughtered cattle more efficiently and conclusively, and the State Agricultural Laboratory staff currently devoted to this activity could be freed up for other types of testing. USDA and regional laboratories appear willing to discuss such an arrangement. Therefore, the Department should pursue an agreement with the USDA that would allow the USDA to assume the brucellosis testing responsibilities for slaughtered cattle in Arizona.

The Department could ship most tests to a cooperative state/federal laboratory.

Testing would be more efficient and conclusive—Sending tests to regional labs could be more efficient and conclusive than testing at the Department’s laboratory. The 1995 Program Authorization Review of the State Agricultural Laboratory reported that it costs the Lab approximately \$1.00 per sample to perform a brucellosis test. Regional laboratories in Kansas and Colorado noted that they could conduct the tests for approximately \$.20 per sample. These regional laboratories use a semi-automated testing process that can perform brucellosis tests more efficiently and at less cost than the process used at the State Agricultural Laboratory. Moreover, both regional labs have the ability to conduct confirmation tests on-site, and do not need to send samples requiring confirmation to the National Veterinary Services Laboratories in Iowa.

Also, shipping the samples to a regional agricultural lab may not result in any additional costs to the State. In Iowa and Nebraska, the USDA pays for sampling and shipping costs. Representatives from the USDA indicated that there is no reason to believe that the USDA would not pay for shipping costs if an agreement

were reached between Arizona and a regional agricultural lab. Thus, the Department might not be responsible for shipping costs under a similar agreement.

Regional laboratories could test more efficiently, and the move could free up Lab staff.

Testing of live samples could be retained—While the Department should transfer slaughter brucellosis testing to the federal government, it could retain the testing responsibilities for live samples. Private veterinarians in Arizona indicated that test turnaround time is important when testing live animals since ranchers may have to wait for the results before they can transport their cattle. As a result, the Department should continue to conduct brucellosis testing for an estimated 17,000 samples from live animals each year. Based on the Department's staffing requirements for this testing activity, approximately one-half FTE would be needed to perform these tests. Further, the Lab has the necessary equipment and trained staff to continue conducting these tests, and a USDA representative indicated that it could continue to provide testing supplies for the State Agricultural Laboratory.

Staff savings could be used elsewhere—Transferring the Department's brucellosis testing responsibilities to the USDA would allow the Department to save staff resources and respond to potential changes in food safety testing requirements. To carry out the 105,000 tests projected for 2000, the Department estimates it will use 2 FTEs. Further, according to the Department, the slaughterhouse industry intends to further increase its slaughter of test-eligible cattle, resulting in the need for more staff to help with testing. By removing the slaughter brucellosis testing function from the Lab, the Department could avoid an increase in brucellosis testing staff, and apply approximately one and one-half FTE elsewhere. For example, the federal government is considering expanding food safety tests, including the potential of requiring states to expand their testing activities in these areas. Therefore, the Lab could use the FTE savings to perform food safety and/or other testing activities.

Agreement with USDA and use of regional laboratory appears feasible—The Department should pursue an agreement in which the USDA would assume the Department's brucellosis testing responsibilities. A representative from the USDA noted a trend for states to shift brucellosis testing to regional cooperative

state/federal laboratories and indicated that the USDA would be willing to facilitate Arizona's pursuit of an agreement with a regional lab. Additionally, regional labs have indicated their willingness to discuss the possibility of conducting brucellosis tests for Arizona. For example, a representative from the Kansas Cooperative State/Federal Agricultural Laboratory indicated that his lab would have the capacity to perform brucellosis tests for the State of Arizona. Further, a representative from the Cooperative State/Federal Agricultural Laboratory located in Colorado also stated that his lab is interested in conducting brucellosis tests for other states.

Recommendations

1. The Department should seek an agreement with the USDA and a cooperative state/federal agricultural laboratory to conduct brucellosis tests on slaughtered cattle while continuing to conduct brucellosis testing for live animals. Further, the agreement should indicate that the USDA will pay shipping costs for samples, and continue to provide the State Agricultural Laboratory with brucellosis testing supplies for live animals.
2. Once an agreement is in place, the Department should use the FTE savings to assist with food safety and/or other testing activities.

FINDING II

THE DEPARTMENT DOES NOT RECOVER PESTICIDE TESTING AND TRAINING COSTS

While the Structural Pest Control Commission (Commission) reimburses the Department for testing and training services, contractual reimbursement rates do not cover the Department's costs. Currently the Department does not recover over 50 percent of its costs for the analyses it performs for the Commission. The Department should accurately determine the costs of the testing and training services provided for in the service agreement, establish appropriate fees, and pursue a service agreement for testing and training that accurately charges the Commission for the cost of the services provided.

Background

While the Department regulates the use of pesticide in agricultural areas, the Structural Pest Control Commission is a state agency that regulates the commercial use of pesticides in nonagricultural areas, primarily pesticide application to prevent termites in new homes. The Commission obtains pesticide samples from applicators, and after applications, which the Lab tests to ensure that the pesticide was correctly mixed. Additionally, the Lab analyzes swab, water, foliage, animal tissue, and soil samples to ensure that applicators comply with state and federal pesticide application and storage laws. For example, the Lab could conduct health-related pesticide analysis if the Commission suspected pesticide misuse that posed a public health threat. The State Agricultural Laboratory is the only lab in Arizona that is federally approved to conduct pesticide analyses for the Commission. The fiscal year 2000 service agreement reimburses the Lab a flat fee of \$47,500 a year for an estimated 290 pesticide analyses, and an additional \$7,500 for training Commission inspectors. The Commission is funded by revenues that are generated from pesticide applicator filing fees, and it uses these revenues to pay for the Lab's testing services.

Department's Service Agreement with the Commission Is Inadequate

The service agreements between the Department and the Structural Pest Control Commission for fiscal years 1998 through 2000 have not reflected the Department's true costs for providing all of the testing and training services specified in these agreements. These agreements failed to adequately account for both the costs and number of pesticide samples submitted by the Commission. As a result, the Lab has absorbed over \$45,000 annually in testing costs associated with analyzing the Commission's pesticide samples. Additionally, these agreements may not have accurately accounted for the training provided by the Department, or received by its Lab staff.

Inaccurate testing projections—The agreements have not reflected the true number of samples submitted by the Commission for testing. Specifically, these agreements underestimated the number of tests the Lab actually performed for the Commission. As illustrated in Table 2, the agreement establishes a price for each type of analysis and the number of tests to be provided. However, with the exception of pesticide application confirmations, the number of tests provided far exceeded the number agreed upon. Further, the most expensive test was the most underestimated test in the service agreements. Specifically, the Department conducted 118 more of the health-related pesticide tests than called for in the agreements.

Table 2

**Arizona Department of Agriculture
State Agricultural Laboratory
Comparison of Contracted to Actual Tests
Year Ended June 30, 1999**

Type of Analysis	Service Agreement Amount	Number of Tests	
		Estimated	Actual
Health Related Pesticide	\$350	50	168
Pesticide Formulation	100	50	81
Unknown Pesticide	250	40	80
Pesticide Application Confirmation	100	<u>150</u>	<u>0</u>
Total		<u>290</u>	<u>329</u>

Source: Fiscal year 1999 Interagency Service Agreement between the Commission and the Department, and the Department's pesticide testing records.

The Structural Pest Control Commission agreement does not accurately estimate the number and costs of lab testing.

Costs for testing services are low—In addition to underestimating the number of tests, the fees in the service agreements do not reflect the true costs of testing. The Department derived the \$47,500 charge for its services based on an estimate of the number of employees required to conduct the tests. The fees specified in the agreements did not reflect the actual number of staff hours, cost of supplies and equipment, and administrative expenses incurred as a result of the agreement with the Commission. Despite this, the Department has tracked and developed overall cost estimates for testing services for the Commission. These estimates indicated that while the agreements' fees appear to recover the Department's staffing and supply costs, they do not recover equipment costs. When these are accounted for, testing services provided to the Commission cost the Department from \$92,000 to over \$110,000 per year from fiscal years 1997 through 1999. By not fully reflecting all costs in the agreement, and inaccurately accounting for the number and types of tests conducted, the Department has absorbed approximately 50 percent annually of Commission testing costs.

Training costs may not be accurate—In addition to underestimating testing volume and costs, the service agreements may not accurately account for the training included in the agreement. At the Commission's request, its inspectors receive training in proper pesticide sampling procedures from Lab staff. The amount of this training varies from year to year. Further, the \$7,500 supports continuing professional training and development for the Department Laboratory staff. However, the Lab has not maintained accurate records of the training it provides to the Commission, and as a result, cannot estimate its costs for providing this training.

The Department Should Take Steps to Recover Its Costs

The Department should take steps to recover all of the costs associated with the testing and training services provided for in the agreement. Specifically, the Department should:

- **Determine the per analysis costs for the testing services provided to the Commission**—The Department should monitor the testing conducted for the Commission to determine the Lab's per analysis costs for conducting pesticide tests. To arrive at this cost, the Department should examine each pesticide test included in the service agreement, calculate the average cost per analysis for these tests, and incorporate the actual costs into a revised service agreement with the Commission. For example, the Department should calculate the average cost of health-related pesticide analyses and use this average cost when negotiating the service agreement for the following year. However, in cases where the Department must conduct a method development test, the Department should consider recovering its costs separately. These costs arise when staff are required to develop new testing methods for unique samples.

- **Establish a fee-for-service agreement with the Commission**—In addition to determining the average cost per analysis type, the Department should seek a fee-for-service agreement with the Commission. A fee-for-service agreement would allow the Department to accurately recover all of its costs for Commission pesticide testing by requiring the Commission to reimburse the Department for tests actually conducted. Additionally, the Department should provide monthly billings to the Commission reflecting the charges incurred by the Department for the testing services provided. This would allow both the Department and the Commission to monitor cost and provision of these services. In response to this audit, the Department has modified its agreement with the Commission for fiscal year 2001 to more fully reflect the costs associated with the testing services it provides.

- **Ensuring training costs are accurately reflected in service agreement**—Within this fee-for-service agreement with the Commission, the Department should also ensure this agreement accurately reflects the costs of the training services provided to the Commission or received by its Lab staff. Therefore, the Department should determine the costs of training provided for in the agreement to ensure these costs are reflected in the agreement.

Recommendations

1. The Department should annually identify its costs for performing the various analyses requested by the Commission, determine an accurate cost per analysis, and incorporate this cost per analysis into the service agreement with the Commission.
2. The Department should establish a fee-for-service agreement with the Commission for pesticide tests and bill the Commission each month based on the actual numbers of tests performed.
3. The Department should identify its actual costs for the training services it provides to the Commission and the continuing professional training its laboratory staff receive and ensure the service agreement accurately reflects and reimburses the Department for these costs.

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Agency Response

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September 7, 2000

The Honorable Debra K. Davenport
Auditor General
Office of the Auditor General
2910 North 44th Street, Suite 410
Phoenix, Arizona 85018

Dear Ms. Davenport:

Enclosed is the Arizona Department of Agriculture's response to the State Agricultural Laboratory Audit.

The Department is pleased to note that it has already begun to identify ways to improve upon the issues documented in your report and has also begun implementing the recommendations where possible. In most instances, these efforts were underway before the recommendations were received, and we accept them as endorsements of responsible management directives already underway.

We extend our appreciation to the audit team for their professionalism and attention to detail. I certainly appreciate their willingness to seek out the Department's input and clarification of issues identified in this report.

Sincerely,

A handwritten signature in black ink, appearing to read "Sheldon R. Jones". The signature is fluid and cursive, with a prominent initial "S".

Sheldon R. Jones
Director

AUDITOR GENERAL'S RECOMMENDATIONS AGENCY RESPONSE

Overview:

The Arizona Department of would like to thank the Auditor General's staff for the professional manner in which the audit was performed.

We believe the ADA, while it continues to identify methods of improving its delivery of service to Arizona's growing agricultural industry and the public as a whole, is a good example of how government should strive to work. We take very seriously our mission and our charge to regulate and support Arizona agriculture in manner that promotes farming, ranching and agribusiness while protecting consumers and natural resources.

While this cabinet level agency was created only ten years ago, to serve and regulate Arizona's agriculture industry, a number of things have and continue to change about the industry we serve. Foremost is the changing face of our customers, which reflects the industry as a whole. Arizona is internationally renowned for its diverse agricultural production. From artichokes to cattle, cotton and citrus to shrimp and watermelons, Arizona is continuously increasing its agricultural diversity. It is entirely fascinating to observe the customers that call on us every day. The ADA is constantly asked to service more than the program crops of wheat, cattle, cotton and dairy. Ten years ago, the aquaculture, ratite, custom slaughter, wine and massive nursery industry did not exist as they do today. Because of the changing face of our customers and the public's demands for faster, more efficient service, the ADA recognizes more must be done to meet the challenges we face today and those we will face in the future.

The Department appreciates the attention the Auditor General's staff has paid to the unique responsibilities and critical functions of the State Agricultural Laboratory. As the report highlights, the laboratory's customers indicate that they are "satisfied with the quality and timeliness of the testing services the Lab offered." While this is good news, the Department hopes to improve upon the already high level of service offered at the Lab by implementing the report's findings and recommendations where effective.

The findings and recommendations of this report will be incorporated into our discussions with other state agencies and other agency stakeholders to further refine the system for meeting the dynamic and ever changing needs of Arizona's agriculture industry and the public at large.

Finding I. The Department Should Pursue an Agreement to Shift Most Brucellosis Testing to the USDA

Recommendation: The Department should seek an agreement with the USDA and a cooperative state/federal agricultural laboratory to conduct brucellosis tests on slaughtered cattle while continuing to conduct brucellosis testing for live animals. Further, the agreement should indicate that the USDA will pay shipping costs for samples, and continue to provide the State Agricultural Laboratory with brucellosis testing supplies for live animals.

Agency Response: *The finding of the Auditor General is not agreed to but the recommendation will be implemented in a different manner.*

Agency Explanation:

The Department appreciates the Auditor General’s insight and suggestions relative to generating cost-savings for Arizona’s taxpayers wherever responsible. The Department, however, cannot agree to shift “most brucellosis testing to the USDA.”

The report accurately summarizes the effect of brucellosis on livestock. What the report did not expand upon is the public health threat that brucellosis presents to infected areas. For people who come in contact with infected livestock or those who consume unpasteurized products from infected animals, this disease may prove burdensome. Brucellosis causes undulant or remittent fever, headaches, weakness, profuse sweating, chills, weight loss, and generalized aching. According to the New York City Department of Health, brucellosis was detected in a citizen as recently as 1998.

The Department will look into ways to reduce further the cost of conducting brucellosis testing at its laboratory, and if further research warrants, will consider seeking an agreement with the USDA for their regional analysis of the blood samples. But before the Department implements this recommendation, it must be absolutely certain that the implementation will not jeopardize this state’s brucellosis-free status.

Many factors, beyond postage and supplies, need to be considered when outsourcing a perishable sample analysis. Foremost is the timeliness of the result communication, the integrity of the sample once shipped, the potential for sample loss or contamination, and contingency laboratory procedures. Until each factor is examined, the Department cannot agree to “seek an agreement with the USDA and a cooperative state/federal agricultural laboratory.”

Responsibly, the Department sees tremendous value in maintaining a strong level of local control over Arizona’s brucellosis-free status by continuing the in-house analysis of samples collected until enough evidence has been presented to assure the state’s status will not be jeopardized by the migration to regional analyses.

The Department has begun a detailed cost study of the brucellosis analyses with the intention of reducing costs strategically and efficiently. The Department will seek out further opportunities to reduce the cost of this service cautiously, without jeopardizing the integrity of the state's free-from status. Incorporated in this search for prudent cost-savings, the Department requires time to contact its counterparts in other states to learn first-hand of their experiences with federal, regional analyses. Additionally, the Department requires time to identify the audit team's contacts at the USDA that have expressed a willingness to develop a realistic agreement.

It should be noted that the Department has actively contacted numerous officials at the United States Department of Agriculture to learn more about the possibility to conduct regional analyses of the samples. Unfortunately, however, the Department has received no indication from the USDA's regional or Washington, D.C. offices that an agreement incorporating the cost of sample shipping or supplies will be negotiated. To date, the USDA has neither indicated what kind of turn-around time the Department can expect for samples submitted to their laboratories for analysis.

Recommendation II: Once an agreement is in place, the Department should use the FTE savings to assist with food safety and/or other testing activities.

Agency Response: The finding of the Auditor General is not agreed to and the audit recommendation will not be implemented.

Agency Explanation:

As was stated in its response to Recommendation I above, the Department will consider negotiating an agreement that strategically reduces the costs associated with brucellosis testing while providing adequate safeguards and mechanisms to protect Arizona's brucellosis-free status. Should cost savings be actualized, the Department will certainly make good use of its resources to function in other laboratory testing activities.

Finding II: The Department Does Not Recover Pesticide Testing and Training Costs

Recommendation I: The Department should annually identify its costs for performing the various analyses requested by the Commission, determine an accurate cost per analysis, and incorporate this cost per analysis into the service agreement with the Commission.

Agency Response: The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

Agency Explanation:

The Department has already implemented this recommendation. As the audit team was made aware, the Department developed an amended service agreement with the Structural Pest Control Commission for this fiscal year that accurately collects the cost of the various analyses performed for the Commission. This agreement was signed on August 1, 2000.

Recommendation II: The Department should establish a fee-for-service agreement with the Commission for pesticide tests and bill the Commission each month based on the actual numbers of tests performed.

Agency Response: The finding of the Auditor General is agreed to and the audit recommendation will be implemented in a different manner.

Agency Explanation:

The Arizona Department of Agriculture has expressed to the audit team its concern with requiring reimbursement of sample costs from the Commission on a monthly basis. While the Department has executed a new agreement between the Commission and itself, the matter of payment for the sample analyses has been approached differently.

Specifically, the Commission has agreed to pay a lump-sum amount at the beginning of each fiscal year that is based upon the historic, actual cost of past samples and the number of samples projected to be analyzed. Once the cost of the analysis exceeds what has been paid, the two parties have agreed to bill and make payment for additional samples on an actual-cost, monthly basis.

Recommendation III: The Department should identify its actual costs for the training services it provides to the Commission and the continuing professional training its laboratory staff receive and ensure the service agreement accurately reflects and reimburses the Department for the costs.

Agency Response: The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

Agency Explanation:

The Department recognizes the value of recovering the costs associated with training services and continuing professional training the laboratory staff receives and incorporated a mechanism to recover these costs in the agreement signed August 1, 2000.

Other Performance Audit Reports Issued Within the Last 12 Months

99-15	Arizona Board of Dental Examiners	00-3	Arizona's Family Literacy Program
99-16	Department of Building and Fire Safety	00-4	Family Builders Pilot Program
99-17	Department of Health Services' Tobacco Education and Prevention Program	00-5	Department of Agriculture— Licensing Functions
99-18	Department of Health Services— Bureau of Epidemiology and Disease Control Services	00-6	Board of Medical Student Loans
99-19	Department of Health Services— Sunset Factors	00-7	Department of Public Safety— Aviation Section
99-20	Arizona State Board of Accountancy	00-8	Department of Agriculture— Animal Disease, Ownership and Welfare Protection Program
99-21	Department of Environmental Quality—Aquifer Protection Permit Program, Water Quality Assurance Revolving Fund Program, and Underground Storage Tank Program	00-9	Arizona Naturopathic Physicians Board of Medical Examiners
99-22	Arizona Department of Transportation A+B Bidding	00-10	Department of Agriculture— Food Safety and Quality Assurance Program and Non-Food Product Quality Assurance Program
00-1	Healthy Families Program	00-11	Arizona Office of Tourism
00-2	Behavioral Health Services— Interagency Coordination of Services	00-12	Department of Public Safety— Scientific Analysis Bureau
		00-13	Arizona Department of Agriculture Pest Exclusion and Management Program

Future Performance Audit Reports

Arizona Department of Agriculture—Commodity Development and
Promotion Program

Arizona Department of Agriculture—Sunset Factors

Arizona Department of Agriculture—Pesticide Compliance Program

Arizona State Boxing Commission