

# State of Arizona Department of Agriculture



## Annual Report Fiscal Year 2003 - 2004

### Mission Statement

*To regulate and support Arizona agriculture in a manner that encourages farming, ranching and agribusiness while protecting consumers and natural resources.*



# Arizona Department of Agriculture

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September 30, 2004

Honorable Janet Napolitano  
Governor, State of Arizona  
1700 West Washington  
Phoenix, AZ 85007

Dear Governor Napolitano:

I am pleased to submit to you the Arizona Department of Agriculture's Annual Report for the fiscal year 2003-2004. Inside you will find the details about the many services provided by our Department. The professional activities of departmental staff and individuals committed to excellence reflect the expertise and training each employee brings to serving the citizens of the State of Arizona.

I am proud to offer the following account as to how we are working to improve the quality of our State's agricultural industry. As you read through these pages, you will find our staff has been awarding grant funds, promoting Arizona businesses in foreign and domestic markets, administering public advisory committees and training agricultural workers around the State in safety, research and writing.

The Arizona Department of Agriculture has implemented many improvements and successes over the last fiscal year. From consistently and fairly regulating agriculture to rewarding employee dedication and hard work, the Department is constantly seeking ways to improve service.

Our Department realizes its duty to incorporate agriculture and developing technology with state-of-the-art protocols, as it fulfills its mandate to regulate agribusiness and protect the public. However, services such as securing ports of entry and monitoring safe food processing and packaging have been severely impacted by previous budget reductions. We trust the economic integrity of the Department will remain intact as we prepare for the food safety and industry challenges in the coming months and years.

Sincerely,

A handwritten signature in cursive script that reads "Donald Butler".

Donald Butler  
Director

DB/kd

# Table of Contents

|  |    |
|--|----|
| Agriculture Advisory Council   | 1  |
| Food Safety and Quality Assurance  | 2  |
| Animal Health and Welfare Program  | 6  |
| Citrus Fruit & Vegetable Standardization and<br>Federal-State Inspection | 13 |
| Pest Exclusion and Management  | 15 |
| Environmental Services   | 21 |
| Agricultural Consultation and Training                                   | 32 |
| State Agricultural Laboratory  | 45 |
| Commodity Development and Promotion                                      | 52 |

# The Department of Agriculture Advisory Council

In existence since 1989, the Arizona Department of Agriculture Advisory Council

- Reviews agricultural policy in this State as established by law and as administered in all functional areas of the department.
- Assists the director in formulating the department's proposed budget allocations among the administrative units of the department and provides such additional assistance as the director requests.
- Reviews, advises and makes recommendations to the director on proposed rules before they are adopted by the director and may recommend initiating the rule making process relating to any subject under the department's jurisdiction.
- May conduct periodic analyses of departmental policy as reflected by the operations of the State Agricultural Laboratory, the office of the agriculture safety, the office of border inspections, and decisions of hearing officers.

This Advisory Council is made up of five members appointed by the Governor to five-year terms. Pursuant to statute, two members must be actively engaged in animal production as their major source of income, two members must be actively engaged in plant production as their major source of income and one member must be actively engaged in agribusiness as his or her major source of income.

On November 18, 2003, Mr. Doug Mellon was elected Chairman of the Department of Agriculture Advisory Council and Mr. Rick Ladra was elected Vice-Chairman. Mr. Ben Gingg of Buckeye, Ms. Cindy Baker of Yuma and Mr. Clint Hickman of Glendale serve on the council.

# Food Safety and Quality Assurance

Cooperating with federal, state and county agencies, the dairy, egg and meat & poultry inspection programs are charged with safe production, processing and distribution of food items produced in Arizona. Inspections take place at all levels of production and distribution. Purposes of the inspections range from public health controls, to inspections for quality and weight.

## Dairy Products Control Program

The dairy inspection program is now a part of the Arizona Department of Agriculture. The dairy program's origin goes back some 86 years, just after Arizona became a state in 1912. One of the very earliest of the public health programs, the Dairy Commission was charged with monitoring and improving sanitation at both dairy farms and in milk processing plants - prior to the advent of pasteurized products or widespread refrigeration of dairy products. At the time, lacking both pasteurization and refrigeration, sanitation and control of zoonotic diseases (those transmissible to humans) were the most important parts of the program.

In 1991, the State Dairy Commission became part of the Arizona Department of Agriculture. Not only did the Agriculture Department assume responsibility for housing the program, its State Agricultural Laboratory (SAL) became responsible for processing dairy samples taken to ensure public health and food quality. The Dairy Products Control Program, as it is now known, continues working relationships established with both the Food and Drug Administration (FDA) and United States Department of Agriculture (USDA). The work with FDA includes the shipment of milk in interstate markets and physical inspection of dairy farms and processors. USDA work includes facility inspections and grading / sampling of various dairy products such as butter, cheese and powdered milk and officially assigning USDA grades to such products.

The Dairy Products Control Program works cooperatively with the Food and Drug Administration with respect to the National Conference of Interstate Milk Shippers (NCIMS). This program allows Arizona milk producers and firms to ship milk products across state lines in interstate commerce. Currently, the program operates under conventional inspection procedures, involving physical plant and farm inspections and product sampling. HACCP (Hazard Analysis Critical Control Point) inspections are still fairly new in the dairy industry. Three field inspectors interact with county health program staff in helping to resolve public inquiries regarding vector, odor issues and manure runoff from dairy farms.

## Safety and Quality

Milk and dairy products are routinely sampled and examined for a number of food safety indicators and quality factors. At the State Agriculture Laboratory, tests such as Coliform and Standard Plate Count are run to determine if milk was processed under sanitary conditions and is of good quality. Tests are conducted to verify that milk was properly pasteurized, that added vitamins are at standardized and safe levels and for other items to ensure public safety. Milk is also checked for standardization, to verify that statements, such as fat content shown on labels, properly reflect the product contained. As part of lab testing, screening is done for antibiotics, pesticides and aflatoxin.

Dairy inspectors check facilities that handle milk such as dairy farms, processing plants and wholesale facilities. This is done to ensure conformity with state and federal laws regarding sanitation and public health related issues. When they are prescribed for use on dairy farms,

prescription drug usage is checked to be certain that they are approved for dairy animal use. Water supplies are visually examined to ensure that potable and non-potable water supplies are not co-mingled and cross-contaminated.



*The USDA "Shield"  
applied by Arizona Department of Agriculture staff to  
officially graded eggs and dairy products*

## Egg Products Control Program

Food safety and quality within the Department of Agriculture includes the Egg Products Control Program, which began in the Department of Agriculture when the department was formed in 1991. During the 1940's, the State Egg Inspector's office worked directly with the predecessor of the United States Department of Agriculture, the War Food Administration, in matters of egg and poultry procurement for the war effort and later for the Veteran's Administration.

Today, the program inspects shell eggs and egg products at all industry levels. This includes packing plants, wholesalers and retail firms. The Arizona Department of Agriculture has adopted United States Department of Agriculture grade standards and weights, and applies these to eggs in commerce in Arizona. Three field staff monitor the program statewide and help to ensure that eggs offered for sale to consumers meet applicable standards, processed under sanitary conditions and are held under refrigeration at all times prior to sale.

The Department of Agriculture enforces a 45-degree ambient temperature requirement on shell eggs in commerce in Arizona. Program staff enforces this requirement from production until the product is sold at retail. The program also enforces temperature requirements for frozen pasteurized or liquid eggs, which are in commerce.

## A Growing Industry

Although Arizona is a relatively small egg producing state, it has gone from approximately 250,000 layers five years ago to more than 2.5 million layers at present. This represents a ten-fold increase in numbers. This number may double within a few years. Arizona currently has 3 commercial laying flocks, including a small facility north of the Grand Canyon. There are approximately 100 licensed wholesale egg dealers inside and outside Arizona, which serve thousands of retail outlets statewide.

## The United States Department of Agriculture (USDA) State Trust Program

Egg program inspectors are required to be licensed by USDA. Since the inception of the program in the 1940's, program staff have been responsible for inspecting eggs, egg products and poultry products. These inspectors apply USDA grade standards to certify shell eggs, egg products and poultry products to USDA consumer grades. A new state trust agreement in 1999 allowed the Arizona Department of Agriculture to assume full management of the program,

which includes inspections for new facilities desiring grading service and billing and collections for services rendered to industry.

Applicants for grading service, industry, military and USDA itself, pay the full cost of this voluntary inspection program. Officially graded products command a premium in the market place. Additionally, department staff stationed at the egg plants provides contract compliance services, which allow Arizona eggs access to foreign markets, including Mexico. The State of Hawaii currently receives large quantities of eggs produced in Arizona, which are graded and inspected by program staff to comply with Hawaiian State requirements.

Four USDA licensed department employees work full time at two egg packing plants. This provides 7 day a week coverage inspecting plant sanitation, providing employee training, checking eggs for weight and grade standards, oversee third party audits and make temperature checks on facilities and product. Department staff certifies that shell eggs produced under private label consistently meet USDA standards.

Department resident graders assigned to the plants have also assisted plant management in developing and enforcing bio-security programs to help prevent Exotic Newcastle Disease (END) from entering the facilities. END in the birdhouses would result in full depopulation of all birds at an egg packing plant.

### **School Lunch Program**

Departmental USDA licensed inspectors inspect poultry products procured for consumption by school age children under United States Department of Agriculture Food Help Programs. Department personnel verify that products are received under seal and properly refrigerated during shipping. Because children are considered high risk with respect to food borne illness, the performance of shipping companies to maintain temperature limits is monitored.

### **Meat and Poultry Inspection Program**

This General Fund program receives 50% in matching funds from United States Department of Agriculture to conduct many types of meat and poultry inspections at the wholesale level. Empowered by state statutes and administrative rules, the Federal Meat Inspection Act and the Federal Poultry Products Inspection Act, the program directly protects Arizona consumers.

Staff inspectors receive training identical to USDA inspectors including training in HACCP inspection procedures, Sanitation Standard Operating Procedures, animal ante and post mortem inspection procedures for disease, general sanitation inspection procedures, and federal computer system and processing procedures. On a daily basis, inspectors visit industry plants to check for compliance with state and federal standards.

### **Beyond organoleptic inspections...**

It used to be the norm to perform “organoleptic” inspections of meat and poultry. That is, utilizing the senses of taste, smell, vision and touch to determine disease or other conditions which render animals and animal products unfit, either partially or wholly, for human consumption. HACCP inspection procedures were devised and implemented for the industry, which were originally developed to protect America’s astronauts; HACCP is now the norm in much of the food industry. The Arizona Meat and Poultry Inspection Program has been operating for 5 years under a HACCP system of inspections.

### **Beyond Inspections...**

Arizona’s consumers benefit from routine microbial analysis of meat and poultry samples submitted to the State Agricultural Laboratory. Environmental swabs taken in processing plants and samples of meat and poultry are routinely checked for Salmonella, Listeria and other

organisms of public health concern. Residue testing for antibiotic residues is also performed on samples submitted to the laboratory. This compliments antibiotic screening (called STOP tests), which are performed by inspectors at the plant level.

When samples are collected for microbiology testing, additional samples of products, especially further processed foods, are taken as well. Known as “economic” samples in the program, these include analysis of percentage of fat content, water content and other items, to verify compliance with label formulations. Inspectors and program management staff check product formulations prior to product approval. Products meeting regulatory requirements receive a triangular “mark of inspection”, which shows that it is an Arizona Department of Agriculture approved product.



*ADA's Official  
"Mark of Inspection" found on  
officially inspected meat and  
poultry products.*

### **Consumer Inquiries: A priority at the Arizona Department of Agriculture**

If there are questions from the public about any food product inspected by the department, which is under the regulatory jurisdiction of the department, field inspectors or sanitarians are dispatched to check on the product purchased if needed. If the concern is quality or weight related, the inspector generally can resolve it promptly, following up on the issue at retail and/or wholesale outlets. If a concern about human illness is raised, a sample of the product in question is forwarded to the State Agricultural Laboratory for microbial or residue testing, as appropriate.

# Animal Health and Welfare Program

## Priorities and Oversight

The highest priority of the Animal Health and Welfare Program is the prevention and rapid identification of and response to diseases of livestock, poultry and commercial fish, some of which are transmissible to humans. These diseases include many which exist in other parts of the United States and have never been identified in Arizona or have been recently eliminated from Arizona. The Arizona Department of Agriculture State Veterinarian Office is responsible for safeguarding our livestock, poultry and commercial fish resources from devastating diseases, protecting the public from harmful interactions with livestock, and ensuring the humane treatment of livestock. In addition, staff veterinarians provide veterinary expertise to the Meat and Poultry Inspection Program, which is responsible for the oversight of animal slaughtering and processing.

## Livestock, Poultry and Commercial Fish Disease Prevention and Control

In order to prevent importation of diseased animals from other states and nations and to ensure rapid identification and containment of infected animals, Animal Health and Welfare Program officers and inspectors are deployed throughout the State for the purposes of:

- Monitoring the health of animals moving in interstate commerce as well as those imported through international ports-of-entry;
- Monitoring the health of livestock at locations where they are concentrated such as auctions, feedlots and dairies;
- Enforcing laws governing the importation of animals;
- Application of quarantines under authority of the Department Director and the State Veterinarian;
- Enforcement of laws pertaining to feeding livestock in beef cattle feedlots and swine in meat garbage feeding operations. (Improperly treated meat garbage can spread swine diseases including diseases foreign to the United States);
- Investigation of reported inhumane treatment of livestock;
- Containment of straying livestock including those from Mexico.

The State Veterinarian collaborates with state and federal government agencies in the U.S. as well as Mexico, in the enforcement of laws to control livestock and poultry diseases such as Foot and Mouth Disease, Bovine Spongiform Encephalopathy (Mad Cow Disease), tuberculosis and brucellosis in cattle, brucellosis and pseudorabies in feral and domestic swine, scrapie in sheep, chronic wasting disease in deer and elk, rabies in all animals, and other diseases that are foreign to the United States.

## Animal Health Programs

Ongoing state/federal/industry programs for the elimination of brucellosis and tuberculosis in cattle, pseudorabies in swine and equine infectious anemia in horses continue to be the major focus of field veterinarians. Scrapie in sheep, Chronic Wasting Disease (CWD) in cervids,

Johne's Disease in cattle and West Nile Virus in horses have also taken more staff time this fiscal year.

- Bovine Tuberculosis (TB) was diagnosed in a dairy-breeding heifer that was being tested for export out of Arizona in January of this year. This heifer was imported into Arizona as a small calf and had tested negative before arrival. The last TB diagnosis in breeding cattle was over twenty years ago in Arizona. The Arizona Department of Agriculture took swift action to quarantine the premise and conduct an epidemiological assessment including testing, sampling and depopulation of exposed cattle. In all 8500 head of replacement dairy heifers in a feeding operation and 5500 head of mature cows in an adjacent dairy were included in the epidemiological assessment. The quarantine that was imposed in January 13, 2004 was lifted on February 19, 2004. ADA and USDA sponsored two continuing education workshops attended by over thirty practicing veterinarians highlighting administration and interpretation of tuberculin skin tests. TB surveillance and prevention strategies were also major topics in light of Texas, California and New Mexico having lost their TB free status over the last two years.
- West Nile Virus (WNV) first identified in the Eastern U.S. in 1999, has spread westward and Arizona's first equine case was confirmed on the Navajo Nation in August of 2003. During the balance of the vector season last fall, 136 more cases were confirmed in 11 counties in Arizona. Among the horses with known outcomes (92) 41 (45%) died and 51 (55%) survived. The department continued to work closely with the Arizona Department of Health Services, Arizona Veterinary Diagnostic Lab and the other state county and local government agencies in conducting surveillance activities across the state. 27 cases were confirmed in May and June of this spring, 24 were in Maricopa County. Symptoms of WNV in horses include neurological signs such as depression, lack of appetite and coordination, muscle tremors and head pressing. The department continues to stress vaccination of horses and mosquito control as prevention strategies.

Monitoring imports and active surveillance are key components of the Animal Health Programs. The following graphs, gives a breakdown of the Livestock Importation Survey and active surveillance and vaccination for program diseases.

### LIVESTOCK IMPORT SUMMARY

| CLASS OF LIVESTOCK        | SHIPMENTS                       | TOTAL NUMBER OF HEAD |
|---------------------------|---------------------------------|----------------------|
| Dairy Cattle Replacements | 832                             | 58,868               |
| Beef Cattle               | Beef & Feeding Combined<br>3500 | 20,862               |
| Feeding Cattle            |                                 | 345,715              |
| Swine                     | 434                             | 39,469               |
| Sheep and Goat            | 453                             | 77,953               |
| Equine                    | 8345                            | 15,486               |

### TESTING AND VACCINATION SUMMARY

|   |        |
|---|--------|
| Bovine Brucellosis – Blood Tests            | 65,549 |
| Bovine Tuberculosis – Tuberculin Skin Tests | 83,727 |
| Equine Infectious Anemia – Blood Tests      | 12,662 |
| Official Calfhood Vaccinations Brucellosis  | 36,405 |

## Livestock Inspection

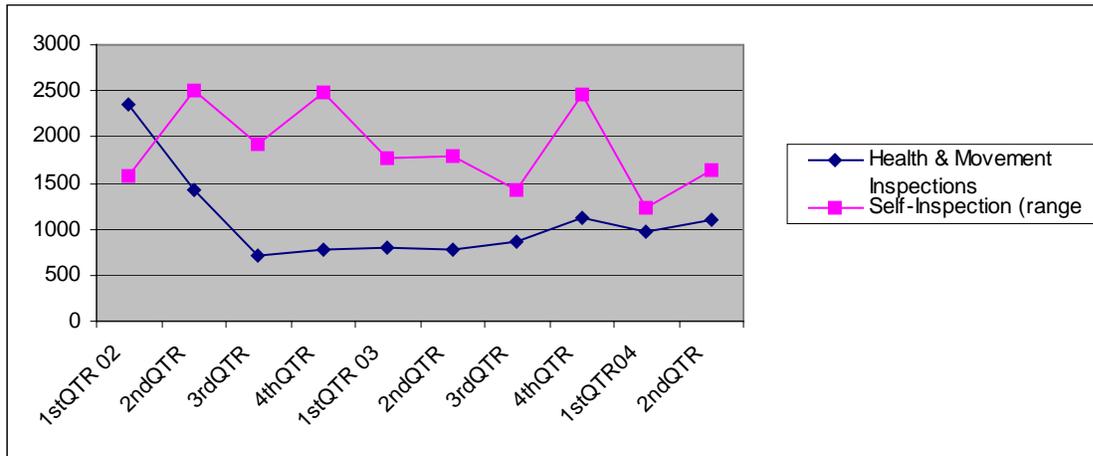
The Animal Health and Welfare Program is focused on protecting and regulating the livestock industry. While the primary focus is protecting livestock from animal disease and ensuring their humane care, the program works with the Central Licensing Self-Inspection Program to oversee the owner-generated documentation of Arizona livestock movement. The ability to trace the movement of animals through the marketing system is a cornerstone of an effective disease

control program. If a diseased animal is located, knowing where the animal has been enables identification of potentially exposed animals and the implementation of disease reduction strategies.

### Inspection Data Tracking

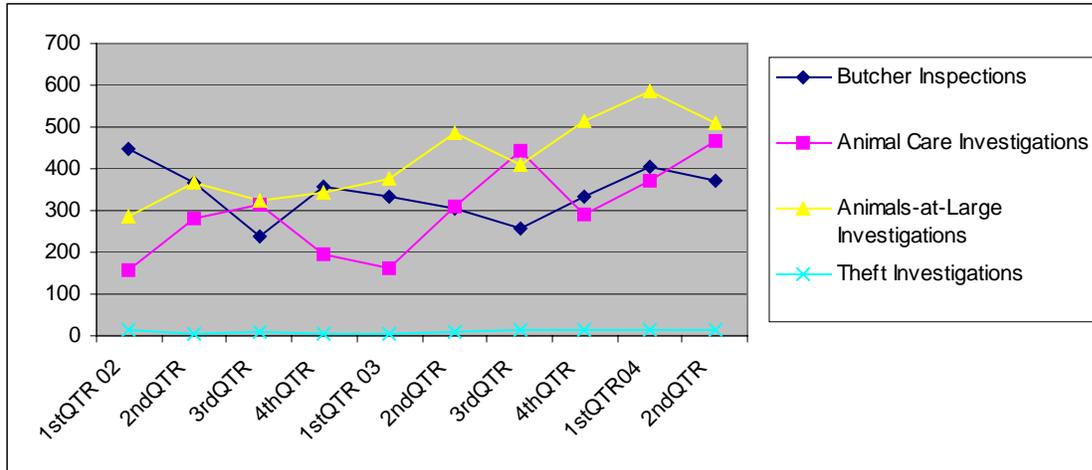
The Livestock Inspection Program tracks field activities with the dispatch Radio Log Identification System. Since 2002, a number of activities have been closely monitored and include such items as the number of inspections for health and the movement of range cattle and cattle for processing, and the number of investigations for animal care issues, stray animals/animals-at-large, and livestock theft. The inspection data closely tracks the changes that have occurred in the past three years.

**Health and Movement Inspection vs. Self-Inspection**



This graph demonstrates the drop in field inspections coinciding with the director’s order to suspend some of the inspection activities in early 2002. Concurrently, there is a rise in the number of self-inspections conducted by the livestock owner. We expect these patterns to continue with a dramatic increase of inspection activity during the fall shipping season.

## Investigations and Inspections



The graph above shows the number of investigations conducted for animal care issues (generally higher in the summer months, or 2<sup>nd</sup> and 3<sup>rd</sup> quarters), stray livestock and livestock theft. Reported thefts have remained unchanged in spite of a heavier reliance on self-inspection. In addition, the graph shows the number of inspections conducted for cattle processing at custom exempt processing plants.

Currently, over two thousand producers are approved to use self-inspection. Livestock owners understand the value of documenting animal movement and have accepted this responsibility for intrastate documentation through self-inspection. Department Animal Health and Welfare officers, inspectors and deputies document all sales of range cattle and all interstate movement of range cattle. The sheep, goat and swine industries continue to support the inspection statute and rules governing their respective species. Exhibitions, fairs and shows have also been supportive of the “seasonal pass” started by rule. Livestock theft investigation and enforcement cases remain at a low level and Arizona continues to maintain disease free status in all industry-state-federal cooperative disease control programs.

### Service to the Livestock Industry

Arizona Department of Agriculture’s Animal Health and Welfare officers and inspectors provide a valuable service to the people of Arizona by protecting livestock from contagious and infectious diseases, documenting animal movement and regulating the health of animals. Acting on behalf of the State Veterinarian, officers and inspectors may enter any premises where livestock are kept or maintained to examine evidence of ownership, to inspect the animal’s health or to confirm their care is humane. The field component of the Animal Health and Welfare Program consists of ten officers and eight inspectors who are assisted by a force of part-time deputies who help during increased inspection demands. Two officers have received advanced training in equine welfare issues and take the lead in complicated welfare cases.

### Commercial Fish Industry: Aquaculture Disease and Control

Arizona producers of warm water fish species such as catfish, tilapia and shrimp are among this State’s most unique industries. They are joined by those in the production of cold-water species such as trout, which occurs in cooler parts of northern and eastern Arizona. The scope of state aquaculture regulation covers those involved in the growing, transporting and processing of commercially raised fish and shrimp for human consumption. Statutes mandate that when

transported, live fish must be accompanied by a certificate of aquatic health and because the department does not yet have a fish health inspector on staff, the University of Arizona assists the department by conducting fish farm inspections and sample testing in order to complete required health certifications. Department aquaculture statistics for 2003-2004 reveal 71 licenses were issued to aquaculture facilities, transporters and processors including nine for educational or research purposes.

## Foreign Animal Disease (F.A.D.)

### Exotic Newcastle Disease (END) and Avian Influenza (AI)

The final quarantines of the Exotic Newcastle Disease (END) outbreak in California, Nevada, Arizona, New Mexico and Texas in 2002 and 2003 were lifted in September of 2003. The highly pathogenic Avian Influenza (AI) quarantine implemented in Texas in February of 2004 was lifted on March 30, 2004 of this year.

Both END and AI have a national surveillance strategy coordinated by the United States Department of Agriculture with assistance from states and industry stakeholders. The Arizona Department of Agriculture in cooperation with the University of Arizona Veterinary Medical Diagnostic Laboratory are supporting the national effort to do surveillance for END, highly pathogenic AI and low pathogenic AI.

END and AI are both highly contagious poultry diseases that can infect a wide variety of other birds. The velogenic viscerotropic Newcastle disease and highly pathogenic Avian Influenza can both cause sudden death in birds and exhibit the following similar clinical signs in sick birds:

- Decreased egg production
- Soft shelled eggs
- Nasal discharge, sneezing and coughing
- Diarrhea
- Incoordination

### Brucellosis Spongiform Encephalopathy (BSE)

In cooperation with USDA-VS the department is supporting an enhanced surveillance program for BSE with the United States. This is in response to the diagnosis of BSE in a dairy cow located in the state of Washington on December 23, 2004. Through DNA testing regulatory officials in the US and Canada both verified that this cow originated from a herd in Canada. The goal for Arizona in the national program is to analyze 3000 biological specimens for the presence of BSE during a 12-month period.

### Vesicular Stomatitis (VS)

Vesicular Stomatitis (VS) was diagnosed in Texas, New Mexico and Colorado in late spring and early summer of this year. The lesions of this virus are similar to Foot and Mouth Disease a highly contagious disease eradicated in the United States in the 1920's. VS is usually self limiting and occurs sporadically in the Southwestern US. Arizona Animal Health Officials placed restrictions on livestock shipments entering from Texas, New Mexico and Colorado. To date the positive cases have been limited to the above mentioned states.

The following table recaps by species the on farm Foreign Animal Disease investigations conducted by State and Federal diagnosticians during the past year.

|                          |    |
|--------------------------|----|
| Bovine                   | 5  |
| Equine                   | 16 |
| Poultry                  | 1  |
| Exotic Animal (tortoise) | 1  |

## Nonfat Dry Powder Milk Program

In May of 2003, USDA/CCC announced the release of nonfat dry powder milk to be used as a supplemental high protein animal feed. The powder had been declared unfit for human consumption due to being old and beyond its fit for use date. The powder was made available to eleven western states, which included Arizona ranchers, who signed up for the program being administered by the Arizona Department of Agriculture. They began receiving dry powder for their foundation herds of cattle, bison, sheep and goats on a monthly basis. At the rate of two pounds of powder per animal per day for cattle and bison, one-half pound per day for sheep and goats. The program continued to May of 2004 with 73,000,000 pounds of dry powder milk being dispersed to Arizona ranchers.

USDA/CCC have renewed the program in 2004 on a limited basis with Arizona having only six counties eligible an allocation of 4,980,000 ponds of dry powder.

# Citrus, Fruit & Vegetable Standardization and Federal-State Inspection

Arizona ranks third in the nation for production of fresh market vegetables. Arizona acreage produced more than 102 million cartons of fresh produce. Arizona's top five commodities rank second nationally and account for almost 70 percent of the State's total produce production.

The top ten FY 2003-2004 number of cartons shipped from Arizona, in order of their volume, are as follows:

|              |            |            |           |
|--------------|------------|------------|-----------|
| Head lettuce | 31,615,900 | Watermelon | 4,751,689 |
| Romaine      | 13,945,649 | Spinach    | 3,961,792 |
| Cantaloupe   | 12,036,282 | Lemons     | 3,696,508 |
| Broccoli     | 6,288,301  | Honeydew   | 3,005,658 |
| Leaf lettuce | 5,287,958  | Tomatoes   | 2,948,239 |

As detailed below, the Citrus, Fruit and Vegetable Standardization Program and the Federal-State Inspection Program conducted 75,398 inspections this year. In addition, the Citrus Fruit and Vegetable Standardization Program issued 468 licenses to industry producers.

## Industry Funded Industry Supported

Both of these programs are entirely self-funded and receive no general fund allocations. Industry supports the Citrus, Fruit and Vegetable Standardization Program through license fees and carton assessments, which are reviewed monthly and adjusted yearly. The Federal-State Inspection Program is entirely funded on a fee-for-service basis.

The Citrus, Fruit and Vegetable Advisory Council, by statute, is comprised of governor-appointed citrus producers from specified counties, fruit or vegetable producers from specified counties, an iceberg lettuce producer from Yuma County, an Arizona grape producer and an Arizona apple producer. This group of leaders of their respective industries meets quarterly with staff of the Citrus, Fruit and Vegetable Program to review program policy and budgetary items.

## Standardization Program

Arizona citrus, fruit and vegetable producers rely on the Arizona Department of Agriculture for access to markets in order to sell their commodities. To qualify to sell their commodities, Arizona producers must show proof of compliance with international, national and other States' quality standards. It is the Arizona Department of Agriculture Citrus, Fruit and Vegetable Standardization Program (CF&V) that provides Arizona growers, shippers, dealers and commission merchants proof of their quality standards compliance.

The Citrus, Fruit and Vegetable Standardization Program maintains the product quality standards established for each commodity produced or marketed in Arizona. Program inspections are conducted to verify quality (such as color, shape and condition factors, bruising and decay), size, maturity, processing and labeling. These Program inspections take place in fields, packinghouses, coolers and warehouses.

Because of the CF&V Program, Arizona industry has the quality control necessary for the marketing of their products.

Arizona industry produces an immense variety of citrus, fruits and vegetables available to consumers throughout the year. Citrus, Fruit and Vegetable Program inspectors check for various factors in that citrus, for example, is tested for maturity and size, which is important to shippers. Grapes and melons are tested for ripeness and sugar content. All vegetables and fruits are inspected for defects such as scars or irregularities of shape, which is important for customer appeal.

## Federal-State Inspection Program

This year the Citrus, Fruit and Vegetable Standardization Program successfully completed its seventh year managing the Federal-State Inspection Service Fresh Produce Inspection and Terminal Market Programs in Nogales, Phoenix, and Yuma under a cooperative agreement with United States Department of Agriculture. Mandatory as well as voluntary United States Department of Agriculture inspections are performed by Arizona Department of Agriculture staff (federal-state inspectors) and take place primarily at the shipping point (point of origin), port-of-entry (Arizona-Mexico border) or the terminal market (point of destination).

This federal program administered by the department also enforces United States import requirements and marketing order restrictions at the international border between Arizona and Mexico. Significantly, Nogales, Arizona is the second busiest port-of-entry for produce in the United States; last year, department staff inspected more than 18 million packages of tomatoes and 11 million lugs of table grapes imported from Mexico.

It is important to note that the Citrus, Fruit and Vegetable Program and the Shipping Point Inspection Program in Yuma and Phoenix developed cost-reduction efficiencies for Arizona's agriculture industries through the cross-training of department inspectors to handle both state and federal inspections as well as phytosanitary certifications.

## Third Party Audit Program Created

At the request of Arizona fresh produce industry representatives, Arizona Department of Agriculture, along with other western State Departments of Agriculture and the United States Department of Agriculture, met several times to develop a Third Party Audit Program within the existing framework of USDA Agricultural Marketing Service Federal -State Inspection. The resulting program is designed to audit the Good Agricultural Practices and Good Handling Practices for the produce industry. Federally licensed state inspectors perform these audits at industry's request.

## Department Pride in the Statewide Gleaning Project

Governor Janet Napolitano has issued an Executive Order extending the Arizona Statewide Gleaning Project. Gleaning is the harvesting of surplus crops and the Governor's Project distributes these gleaned crops to those in need. The Arizona Department of Agriculture plays an integral role in the statewide gleaning effort in that Citrus, Fruit and Vegetable Standardization Program inspectors notify key food bank officials of upcoming seasons and identify potential crop donations. Participating producers are then able to donate surplus crops instead of discarding them by allowing volunteers, inmate labor and food bank staff to glean their fields.

Several state agencies support other portions of the program and this combined effort resulted in 29 million pounds of produce collected and distributed to food banks and other organizations serving those in need during this past year.

# Pest Exclusion and Management

## Increased Threat of Pests

Increased execution of various trade agreements has resulted in a higher incidence of trade into and out of the United States and, subsequently, Arizona. Many pests common to foreign countries present a significant threat to Arizona agricultural industry, public well being and associated quality of life. As more commerce enters Arizona, the risk of introducing plant pests or diseases from other states or foreign countries increases.

## Dangers

Introduction of non-native plant pests can have devastating effects on the yield of agricultural and horticultural commodities, and can increase industry production costs through pesticide applications for eradication or control of destructive pests. Plant pests reduce the quality of products and threaten the demand for Arizona products.

Metropolitan Phoenix is among the nation's ten largest cities and is expected to grow by one million people over the next ten years. This unprecedented growth has fueled significant increases in the importation and distribution of plants, many of which originate in parts of the country already quarantined for devastating and costly exotic pests such as the red imported fire ant.

## Pest Exclusion Safety Nets

The Pest Exclusion and Management Program has moved to incorporate new technologies, advanced inspector training and updated quarantine requirements. Intensive pest-trapping methods are used to meet the challenges of rapid urban development, increased trade and expanded export opportunities for Arizona's agricultural industry.

## Free-From Status

Arizona continues to enjoy freedom from numerous exotic pests that have cost infested states millions of dollars in attempted control or eradication. Through the deployment of several safety nets intended to minimize the threat of exotic species establishment, the Arizona Department of Agriculture protects the quality of Arizona life. Components of these safety nets include Arizona's ports-of-entry, interior inspection operations and a comprehensive survey and detection program against...

## Arizona's Most Unwanted -

**Asian Longhorned Beetle**—boring insect that weakens and eventually kills infested trees. Threatens urban landscapes.

**Japanese Beetle**—defoliates ornamental plants and destroys turf roots resulting in decline or death. Threatens the export potential of Arizona's green industry.

**Gypsy Moth**—weakens and eventually kills forest trees, impacting aesthetic value of forested areas.

**Citrus Canker**—results in rapid death of citrus trees. Threatens commercial and residential citrus production.

**Fruit flies (Mediterranean, Mexican, Oriental, and Caribbean)**—devastating pests of citrus impacting quality and yield. Presence in Arizona would limit export potential of citrus commodities.

**Red Imported Fire Ant**—an aggressive competitor with native ant species, its aggressive behavior and ability to both sting and bite threatens public well being, quality of life and agricultural production, especially livestock. Presence in Arizona would limit the export potential of the state's green industry.

## Field Operations: Ports-of-Entry

The ports are operated as staffing allows 24 hours, 7 days a week at Sanders, San Simon, Yuma, and Ehrenberg, Arizona and 8 hours a day at Duncan, Douglas and Parker, Arizona. These ports-of-entry are Arizona's first line of defense against the importation of exotic pests. All ports are staffed to inspect commercial vehicles hauling commodities that may harbor serious plant pests and diseases or that may originate from infested areas.

## Commercial Inspections

In FY 2004, of the total trucks inspected, 19,125 were rejected because of pest interceptions or noncompliance of quarantine rules and regulations. Interceptions of pests totaled 17,681. Rejection rates were 11%, 13 % and 8.7% in FY 04, 03 and 02, respectively.

## Interior Inspections

Inspection staff assigned to five operational locations (Phoenix, Tucson, Yuma, San Simon and Ehrenberg) function as the second safety net against pests. Interior inspectors carry out a variety of duties including issuance of certificates, field inspections for quarantine clearance and export certification in seed and produce distribution centers, to serve the agricultural industry and contribute to the prevention of pest establishment within the State.

## An Overview

In FY 2004, inspection staff intercepted 10,302 pests within the state's interior through various inspections; 6,367 state and federal phytosanitary certificates were issued for the export of vegetable, agricultural, and ornamental seed, produce, nursery stock, wood products, and various other agricultural commodities. Terminal inspections (review of packages for quarantine items at large distribution facilities) have increased multiple-fold with the explosion of e-commerce. Pre-clearance of plants for pests, most notably citrus stock, prior to distribution within the State is a major inspection task.

## Survey and Detection

The early detection of potential pests and delimiting surveys of pest infestations through trapping and surveillance programs for a wide range of pests is the final safety net in the department's pest exclusion effort. Statewide, 5,295 traps were placed, serviced and monitored for approximately 15 targeted pests.

## Aggressive Detection

Foreign nations require scientific data to ensure that pests that inhabit Arizona will not harm their crops. Because the department maintains an aggressive detection program to help protect that federal *free-from* pest distinction, Arizona's agricultural producers can ship almost anywhere in the world and their products are welcomed in many foreign markets. This kind of market access is unique and is the result of the Arizona Department of Agriculture's commitment to protect Arizona industries.

## Fruit Fly

In particular, many foreign nations are concerned about the fruit fly complex. Fruit flies, much like a wormy apple, cause citrus fruit to be cosmetically unacceptable to consumers and increase spoilage in commercial storage.

The department's fruit fly detection, supported in part through a United States Department of Homeland Security Animal and Plant Health Inspection Service (APHIS) grant, involves monitoring our nearly 3,100 traps placed statewide and currently meets or exceeds the National

Exotic Fruit Fly Trapping protocol. To date, the department's efforts have achieved the result that no fruit flies of concern have been detected in the State.

## Gypsy Moth

Gypsy moth, a devastating forest pest well established in the northeastern United States, is a pest that is threatening Arizona's forests. Leaf destruction caused by the feeding caterpillars weakens trees and can lead to tree death. Once again, due to department commitment, no reproducing gypsy moth population has been detected in Arizona. Occasionally a "hitchhiking" male moth has been detected in traps placed at RV parks. Efforts to prohibit gypsy moth movement here are underway. The department maintains an active gypsy moth trapping program including placement and servicing of traps on state and private forestlands. High-risk locations, such as RV parks, are routinely trapped.

## Commitment to Service

Arizona Department of Agriculture continues its efforts to improve timeliness and quality of customer service delivery and even though faced with continued budget reductions, the extended absence of an appointed Director, and inspection staff who were needed to combat poultry disease threat as well as numerous other challenges, the Pest Exclusion and Management Program demonstrated its commitment to service by the following:

### Digital Imaging Technology

Digital imaging technology is used to improve the speed at which regulatory samples of pests originating from remote locations of the state can be identified. Digital imaging systems, capable of sending picture images of pests over the Internet for identification by a laboratory technician stationed miles away, continues at all interstate and selected non-interstate ports-of-entry.

These systems continue to significantly reduce the turn-around-time required for identification of numerous intercepted pests in trucks held at the ports.

With the substantial support of the State Agricultural Laboratory, expanded utilization of digital imaging has resulted in identification of dozens of pest species from remote locations via this technology. Continued expansion of the use of this digital imaging technology will enhance our customer service.

### Export Enhancement

Arizona's economy benefits greatly from the department's strict maintenance of its aggressive pest exclusion program. In previous years, government quarantine officials from the People's Republic of China, Chile, Argentina, Israel and Mexico reviewed the department's pest exclusion efforts to the end that more and more foreign nations have opened their market, thus allowing Arizona producers greater financial growth options.

### World Market Access

Successful verification of the integrity of our pest exclusion efforts and *free-from* status for quarantine pests of concern to our trading partners ensures greater opportunities for Arizona's agricultural industry, most notably expanded international market access. In 2003, after demonstrating the success of the Arizona Department of Agriculture's fruit fly survey and detection program, the United States Department of Agriculture was able to negotiate an increase in the allowed exportation of Arizona grown lemons into Mexico. In 2004, successful negotiations with Chile resulted in additional markets for Arizona lemons.

## Red Imported Fire Ant (RIFA)

The red imported fire ant is no longer a pest that threatens from distant southeastern states. In recent years, populations were discovered as near-by as New Mexico and California. This aggressive pest, with the ability to wound with both bite and sting, inflicts painful injuries and in some cases death, if disturbed.

Exclusion of RIFA is a department top priority, due to its significant ability to disrupt agricultural productivity, endanger public health, negatively impact fragile ecosystems and reduce the quality of life enjoyed in Arizona.

## Nationally Renowned

The Department is nationally recognized for successful detection and eradication techniques as demonstrated when the United States Department of Agriculture offered a \$71,167 grant in support of department RIFA strategies in FY2004. The USDA continues to help fund other Arizona Department of Agriculture detection programs, including those against Japanese Beetle, Khapra Beetle, Glassy-winged Sharpshooter, a citrus disease survey, a cotton pest survey, and others. Each of these are steps taken toward the successful accomplishment of key Pest Exclusion and Management Program objectives. These continuing department efforts maintain Arizona's federal designation as free-from these pests, and enable our state to avoid economically costly federal quarantines.

## California-Arizona Partnership

Recognizing the pest exclusion effectiveness of Arizona's ports system, the California Department of Food and Agriculture (CDFA) entered into a three-year renewable agreement in FY2000 with the department to inspect commercial trucks entering Arizona and destined for California. The inspections are conducted at Arizona's eastern ports and are to detect the presence of RIFA and other pests. The \$350,000 annually from CDFA and in-kind contributions from department funds, allows for staffing of the Duncan and Douglas ports and augments staffing at the San Simon and Sanders ports. Continuation of this State-to-State agreement in FY2004 solidified efforts to establish a regional approach to pest exclusion.

## Invasive Weeds

"Weed" is a term used to designate a pest plant. Certain imported or introduced (non-native) invasive weeds are extremely destructive and labeled as noxious for regulatory purposes.

## Cooperative Effort

The department maintains a Noxious Weed Program that coordinates a number of state, federal and university weed exclusion plans and control efforts dedicated to preventing environmental disasters caused by invasive plants. Arizona's noxious weed administrative rules divide the Noxious Weed List into three groups.

1. Regulated noxious weeds found within the State are to be controlled to prevent further spread.
2. Restricted noxious weeds found within the State are to be quarantined to prevent further infestation or contamination. Commodities or land may be quarantined until eradication is complete.
3. Prohibited noxious weeds are prohibited from introduction into Arizona, and shippers must have a permit to transport them through the State.

At the beginning of FY 2004, 22 noxious weed/invasive plant abatement associations were actively pursuing control or eradication goals, mapping local weed distributions and conducting public information programs in Arizona.

## Giant Salvinia Survey

In June 2002, Arizona Department of Agriculture began an aquatic weed survey. Fieldwork continued through early June 2003. A total of 159 sites were inspected for the presence of Pinnate Waterfern, Hydrilla and Giant Salvinia. Survey areas included natural and man-made water habitats plus several retail aquatic plant businesses, parks, aquatic recreational areas and private aquatic gardens. This work was funded by a grant from United States Department of Agriculture Cooperative Agricultural Pest Survey (CAPS) Program.



### Giant Salvinia Survey Results

Three federal noxious weed species were detected in the survey including Pinnate Waterfern (*Azolla pinnata* R. Brown), Hydrilla (*Hydrilla verticillata* (L.f.) Royle) and Giant Salvinia (*Salvinia molesta* Mitch).

Numerous Giant Salvinia colonies were observed in Colorado River slackwater areas north and west of Yuma, Arizona in southwest Yuma County. Giant Salvinia was documented in 22 sites; 21 of those locations were in Colorado River habitats protected from main current turbulence.

### Survey Assessment

The *Azolla* records may be the first reports of this species in Arizona. Even though no *Azolla* plants were found in natural or man-made water ways, such widespread distribution in retail aquatic plant dispersing situations indicate a high probability of this weed escaping into natural and constructed water bodies. Thus, additional survey efforts are needed with inspections concentrated in urban and agricultural areas.

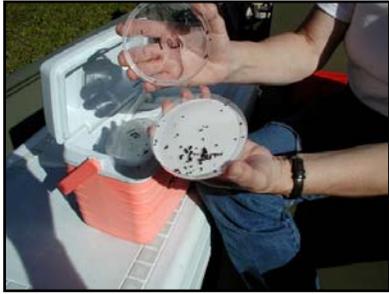
Historical records maintained by Arizona Department of Agriculture, Noxious Weed Program indicate sporadic Hydrilla infestations have been recorded and abated since 1984. Results from this 2002-2003 CAPS survey confirm that Hydrilla continues to be a serious threat to Arizona waters. Areas of the State not monitored during this survey need to be inspected with the goal of producing a complete understanding of where submerged aquatic noxious weed species may exist in Arizona.

Giant Salvinia was first observed in Arizona river habitats in late summer 1999. Sources of that infestation were, and still are, irrigation drainage waters from the region around Blythe, California. The drain flows south and empties into the Colorado River approximately 21 miles southwest of Blythe. Substantial Salvinia colonies continue to thrive in the southern 10 to 12 miles of this brush infested drain. No Giant Salvinia plants were documented upstream from the previously confirmed infestations on Cibola National Wildlife refuge. However, this survey confirms Giant Salvinia reproduces in and disperses from slackwater sites as far south as Morelos Dam, approximately 70 miles down river from the Wolter's Camp / Cibola Refuge area. As temperatures increase during May and June, these protected colonies begin rapid vegetative growth to the point that new growth expands into river currents and moves downstream. Since Morelos Dam is the source of irrigation water for Mexico west of the Colorado River in the region south of the Mexico/California border, natural river flow transports many thousands of Giant Salvinia colonies into Mexico during Salvinia's peak growing season (May-October.).

Based on widely distributed field populations and commercial sales of Giant Salvinia, it is possible other infestations may be established in Arizona's natural waters and man-made aquatic

sites. As a result, more exploratory surveys are needed to define the extent of Giant Salvinia occurrence in densely populated urban areas and irrigated agricultural lands.

### Biocontrol of Giant Salvinia



In 2003, a biocontrol project was initiated on the lower Colorado River in an effort to suppress populations of Giant Salvinia. The Salvinia weevil, *Cyrtobagos salviniae*, was released at four sights (two in AZ, and two in CA) along the river. Additional releases were



made in 2004. Biological control using the salvinia weevil has been effective in reducing the biomass of Salvinia by reducing the enormous growth potential of the weed.

### Noxious Weeds For Sale

As each spring flower season approaches, weed dispersal can happen from businesses such as grocery, drug, pet, hardware stores, and nurseries. Most gardeners do not think of nurseries or gardening shops as sources of pest plants. Arizona Department of Agriculture inspectors find prohibited weeds in retail seed displays and in display ponds each year. Often, non-native species have no natural enemies in new environments and, if exotic species are aggressive, they may become weedy invaders in their new habitats.

Non-native morning glory species invade and persist in Arizona's agricultural crop fields and urban gardens. They grow so abundantly and are so competitive that their vines entangle, cover and smother the crops and ornamental plants. In fact, morning glory infestations become so dense that it becomes extremely difficult to harvest crops-an economic disaster for the farmer. Therefore, these non-native morning glory species are prohibited in Arizona.

A non-native aquatic plant native to the Amazon region of tropical South America, water hyacinths have spread to tropical and subtropical areas worldwide. Water hyacinth plants, another prohibited plant pest, form thick mats that are able to completely cover water surfaces. Water hyacinth populations degrade aquatic habitats by reducing open water and displacing native plants, create mosquito habitat, and obstruct waterways.

# Environmental Services

The Arizona Department of Agriculture Environmental Services Division is responsible for protecting public health, agricultural workers, consumers and the environment. The department's centralized licensing within the division provides uniform customer service and appropriate cash handling. The Office of Special Investigation (previously named Office of Review and Investigation) within the division ensures effective investigation of agricultural crimes. The division's Pesticide Compliance and Worker Safety Program protect the public, agricultural workers and pesticide handlers employed in agribusiness through field inspections and complaint follow-up to monitor proper use of crop protection products and enforcing compliance with environmental laws and rules. The Nonfood Product Quality Assurance Program inspects, takes samples of feed, fertilizer, pesticide and seed in the marketplace for analysis at the state ag lab to ensure product quality.

## Staff Allocations

The Environmental Services Division had 36.5 full-time employee positions as of June 30, 2003. Thirteen field inspectors are responsible for sampling various nonfood products, enforcing compliance with pesticide, feed, fertilizer and worker protection statutes and rules, and conducting criminal investigations. One and one-half of the 36.5 positions are assigned to the State Agricultural Laboratory for analysis of the nonfood products sampled. A change this year within the division was the movement of 4 computer technology positions to the division for supervision. This move eliminated one of the many direct reports to the director and is intended to provide a champion for better services to our customers through the use of technology. The division went through a reduction in force of 3 positions in March to help stay within appropriations in the coming budget years. Fortunately all of the positions were able to find employment or retire. The loss will be felt in our ability to provide scientific support and our ability to conduct audits.

## Centralized Licensing and Registration

The centralized Licensing Section processes approximately 96 percent of licenses issued by the Department. Office hours are from 8:00 a.m. to 5:00 p.m. After 4:30 p.m., paperwork is accepted but the issuance of the corresponding license may not occur until the following day. To apply for a license, call (602) 542-3578 or access our home page at <http://agriculture.state.az.us>.

The Department of Agriculture is committed to providing excellent customer service on a timely basis. The centralized Licensing Section exemplifies this commitment to customer service. This proves true many times over through the return of customer service survey cards stating what a pleasant experience it was and how great the employees were in treating them so professionally.

Arizona Administrative Code changes moved all pesticide credentials to a December 31 renewal date. This change is expected to prove to be much more convenient to the affected pesticide applicators since the renewal dates were March 31 and September 30 which were in the middle of two busy seasons and caused confusion because of the various renewal dates for different credentials. Customers have already voiced their satisfaction with this change and they look forward to its full implementation.

## License Fees Protect Industry and Consumers

The Non-Food Quality protection program is funded with no general funds. The funding comes from legislative appropriation of monies collected from: an annual \$10 commercial feed license

fee and the \$0.20 per ton commercial feed inspection fee; an annual \$125 fertilizer license fee, a \$50 per brand and grade specialty fertilizer registration fee and a \$0.25 per ton fertilizer inspection fee; a \$100 per product pesticide registration fee; and, an annual seed license fee of \$25 for dealers and \$40 for labelers. Approximately one-half of the seed fees collected are used to fund half a position at the State Agricultural Laboratory to perform seed quality analysis. This year the legislature appropriated \$200,000 from the feed fund to develop a statewide system of notification relating to animal disease.

One hundred dollars of the fee paid for each fertilizer license and \$75 of the pesticide registration fee help support the Arizona Water Quality Assurance Revolving Fund (WQARF), which is administered by the Arizona Department of Environmental Quality (ADEQ) to be used for ground water cleanup projects. In 2004, \$672,680 in fees were collected for the WQARF: \$36,680 in fertilizer fees and \$636,000 in pesticide registration fees.

### Licensing Requires Continuing Education

The Department's continuing education efforts keep users of restricted use pesticides aware of current laws, rules and the latest integrated pest management techniques to help protect the environment through efficient utilization of pesticides.

Individuals holding commercial certification are required to earn six continuing education units each year. Those holding private certification are required to earn three units each year. Private certification enables individuals to apply restricted use pesticides on land owned or rented by their employer or themselves. Commercial certification allows application on any agricultural property.

During FY 2004, three hundred forty training courses were held that provided credential holders the opportunity to earn training credits.

### Testing Center

Tests administered by the Environmental Services Division are milk haulers, cottonseed samplers and a myriad of pesticide use applicants. Testing protocol require applicants to show identification before taking an exam and the identification is held during testing to prevent individuals walking out with the exam. Individuals are not allowed to bring materials into the testing room. These procedures are necessary to help ensure there is no cheating on the exams. Tests are administered in Phoenix between 8:00 a.m. - 4:00 p.m., Monday through Friday at 1688 West Adams Street. To schedule an appointment call (602) 542-3578. This procedure is followed in the Yuma/Somerton and Tucson offices also. For people outside the Phoenix metro area contact should be made with the local inspector to arrange testing.

### Exams Administered in FY 2004

| TYPE OF EXAM                | Total Exams | Number Passed | Number Failed | Passing Rate |
|-----------------------------|-------------|---------------|---------------|--------------|
| Aerial Applicator (AAP)     | 10          | 9             | 1             | 90%          |
| Commercial Applicator (PUC) | 192         | 167           | 25            | 87%          |
| Custom Applicator (CAA)     | 4           | 4             | 0             | 100%         |
| Pest Control Advisor (PCA)  | 113         | 72            | 41            | 64%          |
| Private Applicator (PUP)    | 130         | 111           | 19            | 85%          |
| Fumigant Endorsement        | 6           | 5             | 1             | 83%          |
| Milk Sampler & Hauler       | 70          | 61            | 9             | 87%          |
| Cottonseed Sampler          | 2           | 2             | 0             | 100%         |
| TOTALS                      | 527         | 431           | 96            | 82%          |

## National Pesticide Certification

Nationally, the Pesticide Certification Program is undergoing assessment. A national group of regulatory and extension professionals are working to improve the overall quality of the National Pesticide Training and Certification Program with the goal of ensuring professionalism within the pesticide application industry. The Department continues to play an active role in this national effort by participating in discussions and development of methods to improve the federal program. Areas for revision include mandatory testing, age limits of applicants for certification, closed book monitored exams, integration of pesticide handler training into the certification program and varying the training levels required for different pesticides based on toxicity and potential to cause harm. The latter issue is looking to help address Homeland Security concerns.

| <b>Licenses and Registrations issued in 2004</b> |        |
|--|--------|
| Pesticide – Total Pesticides Registered          | 9,662* |
| Agriculture                                      | 1,180  |
| Non-Agriculture                                  | 8,482  |
| Fertilizer – Licensed Fertilizer Companies       | 272    |
| Specialty Fertilizers                            | 1,784  |
| Feed – Licensed Feed Companies                   | 424    |
| Seed Dealers                                     | 1003   |
| Seed Labelers                                    | 188    |
| Dairy/Milk Industry Licenses                     | 358    |
| Aquaculture Licenses                             | 73     |
| Egg & Egg Products                               | 96     |
| Meat Industry Licenses                           | 249    |
| Livestock Brand Certificates (approx.)           | 2,003  |
| Equine Certificates Issued                       | 2,659  |

\*Pesticides are registered on a calendar year

| <b>Pesticide Use Related Credential Summary</b> |       |
|---|-------|
| Grower Permits (PGP)                            | 1,154 |
| Pesticide Sellers (PSP)                         | 157   |
| Ag Aircraft Pilots (AAP)                        | 54    |
| Custom Applicators (CAA)                        | 56    |
| Equipment Tags                                  | 197   |
| Pest Control Advisors (PCA)                     | 238   |
| Private Applicators (PUP)                       | 499   |
| Commercial Applicators (PUC)                    | 288   |

| <b>Fertilizer Tonnage FY 2004</b> |               |              |              |
|-----------------------------------|---------------|--------------|--------------|
| <b>Dry</b>                        | <b>Liquid</b> | <b>Misc.</b> | <b>Total</b> |
| 223,686                           | 334,888       | 17,876       | 576,452      |

| <b>Feed Tonnage FY 2004</b> | <b>Total 1,075,880</b> |
|-----------------------------|------------------------|
|-----------------------------|------------------------|

## Pesticide Compliance and Worker Safety Overview

On March 6, 2004, the division implemented new Pesticide Compliance Rules governing pesticide use and enforcement. The new rules include higher penalties for violations, uniform expiration dates on licenses, certifications and permits, optional two year credential renewals, fumigation certification for private on-farm use and various other changes. A significant change for pest control advisors is the number of continuing education units required. At the request of industry, the change was to increase the current 6 hours required, to 15 for next year. This industry feels they are professionals and this helps to keep them at a high level.

### Misuse is Taken Seriously

The Department aggressively monitors pesticide applications and activities related to mixing and loading pesticides, storage and disposal of pesticides and empty pesticide container disposal to ensure the safety of pesticide use. Complaints alleging pesticide misuses are promptly and thoroughly investigated. Once an investigation is complete, a recommended disposition is prepared. No recommended disposition can take place without a review and approval by the Associate Director, the Director and an attorney from the Office of the Arizona Attorney General. If all parties agree, a complaint can be issued. Negligent parties may negotiate a settlement with the Department, request a hearing with the Office of Administrative Hearings or pay a penalty established by law for their actions.

### Report Pesticide Misuse

To report pesticide misuse allegations, contact the Pesticide Emergency Hotline at 1-800-423-8876. This number is monitored regularly, including weekends and holidays during the summer months. This line is also used by pesticide applicators to request an inspector to monitor an application when spraying in pesticide management areas or sensitive areas where agricultural and urban areas interface. Complaints may also be reported by calling offices located in Phoenix, Tucson, and Yuma/Somerton.

### Restricted Use Pesticides

Inspections are conducted at pesticide distributors to ensure that pesticides are properly registered with the state and the Environmental Protection Agency. Inspections at pesticide dealers and on agricultural establishments ensure that pesticides classified as *restricted use* are sold and used only by persons who have proven their competency through certification to handle the associated risks. This also ensures that agricultural insecticides do not find their way into urban settings for residential use, which can be deadly.

Inspections are designed to identify pesticides that have been manufactured in other countries and illegally imported into Arizona. Many foreign-made pesticides are not subject to the same strict quality control or child-safe packaging measures as pesticides manufactured in the United States and may pose health risks to people, animals and the environment.

### Agricultural Worker Safety

The agricultural safety program is designed to protect agricultural workers and pesticide handlers employed on agricultural establishments, which include farms, forests, nurseries, greenhouses and pesticide handling establishments. Establishments applying and using agricultural use pesticides must comply with the Arizona and EPA's Worker Protection Standard (WPS). WPS regulations are aimed at reducing the risk of pesticide poisonings and injuries among agricultural workers and pesticide handlers.

If agricultural use pesticides are applied on an agricultural establishment, under the WPS the establishment must train workers and handlers of ag. pesticides, provide notification of pesticide applications, provide required personal protective equipment and decontamination supplies, take

the employee to the doctor if they claim illness due to pesticides and provide a central location where information on pesticides used can be obtained.

The Department's Worker Protection Standard (WPS) efforts predate federal standards and continue to be a benchmark for other states. The Department compliments WPS inspections by remaining in contact with the agricultural worker community, thereby gaining trust and credibility.

### **Train-The-Trainer**

The WPS Train The Trainer Program trains and qualifies individuals to be trainers of field workers and pesticide handlers regarding pesticide safety. The Train-The-Trainer Program is regularly reviewed internally by looking at surveys received for all the training seminars held throughout the year. The program is revised continuously to ensure continued interest on the participants' part. The program has been conducted in cooperation with Agricultural Consultation & Training staff, who usually follow the courses with pesticide handler training. The course test contains 50 questions to test participants' basic knowledge of the materials presented during the course. The reviews continue to give the program high marks. Meetings were held throughout the year in agricultural regions of the state to allow easy access by the regulated parties. These sessions are held in both Spanish and English.

Thirteen (13) Train-The-Trainer courses were taught during this fiscal year, approximately half in English and half in Spanish. 206 participants satisfactorily passed the certification test to become certified trainers for worker protection standards. This year WPS trainers were issued cards to train approximately 10,758 agricultural workers and 4229 pesticide handlers. The decision was made to only hold 8 Train The Trainer courses next year. This is to help get the most benefit for the time and effort spent preparing and putting the courses on.

### **Worker Protection Standard**

Each year thousands of farm workers enter Arizona to work on the numerous agricultural establishments within the state. Department inspectors cover the Worker Protection Standard (WPS) through inspections, participation in the training courses and in developing training materials. Industrial hygienists help agricultural establishments who need assistance to be in compliance with the WPS laws. All of the hygienists are bilingual and can readily communicate with the farm worker community ensuring they are provided the protections required.

The Department continues to play an active role in various organizations to identify and coordinate mutual agency requirements and to assist farm workers in becoming aware of the laws created for their protection. Periodic meetings are held to allow outreach efforts to be extended to the worker community and employers.

| <b>PESTICIDE COMPLAINT/ALLEGATION CATEGORIES / ACTIONS FY 2004</b> |                               |                        |                                   |
|--|-------------------------------|------------------------|-----------------------------------|
| <b>07/01/03 - 6/30/04</b>  | <b>Number of Cases Opened</b> | <b>Warnings Issued</b> | <b>Citations / Admin. Actions</b> |
| Agricultural Safety – Multiple (WPS)                               | 18                            | 3                      | 8                                 |
| Crop Damage  | 3                             | 0                      | 0                                 |
| Pesticide Misuse / Label Violation                                 | 2                             | 3                      | 9                                 |
| Drift - Health Effects   | 3                             | 0                      | Cited under other categories      |
| Expired License  | 1                             | 4                      | 2                                 |
| Failure to Train Workers/ Pesticide Handlers (WPS)                 | 1                             | 5                      | 22                                |
| Central Posting (WPS)  | 0                             | 11                     | 0                                 |
| Illegal Pesticide Sales  | 2                             | 0                      | 3                                 |
| Record Keeping   | 2                             | 3                      | 1                                 |
| Personal Protective Equipment (WPS)                                | 0                             | 1                      | 3                                 |
| Unregistered Pesticide   | 2                             | 1                      | 0                                 |
| Pesticide Misbranding  | 4                             | 0                      | 0                                 |
| Re-Entry Interval (WPS)  | 1                             | 0                      | 0                                 |
| Dog Poisoning  | 1                             | 0                      | 0                                 |
| Drift  | 3                             | 0                      | 1                                 |
| Health Effects   | 1                             | 0                      | 1                                 |
| Pesticide Application List (WPS)                                   | 0                             | 7                      | 3                                 |
| Oral / Posted Warnings   | 0                             | 1                      | 0                                 |
| Decontamination Supplies (WPS)                                     | 0                             | 2                      | 4                                 |
| <b>Total Cases</b>   | <b>44</b>                     | <b>41</b>              | <b>57</b>                         |

- 18 cases or 41% of the investigations were as a result of routine inspections.

| <b>FY 2004 Enforcement Activities<br/>By License Category</b> | <b>Quantity</b> | <b>Penalties<br/>Assessed<br/>During FY 2004</b> | <b>Penalties Paid<br/>During FY 2004</b> |
|---|-----------------|--|--|
| <b>Warning Letters</b>  |                 |  |  |
| Regulated Growers – PGP                                       | <b>32</b>       | -----  | -----                                    |
| Commercial Feed Manufacturers                                 | <b>0</b>        | -----  | -----                                    |
| Pesticide Manufacturers                                       | <b>0</b>        | -----  | -----                                    |
| Seed Dealers  | <b>0</b>        | -----  | -----                                    |
| Private Sector  | <b>0</b>        | -----  | -----                                    |
| Private Applicators – PUP                                     | <b>6</b>        | -----  | -----                                    |
| Pest Control Advisor – PCA                                    | <b>1</b>        | -----  | -----                                    |
| Farm Labor Contractors  | <b>0</b>        | -----  | -----                                    |
| Pesticide Sellers – PSP                                       | <b>0</b>        | -----  | -----                                    |
| Custom Applicator   | <b>1</b>        | -----  | -----                                    |
| Commercial Applicators – PUC                                  | <b>1</b>        | -----  | -----                                    |
| Seed Labelers   | <b>0</b>        | -----  | -----                                    |
| <b>Total Warning Letters</b>                                  | <b>41</b>       | N/A  | N/A                                      |
| <b>Deminimus Violations</b>                                   | None Issued     |  |  |
| <b>Non-Serious Violations</b>                                 |                 |  |  |
|   | <b>Quantity</b> | <b>Penalties<br/>Assessed<br/>During FY 2004</b> | <b>Penalties Paid<br/>During FY 2004</b> |
| Regulated Growers – PGP                                       | <b>35</b>       | <b>18,908.50</b>                                 | <b>14,033.00</b>                         |
| Commercial Applicators  | <b>2</b>        | <b>462.00</b>                                    | <b>210.00</b>                            |
| Pesticide Sellers   | <b>2</b>        | <b>482.00</b>                                    | <b>482.00</b>                            |
| Pest Control Advisors   | <b>1</b>        | <b>42.50</b>                                     | <b>42.50</b>                             |
| Private Applicators – PUP                                     | <b>5</b>        | <b>1,503.50</b>                                  | <b>913.50</b>                            |
| <b>Total Non-Serious</b>                                      | <b>45</b>       | <b>21,398.50</b>                                 | <b>15,681.00</b>                         |

## **Non-Food Quality Assurance**

### **Bovine Spongiform Encephalopathy Inspections (Mad Cow Disease)**

The division under a federal grant in cooperation with the Food and Drug Administration (FDA), conducts inspections of feed manufacturers and dealers to determine compliance with federal FDA regulations regarding animal feed ingredients fed to ruminants and their potential for human health & safety concerns. Numerous avenues of contamination of the animal feed supply may directly relate to food for human consumption. During FY 2004, the division conducted 29 inspections of feed manufacturers in Arizona for compliance with the prohibited materials feed ban and feed labeling requirements.

### **Marketplace Inspections and Sampling**

Division inspectors inspect and sample animal feed products, fertilizer, pesticide and seed in the marketplace to protect consumers by ensuring that products meet label guarantees. Cease and desist orders are issued on unregistered products, unlicensed companies and products which fail laboratory analysis as well as other issues relating to products being mislabeled. The division has been coordinating with other states to nationally target unapproved feed ingredients identified as having health and safety issues.

| <b>Complaints Received / Investigated FY 2004</b> |                               |                        |                                   |
|---|-------------------------------|------------------------|-----------------------------------|
| <b>07/01/03 - 6/30/04</b>                         | <b>Number of Cases Opened</b> | <b>Warnings Issued</b> | <b>Citations / Admin. Actions</b> |
| Quality Assurance – Seed                          | 1                             | 0                      | 0                                 |
| Unlicensed / Unregistered Fertilizer              | 1                             | 0                      | 0                                 |
| Unlicensed Feed Company                           | 2                             | 0                      | 0                                 |
| Expired Test Date - Seed                          | 1                             | 0                      | 0                                 |
| Misbranding – Fertilizer                          | 0                             | 0                      | 1 - Referred to EPA               |
| Noxious Weed Seed                                 | 0                             | 0                      | 1                                 |
| <b>Total Non-Pesticide Related Complaints</b>     | <b>5</b>                      | <b>0</b>               | <b>2</b>                          |

| <b>Notices of Violation / Cease &amp; Desist Orders</b> | <b>Number of Notices of Violation</b> | <b>Number of Cease &amp; Desist Orders</b> |
|---|---------------------------------------|--|
| Unregistered Pesticides                                 | 34                                    | 8  |
| Seed Label Violation                                    | 1                                     | 1  |
| Quality Assurance - Seed                                | 70                                    | 70   |
| Prohibited Noxious Weed                                 | 6                                     | 6  |
| Unlicensed Seed Labeler                                 | 12                                    | 0  |
| Unlicensed Seed Dealer                                  | 8                                     | 1  |
| Unlicensed Feed Manufacturer                            | 47                                    | 5  |
| Unregistered Specialty Fertilizer                       | 17                                    | 2  |
| Label Violation – Feed                                  | 1                                     | 1  |
| Quality Assurance – Feed                                | 38                                    | 38   |
| Seed Out of Test Date                                   | 69                                    | 69   |
| Label Violation - Fertilizer                            | 0                                     | 0  |
| Quality Assurance - Fertilizer                          | 62                                    | 62   |
| Quality Assurance / Pesticide                           | 18                                    | 18   |
| Unlicensed Fertilizer Manuf. / Distrib.                 | 11                                    | 1  |
| Label Violation – Pesticide                             | 0                                     | 0  |
| <b>Total Notices of Violation</b>                       | <b>394</b>                            | <b>282</b>                                 |

| SAMPLE ANALYSIS FOR DEFICIENCIES for FY 2004 |           |          |                  |                       |                         |           |
|--|-----------|----------|------------------|-----------------------|-------------------------|-----------|
| Sample Type                                  | Received  | Reported |                  |                       |                         |           |
|  | Collected | Analyses | Samples Reported | Sample Violation Rate | Analysis Violation Rate | Cancelled |
| Feed   | 196       | 441      | 197              | 15.7%                 | 10.1%                   | 0         |
| Fertilizer                                   | 449       | 1296     | 479              | 15.5%                 | 7.0%                    | 1         |
| Mycotoxin                                    | 34        | 168      | 59               | 17.0%                 | 6.0%                    | 0         |
| Pesticide Formulation                        | 178       | 261      | 217              | 9.7%                  | 9.6%                    | 1         |
| Pesticide Residue                            | 56        | 27       | 17               | 29.4%                 | 25.9%                   | 0         |
| Seed   | 738       | 1093     | 795              | 8.8%                  | -----                   | 4         |

### Fertilizer Penalties

During FY 2004, the division issued 34 penalties based on tonnage of fertilizers distributed, which were found deficient during laboratory analysis. \$54,186.31 in penalties were assessed to fertilizer manufacturers, both in state and out-of-state, found distributing products in Arizona which did not meet label guarantees.

### Office of Special Investigations

The Office of Special Investigations (OSI) is primarily responsible for the investigation of criminal activities involving agricultural laws and provides law enforcement support to the other divisions and programs within the department. The office is comprised of individuals specially trained to investigate criminal misconduct regarding native plants theft and destruction, livestock theft and cruelty, food safety and quality assurance and cultural resource protection.

### Officer Certification & Training

OSI investigators are certified peace officers that are highly qualified and proficient in their field of expertise. The investigators maintain training standards in investigation techniques, annual handgun qualifications and various other proficiency requirements. Records of all departmental certified personnel were audited to assure compliance with AZPOST requirements.

Investigators attended the sixteenth annual Conservation Law Enforcement Association Conference, which was held in Prescott. This year's conference had nationally recognized speakers who covered the topics of Violence in the Work Place, Police Stress in the Family, Psychology of Combat and finally Fitness for Duty - Applied Ethics in Law Enforcement.

### Enforcement Activity

During the fiscal year, OSI investigated sixty-one cases of alleged civil and criminal misconduct. Twenty-two cases were filed with either the county attorney offices or the Attorney General's Office. Cases are either awaiting trial, or pending review to determine what charges will be considered. Six cases were reviewed and returned to the division for follow-up information. One case was closed due to other actions such as warning letters. Seventeen cases were closed by conviction. Two cases were referred to another agency for further investigation and thirteen cases were closed due to insufficient evidence.

## Native Plants Investigations

The Arizona Native Plant Law was established to protect wild-growing plants. The law requires that a person shall have a State permit to possess any protected native plant taken from its habitat. Moreover, it is unlawful to take, destroy or mutilate any protected plant without the consent of the landowner. To regulate the collection of protected native plants, the Department enforces the law through investigations, legal action against violators, public awareness programs, and permit issuance.

There were eleven native plant cases of theft or destruction with three cases still under investigation. Three cases are pending review by the Attorney General's Office. Four cases were closed as having insufficient evidence to prosecute. One case was closed with the issuance of a warning letter.

The State Land Department requested OSI assistance in an incident involving the mass destruction of protected plant species.

A Memorandum of Understanding between the Department and the University of Arizona was enacted to study threatened and endangered plants under Section 6 of the Endangered Species Act. Federal grants in the amount of \$76,144 were received to conduct studies on four different plant species in Arizona.

## Livestock Investigations

OSI investigation responsibilities are to prevent the theft and killing of livestock and to enforce the laws and regulations closely associated with livestock inspection. Livestock kept on open range shall have a registered brand to confirm ownership. A volunteer equine ownership/hauling certification has the same function. Both types of registrations help to protect the owners from having their stock stolen.

There were eleven cases involving the killing of approximately thirty-three head of livestock. Seven cases are pending prosecution through various County Attorney Offices and four were closed due to insufficient evidence.

There were twenty-one cases involving the theft of approximately twenty-two head of horses and approximately 150 head of cattle and goats. Fourteen cases are still under investigation and three cases were closed due to insufficient evidence and one the court dismissed. Three cases were closed by adjudication.

There were nine cases of livestock cruelty involving forty-one head of horses and approximately sixty-three head of cattle. Six cases were closed by adjudication and one case is still pending. One case was referred to another division for additional investigation and one case was closed for insufficient evidence.

Three cases involving ownership disputes of horses were all settled through ownership hearing at the justice court level.

## Food Safety Investigations

OSI investigation responsibilities include assistance in illegal animal slaughtering operations for food safety reasons. Under federal and State standards, enforcing appropriate laws to assure that the Arizona consumers have a safe supply of wholesome meat and meat products fulfills public health requirements.

There was one case involving food safety violations, in which an individual was selling non-inspected meat products to the general public.

## Cultural Resource Investigations

Material evidence of past cultural heritage is found in many areas in Arizona. This includes ruins, burial sites and pictograph sites, none of which can be renewed, and when destroyed, are gone forever. While no legal action was taken during the fiscal year, the Department continues to work closely with other agencies to reduce the threat of losing one of Arizona's richest cultural legacies.

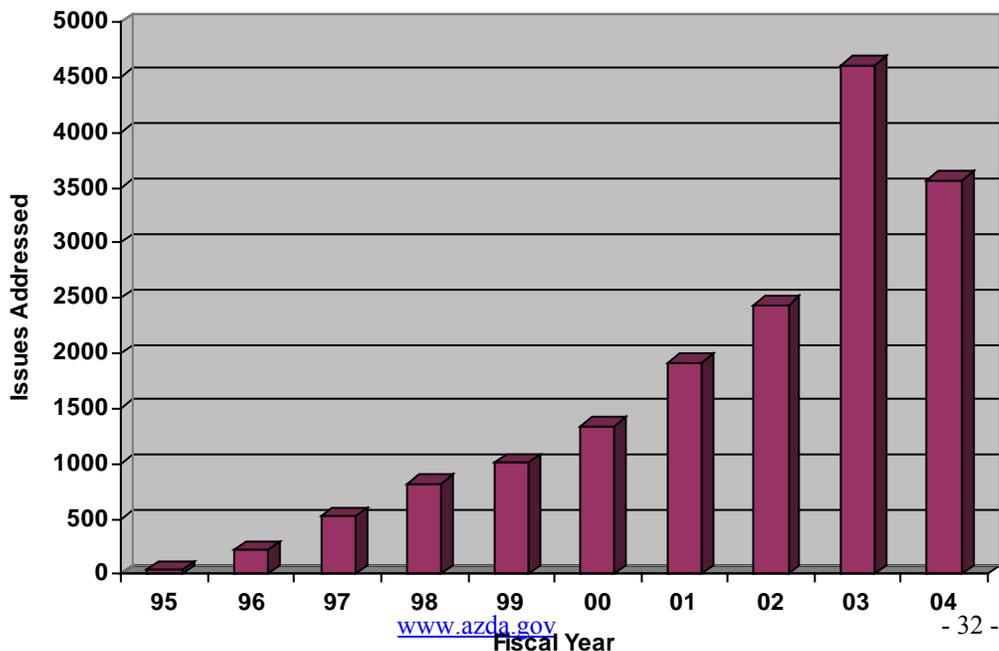
# Agricultural Consultation & Training

The Agricultural Consultation and Training Program (ACT) is an innovative compliance assistance program unique to an agricultural regulatory agency. ACT embraces the Arizona Department of Agriculture's (ADA) goal of encouraging farming, ranching and agribusiness, while protecting consumers and natural resources by utilizing a non-enforcement approach. ACT is not affiliated with any of ADA's enforcement programs, allowing ACT to provide a formal means by which the regulated agricultural community may request compliance assistance without regulatory intervention. ACT serves Arizona's diverse agricultural community by promoting agriculture, providing training and increasing voluntary compliance and awareness of regulatory requirements through the following compliance assistance programs:

- Worker Safety
- Water Quality
- Air Quality

Driven by subject specific requests from members of the agricultural community, ACT field consultants conduct on-site visits of agricultural establishments and complete detailed evaluation reports tailored specifically to the customer. Included in the evaluation report is information gathered during the on-site visit and any corrective measures recommended by the field consultant. Detected violations are not made available to regulatory personnel, except in cases of imminent danger where human health and welfare are in jeopardy. This year, ACT field consultants addressed 3,572 compliance issues. This represents a 22% decrease in total compliance issues addressed from Fiscal Year 2003. Budget cuts to the ACT program resulted in the elimination of one field consultant position based in Yuma, and contributed to the decrease in compliance issues being addressed. Figure 1 displays the total number of compliance issues

Figure 1 - Total Number of Compliance Issues



addressed by ACT field consultants since fiscal year 1995.

The Agricultural Consultation & Training Program also houses the following agency wide programs:

- Livestock & Crop Conservation Grant Program
- Arizona Citrus Research Council
- Arizona Iceberg Lettuce Research Council
- Arizona Wine Commission
- Arizona Grain Research and Promotion Council
- Agricultural Employment Relations Board
- Arizona Agricultural Protection Commission

## Worker Safety Compliance Assistance

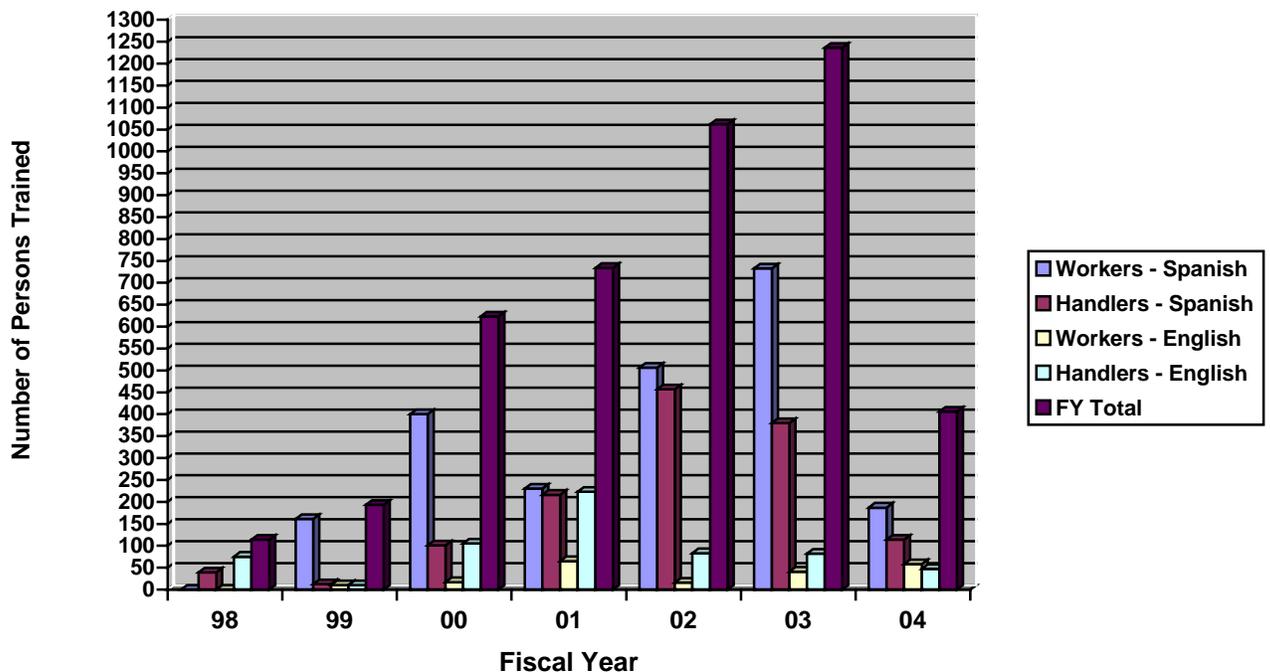
The Worker Protection Standard (WPS) is a federal regulation administered by the United States Environmental Protection Agency. The WPS became effective in 1992 and is designed to provide protection for agricultural workers (individuals involved in the production of agricultural plants) and pesticide handlers (individuals involved in mixing, loading or the application of pesticides or in performing tasks involving direct contact with pesticides).

Due to the complexity of the federal regulation, WPS issues continue to occupy the highest percentage of compliance needs addressed by ACT personnel. In addition to WPS compliance on-site visits, ACT personnel conduct WPS pesticide safety training for agricultural employers and employees across the State in order to further promote compliance with WPS regulations.

In Fiscal Year 2004, ACT conducted 28 WPS training sessions, training 406 persons as either agricultural workers or pesticide handlers. Eighteen of the training sessions were conducted in Spanish and resulted in 301 persons trained in Spanish.

Figure 2 shows the number of persons who received ACT WPS training since fiscal year 1998.

**Figure 2 - Worker Protection Standard Training**



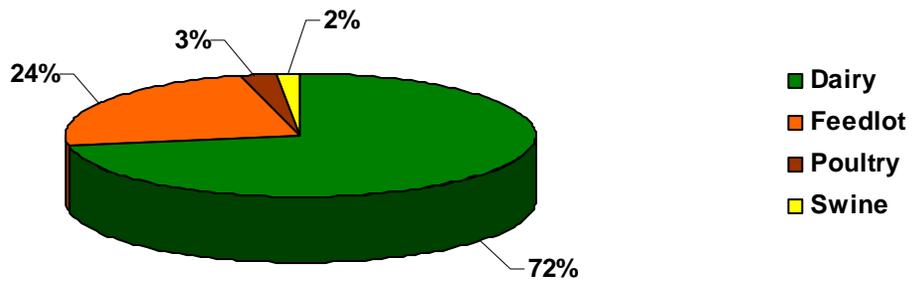
## Water Quality Compliance Assistance – Comprehensive Nutrient Management Planning Program

In September 2002, ACT entered into a cooperative agreement with the United States Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) to create the Comprehensive Nutrient Management Plan (CNMP) Assistance Program. This program serves multiple organizations by addressing: ACT's goal of increased non-regulatory compliance assistance to the agricultural community; USDA-NRCS' effort to maintain and improve environmental resources; compliance with ADEQ's Arizona Pollutant Discharge Elimination System Permit (AZPDES), which in turn meets the United States Environmental Protection Agency's (EPA) Clean Water Act regulations. Through this agreement, the certified nutrient management planning specialist (CNMPS) provides compliance assistance to Arizona AFOs with the development of nutrient management plans (NMPs).

In December 2002, ADEQ received National Pollutant Discharge Elimination System (NPDES) Permit authorization from EPA Region 9, which gave authority to interpret and enforce the Federal NPDES permit in Arizona. In order to make this permit specific to Arizona, ADEQ developed a new permit called the Arizona Pollutant Discharge Elimination System Permit (AZPDES), which was released April 16, 2004.

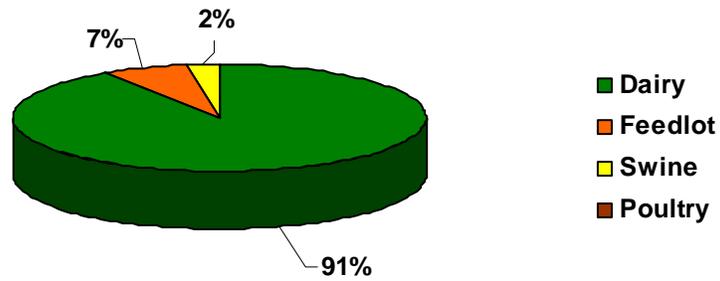
According to the AZPDES Permit, any AFO that is considered a CAFO must apply for the permit and comply with its requirements no later than December 2006. In Arizona, according to EPA's regulatory definition, an AFO can be classified as a CAFO if it either is designated as one by ADEQ or if it contains 700 or more mature dairy cattle. As represented by Figure 4, most of Arizona's CAFOs are dairy operations.

Figure 4 - Percentage of Arizona CAFOs by Category



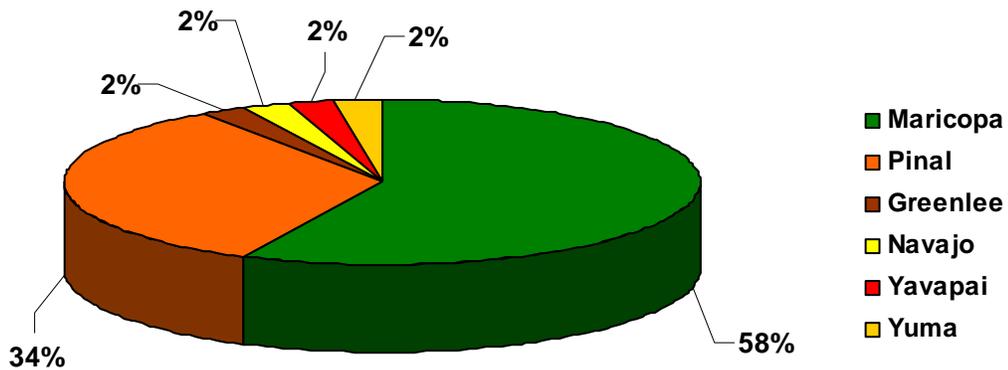
A major component of complying with the AZPDES Permit is the development of an NMP by a CNMPS. In Fiscal Year 2004, voluntary sign-up for NMP development through the CNMP Assistance Program increased by 950%. In an effort to educate producers of the AZPDES requirements and to facilitate NMP development, the CNMP Assistance Program has participated in 16 separate outreach activities with a total of 466 participants. Currently, the Program is assisting 42 CAFOs: 38 dairies, 3 feedlots and 1 swine operation. Figure 5 shows the distribution of assistance by category.

Figure 5 - Distribution of CNMP Assistance by Category



These CAFOs are spread throughout six Arizona counties, as shown in Figure 6. The majority of the CAFOs receiving assistance from the CNMP Assistance Program are within Maricopa County, followed by Pinal County. Greenlee, Navajo, Yavapai and Yuma Counties share the same number of CAFOs currently developing nutrient management plans.

**Figure 6 - Distribution of CNMP Assistance by County**



NMPs are extensive plans that may contain up to nine separate components including site and



**Figure 7**

soil maps; soil, wastewater and solid waste nutrient analyses; current and planned crop rotation; crop yield; and a nutrient budget for crops. This fiscal year, the CNMP Assistance Program’s first NMP, a small feedlot operation that did not involve any land application of manure nutrients, took approximately 225 hours to reach about 95% completion.

Many of the CAFOs currently

receiving assistance and throughout Arizona are much larger operations and do include land application of manure nutrients (Figure 7). The average time needed to complete an NMP will become more predictable as data is accumulated to use as a baseline.

## Water Quality Compliance Assistance – Agricultural Activities Assistance Program

The Agricultural Activities Assistance Program (AAAP) is a compliance assistance program which helps animal feeding operation (AFO) owners and operators understand and comply with federal and state water quality regulations. AAAP concentrates compliance assistance efforts on AFOs. AFOs are dairies, feedlots, swine operations and poultry facilities, which are not required to obtain a Federal National Pollution Discharge Elimination System (NPDES) Concentrated Animal Feeding Operation (CAFO) Permit. The purpose of AAAP is to increase AFO compliance to water quality regulations in order to reduce potential animal-waste contamination of surface and ground waters. The two primary objectives of AAAP are:

- 1) To educate producers regarding federal and state regulations including: the federal CAFO Rule changes, the Arizona Pollutant Discharge Elimination System (AZPDES) CAFO General Permit and Arizona's CAFO and Nitrogen Fertilizer Agricultural General Permits.
- 2) To help producers increase compliance with water quality regulations in order to help protect Arizona's waters.

AAAP is funded through an Intergovernmental Service Agreement (ISA) between the ADA and the Arizona Department of Environmental Quality (ADEQ). Through this agreement, ADEQ provides AAAP with funding by means of an Environmental Protection Agency (EPA) grant, which requires a funding match of 40% by the ADA. Support for AAAP includes the ADEQ and the Environmental Protection Agency (EPA) Region 9, which has discussed the possibility of utilizing AAAP as a model for CAFO compliance assistance programs in other Region 9 States. In addition, the Arizona Cattle Feeders' Association and many individual producers have expressed support for AAAP.

### AAAP's On-Site Visits

In order to provide individual compliance assistance, AAAP personnel conduct on-site assessments of AFOs. During on-site visits (OSVs), ACT personnel assess the livestock facility waste containment structures and waste management practices to determine the facility's level of compliance with state regulations. When non-compliance is observed, the ACT Field Consultant makes written recommendations to the operator and owner to help bring the facility back into compliance. On-site visits are valuable in identifying and helping to correct potential compliance violations prior to possible discharges of manure-water to surface water. AFO operators are also informed of the specific regulations that pertain to their AFOs during on-site visits.

AAAP may consult with ADEQ on a compliance issue to obtain interpretation of a regulation in order to provide the producer with the best recommendation for compliance. However, AAAP maintains the confidentiality of all AFOs assisted; never revealing to any regulatory agency the identity of a specific operation or owner suffering from compliance difficulties.

During fiscal year 2004, AAAP personnel conducted thirty-four on-site visits, which represent a 31% increase in the number of OSVs conducted during Fiscal Year 2003. As a result, 1,564 compliance issues were assessed relating to manure and wastewater management. One hundred twenty five of those 1,564 issues assessed were found out-of-compliance or potentially out-of-compliance, which could lead to citations for the facilities if ADEQ were to observe the violations. Figure 3 illustrates the number of OSVs conducted by ACT pertaining to CAFO and AFO compliance assistance.

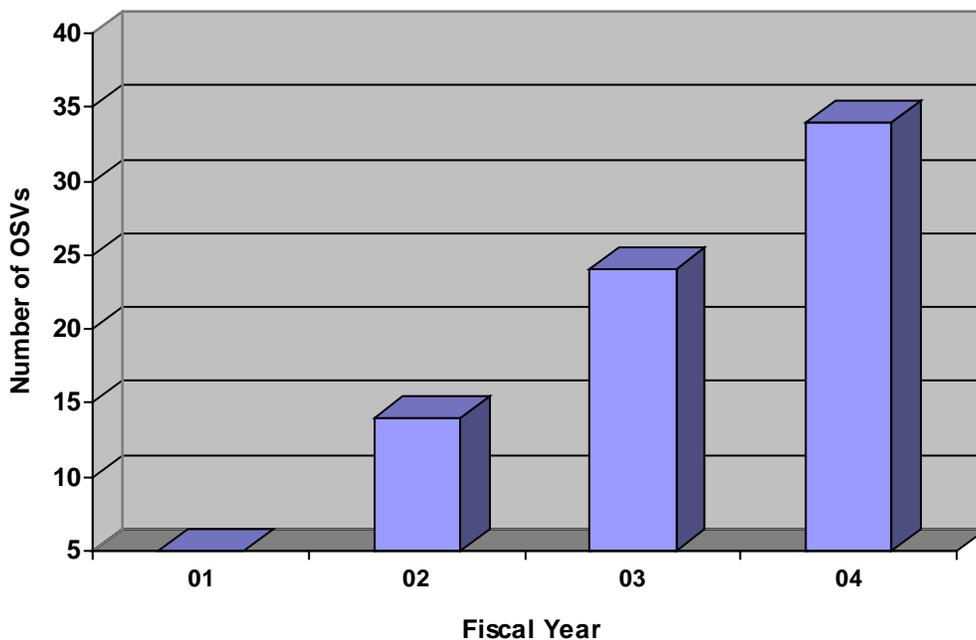
### AAAP Expired in FY 04

The Interagency Service Agreement supporting AAAP expired at the close of fiscal year 2004. A new ISA between ADEQ and ADA beginning July 1, 2004 will focus on compliance assistance efforts specifically directed to CAFOs. (July has come and gone.)

### Educational Outreach through the Multi-Agency CAFO Education Group

AAAP provides educational outreach to AFO producers in cooperation with the CAFO Education Group. The CAFO Education Group is a cooperative between producer organizations and state and federal agencies committed to providing education and compliance assistance to Arizona's AFO and CAFO producers. CAFO Education Group members include representatives from the Arizona Cattle Feeders' Association, United Dairymen of Arizona, Arizona and Maricopa County Farm Bureaus, USDA - NRCS, EPA Region 9, East Maricopa Natural Resource Conservation District, University of Arizona Cooperative Extension, ADEQ and ADA. AAAP chairs the CAFO Education Group, whose group efforts are funded through a grant from the EPA to the ADA.

Figure 3 - RAAAP/AAAP On-Site Visits



The CAFO Education Group's efforts include the Producer's Notebook, educational outreach workshops and the Animal Waste Management website. The Producer's Notebook, which is

periodically updated, contains summaries and information on State and federal regulations, worksheets to assist in record keeping, contact information for financial and technical assistance organizations, principles of nutrient management, sampling procedures and other materials to assist producers with compliance. During fiscal year 2004, AAAP, CNMP Assistance Program and the CAFO Education Group began the development of an updated Producer's Notebook to help producers address the requirements of ADEQ's new AZPDES CAFO Permit. The updated Producer's Notebook will be finalized and distributed to producers during fiscal year 2005. During fiscal year 2004, the CAFO Education Group provided three outreach workshops, which were attended by representatives from 63 dairies, feedlots and swine operations. AAAP also worked with the CAFO Education Group in updating the Animal Waste Management website, <http://ag.arizona.edu/animalwaste/>, which is maintained by the University of Arizona Cooperative Extension. Contents of the website include an electronic copy of the Producer's Notebook, copies of regulations, technical guidance regarding waste management, links to information and agencies, which can assist animal feeding operations, and other relevant information.

Other educational outreach provided by AAAP includes answering producer questions and providing information through letters, emails, faxes and phone calls. AAAP attends and has provided educational and promotional displays at producer group meetings and trade shows. In addition, AAAP writes informational articles which have been published in the Arizona Farm Bureau Newsletter, the United Dairymen of Arizona Magazine, the Arizona Horse Connection Magazine, and the Arizona Cattle Feeders' Association Cattlelog Magazine and Newsletter.

## Air Quality Compliance Assistance – Regulated Agricultural Best Management Practices

ACT is in the second year of administering a statewide air quality compliance assistance program for commercial farmers, the Regulated Agricultural Best Management Practices (RABMP) program. The RABMP program, which began late in Fiscal Year 2003, assists farmers in ensuring compliance with federal, state and local regulation and aids in the selection and implementation of agricultural best management practices for particulate matter (PM10) generated from farming activities.



An agricultural best management practice (BMP) is a practical, economical and feasible technique to reduce PM10 from becoming airborne. Agricultural activities such as tilling and harvesting, as well as windblown dust from fallow cropland, can produce PM10. A wide range of soil types and different cropping systems require that BMPs are addressed on a case by case basis. The RABMP program can assist farmers in their development of an air quality BMP plan. Some BMPs that reduce agricultural PM10 include practices such as limiting activity during high winds, creating artificial wind barriers and/or applying aggregate or water to unpaved farm roads or tillage that leaves large clods of soil in fallow cropland.

Looking ahead, increased growth of the RABMP program is projected as air quality issues such as regional haze, visibility and federal PM standards in the state are



addressed through enhanced air quality compliance assistance.

The growth projections in Figure 8 capture program innovation and enhancement by employing such tools as joint on-site visits with the other ACT programs, direct mailings and established referral systems. Also, beginning in early 2005, it is anticipated an agricultural BMP rule will become effective in the Yuma area, which will dramatically increase the utilization the RABMP compliance assistance program.

**Figure 8 - Actual and Estimated Projections for the RABMP Program**

|                             | Actual       | Projected   | Projected   | Projected   |
|-----------------------------|--------------|-------------|-------------|-------------|
|                             | <b>FY 04</b> | <b>FY05</b> | <b>FY06</b> | <b>FY07</b> |
| Number of Issues Addressed  | 1,102        | 1,824       | 2,736       | 3,420       |
| Compliance Issues Corrected | 363          | 601         | 902         | 1,129       |
| On-site Visits              | 29           | 48          | 72          | 90          |

Enhanced outreach and education to the agricultural community and the general public will be achieved through participation in conferences, seminars and agricultural workshops. Figure 9 shows the projections for the number of sessions and participants in these events. The substantial increase in the number of sessions and participants projected for fiscal year 2005 is due to the need for initial outreach and education, which will be necessary when the Yuma agricultural BMP rule becomes effective.

**Figure 9 - Actual and Estimated Projections for RABMP Outreach and Education**

|                        | Actual       | Projected   | Projected   | Projected   |
|------------------------|--------------|-------------|-------------|-------------|
|                        | <b>FY 04</b> | <b>FY05</b> | <b>FY06</b> | <b>FY07</b> |
| Number of Sessions     | 21           | 25          | 23          | 23          |
| Number of Participants | 1,011        | 1,213       | 1,112       | 1,112       |

The RABMP air quality program has experienced great success this fiscal year and growth projections for the future are a direct result of these successes and the continued support of the agricultural community.

### Livestock and Crop Conservation Grant Program

The Livestock and Crop Conservation Grant Program (LCCGP) is part of the Proposition 303 Growing Smarter Statute that was passed by public referendum in 1998.

A.R.S. §41.511.23(G) provides:

The exclusive purpose of the Livestock and Crop Conservation Grant Program is to fund grants to individual landowners and grazing and agricultural lessees of state or federal land who contract with the

Arizona Department of Agriculture to implement conservation based management alternatives using livestock or crop production practices, or reduce livestock or crop production, to provide wildlife habitat or other public benefits that preserve open space.

On September 18, 2003, Arizona State House of Representatives Bill (HB) 1071 became law, which effectively moved the LCCGP under the authority of the Arizona Department of Agriculture. Prior to HB 1071, the LCCGP, formerly known as the Growing Smarter Open Space Reserve (Growing Smarter) Grant Program, was administered by ADA through an Interagency Service Agreement, but was statutorily under the authority of Arizona State Parks. In November of fiscal year 2003, the Arizona State Parks Board suspended the grant program in response to a citizen petition requesting that the grant program undergo the official Arizona Administrative Rules process. As a result, no grants were awarded during fiscal year 2003.

In addition to moving the grant program to ADA, HB 1071 slightly modified the requirements governing the structure and administration of the LCCGP as follows:

- ADA shall develop guidelines and criteria for implementation of this program that shall include requiring as part of the grant application a letter describing the intended use for the grant money.
- ADA shall give priority to lessees of state or federal land, who reduce livestock production to provide public benefits such as wildlife species conservation or wildlife habitat.
- ADA shall not grant more than fifty per cent of the monies in the Livestock and Crop Conservation Fund, with respect to land, in one county in any fiscal year.
- The LCCGP is exempt from Chapter 6 of A.R.S. Title 41 with respect to adopting rules, except that the department shall provide for public notice and allow sixty days for public comment on the annual grant guidelines and criteria, including public hearings.
- ADA shall require each grantee to submit to the department, within twelve months after receiving the grant, a written report detailing how grant monies were used to achieve the project described in the letter submitted as part of the application. If the project is longer than one year, a written report shall be submitted to the department on an annual basis until the project is complete.

Throughout fiscal year 2004, the design of the LCCGP has been under development. ADA personnel have met with various stakeholder groups to gain input and feedback on the possible design and criteria of the LCCGP. As a result of this redevelopment period, no grants were awarded during fiscal year 2004. Also during fiscal year 2004, ADA began the process of creating a Grant Project Coordinator position within the agency that will be solely responsible for designing, implementing and administering the LCCGP. ADA anticipates that with the addition of this new position, the Livestock and Crop Conservation Grant Program will be fully functional in fiscal year 2005.

## Arizona Citrus Research Council

The Arizona Citrus Research Council was created by A.R.S. §3-468 to support the development of citrus research programs and projects within the Arizona citrus industry. Last year, the Arizona citrus industry produced more than 4 million cartons of grapefruits, lemons, oranges and tangerines at a value of \$44.5 million. Council programs and projects target production, plant pest and disease control, efficient fertilization and irrigation techniques and varietal development. The Council is comprised of seven producers appointed by the Governor:

- three producers from district one (including Yuma County)

- two producers from district two (Maricopa, Pima and Pinal Counties)
- two producers at large

In fiscal year 2004, the Council continued its work with research institutions to coordinate industry research needs. Council members approved more than \$79,000 in research grants.

The Council filed a notice of Proposed Rulemaking on August 29, 2003, to clarify their administrative process. Final administrative rules were effective December 2, 2003 and can be found under Title 3, Chapter 9, Article 5 of the Arizona Administrative Code. Due to a statutory change that exempts the Council from the State grant solicitation and award procedures, A.R.S. §41-2702, the Council also filed a Rulemaking Docket Opening on March 26, 2004 in preparation for proposed rules on their grant solicitation and award process. This legislative change will not become effective until fiscal year 2005. Until that time, the Council has obtained a waiver from the State grant solicitation and award procedures issued by the Department of Administration.

**Fiscal Year 2004 Financial Status - Arizona Citrus Research Council**

|          |              |
|----------|--------------|
| Revenue  | \$83,006.07  |
| Expenses | \$97,616.86* |

\*Actual revenues were lower than projected. The Citrus Council fund balance is more than adequate to cover the difference between expenses and revenues in FY 2004.

**Arizona Iceberg Lettuce Research Council**

The Arizona Iceberg Lettuce Research Council was created by A.R.S. §3-526 to conduct research for an Arizona industry that produces more than 31 million cartons of iceberg lettuce at a value of over \$700 million annually. Council members are appointed by the Governor and consist of seven producers:

- four producers from district one (including Yuma and La Paz Counties)
- one producer from district two (including the remainder of iceberg lettuce producing areas in the State)
- two producers at large

The Council reviews and awards a wide range of research proposals on topics such as variety development, lettuce pest eradication, and for programs relating to production, harvesting, handling, and transporting lettuce from fields to markets. During fiscal year 2004, the Council approved \$118,000 in research grants. Some examples of research grant projects include managing lettuce disease, breeding high quality lettuce for arid climates and field evaluation of lettuce cultivars.

Due to a statutory change that exempts the Council from the State grant solicitation and award procedures, A.R.S. §41-2702, the Council approved a Rulemaking Docket Opening for their grant solicitation and award process. The Council will continue to follow the State solicitation and award procedures until the legislative change becomes effective early in fiscal year 2005.

**Fiscal Year 2004 Financial Status-Arizona Iceberg Lettuce Research Council**

|          |               |
|----------|---------------|
| Revenue  | \$ 96,085.27  |
| Expenses | \$267,938.74* |

\* Expenses are unusually high due to the distribution of the remainder of USDA Specialty Crop Grant funds that were received in fiscal year 2003.

## Arizona Wine Commission

The Arizona Wine Commission was created by A.R.S. §3-552 to promote the Arizona wine industry through research, trade promotions, marketing, advertising and the sale or dissemination without charge of wine produced in Arizona. This Commission administers the Wine Fund established by the Arizona State Legislature to promote the wine industry. The Commission consists of seven Governor-appointed members:

- Director of the Department of Agriculture
- two producers
- two growers
- one retailer
- one wholesaler

During fiscal year 2004, the Commission completed a Sunset Review. The Commission's sunset legislation, Arizona State Senate Bill 1108, failed to pass during the 2004 legislative session. As a result, the Arizona Wine Commission was terminated effective July 1, 2004 and the statute that established the Commission, Title 3, chapter 3, article 6 will be repealed effective January 1, 2005.

### **Fiscal Year 2004 Financial Status - Arizona Wine Commission**

|          |             |
|----------|-------------|
| Revenue  | \$28,742.66 |
| Expenses | \$26,560.06 |

## Arizona Grain Research and Promotion Council

The Arizona Grain Research and Promotion Council was created by A.R.S. §3-581 thru 594 and utilizes grower 'check-off funds' to aid in marketing wheat and barley, participate in research projects and other programs that assist in reducing freshwater consumption, develop new grain varieties and to improve grain production, harvesting and handling methods. The Council consists of nine Arizona grain producers appointed by the Governor.

Research continues to be a top priority of the Council by continuing support for the research activities of the University of Arizona. Research projects focus on production management of durum wheat and barley for yield, quality and water use efficiency, littleseed canarygrass control in wheat, development of new limited-input small grain varieties, crop coefficients for estimating small grain water use, and methodologies to support tissue testing as a predictive tool to prevent low grain protein content in durum. Annually, the Council funds the small grain variety test trials used by producers to evaluate the varieties available. Approximately \$32,750 was spent on research projects during fiscal year 2004.

The Council supports the activities of United States Wheat Associates, the export market development arm of the United States wheat industry. Council support of the United States Wheat Associates is significant because more than half of Arizona's durum wheat is exported. The Council collaborates with the California Wheat Commission to conduct an annual crop quality survey of the Desert Durum® crop in Arizona and Southern California and publishes the results for buyers around the world.

## **Fiscal Year 2004 Financial Status - Arizona Grain Research and Promotion Council**

|          |              |
|----------|--------------|
| Revenue  | \$168,668.49 |
| Expenses | \$119,867.86 |

## **Agricultural Employment Relations Board**

The Agricultural Employment Relations Board (AERB) was created by A.R.S. §23-1386 in 1993 to provide a means to bargain collectively that is fair and equitable to agricultural employers, labor organizations and employees, to provide orderly election procedures, to resolve questions concerning representation of agricultural employees and to declare that certain acts are unfair labor practices that are prohibited and that are subject to control by the police power of this state. The Board has an annual budget of \$23,300.

The Board is comprised of seven members (and two alternates):

- two agricultural employers/management
- two organized agricultural labor representatives
- three public members, from which a Chairman must be selected.

The Board met on October 29, 2003 to approve the Interagency Service Agreement with the Department of Agriculture. There were no agricultural labor issues before the Board in FY 2004.

## **Arizona Agricultural Protection Commission**

The Arizona Agricultural Protection Commission was established by the Arizona Agricultural Protection Act (AAPA), A.R.S. §3-3303, effective August 22, 2002. The Commission's purpose is as follows: make recommendations to the Director of the Department of Agriculture for the adoption of rules necessary for the Commission to perform its duties; advise the Department with respect to grants awarded and contracts entered into pursuant to the Arizona Agricultural Protection Act; solicit and accept donations, including donations for the sole purpose of administering the Arizona Agricultural Protection Program; annually elect a Chair and Vice-Chair from among its members; advise the Director and submit recommendations relating to the monitoring of agricultural easements established pursuant to the AAPA; and prepare an annual report of its activities.

The Commission consists of sixteen members:

- Five members appointed by the Governor: two members who operate family farms or ranches in this state and who are active in regional or local agricultural organizations; one member from a university under the jurisdiction of the Arizona board of regents and who has experience in range ecology; and two members who represent regional or statewide conservation organizations in this state that have been in operation for at least ten years.
- Five members appointed by the President of the Senate: two members who operate family farms or ranches in this state; one member who represents a regional or statewide land trust that has been in operation for at least five years; one member who is a member of a county board of supervisors; and one member who is a member of a natural resource conservation district board of directors.
- Five members appointed by the Speaker of the House of Representatives: two members who are licensed real estate professionals and are active in marketing agricultural properties; one member who is active in and represents a statewide agricultural

organization in this state that has been in existence for at least ten years; one member who is active in managing water resources; and one member who is a member of the state bar of Arizona and who is experienced in the practice of private real estate law.

- The Director of the Department as an ex officio member.

Commission appointments were finalized in March of 2003.

The Arizona Agricultural Protection Act did not provide funding for the Commission. Therefore, in September 2003, the ADA entered into an agreement for one year with the United States Department of Agriculture Natural Resources Conservation Service to provide funding for the administrative support to the Commission. The first meeting of the Commission was held in January of 2004.

The Commission filed a Rulemaking Docket Opening on February 6, 2004, in preparation of filing proposed rules outlining their administrative process. The Commission also obtained a waiver from the State grant solicitation and award procedures issued by the Department of Administration.

The Commission will be meeting in September 2004 to further discuss its priorities, timeline and strategies for funding. They plan to learn from other successful state conservation easement programs and develop an action plan for fulfilling their charges.

# State Agricultural Laboratory

The State Agricultural Laboratory provides quality agricultural laboratory analysis, identification, certification and training services to various regulatory divisions of the Department and others as provided by law. To maintain the integrity of its test results, the Laboratory operates independently of the Department’s regulatory divisions and operates under a stringent quality assurance program. The Laboratory is currently organized into two main sections — Biology and Chemistry.

| <b>Lab Subsection</b>            | <b>Summary of Activities</b>   |
|----------------------------------|--|
| <b>Biology</b>                   |  |
| Entomology                       | Provides insect identifications to assist in preventing harmful pests from becoming established in Arizona and assists in certification of Arizona products. |
| Plant Pathology                  | Provides plant disease identification for certifying Arizona products for export and aiding in the prevention and control of plant diseases.                 |
| Botany                           | Identifies plants to assist in preventing the spread establishment and spread of “weeds” in the state.   |
| Nematology                       | Provides nematode identifications to protect the State from introductions of pest species.   |
| Malacology                       | Identifies snails and slugs to assist in preventing the establishment and spread of agricultural pests species.  |
| Seed Quality                     | Tests seed properties to assure consumers are getting label guaranteed quality.  |
| Animal Disease                   | Tests animal blood and milk samples for the presence of the organism responsible for causing the disease brucellosis.  |
| Dairy Product Quality            | Tests dairy products to assist regulators in enforcing quality standards.  |
| Food Safety & Meat Microbiology  | Tests meat, ready to eat products and other commodities for harmful bacterial contamination.   |
| <b>Chemistry</b>                 |  |
| Dairy Residue                    | Analyzes milk and other dairy products for the presence of pesticides and other harmful chemicals.   |
| Pesticide Residue                | Assists pesticide law enforcement officials through the forensic analysis of samples resulting from an investigation of pesticide misuse allegations.        |
| Natural Toxin Residue            | Tests human and animal feed products for the presence of naturally occurring chemicals capable of causing illness.   |
| Pesticide Formulations           | Determines quality of pesticide products through the analysis of commercially available pesticides.  |
| Feed and Fertilizer Formulations | Performs testing of commercial product ingredients to determine compliance with label guarantees.  |
| Meat Quality                     | Tests meat and meat product samples to assist regulators in assuring proper economic labeling of products.   |

## Quality Assurance

Quality assurance is an integral part of the Lab's analytical operations. It is the scrupulous attention to quality assurance standards that enables each of the laboratory's customers to act upon test results with utmost confidence.

## Quality System

Quality manuals define the laboratory policies, systems, programs, procedures and instructions to assure the quality of the test results. Standard operating procedures referenced in the quality manual detail laboratory processes, test methods, as well proper use and maintenance of equipment. These procedures ensure uniformity of work and the accuracy and reproducibility of test results.

## Laboratory Audits

Internal laboratory audits are conducted to verify that the laboratory operations comply with the requirements of the quality system.

The Dairy Product Quality lab also undergoes on-site laboratory audits that are conducted every three years by the U.S. Food and Drug Administration (FDA) personnel. These audits, combined with analyst participation in an annual proficiency sample program ensure the quality of the analyses conducted by the Dairy Product Quality laboratory.

## Personnel Requirements

The laboratory ensures the competence of all who operate specific equipment, perform tests, evaluate results, and sign test reports. Personnel performing specific tasks are qualified on the basis of appropriate education, training, experience, demonstrated skills, and/or certifications.

## Assuring the quality of test results

The Laboratory has quality control procedures in place for monitoring the validity of tests.

## Reference Standards and Reference Materials

Certified reference material and internal quality control using secondary reference materials are used regularly to ensure the accuracy of test results. The Biological Identification lab houses one of the largest and most comprehensive ant collections in Arizona. It is part of an insect collection made up of over 20,000 individual specimens, representing more than 250 families of insects. This important reference collection is used by staff in identifying samples of beneficial and harmful insects, which are introduced or established in the state.

## Proficiency Sample Programs

Quality assurance is validated in the Chemistry Section by voluntary participation in several check sample programs. For example, feed analyses are evaluated by check samples from the American Association of Feed Control Officials (AAFCO). Fertilizer analyses are evaluated by McGruder's Fertilizer Check Sample Data Program. The USDA/FSIS (U.S. Department of Agriculture/Food Safety Inspection Service) Food Chemistry Check Sample program reviews meat analyses.

## Biology

### Biological Identification

The Biological Identification laboratory provides a number of services, including the identification of insects, nematodes, mollusks, plant diseases and weeds, seed quality analyses and information about pests that allow the regulatory divisions to make informed decisions about permits, phytosanitary certification, quarantines and pest control measures.

## Digital Imaging

The State Agricultural Laboratory was the first state department of agriculture to establish and develop a digital imaging system for remote identification of potential pests as part of a pest exclusion program. This was accomplished in partnership with the Plant Services Division and the Department's MIS group. With Digital Imaging (DI) systems in place at the State's ports of entry, high quality images of insects, seeds, diseases and other potential pests can be sent electronically for rapid analysis. In most cases a determination can be made in less than an hour. This shorter time span reduces the holdup of a commercial load from days to hours.

The Lab's DI system also has been used for preparing training materials for the Department's inspectors. In addition it has been used to send images to experts around the world, thus expanding the analytical ability of the Laboratory's Biological Identification staff.

The Department's DI system has been so successful that the California Department of Food and Agriculture has implemented an identical system at its ports. The Lab has supplied training and expertise for implementing the DI system not only to Arizona's ports' personnel, but has also trained CDFA ports inspectors in the use of the DI system. The State Agricultural Laboratory continues to develop and expand the use and efficiency of the Digital Imaging system.

## Seed Analysis Benefits Arizona's Farmers and Others

Seed analysts in the Biology Section conduct testing on seed purity, germination rate, and weed seed content to benefit Arizona's farmers, landscapers, homeowners, golf courses and seed export companies. During FY2004, 2,469 analyses were completed on seed samples to provide assurance that the seed label matches its guaranteed performance when planted and does not contain harmful weeds. Seed technicians are certified by the Association of Official Seed Analysts and can recognize at sight over 400 species of plant seeds.

## Identifications

For FY 2004 the Biology Section of the lab provided 12,676 identifications on specimen submissions. This included 147 botany identifications, 10,503 entomology identifications, 12 malacology (snails and slugs) identifications, 1,470 nematode identifications, 544 plant pathology identifications.

## Technical Assistance

The lab provides technical assistance to Department personnel and others in Phytosanitary Certifications, Pest Importation Permits, and hands-on training in sampling technique, sample submission and field recognition of pests and plant diseases.

## Export

To facilitate exports of various agricultural commodities, laboratory staff train Department personnel in field inspection, collection and detection of plant pests. Export requirements require certificates that indicate plant health. The list of target diseases is dynamic and fluctuates in response to biological, economic and political factors abroad. Tests performed and information provided by plant pathology and entomology staff are vital in certifying Arizona-produced commodities for domestic and foreign markets.

## Dairy Product Quality

The U.S. Food and Drug Administration (FDA) certifies the dairy microbiology lab and its analysts to perform testing on dairy products, dairy product containers, and environmental dairy water samples to allow export of Arizona's milk and milk products to other states. On-site laboratory surveys, conducted every three years by FDA personnel as well as analyst participation in an annual proficiency sample program, ensure the quality of the analyses conducted by the dairy microbiology laboratory. Tests conducted include bacteriological

analyses, enzyme activity for proper pasteurization of dairy products, antibiotic residues, fat and non-fat solids content, and other indicators of milk safety and quality. In FY 2004, the laboratory performed 9,572 microbiological and 139 antibiotic residue analyses on Arizona-produced raw milk, pasteurized dairy products, dairy product containers, and environmental dairy water samples for the Department's Dairy Products Inspection program.

FDA certified Dairy Product Quality Laboratory personnel also conduct on-site audits of commercial dairy laboratories for compliance with FDA regulations for testing milk and milk products.

## Food Safety

The laboratory participates in the Department's development of a Food Safety and Quality Assurance Program by testing agricultural commodities for food-borne pathogens in the Food Safety lab. Raw meat, ready-to-eat products, and animal carcass swab samples are tested in support of the State's Meat and Poultry Inspection Program which is a cooperative program of the U. S. Department of Agriculture Food Safety and Inspection Service program. The Food Safety lab also has also been a cooperating laboratory for testing of vegetables imported from Mexico under contract with the FDA. A total of 465 tests for food-borne pathogens were performed in FY 2004.

## Animal Disease Detection

The Animal Disease laboratory tests animal blood and raw milk for the bacteria responsible for causing brucellosis, a severe reproductive disease in cattle and other animals. In humans the disease is known as undulant fever. Brucellosis may be transmitted from animals to humans through non-pasteurized milk or milk products.

Brucellosis is a disease that decreases reproductive efficiency, and if present, can seriously affect the profitability of domestic livestock producers and exotic zoo animal producers. Since the 1940s, the USDA has sought to eradicate brucellosis, resulting in the current Cooperative State Federal Brucellosis Eradication Program.

States are designated brucellosis free when none of their cattle or bison are found to be infected for 12 consecutive months under an active surveillance program. Arizona has been brucellosis-free since 1987. At slaughter, all potentially reproductive cattle and bison two years of age or older are tested.

Laboratory analysts are certified by the United States Department of Agriculture National Veterinary Services Laboratory. To remain certified, the analysts must pass annual proficiency. The Animal Disease laboratory analyzed a total of 18,034 blood and milk samples from domestic and exotic animals for the Brucellosis Eradication Program in FY 2004. In addition, laboratory technicians perform blood sample collection from cattle at an Arizona slaughter facility. These samples are shipped to a State-Federal laboratory in Lubbock, Texas for analysis. A total of 115,031 cattle blood samples were collected and shipped to the Lubbock laboratory for testing in FY 2004.

## Chemistry

### Our Customers

During FY 2004, the Lab's Chemistry Section continued providing regulatory pesticide residue analyses to Arizona's pesticide law enforcement agencies including:

- Department's Pesticide Compliance and Worker Safety Program
- Department's Animal Products Food Safety and Quality Inspection Program

- Department's Non-Food Product Quality Assurance Program
- Structural Pest Control Commission
- Arizona Department of Environmental Quality
- Gila River Indian Community
- Navajo Nation

In addition, technical and training support for tasks such as sample collection and preservation, chain-of-custody use and documentation; test selection; results interpretation; sampling plan development and chemical safety also are services provided to our customers.

## Natural Toxins

### Cottonseed - A Valuable Feed Commodity

The Natural Toxins laboratory plays a major role in the certification of three private laboratories to provide the industry with lab services, allowing for the safe use of cottonseed and cottonseed products as a feed substance. Cottonseed is commonly fed to Arizona's dairy cows. A natural toxin called aflatoxin can contaminate cottonseed. Arizona's dairy producers do not want to buy contaminated seed or feed it to their dairy herds.

### Protection for Milk

To protect Arizona's milk drinkers, a comprehensive system was developed to detect and prevent contaminated milk from reaching the market place. The Laboratory certifications are an integral part of this protection. Cottonseed products must be stored, sampled and tested by a certified laboratory in strict accordance with Arizona Statute to protect the dairy producers from obtaining contaminated feeds. To further protect Arizona's consumers, milk products also are diligently tested both by industry and the Lab. Raw and finished milk products are tested for aflatoxin as a final line of defense.

## Chemical Residue

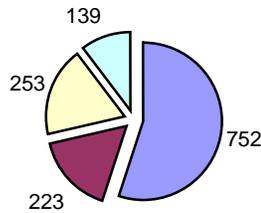
### Threat of DDT Residues

Pesticide residue testing also is conducted for the Department's Food Safety and Quality Assurance program. The primary pesticide of concern continues to be dichloro diphenyl trichloroethane or DDT. While the use of DDT was banned in 1971 due to environmental concerns, further studies have suggested that this pesticide may be responsible for causing cancer. Despite 30+ years of nonuse, DDT continues to have a presence in Arizona's environment. Testing for the presence of this pesticide supports the Department's regulatory role in the preventing significant levels of contamination from reaching Arizona's dairy product consumers. The Chemistry Section also tests samples collected as a result of alleged pesticides misuse.

### Behind the Scenes

Other examples of residue testing may involve allegations of off-target spraying of pesticides during agricultural use, incorrect application of pesticides to homes for the prevention of termite infestations or insect control, illegal discharge of pesticides into the environment, or failure to take necessary actions to protect industry workers.

## Chemical Residue Section



■ Dairy Residue ■ Mycotoxin Residue □ Pesticide Products □ Pesticide Residue

Sample types received include water, soil, produce, foliage, animal tissues, air, clothing and surface swabs. Complicating the variety of samples are the estimated 11,005 pesticide products registered for use in Arizona. Analysis of these forensic samples requires advanced scientific tools and experience.

### Consumer Protection

The expertise of the Lab's personnel with the chemistry of pesticides is further used to protect Arizona's consumers and industry through the provision of analysis of home-use, commercial and agricultural pesticide products. The Department collects samples each year from the consumer and industrial market place. Chemists then perform analyses to determine whether the content and quality of the active ingredients are correctly displayed on the product label. This regulation not only protects the end-user from potential financial losses, but it also plays a key role in protecting pesticide applicators and farm workers against harmful exposure.

### Termite Checkup

The Structural Pest Control Commission collects similar samples to ensure proper labeling, mixing and application of pesticides used in the home building process. Without this regulatory effort and the testing performed in the Pesticide Residue lab, poor quality products or applications could leave a new home defenseless against harmful termites. The Commission is a State agency that regulates the commercial pest control industry and the use of structural pesticides.

### Animal Feed Protection

The laboratory also performs analyses for the presence of natural toxin residues in human food, animal feeds and pet food products. This includes chemicals such as aflatoxin (potent cancer-causing agent in humans and animals), fumonisin (causes death and illness in horses and hogs), and vomitoxin (causes serious illness in dogs). As these compounds are naturally produced through fungal activity, the regulatory focus is shifted into the detection and prevention of contaminated products entering into the human and animal food chain. This testing is completed for the Department's regulatory programs.

### Traditional Chemistry

#### Feed and Fertilizer Quality

This portion of the chemistry laboratory analyzes commercial feed and fertilizer products to determine whether the amount of ingredients guaranteed on the label are accurate. This ensures that consumers receive agricultural products that meet the label guaranteed quality. For example, a fertilizer may have a guarantee of 10-20-5 which indicated the product must contain 10% nitrogen, 20% phosphorous and 5% potassium and the lab would run tests for all three ingredients. Similarly, a feed product may be guaranteed for protein, calcium and phosphorous,

requiring multiple testing as well. During FY 2004, 1,587 analyses were performed on 703 feed and fertilizer products collected in the marketplace.

#### **Meat Product Quality**

Department Meat and Poultry Inspectors collect samples of raw and processed meat and submit them to the laboratory for analysis of their key economic ingredients: protein, fat, moisture, added water, and salt. By performing 204 analyses, the laboratory assisted the Department in ensuring the public is receiving meat products at the economic value guaranteed on the label.

# Commodity Development and Promotion

The Office of Commodity Development and Promotion (CDP) supports Arizona's agriculture by providing a number of marketing and outreach services. Our agriculture industry continues to be among the leaders in the nation in crop diversity and self-reliance. As such, trade and marketing assistance are two requests we receive frequently.

## Outreach and Promotion

We work to promote Arizona agriculture to local consumers and potential trading partners in cooperation with the state's farmers, ranchers and agribusinesses through various marketing and outreach opportunities.

FY 2004 was a year of tremendous change in CDP, as the division faced challenges on how best to support and promote Arizona agriculture through its remaining staff member.

One of the leading ways we are supporting Arizona agriculture is through our support of organizations such as the Arizona Farmers' Direct Marketing Association and "Flavors of Arizona," Arizona's processed food association. CDP sits on the board of these industry driven organizations as an ex officio member, guiding and providing support to the organizations.

Additionally, the office is responsible for the management and coordination of Specialty Crop grants that were awarded to participants during 2001-2002.

## Policy

One continued area of concentration for the Marketing and Outreach program was implementation of international policy. The International Program works intimately with the Governor's Office for adequate representation in the Arizona Mexico Commission, the Border Governors' Conference, the CANAMEX Coalition, and the Governor's Task Force for Southern Expansion. In fact, Arizona assumed the Chair position for the Agribusiness Working Table at the Border Governors' Conference for 2004-2005. These organizations work to strengthen Arizona's relationship with its southern neighbors through trade missions, cultural exchanges and business ties.

## International Marketing Program

The International Program works to promote and support Arizona agriculture and agribusiness throughout the world. The International Program uses various promotional activities to target foreign buyers of Arizona agricultural products. As new markets continue to embrace free trade, Arizona agriculture will capitalize on exporting many Arizona Grown commodities. In 2003-2004 we continued our focus on Japan and Mexico, and added a new program in Chile.

Funding for our international marketing services is allocated entirely from a range of sources from the USDA Foreign Agricultural Service's Market Access Program. Awards are based on strategic planning, market potential and industry support for each promotional activity. Although funding is limited, we have been able to initiate a number of quality promotions internationally for various Arizona farmers, ranchers and agribusinesses.

## Trade Shows and Missions

One successful avenue the Arizona Department of Agriculture informs and educates international buyers about the wealth of Arizona Grown products is through international trade shows and missions. In these programs, the Department works with industry representatives and companies and accompanies them to international locales to find buyers interested in their products.

### **AGF Totaal Trade Show, Rotterdam, Netherlands, September 2003**

Arizona organized the participation of five different food companies for the AGF Totaal show in Rotterdam. The show was a tremendous success with two companies actually selling at the show; one order for more than \$300,000. This trade show takes place every other year, and Arizona is seriously considering participating in the '05 show.

### **ExpoGan Chihuahua, Chihuahua, Mexico, October 2003**

Through funding awarded by U.S. Livestock Genetics Export (USLGE) Arizona participated in ExpoGan Chihuahua, one of Mexico's largest shows dedicated to the sale and promotion of cattle. Arizona ranchers took advantage of this grant and visited the show. Several made excellent connections, in the hopes of selling steers to Mexico in the near future.

### **ExpoGan Jalisco, Jalisco, Mexico, October, 2003**

Arizona participated in ExpoGan Jalisco for the second time. ExpoGan Jalisco is the largest livestock show and auction in Mexico. Because Arizona has a business office in Jalisco, it is very easy for Arizona ranchers to make significant connections and sales to Mexican ranchers. Several participants stated they were very interested in attending ExpoGan Jalisco in the coming year, and expect to sell animals to Mexican ranchers within 18 months.

### **Trade Mission to Santiago, Chile, March, 2004**

In March, the Department took several western citrus growers to Santiago, Chile to begin negotiations about selling our citrus to Chile during their summer months. This program offers an excellent opportunity for Arizona producers, not just of citrus but other fresh products to sell their produce to Chile and the rest of South America. Three or four container loads of citrus were expected to be shipped from the Yuma area beginning in December, 2004 as just the beginning of continued sales to South America.

### **ExpoGan Sonora, April 2004**

Although the finding of BSE in Washington State closed the Mexican market to Arizonan cattlemen, Arizona still mounted a trade mission to ExpoGan Sonora in Hermosillo. It is most important during this closed business time that Arizona ranchers continue their presence in Mexico, so that once this market is opened up for live animals again, we will be ready to take advantage of it.

### **New to Market Export Mission, May 2004**

CDP and hosted several produce companies from Colorado and Arizona on a specialized tour of the border. The companies learned the fresh produce export process and met with several brokers, importers and exporters. The participants then traveled to Mexico City to meet with prospective companies interested in buying their fresh products.

### **Korean Buyers Delegation, May 2004**

The Arizona Department of Agriculture hosted 15 Korean food buyers through the auspices of the Western U.S. Agricultural Trade Association. The Department spent three days touring with the group through various fresh and processed food companies based upon a suggested itinerary

from the Agricultural Trade Office in Seoul. Sales were pending upon publication of the Annual Report.

### Fancy Food Show New York City, June, 2004

Arizona sent four different processed food companies to the Fancy Food Show in New York. The Arizona Department of Agriculture sent one representative to the show to assist and support those companies in attendance. All companies reported excellent results including sales on the floor.

### What to Expect in FY 2005

As a result of these marketing activities, Arizona successfully distributed marketing literature around the world about the quality and freshness of Arizona Grown commodities and processed food products. The programs will continue to build upon these foundations and add new international markets where Arizona producers of both processed foods and bulk commodities can successfully compete.