

1

ORGANISATION OF THE ANIMAL HEALTH SYSTEM

Cooperative partnerships between all levels of government and the animal industries are central to effective national surveillance and control of animal diseases in Australia.

This introductory chapter describes the organisation of Australia's animal health system, including the roles of government and nongovernment organisations.

Under the Australian Constitution, the Australian state and territory governments are responsible for animal health matters within their boundaries. These matters include disease control, chemical residues in animal products, livestock identification and traceability, and animal welfare. The Australian Government advises on and coordinates national animal health policy and is responsible for international animal health matters, including quarantine, export certification and trade, and disease reporting to the World Organisation for Animal Health (OIE).

In Australia, the traditional role of governments in managing animal health is complemented by a close association between government and the livestock industries. National animal health priorities are determined in consultation with the livestock industries, which participate in policy development, support targeted activities and contribute to emergency responses. Australia's livestock industries are described in Appendix 1.

Australia's animal health system includes all organisations, government agencies, commercial companies, universities and individuals that are involved in the livestock production chain. The Australian Wildlife Health Network (AWHN) provides a link between livestock health and the health of wild and feral animals.

Table 1.1 shows the numbers and categories of veterinarians and other animal health personnel in Australia.

The National Livestock Identification System (NLIS) for sheep and goats is being improved in response to issues identified by the traceability exercise, Sheepcatcher. Improvements include the introduction of mob-based recording on the system's central database.

A detailed review of Australian Pork Limited's Australian Pork Industry Quality Assurance Program was completed. The program has been revised in response to the review, and the new program is now being rolled out to producers. The revised program covers all types of pig production systems — free-range, outdoor-bred and intensive systems.

Australian Egg Corporation Limited's (AECL's) national quality assurance program for the egg industry, Egg Corp Assured, was reviewed. The program is now being written into a standard that will be launched in 2011.

The Australian Chicken Meat Federation produced and distributed a revised version of the *National Farm Biosecurity Manual for Chicken Growers*.

1.1 Governance

1.1.1 Australian Government committees

Consultative committees ensure that all components of the animal¹ health system (described below and shown in Figure 1.1) work together to serve the interests of Australia. Animal Health Australia (AHA)

provides linkages through its members: the Australian Government, state and territory governments, the peak national councils of Australia's livestock industries and service providers (see Table 1.2).

Primary industries committees

The Primary Industries Ministerial Council (PIMC)² is the peak government forum for consulting on, coordinating and integrating government action on national primary industries issues. PIMC comprises the Australian national, state and territory, and New Zealand ministers responsible for the agriculture, food, fibre, forestry, fisheries and aquaculture industries, and for production in these industries. The council's aims are to develop and promote sustainable, innovative and profitable industries in these sectors.

PIMC is supported by a permanent committee, the Primary Industries Standing Committee (PISC). This committee comprises the heads of the Australian national, state and territory, and New Zealand departments of agriculture; representatives of the Bureau of Meteorology; and representatives of the Commonwealth Scientific and Industrial Research Organisation (CSIRO).

The National Biosecurity Committee (NBC)³ is the advisory committee to PISC and PIMC on all animal, plant and environmental biosecurity issues. The NBC provides strategic leadership, across jurisdictions and sectors, in national approaches to emerging and ongoing biosecurity policy issues.

The Animal Welfare Committee provides advice to PISC on animal welfare matters through the Animal Welfare and Product Integrity Taskforce. Some aquatic animal health issues that have environmental implications are managed through the natural resource management committee structure.

Table 1.1 Veterinarians and other animal health personnel, 2010

Registered veterinarians		Auxiliary personnel	
Government	638	Stock inspectors, meat inspectors, etc	887
Laboratories, universities, etc	677		
Private practitioners	8 477		
Other veterinarians (not registered)	658		
Total	10 450	Total	887

1 Animals include terrestrial and aquatic animals.

2 www.mincos.gov.au

3 www.daff.gov.au/animal-plant-health/pihc

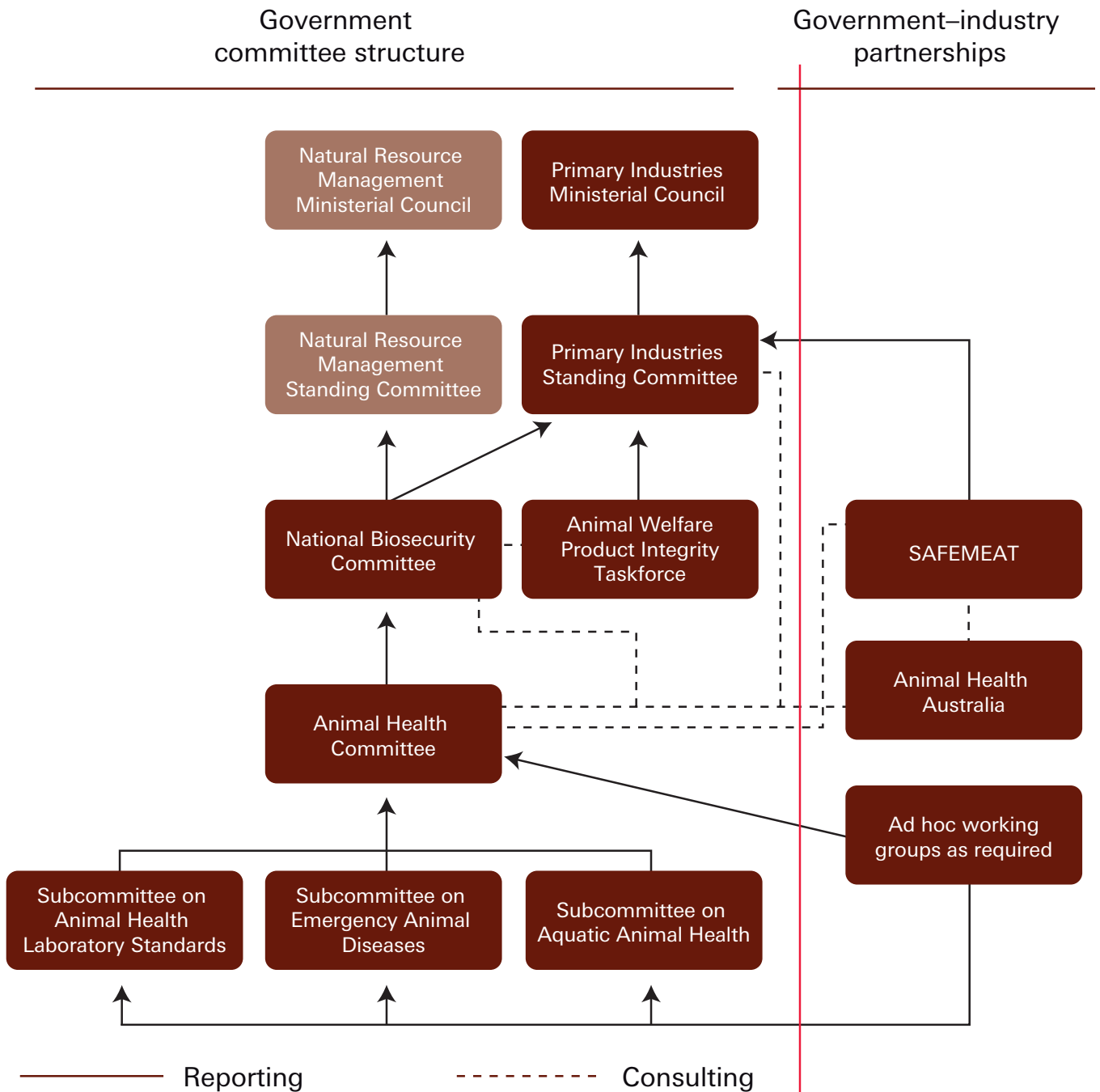


Figure 1.1 Organisation of animal health management committees and organisations in Australia

Animal Health Committee

The Animal Health Committee (AHC)⁴ provides the government with strategic scientific and policy advice on animal biosecurity matters through the NBC, PISC and PIMC. The AHC prioritises and coordinates activities in national animal health, domestic quarantine and veterinary public health by driving the development and implementation of policy, programs, operational strategies and standards for government.

In 2010, the scope of the AHC's work was extended to include responsibility for the environmental and social implications of animal health policy, following the disbandment of the Environmental Biosecurity Committee.

AHC membership comprises the national, state and territory chief veterinary officers, and representatives from the CSIRO Australian Animal Health Laboratory (CSIRO-AAHL), Biosecurity Australia, AHA, the Australian Quarantine and Inspection Service (AQIS) the Australian Department of Sustainability, Environment, Water, Population and Communities, and New Zealand.

The AHC is advised by three subcommittees: the Subcommittee on Animal Health Laboratory Standards (SCAHLS), the Subcommittee on Emergency Animal Diseases and the Subcommittee on Aquatic Animal Health. Specialist ad hoc working groups advise the AHC on technical or policy issues as necessary.

The AHC consults with the animal industries through newsletters, membership of AHA and industry participation in some sessions of AHC meetings. Aquatic industries are consulted through the National Aquatic Animal Health Industry Reference Group and the Australian Fisheries Managers Forum. Those with an interest in zoo, wild or feral animals are consulted through the AWHN.

Consultative Committee on Emergency Animal Disease

When an emergency animal disease (EAD) outbreak occurs, the Consultative Committee on Emergency Animal Disease (CCEAD)⁵ is convened. CCEAD membership is similar to that of the AHC, but also includes technical representatives from relevant industries. Further information about the CCEAD's membership and role is in Chapter 4.

Subcommittee on Animal Health Laboratory Standards

SCAHLS is the primary forum for networking among the animal health laboratories in Australia and New Zealand. It establishes, implements and monitors professional and technical standards by dealing with quality assurance, skills, and the development and validation of new tests. It also publishes the Australian and New Zealand Standard Diagnostic Procedures.⁶

1.1.2 Animal Health Australia

AHA is an innovative partnership involving government, industry and other stakeholders in animal health. It aims to strengthen Australia's animal health system and maximise confidence in the safety and quality of Australia's livestock products in domestic and overseas markets.

Within the framework of a not-for-profit public company, AHA manages more than 50 national programs on behalf of its members. These programs improve animal and human health, biosecurity, market access, livestock welfare, productivity, and food safety and quality.

AHA's 31 members include the Australian Government, state and territory governments, livestock industry organisations, service providers and associate members. The current membership is shown in Table 1.2, and contact details for these organisations are provided in Appendix 2.

The company's roles are:

- to facilitate improvements in Australia's animal health policy and practice by building capacity to improve EAD preparedness
- to ensure that Australia's livestock health systems support productivity, competitive advantages and preferred market access
- to ensure animal health programs assist in protecting human health, the environment and recreational activities
- to manage nationally agreed animal health programs.

AHA members help develop the company's strategic plan and the annual business plan through regular contact and formal meetings. A consultative group, comprising representatives of all AHA member organisations, consults with the company on issues relating to the national animal health system and AHA's role in addressing these issues. It also has a role in prioritising AHA activities. The consultative process ensures that key strategic issues and emerging risks for

4 www.daff.gov.au/animal-plant-health/animal/committees/ahc

5 www.daff.gov.au/animal-plant-health/animal/committees/ccead

6 www.scahls.org.au/procedures

Table 1.2 Members of Animal Health Australia

Government	Industry
The Australian Government	Australian Alpaca Association Ltd
Department of Agriculture, Fisheries and Forestry	Australian Chicken Meat Federation Inc
State and territory governments	Australian Dairy Farmers Ltd
Australian Capital Territory	Australian Duck Meat Association Inc
Northern Territory	Australian Egg Corporation Ltd
State of New South Wales	Australian Honey Bee Industry Council
State of Queensland	Australian Horse Industry Council
State of South Australia	Australian Lot Feeders' Association Inc
State of Tasmania	Australian Pork Ltd
State of Victoria	Australian Racing Board
State of Western Australia	Cattle Council of Australia Inc
Associate members	Equestrian Australia Ltd
Australian Livestock Export Corporation Ltd (LiveCorp)	Goat Industry Council of Australia Inc
Dairy Australia Ltd	Harness Racing Australia
National Aquaculture Council Inc	Sheepmeat Council of Australia Inc
Service delivery	WoolProducers Australia
Australian Veterinary Association Ltd	
Commonwealth Scientific and Industrial Research Organisation (CSIRO) — Australian Animal Health Laboratory	
Council of Veterinary Deans of Australia and New Zealand	

all members are identified, and that AHA's programs and projects align with identified priorities.

For more information about AHA, visit the website.⁷

National Animal Health Performance Standards

The National Animal Health Performance Standards allow the member organisations of AHA to assess Australia's animal health capacity, to ensure that obligations and expectations about EAD preparedness and response capability are addressed. Such assessments can show whether Australia's baseline capacity is being met, identify gaps and indicate appropriate corrective strategies, and assist the effective distribution of scarce national resources. Outcomes include improved adoption of biosecurity measures by industry, increased confidence by domestic consumers in Australia's livestock products and improved access to international markets for these products.

⁷ www.animalhealthaustralia.com.au

AHA continues to work with its members to refine the standards and improve the accountability and efficiency of their implementation. Particular areas to be addressed are the purpose of assessments, sharing of findings and use of the outcomes. Assessment and reporting against the revised standards will begin shortly.

1.1.3 SAFEMEAT

SAFEMEAT,⁸ is a partnership established by the peak red meat industry bodies⁹ and the Australian Government and state and territory governments. Reporting to PISC, SAFEMEAT's role is to oversee and promote sound management systems to deliver safe and hygienic products to the marketplace. Initiatives developed by SAFEMEAT include:

⁸ www.safemeat.com.au
⁹ Australian Livestock & Property Agents Association, Australian Livestock Exporters Council Ltd, Meat & Livestock Australia, Sheepmeat Council of Australia, WoolProducers Australia, Cattle Council of Australia, Australian Lot Feeders' Association, Australian Meat Industry Council, Australian Dairy Farmers Ltd, Australian Pork Ltd, Livestock Saleyards Association of Australia, Saleyard Operators of Australia, and Animal Health Australia

- targeted residue-monitoring programs — the National Residue Survey conducts testing on behalf of the red meat industries
- the NLIS — developed for cattle, sheep, goats and pigs, with a similar system under development for alpacas
- a system of national vendor declarations about the health of cattle, sheep, goats and pigs that are being traded
- strategies for animal disease issues affecting food safety, including the implications of transmissible spongiform encephalopathies such as bovine spongiform encephalopathy.

Major activities during 2010 included:

- obtaining agreement with veterinary drug manufacturers on policy regarding placing export slaughter intervals on chemical labels
- developing management plans for lead and cadmium residues in livestock
- further developing the NLIS (Sheep and Goats).

SAFEMEAT participated in a review of the NLIS (Sheep and Goats) by an independent consultant, following the traceability exercise, Sheepcatcher. The review was commissioned by PISC to identify improvements that would enable compliance with the National Livestock Traceability Performance Standards. The NLIS (Sheep and Goats) Management Committee identified two strategies for improvement, which were forwarded to PISC.

In 2010, SAFEMEAT instigated the Dairy Calf Supply Chain Trial, which aims to ensure that the risks of residues are managed throughout the supply chain, and that the welfare of bobby calves sent to slaughter can be demonstrated. The Australian Government Department of Agriculture, Fisheries and Forestry (DAFF) and the Victorian Department of Primary Industries provided grants towards the trial, which is being undertaken by Australian Dairy Farmers, Dairy Australia and several bobby calf supply chain alliances. SAFEMEAT receives regular updates on the progress of the trial, which has been quite successful, with trial participants indicating greater awareness of residue issues.

1.2 Service delivery

1.2.1 Australian Government animal health services

Under the Australian Constitution, the Australian Government is responsible for quarantine and international animal health matters, including disease reporting, export certification and trade negotiation.

It also provides advice on and coordinates national policy and, in some circumstances, provides financial assistance for national animal disease control programs. The animal health role of the Australian Government is delivered by DAFF.

The Australian Government is Australia's largest single employer of veterinarians, providing an important reserve for the state and territory governments in the event of an outbreak of a major EAD.

In mid-2009, DAFF's quarantine and biosecurity functions were brought together in the Biosecurity Services Group (BSG)¹⁰ to deliver more effective risk management and services along the biosecurity continuum (pre-border, border and post-border). The BSG integrates the functions and responsibilities of AQIS; Biosecurity Australia; the Product Integrity, Animal and Plant Health Division; and the Quarantine and Biosecurity Policy Unit (although AQIS and Biosecurity Australia branding is still used). The restructure reinforces a national approach to biosecurity, simplifies internal and external communications, and improves responsiveness.

Animal health falls within BSG's Animal Division, which includes:

- Office of the Chief Veterinary Officer
- Animal Health Programs
- Animal Biosecurity
- Animal Quarantine and Export Operations
- Biological Quarantine Operations and Marine Pests.

Food safety and product integrity fall within BSG's Food Division, which includes:

- Export Standards
- Food Exports
- Residues and Food Safety
- Export Reform.

The Agricultural Productivity Division of DAFF is responsible for national policy and the development of standards for animal welfare. The Trade and Market Access Division of DAFF provides policy and strategic support for DAFF's international activities.

Office of the Chief Veterinary Officer

The Office of the Chief Veterinary Officer (OCVO)¹¹ provides national leadership and direction on priority policy issues relating to animal health in Australia. It manages international disease intelligence gathering, and

10 www.daff.gov.au/bsg/biosecurity-services-group

11 www.daff.gov.au/animal-plant-health/animal

provides scientific advice to government and industry stakeholders to reduce the potential impacts of disease on Australia's animal health status. An epidemiology and disease modelling section provides high-level expertise, research and analysis to inform policy.

The OCVO provides an international reference point on animal health, manages Australia's commitments to the OIE and manages communication with other international agencies involved with animal health.

Animal Health Programs

The Animal Health Programs branch represents DAFF on national animal health programs. It coordinates national animal surveillance and laboratory strategies; livestock disease prevention and preparedness activities; and emergency disease planning, training and awareness programs. The branch supports animal and human health, biodiversity and trade by collaborating with human health authorities and managing programs in wildlife health, aquatic animal health and veterinary public health.

The Animal Health Programs branch provides technical, executive and administrative support to national animal health committees, and their working groups and programs.

Animal Biosecurity

The Animal Biosecurity branch provides science-based quarantine assessments and policy advice to protect Australia's favourable animal health status.

Animal Biosecurity is responsible for developing and reviewing Australia's quarantine policy, through import risk analyses and policy reviews that relate to the importation of live animals, animal reproductive material and animal products. It provides technical advice for negotiations on access to international markets for live animals and animal reproductive material, and contributes to the development of international quarantine standards.

Animal Quarantine and Export Operations

The Animal Quarantine and Export Operations branch manages the importation of live animals and animal genetic material to minimise the risk of exotic animal pests and diseases entering Australia. The branch is also responsible for maintaining market access for live animals and animal genetic material by certifying that Australian exports meet importing country requirements.

The branch provides import and export inspection and certification for live animals and animal reproductive material. It is one of several branches within the BSG that deliver quarantine and export field services and manage quarantine controls at Australia's border to minimise the risk of entry of exotic pests and diseases.

Biological Quarantine Operations and Marine Pests

The Biological Quarantine Operations and Marine Pests branch helps to maintain Australia's favourable animal disease and marine pest status by establishing and implementing import conditions for biological products, and managing national measures to prevent and manage marine pest incursions.

The branch is divided into two programs that reflect its major functions: the Biological Imports Program and the Invasive Marine Species Program. The Biological Imports Program manages the quarantine risks of imported biological products by assessing and granting import permits, providing advice to clients and regulatory staff, and conducting audits and verification of systems and producers importing biological products into Australia. Imported products that may require a permit include skins and hides, veterinary and human therapeutic products, veterinary vaccines, laboratory materials, soil and water samples, pet foods, stock food supplements, and foods containing animal products (such as fish, seafood, egg, dairy or meat).

The Invasive Marine Species Program is currently developing Australia's biofouling management



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requirements, as well as managing the Australian Government's marine pest responsibilities. The program also coordinates national emergency responses to any marine pest incursions detected in Australian waters.

Animal welfare

Within DAFF, animal welfare policy is the responsibility of the Livestock Industries and Animal Welfare branch of the Agricultural Productivity Division. This branch focuses on helping livestock industries to improve their responsiveness to changing markets and on facilitating nationally consistent approaches to animal welfare. It develops and delivers advice to the minister and the Australian Government on issues relating to the meat, wool, dairy, intensive livestock and game industries, and on animal welfare for livestock, aquaculture and nonproduction sectors.

The branch liaises with industry, community and government, particularly through representative organisations and agencies. Relevant issues include opportunities for (and impediments to) industry development, and the development of Australian animal welfare standards and guidelines. The branch coordinates the implementation of the Australian Animal Welfare Strategy, delivers administered funding, facilitates statutory funding and administers industry-related legislation. More information about animal welfare in Australia and the Australian Animal Welfare Strategy can be found in Chapter 8.

Commonwealth Scientific and Industrial Research Organisation

CSIRO,¹² Australia's national science agency, works to develop and improve technologies in Australia and overseas, and to improve community understanding of science. CSIRO Livestock Industries provides diagnostic services, exotic and emergency disease support, and independent scientific advice. Current research is focused on animal biosecurity; transformational biology to improve animal-based products; and diagnosis, surveillance and response strategies for animal diseases.

CSIRO also operates CSIRO-AAHL, which is vital to maintaining Australia's capability to quickly diagnose exotic and emerging animal diseases that may threaten Australia's livestock, aquaculture species, wildlife or people. CSIRO-AAHL is a national facility, cofunded by DAFF and CSIRO, for disease diagnosis, training, technology transfer and animal health research. It develops diagnostic tests, vaccines and treatments for

endemic animal diseases of national importance. The laboratory is a high-level facility and it is recognised as an international, regional and national reference laboratory.

1.2.2 State and territory animal health services

Under the Australian constitution, state and territory governments are responsible for animal health services within their respective borders (jurisdictions). State and territory agricultural authorities aim to protect the interests of livestock producers and the community by providing world-class biosecurity systems that protect and benefit the economy, the environment and public wellbeing. This is achieved through a combination of legislation and service delivery, which differ between jurisdictions. A coordinated approach to national animal health issues is managed through the AHC.

The jurisdictions deliver their services through government-appointed or government-accredited animal health personnel — district veterinarians, regional veterinary officers and local livestock inspectors — who are responsible for administering the relevant state and territory legislation. The work of these personnel includes:

- surveying, controlling, investigating and reporting livestock diseases, including EADs
- controlling specified endemic livestock diseases in partnership with relevant jurisdictional livestock industries
- monitoring and ensuring compliance with animal identification systems and the supply of vendor declarations
- maintaining appropriate controls on the movement of livestock for animal disease control programs operating within the jurisdiction
- investigating reports of chemical contamination of livestock and implementing response plans to protect consumers from chemical residues
- maintaining producer awareness of best practice in local livestock management systems
- investigating complaints about livestock welfare
- monitoring the health of feral animals and native wildlife to detect the emergence of new diseases or exotic diseases
- educating livestock producers, industry organisations and service providers (transport and marketing) on their legislative obligations, relevant biosecurity, welfare and market assurance programs, and technological developments.

12 www.csiro.au/li

The state and territory governments develop and administer legislation governing the surveillance, control, investigation and reporting of both notifiable diseases and chemical residues. Under this legislation, jurisdictions proclaim certain diseases as 'notifiable'. Animal owners and veterinarians have a legal requirement to report notifiable diseases to the government agricultural authorities when such diseases are suspected or diagnosed.

Notifiable diseases for each state and territory include those listed on the National Notifiable Animal Diseases list¹³ (i.e. exotic, emergency and endemic diseases of national significance), and additional diseases of regional significance in that jurisdiction. Government-appointed veterinarians and livestock inspectors monitor notifiable diseases and implement regulatory control programs where necessary. They are authorised, in defined circumstances, to inspect, quarantine, test, treat and destroy affected livestock as part of regulated disease control or eradication.

Over a 50-year period, the coordinated efforts of state and territory animal health services (often assisted by nationally coordinated arrangements) have successfully eradicated many notifiable diseases, including contagious bovine pleuropneumonia, bovine tuberculosis, bovine brucellosis, classical swine fever, equine influenza, highly pathogenic avian influenza, Newcastle disease and Menangle virus disease. Provisional freedom from enzootic bovine leucosis in Australia's dairy cattle herd was declared in 2010, and there have been marked reductions in the prevalence of tick fevers, footrot and anthrax. The scale of these achievements is unique in world animal health systems.

State and territory animal health services constantly watch for the emergence of new infectious diseases, as their impacts can be significantly reduced by early recognition and understanding. A number of recent emerging diseases have been detected in Australia and around the world, including the zoonosis Hendra virus. It is estimated that worldwide, approximately 70% of emerging diseases have the potential to infect humans.

Chemical residue programs aim to keep animal products free from unacceptable levels of chemical contamination. Without these programs, animal products could contain a wide range of chemicals, including pesticides from soil, pasture or stockfeed; lead from discarded batteries; and veterinary drugs such as anthelmintics, antibiotics and acaricides. Legislated chemical or residue avoidance

protocols and monitoring programs are used to minimise the risk of chemical contamination, and severe penalties apply to livestock owners who fail to comply.

State and territory animal health services enforce livestock identification and tracing legislation. All cattle, sheep, goat and pig producers must identify their stock and record movements of stock on and off their properties on the NLIS database. This provides lifetime traceability of each animal and the ability to identify all other stock that each identified animal has had contact with during its lifetime.

As well as administering legislation, state and territory animal health personnel conduct general surveillance and other applied research projects. This work requires close links with livestock producers, industry organisations, private veterinarians, veterinary laboratories, livestock transport and marketing agents, and other stakeholders.

State and territory animal health personnel provide disease diagnostic services, particularly for cases that are not routinely managed by private veterinarians, such as detailed investigations for exotic and emerging diseases and postmortem examination of livestock. The field staff are supported by government or government-contracted veterinary diagnostic laboratories, which provide reports to government.

Data gathered during these activities are recorded in disease information databases, which ensure that disease profiles of districts and individual properties are maintained. Information that is collected, collated and analysed by the state and territory animal health systems is collated through the National Animal Health Information System and used to issue health certificates for domestic and international trade and to produce reports on Australia's animal disease status for the OIE.

Most of the advances in Australia in the knowledge and management of livestock diseases during the past 50 years have come from the partnership between government laboratories and field workers. This applied research has contributed significantly to the international veterinary textbooks on production animal diseases. Extension of this research to producers significantly improves animal production and offers further opportunities for producer contact, which contributes to even better livestock disease intelligence.

Collaboration with industry strengthens government animal health services and contributes to high-quality policy decisions. It also leads to joint industry-government programs for awareness and improvement of biosecurity and welfare. Such programs have

13 www.daff.gov.au/animal-plant-health/pests-diseases-weeds/animal/notifiable

been applied for ovine brucellosis, ovine footrot, Johne's disease, caprine arthritis–encephalitis, feedlot management and poultry production systems. To promote government–industry partnerships, the jurisdictions train livestock industry staff to work in emergency disease control centres.

Protecting human health from diseases and pests of animals and animal products is a key role of the jurisdictional animal health personnel, who work closely with their government public health counterparts in a joint approach to zoonoses such as chlamydia, avian influenza and Hendra virus infection. Government animal health personnel also collaborate with wildlife organisations and national parks to ensure that disease outbreaks in wild and feral animals are managed to minimise their impact on livestock production and human health.

1.2.3 Australian Wildlife Health Network

The AWHN is a not-for-profit organisation initiated by the Australian Government and funded under the Wildlife Health and Environment Program. The AWHN was established to promote and facilitate collaborative links in the investigation and management of wildlife health, to support human and animal health, biodiversity and trade. The AWHN actively encourages collaboration between organisations.

The AWHN manages a network consisting of over 350 wildlife health professionals and carers from around Australia, including individual subscribers and institutional representatives from federal, state and territory conservation, agriculture and human health departments; universities; zoos; hunting groups; wildlife and other industries; diagnostic pathology services; private practitioners; and wildlife carers. The Chair of the AWHN is Australia's OIE Wildlife Focal Point.

The AWHN maintains and coordinates a network of wildlife health expertise and resources. It coordinates national wildlife health surveillance, research needs and priorities, information about mass mortalities in wild fauna, and emerging diseases in wildlife that affect humans and production animals.

Activities of the AWHN include:

- maintaining a national database of wildlife health information
- contributing to the development of regional and national wildlife health emergency preparedness and response strategies

- facilitating and monitoring field investigations of disease incidents
- advancing education and training in wildlife health
- providing information about wildlife health to the community.

The AWHN has a major focus on human and animal health issues associated with free-ranging populations of wild animals, but also works closely with environment agencies, zoos and wildlife parks.

1.2.4 Animal Health Laboratories

The Australian Government, state and territory governments, CSIRO-AAHL, veterinary schools at universities and the private laboratory sector maintain a network of world-class animal health laboratories — the animal health laboratory network.¹⁴ Although laboratories in the different sectors and jurisdictions are managed separately, their activities and standards are coordinated nationally through SCAHLS.¹⁵

SCAHLS coordinates EAD preparedness within the network and oversees the Laboratories for EAD Diagnosis and Response (LEADDR) network. LEADDR was formed in 2009, with members from the Australian Government, CSIRO-AAHL and the state and territory government laboratories. It aims to harmonise or standardise testing services across all member laboratories and meet demands for large-scale testing during a major EAD outbreak, or at other times.

SCAHLS also oversees the national reference laboratories and supports the activities of the Australian Association of Veterinary Laboratory Diagnosticians, which provides forums and opportunities for professional development and scientific exchanges among laboratory staff.

Australia's veterinary laboratories can test for endemic and exotic animal diseases, including transboundary animal diseases and emerging zoonoses. National laboratory preparedness for EADs is primarily led by CSIRO-AAHL, which maintains diagnostic capability for all the major exotic animal diseases. The state and territory government laboratories specialise in services for endemic diseases and are the primary providers of testing in support of animal exports.

CSIRO-AAHL continues to play a key role in transferring testing capabilities for major EAD surveillance to state and territory laboratories under controlled quality assurance conditions. Some states have outsourced laboratory testing to the private sector, and this has

14 www.daff.gov.au/animal-plant-health/animal/system/lab-network

15 www.scahls.org.au

led to a number of companies offering veterinary diagnostic services that are important to Australia's EAD surveillance. Veterinary schools at universities also offer diagnostic services in specialty areas and for teaching purposes.

Laboratory standards, accreditation and quality assurance

Veterinary laboratories in Australia are accredited to the ISO/IEC 17025:2005 standard,¹⁶ administered by the National Association of Testing Authorities (NATA), which is a member of the International Laboratory Accreditation Cooperation. NATA accreditation is obligatory for laboratories that participate in EAD testing, and for those that provide testing to support the international movement of animals.

The Australian National Quality Assurance Program (ANQAP)¹⁷ is an international proficiency testing program managed by the Victorian Department of Primary Industries on behalf of SCAHLS. ANQAP supports veterinary serology, virology and bacteriology on a fee-for-service basis. It focuses on providing proficiency testing for laboratories performing veterinary tests associated with quarantine, export health certification and disease control programs. Participation is not restricted, and overseas laboratories are encouraged to use the service. More than 30 veterinary laboratories from Australia, New Zealand, Asia, Europe and North America participate in the program.

CSIRO-AAHL collaborates with laboratories nationally and internationally to develop proficiency testing for real-time polymerase chain reaction (PCR) tests for pathogen detection and enzyme-linked immunosorbent assay (ELISA) tests for serology.

The Australian Animal Pathology Standards Program, managed by AHA, offers histopathology proficiency testing for veterinary pathologists. The program was launched in 2006, and currently has 24 participating laboratories in Australia and overseas.

1.2.5 Private veterinary services and veterinary education

Private veterinary practitioners play a vital role in rural communities by providing livestock owners with animal health advice, and by investigating and treating disease. Private practitioners are an integral part of the animal disease preparedness programs for Australia's livestock industries.

Veterinary practitioners must be registered in the state or territory in which they practise. Competence in recognising and diagnosing livestock diseases is an important part of veterinary education in Australia, and a prerequisite for registration as a veterinarian. All veterinary practitioners must be able to recognise the possibility of an EAD and be familiar with the procedures to initiate an immediate response. To maintain this awareness, state and territory authorities conduct awareness programs on notifiable and exotic livestock diseases for private veterinarians involved in livestock industries.

The Accreditation Program for Australian Veterinarians¹⁸ is a national program designed to integrate private veterinary practitioners into the national animal health system. This integration supports the international standing of Australia's animal health capability. The aim of the program is to accredit nongovernment veterinarians who can use their skills and knowledge effectively to contribute to government and industry animal disease control programs.

Other national programs that involve private veterinarians in the national animal health system are the Australian Veterinary Practitioner Surveillance Network (see Chapter 3), the Australian Veterinary Reserve (see Chapter 4) and the National Significant Disease Investigation Program (see Chapter 3).

There are seven veterinary schools in Australia. Six of these — at the University of Queensland, the University of Sydney, the University of Melbourne, Murdoch University, Charles Sturt University and James Cook University — are currently producing graduates, with the latter two universities producing their first graduates in 2010. The University of Adelaide, which opened its school of veterinary science in 2008, will see its first students graduate in 2014. All Australian veterinary courses include strong undergraduate programs in the health of horses, companion animals, farmed livestock and wildlife, and in biosecurity and public health. The veterinary schools also provide research, continuing education and postgraduate training relevant to Australia's livestock industries.

Once every six years, an accreditation committee audits the curriculum, facilities, staffing and outcomes of each of the established veterinary schools. Since 1999, this audit has been conducted by the Australasian Veterinary Boards Council Inc,¹⁹ which has an international representative on the accreditation committee. The

16 www.iso.org/iso/catalogue_detail?csnumber=39883

17 www.anqap.com

18 www.animalhealthaustralia.com.au/training/apav.cfm

19 www.avbc.asn.au



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council sets the standards for veterinary registration in Australia and New Zealand, and conducts the National Veterinary Examination for overseas-qualified veterinarians.

1.2.6 Agricultural colleges and other registered training organisations

Agricultural colleges and other registered training organisations within the Australian vocational education and training sector provide training for veterinary nurses, animal technologists, farm managers and others whose work involves the care of animals. This training meets the requirements of national competence standards and vocational qualifications under the Australian Qualifications Framework. The standards are agreed by industry, professional organisations and each jurisdiction.

In 2010, the Animal Care and Management Training Package was reviewed and validated to ensure that it continued to meet the needs of industry. Students can participate in full-time training, mix part-time training with work or begin their program while they are still at school. One of the hallmarks of the system is the

active involvement of industry groups and employers in providing training opportunities and work experience.

1.3 National Livestock Identification System

The NLIS is Australia's system for livestock identification and traceability. When fully implemented for a type of livestock, such as sheep, it is intended to be a permanent, whole-of-life system that allows animals to be identified individually or by mob, and tracked from property of birth to slaughter for the purposes of food safety, product integrity and market access. Australia's state and territory governments are responsible for the legislation that governs animal movements, and therefore for the implementation of the NLIS.

Information on animal movements is recorded on movement documents and submitted to the NLIS database by producers, saleyard operators, livestock agents and processors. The NLIS has been fully implemented for cattle, and improvements are being made for the system for sheep, goats and pigs. The NLIS is being developed for alpacas.

NLIS Limited administers the NLIS database on behalf of industry and government stakeholders. This includes managing the development and operation of the database in accordance with stakeholder requirements.

1.3.1 National Livestock Identification System for cattle

Development of the NLIS tracing system for cattle is now complete. NLIS (Cattle) is an electronic identification system in which each animal is tagged with an individual radio frequency identification (RFID) device and accompanied by movement documentation when moved from a property. Animal movements from properties are recorded electronically in the NLIS database. The requirements for animals to be identified and their movement recorded are underpinned by legislation in all states and territories. During 2010, a new system of device-based statuses was introduced under which individual animals (where applicable) are assigned statuses against the electronic tag number on the database, enabling their identification with regard to residue and disease status.

1.3.2 National Livestock Identification System for sheep and goats

NLIS (Sheep and Goats) is a mob-based system for tracing mobs of sheep and farmed goats. It uses visually readable ear tags that have property identification codes printed on them. When mobs are transported, they are

accompanied by a movement document (such as a National Vendor Declaration [NVD] or a waybill).

The NLIS (Sheep and Goats) Advisory Committee continued work on improving the system in response to issues identified following the traceability exercise, Exercise Sheepcatcher, held in 2007.²⁰ The major change has been the introduction of mob-based recording on the central NLIS database.

1.3.3 National Livestock Identification System for pigs

The pig industry is continuing to develop NLIS (Pigs), working towards compliance with National Livestock Traceability Performance Standards. Currently, it is a mob-based system based on tattoos and brands to identify the property of birth, along with movement documents.

During 2009, a pig-tracing exercise, Exercise Pigcatcher, was undertaken to test the system and identify areas requiring improvement. Following Exercise Pigcatcher, several recommendations for the improvement of NLIS (Pigs) were made. These recommendations are currently being considered by governments and industry.

1.3.4 National Livestock Identification System for alpacas

NLIS (Alpaca) is under development. The alpaca industry is advocating the use of RFID tags that incorporate both radio frequency and visual readability in the one tag for animal identification. Currently, this system is voluntary.

1.4 Livestock industry quality assurance programs

The peak livestock industry associations contribute to national animal health policies and strategies, implement industry biosecurity plans and promote sound animal health management practices to livestock producers. Quality assurance (QA) programs in the livestock industries are critical to on-farm biosecurity and food safety practices. In general, there is an increasing demand for industries to meet high QA expectations. Examples of livestock industry QA programs are detailed below.

1.4.1 Livestock Production Assurance for the red meat industry

The Australian red meat industry (cattle, sheep and goats) has developed and implemented integrity systems to verify and assure food safety and other quality attributes of livestock.

Livestock Production Assurance (LPA), which began on 1 March 2004, is an on-farm food safety certification program for cattle, sheep and goats. It was developed by Meat & Livestock Australia in conjunction with industry peak councils and stakeholders.

The LPA program is associated with on-farm food safety guidelines, which underpin food safety declarations on NVDs displaying the LPA logo. The LPA food safety program (Level 1) standards follow hazard analysis and critical control points (HACCP)²¹ principles and comprise five elements:

- property risk assessment — ensures that livestock are not exposed to areas on a property that are contaminated with organochlorides or other persistent chemicals
- safe and responsible animal treatments — ensures that livestock intended for human consumption do not contain unacceptable chemical residues or physical hazards
- stock foods, fodder crops, grain and pasture treatments — ensures that livestock are not exposed to feeds containing unacceptable contamination, specifically any food containing animal products or unacceptable chemical residues
- preparation for dispatch of livestock — ensures that livestock to be transported are fit for the journey and not unduly stressed, and that contamination is minimised during on-farm assembly and transport to the destination
- livestock transactions and movements — ensures that the movement of livestock can be traced if required, and that the status of livestock with regard to exposure to chemical residues accompanies their movement.

The LPA on-farm QA program (Level 2) incorporates the CATTLECARE and FLOCKCARE programs, and consists of three modules: Food Safety Management (LPA Level 1), Systems Management and Livestock

20 Animal Health Australia (2009). *Animal Health in Australia 2008*, Animal Health Australia, Canberra. [www.animalhealthaustralia.com.au/programs/adsp/nahis/ahia\\$_archive.cfm](http://www.animalhealthaustralia.com.au/programs/adsp/nahis/ahia$_archive.cfm)

21 HACCP is a systematic preventive approach to food safety that addresses physical, chemical and biological hazards by prevention, rather than inspection of the finished product. HACCP is used in the food industry to identify potential food safety hazards, so that key actions, known as critical control points, can be taken to reduce or eliminate the risk of the hazards being realised.

Management. It is an industry-recognised QA program with emphasis on internal and external systems review.

Systems Management comprises:

- training
- internal auditing and document control
- quality records
- chemical inventory.

Livestock Management comprises:

- livestock husbandry and preparation
- livestock handling facilities
- livestock transport
- animal welfare
- accredited livestock.

The LPA programs are managed on behalf of the red meat industry by AUS-MEAT through the LPA Advisory Committee. This committee includes representatives from industry sectors, including cattle, sheep, goat and dairy producers, processors and livestock agents. The Australian Government participates with representation from the BSG of DAFF.

1.4.2 National Feedlot Accreditation Scheme

The Australian feedlot industry was the first agriculturally based industry in Australia to embrace QA, and its National Feedlot Accreditation Scheme (NFAS) has been in place since 1995. This self-regulatory program, which has accredited approximately 600 feedlots, covers animal health and welfare, environmental conservation and product integrity. Third-party annual auditing of every accredited feedlot ensures that the scheme's high standards are met.

The Australian Lot Feeders' Association, the peak body of Australia's feedlot industry, works with governments and other industry bodies to ensure continuous improvement of the NFAS, so that it keeps abreast of developments in legislation, codes of practice, guidelines, technology, best management practice and science.

The NFAS is managed by the Feedlot Industry Accreditation Committee, which comprises government and industry representatives from around Australia. The independence of the committee from the Australian Lot Feeders' Association provides the scheme with important autonomy, while government representation on the committee ensures its integrity and credibility.

Relevant technical information compiled by the Australian Lot Feeders' Association and AHA was used to develop standards and awareness materials for heat

stress, biosecurity and other pertinent disease issues, which have been incorporated into the accreditation scheme. This ensures that feedlot managers operate in accordance with the requirements and expectations of consumers, markets, regulatory authorities and the wider community.

The feedlot industry receives new technical information at several levels. An annual feedlot conference highlights key research projects that aim to increase awareness of animal health issues. Animal health workshops are presented by experienced feedlot veterinarians in regions across Australia. These well-attended workshops provide practical information for the day-to-day management of animal health. Other promotional materials, including DVDs and fact sheets containing industry case studies, have been used to deliver information on biosecurity.

A new version of the NFAS is expected to be released in early 2011.

1.4.3 Dairy industry quality assurance program

Australia has comprehensive food standards and a system of legislation and regulation across the whole dairy production and processing chain. The system monitors compliance with food standards to ensure the integrity of the dairy supply chain.

The Australian Dairy Food Safety Scheme has three elements:

- Dairy farms and companies must have a dairy food safety program that is developed, validated and approved by the competent government authority to national and international standards.
- Individual programs must be verified under legislation from farm through to retail or export.
- Each business (farm or manufacturing company) is licensed, and compliance against the food safety program is checked by audit.

Industry and government support programs underpin the scheme, and the partnership between industry and government is a critical factor in the success of the scheme. The food safety requirements of the dairy industry on-farm QA programs are complemented by recommended biosecurity elements to protect animal health.

The state dairy food safety authorities license the operation of farm businesses. All on-farm dairy food safety programs are HACCP based and cover the following core areas:

- physical, chemical and microbiological contaminants

- herd health programs (including safe and responsible animal treatments)
- dairy milking premises
- hygienic milking
- water supply and quality
- cleaning and sanitising
- identification of animals from birth
- traceability systems for both farm inputs (including treatment of animal feeds and pasture) and farm outputs (milk and animal or meat products)
- appropriate records to enable verification
- the competence of personnel.

All dairy companies have product identification and traceability systems to follow raw materials and products from farm to consumer. The Dairy Primary Production and Processing Standard, part of the Australia New Zealand Food Standards Code, covers the complete supply chain from farm to consumer.

Every licensed dairy farm and dairy manufacturing company is audited for compliance and verification of the mandated food safety program.

1.4.4 Australian Pork Industry Quality Assurance Program

The Australian Pork Industry Quality Assurance Program (APIQ✓™) is owned and administered by Australian Pork Limited on behalf of the Australian pork industry. APIQ✓™ covers 91% of the breeding herd and about 576 pig farm enterprises.

APIQ✓™ is an independently audited on-farm QA system, based on managing farm risks by following good agricultural practices using HACCP principles. To gain APIQ✓™ certification, producers must meet standards in five key areas:

- management
- food safety
- animal welfare
- biosecurity
- traceability.

An in-depth review of APIQ was conducted in 2009–10 to improve the program's relevance to the market, integrity and uptake by producers. As a result of the review, the following changes have been made:

- There is now only one program with one set of standards. PigPass QA, which was a food safety program only, is being phased out, and PigPass QA certified producers are expected to move to APIQ✓™

by October 2011, as their current PigPass QA certification expires.

- All types of pig production systems, including free-range, outdoor-bred and intensive systems, are now covered by APIQ✓™.
- Two categories of producers — smallholders and large holders — are recognised, with specific tools available to each to assist them with record keeping and managing the cost of compliance. The smallholder program is aimed at producers who own or manage 20 or fewer sows or sell 400 or fewer pigs annually. Traditionally, these producers have found it difficult to participate in QA.
- All APIQ✓™ certified producers must pass an annual site audit conducted by an eligible auditor.
- Auditors must be APIQ✓™ registered, have RABQSA accreditation (i.e. accepted by the Registrar Accreditation Board and the Quality Society of Australasia), have a minimum accreditation of National Food Safety Auditor Level 2 with APIQ✓™ Scope (an examination to test knowledge of the pig industry) and have attended the APIQ auditor training program. They must be a third party with no conflicting interests and must not audit the same piggery for more than three consecutive years. Each auditor's skills and practices are assessed annually through an independent on-farm witness audit process. APIQ✓™ auditors must renew their registration each year.
- The APIQ✓™ system and program will be audited annually by an independent certifying body to ensure that its policies, processes and administration are robust, reliable and of a high standard.
- The APIQ Panel, comprising independent experts, has been established to consider situations and major or critical incidents regarding producers and auditors, as per APIQ✓™ certification policies.

Roll-out of the revised APIQ✓™ program began in October 2010 and will continue throughout 2011. Existing APIQ-certified producers will move to the revised APIQ✓™ program as their annual renewals fall due, and new producers will move directly to the new APIQ✓™ program.

APIQ✓™ can be used to underpin the PigPass NVD, which includes key questions relating to on-farm practices. When the PigPass NVD is linked to a certified and audited on-farm QA program like APIQ✓™, it meets the requirements of the state food authorities and AQIS under Australian Standard AS4696:2007 (Hygienic Production and Transportation of Meat and Meat Products for Human Consumption).

1.4.5 Egg Corp Assured, the national egg quality assurance program

AECL's Egg Corp Assured (ECA) is the national QA program for the egg industry. It is an integral part of the egg industry's commitment as a signatory to the Emergency Animal Disease Response Agreement. ECA provides standards for best practice in the egg industry relating to:

- animal welfare
- animal health
- quarantine and biosecurity
- food safety
- egg labelling
- environmental management.

Launched in November 2004, the program is governed by certification rules, a registered trademark, a registration and licensing process, and a suite of policies and procedures. Voluntary uptake of the program by industry has led to ECA issuing 216 annual licences to date. The program covers more than 12 million laying hens, or 83% of the national flock (based on data from the Australian Bureau of Statistics at 30 June 2009).

ECA was reviewed during 2009–10. AECL wishes to continue the momentum of QA in the industry, and the QA program is now being written into a standard that will have international status. The new egg standard will be launched to both the egg industry and consumers in 2011, with the current ECA program being phased out at the same time.

AECL, the ECA trademark owner and program administrator, has accredited auditors who have RABQSA accreditation and have attended the ECA auditor training program. All auditor accreditations must be renewed each year, and prerequisites are that auditors complete at least four ECA audits and attend an auditor training workshop each year.

With the launch of the new egg standard in 2011, AECL is moving to global auditing companies to manage the audit regime of the standard. Two such companies have been identified and will be given exclusive auditing rights.

AECL has appointed two senior auditors to review every audit, and has implemented a program of spot audits of at least 20% of licensees each year. Other features of the ECA program are unique identification master logos for egg businesses with multiple farm sites, and an Egg Labelling Integrity Panel to approve label designs and critical market information to ensure transparency.

A series of QA training workshops is held annually in all states and territories for egg producers, ECA-licensed farms and ECA-accredited auditors. The purpose of the workshops is to educate and inform attendees on how to incorporate any new components of the national QA program, from both a practical farm point of view and an auditor's perspective. The program is continually being improved to maintain its relevance to a changing marketplace and improve its integrity.

1.4.6 Australian Chicken Meat Federation's customer-driven quality systems

The Australian Chicken Meat Federation produced and distributed a revised version of the *National Farm Biosecurity Manual for Chicken Growers*. The revision was based on the original 2002 *Biosecurity Manual for Contract Growers* and informed by the *National Farm Biosecurity Manual for Poultry Production*, which was published in 2009 as a result of a joint effort between DAFF, AHA and the poultry industry. The revised manual has an auditable checklist. The manual is an important component of the industry's promotional and training activities, which will continue in 2010–11.

All jurisdictions have agreed that implementation of the *National Farm Biosecurity Manual* will satisfy the requirements for farming of poultry in the new Poultry Meat Standard, issued by Food Standards Australia New Zealand. This new standard will become effective on 20 May 2012.

An auditable industry animal welfare standard for all aspects of the chicken meat industry was finalised in 2009. Processors are encouraged to integrate these industry standards into their in-house QA systems.

Implementation of these standards and biosecurity measures relies heavily on the integrated nature of much of the chicken meat industry. Processors have contractual arrangements with growers and are themselves bound by the requirements of customers — in particular, the quick-service restaurants and supermarket chains. This integrated structure helps implement the biosecurity and animal welfare requirements throughout the industry.

1.4.7 Q-Alpaca

Q-Alpaca, designed and managed by the Australian Alpaca Association Ltd, is a QA program for voluntary use by Australian alpaca breeders and owners. Q-Alpaca is fully endorsed by all Australian Government and state and territory animal health authorities.

Q-Alpaca has a number of intentions:

- The program encourages development and adoption of easier and more affordable diagnosis, monitoring and management of known diseases.
- The program reduces the risk that a defined EAD could affect a herd in the event of a disease outbreak.
- The health of participating alpaca herds is closely monitored by requiring deaths within the herd to be investigated by an approved veterinarian — this requirement relates to all dead alpacas 12 months of age and over, and all dead alpacas under 12 months of age that show signs of wasting and diarrhoea (resulting in Johne's disease in the differential diagnosis). Necropsy is required to eliminate Johne's disease, severe worm infestation, liver disease, gastric ulceration, liver fluke infestation and coccidiosis. The program allows other diseases to be investigated in the necropsy, if required.
- The program is fully auditable — owners of participating alpaca herds are required to keep movement records and adopt sound biosecurity practices with regard to new arrivals to the herd and appropriate and adequate fencing.
- An agreement signed between the participant and the approved veterinarian forms the basis of a partnership for adhering to the requirements of Q-Alpaca and the adoption of best practice in biosecurity.
- There is minimal chance of introducing certain preventable infections and infestations or transferring them to another alpaca herd. Preventable conditions include Johne's disease, severe worm infestation, liver disease, gastric ulceration, liver fluke infestation and coccidiosis.

