

International standards for brucellosis prevention and management

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Summary

International standards are a crucial element in brucellosis prevention and management. They allow policy-makers, scientists, epidemiologists, laboratories and trade entities to have a common vocabulary for communication and understanding of the disease. These standards cover the entire spectrum of activities from surveillance, testing, prophylaxis, transport and trade to policy development, research and reporting. Developing, adhering to and monitoring standards increases both the effectiveness and efficiency of prevention and management programmes. Creating standards with the input of all stakeholders ensures that the standards do not adversely affect the requirements of any of the multiple parties involved. The World Organisation for Animal Health (OIE), in conjunction with its Member Countries, and through its standing and *ad hoc* committees plus expert input, has taken a key leadership role in developing and reviewing brucellosis standards. These standards are used to harmonise testing, prevention processes, vaccines and reporting, to support trade and to protect human and animal health.

Keywords

Brucellosis – Diagnostic – International standard – Standardisation – Trade – Vaccine.

Introduction

‘Globalisation’ is now a common term, used in many contexts, and is also a driver for many changes in today’s societal practices and perspectives. Although definitions of globalisation abound, a succinct definition by Swedish journalist Thomas Larsson in his book, *The Race to the Top: The Real Story of Globalization* (2001), defines globalisation as:

‘The process of world shrinkage, of distances getting shorter, things moving closer. It pertains to the increasing ease with which somebody on one side of the world can interact, to mutual benefit, with somebody on the other side of the world.’ (2)

As this definition states, in most instances interactions across international borders are initiated for a positive benefit. An increase in agricultural trade has promising benefits for the improvement of countries’ economies and people’s livelihoods (4). However, the unintended consequences

of international interactions could prove disastrous if appropriate measures are not taken to prevent the unintentional introduction of diseases of high consequence. In light of the current increasing trend of globalisation, animal health measures have become increasingly important in facilitating safe international trade of animals and animal products, while also avoiding unnecessary impediments to trade (7). The development of clear international standards for animal health is vital to the development of acceptable and understood animal health measures.

International standards for surveillance, diagnosis and prevention, epidemiology, control and eradication efforts, and the reduction of risk for animal health have been developed by the World Organisation for Animal Health (OIE). These standards include those relative to brucellosis, and the performance of national veterinary agencies. The importance of these standards is reflected in their use by the World Trade Organization (WTO), which relies on scientific and technical standard-setting bodies such as the OIE. Although the World Health Organization (WHO) provides internationally accepted standards for the diagnosis and

treatment of brucellosis in humans, this paper will focus on the development and application of international standards as they relate to brucellosis in animals.

What is meant by international standards?

In 1995, the WTO finalised its Agreement on Sanitary and Phytosanitary Measures (the 'SPS Agreement'), which sets out the basic rules for food safety and animal and plant health standards. Member Countries are encouraged to use international standards, guidelines and recommendations where they exist. However, countries may use measures which result in higher standards if there is scientific justification for doing so (9). The SPS Agreement includes some special provisions that are important in understanding what is meant by international standards. Part of that agreement includes the concept of harmonisation. Under harmonisation, the agreement encourages its Members to align and coordinate their sanitary measures on as wide a basis as possible, by basing them on international standards, guidelines and recommendations, where they exist (4). The intent of harmonisation is to ensure that measures used are as uniform and consistent as possible. This recommendation confers extreme importance on the international standards set by the OIE.

Equally important is the concept of equivalence, by which the Member Countries agree to accept the measures of other Members as equivalent, even if they are different from their own. In other words, international standards do not imply that every country must do things exactly the same way. They imply that countries should follow the international standards as much as possible, when they exist. However, exporting countries do have the flexibility of demonstrating to importing countries that the measures they propose to use achieve the same level of protection. Countries can achieve equivalence by conducting risk assessments and defining risk management activities and principles. The intent is to focus attention on meeting the desired objectives of an animal health measure, not just to do everything in exactly the same way, which is impossible across all countries, cultures and capabilities.

The importance of international standards

Clear international standards provide a common operating and communication platform for all stakeholders and are vital for the safe trade of animals, effectiveness of disease control programmes, and the protection of human health. The use of standardised definitions, concepts and

approaches allows for harmonisation and equivalence in disease control programmes, and promotes understanding when communicating on often complex disease issues. Standards and standardisation also establish trust and confidence in data and reporting, leading to increased efficiency and effectiveness in dealing with disease control, safe trade and human health. The future of governments and the competitiveness of industries depend on how well their structures and operations can adapt to meet the requirements laid out in the SPS Agreement. Only after implementing the OIE requirements, and strengthening veterinary infrastructures and surveillance and monitoring systems, will countries be able to fully benefit from international trade rules (4). Assurance that a nation's Veterinary Services are functioning adequately and in compliance with OIE standards is crucial for engaging in international trade as it confirms that diseases of concern are dealt with quickly and efficiently, and that claims for disease freedom or absence in a country or zone can be verified and validated. In this way, the confidence and willingness of all countries to engage in international trade of animals and animal products will be greatly increased.

International standard-setting bodies

The OIE is the recognised international standard-setting body for animal disease control policies and procedures. The OIE has evolved over time from a focus on the development of trade standards to both the development of standards and the promotion of effective national Veterinary Services and their capacity to control animal diseases and zoonoses worldwide. Such OIE standards have been developed to address brucellosis in cattle, sheep, goats and swine. The WTO is the international organisation whose primary purpose is to open up trade for the benefit of all countries. The OIE standards are recognised by the WTO as fundamental references for animal health and zoonotic diseases. There is no legal requirement for countries to comply with internationally negotiated standards. Governments are free to set their own standards, provided they are consistent with those of the OIE, and that those standards are not arbitrary or discriminatory across the full range of products.

The OIE standardisation process

The OIE publishes two codes (the *Terrestrial* and *Aquatic Codes*) and two manuals (the *Terrestrial* and *Aquatic Manuals*) as the principal references for WTO Members. In addition, the OIE has four standing Specialist Commissions to focus on specific technical areas. These are:

- the Terrestrial Animal Health Standards Commission, which is responsible for the *Terrestrial Animal Health Code (Terrestrial Code)*
- the Aquatic Animal Health Standards Commission, which is responsible for the *Aquatic Animal Health Code* and the *Manual of Diagnostic Tests for Aquatic Animals*
- the Scientific Commission for Animal Diseases, which is responsible for drafting texts for eventual inclusion in the *Terrestrial Code* and for the recognition of Member Countries' official disease status
- the Biological Standards Commission, which is responsible for the *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals (Terrestrial Manual)* and for the approval of standard sera and the certification of diagnostic assays.

All 178 Member Countries of the OIE have an equal voice in the development and adoption of standards related to animal health. Draft standards are developed by experts from various OIE regions, balancing scientific and geographical representation, with a focus on neutrality and scientific integrity. The reports are subsequently reviewed by the elected members of the Specialist Commissions and by *ad hoc* expert working groups, as required. A key element of this review is to consider and evaluate risk management alternatives for the proposal. The work of these groups is published on the OIE website for the consideration of all OIE Member Countries and the public.

Members of the OIE can provide their input during the scheduled comment periods. Other stakeholders, including the public, producers, manufacturers and others, can contribute through their OIE Member representative, generally the Chief Veterinary Officer of the country concerned.

All OIE Member comments are reviewed again by the Specialist Commissions, who report their findings, analysis and recommendations to the Member Delegates through posts on the OIE website.

All standards are adopted by the World Assembly by consensus or, in rare circumstances, by a two-thirds majority vote.

Standardisation procedures related to brucellosis

The Performance of Veterinary Services (PVS) tool

The development and growth of many countries, as well as the prevention and control of major biological disasters,

depend on the performance of their agricultural and food policies and economies, and this, in turn, directly affects the quality of their national Veterinary Services. To assist in strengthening national Veterinary Services and to help them comply with international standards, the OIE has developed a tool for the evaluation of the performance of a national Veterinary Service's structure and function. This tool, the Performance of Veterinary Services tool (commonly referred to as the PVS tool), is designed to assist Veterinary Services to assess their current level of performance, identify gaps and weaknesses and improve their ability to comply with OIE international standards. An evaluation by the OIE PVS tool evaluates four fundamental components of Veterinary Services:

- human, physical and financial resources, to attract resources and retain professionals with technical leadership skills
- technical authority and capability, to address current and new issues, including prevention and control of biological disasters based on scientific principles
- sustained interaction with stakeholders, in order to stay on course and carry out relevant joint programmes and services
- the ability to access markets, through compliance with existing standards and implementation of new disciplines, such as the harmonisation of standards, equivalence and zoning (6).

Reporting and data systems

A monitoring or surveillance system is of little value if the information gathered is not distributed to decision-makers and directed towards action (10). Standardisation in reporting systems allows policy-makers and decision-making authorities to make rapid and accurate evaluations, analyse situations and take decisions on activities to prevent and control brucellosis. Using common nomenclature and processes allows decision-makers to monitor trends, compare programmes and their effectiveness, and allocate resources. Member Countries of the OIE agree to report notifiable disease events, as well as disease control measures that are in place in their countries. This information is publicly available on the OIE World Animal Health Information System (WAHID) website.

Laboratory systems and diagnostic tests

Internationally accepted standards for approved diagnostic tests and vaccines ensure that a scientifically accepted process is in place to protect the validity and quality of both diagnostic methods and tools such as vaccination. The OIE Biological Standards Commission was established in 1949 to develop internationally agreed-upon standards

for laboratory diagnostic tests and vaccines for OIE-listed animal diseases of mammals, birds and bees. The Commission accomplishes this through various means, including:

- developing and overseeing the OIE register for diagnostic assays
- producing the *Terrestrial Manual*
- selecting and supporting OIE Reference Laboratories for animal diseases with subject-matter experts
- producing the *Laboratory Quality Standard and Guidelines for Veterinary Laboratories*
- promoting international standardisation of diagnostic tests, including the preparation and distribution of standard reagents.

The OIE *Terrestrial Manual* serves as an excellent international standards reference for both the preparation and appropriate use of diagnostic tests for disease control and international trade purposes.

Vaccination

The control of brucellosis depends largely on two of the main principles of disease management: preventing the exposure of susceptible animals to infection, and increasing resistance of the population through vaccination. Although vaccination is a powerful tool for controlling brucellosis and moving towards ultimately eliminating it from national herds, it is imperative that vaccines be used appropriately, as they have the potential to create health issues for those who apply them. In addition, vaccines can create challenges for disease surveillance, in that some brucellosis vaccines have the potential to cause titres, or positive blood tests, that can confuse a diagnostic picture. To provide a consistent understanding of disease status, it is important to standardise vaccines across the spectrum of their production, distribution and use. The OIE *Terrestrial Manual* outlines standards on vaccines for their nomenclature, quality assurance, equivalence, method of manufacture, in-process control, batch control, sterility, safety, potency, stability and labelling. Following these recommendations provides assurance that safe, potential and reliable vaccines can be used with confidence in the field.

Standards for bovine brucellosis

The OIE *Terrestrial Code* contains science-based internationally accepted recommendations for disease reporting, prevention and control, thus providing for safe international trade in terrestrial animals and animal products (8). These measures are intended to prevent the introduction and spread of significant diseases that affect animals and/or humans.

Chapter 11.3. of the OIE *Terrestrial Code* addresses bovine brucellosis. The chapter includes standards to address the following:

- definitions of freedom from bovine brucellosis for countries, zones and herds
- recommendations for the importation of cattle for breeding, rearing or slaughter (except for castrated males)
- recommendations for the importation of bovine semen, *in vivo*-derived bovine embryos, and *in vitro*-produced bovine embryos and oocytes.

The OIE *Terrestrial Manual* provides guidelines for disease diagnosis by extensively describing internationally agreed laboratory diagnostic techniques, as well as the requirements for the preparation of brucellosis vaccines and diagnostic biologicals. Chapter 2.4.3. of the *Terrestrial Manual* provides an excellent overview of bovine brucellosis, including causative agents, clinical signs and geographic distribution. This chapter includes the differential characteristics of species of the genus, including the *Brucella* spp. that affect species other than livestock, such as *B. canis* (affecting dogs), *B. pinnepedialis* (affecting pinnepedes), and others. The chapter also contains internationally accepted standards for vaccines and diagnostic techniques for brucellosis in cattle, including:

- identification of the agent and guidelines for the collection and culture of samples
- serological tests and testing procedures, including antigen production
- other tests.

International standards for serological tests in cattle

There is no single serological test that is appropriate in all epidemiological situations; all tests have limitations, especially when it comes to screening individual animals (5). The OIE standards for serological tests represent standardised and validated methods with suitable performance characteristics, to be designated as either prescribed or alternative tests for international trade (5). The standard does not preclude the use of different biological reagents or the use of modified or similar test methods. Chapter 2.4.3. also discusses which tests are considered to be screening tests, and which are acceptable for international trade.

Internationally accepted serological tests for bovine brucellosis (within the parameters described by the OIE in the *Manual*) include:

- the Rose Bengal test
- the buffered plate agglutination test
- the complement fixation test (a prescribed test for international trade)
- enzyme-linked immunosorbent assays (ELISAs), both indirect (I-ELISA) and competitive (prescribed tests for international trade)
- the fluorescence polarisation assay (a prescribed test for international trade)
- other bovine brucellosis tests.

Standards for other tests that can be used for brucellosis in cattle, in combination with officially approved standardised tests, are also described in Chapter 2.4.3. These tests are not recognised for the purposes of international trade:

- the brucellin skin test
- the serum agglutination test
- the native hapten and cytosol protein-based tests
- milk tests (the milk I-ELISA, and milk ring test)
- the interferon gamma test.

Requirements for vaccines and diagnostic biologicals for cattle

Chapter 2.4.3. also outlines the requirements for vaccines and diagnostic biologicals for bovine brucellosis. It is imperative that great care be taken when working within a laboratory situation as live cultures, including vaccine strains, are hazardous and can infect humans. Therefore, work must be done under containment level three or higher to minimise occupational exposure. The manufacture, management of, and in-process control for the production of brucellin are also described.

Vaccines discussed include the:

- *B. abortus* strain 19 vaccine
- *B. abortus* strain RB51 vaccine
- *B. melitensis* strain Rev.1 vaccine.

Although strain 19 and RB51 vaccines are widely used in cattle, it should be noted that there have been no experiments reporting the efficacy of Rev.1 vaccine against *B. melitensis* infection in cattle. Moreover, the safety of this

vaccine is practically unknown in cattle. The chapter states that, until the safety of Rev.1 vaccine is determined in cattle of different physiological status, and efficacy studies against *B. melitensis* are performed under strictly controlled conditions, Rev.1 vaccine should not be recommended for cattle.

Standards for caprine and ovine brucellosis (excluding *Brucella ovis*)

Chapter 14.1. of the OIE *Terrestrial Code* addresses caprine and ovine brucellosis (excluding *B. ovis*). The chapter covers the following:

- definitions of freedom from brucellosis for countries, zones and sheep or goat flocks
- recommendations for the importation of sheep and goats for breeding or rearing (except castrated males), destined for flocks officially free from caprine and ovine brucellosis
- recommendations for the importation of sheep and goats for breeding or rearing (except castrated males), destined for flocks not officially free from caprine and/or ovine brucellosis.

Chapter 2.7.2. of the OIE *Terrestrial Manual* provides an excellent overview of brucellosis in these species (primarily caused by one of three biovars of *B. melitensis*), including causative agents, clinical signs and geographic distribution.

The chapter also contains internationally accepted standards for diagnostic techniques.

Internationally accepted tests for caprine and ovine brucellosis (within the parameters described by the OIE in the *Manual*) include:

- the buffered plate agglutination test (a prescribed test for international trade)
- the complement fixation test (a prescribed test for international trade)
- ELISAs (prescribed tests for international trade)
- the fluorescence polarisation assay (a prescribed test for international trade).

Other caprine and ovine brucellosis tests

Other tests that can be used for caprine and ovine brucellosis are:

- the brucellin skin test (an alternative test for international trade in small ruminants)
- native hapten tests.

Requirements for vaccines and diagnostic biologicals for sheep and goats

The reference vaccine, as well as the most widely used vaccine for the prevention of brucellosis in sheep and goats, is the *B. melitensis* Rev.1 vaccine. Standards for the preparation and use of the Rev.1 vaccine in sheep and goats are outlined in Chapter 2.7.2.

Standards for porcine brucellosis

Chapter 15.3. of the OIE *Terrestrial Code* addresses porcine brucellosis. It includes the following:

- definitions of herds that are free from porcine brucellosis
- recommendations for the importation of pigs for breeding or rearing
- recommendations for the importation of pigs for slaughter
- recommendations for the importation of pig semen.

Chapter 2.8.5. of the OIE *Terrestrial Manual* provides an overview of swine brucellosis, including causative agents, clinical signs and geographic distribution. This chapter also contains internationally accepted standards for diagnostic techniques in swine, including:

- identification of the agent
- serological tests and testing procedures, including antigen production
- other tests.

Serological tests for swine

None of the serological tests used to diagnose brucellosis in swine is reliable for diagnosis in an individual animal. Therefore, for international trade, the disease status of the herd and the area in which the herd is situated are of more importance than individual animal tests. Internationally

accepted tests for swine brucellosis (within the parameters described by the OIE in the *Terrestrial Manual*) include:

- ELISAs, both indirect and competitive (prescribed tests for international trade)
- the fluorescence polarisation assay (a prescribed test for international trade)
- the Rose Bengal test (a prescribed test for international trade)
- the buffered plate agglutination test (a prescribed test for international trade)
- the complement fixation test (a prescribed test for international trade).

Other swine brucellosis tests

Other swine brucellosis tests include the allergic (hypersensitivity) test. This test was developed for use in ruminants, but is also effective at confirming the disease in pigs, at the herd level.

Requirements for vaccines and diagnostic biologicals for swine

There are no brucellosis vaccines for swine that have been found to be fully effective and supported by experimentation under strictly controlled conditions.

Standards for ovine epididymitis (*Brucella ovis*)

This is not known to cause human disease, and natural cases have not been reported in cattle or goats. Thus, brucellosis caused by *B. ovis* has not been as highly regulated as brucellosis caused by other species of *Brucella*. Chapter 14.7. of the OIE *Terrestrial Code* covers brucellosis caused by *B. ovis*, addressing the following:

- definitions of sheep flocks that are free from ovine epididymitis
- recommendations for the importation of sheep for breeding or rearing (except castrated males)
- recommendations for the importation of sheep semen.

Chapter 2.7.9. of the OIE *Terrestrial Manual* addresses ovine epididymitis caused by *B. ovis*. This chapter provides information on clinical signs and geographic distribution, as well as guidelines for identifying the agent. Internationally

accepted standards for diagnostic techniques for *B. ovis* are also included. The following are acceptable serological tests for *B. ovis*. The preparation of and procedures for the following tests are described:

- the complement fixation test (a prescribed test for international trade)
- the agar gel immunodiffusion test
- the ELISA (the alternative test for international trade).

Requirements for vaccines and diagnostic biologicals

The use of vaccines in both rams and ewes is discussed. The *B. melitensis* Rev.1 vaccine is probably the best available vaccine for *B. ovis*, for long-term control, but consideration should be given to the effects of vaccination on serological testing. Standards for the use of the Rev.1 vaccine in sheep are outlined.

Challenges in developing international standards

The creation of acceptable international standards is a complex undertaking that brings many challenges across a spectrum of political, economic, social, technical, and legal arenas. In addition, in the case of brucellosis, wildlife reservoirs that result in spillover into domestic livestock populations complicate the management of the disease.

Political

From a political standpoint, representatives of countries and other stakeholders might view standards as:

- an intrusion into the rights of sovereign authorities
- mechanisms to instil artificial trade barriers
- restrictions on current producers and open markets
- favouring countries and producers who have the economic and technical ability to comply.

The input of all political stakeholders must be considered to create policies that add to the overall social good of a country. In addition, international standards may require changes in the present law and policies, resulting in an associated inertia.

Economic

From an economic viewpoint, countries and private entities would have to bear the start-up and maintenance costs of

compliance with international standards and, in addition, would be at risk of market restrictions if they could not comply or comply fully. Some of these costs would include training and certifying regulatory personnel, maintaining a technically competent workforce, developing field and laboratory testing capability, providing epidemiological and surveillance data and reporting systems, and providing compliance and oversight for brucellosis control or eradication programmes. While these would ultimately provide a high return on investment, the initial cost could limit the ability of some countries to participate.

Social, language and cultural barriers

Social and cultural norms and behaviours tend to favour existing systems and are resistant to change, unless accompanied by either incentives to adopt, or penalties for non-compliance. Production management and processing activities often have a long history of embedded practices and infrastructure investments that are difficult to change.

Technology

Technology limitations can be viewed through the lenses of cost, infrastructure, access and workforce capacity. It is important to coordinate the acquisition and deployment of technology with the education, training and certification of the workforce. In addition, planning must take place to ensure sustainability of the control or eradication programme. In many cases, the establishment of laboratory capability has occurred without considering such things as continuity of supply of reagents, a trained workforce or reporting capabilities.

Legal

Global standards can be in conflict with current national animal disease and movement laws and must be adjudicated to meet sovereign requirements. Such complex issues could include: the acceptance of definitions of country status, import/export requirements, reporting requirements and authorities, indemnity, health laws and fiscal laws. The impact of all these potential conflicts must be evaluated as part of the overall challenge of implementing brucellosis standardisation programmes.

Private entity standards

The rise of private entity standards through animal and food industry groups, such as the Global Food Safety Institute and GlobalGAP (which sets the standards for good agricultural practice), represents both a challenge and an opportunity when developing standards for brucellosis activities. While these private organisations mainly focus on product outcomes for trade (including outcomes such as consumer safety and confidence), private standards can

affect other aspects of production, including animal welfare and management as the public's awareness of such concerns and its demand for product expand.

Brucellosis in other species including wildlife

The management of brucellosis is complicated by the fact that, in many areas and countries, there are reservoirs of brucellosis in wildlife and species other than domestic livestock, and crossover of brucellosis can occur between species. Brucellosis is known to exist in wildlife reservoirs of elk, bison, reindeer, caribou and feral swine. Camels, known to be vital for numerous pastoralist groups in Asia and Africa, may be infected by different serotypes of *B. abortus* and *B. melitensis*. Many countries with long-standing traditions of camel keeping and use do not have clear-cut policies on the control of camel brucellosis (3). There has also been an increase in reports of brucellosis in marine mammals. The overall characteristics of marine mammal strains of brucellosis that have recently been isolated and characterised are different from the six species that are currently recognised. The pathology and zoonotic potential of marine mammal brucellosis are still largely unknown (1). The development of international standards for managing brucellosis in wildlife is very difficult. In many cases, there are insufficient data and research in these other species to validate serological tests or determine appropriate vaccines. ■

Conclusion

The development and application of clear international standards for brucellosis is crucial to facilitate safe international trade of animals and animal products while also avoiding unnecessary impediments to trade. The OIE has developed guidelines for the diagnosis of the disease; requirements for internationally accepted vaccine protocols; diagnostic procedures; and reporting and data systems. These guidelines help to establish trust and confidence in data collection and reporting, leading to increased efficiency and effectiveness when dealing with disease control, safe trade and improvements in human health. The successful application of these international standards depends upon effective national Veterinary Services and their capacity to control animal diseases and zoonoses worldwide. While there are challenges to overcome, clear international standards for brucellosis will encourage international trade in animals and animal products, while preventing the introduction and spread of significant diseases that affect animals and/or humans.

Normes internationales en matière de prévention et de gestion de la brucellose

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Résumé

L'existence de normes internationales est un aspect déterminant de la prévention et de la gestion de la brucellose. Ces normes fournissent aux décideurs, aux chercheurs, aux épidémiologistes, aux laboratoires et aux partenaires commerciaux un langage commun pour communiquer sur la maladie et pour la comprendre. Elles portent sur toute une gamme d'activités, depuis la surveillance jusqu'au dépistage en passant par la prophylaxie, le transport, le commerce international, l'élaboration de politiques, la recherche et les notifications. La participation à la rédaction des normes, l'adhésion à ces normes et le contrôle qui leur est associé améliorent l'efficacité autant que le bon déroulement des programmes de prévention et de gestion. La contribution active des nombreuses

parties prenantes à la rédaction des normes garantit la prise en compte des contraintes particulières de chacune de ces parties. L'Organisation mondiale de la santé animale (OIE), assistée de ses Pays Membres, de ses Groupes de travail et *ad hoc* ainsi que des experts qui contribuent à leurs travaux respectifs joue un rôle de chef de file dans l'élaboration et la révision des normes relatives à la brucellose. Ces normes ont pour finalité d'harmoniser le dépistage, les mesures de prévention, les vaccins et les notifications en matière de brucellose afin de sécuriser les échanges internationaux et de protéger la santé animale et humaine.

Mots-clés

Brucellose – Commerce international – Diagnostic – Élaboration de normes – Norme internationale – Vaccin.



Normas internacionales para la prevención y gestión de la brucelosis

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Resumen

Las normas internacionales son un elemento básico para prevenir y combatir la brucelosis. Gracias a ellas los planificadores de políticas, científicos, epidemiólogos, laboratorios y entidades comerciales disponen de un vocabulario común para comunicarse y entenderse sobre la enfermedad. Dichas normas abarcan todo el espectro de actividades, desde la vigilancia, las pruebas de detección, la profilaxis, el transporte o el comercio hasta la elaboración de políticas, la investigación o la notificación de enfermedades. La elaboración, el cumplimiento y el seguimiento de normas confieren más eficiencia y eficacia a los programas de prevención y gestión. El hecho de integrar la aportación de todos los interlocutores en el proceso de formulación de normas garantiza que estas no influyan negativamente en las necesidades de ninguna de las numerosas partes interesadas. La Organización Mundial de Sanidad Animal (OIE), de consuno con sus Países Miembros y a través de sus Grupos de trabajo, ya sean *ad hoc* o permanentes, a lo que se añade la contribución de expertos, ha asumido una función clave de liderazgo en la elaboración y revisión de normas sobre la brucelosis, que se utilizan para armonizar la realización de pruebas, los procesos de prevención, las vacunas y las notificaciones; respaldar al comercio; y proteger la salud humana y animal.

Palabras clave

Brucelosis – Comercio – Diagnóstico – Norma internacional – Normalización – Vacuna.



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