Joint FAO/OIE Committee on Global Rinderpest Eradication

FINAL REPORT

May 2011

JOINT FAO/OIE COMMITTEE ON GLOBAL RINDERPEST ERADICATION

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LIST OF ABBREVIATIONS AND ACRONYMS

BWTC:	Biological and Toxin Weapons Convention
CMC-AH:	Crisis Management Centre for Animal Health (FAO/OIE)
EMPRES:	Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases (FAO)
FAO:	Food and Agriculture Organization of the United Nations
GREP:	Global Rinderpest Eradication Programme (FAO)
IAEA:	International Atomic Energy Agency
Joint Committee:	Joint FAO/OIE Committee for Global Rinderpest Eradication
OIE:	World Organisation for Animal Health
Scientific Commission:	Scientific Commission for Animal Diseases (OIE)
Terrestrial Manual:	Manual of Diagnostic Tests and Vaccines for Terrestrial Animals (OIE)
Terrestrial Code:	Terrestrial Animal Health Code (OIE)
WHO:	World Health Organization

TITRE 1 | BACKGROUND

The Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE) have been engaged in a process aiming to achieve certified global freedom from rinderpest, with an initial target in the year 2010. The task of both organizations was to ensure that every country with susceptible animal populations in the world be listed, by way of self-certification and finally by OIE official recognition of rinderpest infection-free status, on a global rinderpest-free database.

In 2005, a number of OIE Member Countries were yet to undergo a mandatory OIE dossier-based evaluation process for entry to this database. For non-OIE Member Countries an alternative process was required.

In May 2007, OIE adopted a new set of rules for rinderpest accreditation. It was essential that for the 2010 deadline, both the OIE and FAO review the implications of the new provisions and agree on the extent of the work still to be done and on a joint action plan to ensure its success. During the Global Rinderpest Eradication Programme (GREP) experts consultative meeting held in September 2007 at FAO headquarters, it was recommended that:

i) FAO (GREP and the FAO-IAEA Joint Division) and OIE should establish a Standing Commission and Global Scientific Commission to start immediate preparations for the final scientific evidence for global verifiable absence of rinderpest virus in the natural environment. This would lead to the Declaration of Global Freedom from rinderpest by the two partner organizations in 2010.

ii) FAO and OIE should start developing a legal framework for the Declaration and the associated national obligations for assuring the maintenance of global freedom from rinderpest, including the code of practice for virulent rinderpest virus isolates still held by certain countries.

OIE was notified by FAO of the above recommendations and in October 2007 OIE suggested to "... draft an internationally acceptable common plan of action to be communicated during the OIE and FAO General Assemblies.".

The proposed Standing Commission and Global Scientific Commission were based on the World Health Organization (WHO) experience on the eradication of smallpox in the 1970s. There was some scepticism as to the achievements of the eradication process and a reluctance to dismantle public health measures designed to combat smallpox. WHO had determined that in order to convince the international community of the success of its programme an independent review process was required. A formally constituted International Commission for the Global Certification of Smallpox Eradication was called into being to provide consultative assistance to WHO and verification of the eradication achievement by the Global Commission. The ultimate responsibility of the Global Commission – once it was satisfied that worldwide eradication had been achieved – was to document the reasons for its decisions in a way that would allow the World Health Assembly to declare in 1980 that smallpox had been eradicated.

From October 2007 to early 2009, discussion was pursued between FAO and OIE to establish an independent committee whose major task would be to recognize achievement of global freedom from rinderpest. Both organizations accepted the inherent value of running this exercise jointly within a time-bound framework and accepted that the timetable originally

developed under GREP should be concluded, if possible, in 2010. The proposed OIE/FAO Standing Commission was to review annually progress in accreditation. In doing so, the Standing Committee was to duplicate the role already undertaken by the Scientific Commission for Animal Diseases of OIE. In alternative to establishing a Standing Commission, the Scientific Commission of the OIE and FAO-GREP Secretariat could work closely together, assisting countries and reviewing progress. It was then proposed that the end-point of this process would be the development of a joint proclamation that there is no extant transmission chain anywhere in the world. This last step should be achieved through the establishment of a Global Scientific Commission or a Joint FAO/OIE Committee for the Global Eradication of Rinderpest (following the model of the World Health Organisation Global Commission for the Certification of Smallpox Eradication).

The agreement between FAO and OIE establishing the Joint FAO/OIE Committee for Global Rinderpest Eradication (Joint Committee) was concluded in June 2009. The main function of the Joint Committee was to provide a report of its findings to the Directors General of FAO and OIE, stating whether they are confident that the world can be declared free of rinderpest and/or recommend the actions to be taken for this achievement to be settled. More concretely, the Joint Committee was to: 1) advise the Directors General of FAO and OIE on potential gaps and risks of the proof of rinderpest freedom efforts to allow a firm statement declaring the end of rinderpest virus circulation in the world; 2) draft a joint FAO-OIE text for the global declaration of rinderpest freedom in mid-2011; and 3) draft an international agreement outlining principles and responsibilities for oversight and regulatory actions to ensure rinderpest freedom in the post-eradication era.

The Joint Committee was composed of a total of seven highly qualified individuals, i.e. three nominees from each organization and an additional, independent Chairman. It was also decided that where necessary, additional experts would be invited on an *ad hoc* basis to address a specific topic. The Terms of Reference of the Joint Committee are attached in Annex A of this report. The members of the Joint Committee are given in Annex B of this report. Other participants invited to attend meetings of the Joint Committee as well as staff of FAO and OIE are listed in Annex C.

The Joint Committee held four meetings: (i) 3 December 2009, FAO headquarters, Rome, (ii) 13-14 April 2009, OIE Headquarters, Paris, (iii) 15-16 July, Joint FAO/IAEA Division, IAEA Headquarters, Vienna, and (iv) 13-14 January 2011, OIE Headquarters, Paris.

The work of the Joint Committee benefited by it attending the FAO workshop on post-eradication activities with participation of OIE, held on 12 October 2010 at FAO headquarters.

TITRE 2 | FINDINGS OF THE JOINT COMMITTEE

Information on disease situation in countries and relevant activities

The Joint Committee was given access to the OIE archive of sanitary reports, amongst others, on rinderpest since 1924 as reported by OIE Members. The Joint Committee observed that the number of infected countries worldwide had steadily decreased. The Joint Committee was also given access to FAO archives and was fully informed of the GREP activities in regions and countries (Annex F).

Development of the OIE pathway and evaluation of country applications

The Joint Committee recalled that the guidelines for surveillance were originally developed and published in 1989 by the OIE as a guide to assist its Members in demonstrating freedom from rinderpest post-vaccination for self-assurance. It was a prerogative to cease vaccination and proceed to the next steps of the pathway leading to disease freedom.

In 1999, OIE Members endorsed the decision to establish a baseline list of historically rinderpest-free OIE Members. In 2000, a first list of officially recognized rinderpest free Members was adopted by the body now referred to as the World Assembly of the OIE Delegates. Other Members were then required to submit detailed evidence for claims of rinderpest freedom.

The Joint Committee accepted the concept of historical freedom in accordance with relevant OIE standards (baseline list of Year 2000, which counted 86 countries as free of rinderpest infection). The Joint Committee further noted that following the recommendations of the OIE Scientific Commission for Animal Diseases which took into account the progress of global rinderpest eradication and the knowledge of the distribution of historical rinderpest risks amongst different regions of the world, the World Assembly of the OIE Delegates agreed to allowing countries of selected regions to be evaluated in the same way as were the 86 countries that had entered the baseline list in the year 2000; a list of countries located in world regions that never faced rinderpest outbreaks (Americas except Brazil, the Caribbean, New Zealand and Oceania) and countries located in regions that managed to eradicate rinderpest several decades earlier (Western part of Europe, Brazil and Australia) was elaborated by the *ad hoc* Group on rinderpest and was endorsed by the Scientific Commission in 2008. This re-opening of the so-called baseline list considerably accelerated the progress in the official recognition of historically rinderpest infection-free countries.

The Joint Committee noted that the Scientific Commission of the OIE (formerly known as "Foot and Mouth Disease and Other Epizootics Commission" until 2003) was tasked to review applications for official recognition of rinderpest free status on its own until 2004. From 2004 onwards, the Scientific Commission requested the support of an *ad hoc* Group composed of rinderpest experts to evaluate the submitted dossiers, in particular of those Members not historically free, and provide its recommendations to the Scientific Commission for consideration. The Scientific Commission, in turn, forwarded its proposals on the recognition of rinderpest-free status of countries and territories to the World Assembly of the Delegates for adoption.

In January 2011, the *ad hoc* Group evaluated the last remaining countries and the process of reviewing the rinderpest freedom of all 198 relevant countries and territories (having susceptible animal populations) in the world was completed. The Joint Committee commended this endeavour.

The Joint Committee supported the evidence and conclusions detailed in the *ad hoc* Group reports and acknowledged the expertise of the members of this ad hoc Group as well as the Scientific Commission.

International standards for diagnosis and vaccines

The Joint Committee noted that in 1991, the OIE Biological Standards Commission (then known as the Standards Commission) initiated a programme for the development of international standards for laboratory diagnosis of rinderpest and for the manufacture of rinderpest vaccines. This activity resulted in the harmonisation of test protocols and the designation of reference reagents to be used in these tests, facilitating surveillance and greatly contributing to the successful outcome of the campaign for rinderpest eradication. These standards are published in the OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals.

FAO efforts toward the eradication of rinderpest

The Joint Committee found that FAO (including through the Joint FAO/IAEA Division) since its foundation, provided substantial technical assistance through major campaigns in Asia throughout the 1950s and 1960s and those in Africa from 1960 through 1976, contributing to bring the disease largely under control. However, because of weaknesses in operational and structural follow-up, rinderpest resurged and spread widely in sub-Saharan Africa and Asia. The FAO Council at its 83rd Session, in June 1983, endorsed the recommendation by the Committee on Agriculture regarding the need to formulate national and international strategies for animal health, including the action to control rinderpest. Particular concern was expressed on the resurgence of this disease in Africa, Near East and Asia. The Council also requested FAO to provide assistance to African countries to control the disease and to mobilise support for the newly proposed Pan African Rinderpest Campaign (PARC) through the International Office of Epizootics (OIE), the Organization of African Unity and the European Economic Community. In 1987, FAO held the Expert Consultation on global strategy for the control and eradication of rinderpest. The experts concluded that the global eradication was justified and feasible by expanding the campaign from Africa to the Middle East and South Asia.

FAO Expert and Technical Consultation meetings assisted in coordinating several regional campaigns in Asia, the Middle East and Africa as well as ensuring that national campaigns were fully abreast of technical issues as well as the opportunity for information exchange in terms of disease occurrence, incidence or prevalence at country and regional level. These efforts aimed to guide countries in vaccine production and quality control, emergency vaccination campaigns, along with OIE pathway, and then provide assistance in surveillance activities and assembly of evidence needed for preparing country dossiers, which in turn were evaluated by OIE.

The Joint Committee also recognized the contribution of diagnostic and training networks; establishment of diagnostic laboratories and guidelines formulation. ELISA technology was developed in the early 1980s from a research tool into an affordable diagnostic laboratory technology. Performance Indicators as well as Standard Operating Procedures (SOPs) for rinderpest sero-monitoring, sero-surveillance and related Quality Assurance aspects were completed.

From 1994, FAO has strengthened its responsibility for technical leadership and global coordination through the Global Rinderpest Eradication Programme (GREP) with year 2010 as the projected deadline for rinderpest eradication. Following technical consultation in late

1998, an Intensified GREP was launched, marking the transition to the final eradication thrust, based on epidemiological understanding of suspected reservoirs of infection in marginalized extensive high risk pastoral systems. The focus was the containment, elimination and proving freedom of disease. The Committee also acknowledged the established laboratory networks and their role in sero-monitoring and surveillance.

The Joint Committee noted that GREP had been successful and had achieved, in cooperation with the OIE and partners, its stated objective of eradicating rinderpest virus by the 2010 deadline (last outbreak in 2001 and last use of vaccine in 2006). The socio-economic analysis on the eradication programme also supports this achievement.

Cooperation between governments, international and regional organizations and other partners

The Joint Committee observed that the commitment of national veterinary services was pivotal. Contributions of reference laboratories, advanced diagnostics and molecular epidemiology were also significant. The Committee also acknowledged the important roles played by networks of specialist groups supported by the OIE and FAO, and by specialized regional organizations such as the Inter-African Bureau for Animal Resources of the African Union and the South Asian Association for Regional Cooperation, amongst others. These concerted efforts allowed to obtain that there was no evidence for residual foci in domestic or wildlife species. Other actors such as regional organizations and donors made significant contributions to the process of eradication.

Virus sequestration

The Joint Committee noted that virulent and attenuated rinderpest virus samples and vaccine stocks continued to be held in laboratories in a number of countries worldwide. The Joint Committee noted that FAO and OIE were in the process of establishing an inventory of institutes holding rinderpest virus-containing material through questionnaire surveys. Preliminary results of these surveys indicated that virus-containing material was stored in varied biosecurity conditions in over 20 countries. The Joint Committee was informed of WHO experience on smallpox eradication and noted that many approaches taken by WHO were also applicable to rinderpest in designing post-eradication activities.

Significance of global rinderpest eradication

The Joint Committee noted that socio-economic analysis on the eradication programme suggested that rinderpest eradication could be considered as a global public good. The Joint Committee also noted that the experience gained during the rinderpest eradication process should be kept and be used for future eradication of other animal diseases.

TITRE 3 | CONCLUSIONS

In the light of the findings above, the Joint Committee concluded that:

i) Rinderpest as a freely circulating viral disease has been eliminated from the world (Annex D); and

ii) The presence of virulent or attenuated rinderpest virus in laboratories constitutes a potential threat to global biosecurity.

TITRE 4 | RECOMMENDATIONS

1) A resolution should be taken forward by FAO and OIE, for adoption by their governing bodies, declaring global rinderpest eradication and implementing subsequent necessary measures;

2) Guidelines on rinderpest virus sequestration as agreed by the Joint Committee in consultation with the OIE Biological Standards Commission (Annex E) should be implemented by national veterinary authorities, OIE and FAO;

3) FAO and OIE should, as a matter of urgency, continue to work in close collaboration on the following:

   a) Develop a strategic plan to guide the post-eradication activities at international level;

   b) Complete an analysis of the risks of re-emergence of rinderpest virus, and its consequences;

   c) Prepare an international contingency plan based on the risk analysis;

   d) Set up a joint FAO/OIE Advisory Body on rinderpest, defining terms of reference and membership; this Advisory Body may set up subcommittees, for example to monitor rinderpest research activities;

4) National veterinary authorities should update national contingency plans in line with the guidelines for rinderpest virus sequestration and the international contingency plan;

5) FAO and OIE should establish an appropriately funded mechanism for oversight and approval of facilities holding rinderpest virus containing material, in conjunction with national regulatory authorities and, where appropriate, with other international organizations;

6) FAO and OIE should maintain archives of existing documents (including country dossiers); digitization of files should be considered where possible, as well as identification of documentation that should be made publicly accessible;

7) FAO and OIE should find and collate suitable education and training materials, particularly films of rinderpest disease, and package them in a way that is accessible to as wide an audience as possible, through official websites and other publicly accessible file depositories on Internet;

8) National authorities should ensure that:

   a) Rinderpest remains a notifiable disease;

   b) A surveillance system (including rumour tracking and early detection) be maintained to detect disease events;

   c) Suspect cases, including undiagnosed die-offs, be rapidly investigated (using existing mechanisms or, where appropriate, the FAO/OIE Crisis Management Centre-Animal Health) and necessary actions be promptly taken;

9) On-going support for FAO/OIE rinderpest reference laboratories should include adequate funding for maintenance of diagnostic capability;

10) FAO/OIE rinderpest reference laboratories should ensure inter-collaboration;

11) The use of rinderpest vaccines should be forbidden except for emergency use in the case of a rinderpest outbreak;

12) FAO and OIE should provide guidelines on control procedures, including the use of emergency vaccination;

13) Research on historical strains of rinderpest should continue, given that full sequencing promotes greater understanding of Morbillivirus evolution and full sequence data reduce the need to retain live virus stocks;

14) Re-creation of rinderpest virus from full genome sequences should be forbidden except in an authorized biosecure facility on approval by FAO and OIE;

15) An international Morbillivirus discovery and monitoring programme should be promoted and knowledge gained in rinderpest eradication should be transferred to potential control programmes for other Morbillivirus infections;

16) The need for possible novel (e.g. differentiating infected from vaccinated animals) vaccines and diagnostic tests should be determined by the Advisory Body in the light of the risk analysis;

17) Vaccines (including related equipment) should be manufactured in accordance with the OIE *Terrestrial Manual* and held in sustainably-funded vaccine repositories (vaccine banks), coordinated by FAO and/or other appropriate bodies and in liaison with manufacturers; minimum number of repositories should be determined by the Advisory Body in the light of the risk analysis;

18) FAO and OIE should vigorously pursue the publication of experiences on rinderpest control and eradication in a book;

19) International standards and guidelines on rinderpest, including the OIE *Terrestrial Code,* OIE *Terrestrial Manual,* and FAO Manuals, should be updated in the light of global eradication; and

20) A specialist rinderpest secretariat should be maintained by FAO and OIE with adequate resources to deliver the rest of these recommendations, including the support to activities of the FAO/OIE Advisory Body.

ANNEX A | TERMS OF REFERENCE OF THE JOINT COMMITTEE

I. Review all FAO (including FAO/IAEA) projects devoted to rinderpest surveillance, diagnosis, containment, and research, including those projects where FAO may not have been a lead organization;

II. Receive reports from the OIE on the infection free status of countries and territories and other related information, as well as ongoing activities of FAO and OIE to assist countries and territories to submit required dossiers for official recognition of their free status by OIE.

III. Advise the Directors General of both organizations indicating whether the evidence presented to the Committee entitles them to announce that rinderpest virus has ceased to circulate in the world;

IV. Prepare, based on the technical assistance of the OIE Biological Standards Commission, a draft international agreement on the elimination of rinderpest virus and other potentially dangerous biological materials in laboratories and other places and on the choice of a limited number of centres where sample materials can be stored safely for research or vaccine production purposes;

V. Advise OIE and FAO on surveillance and emergency vaccination policy applicable after eradication; and,

VI. Contribute to guiding the preparation of a publication on the history of rinderpest and its global eradication.

ANNEX B | LIST OF MEMBERS OF THE JOINT COMMITTEE

Prof. Steven Edwards
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Prof. Jean-François Chary
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UNITED STATES OF AMERICA

Dr Daouda Sylla
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MALI

ANNEX C | LIST OF OTHER RELEVANT MISSIONS AND INVITED PARTICIPANTS

A. Missions

Somali Ecosystem (Addis Ababa-Ethiopia from 28 March to 2 April 2010): J. Pearson and D Sylla

WHO (Geneva, 3 - 4 June 2010): K. Miyagishima (OIE) and F. Njeumi (FAO)

Biological Weapons Convention Unit, UNODA (Geneva, 4 June 2010): F. Njeumi,(FAO)Iran to investigate suspected case of rinderpest (24 December 2009 to 3 January 2010): G. Kiani (FAO)

B. Invitees to the Joint Committee meetings

First Meeting:

Dr David Ulaeto, Advisor to WHO's Advisory Committee on Variola Virus Research
Dr Gerrit Viljoen, Head, Animal Production and Health Section of the Joint FAO/IAEA Division, Vienna,

Second Meeting:

Dr Piers D Millett, BWC Implementation Support Unit, UNODA
Professor Geoffrey L. Smith, former Chair of WHO's Advisory Committee on Variola Virus Research

Third Meeting:

Dr Daniel Lavanchy, former member of WHO Secretariat for Smallpox Eradication
Dr Karim Tounkara, Director Pan African Vaccine Institute PANVAC
Dr Adama Diallo, Head Animal Production and Health Laboratory, Joint FAO/IAEA Division
Dr Gerrit Viljoen, Head Animal Production and Health Section, Joint FAO/IAEA Division

Fourth Meeting:

Dr Peter Roeder, Member of the OIE *ad hoc* Group on Evaluation of country Status for Rinderpest and former GREP Secretary
Dr Michael Baron, OIE/FAO Reference Laboratory on Rinderpest
Dr Hermann Unger, Animal Production and Health Section, Joint FAO/IAEA Division

C. FAO and OIE Organizations

FAO

Dr Modibo Traoré, Assistant Director-General
Dr Samuel Jutzi, Director Animal Health and Production Division
Dr Juan Lubroth, Chief, Animal Health Service
Dr Felix Njeumi, Animal Health Officer, GREP Secretariat
Dr Gerrit Viljoen, Head, Animal Production and Health Section, Joint FAO/IAEA Division

OIE

Dr Bernard Vallat, Director General
Dr Kazuaki Miyagishima, Deputy Director General
Dr Elisabeth Erlacher-Vindel, Deputy Head, Scientific and Technical Department
Dr Lea Knopf, Officer in charge of official recognition of disease status
Dr Yong Joo Kim, Chargé de mission, Scientific and Technical Department
Ms Sara Linnane, Scientific Editor, Scientific and Technical Department

ANNEX D | LIST OF COUNTRIES AND TERRITORIES OFFICIALLY RECOGNISED FREE FROM RINDERPEST INFECTION (MAY 2011)

1. OIE Members with rinderpest susceptible animals :

(BL): Baseline list of historically rinderpest free countries

NR: Rinderpest was reported to have never occurred in the country

Member	last outbreak	listed
Afghanistan	1995	2008
Albania	1934	2000(BL)
Algeria	NR	2000(BL)
Andorra	NR	2000(BL)
Angola	1972	2000(BL)
Argentina	NR	2000(BL)
Armenia	1928	2009
Australia	1923 (import)	2000(BL)
Austria	1881	2000(BL)
Azerbaijan	1928	2011
Bahamas	NR	2011
Bahrain	1980	2009
Bangladesh	1958	2010
Barbados	NR	2001
Belarus	NR	2008
Belgium	1920	2000(BL)
Belize	NR	2009
Benin	1987	2005
Bhutan	1971	2005
Bolivia	NR	2000(BL)
Bosnia and Herzegovina	1883	2000(BL)
Botswana	1899	2000(BL)
Brazil	1921 (import)	2000(BL)
Brunei	NR	2009
Bulgaria	1913	2000(BL)
Burkina Faso	1988	2006
Burundi	1934	2006
Cambodia	1964	2010
Cameroon	1986	2010
Canada	NR	2000(BL)
Cape Verde	NR	2009
Central African Republic	1983	2010
Chad	1983	2010
Chile	NR	2000(BL)
China	1955	2008
Chinese Taipei	1949	2000(BL)
Colombia	NR	2000(BL)
Comoros	NR	2011
Congo	NR	2006
Congo (Dem. Rep. of the)	1961	2006
Costa Rica	NR	2000(BL)
Côte d'Ivoire	1986	2007

Member	last outbreak	listed
Croatia	1883	2000(BL)
Cuba	NR	2000(BL)
Cyprus	NR	2000(BL)
Czech Rep.	1881	2000(BL)
Denmark	1782	2000(BL)
Djibouti	1985	2010
Dominican Rep.	NR	2009
Ecuador	NR	2000(BL)
Egypt	1986	2006
El Salvador	NR	2000(BL)
Equatorial Guinea	NR	2008
Eritrea	1995	2005
Estonia	NR	2000(BL)
Ethiopia	1995	2008
Fiji	NR	2009
Finland	1877	2000(BL)
Former Yug. Rep. of Macedonia	1883	2000(BL)
France	1870	2000(BL)
Gabon	NR	2008
Gambia	1965	2011
Georgia	1989	2010
Germany	1870	2000(BL)
Ghana	1988	2007
Greece	1926	2000(BL)
Guatemala	NR	2000(BL)
Guinea	1967	2006
Guinea Bissau	1967	2006
Guyana	NR	2000(BL)
Haiti	NR	2000(BL)
Honduras	NR	2000(BL)
Hungary	1881	2000(BL)
Iceland	NR	2000(BL)
India	1995	2006
Indonesia	1907	2000(BL)
Iran	1994	2008
Iraq	1996	2009
Ireland	1866	2000(BL)
Israel	1983	2010
Italy	1947	2000(BL)
Jamaica	NR	2000(BL)
Japan	1924	2000(BL)

Member	last outbreak	listed
Jordan	1972	2008
Kazakhstan	1928	2011
Kenya	2001	2009
Korea (Dem. People's Rep.of)	1948	2009
Korea (Rep. of)	1931	2000(BL)
Kuwait	1985	2010
Kyrgyzstan	1928	2011
Laos	1966	2011
Latvia	1921	2000(BL)
Lebanon	1982	2008
Lesotho	1896	2000(BL)
Libya	1963	2009
Liechtenstein	19th century	2009
Lithuania	NR	2000(BL)
Luxembourg	NR	2000(BL)
Madagascar	NR	2000(BL)
Malawi	NR	2003
Malaysia	1935	2000(BL)
Maldives	NR	2010
Mali	1986	2006
Malta	NR	2000(BL)
Mauritania	1986	2007
Mauritius	NR	2000(BL)
Mexico	NR	2000(BL)
Micronesia (Fed. States of)	NR	2011
Moldova	NR	2000(BL)
Mongolia	1992	2005
Montenegro	1883	2009
Morocco	NR	2000(BL)
Mozambique	1896	2007
Myanmar	1957	2006
Namibia	1905	2000(BL)
Nepal	1990	2002
Netherlands	1869	2000(BL)
New Caledonia	NR	2000(BL)
New Zealand	NR	2000(BL)
Nicaragua	NR	2009
Niger	1986	2010
Nigeria	1987	2010
Norway	NR	2000(BL)
Oman	1995	2009
Pakistan	2000	2007
Panama	NR	2000(BL)
Papua New Guinea	NR	2009
Paraguay	NR	2000(BL)
Peru	NR	2000(BL)
Philippines	1955	2000(BL)

Member	last outbreak	listed
Poland	1921	2000(BL)
Portugal	NR	2000(BL)
Qatar	1987	2010
Romania	1886	2000(BL)
Russia	1998	2010
Rwanda	1932	2006
San Marino	NR	2009
Sao Tome and Principe	1950's (import)	2011
Saudi Arabia	1999	2011
Senegal	1978	2005
Serbia	1883	2008
Seychelles	NR	2009
Sierra Leone	1958	2011
Singapore	1930	2000(BL)
Slovakia	1881	2000(BL)
Slovenia	1883	2000(BL)
Somalia	1983	2010
South Africa	1904	2000(BL)
Spain	NR	2000(BL)
Sri Lanka	1994	2011
Sudan	1998	2008
Suriname	NR	2009
Swaziland	1898	2000(BL)
Sweden	1700	2000(BL)
Switzerland	1871	2000(BL)
Syria	1983	2010
Tajikistan	1949	2008
Tanzania	1997	2007
Thailand	1959	2004
Timor Leste	NR	2009
Togo	1986	2005
Trinidad and Tobago	NR	2000(BL)
Tunisia	NR	2000(BL)
Turkey	1996	2005
Turkmenistan	1954	2011
Uganda	1994	2008
Ukraine	NR	2000(BL)
United Arab Emirates	1995	2011
United Kingdom	1900	2000(BL)
United States of America	NR	2000(BL)
Uruguay	NR	2000(BL)
Uzbekistan	1928	2008
Vanuatu	NR	2000(BL)
Venezuela	NR	2000(BL)
Vietnam	1977	2000(BL)
Yemen	1995	2010
Zambia	1896	2006
Zimbabwe	1898	2000(BL)

2. Non OIE-Members with rinderpest susceptible animals :

Countries or Territories	last outbreak	listed
Antigua and Barbuda	NR	2011
Cook Islands	NR	2009
Dominica	NR	2010
Grenada	NR	2011
Kiribati	NR	2011
Kosovo	1890s	2011
Liberia	unknown	2011
Marshall Islands	NR	2009
Nauru	NR	2009
Niue	NR	2009
Palau	NR	2009
Palestinian Autonomous Territories	1983	2010
Saint Kitts and Nevis	NR	2011
Saint Lucia	NR	2011
Samoa	NR	2009
Solomon Islands	NR	2009
St Vincent and the Grenadines	NR	2009
Tonga	NR	2010
Tuvalu	NR	2011
Vatican	NR	2009

3. Non-contiguous Territories of OIE Members with rinderpest susceptible animals

Country	Non-contiguous territories	Considered free
Australia	Norfolk island	2009
Denmark	Faroe Islands	2010
Denmark	Greenland	2009
France	Mayotte	2009
France	French Polynesia	2009
France	Saint-Barthélemy	2009
France	Saint-Martin	2009
France	Wallis-et-Futuna	2010
Morocco	Western Sahara	2009
Netherlands	Aruba	2009
Netherlands	Netherlands Antilles	2009
New Zealand	Tokelau	2009
Portugal	Açores	2009
Portugal	Madeira	2009
Spain	Ceuta	2009
Spain	Islas Baleares	2009
Spain	Islas Canarias	2009
Spain	Melilla	2009
UK	Anguilla	2010
UK	Bermuda	2010
UK	British Virgin Islands	2010
UK	Cayman Islands	2009
UK	Falkland Islands	2009
UK	Gibraltar	2009
UK	Guernsey	2009
UK	Isle of Man	2009
UK	Jersey	2009
UK	Montserrat	2010
UK	Turks and Caicos	2010
USA	American Samoa	2009
USA	Guam	2009
USA	Northern Marianas	2009
USA	Puerto Rico	2009
USA	US Virgin Islands	2009

ANNEX E | GUIDELINES FOR RINDERPEST VIRUS SEQUESTRATION

Endorsed with amendments on 28 January 2010
by the Biological Standards Commission of the OIE

Endorsed with amendments on 14 April 2010
by the Joint FAO/OIE Committee on Global Rinderpest Eradication

Introduction

The global eradication of rinderpest creates a duty for the international community to prevent the re-emergence of the disease through release of virus from laboratory sources. To this end FAO and OIE shall establish the principle of international oversight and regulation of facilities holding rinderpest virus containing material. The objective of the present guidelines is to ensure secure handling and sequestration of rinderpest virus in the post-eradication era. FAO and OIE and Member states undertake to reduce the number of virus repositories in order to minimise the risk of accidental release.

FAO and OIE, in collaboration with Member states, will put in place global contingency plans and will ensure approval of a minimum number of repositories and Reference Centres/Reference Laboratories necessary to maintain preparedness against releases of the virus into the environment. These plans will include, amongst others, vaccine production, vaccine banks and deployment of vaccines in case of emergency. Vaccines should be available to countries for immediate dissemination in case of emergency. The following guidelines deal with biosafety and bio-containment measures to be observed in laboratories and other facilities holding rinderpest virus containing material.

Definitions

For the purpose of these guidelines the following definitions apply:

An *approved BSL3 facility* means a facility that is jointly approved by FAO and OIE and subject to joint regular inspection. The facility meets BSL3 standards as defined in chapter 1.1.2 of the OIE *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals*, is certified by the *Veterinary Authority*, and in addition has mandatory shower out for staff and either an exclusion zone or a restricted movement zone for rinderpest-susceptible species around the facility. Staff are subject to restriction on contact with susceptible species (e.g. on farms, in zoos)[1].

Rinderpest virus-containing material means field and laboratory strains of rinderpest virus; vaccine strains of rinderpest virus including valid and expired vaccine stocks; tissues, sera and other clinical material from infected or suspect animals; and diagnostic material containing or encoding live virus. Recombinant morbilliviruses (segmented or non-segmented) containing unique rinderpest virus nucleic acid or amino acid sequences are considered to be rinderpest virus. Full length genomic material including virus RNA and cDNA copies of virus RNA is considered to be *rinderpest virus-containing material*. Sub-genomic fragments of morbillivirus nucleic acid that are not capable of

[1] A detailed protocol on the approval and inspection process for BSL3 facility will be jointly developed by FAO and OIE.

being incorporated in a replicating morbillivirus or morbillivirus-like virus are not considered as *rinderpest virus-containing material.*

Veterinary Authority means the Governmental Authority of an OIE/FAO Member, comprising veterinarians, other professionals and para-professionals, having the responsibility and competence for ensuring or supervising the implementation of animal health and welfare measures, international veterinary certification and other standards and recommendations in the OIE *Terrestrial Animal Health Code* in the whole territory.

Guidelines for rinderpest virus sequestration

1. All manipulation of *rinderpest virus-containing materials*, including vaccine production, shall be forbidden unless approved the *Veterinary Authority* and by FAO and OIE. An advisory body, jointly established by FAO and OIE, shall be tasked to approve in advance and monitor any activities involving the use of *rinderpest virus-containing material*.

2. All countries shall either destroy or transparently audit and manage all remaining *rinderpest virus-containing material* under biologically secure conditions. The *Veterinary Authority* shall be kept aware of and be held responsible for any activity involving *rinderpest virus-containing material*.

3. *Rinderpest virus-containing material*, with the exception of stocks of packaged, manufactured vaccines, must only be kept, and can only be manipulated, in an *approved BSL3 facility*.

4. Master seed stocks must be maintained in, and tested by, the *approved BSL3 facilities* designated by FAO and OIE. Stocks of packaged, manufactured vaccines, as covered under *rinderpest virus-containing material,* shall only be kept in FAO and OIE approved facilities which are subject to joint regular inspection. Any expired vaccine stocks shall be destroyed by a validated process.

5. *Rinderpest virus-containing material* that is not in an *approved BSL3 facility* shall be destroyed by a validated process or transferred to an *approved BSL3 facility.* Its relocation or destruction shall be supervised and documented by the *Veterinary Authority* and be notified to FAO and OIE.

6. Transfers of *rinderpest virus-containing material* to an *approved BSL3 facility* located in another country must be notified to FAO and OIE; such material may remain the property of the country of origin.

7. Transport (intra and inter-country) arrangements for *rinderpest virus-containing material* shall be agreed by the relevant *Veterinary Authorities* in advance and in accordance with chapter 1.1.1 of the OIE *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals*.

8. FAO and OIE shall establish and maintain a single global inventory on all existing *rinderpest virus-containing materials*, including vaccine stocks and the facilities holding such stocks and any movement of such materials. The global database shall be kept up-to-date on a permanent basis.

9. FAO and OIE shall develop a mechanism to facilitate and standardise reporting of *rinderpest virus-containing material* by *Veterinary Authorities* to update the global database.

10. FAO and OIE shall widely publicise the availability of internationally accessible rinderpest vaccine stocks to assist in convincing national authorities that they do not need to continue holding *rinderpest virus-containing material*.

11. FAO and OIE shall develop a set of guidelines and standard operating procedures to govern the maintenance of rinderpest vaccine stocks and their use for emergency purposes.

12. FAO and OIE, through their Reference Centres and Reference Laboratories, (including the laboratory of the Joint FAO/IAEA division) shall advise regional, national and international partners on laboratory-related issues having to do with rinderpest virus, including virus sequestration, destruction and disinfection protocols and diagnostic quality control.

13. FAO and OIE shall oversee the development of diagnostic kits that do not require the use of live virus within the kit itself or during the manufacture of the kit.

ANNEX F REFERENCES ON WHICH THE JOINT COMMITTEE BASED ITS CONCLUSIONS

Reports of the meetings of the OIE Scientific Commission for Animal Diseases (until May 2004 'OIE Foot and Mouth Disease and Other Epizootics Commission')**:**

1-4 February 2011, Paris	7-10 September 2010, Paris	2-5 March 2010, Paris
8-11 September 2009, Paris	11-13 February 2009, Paris	30 September - 2 October 2008, Paris
19-21 February 2008, Paris	18-20 September 2007, Paris	26-28 February 2007, Paris
30 January - 1 February 2007, Paris	19-22 September 2006, Paris	7-9 March 2006, Paris
12-19 January 2005, Paris	10-11 March 2004, Paris	1-5 December 2003, Paris
11-12 August 2003, Paris	16-17 & 22 May 2003, Paris	12-14 February 2003, Paris
25–29 November 2002, Rio de Janeiro	2-3 July 2002, Paris	25-26 and 31 May 2002, Paris
21-25 January 2002, Paris	17-21 September 2001, Paris	23-26 January 2001, Paris
26-28 September 2000, Paris	24-27 January 2000, Paris	13-17 September 1999, Paris
18-22 January 1999, Paris		

Reports of the meetings of the OIE *ad hoc* Group on Evaluation of Rinderpest Disease Status of Members (submitted to the OIE Scientific Commission for Animal Diseases)**:**

11-12 January 2011, Paris	8-9 July 2010, Paris	19-21 January 2010, Paris
23-24 September 2009, Paris	30 January 2009, Paris	18-19 November 2008, Paris
5-7 February 2008, Paris	2-3 October 2007, Paris	13-15 February 2007, Paris
21-22 November 2006, Paris	12-14 September 2005, Paris	20-22 October 2004, Paris
7-8 January 2004, Paris		

Reports of FAO - Global Rinderpest Eradication Programme Expert and consultative meetings from 1994 to 2010 (submitted to Director General, FAO)**.**

Title	Date
GREP SYMPOSIUM AND HIGH LEVEL MEETING "Lessons learned from the eradication of rinderpest for controlling other transboundary animal diseases"	13-14 October 2010, Rome
FAO workshop on post-eradication activities with participation of OIE,	12 October 2010, Rome
GREP EXPERTS CONSULTATIVES MEETINGS "RINDERPEST VIRUS AND VACCINES SEQUESTRATION"	30 November – 2 December 2009, Rome
GREP Expert Consultation Meeting "Will rinderpest virus ever die? What lies beyond 2010"	2-3 June 2009, Rome
GREP Ad Hoc Group Workshop	25-26 September 2007, Rome
FAO-EMPRES Technical Consultation on the Global Rinderpest Eradication Programme "Maintaining momemtum and commitment".	30 September-2 October 2002, Rome
Verification of rinderpest freedom	FAO Rome, 29-30 May 2000, Rome
FAO Technical Consultation on the GREP: "The challenge ahead"	28-30 September 1998, Rome
FAO Technical Consultation on the Global Rinderpest Eradication Programme "The world without rinderpest"	22–24 July 1996, Rome
Emergency preparedness and contingency planning for rinderpest and other epidemic diseases emergencies	Joint FAO/EMPRES and OAU/IBAR workshop; 19-22 June 1995,