ISSN 1564-2615

EMPRES
EMERGENCY PREVENTION SYSTEM

EMPRES
Transboundary Animal Diseases Bulletin

No. 26 – 2004
July–September 2004

E-mail: empres-livestock@fao.org ■ www.fao.org/empres

Foot-and-mouth disease virus type C reported in Brazil

Official laboratory results of an outbreak of FMD reported in Brazil indicated FMD serotype C, which had not been reported in South America for almost ten years. The outbreak affected bovines on an island in the Amazon River where animal movement is performed exclusively by river boat, and which is separated from the World Organisation for Animal Health-recognized FMD-free zone with vaccination by more than 500 km. The Brazilian authorities quarantined the affected premises and curtailed animal movement.

Global Rinderpest Eradication Programme

Significant progress has been made in accreditation of rinderpest freedom, with many more countries signing on to the World Organisation for Animal Health OIE pathway. Most significant has been the progress in the Arabian Peninsula and Mongolia.

AND...

Participatory disease surveillance techniques

Bolivian and international practitioners of participatory epidemiology recently evaluated and adapted techniques used in participatory disease surveillance to the classical swine fever situation in Bolivian smallholder systems.

Avian influenza in Asia

Since June 2004, new cases of highly pathogenic avian influenza H5N1 have been reported in poultry in China, Malaysia, Thailand and Viet Nam. Countries in the region continue to implement control programmes and conduct scientific investigations, and FAO has launched Technical Cooperation Programme projects.

Rinderpest

Update on the Global Rinderpest Eradication Programme in 2004

Significant progress has been made in accreditation of rinderpest freedom, with many more countries signing on to the process described in the World Organisation for Animal Health (OIE) *Report of the Expert Consultation on Rinderpest Surveillance Systems, Paris, 16–18 August 1989*, commonly called the "OIE pathway". Most significant has been the progress in the Arabian Peninsula and Mongolia. Following a workshop held in Mongolia in October 2003 under the auspices of the Joint FAO/International Atomic Energy Agency Division, Mongolia was able to present a convincing dossier to OIE and has now been recognized as free from rinderpest disease. Serological surveys are in progress to complete the process of attaining freedom from rinderpest infection. Following visits and discussions with the Global Rinderpest Eradication Programme (GREP), it is expected that China and the Russian Federation will soon announce progress in demonstrating rinderpest freedom.

Acting on fears that some Middle Eastern countries lack commitment to GREP, FAO and OIE joined together to mount a regional Technical Consultative Group Meeting for the Middle East in Beirut, Lebanon. The African Union Interafrican Bureau for Animal Resources (AU/IBAR) sent a team to report on the situation of suspected rinderpest persistence in the Greater Horn of Africa. The meeting not only dispelled the fear of lack of commitment in the Middle East, but also resulted, through follow-up by the OIE regional representative, in many more countries' ceasing vaccination in order to join the OIE pathway by making a declaration of provisional freedom. The actions of Oman and Saudi Arabia were most welcome in this respect. The challenge now is to sustain progress and assist the last few countries in joining the OIE pathway. The apparent success of GREP must not be allowed to generate complacency. There is still a long way to go before the risk of resurgence of rinderpest is eliminated together with the last reservoir of infection. It is essential that vigilance against resurgence from suspected or hidden reservoirs of infection be maintained.

P. ROEDER

Cattle in an eastern Ethiopian market, free from rinderpest risk – or are they?

A serious cause of concern for several countries in the Middle East is the risk perceived to be posed by the trade in cattle from some countries in the Horn of Africa. The trade is unstoppable for many reasons, among which are the good quality of the traded beef cattle, economic considerations and political imperatives. Countries wish to mitigate this risk by requiring vaccination of cattle against rinderpest during quarantine before importation, but this procedure is not compatible with the OIE pathway, which, as it stands at present, requires that countries import only non-vaccinated seronegative cattle after appropriate quarantine. Even though most of

the traded cattle would be destined for slaughter, it has been considered that the presence of seropositive cattle in the country would compromise serosurveillance for rinderpest. This problem could be alleviated by marking vaccinated cattle either physically or serologically using a marked rinderpest vaccine for which a serological test system capable of differentiating between vaccinates and cattle exposed to field infection is available. Several countries are interested in adopting this practice if it is sanctioned.

Unfortunately, there is currently no OIE-recommended vaccine and test system available. The commercially available heterologous *peste des petits ruminants* (PPR) vaccine based on the Nigeria 75/1 isolate is possibly the closest candidate to approval, as discriminatory tests are recognized and widely used. However, endorsement of this system has been delayed because some authorities first wish to see a formal demonstration of the efficacy and innocuity of the PPR vaccine in cattle with confirmation that the serological tests are able to discriminate. AU/IBAR, through its Pan African Programme for the Control of Epizootics (PACE), wished to commission such studies at the Kenya Agricultural Research Institute's Muguga Laboratory (considered the regional reference laboratory for rinderpest for East Africa), but bringing this plan to fruition has been delayed for more than a year, and it is still not certain to proceed.

A case could be made for recommending the use of this PPR vaccine/test system on an experimental basis for a small number of key countries before the completion of the desired studies. It has been demonstrated that PPR virus infection of cattle produces a cross-reactive immunity that provides full protection against rinderpest virus infection; there is no evidence that PPR virus infection can cause disease in cattle; and it has been shown that many cattle are already seropositive to PPR in those countries in which the disease is endemic. For example, Drs Manzoor Al-Qadassi and Najib Al-Hammadi have recently shown that some 23 percent of cattle in the Tihama coastal region of Yemen are seropositive to PPR (personal communication). It was clear to participating countries at the Beirut meeting that their best form of protection against rinderpest would be to remove the risk of movement of rinderpest out of the Somali ecosystem permanently. Action to achieve this objective was urged.

Remarkably there has been no re-emergence of rinderpest in any of the countries/regions cleared of rinderpest in the past ten years

The United Arab Emirates continues to seek protection from requiring rinderpest vaccination of cattle. In fact, there is very little use of rinderpest vaccine anywhere. Only the Syrian Arab Republic continued until this year (2004) to run an institutionalized annual vaccination programme, although it is understood that Tajikistan and Georgia intend to restart some border vaccination despite the virtual absence of rinderpest risk.

Remarkably there has been no re-emergence of rinderpest in any of the countries/regions cleared of rinderpest in the past ten years; indeed, all accruing evidence confirms that both African lineage 1 and the Asian lineage of rinderpest virus have been extinct since 2001. Rinderpest has not been detected in Asia (neither the disease nor serological evidence of infection) since cases were found in 2000 in the Indus River buffalo tract of the Sindh Province of Pakistan. Although participatory

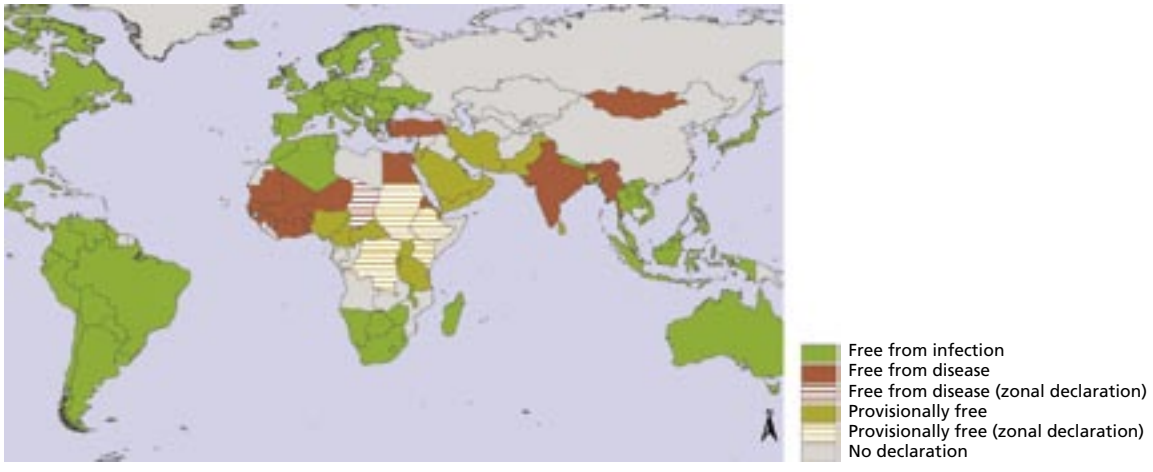
epidemiological studies suggest that the last cases might actually have occurred in early 2001, they are really of little significance, given that subsequent intensive investigations in Pakistan serve only to continue to confirm the absence of infection, not just of disease. Evidence from Afghanistan confirms that it has remained free since the 1995 incursion from Pakistan was eradicated in 1997. India continues to confirm that it eliminated rinderpest by eliminating the reservoir of infection in Tamil Nadu and Karnataka in the Southern Peninsula in 1995, and the whole country is now recognized by OIE as free from rinderpest disease.

Progress with the OIE pathway accreditation process is gaining momentum in Asia

Southeast Asia has undoubtedly been free from rinderpest since the late 1950s (with a possible, but unlikely, suggestion that it could have persisted in Viet Nam until the 1970s). Elsewhere in Asia, surveillance exercises, taken together, suggest that the other reservoirs of infection were resolved at about that time. The "Kurdish triangle" (the Islamic Republic of Iran, Iraq and Turkey) experienced its last infection in 1996, and Yemen last detected infection in 1997. Again formal surveillance data tend to confirm rinderpest absence. There can be little doubt that China, Mongolia and the Russian Federation are free from infection. Enigmatic rinderpest outbreaks in the Amur region of the current Russian Federation (1988), Georgia (late 1989, continuing into early 1990) and Siberia/Mongolia (1991 to 1993) can almost certainly be ascribed to reversion to virulence of the K37/70 vaccine that was used in an attempt to create an immunized buffer zone on the borders of the Union of Soviet Socialist Republics, and later the Russian Federation, with neighbouring countries.

Progress with the OIE pathway accreditation process is gaining momentum in Asia, and the surveillance data presented against a background of the complete absence of vaccination in most areas for many years support the understanding that the Asian lineage of rinderpest is extinct (apart from in laboratory archives). In Africa the OIE pathway accreditation process is providing confidence that West and Central

Accreditation of rinderpest freedom by the OIE pathway as of October 2004



African countries have been free from rinderpest since the last cases occurred on the Burkina Faso/Ghana border in 1988. The possibility that there might have been a later minor introduction from the Sudan into the Central African Republic (based on serological evidence from wildlife) does little to affect this understanding.

Rinderpest virus of African lineage 1 persisted in Ethiopia until 1995, at which time an epidemic extended into Eritrea, and in the Sudan until 2001. In these countries there is convincing evidence for the absence of virus circulation. These were the last strongholds of African lineage 1 rinderpest virus, which has almost certainly joined the Asian lineage in being consigned to history in the wild. It is only the possible persistence of a supposedly mild form of rinderpest in the Somali pastoral ecosystem of Ethiopia, Kenya and Somalia that prevents the conclusion that rinderpest has been eradicated from Africa, and the world.

It is only the possible persistence of a supposedly mild form of rinderpest in the Somali pastoral ecosystem that prevents the conclusion that rinderpest has been eradicated from Africa, and the world

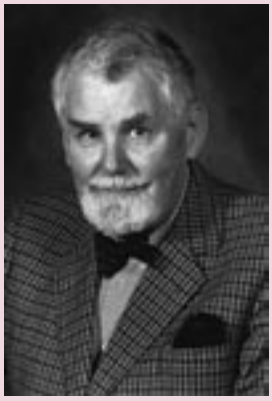
There is no cause for complacency, for there exists a significant body of experience recording the recent presence of a disease syndrome in cattle compatible with the concept of "mild" rinderpest. Its distribution relates closely to the area in which mild rinderpest virus strains were described in the 1950s and 1960s, with rediscovery in the 1990s. However, the last definitive detection of rinderpest virus was in African buffaloes (*Syncerus caffer*) adjacent to the Somali pastoral ecosystem in eastern Kenya in 2001. It was unequivocally identified as virus of African lineage 2 by the World Reference Laboratory for Rinderpest at Pirbright, United Kingdom. All subsequent investigations of what could be a mild form of rinderpest in cattle in Kenya and Somalia (and most recently in a contiguous area of southern Ethiopia in 2004) have failed to provide clear evidence of rinderpest virus presence, whether by virus detection or serology. In Ethiopia, after some initial problems were resolved, the observed disease was clearly shown not to have been rinderpest.

The current situation in this area is an enigma, and failure to resolve it threatens to compromise the ultimate success of GREP. The important conclusions are that 2001 was the last year that rinderpest virus of any of the three lineages known to have been responsible for rinderpest in the recent past was detected in the field, and that it is only in the Somali pastoral ecosystem that there is any suspicion that rinderpest virus is still present. The involvement of wildlife in virus maintenance must be considered, highlighting the need for wildlife surveillance to continue at an appropriate level. If indeed rinderpest is still present, as one must assume until it is proven otherwise, it seems to be able to infect cattle without provoking the clinical syndrome typical of classical rinderpest. It might not be readily detectable clinically.

The encouraging progress made in accreditation of rinderpest freedom across most of the territory in which rinderpest used to damage the livelihoods of livestock farmers suggests that finalizing this process will not be a major obstacle for GREP. The major challenges that remain are resolution of the Somali ecosystem enigma and elimination of this last reservoir of infection, if it is present. Vaccination should only be contemplated if it can be determined that rinderpest is still present there – and if it is still present, its location defined. The emphasis must be on progressing as rapidly as possible to accreditation of rinderpest freedom. Whether or not this will

require recourse to intensive focused vaccination depends essentially on activities undertaken during the last months of 2004 and in 2005 to 2006 by the two-year extension of PACE. A timely, successful outcome is not assured unless all the agencies and organizations involved commit themselves to the common ecosystem strategy developed by AU/IBAR-PACE with partners.

Gordon Ramsay Scott, O.B.E., Ph.D., F.R.C.V.S.



It is with great sadness that we report the death of Professor Gordon Scott, aged 80, on 14 April 2004 after a short illness. He will be mourned not only by his family but also by several generations of veterinarians whom he inspired with his professionalism, broad knowledge of tropical veterinary medicine and practical assistance with their studies at the Centre for Tropical Veterinary Medicine at the University of Edinburgh, United Kingdom. The world has lost an authority on virus diseases, particularly those caused by morbilliviruses.

A Scot by birth, he graduated from the Royal (Dick) School of Veterinary Studies in 1946 and then practised veterinary medicine in the United Kingdom for three years before joining the Colonial Service to work in Kenya. There he embarked on a distinguished career in tropical veterinary science, especially virus diseases. Initially he was posted to the Veterinary Research Laboratory, Kabete, but he later transferred to the East African Veterinary Research Organization, Muguga, where he was head of the Division of Virus Diseases and twice served as the organization's acting director. During his time in the Colonial Service he spent a year in Canada. He obtained an M.Sc. from the University of Wisconsin, United States of America. He obtained his Ph.D. in 1959 from the University of Edinburgh for work on the growth of Newcastle disease, rinderpest and Rift Valley fever viruses.

On return to the United Kingdom in 1963, he took up a lectureship in tropical veterinary medicine at the University of Edinburgh, later being promoted to senior lecturer and then reader. At Edinburgh, the Tropical Veterinary Unit evolved into the Centre for Tropical Veterinary Medicine, and he played a key role in the Diploma and Masters courses in Tropical Veterinary Medicine and Science. He remained active and involved in research and teaching long after "retirement". In 1990 the University of Edinburgh conferred on him the accolade of Professor Emeritus, adding to a long list of awards and honours received in recognition of his contributions to veterinary virology. He conducted research with students and colleagues from many countries, publishing more than 120 papers and innumerable book chapters on the major virus diseases of livestock.

Remembered for his encyclopaedic knowledge of virus diseases, it is with his work on rinderpest that his name will always be first associated. His expertise in this disease was invaluable to FAO, for which he undertook numerous field missions, conducted workshops, drafted manuals and provided expert opinion in every way possible, as he did for many other international organizations. None will forget his wise counsel, patience and constant availability to colleagues and students alike in providing advice on any subject, but notably for many students in the field of statistical analysis. He led by example and was universally liked and respected.

Gordon Scott played a leading role in establishing the Global Rinderpest Eradication Programme,[1] and when the disease is finally consigned to history in the near future, it will be due in no small measure to his efforts. We have lost a good friend, and his passing marks the end of an era.

[1] **G.R. Scott & A. Provost.** 1992. *Global eradication of rinderpest* (available at: http://www.fao.org/docs/eims/upload/171203/784.pdf).