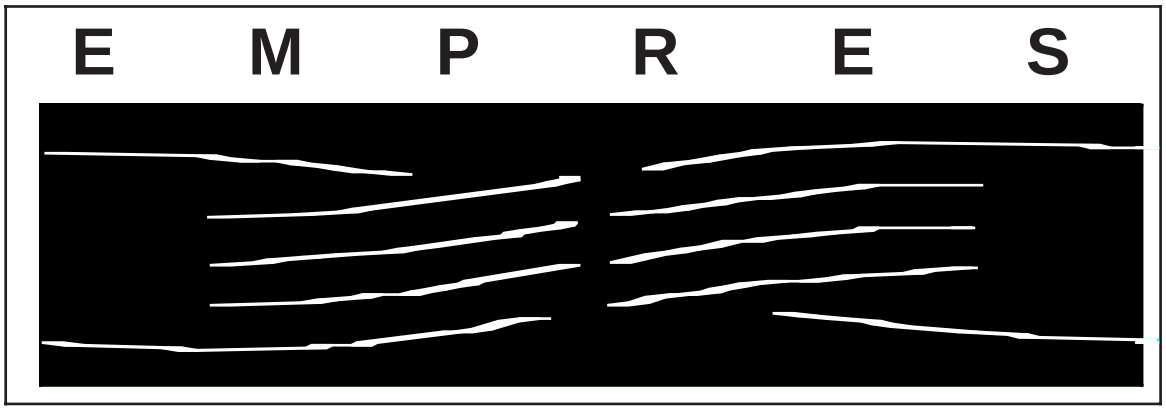

The EMPRES Transboundary Animal Disease Bulletin

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May 1997

In This Issue

Resurgence of Rinderpest in Eastern Africa

Until three years ago, it was considered that endemic rinderpest was confined to Southern Sudan and the contiguous pastoral areas of Uganda, Kenya and Ethiopia (the Southern Sudan axis), plus the Afar region of north-east Ethiopia. All virus isolates from these areas and the epidemic extensions from them were found to be genetically homogeneous. In Ethiopia rinderpest control strategies were focused on the Afar zone and routine blanket vaccination was withdrawn from most of the rest of the country. This strategy has worked well and the Afar focus is well under control. In Southern Sudan, the activities of relief agencies, particularly UNICEF, has resulted in considerable reduction in the incidence of disease. This has been achieved by well planned community based rinderpest control schemes which demonstrates that effective outreach to insecure areas can be achieved.

The endemic focus of the Southern Sudan axis was considered by veterinary authorities in East Africa as constituting the greatest risk to the farming areas of central and southern Uganda and central Kenya. This risk is accentuated by the constant movement of trade cattle from pastoral areas to the peri-urban slaughter houses of Nairobi and Kampala. Any introduction of disease into these vulnerable zones could result in further spread either to Rwanda, north-west Tanzania and Zaire or into northern Tanzania whence it could spread to SADC countries. Indeed during 1989 an outbreak of rinderpest near Nairobi was traced to trade-stock movement from the north-west.

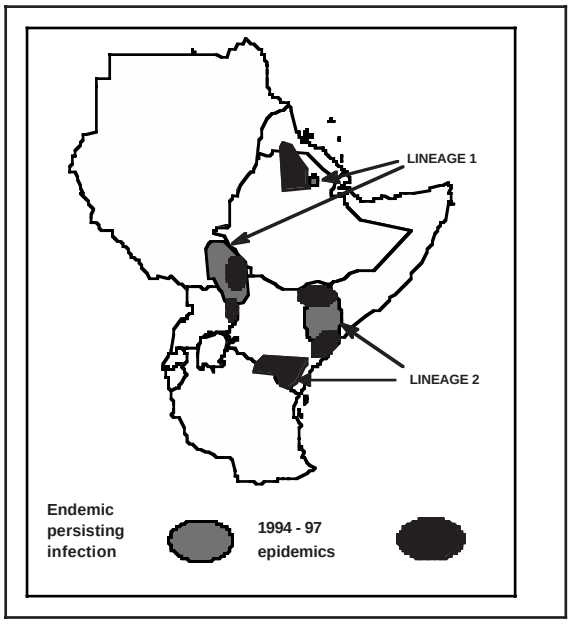

Figure 1. Rinderpest in eastern Africa from 1994-1997

At the end of 1994/95, the Kenyan veterinary authorities detected an outbreak of rinderpest in buffaloes and lesser kudu in the Tsavo National Park, in the south-eastern part of the country. The initial reaction was to suspect the southern Sudan axis as the source. However, molecular analysis by the FAO World Reference Laboratory (WRL), Pirbright, UK, demonstrated that this virus differed from other strains circulating in Eastern Africa in recent years. The closest related strains were two isolates from the 1960's: one from a giraffe in northern Kenya and the other from mild rinderpest in northern Tanzanian cattle. This suggested the presence

of an additional endemic focus in East Africa.

The probability of such a focus being in the Masailand zone of Tanzania and Kenya was considered to be low since long-term serological surveillance had shown no evidence of virus circulation there. Subsequent investigations led to a conclusion that the disease in Tsavo must have originated from an endemic focus in the north-east Kenya-southern Somali border zone. In April 1996 an EMPRES mission with the Kenyan veterinary surveillance team identified an outbreak of mild disease in young cattle in Mandera close to the Kenya-Somali border. This was confirmed to be rinderpest.

In October/November 1996, there was an outbreak of rinderpest in the Nairobi National Park which killed buffaloes and eland. The disease was also seen in local cattle herds. The causal virus was identified as similar to the one that had been responsible for deaths of about 60% of the buffalo and 80% of the lesser kudu populations in the Tsavo Park during 1994/5.

In December 1996, the disease was identified in cattle south of Nairobi, in Kajiado and in buffaloes in Amboseli National Park, close to the border with Tanzania. By mid January 1997 the disease had spread to the contiguous part of Tanzania. Maasai cattle may have introduced the virus when they returned from Kenya after a prolonged stay due to drought conditions.

The attached figure illustrates the distribution of rinderpest in Eastern Africa between 1994 and 1997. The hall mark of the recent epidemic has been the mildness of the clinical disease in cattle and severity in certain wildlife species (kudu, eland and buffaloes). This characteristic has jeopardised rinderpest surveillance and increased the risk of undetected spread to the highly susceptible cattle and wildlife populations.

Rinderpest is now a **disease of cattle in the pastoral areas of eastern Africa**. Any control strategy must take this into account. It must be tailored to the epidemiological, geographical, cultural as well as the prevailing sociological and political conditions.

FAO Response to the Rinderpest Emergency in Eastern Africa

In November 1996 rinderpest was diagnosed in Nairobi National Park. This alarmed both Kenya and Tanzania and the Minster of Agriculture of Tanzania called for international assistance to prevent his country becoming re-infected after a period of 14 years without rinderpest. In February 1997 the government of Kenya requested FAO for additional assistance with the rinderpest emergency.

Through EMPRES, FAO in collaboration with the OAU and the EC Delegation in Nairobi, facilitated a joint Kenya-Tanzania meeting of senior veterinary officials and wildlife experts in December 1996 to assess the risk of rinderpest spread. The risk was assessed as high. A strategy for harmonised intensive surveillance and vaccination were agreed upon.

FAO has provided technical assistance to both countries through the services of consultants and field staff plus TCP projects to the tune of about $600,000. In addition, with the financial support of the UNDP ($430,000), FAO will be providing additional assistance to Tanzania while Kenya has an additional on-going TCP project worth about $300,000.

Further assistance has been provided by the European Union and the OIE.

A most important element is that the national treasuries of both Kenya and Tanzania have responded to this emergency with provision of emergency funds from internal resources. This effort has to be appreciated against the background of a prevailing drought in the areas affected by rinderpest.

Intensive surveillance and vaccination has been undertaken by the veterinary and wildlife teams of the two countries in close collaboration with specialists from the Inter-African Bureau for Animal resources of the OAU (OAU/IBAR). Until the end of March ‘97, the disease in Tanzania has been confined to 4 districts (Hai, Monduli, Keratu and Ngorongoro) while in Kenya infection seems to have been confined to south and south-east of Nairobi. Both Tanzania and Kenya are currently drawing up plans for emergency re-vaccination of the same areas which will start as soon as the rains stop, in June-July.

The collaboration between FAO and the national veterinary authorities, the OAU and the EU has been very high.

FAO continues to urge the countries of Eastern Africa and the donor community to intensify not only the emergency action but to put into place a coordinated, transboundary program for accelerated eradication of

rinderpest from the whole region in order to remove the risk of recurrent rinderpest emergencies. We have proposed such a strategy as having the following characteristics:

Be highly focused on the objective of rinderpest eradication;
Operate in a transboundary manner even if the financing is compartmentalised on geo-political basis;
Be highly integrated irrespective of plurality of projects and multiplicity of sources of donor funding;
Be a time-bound program with performance indicators and clearly identified milestones.

EMPRES Bulletin Goes to Press

The first issue of the EMPRES Bulletin - a quarterly bulletin will provide an update of the activities of the EMPRES Group. It will also provide information on the progress of countries towards control and eradication of the 6 priority EMPRES diseases.

The EMPRES-Livestock Diseases Vision is "to promote the effective containment and control of the most serious epidemic livestock diseases as well as newly emerging diseases by progressive elimination on a regional and global basis through international cooperation involving EARLY WARNING, EARLY/RAPID REACTION, ENABLING RESEARCH and CO-ORDINATION."

Transboundary livestock diseases are "those that are of significant economic, trade and/or food security importance for a considerable number of countries; which can easily spread to other countries and reach epidemic proportions; and where control/management, including exclusion, requires cooperation between several countries."

For operational purposes, EMPRES groups transboundary animal diseases into 3 categories:

those of strategic importance - rinderpest, contagious bovine pleuropneumonia (CBPP) and foot-and-mouth diseases (FMD) - for which there is a need to coordinate either global (e.g. GREP) or major regional control programs (FMD and CBPP);
those requiring tactical intervention, which demand EMPRES early response activity - Peste des petits ruminants, Rift Valley fever, lumpy skin disease, village Newcastle disease or where there is a major introduction of disease into new areas, such as screw-worm or swine fevers;
emerging or evolving diseases.

The mission of the EMPRES program is in line with the World Food Summit Plan of Action which under Commitment 3 states;

> ***"Seek to ensure effective prevention and progressive control of plant and animal pests and diseases, including especially those which are of transboundary nature, such as rinderpest, cattle tick, foot-and-mouth disease and desert locust, where outbreaks can cause major food shortages, destabilise markets and trigger trade measures; and promote concurrently, regional collaboration in plant pests and animal diseases control and widespread development and use of integrated pest management practices."***

African Swine Fever Controlled in Côte d'Ivoire

Sporadic outbreaks of ASF within the enzootic countries of Africa, have been largely controlled during the years 1995-96. Local stamping out policies, quarantine and movement control have been recently used to control outbreaks in Kenya and Mozambique.

An extension of ASF beyond its known enzootic range in Africa has recently occurred in Côte d'Ivoire. The disease was first reported in April 1996 affecting initially pigs in the Abidjan area where 9O% of Côte d'Ivoire's commercial breeding is located. Spread occurred to village pigs around that area.

Sanitary slaughter began on 25 May, immediately after diagnostic confirmation of the disease. Up to November 1996 over 100,000 pigs had been slaughtered. The number of pigs which died of ASF was about 22,000. Other measures of control included a ban on transport, trade of pigs and pigs products. Unfortunately, those measures were not strictly executed which allowed further spread of ASF beyond Abidjan throughout much of the country before it was brought under control. **The last reported outbreak took place on 21 October** in the Central Province. The success of this eradication effort was achieved through TCP assistance.

The first sentinel pigs were put in place on 24 February 1997 in the locations where ASF foci were previously recorded. Up to now, the animals have remained healthy.

The factors contributing to the initial failure to contain the disease outbreak and the subsequent, apparent success in eradication provided material for a Regional Technical Meeting on ASF Control /Eradication and Emergency Preparedness Strategies in Africa. This was held in March 1997 in Abidjan. It addressed the need for regional preparedness and contingency planning for control of transboundary diseases.

CBPP in Tanzania a Threat

With 11 out of 19 districts in Tanzania infected with CBPP, there is a serious threat of spread of the disease to its neighboring countries especially Malawi and Zambia. FAO assistance was provided to Tanzania for the control of CBPP in the southern part of the country, and to Malawi to protect the country from transboundary spread of CBPP. These projects have come to an end but as a high risk of disease transmission remains a regional project was designed along the EMPRES strategy. This is to create a 'cordon sanitaire' between Lake Tanganyika and Lake Malawi comprising;

A 100 km deep control zone in south western Tanzania along the border with Malawi and Zambia in which all cattle would be vaccinated, and

Maintain a 50 km deep surveillance zone on the Malawi and Zambia sides of the border in which cattle would not be vaccinated but would be subject to intensive surveillance.

During the last few months there have been six recorded outbreaks of CBPP in or near to the Tanzanian control zone. The precautions that are being taken in Malawi are thorough and the risk to that country is commensurably less than to Zambia which has a relatively unprotected border and seems less well prepared. Surveillance activities are based on monitoring the presence of CBPP lesions in abattoirs.

CBPP in Botswana Eradicated

A report on the management of the CBPP outbreak in Botswana has been received from the Director of the Department of Animal Health and Production in February 1997. After all efforts to eradicate the disease by test and slaughter and the construction of 3 fences failed it was decided to destroy the whole cattle population of Ngamiland (FMD zone 2) totaling some 320,000 head; the rest of the country was patrolled by the army and police to ensure no cattle crossed. Livestock owners were compensated partly in cash and partly in replacement livestock. Active search for unidentified cattle in Ngamiland will continue until March/April 1997.

Intensive surveillance in high risk areas has been conducted with sero-testing of all livestock in the zones bordering the infected zone. Repeat sampling 6 months later found no reactors. Physical inspections of animals for signs of CBPP are carried out at the time of the government sponsored vaccinations for FMD, blackleg/anthrax and brucellosis. Examination of lungs on all animals slaughtered in public abattoirs continues. Restocking of Zone 2 commenced in March/April 1997 and a double cordon fence between Namibia and Botswana is being built and will be actively patrolled.

Rift Valley Fever in India Ruled Out

Rift Valley fever (RVF) has not been confirmed outside Africa. EMPRES recently investigated reports of RVF in Tamil Nadu in southern India where their had been high abortion rates and early post-natal mortality amongst flocks of sheep. Other signs seen were pyrexia, buccal erosions, gastro-enteritis and naso-lachrymal discharges. Peste des petits ruminants and bluetongue viruses were isolated from the second outbreak.

Livers from affected sheep had foci of degeneration and hepatocytes showed eosinophilic intra-nuclear inclusions as described in RVF affected animals. A virus had been isolated from 2 outbreaks which on needle passage, produced similar liver changes in lambs, kids and hamsters, without any deaths. Tests at

the National Institute of Virology, Pune, on 204 sera from sheep, goats and humans collected after the disease episode, gave >50% with haemaglutination inhibition (HAI) titres of 1/10-1/20. Ten had titres of 1/40 and one 1/80.

There was no disease in man or cattle in either outbreak. Laboratory studies did not suggest that the isolates were RVF virus and the low HAI titres described above were consistent with infection by other Phleboviruses. Recent infections with RVF will give titres of at least 1/320 to 1/640 and higher in a majority of animals. Some known Phleboviruses give HAI titres of 1/640 in RVF Group test systems and there is a good cause for confusion with RVF when these are detected. Virus serum neutralisation tests are required to distinguish between these and RVF. The Group specific tests, such as HAI, IFAT and ELISA cannot be used for this purpose.

The investigations which had been carried out in Tamil Nadu were thorough, and highlighted some of the diagnostic problems which can be encountered when RVF is suspected in a new continent.

Regional Animal Disease Surveillance Network

Through the support of the IFAD funded project, RADISCON, epidemiologists from 29 countries in North Africa, the Middle East and the Horn of Africa have been given orientation training in surveillance, data gathering and reporting systems for epidemic diseases. These national liaison officers will be linked by e-mail. The first RADISCON steering committee meeting took place in Cairo on 20 March 1997.

ELISA networks developed by the IAEA will be an integral part of a global surveillance and early warning system for rinderpest and other EMPRES diseases. These networks exist in Africa, the Middle East and South-east Asia.

Operational Projects - 1996/97

Disease	Year	Country	Project code
Rinderpest	1997	PANVAC/OAU	GCP/RAF/337/JPN
Rinderpest	1997	Sri Lanka	TCP/SRL/4554
Rinderpest	1997	SAREC	(pipeline)
Rinderpest	1997	Tanzania	TCP/URT/6714
Rinderpest	1996	Kenya	TCP/KEN/6613
Rinderpest	1996	PARC/OAU	GCP/RAF/317
Rinderpest	1996	PANVAC/OAU	GCP/RAF/318
Rinderpest	1996	PARC/OAU	GCP/RAF/290
ND*	1996	Zimbabwe	TCP/ZIM/4553
Vaccine Prod.	1996	Egypt	TCP/EGY/4554
CBPP**	1996	Mauritania	TCP/MAU/6611
CBPP	1996	Tanzania, Malawi, Zambia	TCP/RAF/6611
FMD***	1996	Cambodia, Laos, Vietnam	TCP/RAS/6111
FMD	1996	Philippines	GCP/PHI/041/AUL
ASF****	1996	Côte d'Ivoire	TCP/IVC/6612
Surveillance	1996	RADISCON	GCP/REM/059/IFAD

*Newcastle disease ** Contagious bovine pleuropneumonia
***Foot-and-mouth disease ****African swine fever

Recent FMD Outbreaks

WRL, Pirbright, identified Type O FMD virus in samples sent from Taiwan on 24 March 1997. This outbreak had infected 1724 farms involving 1.46 million pigs at the last announcement by the Taiwanese authorities on 4 April.

Authorities in Kyrgyzstan announced to OIE on 11 April an outbreak of Type O FMD in the city of Osh involving bovine.

New Arrivals at EMPRES

New arrivals in Rome are Dr. Peter Morcombe, a veterinary epidemiologist with Agriculture Western Australia and Dr. Mark Schoenbaum, an American veterinary epidemiologist with the Animal and Plant Health Inspection Service (APHIS) of the USDA. Both are visiting scientists on loan from their respective governments. Peter will work on the early warning and Mark on the early response components of EMPRES. The focus of their activities will be the Global Rinderpest Eradication Program (GREP).

Dr. Bernadette Abela, a recent MSc graduate in Tropical Veterinary Medicine (Edin.), and who comes to us from Austria, is assisting with the development of the EMPRES disease database and mapping capability.

Rinderpest and PPR Report

(Sept 96-Mar 97)

Results of samples sent to FAO WRL -rinderpest, Pirbright, UK

Country	No.	Date	Species	PCR result
Kenya	4	9/96	Calves	Negative
India	6	9/96	Goat	PPR
Nepal	2	9/96	Goat	PPR
Kenya	11	2/10	Game	Rinderpest
Kenya	17	12/96	Cattle	Negative
Somalia	9	12/96	Cattle	Negative
Pakistan	2	12/96	Sheep	PPR
India	10	1/97	Goats	PPR
Kenya	13	I/97	Cattle	Negative
Qatar	5	2/97	Oryx	Negative
Tanzania	47	2/97	Cattle	Negative

Tanzania	10	3/97	Cattle	Rinderpest*

* Full characterisation by sequencing in progress

FMD Report

(Jan 97–Mar 97)

Results of samples sent to FAO/OIE WRL - FMD Pirbright , UK

Country	FMD virus sero-types						
				SAT	Asia	SVD	NVD
	O	A	C	1,2,3	1	*	**
Bahrain	3	-	-	-	-	-	1
Côte d'Ivoire	-	-	-	-	-	-	9
Hong Kong	6	-	-	-	-	-	3
Iran	3	13	-	-	-	-	2
Italy	-	-	-	-	-	8	-
Jordan	-	-	-	-	-	-	1
Kuwait	5	-	-	-	-	-	-
Libya	-	-	-	-	-	-	1
Malaysia	2	-	-	-	1	-	1
Mali	-	1	-	-	-	-	1
Mauritania	-	2	-	-	-	-	6
Pakistan	3	-	-	-	-	-	-
Qatar	-	-	-	-	-	-	10
Senegal	-	1	-	-	-	-	9
Sri Lanka	2	-	-	-	-	-	-
Taiwan	22	-	-	-	-	-	13
Total	46	17	-	-	1	8	57

* Swine vesicular disease ** no virus detected