THE EMPRES TRANSBOUNDARY ANIMAL DISEASE BULLETIN

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Table of contents

RECOMMENDATIONS OF FIRST MEETING OF THE FAO/ OIE/OAU–IBAR CONSULTATIVE GROUP ON CONTAGIOUS BOVINE PLEUROPNEUMONIA

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NEWWORLD SCREWWORM

The transboundary animal diseases do not have a Christmas break. On 23rd December 1998, *FAO's Collaborating Centre on Myiasis Causing Insects and their Identification*, located in the Department of Entomology at the Natural History Museum in London, UK, received a sample of larvae from London's Hospital for Tropical Diseases. The larvae were removed from an infested lady who had just returned from a visit to Trinidad, and they were identified as New World Screwworm (NWS) *Chochliomyia hominivorax*. During the preparation of this note the epidemiological investigation was underway.

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SCREWWORM FLY INFESTATION

TROPICAL NEW WORLD SCREWWORM (NWS) IN THE UNITED KINGDOM

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Apart from an outbreak in Libya (1988-1992), the NWS is confined to the tropical and subtropical Americas where it is an obligate parasite of many warm-blooded animals, including humans. Although the name "screwworm" is given to both the larval and adult stages of the insect, the adult fly is harmless. Its reputation as a deadly parasite comes instead from its larvae, which are totally dependent on the living tissues of host animals for their development. The adult female screwworm fly is attracted to skin abrasions and wounds, where she deposits eggs. Within 24 hours the eggs hatch into larvae that immediately start feeding on the living tissue, dramatically increasing the size of the wound and causing intense suffering. If left untreated, the infested animal often dies. Hence, the livestock industry can suffer severe economic losses.

Prior to eradication campaigns against it, this parasite lived year-round in tropical and subtropical regions of the United States, Mexico, Central America, Panama, Northern and Central South America, and in the Caribbean Islands. Its distribution is largely determined by its inability to survive persistently cold weather, therefore it is usually unable to overwinter in temperate regions.

The cutaneous myiasis caused by NWS has been eradicated, using the Sterile Insect Technique (SIT), from the *United States* (1981), *Puerto Rico* (1975), the *US Virgin Islands* (1972), the *British Virgin Islands* (1972) and *Curacao* (1954, 1976). *Mexico* was declared NWS-Free on 25 February 1991, with a programme cost of US$.413.5 millions. In *Guatemala*, the last recorded case of NWS myiasis occurred on 22nd May 1994, as the result of an eradication campaign which began in 1988. *Belize*, implemented eradication in 1989 and NWS elimination was completed in 1994. *El Salvador* began a campaign against NWS in 1991, concluding its eradication in 1995. *Honduras* implemented a zoosanitary programme in 1991 and had eradicated NWS by 1996. *Nicaragua* is the most recent country to be declared NWS-Free in Central America, after a successful zoosanitary effort which began in 1992 and concluded on 28th November, 1998.

Eradication efforts are now progressing in *Costa Rica,* which is expecting NWS eradication in 1999, as well as in *Panama*, programmed to be NWS-Free in the year 2000. NWS currently occurs in all countries of South America, south of the eradication zone except for mainland Chile, where the last outbreak was recorded in 1959.

The smaller islands of the Caribbean are also apparently screwworm-free, even though their climates are generally favourable to screwworm reproduction. However, several of the larger Caribbean islands are infested, e.g., Cuba, Dominican Republic, Haiti, Jamaica, Trinidad and Tobago.

The discovery of NWS in the Libyan Arab Jamahiriya in 1988 focused worldwide attention on the potential for this destructive parasite to become established in countries outside its natural range. During 1997 and 1998 a total of four registered NWS introductions to NWS-Free countries occurred:-

April, 1997
NWS infested fresh goatskins from Haiti were introduced to Tampico port in Mexico. Emergency zoosanitary operations took place including the weekly release of 1.6 million NWS sterile flies and intensive field surveillance in the area. No NWS was reported and the Mexican Government stopped importation of fresh skins from NWS infested countries in the Caribbean. This NWS mode of transmission is the first recorded and scientists are working on simulation studies to learn how this incident arose.

November, 1997
A case occurred in a female Basset Hound imported from Central America to Bexar County, Texas, U.S.A.. Surveillance and monitoring actions were implemented. No additional cases were identified.

November, 1998
At Edwards County, Texas, U.S.A., a NWS case was reported in a female goat. An intensive surveillance operation took place, resulting in eight larval samples from wounds in November and December of 1998. All samples were negative. The lack of positive samples and the cold temperatures have resulted in the termination of these intense surveillance proce-

dures. In the spring, reminders for future surveillance will be issued throughout the county.

December, 1998

In the UK, an imported human case was diagnosed at the world FAO-NWS Collaborating Centre. Up to now no other NWS cases have been reported and due to adverse winter climatological conditions for the parasite, no additional cases are expected.

The threat of NWS Transboundary reinfestation into free areas is a constant and underestimated danger. Nowadays, an estimated US$690 million has been spent eradicating NWS from U.S.A. and Mexico. Programme benefits to livestock producers and consumers are estimated to exceed US$ three billion. Outbreak containment costs are estimated to range from US$3 to US$25 million in the Americas, and US$75 million in North Africa (Libya). The threat of myiasis outbreaks in animals and people is a serious problem and will not decrease until NWS field infestations are eliminated from the Caribbean and South American Regions.

(Contribution by By M.Vargas-Terán, Animal Health Officer, FAO/RLC)

AFRICAN SWINE FEVER (ASF)

UPDATE ON THE SITUATION IN WEST AFRICA

African Swine Fever (ASF) in Western Africa is actively present in Cape Verde, Benin, Togo and Nigeria.

CAPE VERDE :

ASF epidemic is limited to islands: Maio (one infected zone) and in Santiago (five-six infected zones). The surveillance is being strenghened; quarantine services in sea and airports require upgrading. The strategy involves mobilisation of an informed public (smallholders) who will initiate the necessary measures for control in cooperation with Veterinary Services**.**

BENIN :

Due to active approach of the Veterinary Services, the disease has been confined to the Maritime Region. Intensive surveillance and application of zoosanitary measures are being emphasised and adopted. The recommended strategy includes establishment of effective disease detection and reporting as well as sanitary stamping out of sick and seropositive animals. Commitment of the donor (EU) for restocking has been assured.

TOGO :

Disease outbreaks were reported in Dapaong - the north, Kara, in the north east, suburbs of Lome (the south) and most probably near the south eastern border of Togo/Benin. The major recommended strategy is further mobilization, strengthening of Veterinary Services and full Government's commitment to the task of ASF control, containment and eradication.

NIGERIA :

There were no recent cases of ASF in Ogun state - one of the states where ASF was first reported in the country. Unconfirmed reports indicate that there were fresh outbreaks in Lagos State in december 1998. The disease spread beyond the initial two states; Ogun and Lagos to involve seven other states, namely, Bendel, Osun, Edo, Enugu and Rivers states in Southern as well as Kaduna and Benue States in Northern Nigeria.

Although the Osun outbreaks were said to have started in April, 1998, retrospective evidence seem to indicate that the disease was present in the area as far back as late 1997, which co-incides with the known date of introduction into Ogun state.In Delta State where cases were seen in the coastal, oil-producing villages of the Benin River estuary, it is speculated that the disease may have been Introduced through feeding of swill while intra- and inter- village spread , may have been through dumping of dead pigs into canals that traverse the area. Benue State that has about 21.5% of the Country's pig population experienced the most devastating effects of the epizootics.. By the end of September 1998, about 79,748 pigs were affected and 61,298 of them died. So far, the National Veterinary Research Institute, Vom, Nigeria, has confirmed cases from some towns in Kaduna, Benue, Rivers, delta and Osun States in the laboratory.

Nigeria may now be divided into: ASF infected, surveillance and ASF free zones. In the infected zone, slaughter of all clinicaly affected , in-contacts and surviving pigs should be done; in the surveillance zone, there should be intensive disease surveillance, good public awareness programme and control of pig movement.

CAMEROON :

ASF has been enzootic since 1982 in the southern provinces :Centre-Ouest (Bafoussam), Nord-Ouest (Bamenda), Sud Ouest and Littorial. However, the disease may also be present undetected in other areas due to inadequate or non existing surveillance. The National Veteterinary Laboratory-LANAVET in Garoua has good diagnostic potentials but requires upgrading. Some recommendations have been made to establish two branches of LANAVET for Laboratory diagnostics of ASF in Yaounde and Bafoussam.

The Veterinary Services should be more actively involved in the ASF control in close cooperation with LANAVET and the Research Centre-IRAD. Soonest serosurveillance in northern provinces in order to assess the real epidemiological situation in this area is required. Also control of pigs movement from the maritime region to the north should be implemented.

SENEGAL, GAMBIA, GUINEA-BISSAU:

The ASF is endemically present in those countries (in the Casamance province of Senegal and in Guinea-Bissau since 1959 and since 1970-ies in Gambia). A consolidated control and eradication in those countries seems to be feasible. The need for a separate project for those countries has been identified in the areas of : strengthening of national capabilities for ASF control and eradication and development of a suitable family pig breeding system.

COTE D'IVOIRE:

This is considered as an ASF free country. The last outbreak of ASF in the country was in 1996 (October) after a successful national eradication campaign supported by the TCP/CIV/6612 (E). Intensive surveillance continues. Owing to fear of reintroduction of the disease and inspite of the encouraging serological results of the sentinelisation programme, commercial pig farming has not yet resumed in Abidjan area.

LIBERIA, GUINEA, GHANA, BURKINA FASO :

ASF free countries conducting an intensive clinical and serosurveillance as well as communication campaign on ASF recognition, economic impact and control for Early Warning. National contingency plans related to ASF will be strengthened.

WORKSHOP: GENETIC RESISTANCE TO AFRICAN SWINE FEVER

A workshop on genetic resistance to African Swine Fever was held at FAO Headquarters, Rome on 13 – 14 January 1999. It brought together 19 participants from 6 countries (Mozambique,Netherlands, South Africa, Sweden, United Kingdom, and United States of America) , IAEA Vienna and FAO Rome. The group had expertise in genetics and in virology and epidemiology of African Swine fever. Outputs of the workshop were the identification of approaches to the selection of domestic pigs genetically resistant to African swine fever as an alternative control measure for this devastating disease, essential work to be done in the short term and the necessity for additional funding for this work, and longer term work based on molecular genetics that will complement the short term experiments.In the short term, an experiment was designed to breed pigs from one or more candidate populations with serological evidence of a higher than normal survival rate. First generation offspring will be challenged with one or more virulent strains of ASF virus to determine heritability of resistance. Once this has been established, further work on the genome of the pigs will be pursued, using various quantitative and molecular genetic techniques.Possible facilities and collaborators for the work envisaged were identified. The contents of the workshop will be presented in a report.

(Contribution from Dr.Mary-Lou Penrith,
Onderstepoort Veterinary Institute, RSA)

AFRICAN SWINE FEVER IN MADAGASCAR

The Director of Veterinary Services, Ministry of Animal Production, Antananarivo by a fax message received by the OIE on January 11, 1999 reported the presence of African swine fever (ASF) in the Provinces of Toliary, Antananarivo and Mahajanga in Madagascar. The report indicated that the initial date of detection was June 1998 and that a total of 16 outbreaks had been recorded with 107,260 deaths out of 153,229 affected animals. Further information received from CIRAD-EMVT, Antananarivo, claimed that an acute haemorrhagic syndrome affecting initially adult pigs causing over 80% mortality was present in Fort Dauphin and Ambovombe in Southern Madagascar in August and October, 1997 and Antananarivo in the central part of the country in September, 1997. This was diagnosed as Teschen disease. In October 1997, a similar syndrome was seen in Tulear (Southwest Madagascar) and Antsirabe (Central Madagascar) in October 1998. By November 1998, classical swine fever (CSF) was suspected but attempts at control using locally produced CSF vaccine were ineffective. The three fatal pig diseases might have been present simultaneously in the same or different locations in the country. The CNEVA laboratory in France finally confirmed the disease as ASF in December 1998 by serology and PCR.

It was estimated that about 87.5% of the country's 800,000-900,000 pigs are kept in the infected areas and that about 50% of the pigs in the infected areas died or were slaughtered as a result of the disease.

Bushpigs (Potamochoerus sp.) – known to sustain infection in ASF endemic areas of Africa - are present in Madagascar together with the soft argasid tick vectors (Ornithodorus moubata) which are important in the maintenance of ASF in endemic areas and transmission of the disease to domestic pigs. Although the origin of the present outbreak is unknown, it is being suggested that the disease may have been introduced through pigs on boats coming into Fort Dauphin. The present epizootic re-emphasises both the potential of ASF to spread outside the African continent and the urgent need for molecular epidemiological studies on past and recent ASF virus isolates to be able to determine the origin of the African epizootics. Designing effective control strategies requires a sound epidemiological foundation in Madagascar as elsewhere.

An FAO-EMPRES preliminary fact-finding mission is in the country to assess the ASF situation and advise the Government on control measures to be adopted.

RINDERPEST

DECLARATION OF PROVISIONAL FREEDOM BY TURKEY

The Delegate declares the Thrace region "provisionally free" from the disease. Text of a fax received by OIE on 3 November 1998 from Dr Celal Ozcan, General Director of Protection and Control, Ministry of Agriculture and Rural Affairs, Ankara:

After a 22-year period of freedom from rinderpest, an outbreak of the disease commenced in the south-eastern part of Turkey, in the Van and Hakkari provinces, in October 1991 (see Disease Information, 4 [43], 139, dated 31 October 1991). This was the first occurrence of rinderpest in Turkey since 1969. The last outbreak was recorded at Diyarbakir in January 1996 (see Disease Information, 9 [2], 7, dated 19 January 1996). No outbreaks have been reported since 1996.

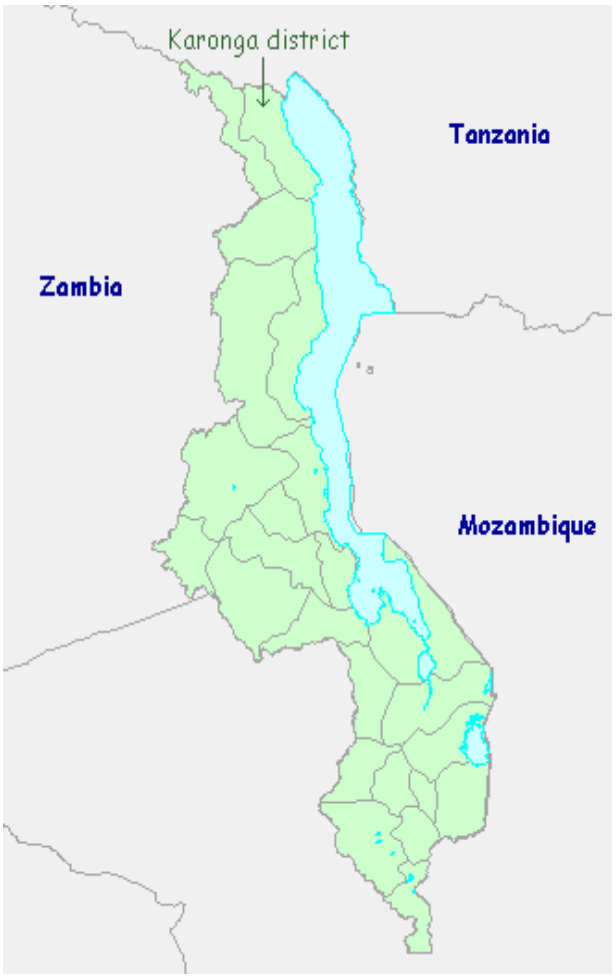
Vaccination campaigns have been conducted every year to protect the animal population in the whole country since rinderpest was seen in Turkey in 1991. For serological evaluation and rinderpest antibody assay after each round of vaccination in the whole country, sero-monitoring has been carried out. The epizootic was controled by the necessary control measures, such as destroying sick and in-contact animals with compensation of owners, animal movement controls, vaccination and surveillance, etc. In order to reach national eradication as well as global rinderpest eradication, Turkey has followed the OIE "pathway" since 1991. Considering the geographical and epidemiological situation, it is convenient to apply zonal freedom from rinderpest toTurkey and to apply the necessary measures within the zones. We now declare the Thrace region "provisionally free" from rinderpest. In Thrace region, vaccination against rinderpest ceased on 1 January 1998.

FOOT AND MOUTH DISEASE IN MALAWI

On 25 October 1998, the Malawian veterinary authorities detected an outbreak of Foot-and-mouth Disease (FMD) in the Karonga district in the north of the country. Concurrently, there was an epidemic of FMD in Tanzania. FMD virus type O was identified as the causal agent. Molecular analysis of the virus isolates from Malawi and Tanzania by the FAO/OIE World Reference Laboratory for FMD at Pirbright, UK, has shown the Tanzania and Malawi viruses to be identical. Furthermore, the nucleotide sequence data has shown this group of viruses to differ from those previously isolated from Kenya and Uganda in recent years.

The outbreak has been limited to three villages within half a kilometre of the border with Tanzania. Vaccine has been procured under an EMPRES emergency TCP project to help deal with the problem. Ring vaccinations so far carried out have proved successful, as the disease has not spread.

Further FAO assistance is aimed at improving disease surveillance, movement control and contingency planning.



RECOMMENDATIONS OF FIRST MEETING OF THE FAO/OIE/OAU–IBAR CONSULTATIVE GROUP ON CONTAGIOUS BOVINE PLEUROPNEUMONIA

The recent alarming spread of CBPP has highlighted the decreased control of the disease throughout Africa. The reasons for this include shortcomings in the basic understanding of the disease and the implementation of effective surveillance and control programmes. This prompted FAO together with OIE, FAO/IAEA and OAU–IBAR to convene a joint meeting of specialists to review the current situation and to suggest actions for the improvement of this situation. The meeting was held at FAO, Rome from 5 to 7 October 1998. The main outcome of the meeting was the recognition of the need for a CBPP Consultative Group (CG) to continually update the current knowledge and advise on the progress of improved strategies for the control and eradication of the disease. The following recommendations were made:

***RECOMMENDATIONS*:**

1 Strategy development of an integrated and co–ordinated regional control programme.

1.1 The FAO and its partners should formalise the consultative group (CG) in order to ensure its continuation as a body that will provide guidance on CBPP control and research. Standing members of the CG would include FAO, OIE, OAU–IBAR, FAO/IAEA, the newly recognised World Reference Laboratory for CBPP and other appropriate collaborating centres and individual specialists. The Secretariat will be hosted by FAO.

1.2 The CG should prepare, in consultation with concerned countries, a strategic plan for the improved control of CBPP. A fully comprehensive programme for the progressive control of CBPP throughout the world, with special focus on Africa is to be implemented. The ultimate goal is eradication following the OIE pathway in accordance with the International Animal Health Code.

1.3 It was recognised that the FAO/EMPRES group possesses the required skills to advise on standardised surveillance systems at continental and national levels, and to establish guidelines for these. It was recommended that these guidelines should be implemented through regional networks such as those already existing in OAU–IBAR and SADC. In conjunction with data from socio-economic studies the baseline data generated would be used for the economic analysis and disease modelling of optional control strategies.

1.4 It was recognised that there is a shortage of funds for CBPP control at the regional and, in most cases, national levels and that most future initiatives will require donor assistance for funds and resources. It was, therefore, recommended that the newly established CG should invite donors to participate in CG meetings as observers.

2 Surveillance, modelling and economics

2.1 FAO and partners should prepare appropriate standards, supported by clear documentation, and training materials, for — abattoir surveillance, serological surveillance, and clinical disease search.

2.2 FAO/IAEA in collaboration with their partners should prepare appropriate standards, supported by clear documentation, and training materials, for laboratory diagnosis.

2.3 National CBPP committees through their epidemiology networks will generate baseline data for economic assessment of the disease to determine its true costs and impact. Furthermore, disease modelling is recommended to investigate the efficacy of ongoing control programmes and develop other cost effective control options.

2.4 Detailed field and laboratory studies should be made to further elaborate the epidemiology of CBPP. In particular:

- The risk of transmission from recovered cases/lungers — breakdown to transmission.
- The effectiveness of chemotherapy and its effect on development of carrier state.
- The possible reversion to virulence of live vaccines.
- The persistence of infectiousness after recovery from disease and sub-clinical infection.

2.5 The development of robust sampling and transport methods for antigen and antibody detection systems should be undertaken.

2.6 The development of new molecular typing systems should be actively encouraged and their results continually related to accurate field surveillance data in order to establish reliable and meaningful molecular epidemiology.

3 In–country capacity building to support the strategy

3.1 Public Veterinary Services should have a strong central authority supported by clear implementable legislation with adequate human and financial resources.

3.2 A national CBPP committee should be established in each concerned country. It should comprise among its members a veterinarian with recognised expertise in CBPP having the responsibility of liaising with the CG and the appropriate regional Organisations (e.g. OAU–IBAR, SADC etc.).

3.3 The public sector should be encouraged to examine the feasibility of sub-contracting vaccination against CBPP to the private sector, including NGOs and veterinary supervised community based animal health workers. Also it is proposed that governments could subsidise the supply of vaccine in order to increase vaccination coverage.

3.4 National Authorities should endeavour to deploy as necessary trained manpower for CBPP diagnosis, surveillance, research and control.

3.5 Efforts should be made to establish CBPP research laboratories on a regional basis. The allocation of the laboratories should be determined following an evalution exercise of the present facilities in Africa. Adequate finance, equipment and materials should be provided to the laboratories for efficient functioning. Also, an enabling enviroment should be provided to retain scientists and the supporting staff.

3.6 It is proposed that when budgets for CBPP control are being established a defined proportion (5 to 10%) be allocated for research purpose.

3.7 As far as possible, research on CBPP should be carried out in African Institutions.

3.8 Also the veterinary curricula should emphasise CBPP, and continuing education should be encouraged to up-date field veterinarians in the latest knowledge in diagnosis, epidemiology and control. Additionally, there should be access through the CG Secretariat to a complete collection of archival and recent published reports and studies pertaining to the control of CBPP.

3.9 Information and communication systems should be put in place to monitor the efficiency of the adopted strategy. This will enhance general awareness and sensitise politicians, administrators and breeders on the importance of CBPP control/eradication.

4 Vaccine production, research and quality assurance

4.1 This meeting noted that the use of KH_3J in CBPP vaccination was no longer recommended by the OIE.

4.2 The use of bivalent rinderpest–CBPP (Bisec) vaccine is no longer advisable.

4.3 On account of field observations which have cast some doubt on the immunogenicity of T_1SR, the use of this strain in CBPP vaccines should await the results of conclusive cattle efficacy trials. For the time being T_144 remains the recommended seed strain. A reference seed lot which has been jointly produced and tested by PANVAC and EMVT can be obtained from PANVAC.

4.4 Specific in vitro tests for definitive vaccine seed strain identification are needed.

4.5 The OIE manual section on the vaccine culture inoculation needs to be revised to avoid the risk of inadvertent cloning of vaccine seed culture. One way may be to inoculate the whole contents of a vaccine seed vial directly into 100 ml of medium. After incubation this can then be used to inoculate vaccine bulk cultures.

4.6 Noting PANVAC's results of 957 titrations on 319 CBPP vaccine batches from 10 different producers, the meeting considered that the mycoplasma content for the 100 dose pack is only marginally above the OIE minimum requirement. Consequently, it is recommended that vaccine manufacturers should strive to limit the prescription of the number of doses per vial, as currently constituted, to only 50.

4.7 It was also noted that there is a need for vaccine packs of 10 and 20 doses, especially for use in small scale holdings and pastoral areas.

4.8 Means of increasing mycoplasma final titre should be investigated, e.g. through the fermentation process. Such products should be fully quality controlled including testing in cattle before they are adopted for routine use.

4.9 Procedures to improve the thermostability of vaccines should be defined e.g. optimised freeze-drying cycles using appropriate excipients or stabilisers.

4.10 Research aimed at the development of vaccines of defined antigenic or genetic character using conventional and/or recombinant DNA technology should be encouraged. Such vaccines would be expected to be less reactogenic than the current T_144 and to be able to confer regularly an immunity which lasts longer than one year.

4.11 There is a need for a wider use of experiments in cattle, in Africa, for evaluation of various aspects of vaccines including determining the immunizing dose, route of administration, onset and duration of immunity and evaluation of various formulations.

4.12 Research on the application of the ISCOM technology which now offers an opportunity to study antigen delivery systems, adjuvant formulations, defi-

nition of antigenic determinants and a re-examination of the killed vaccine alternative should continue to be supported.

5 Standardisation and improvement of diagnostic procedures

5.1 National Laboratories should strive to obtain recognition of proficiency through the use of standardised assays (Standard Operating Procedures), well defined controls, and compliance with external quality assurance schemes and national or international veterinary laboratory accreditation scheme.

5.2 The ability to both detect the causative agent (or part of it) or antibody to it at the cow-side is considered important at the herd level for CBPP control and eradication programmes. A number of assays are under evaluation and support should be given for their further evaluation and validation.

5.3 It is essential that national laboratories have an ability to isolate and identify the causative agent of CBPP. Standardised procedures for the culture and identification (including descriptions of the broth and reference sera) should be prepared and distributed. National laboratories in infected countries should ensure that the necessary reagents and skills are available to ensure that this can be carried out.

5.4 Whilst PCR is an invaluable tool both for initial confirmation of a diagnosis and for more long term molecular epidemiology studies it is difficult to standardise and quality assure. It is recommended that as a minimum the African CBPP Reference Laboratories should have an ability to carry out PCR for CBPP.

5.5 Capture ELISA could prove a useful method for rapid antigen detection at the laboratory level and studies should be undertaken to develop and validate such an approach.

5.6 Whilst CFT is the OIE prescribed test it gives rise to false positives, is difficult to quality assure and rather costly. Initial studies on a competitive ELISA (cELISA) show great promise and the validation work on the cELISA and its comparison to the CFT should be completed as a matter of priority. If this assay shows equal or greater sensitivity and specificity to the CFT it should be adopted by the OIE as a Prescribed Test and an internationally standardised kit should be made available to infected countries in Africa.

5.7 It is likely that even with the cELISA some false positives will occur. It is recommended that the immunoblot assay (IBT) be used as a confirmatory test and in the validation of the cELISA positive sera should be re-tested using this assay.

5.8 Antibody assays that clearly identify vaccinated animals, and separately, infected animals will be vital for surveillance studies. Current assays (CFT, cELISA) do not achieve this and every effort should be made to ensure that such assays are developed as a matter of priority. Equally, an assay that correlates with immunity (cell-mediated) is vital for vaccination purposes use and should be developed.

5.9 The designation by FAO and OIE of a CBPP World Reference Laboratory and the identification of Regional Reference Laboratories is considered essential.

6 Investigations into the pathogenesis / immunology of CBPP

It was recognised that there were at least two major areas that require further investigations i.e. (1) how initiation of the infective process takes place and; (2) how to explain the clinical course of the disease. This requires a better understanding of:

- the cellular and humoral immune responses to MmmSC and components of MmmSC;
- the mechanisms of the pathogenic process especially the early interactions between the organism and the host;
- the role of toxins and extracellular components in pathogenicity and the importance of autoimmunity in the disease process;
- the relevant protective responses to MmmSC antigens with a view towards the development of more effective vaccination strategies.

Therefore:

6.1 Investigations by a multidisciplinary team need to be conducted to (1) map the immune response including the expression of cytokines and lymphokines etc.; (2) check the response of the host to separated fractions of the causative agent e.g. carbohydrates, surface proteins; and re-examine the mechanisms of Willems and allergic and/or inflammatory reactions.

6.2 The CG secretariat should request International Livestock Research Institute (ILRI) to incorporate research on CBPP pathogenesis and immunology in their programme (technical advisory committee to CGIAR to be contacted for immediate attention).

CONTRIBUTIONS FROM FAO REFERENCE LABORATORIES AND COLLABORATING CENTRES

FAO/OIE World Reference Laboratory for FMD, Pirbright, UK
FMD report for October - December, 1998

Country	FMD virus serotypes
Bahrain	O
Eritrea	SAT2
Greece	NVD
Hong Kong	O
Iran	O, A
Kuwait	NVD
Lebanon	O
Malawi	O
Saudi Arabia	O
Tanzania	O
Yemen	O, A

NVD : No virus detected

INTERNATIONAL NETWORK FOR FAMILY POULTRY DEVELOPMENT (INFPD)

INFDP/ FAO ELECTRONIC CONFERENCE ON FAMILY POULTRY

The First INFPD/FAO Electronic Conference on Family Poultry: "**THE SCOPE AND EFFECT OF FAMILY POULTRY RESEARCH AND DEVELOPMENT"** is taking place from 7 December 1998 to 5 March 1999.

The International Network for Family Poultry Development (INFPD) has members in all continents. The scope of the network is to promote and develop extensive small-scale family poultry (often referred to as village poultry or rural poultry). The Electronic Conference focuses on all aspects of family poultry production systems. To initiate discussions, there are lead papers from selected authors. Besides, there is free communication sessions on the lead papers by all conference participants.

The first lead paper "Research and development options for family poultry" focuses on family poultry as the backbone on which a sustainable well adapted semi-commercial subsector could be progressively developed. The paper touches on socio-economic importance of family poultry, breeding, management, diseases, vaccination, marketing, research options and prospects for development. The comments on the paper deal mainly with genetic resources and development of vaccines against Newcastle Disease. The scope of eradicating Newcastle Disease has also been addressed.

The conference has approximately 100 participants so far. We hope that others interested in family poultry, i.e. scientists, teachers, farmers, extension workers, etc will sign on to participate in this Conference.

If you want to participate in the conference, please send an E-mail to FAO's Mail server (mailserv@mailserv.fao.org), leave the subject blank and then write in the first line of the message the following: - subscribe Family-Poultry-L

In case you have questions or problems subscribing, please contact Anita.VonKrogh@fao.org.

TRANSBOUNDARY ANIMAL DISEASE INFORMATION SYSTEM (TADINFO) DEVELOPMENT

As part of the Early Warning element of the EMPRES programme, FAO is developing a hierarchical information system for the monitoring of progress with, and the management of, transboundary animal diseases (TADs).

A computer program is under development which can be used by epidemiologists at the national level as a management tool for disease control. It has modules for the storage of information on observations of livestock disease, the recording of serosurveillance (and other active surveillance) data, the recording of slaughter information, vaccinations and livestock census. An easy-to-use query mechanism allows outputs that reflect in an instant the in-country disease situation. A map viewer allows visualisation of disease distribution.

Where clusters of countries need to undertake regional initiatives for disease combat, a modified version of TADInfo can be installed at regional epidemiology centres to store and analyse data on diseases of interest to the region. Inputs are received from cooperating countries, with the possibility of drawing maps of disease distribution and the production of regular reports to the region. In this way, countries are kept informed of disease threats near their borders, and also of progress made with regard to disease eradication in the region.

At the global level, FAO has plans for the capture of essential information from disease "hotspots" across the world, and the inclusion of such data into spatial models which will assist with prediction and spread mapping.

While all of these plans sound very ambitious, the basic truth is that without consistent and reliable surveillance, any information entered into disease reporting software is incomplete and misleading. National governments will need to recognise their responsibility for disease surveillance activities and have adequately trained surveillance personnel in place on the ground. To assist with these efforts, FAO is also involved in the compilation of manuals that will give some basic guidelines on the "how to" of surveillance.

TADInfo will be available for field testing as from the beginning of 1999. While in the development phase, it will be based on MS-Access and ArcView GIS software.

Those interested in field-testing TADInfo will need:

- A computer with MS Windows 95 and above
- MS Access and ArcView
- A 17" SVGA monitor (to avoid excessive scrolling)
- The names and ArcView shape files of two levels of internal administrative divisions within their country (eg province and district)
- The names and georeferences of as many villages/ settlements in their countries as possible.

TADInfo will also be made available on the EMPRES website later in the year. Currently, it is loadable from a standard CD-ROM disk.

The module currently active in TADInfo is for the recording and analysis of clinical/visual and rumour data only - modules for serosurveillance, abattoir data, vaccinations and livestock census are still under development.

For more information, those interested are invited to direct enquiries to Dr Roger Paskin at FAO EMPRES Roger.Paskin@fao.org.

INTRODUCTION OF NEW STAFF MEMBERS

Dr Preben Boysen, a Norwegian veterinarian, joined the EMPRES group on 16 November 1998 as an Associate Professional Officer. He will assist the group in promoting emergency preparedness and responding to epidemic disease emergencies.

Dr Anita Von Krogh, a Norwegian veterinarian, joined the EMPRES group on 16 November 1998 as an Associate Professional Officer (Poultry Diseases). Her main focus will be to develop and promote small scale poultry production.

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Radiscon Regional Animal Disease Surveillance and Control Network

REGIONAL WORKSHOP

A RADISCON Regional Workshop on *Disease Implications on Livestock Trade with Special Emphasis on Rinderpest, Peste des Petits Ruminants, Rift Valley Fever and Brucellosis* took place in Cairo, Egypt, from 1-3 November 1998. Delegates from Bahrain, Egypt, Ethiopia, Jordan, Kuwait, Lebanon, Libya, Oman, Saudi Arabia, Somalia, Syria, Turkey and Yemen composed of RADISCON National Liaison Officers and other senior veterinary officials attended the workshop. Unfortunately, other participants from Somalia, Sudan and the United Arab Emirates did not attend. Representatives of the *Office International des Epizooties*, the Arab Organisation for Agricultural Development, the Organisation of African Unity, Inter-African Bureau for Animal Resources, also participated in the workshop (see picture). Trade in livestock and livestock products is very important in the region, especially in the Arab Gulf and in the Middle East sub-regions. In the majority of countries domestic demand for meat outstrips national production with imports amounting to 530.000 metric tons of red meat and 490.000 metric tons of poultry meat. Turkey, from the Middle East sub-region, and Sudan, Somalia and Ethiopia, from the Horn of Africa sub-region, are the only countries in the RADISCON region producing exportable surpluses. These countries, however, are not in a position to fully exploit their export potential, animal diseases and the fear of importing countries to become infected being an important limiting factor.

The objectives of the workshop were to debate between importing and exporting countries within RADISCON region issues related to livestock trade and:

- to update them on international livestock trade regulations following the creation of the World Trade Organization (SPS-Agreement, enhanced role of the *Office International des Epizooties*, Import risk analysis, etc.),
- to exchange information regarding the status of important livestock diseases and trade in livestock and livestock products through country reports,
- to review the OIE Animal Health Codes covering the above mentioned diseases
- and to develop recommendations leading to increased and safer trade in livestock and livestock products in the region. It came out during the workshop that in many of the represented countries, decisions on import restrictions are not based on judicious assessment of the risk posed by the importation, nor consistent over time, while few countries could provide accurate and reliable figures on the prevalence of important diseases affecting national livestock. Thus, important recommendations emanating from the workshop for export-oriented countries were the improvement of disease surveillance, reporting and control, the creation of disease-free zones and a stronger involvement of the private sector, which is one of the main beneficiaries of access to foreign markets. Main recommendations for importing countries were to base import decisions on objective assessment of the risks posed by the importation and to enter into a dialogue on disease issues with potential exporters so as to establish risk management procedures. Furthermore, it was recommended that importing countries harmonize health regulations and zoo-sanitary certification and seek to reduce the importation of live animals in favour of importing chilled and frozen meat. International organizations should provide assistance in countries' endeavours to implement the above recommendations and promote regionally coordinated disease control programmes. Delegates appreciated RADISCON's role in promoting regional exchange of disease information and supported its continuation into a second phase, building on the achievements of the first phase.

RADISCON COUNTRIES AND THE WORLD TRADE ORGANIZATION (WTO)

Fourteen RADISCON countries out of 29 are member countries of WTO. These are Bahrain, Chad, Djibouti, Egypt, Israel, Kuwait, Mali, Mauritania, Morocco, Niger, Qatar, Tunisia, Turkey and the United Arab Emirates. Six RADISCON countries are observers in WTO, i.e they have applied to join the WTO. These are Algeria, Ethiopia, Jordan, Oman, Saudi Arabia and Sudan (Source WTO: November 1998). Nine RADISCON countries (Eritrea, Iran, Iraq, Lebanon, Libya, Palestinian Authority, Somalia, Syria and Yemen) are neither members nor observers of the WTO.

SHEEP POX SUB-PROGRAMME

A RADISCON meeting to examine the possibility to initiate a coordinated sheep pox eradication programme in the Maghreb countries took place in Tunis, on 18 and 19 December 1998. In addition to RADISCON Coordinator and two FAO/IFAD Consultants, the Chief Veterinary Officers of Morocco, Algeria and Tunisia and the RADISCON National Liaison Officers (NLO) of Tunisia and Libya took part to the meeting. Sheep pox caused in the past heavy losses among the sheep flocks in the Maghreb. The annual vaccination programmes had led to a considerable reduction in the incidence of the disease in these countries but at this stage, there is a danger that these high recurrent annual costs control programmes become institutionalised. In the light of the existing resources and on a an expected minimal technical consensus between the countries, the objectives of the meeting were to examine possible ways to shift from different national sheep pox control programmes to a single sub-regional programme favourable for the eradication of the disease. Different strategies were studied and the ability of each of the countries to combine their annual programmes within the sub-regional one was discussed. In view of the durable immunity resulting from vaccination, it was agreed to make an attempt to interrupt virus transmission by simultaneously raising the immunity level of the sub-regional sheep population to around 85%.

The outlines of a proposed three-phase programme to eradicate the disease are:

Phase 1: Harmonization of vaccine standards, harmonization of laboratory standards, reviewing legislative matters, rectifying any deficiencies in infrastructure (cold chain, vaccination equipment, reporting systems, communications campaigns etc.);

Phase 2: Pulsed vaccination of 85% of all sheep each year for two consecutive years. Both passive and active disease surveillance inputs would accompany these campaigns. A seromonitoring programme should be conducted to evaluate the effectiveness of the vaccination campaigns.

Phase 3: The entry into this phase would require a transition from mass vaccination to reliance on zoosanitary controls for any required 'mopping-up'. This phase would be characterized by intensified active surveillance and reporting, serosurveillance of unvaccinated animals and the implementation of 'stamping-out policies', movement controls and optional ring vaccination in the case of residual outbreaks.

NATIONAL ANIMAL DISEASE SURVEILLANCE SYSTEMS

RADISCON workshop for the Establishment of National Animal Disease Surveillance Systems in Djibouti, Eritrea, Somalia and Yemen took place in Sana'a, Yemen from 6 to 10 December 1998. Eight participants from Yemen, two from Djibouti, three from Eritrea and four from Somalia attended the workshop. Three additional workshops (Egypt, Iraq and Saudi Arabia/Oman/United Arab Emirates) are scheduled to take place in the course of 1999.

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