pan american foot-and-mouth disease center

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TECHNICAL MANUAL SERIES

No. 4

EMERGENCY ANIMAL DISEASES ERADICATION MANUAL FOR THE CARIBBEAN WITH EMPHASIS ON FOOT-AND-MOUTH DISEASE

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PRESENTATION

Resolution I of the Seminar on Foot-and-Mouth Disease Prevention, held in Georgetown, Guyana, on May 12-16, 1980, recommended "That a Working Group be established to revise or to formulate a new Plan of Action, to be presented at the Second Caribbean Veterinary Workshop in 1981."

The Emergency Animal Disease Manual with specific reference to foot-and-mouth disease has been elaborated at the Pan American Foot-and-Mouth Disease Center during November 1980 by a team of veterinary medical officers from Belize, Guyana, Jamaica, and Trinidad and Tobago, and assisted by a Regional Veterinarian from the Inter-American Institute for Agricultural Cooperation (IICA) and the Centers' staff.

The document was conceived as a technical and organizational guide for the English and Dutch speaking Caribbean countries and territories, within the framework of their respective national emergency disease programs.

Its application serves the established policy of immediate eradication of any outbreak of foreign animal disease.

This policy requires the following intermediate objectives:

1. *Prior to the occurrence of disease:*

1.1 *Availability of organized structures, including human, physical and financial resources, legal support and operational readiness.*

1.2 *Functioning of an information system for the surveillance of risk indicators at all entry ports as well as a field surveillance system for the early detection of cases.*

2. *After the disease has been detected:*

2.1 *Delimitation of infected, quarantine and buffer zones.*

2.2 *Tracing of infection and of potential contaminants.*

2.3 *Elimination of diseased animals and residual agents.*

2.4 *Strict quarantine to avoid further dissemination and reintroduction of infection.*

2.5 *Strategic use of vaccine.*

2.6 *Restocking of healthy animal population.*

The contents of the present manual has been organized as a Plan of Action and, as such, sequence has been sometimes sacrificed in order to allow for a faster and easier fiding and comprehension of specific activities.

Also, and due to some restrictions, objective 1.2 has not been developed as yet into a specific prevention guide which, in the future, should be included as Section I of the document.

It is our belief that the adequate implementation of this Manual, which would be supported by the development of periodic simulation exercises constitutes a great break through for the preservation of the animal economy of the Caribbean countries.

The excellent job done by our colleagues will surely be duly appreciated by the people of the countries for whom this document was prepared.

Raul Casas Olascoaga
Director, Pan American
Foot-and-Mouth Disease Center

CONTENTS

INTRODUCTION

The territories for which this document is intended are comprised of the nineteen English and Dutch speaking islands and territories within and bordering the Caribbean Sea. They vary in land mass from 39 square miles to 83,000 square miles with a total human population of almost 6 million, ranging from 6,000 to 2 million. The livestock population is estimated at about 14 million (including 12 million poultry).

The present Veterinary manpower is reported to be 111 Veterinarians including 30 in private practice and agro-industry, supported by 186 Animal Health and Veterinary Public Health Assistants. Other sources of manpower include Public Health Inspectors, Meat and Food Inspectors, Laboratory Technicians and graduates from Agricultural Schools.

The Veterinary Programs in the region and particularly as they relate to the administration of import-export regulations and control of established diseases have been on-going with varying degrees of success.

The threat of foot-and-mouth disease (FMD), the recent entry and persistence of African swine fever and contagious equine metritis in the hemisphere have made it imperative that a region normally free from such pestilences should significantly increase its vigilance to avoid their entry and to act positively and with efficiency against any assault on its

livestock resources from which it obtains the base of its animal protein.

The procedures outlined herein are intended specifically for FMD. It is anticipated, however, that with modifications it will be applicable to other emergency disease outbreaks. The manual is presented as a guide in the event of an outbreak of FMD; it is not intended to prevent, limit or discourage any other approach or any deviation where this is deemed necessary. The manual is also not intended to replace any national plan. The source has been the recommendations from the territories based on the experience of institutions, governments and individuals who have been involved in the fight against foot-and-mouth disease and other epizootic diseases. In addition, the following documents were used as reference:

Emergency Animal Disease Eradication Guide. Animal and Plant Health Inspection Service. U.S. Department of Agriculture. Issued March 1971, reprinted September 1976.

Emergency Animal Disease Eradication Guide. PAHO/Government of Jamaica, 1979.

Seminar on Foot-and-Mouth Disease Prevention. PAHO/PAFMDC/Ministry of Agriculture, Guyana, May 12-16, 1980.

El Conocimiento de la Epidemiología de la Fiebre Aftosa con Particular Referencia a Sudamérica. PAHO/PAFMDC, Ser. Monog. Cient. Tecn. No. 5, 1975.

Manual de Procedimientos para la Atención de un Predio donde Ocurre Fiebre Aftosa. PAHO/PAFMDC, Ser. Man. Tecn. No. 1, 1974.

Manual de Procedimientos para la Prevención y Erradicación de las Enfermedades Vesiculares de los Animales. PAHO/PAFMDC, Ser. Man. Tecn. No. 3, 1975.

DEFINITIONS

1. Buffer Zone

Is that area of a Free Zone that borders on the Quarantine Zone and in which surveillance and precautions are taken to ensure a disease free status.

2. Carrier Animal

Is an animal that following exposure to an infectious agent retains the potential for dissemination of the agent without showing clinical evidence of the disease. A carrier animal in foot-and-mouth disease may be:

(a) an animal that has clinically recovered from the disease;

(b) a non-immune animal exposed to very small quantities of virus;

(c) a vaccinated animal that is exposed to the virus.

NB: A carrier animal may or may not be serologically positive.

3. Check Point

Is a place established for the control of movement into and out of Infected areas, Quarantine and Buffer Zones.

4. Diseased Animal

An animal which shows clinical signs of a particular disease.

5. Emergency Animal Disease

A disease shall be termed an emergency animal disease when its sudden presence or prevalence within a territory poses a severe threat to the existing susceptible animal population within that territory.

6. Exposed Animal

One that has come in contact directly or indirectly with an infectious agent and has the potential to become infected or mechanically transmit the infectious agent.

7. Free Zone

A geographical area or part of a country that has been established on reasonable epidemiological grounds to be free from evidence or suspicion of infection by a particular disease.

8. In-contact Animal

An animal in close proximity to the infectious agent with the likelihood of becoming exposed.

9. Infected Animal

An animal in which multiplication of the infectious agent takes place with or without showing clinical signs of the disease.

10. Infected Area

Is an area comprised of infected and adjacent premises. Where several of these are in close proximity, a single geographical line may be drawn around all the premises and considered as an infected area.

11. Infected Premises

Premises on which a particular infection or disease exists or has been known to exist and on which eradication procedures have not progressed to the point where the premises can be declared free of infection.

12. Livestock Concentration Points

Any place or area where animals are brought together for the purpose of slaughter, sale, exhibition or performance.

13. Non-susceptible Species

Are those in which the infection cannot take place.

14. Quarantine Order

A legal document imposing restrictions on all movement in, out and within a defined premises or area for the purpose of controlling the spread of disease.

15. Quarantine Zone

Geographical area consisting of a radius of varying lengths established immediately around an infected area. It is intended to encircle all possible spread of the disease.

16. Susceptible Species

One in which the infection can occur.

17. Suspected Premises

Is one that may have had prior exposure to the disease through direct or indirect contact.

18. Task Force Veterinarian

A Veterinarian working in the field in the Emergency Animal Disease Program under the direct supervision of the Field Coordinator.

RECOMMENDATIONS

FOR ACTION BY THE TERRITORIES

1. Territories must continue to show a national will to eradicate existing diseases and to prevent the entry of emergency diseases as a matter of national urgency.

2. Each territory should establish a National Emergency Animal Disease Program.

3. Territories should ensure access to laboratories with the capability of diagnosing major epizootic diseases.

4. Territories should equip and maintain national or regional laboratories for the diagnosis of animal diseases that are of particular public health and/or economic significance.

5. Territories should develop highly effective regulatory and control measures against the introduction of diseases at airports, seaports, land borders, post offices, quarantine stations. Territories should also establish an efficient reporting system.

6. Territories should secure funds to meet the needs of animal disease prevention, control and eradication programs including the extremely urgent needs of emergency disease programs involving adequate compensation.

7. Territories should train personnel regularly at all levels in both general and specific areas of animal health, animal industry, socio-economic and other factors involved in veterinary regulatory services.

8. Each territory should examine the requirement of the Emergency Animal Disease Eradication Manual and the relationship to its veterinary organizational structure and manpower. This examination should result in the identification of needed personnel, definition of duties and training of its potential field, laboratory, administrative and other staff in the handling of an emergency animal disease outbreak, through simulation exercises.

FOR ACTION BY THE PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

1. The Pan American Foot-and-Mouth Disease Center should produce concentrated antigens and keep in storage for the immediate preparation of foot-and-mouth disease vaccine in order to supply the urgent needs of emergency programs.

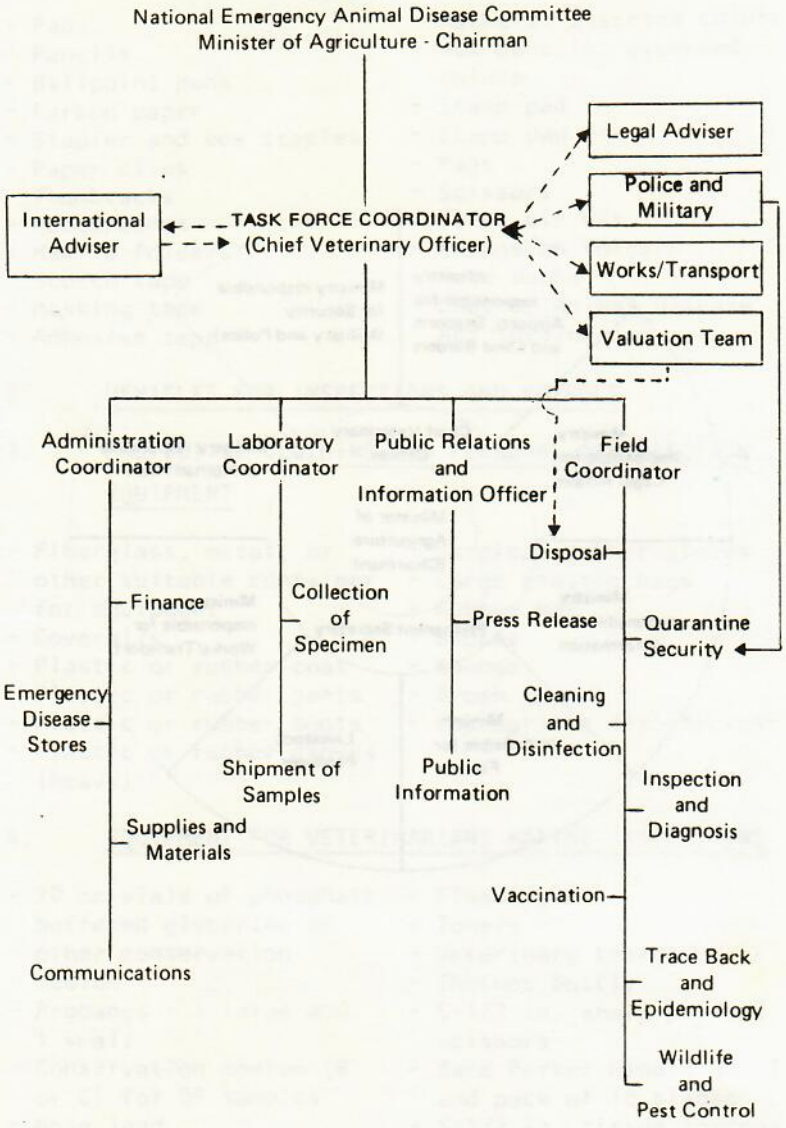
2. The Center should continue to emphasize the development of epidemiological and diagnostic expertise by regular training of personnel in these aspects of FMD.

3. The Pan American Foot-and-Mouth Disease Center should assist the territories in testing the Emergency Animal Disease Manual by conducting simulation exercises for Veterinarians of the Region.

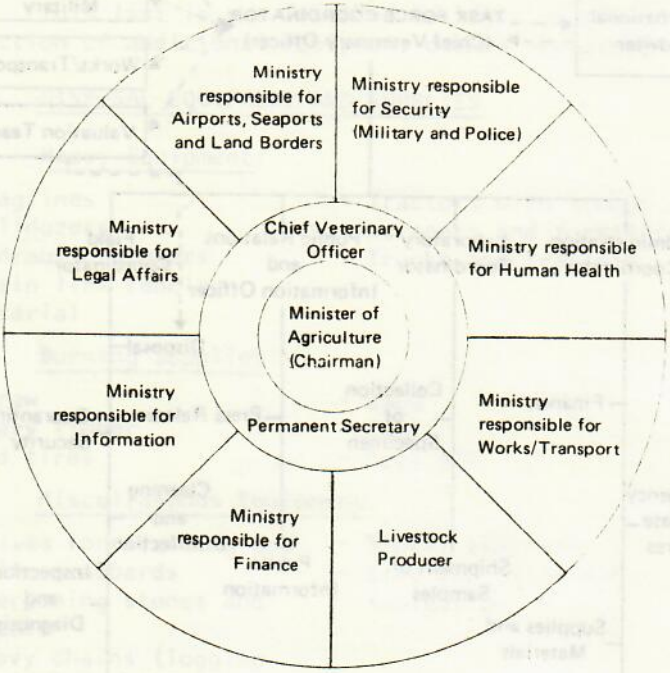
1. ADMINISTRATION

1.1 ORGANIZATIONAL CHART OF THE VETERINARY DIVISION OF THE TERRITORY

1.2 ORGANIZATIONAL CHART OF THE NATIONAL EMERGENCY ANIMAL DISEASE PROGRAM



1.3 ORGANIZATIONAL CHART OF THE NATIONAL EMERGENCY ANIMAL DISEASE COMMITTEE



1.4 THE NATIONAL EMERGENCY ANIMAL DISEASE COMMITTEE (NEADC)

The Committee should be comprised of at least the following members or senior representatives Ministries:

- Minister responsible for Agriculture (Chairman)
- Permanent Secretary in the Ministry responsible for Agriculture with the responsibility to provide a recording secretary
- Chief Veterinary Officer - Veterinary Division
- Livestock Producer*
- Ministry responsible for Air; and Seaports; and Land Borders
- Ministry responsible for Finance
- Ministry responsible for Human Health
- Ministry responsible for Information
- Ministry responsible for Legal Affairs
- Ministry responsible for Security (Military and Police)
- Ministry responsible for Works/Transport.

1.4.1 Objective

1.4.1.1 - To promulgate policies necessary for the proper administration of the National Emergency Animal Disease Program.

1.4.1.2 - To coordinate and ensure that the required inputs and cooperation of all the territory's resources possible are made available to the Task Force when needed.

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*Depending on the structure of the animal industry it may be necessary to have a Livestock Producer representing cattle interests and another representating the interest of pig farmers or small ruminants farmers.

1.4.2 Meeting Time

1.4.2.1 - The Committee should meet at least twice yearly to review its Emergency Animal Disease Preparedness, to monitor and to test its function capability.

1.4.2.2 - In the event of an outbreak the Committee shall meet as often as deemed necessary by the Chairman and as the circumstances warrant.

1.4.2.3 - In the absence of the Chairman, the Committee shall be chaired by the Permanent Secretary in the Ministry responsible for Agriculture.

1.5 EMERGENCY ANIMAL DISEASE TASK FORCE (TASK FORCE)

1.5.1 The Task Force should comprise of at least the:

- Chief Veterinary Officer (Chairman)
- Field Coordinator
- Laboratory Coordinator
- Military representative
- Police representative
- Representative from the Ministry responsible for Works/Transport
- Coordinator for Administration
- Information Officer
- Livestock producers representative.

1.5.2 The functions of the Task Force are:

1.5.2.1 - To implement policies emanating from the National Emergency Animal Disease Committee.

1.5.2.2 - To assist the Chief Veterinary Officer in the day to day decisions that may be required during the Emergency Program.

1.5.2.3 - The Task Force shall be free to co-opt representatives of other sectors involved in the Emergency Program as it deems necessary. It shall meet regularly to review and monitor all aspects of the field and related operations.

1.6 INTERNATIONAL ADVISER

In the event of an outbreak of a vesicular disease, the Pan American Foot-and-Mouth Disease Center will provide an epidemiologist. He will advise the territory through its Chief Veterinary Officer on all technical matters related to the epidemiology of the disease.

1.7 TASK FORCE COORDINATOR

1.7.1 Coordinates the functions of:

- Task Force
- Field Coordinator
- Laboratory Coordinator
- Coordinator of Administration
- Information and Public Relations Officer
- Valuation Team.

1.7.2 Duties and Responsibilities:

1.7.2.1 - Mobilizes the Task Force as soon as a report of field diagnosis of a vesicular disease is made.

1.7.2.2 - Informs Chairman of the National Emergency Animal Disease Committee of the report of a field diagnosis of a vesicular disease and the mobilization of the Task Force.

1.7.2.3 - Advises National Emergency Animal Disease Committee on all aspects of the Emergency Program.

1.7.2.4 - Assigns personnel and other aspects of the Emergency Program as needed by Field Coordinator.

1.7.2.5 - Instructs Field Coordinator as to method(s) to be used to eradicate or control the outbreak of the disease.

1.7.2.6 - Ensures that all legal measures required for quarantine, including notices, signs and gazetting are adopted.

1.7.2.7 - Ensures that all supplies and equipment necessary are made available to the relevant Coordinators.

1.7.2.8 - Provides technical input to the Coordinator of Administration for budgeting and purchasing.

1.7.2.9 - Ensures that farmers, consumers, persons involved with animals at concentration points as markets, fairs, zoos, abattoirs are adequately informed as to the progress and difficulties encountered. He controls all news media releases through the designated Information Officer.

1.7.2.10 - Responsible for the formation of the Valuation Team(s).

1.7.2.11 - Liaison with agencies involved but not included in the National Emergency Animal Disease Committee.

1.7.2.12 - Ensures that a complete report of the outbreak is produced at the end of the emergency.

1.8 FIELD COORDINATOR

1.8.1 Supervises:

1.8.1.1 - All Field Veterinarians and other field personnel including teams for Inspection and Diagnosis, Cleansing and Disinfection, Disposal, Vaccination, Trace back, Wildlife Control.

1.8.1.2 - Supervision should include Security Coordination by the Military and Police for Emergency Animal Disease purposes. Normal Police and Military functions will remain with the Police and Military personnel in charge.

1.8.2 Duties and Responsibilities:

1.8.2.1 - Mobilizes and assigns areas and duties to various teams including that of Inspection and Diagnosis, Cleansing and Disinfection, Disposal, Security, Vaccination, Trace back, Wildlife Control.

1.8.2.2 - Ensures that the Valuation Team is provided with the required support to carry out its task.

1.8.2.3 - Organizes specimen from the field to the laboratory, working closely with the Coordinator of the Laboratory to ensure adequate amount of samples in proper condition.

1.8.2.4 - Identifies and establishes Infected Area, Quarantine and Buffer Zones.

1.8.2.5 - Ensures that all field staff including teams are provided with the necessary supplies, clothing, equipment, vehicles to combat the disease.

1.8.2.6 - Keeps the Task Force Coordinator up-to-date as to the progress and difficulties in the field.

1.8.2.7 - Attends welfare of field staff during the emergency.

1.8.2.8 - Establishes communication with local authorities and other local agencies that may be involved or that can provide assistance.

1.8.2.9 - Ensures all field reports are completed and submitted on time to Task Force Coordinator.

1.8.2.10 - Responsible for all day to day operations related to the emergency in the field.

1.8.2.11 - Holds regular meetings with team leaders and other necessary personnel.

1.9 TASK FORCE VETERINARIAN

1.9.1 Supervises:

1.9.1.1 - Animal Health Assistants and other personnel including teams assigned to him.

1.9.1.2 - That aspect of the Security's function that directly relates to the emergency disease control.

1.9.2 Duties and Responsibilities:

1.9.2.1 - Investigates the disease outbreak and such trace back as may be required and assigned.

1.9.2.2 - Ensures that quarantine requirements are adhered to.

1.9.2.3 - Takes charge of one or more teams as may be assigned.

1.9.2.4 - Ensures proper euthanasia, disposal and vaccination of animals when required.

1.9.2.5 - Ensures the welfare of staff.

1.9.2.6 - Ensures that field reports are submitted on time to the Field Coordinator.

1.9.2.7 - Ensures that farmers and farming community understand the disease, and are provided with requested information on the emergency.

1.10 VETERINARY DIAGNOSTIC LABORATORY COORDINATOR

1.10.1 Supervises:

All laboratory staff.

1.10.2 Duties and Responsibilities:

1.10.2.1 - Works closely with the Field Staff through the Coordinator to ensure adequate amounts of the correct specimen are collected in good condition throughout the emergency.

1.10.2.2 - Ensures that all specimens received from the field are adequately prepared, labelled and carried out or shipped to the Pan American Foot-and-Mouth Disease Center, Rio de Janeiro, Brazil, and the relevant contacts made with the Center.

1.10.2.3 - Assembles and keeps kits available constantly, for the collection and shipment of specimens.

1.10.2.4 - Continues to work out and adjusts route(s) by which specimen(s) can be shipped directly to PANAFTOSA.

1.10.2.5 - Arranges for the storage of vaccines from PANAFTOSA if decided by the Task Force.

1.10.2.6 - Keeps the Task Force Coordinator up-to-date as to the progress and difficulties in the laboratory.

1.10.2.7 - Ensures all laboratory reports are submitted on time to Task Force Coordinator.

1.11 COORDINATOR OF ADMINISTRATION

1.11.1 Supervises:

1.11.1.1 - Clerical and typing staff.

1.11.1.2 - Purchasing and stores staff.

1.11.2 Duties and Responsibilities:

1.11.2.1 - Prepares and processes budget from

technical information supplied by the Task Force Coordinator.

1.11.2.2 - Purchases supplies as identified by the Task Force Coordinator.

1.11.2.3 - Procures vehicles, heavy duty and other identified equipment from Ministries, other public and private agencies.

1.11.2.4 - Ensures proper and urgent procurement, inventory, storage, distribution, maintenance and replacement of all supplies.

1.11.2.5 - Accountable for all finance and stores.

1.12 VALUATION TEAM

1.12.1 The Valuation Team should be comprised of three persons:

- the owner or his representative;
- one person representing the Ministry responsible for Agriculture, and
- one person representing the Livestock Association or Local Authority or Government Valuation Officer or as the territory may see fit.

1.12.2 - A majority of two persons of the team present after notification should be considered adequate for conducting the team's business.

1.13 INFORMATION AND PUBLIC RELATIONS OFFICER

1.13.1 Duties and Responsibilities:

1.13.1.1 - Works closely with the Task Force Coordinator in identifying relevant information to be directed at specific audiences, farmers, butchers, consumers.

1.13.1.2 - Ensures that farmers, butchers, consumers, persons involved with animals at concentration points as markets, fairs, zoos, abattoirs are adequately informed as to the progress, difficulties and social implications of the Emergency Animal Disease Program.

1.13.1.3 - Responsible to the Task Force Coordinator.

1.14 PURCHASES

The administration shall be responsible for the purchase, storage, inventory, distribution, maintenance and replacement of supplies, materials and vehicles identified by the Task Force Coordinator.

1.15 VEHICLES

The administration is responsible for the procurement of vehicles and heavy duty equipment through:

- direct purchases
- Military, Police and Fire Brigade sources
- Ministry of Works/Transport and other government and private agencies.

1.16 BUDGET

1.16.1 Preparation of budget:

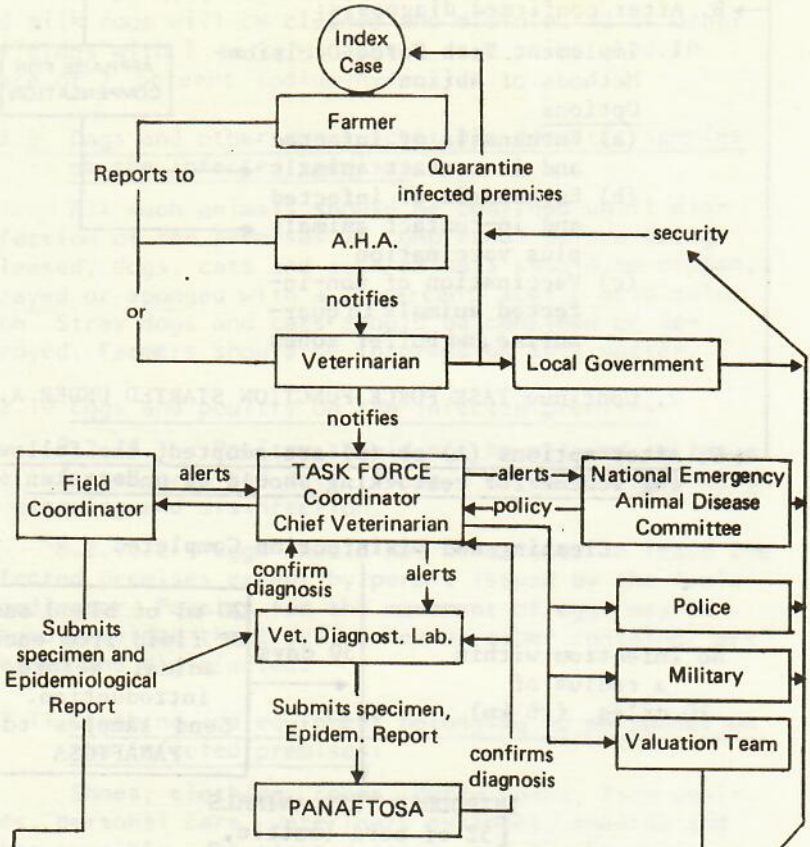
1.16.1.1 - A budget should be prepared immediately upon confirmation of the existence of an emergency animal disease.

1.16.1.2 - The budget should be reviewed periodically for significant upward or downward adjustments in keeping with the emergency disease situation.

1.16.2 Expenditure of funds:

Systems should be explored within the financial regulations of the territory, to expedite matters in order to expend funds in keeping with the urgency of emergency conditions.

2. SEQUENCE OF EVENTS



IMMEDIATE DUTIES OF FIELD COORDINATOR

A. Prior to confirmed diagnosis:

Establishes Headquarters — security
Infected Area
Quarantine Zone
Buffer Zone
Free Zone

Institutes Trace Back Teams
Ensures proper disposal of dead animals
Institutes Cleaning and Disinfection Teams
Institutes Inspection and Diagnostic Teams

cont.

cont.

IMMEDIATE DUTIES OF FIELD COORDINATOR (cont.)

B. After confirmed diagnosis:

1. Implement Task Force Decision-Methods of Action Options
   (a) Euthanasia of infected and in-contact animals
   (b) Euthanasia of infected and in-contact animals plus vaccination
   (c) Vaccination of non-infected animals in quarantine and buffer zones

APPRAISE FOR COMPENSATION

2. Continue TASK FORCE FUNCTION STARTED UNDER A.

C. After options (A) or (B) are adopted, the following scheme for restocking should be undertaken:

Cleaning and Disinfection Completed

No Infection within a radius of 10 miles (16 km)

30 days

20 ml of blood and OP fluid from each animal before introduction. Send samples to PANAFTOSA

INTRODUCE TEST ANIMALS [5% of herd (cattle, pigs) not less than 5]

[Negative result of retest and no infection within a radius of 10 miles (16 km)]

30 days

Repeat Tests on animals for PANAFTOSA

RESTOCK 20%

[Negative results and no infection within a radius of 10 miles (16 km)]

weekly inspection for 60 days

Complete Restocking

3. ERADICATION PROCEDURES

3.1 SUSPECTED OUTBREAK OF FOOT-AND-MOUTH DISEASE

3.1.1 Notification:

3.1.1.1 - The owner or person in charge of any animal or any other person observing an animal(s) affected by or suspected of being affected by a vesicular disease is required to report by the most urgent means such information to the nearest animal health personnel or the Police who in turn must inform the Chief Veterinary Officer immediately. The system of notification and the urgency of reporting specifically, should be brought to the attention of agricultural extension personnel, livestock workers, transport operators, administrators of markets and abattoirs, etc.

3.1.1.2 - The Chief Veterinary Officer shall ensure that such information is delivered to him or his representative without delay irrespective of the time of day. Included in such arrangements must be delivery on Sundays, public holidays and other non-working periods.

3.1.2 Investigation:

3.1.2.1 - Equipment

The Veterinary Officer who investigates the suspected outbreak should be equipped with the following:

3.1.2.1.1 - *Protective clothing*:

- Fiberglass, metal or other suitable container, e.g. large plastic bags
- Coveralls
- Rubber or plastic coat
- Rubber or plastic pants
- Rubber or plastic boots
- Rubber or plastic gloves (heavy)
- Surgical rubber gloves
- Rubber or plastic hat

3.1.2.1.2 - *Personal disinfection equipment*:

- 4 lbs (2 kg) sodium carbonate, mix 1 lb (.5 kg) to 3 gallons (14 liters) of water for a 4 percent solution
- Bucket
- Sponge
- Brush (boot)
- Portable spray can

3.1.2.1.3 - *Equipment for Veterinarian making inspection:*

- Lasso or Lariat
- Hog holder
- Flashlight with batteries
- Veterinary thermometers
- Alcohol
- Styrofoam box with ice
- Oesophageal probangs (large and small)
- Sharp pointed scissors
- Tissue forceps
- Sterile glass vials 20 ml with screw caps
- Phosphate buffered glycerine
- Masking or Adhesive tape 1 inch (2.5 cm) wide
- Bottles of conservation medium
- Ear Tags, pliers or other marking equipment
- Noselead
- Swine mouth speculum
- Paper towels
- Fiberglass or metal case
- Clipboard + paper
- Thermos flask
- Conservation medium (B or C) for OP samples
- Scalpel and blades
- Blood collection tubes
- 100 ml conservation medium for field samples
- Syringes (disposable) 20 ml
- Needles (disposable) 16-20 gauge
- 500 ml distilled water
- One pound (2 kg) common salt

3.2 PROCEDURE WHEN INVESTIGATING VETERINARIAN'S FIELD DIAGNOSIS IS NEGATIVE

3.2.1 - When a suspected emergency animal disease is reported and investigated and in the judgement of the Veterinarian the condition found is clearly not an emergency animal disease, a full written report should be submitted promptly to the Chief Veterinary Officer.

3.2.2 The report should include the following:

- Name and address of owner
- Name and address of person initially reporting the disease
- Location of premises preferably identified on map
- Species and number of animals including poultry on the premises
- Species and number of animals including poultry affected or dead
- Description of the symptoms including post-mortem examination if performed

- Conclusions as to the cause and the nature of the condition.

3.3 PROCEDURE WHEN INVESTIGATING VETERINARIAN'S FIELD DIAGNOSIS IS POSITIVE

3.3.1 - When a suspected Emergency Animal Disease is reported and investigated and in the judgement of the Veterinarian the condition found is suspected to be a vesicular disease, the following steps should be taken immediately by the Investigating Veterinarian:

3.3.1.1 - Quarantine of suspected premises.

3.3.1.2 - Inform the owner or caretaker of the suspicion, order that movements to and from the suspected premises be restricted and give reason for quarantine.

3.3.1.3 - Collect samples and forward to the Veterinary Diagnostic Laboratory for preparation for on-going to the Pan American Foot-and-Mouth Disease Center, Rio de Janeiro, Brazil.

3.3.1.4 - Promptly inform the Field Coordinator or the Chief Veterinary Officer or his designated representative of the positive field diagnosis.

3.3.1.5 - Inform and explain implications to the Police and Local Government to ensure that movement to and from the premises is restricted.

3.3.1.6 - Complete Epidemiological Report including a list of the number and species of animals on the farm.

3.3.1.7 - Arrange for an early systematic and thorough examination of susceptible species in the surrounding areas.

3.4 COLLECTION AND PREPARATION OF SAMPLES OF VESICULAR DISEASES

3.4.1 Examination for collection of sample material:

Examination should commence with animals that appear ill or show-lameness, or salivation or nasal discharge or a sudden reduction in milk production.

Examination should then proceed to the apparent healthy animals. It should be noted that often several animals have to be examined before adequate material is found suitable for laboratory examination.

3.4.2 Restraint of animals:

It is essential that animals be adequately restrained e.g. in a cattle chute or on the ground, in order that samples can be properly taken.

3.4.3 Specific tissues of specimens required for laboratory diagnosis of vesicular diseases:

3.4.3.1 - When a vesicular condition is suspected, specimens for laboratory confirmation should include:

- 5 grams of vesicular lesion tissue preserved in conservation medium
- 10 ml whole blood
- a minimum of 10 ml of serum.

3.4.3.2 - A probang specimen of 10 ml oesophageal-pharyngeal (OP) fluid in 10 ml of conservation medium. If probang is unavailable a sterile pharyngeal swab should be taken.

3.4.3.3 - If vesicular fluid is available it should be collected separately, frozen and submitted with other specimens.

3.4.4 Tissue for virus isolation:

3.4.4.1 - *Site for collecting sample material*

Whenever possible the sample should be taken from a fresh unbroken tongue vesicle. These vesicles or blisters may be one or more reaching a diameter of 2 inches (5.0 cm) or more with an irregular pale surface. The vesicles are not always easily recognized as a result the tongue must be thoroughly examined. The mucous membrane covering a vesicle serves as excellent material for laboratory tests. If already ruptured, the sample should be taken from the mucous membrane surrounding the lesions. Whenever possible, samples should be taken from many lesions, irrespective of site: tongue, gums, palate, lips, nostrils, udder and feet. Epithelial samples too easily detachable, with roten appearance generally do not contain virus for diagnosis. Earlier lesions should always be looked for.

3.4.4.2 - *Cleaning before taking sample material*

If the areas from which samples are to be taken are dirty e.g. feet, it is advisable to wash the area with water. Do not use soap, alcohol or other disinfectants as any existing virus may be destroyed.

3.4.4.3 - *Opening a vesicle*

A vesicle should be opened with a sharp-pointed pair of scissors; be cut along the edge of the lesion and the piece of epithelium removed with a pair of forceps.

3.4.4.4 - *Weight of sample material*

The sample material from an animal should weigh about 5 grams (equivalent to 2 square inches --13 sq cm) of tongue epithelium. The sample may be made up of several pieces of epithelium from the same animal in order to provide the required weight.

3.4.4.5 - *Mixing of sample material*

Each bottle must contain samples from only one animal. It is recommended that material from the mouth (tongue, gums, lips, palate) should not be mixed with material taken from the udder and feet.

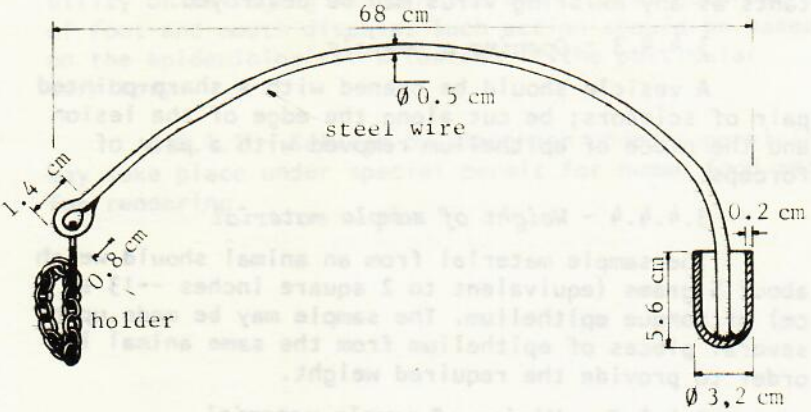
3.4.4.6 - *Conservation medium*

After the material is collected it is immediately placed into a bottle with conservation medium (see Annex II - Preparation of conservation medium). The bottle should be opened only momentarily. When a bottle with conservation medium is not on hand, use a bottle that has been cleaned and heat sterilized. When cooled, place the sample in the bottle.

3.4.5 Blood or sera for serology:

A blood sample should be taken from individually identified infected animals during the initial investigation to attempt virus isolation in case epithelial samples of good quality are not available. If 2 to 3 weeks have already elapsed examine for secondary cases in order to detect new lesions. If no secondary cases exist, quite likely it is not FMD. You may confirm negative diagnosis by a widespread serologic survey. *DO NOT RELY ON SERA FOR DIAGNOSIS.*

3.4.6 Procedure for collecting specimens from bovine and small ruminants using the probang (see the design)



Oesophageal-pharyngeal sample collector.

3.4.6.1 - The virus of FMD can become established in the surface epithelium of the pharyngeal region and multiply, creating a carrier status. This can occur in vaccinated animals exposed to virus, animals recovered from the infection and non-immune animals exposed to small quantities of virus. Carrier animals may or may not be serologically positive.

3.4.6.2 - The following simple technique should be used to collect specimens from bovines using the probang:

3.4.6.2.1 - The animal should be well restrained with the head held in a straight forward position and slightly elevated.

3.4.6.2.2 - The operator should face the animal, insert the probang cup into the mouth, then push the cup over the dorsal prominence of the tongue. With gentle pressure, the animal will swallow the cup.

3.4.6.2.3 - Allow the cup to pass into the oesophagus and by moving it back and forth it can be seen or palpated along the side of the neck, a swelling

that the cup is in the oesophagus and not in the trachea.

3.4.6.2.4 - Move the cup back and forth in the oesophageal-pharyngeal (OP) region with some vigour for five or six times.

3.4.6.2.5 - Withdraw the cup with a firm steady pressure, resulting in little or no injury to the animal. As the cup is withdrawn, care should be taken to keep the cup in an upright position to prevent spillage.

3.4.6.2.6 - After passage(s) of the probang, the specimen in the cup should be poured into the specimen container until 10 ml or more of specimen has been obtained. It is important that immediately after obtaining the desired amount of specimen an equal volume of the conservation medium should be added to the specimen and the contents of the specimen container should then be vigorously shaken for about one minute. About 1 ml of OP fluid will be obtained from small ruminants. Add to this 5 ml OP conservation medium.

3.4.6.2.7 - It should be noted that the probang should not be used in such a way that haemorrhages are produced, since blood in the specimen is undesirable.

The saliva per se is not what is required in the specimen, since it contains very little virus.

If the animal vomits during the collection procedure the material obtained should be discarded and a new material collected.

3.4.7 Preparation for shipment from Field to Laboratory:

3.4.7.1 - The bottles should be sealed with masking tape or sealing wax. They should be labelled with masking tape and the following information on the label should be written in pencil (ink tends to be illegible when wet):

(1) Property or place where the sample was collected
(2) Species
(3) Classification of Animal and Herd sampled:
    (a) Sex
    (b) Age
    (c) Identification if any
(4) Date of collection

3.4.7.2 - The outer surfaces of all bottles containing sample material should be quickly cleaned with a 4 percent sodium carbonate solution, then rinsed with pure water.

3.4.7.3 - It is advisable to keep the bottles of sample material frozen or shipped under refrigeration. Samples in bottles without conservation medium must be shipped frozen or on ice. Freezing may be readily accomplished by using a mixture of dry ice and alcohol and then maintained during shipment with ice mixed with sodium chloride (common salt). The bottles of sample material should be well protected to avoid damage during transport.

3.4.8 Dispatch of samples from Field to Laboratory:

The samples must be sent by safe and reliable means for personal delivery to the Veterinary Diagnostic Laboratory. In the event of a delay, the samples should be kept under refrigeration. Samples in bottles without conservation medium must be kept frozen or on ice at all times.

3.4.9 Epidemiological Report:

The batch of samples should be accompanied by an epidemiological report (see Annex III).

3.4.10 Cleaning and Disinfection after taking samples:

All personnel involved in the taking of samples must take care to thoroughly wash with a generous supply of water and soap. Hands, shoes and all equipment must be disinfected before leaving the property.

3.4.11 Shipment of samples to the Pan American Foot-and-Mouth Disease Center (PANAFTOSA):

3.4.11.1 - *Packing bottles of sample material.* For shipment of samples to PANAFTOSA, the bottles with sample material should be packed in sufficient cotton or other packing material to prevent damage, yet ensure complete absorption of the liquid medium should there be leakage from any source.

3.4.11.2 - A firm and secure wooden, metallic or other suitable container with a tightly fitting cover should be used to hold the wrapped sample bottles, with absorbent material used to fill any excess spaces thus

immobilizing the bottles from each other and within the container.

Addressee:

Director
Centro Pan-Americano de Febre Aftosa
Caixa Postal 589
20000 Rio de Janeiro, RJ
Brasil

3.4.11.3 - The following words should be written clearly and in a visible place on the outside of the package:

MUESTRA BIOLOGICA - ENTREGA PREFERENCIAL - URGENTE

BIOLOGICAL SPECIMEN - PERISHABLE - URGENT

OF NO COMMERCIAL VALUE - FRAGILE

Labels may be obtained on request from PANAFTOSA (see Annex IV).

3.4.11.4 - One of the most efficient means of forwarding samples suspected of FMD is by a courier travelling the most direct route to the Pan American Foot-and-Mouth Disease Center in Rio de Janeiro, Brazil. It is strongly recommended that this means of transportation be used where there are no other effective established means of shipment of such samples.

3.4.11.5 - Otherwise, an aeroplane making a direct flight to Rio de Janeiro should be used for dispatching samples and the package handed to a member of the crew who should be requested to place it in the refrigerator. If this arrangement is not possible, the most rapid air service should be used.

3.4.11.6 - The shipping documents prepared by the Airline Company should be presented to the Brazilian Consulate to obtain the authorization for the dispatch to Brazil. In case of any difficulty, reference should be made to the following decrees authorizing the unrestricted entry of samples, etc., destined for the Center.

3.4.11.7 - Atas Internacionais 341, citando o Artigo No. 19, parágrafo 3, letra b) do Decreto 32.180 do Governo Federal do Brasil, datado do dia 3 de janeiro de 1953 (D.O. 5/2/53, Fls. 1850-51), que promulga o Convênio para organização e funcionamento no Brasil,

do Centro Pan-Americano de Febre Aftosa e cujo texto original é o seguinte:

> O Centro seus haveres e bens estarão
>
> a .....
>
> b "Isentos de direitos aduaneiros, proibições e restrições com relação a materiais científicos ou outras mercadorias e artigos que importe ou exporte para uso de suas atividades técnicas e científicas. Subentende-se, porém, que os artigos importados livres de direitos não serão vendidos no Brasil, senão de conformidade com as condições que se estabeleçam com o Governo."

3.4.11.8 - At the time that the sample is mailed, a cable should be sent to the Center, indicating the date of the dispatch, name and flight number of airline used and the amount of samples sent. Cable should be addressed to: PANAFTOSA, RIO DE JANEIRO.
Telex No. is: (021) 30253 CPFA BR

If the dispatch is delayed the samples should be kept refrigerated.

3.5 IMMEDIATE ACTION OF INVESTIGATING VETERINARIAN AFTER PRELIMINARY DIAGNOSIS OF FMD

3.5.1 Quarantine of Infected Premises:

When a condition requiring emergency procedures is encountered, the Investigating Veterinarian will:

(a) issue a quarantine order;
(b) make a list of the number and species of animals involved; and
(c) inform owner or caretaker of the suspicion, nature of restrictions to be imposed and reason for quarantine (see Annex V).

3.5.2 Inform the Local Autorities including the Police:

The Local Autorities and Police should be informed so that they are made aware of the potential problem facing the community and for both agencies to provide urgent security for the quarantined infected

premises and easy acceptance of necessary official action related to the suspected outbreak.

3.5.3 Inform the Chief Veterinary Officer or other Senior Veterinary Officer(s) in his absence:

3.5.3.1 - The Chief Veterinary Officer or other Senior Veterinary Officers should be fully informed of the suspected outbreak by the most urgent means.

3.5.3.2 - It should be noted that this should not remove the need for the Investigating Veterinarian to use professional judgement to act within the laws of the territory as the circumstances dictate.

3.6 IMMEDIATE ACTION BY THE CHIEF VETERINARY OFFICER

The Chief Veterinary Officer as Task Force should immediately:

(a) alert the National Emergency Animal Disease Committee
(b) activate the Task Force.

3.7 IMMEDIATE ACTION BY THE FIELD COORDINATOR

(a) Establish headquarters.
(b) Establish the infected area, quarantine and buffer zones with the assistance of the Investigating Veterinarian. Checkpoints should be carefully identified, established and manned.
(c) Ensure the proper disposal of any dead animals.
(d) Institute cleaning and disinfection team(s).
(e) Institute trace back team(s).
(f) Institute inspection and diagnostic team(s).

3.8 IF THE DIAGNOSIS IS NEGATIVE FOR FMD

If the diagnosis is negative, mobilization ceases and the quarantine is lifted from the suspected premises.

3.9 OPTIONS WHEN THE DIAGNOSIS IS POSITIVE FOR FMD

The following are options in the absence of a predetermined national decision in the event of a positive diagnosis of FMD:

(a) euthanasia of infected and in-contact animals, or

(b) euthanasia of infected and in-contact animals in the infected area and vaccination of remaining susceptible population in the quarantine and buffer zones, or

(c) vaccination of susceptible animals in the quarantine and buffer zones.

3.10 PROCEDURES TO BE FOLLOWED AFTER THE CONFIRMATION OF THE DIAGNOSIS

3.10.1 Declaration of National Emergency:

The outbreak of foot-and-mouth disease should be declared a National Emergency.

3.10.2 - Member territories and relevant International Agencies should be informed.

3.10.3 - An information program should be prepared providing an accurate and immediate impact. At all stages the Information and Public Relations Officer should provide information through the news media and all other means at his disposal to inform and educate farmers, others in the livestock industry and the general public; and to promote goodwill in the emergency program.

3.10.4 Quarantine of Infected Area:

3.10.4.1 - When the presence of FMD is confirmed, the infected area should be quarantined or if previously quarantined, the quarantine should be amended to show the specific disease involved.

3.10.4.2 - Police and/or Military measures should be instituted to ensure strict security, night and day compliance with the terms of the quarantine until operations cease and the cleaning and disinfection teams have completed their tasks satisfactorily.

3.10.4.3 - All contaminated portions of premises must be soaked with a suitable disinfectant prior to cleaning.

3.10.4.4 - For the first seven days following the cessation of operations and the preliminary disinfection, movement of personnel and equipment from premises should be limited to that necessary to carry out emergency operations.

3.10.4.5 - If justified, other movements of personnel, equipment and non-susceptible species may be authorized after proper cleaning and disinfection.

3.11 ESTABLISHMENT OF A QUARANTINE ZONE AND BUFFER ZONE

3.11.1 Quarantine Zone:

3.11.1.1 - A quarantine zone should be established around the infected premises or area. This zone should have a minimum radius of about 5 miles (8 km) from the point of infection (or other distance as determined necessary), depending on the extent of infection. In establishing this zone, it is recommended that cognizance be given to the known free zone ensuring that enough distance exists in the quarantine zone to maintain the status of the free zone.

3.11.1.2 - Natural barriers such as rivers, swamps, forests should be considered when the perimeter of this zone is established.

3.11.1.3 - All premises which received animals from an infected premise within a two weeks period of the onset of the disease should be considered as infected until the contrary can be demonstrated and should be under observation for a minimum of three weeks. This area should also be included in the quarantine zone.

3.11.1.4 - If ever the infection spreads, the quarantine zone must be enlarged. As areas become free from infection, the zone should be reduced.

3.11.1.5 - The quarantine zone should be clearly outlined and information concerning its location should be adequately publicized. Quarantine signs should be posted in conspicuous places all around the zone.

3.11.1.6 - All animals and animal products within a quarantine zone should be restricted to their respective premises and may be moved only under permit issued by the Field Coordinator.

3.11.2 Buffer Zone:

A buffer zone should be established within the free zone bordering the quarantine zone. This zone may be 5 to 15 miles (8-24 km), or other distance as determined necessary. Natural barriers should be considered in the establishment of this zone. This zone is intended to maintain a strict supervision and surveillance by a team from the free zone.

3.12 INSPECTION OF QUARANTINE AND BUFFER ZONES

Animals in each zone should be inspected as rapidly as possible to determine the extent of the disease outbreak.

3.12.1 Procedures of Inspection within Quarantine Zone:

3.12.1.1 - The Veterinarian(s) and team(s) assigned to the quarantine zone should make daily inspections of the premises of the assigned sector.

3.12.1.2 - The Veterinarian should explain to the owner the reason for the visit, the location of the infected premises, the nature of the disease and how it is spread.

3.12.1.3 - The Veterinarian should advise the owners of immediate and specific precautions necessary to prevent the spread of the disease and to whom the owner should report any suspicious signs among his animals.

3.12.1.4 - The Veterinarian should observe all susceptible animals on the premises by walking among the animals in their normal habitat. Those lying down should be required to get up and move, in order to observe any lameness, weakness or other abnormalities. Animals should be observed closely for lacrimation, salivation, and increased respiration.

3.12.1.5 - Those animals showing suspicious signs should be restrained and a careful physical examination made, taking special note of:

(a) temperature
(b) mucous membranes
(c) buccal cavity and nares
(d) feet
(e) teats and udders.

All abnormalities should be recorded.

3.12.1.6 - Caution should be exercised to prevent damage to the mucous membranes.

3.12.1.7 - Suspicious cases must be reported immediately to the Field Coordinator.

3.12.2 Cessation of Daily Inspections:

3.12.2.1 - Daily inspections of non-infected herds in the quarantine zone should continue for 30 days following the recorded date of the last animal destroyed.

3.12.2.2 - Weekly inspections should then be conducted for an additional 30 days:

- after the date of completion of vaccination;
- after the last infected animal is observed.

3.12.3 Sanitary Measures - Quarantine Zone:

3.12.3.1 - Strict sanitary measures should be observed by Veterinarians and other members of the Inspection and Diagnostic Teams working within the Quarantine Zone. Rubber boots and gloves should be worn for each inspection and should be disinfected before entering and before leaving the premises. Disposable plastic boots and gloves as well are desirable if available.

3.12.3.2 - Vehicles should not be driven on to the premises unless absolutely necessary.

3.12.3.3 - Each contaminated equipment or clothing must be thoroughly cleaned and disinfected or tightly wrapped in plastic bags or containers before leaving the premises.

3.12.4 Census of animals:

3.12.4.1 - The need for a census should be clearly explained to the owner. Annex VI should be completed for each inspection at each farm.

3.12.4.2 - Any deviation from the previous census should be fully documented and explained on the form.

3.12.5 Buffer Zone Inspection:

Inspections in a Buffer Zone should be conducted by a Veterinarian. In the absence of a Veterinarian an Animal Health Assistant or other suitable trained personnel may make the inspection.

Livestock owners in this zone should be advised about the disease, told how it is spread, reason for inspection, requested to report any suspicious symptoms and informed concerning the person to whom they should report.

3.12.6 Procedures for Inspection within a Buffer Zone:

3.12.6.1 - All susceptible animals in the Buffer Zone should be inspected at least twice weekly.

3.12.6.2 - If an animal shows suspicious symptoms, a Veterinarian shall be required to make a diagnosis. The Veterinarian making such inspection should observe all animals on the premises, using the same procedure as described for inspection in the Quarantine Zone.

3.12.6.3 - Caution should be exercised to prevent damage to the mucous membrane.

3.12.6.4 - Suspicious cases must be reported immediately to the Field Coordinator.

3.12.7 Census of animals:

A census of all animals on the farm should be recorded each visit. Annex VI should be completed. Any deviation from the previous census should be fully documented and explained on the form.

3.12.8 Sanitary measures:

Protective clothing should be worn and strict cleansing and disinfecting procedures should be followed before entering and leaving the premises.

4. QUARANTINE AND BUFFER ZONE SECURITY (POLICE AND MILITARY)

4.1 CHECK POINTS IN QUARANTINE ZONE

4.1.1 Check points will be established on all roads at the perimeter of the Quarantine Zone.

4.1.2 The primary purpose of the check points is to control the movement of animals and animal products as well as material such as contaminated vehicles and farm products.

4.1.3 Check points are to be continued 24 hours each day for 30 days after infected animals have been euthanized or until the situation indicates the control is no longer needed.

4.1.4 In order not to impede the flow of traffic on all major roads at the perimeter of the quarantine zone, check points may be located inside the quarantine zone on rural roads feeding into major highways that leave the quarantine zone.

4.2 CHECK POINTS IN BUFFER ZONE

4.2.1 In the Buffer Zone, security will be accomplished primarily by police patrols. Patrols will perform the same function in the Buffer Zone as the check points in the Quarantine Zone.

4.2.2 Police patrols should be established and maintained on a 24-hour basis for 30 days after infected animals are euthanized or until the situation indicates that the patrols are no longer needed.

4.3 INFECTED PREMISES

The infected and direct contact-premises will have police or military personnel assigned on a 24-hour basis to ensure compliance with the terms of the quarantine.

4.4 QUARANTINE OF LIVESTOCK CONCENTRATION POINTS

4.4.1 The Task Force Coordinator should issue immediately an order for closure of all assembly points,

fairs and other livestock concentration points in the quarantine and buffer zones.

4.4.2 Those concentration points that may have been exposed before they were closed, should be cleaned and disinfected before being reopened.

4.4.3 Concentration points containing animals at time of closure should be handled in the following manner:

4.4.3.1 - Concentration points containing known infected or exposed animals should be handled as infected premises and all animals euthanized and disposed of or dealt with as deemed necessary by the Task Force Co-ordinator.

4.4.3.2 - At Concentration Points containing no known infected or exposed animals, all animals should be considered as those in a Quarantine Zone.

4.5 MOVEMENT OF ANIMALS TO SLAUGHTER

No animals should be allowed to move to a slaughter plant from within a Quarantine or Buffer Zone without a permit issued by the Field Coordinator.

4.6 CONTROL OF MILK AND MILK PRODUCTS

Milk and milk products produced within the Quarantine and Buffer Zones should not be fed to livestock unless heated to 145° F (63°C) for 30 minutes.

4.7 MOVEMENT OF MILK IN A QUARANTINE ZONE

Milk in a Quarantine Zone may be:

(1) used on the premises of origin;
(2) destroyed by a method that will prevent the spread of disease e.g. dumping in pits and covering;
(3) processed at a plant within the Quarantine Zone by procedures effective in destroying the FMD virus. Presently these procedures are:
    (a) manufacturing of cheese and sour cream butter,
    (b) heating to 145° F (63°C) for 30 minutes

(4) milk moving from farm to plant within a Quarantine Zone must be moved under a permit issued by the Field Coordinator; and

(5) restrictions on the movement of milk in a Quarantine Zone will remain in effect for a period of 30 days following euthanasia of the last case of the disease, or as deemed necessary by the Task Force Coordinator.

4.8 MOVEMENT OF MILK IN A BUFFER ZONE

Fluid milk may be moved from farm to plant in a Buffer Zone directly to a plant for standard pasteurization provided the final product will be utilized in the Zone for human consumption.

4.9 BULK TANKS AND OTHER MILK TRUCKS OPERATING IN THE QUARANTINE AND BUFFER ZONES

4.9.1 Milk leaving the farm in cans should be placed at the farm entrance so that the truck can pick them up without entering the premises.

4.9.2 All milk bulk tank trucks should have a disinfectant tank, pressure pump and hose mounted on them. At the entrance of the farm, the tyres, wheels and undercarriage and floor mats, as well as the boots of the driver, should be sprayed before the truck enters the farm.

4.9.3 Any spillage of milk at the farm should be thoroughly saturated with an approved disinfectant.

4.9.4 At the exit of the farm spraying as done on entry should again be carried out. The process should be repeated at each farm.

4.9.5 Establish a cleaning and disinfectant station at delivery points or processing plants and each time the truck arrives it should be cleaned and disinfected before it is allowed to go out to collect another load.

4.10 MILK CANS UTILIZED IN THE QUARANTINE AND BUFFER ZONES

4.10.1 The outside of the milk cans should be sponged with a 4 percent solution of sodium carbonate

when they are placed at the entrance to the farm.

4.10.2 The collecting truck should collect the milk cans and deliver them to the processing plant where they should be washed and sterilized.

4.10.3 A separate truck and driver should return sterilized cans to the entrance of each farm.

4.11 MILK PLANT EMPLOYEES

All employees of a milk plant, including drivers, handling milk from a Quarantine of Buffer Zone should be prohibited from having any contact with their own or other livestock during the restriction period.

4.12 CONTACT PREMISES

Diseases may be spread by direct or indirect contact. The following actions should be taken as a result of certain specific types and degrees of contact:

4.12.1 Direct Contact:

4.12.1.1 - Premises adjacent to infected premises are considered as contact premises. For eradication purposes contact premises must be handled the same as infected premises.

4.12.1.2 - Animals moved from infected premises to other premises during the 10 days (or longer if circumstances dictate) before the onset of the disease constitute a direct contact.

The receiving premises must be handled the same as infected premises. Premises adjacent to the receiving premises may also be included as contact premises if circumstances dictate. Premises receiving animals from infected premises 11 days to 3 weeks before the onset of the disease should be placed under quarantine and inspected daily for 21 days.

4.12.1.3 - The caring of susceptible animals on other premises by employees from infected premises will constitute a direct contact. Such premises must be handled the same as infected premises.

4.12.2 Indirect Contact:

4.12.2.1 - Indirect contact with infected premises are defined as those occurring when veterinarians, artificial inseminators, salesmen, employees, family members or others visit other premises after leaving the infected premises.

4.12.2.2 - Movement of farm products, farm equipment, feed and milk trucks also constitute indirect contact. Premises considered as indirect contact must be quarantined and susceptible animals inspected daily for at least 21 days.

5. VALUATION AND INDEMNITY PROCEDURES

5.1 VALUATION OF ANIMALS, PRODUCTS AND MATERIALS

All animals, products and materials destroyed because of infection or because they were exposed to ot contaminated by FMD virus should be valued.

5.2 VALUATION TEAM

5.2.1 Valuation should represent the interest of the owner and the Government.

5.2.2 A Valuation Team should be assigned to each infected premises as soon as possible after a confirmed diagnosis to ensure rapid valuation of the animals, products and materials which might be destroyed due to the FMD infection.

5.2.3 Every effort should be made to have the valuation forms (see Annex VII) signed by the owner before euthanasia commences.

5.2.4 Upon arrival at the entrance to the infected premises, the Valuation Team should change to protective clothing prior to entry.

The Team should be provided with a packet containing:

- 1 polyethylene plastic bag
- Valuation Forms
- 1 vial ethylene oxide
- blank paper and pen.

5.3 VALUATION PROCEDURES

5.3.1 Determine the correct name and address of each owner or owners.

5.3.2 Review with the owner or his designated representative, the number of animals by species and location of the farm. Draw a rough map of the premises and indicate the location of each group. Check off each group as it is valued.

5.3.3 The Team may use any other method that is convenient.

The valuation of animals may be based on fair market value as a minimum. Animals and poultry of the same species and type may be valued in groups, provided that all animals or birds in the group are the same value per head or per pound (or per kg).

5.3.4 Every effort should be made to value animals in the presence of the owner or his designated representative.

5.3.5 The weight of the animals to be destroyed should be agreed upon by the Valuation Team with the owner or his representative. No actual weighing should be necessary.

5.3.6 The Valuation Team should advise the Field Co-ordinator immediately upon completion of valuation so that eradication measures may be started.

5.3.7 A signed copy of the Valuation Form is left with the owner.

5.3.8 On leaving the infected premises, the Valuation Team should:

5.3.8.1 - Clean and disinfect.

5.3.8.2 - Change clothing.

5.3.8.3 - Place the vial of ethylene oxide and all forms and other items used on the premises, in the plastic bags; add a wet pledget of cotton and seal the bag as the ideal humidity for effective action of ethylene oxide is 30 percent.

5.3.8.4 - The ideal temperature for effective action of ethylene oxide is above 70° F (21°C) so the vial should be appropriately warmed before it is broken in the sealed bag. The time the vial of ethylene oxide is broken should be written on the outside of the plastic bag and the bag should not be opened for a minimum of 12 hours.

5.3.8.5 - For at least 7 days after the last visit to an infected premises, members of the Valuation Team should not visit farms or be in contact with any livestock except other infected or exposed premises to which the member may be assigned.

5.3.8.6 - Following a visit to an infected premises members of the Valuation Team should avoid places of public gatherings until they have showered and changed into freshly laundered clothing.

5.3.8.7 - Following euthanasia of all animals on the farm, the Task Force Veterinarian should sign the slaughter certificate (see Annex VII). A copy should be left with the owner or his designated representative.

5.3.8.8 - The owner should take his copy of the Valuation Form and slaughter certificate to the designated office for payment.

6. EUTHANASIA AND DISPOSAL PROCEDURES

6.1 EUTHANASIA

6.1.1 Fire arms:

Rifles -22 calibre or longer should be used for the euthanasia of large animals except when they are confined, a 32 calibre pistol may be used at close range. Captive bolt pistols are recommended for use on small animals (pigs, sheep, goats, calves).

6.1.2 Supervision of Euthanasia:

Unnecessary movement should be avoided and the holding area should be adequate to prevent escape. Euthanasia should be under the direct supervision of a Veterinarian to ensure that humane methods are used at all times. Each animal should be checked after euthanasia to establish certainty of death.

6.1.3 Procedures of Euthanasia:

6.1.3.1 - It is desirable to euthanize animals in a trench after they have been driven into it. When dealing with small herds, the entire herd may be driven into the trench.

6.1.3.2 - After a group is euthanized in the trench, the thoracic and abdominal cavities of all carcasses should be opened and the muscles slashed. The carcass should be positioned to permit the entry of the next group.

6.1.3.3 - Lime should not be used on carcasses as it is believed that it retards natural decay processes which in themselves bring about virus inactivation.

6.1.3.4 - In some instances, it may be necessary to construct a corral conveniently located near the trench. In such cases euthanasia may take place in the corral, then the carcasses may be pushed into the trench.

6.1.4 Other methods of Euthanasia:

6.1.4.1 - A solution of 100 mg of succinylcholine chloride per ml of tap water injected intracardially, intravenously or intramuscularly is rapid in swine euthanasia.

6.1.4.2 - Carbon dioxide gas in chambers.

CAUTION: *Such agents as succinylcholine chloride and carbon dioxide will produce the same effect in man as in animals. Therefore extreme precautions must be taken to prevent accidental injections.*

6.2 DISPOSAL AND BURIAL

Burying is the preferred method of disposal and should be used whenever practicable. Digging the disposal trench should begin as soon as a decision is made to euthanize the animals.

6.3 BURIAL SITE

6.3.1 The site should be on the infected premises. In the selection of a burial site consideration should be given to underground cables, waterlines and wells.

6.3.2 In digging trenches care should be taken not to contaminate streams or water sources. In some areas the water table is high enough to prevent the use of deep trenches.

6.3.3 Where possible choose an area away from public view.

6.4 TRENCH DIMENSION

A burial trench should be at least 7 ft (2 meters) wide and 9 ft (3 meters) deep. At this depth 14 square feet (1.5 square meters) of floor space is required for each bovine carcass (5 mature hogs or sheep are equal to one bovine carcass).

6.5 DISPOSAL OF FEED, MILK, MANURE AND MISCELLANEOUS ITEMS

6.5.1 Such items should be placed in the trench with or without the carcass and covered with at least 6 feet of soil.

6.5.2 Decomposition and gas formation will crack a tightly packed trench causing it to bubble and leak fluids.

6.6 DISPOSAL BY BURNING

Burning carcasses is difficult and time consuming. This method should be used only when burial is not feasible because of conditions such as high water table, excessive rock or for public health reasons.

6.6.1 Selection of Site for Burning:

6.6.1.1 - The site should be readily accessible to heavy vehicles.

6.6.1.2 - It should be well away from buildings, planted crops, electric and telephone cables.

6.6.2 Burning Procedures:

6.6.2.1 - The carcasses should be placed on an elevated platform constructed of materials as wood, straw, old tyres.

6.6.2.2 - Until carcasses are destroyed the fire should be guarded to avoid dissemination of infected material by predatory animals or birds.

6.6.2.3 - The fire should be tended and rearranged periodically as it progresses.

6.6.3 Fuel Requirements:

6.6.3.1 - *Heavy timber*: Allow 3 pieces (about 8 ft — 2.5 meters — long by 1 square foot — 0.1 square meter — in cross section) per cattle carcass. When fence posts or cord wood is used, proportionately more pieces will be needed.

6.6.3.2 - *Old tires*: Allow 8-10 tires per cattle carcass.

6.6.3.3 - *Liquid fuel*: Waste oil or diesel fuel in sufficient quantity to soak the materials before fuel is lighted.

6.6.3.4 - Other materials as the shell of the coconut, wood coal, may be added.

6.6.3.5 - *Estimation of animals*:

1 cow or bull = 5 mature pigs
= 5 mature sheep.

6.6.4 Salvage:

6.6.4.1 - Territories adopting the euthanasia policy should give strong consideration to the possibility of salvaging meat in the event of an outbreak of foot-and-mouth disease. Such action should be based on the epidemiological situation in the particular territory.

6.6.4.2 - Salvage by slaughter under supervision may take place under special permit for human food and for rendering.

7. VACCINATION

7.1 SUPERVISION OF VACCINATION

Vaccination should be carried out under the supervision of a Task Force Veterinarian.

7.2 PROCEDURES FOR VACCINATION

In the event of a decision to vaccinate, the procedures that should be followed are:

7.2.1 The Pan American Foot-and-Mouth Disease Center after providing information on the type of virus involved, should be requested to supply the relevant number of doses of monovalent vaccine.

7.2.2 The Pan American Foot-and-Mouth Disease Center should cable the expected arrival (date, time and carrier) of the vaccine.

7.2.3 On arrival the vaccine should be adequately stored under refrigeration.

7.2.4 Vaccination Team(s) should commence vaccination from within the Buffer Zone moving into the Quarantine Zone. Teams should work in sectors ensuring that all appropriate animals are vaccinated.

7.2.5 Animals receiving the first vaccination should be adequately marked for reference at subsequent vaccination(s).

7.2.6 Members of Vaccination Team(s) should at all times carry out the approved cleaning and disinfection procedures.

8. CLEANING AND DISINFECTION

8.1 EQUIPMENT

The members of the team involved in cleaning and disinfection will be supplied with plastic or rubber outfit including boots, coveralls, hats and gloves.

Street clothes should not be permitted on infected premises.

8.2 PROCEDURES FOR CLEANING AND DISINFECTION

Cleaning and Disinfection Team(s) should be assigned to each premises immediately following confirmation of diagnosis.

8.2.1 Equipment:

8.2.1.1 - Equipment such as buckets, brushes, scrapers, disinfectants, high pressure spray pump or other spray pumps should be available at the gate for cleaning and disinfecting personnel, trucks and other equipment leaving the premises.

8.2.1.2 - Before initiating cleaning operations, spray all contaminated areas and buildings with an approved disinfectant (see Annex VIII).

8.2.1.3 - The Fire Department's equipment may be available in some areas and is very useful for cleaning equipment and buildings. The Field Coordinator should determine the need and availability of such equipment in the area when disinfection is necessary.

8.2.2 Buildings:

8.2.2.1 - All buildings that could possibly have been contaminated should be cleaned and disinfected including those used by susceptible animals or other livestock and poultry.

8.2.2.2 - The interior of buildings to be disinfected must be thoroughly cleaned. All straw, feed, loose litter and trash must be removed, burned and/or buried.

8.2.2.3 - Encrusted floors, walls and stalls should be scraped and scrubbed. Parts of buildings such

as stalls, feed boxes, and wooded floors which are decayed or in such condition that they cannot be thoroughly cleaned should be removed and burned. In some instances it may be necessary to destroy entire old buildings and their contents to ensure elimination of the infectious agent.

8.2.2.4 - Provision must be made for directing wash water into a confined drainage system or ditch that can be later filled in and buried.

8.2.2.5 - When cleaning has been completed, the entire interior and exterior of the structure should be saturated with an approved disinfectant solution. A power spray capable of developing high pressure of 200 pounds per square inch (16 kg per square cm) or higher, should be used on all surfaces to make sure the spray gets into cracks.

8.2.2.6 - When the floor of the building is composed of earth or is pervious to water, the surface is broken and then thoroughly soaked with disinfectant.

8.2.3 Manure Disposal:

All manure and bedding that cannot be burned or buried should be composted with an inch layer of sodium carbonate placed on the surface to protect from birds and insects. The compost area should be fenced to prevent livestock from gaining access. Manure should remain composted for at least 60 days before it is spread in open fields.

8.2.4 Yards, Fences, Stables:

The surrounding walls, fences, stables are first sprayed with sodium carbonate, then scraped and scrubbed and then sprayed again with disinfectant.

8.2.5 Hay, Straw, Crops, Sacks of Feed:

8.2.5.1 - If contaminated, should be burned or buried. If it is necessary to salvage hay, straw or grain where large quantities are stored a careful study should be made to determine the extent of contamination. All possibly contaminated areas should be destroyed by burning or burial.

8.2.5.2 - The surfaces of the remaining straw, grain or sacks of feed should be thoroughly sprayed

with 4 percent formaldehyde solution once daily for 4 days.

8.2.5.3 - Feed treated with formaldehyde is safe to feed to animals after a vaporization period of a few days, however, such feed should not be used for a period of at least 30 days.

8.2.6 Silage:

8.2.6.1 - A pH below 5 inactivates the virus of FMD (silage is generally at a pH on 3.5 to 4.8). Contaminated portions of the silage should be burned or buried. The remaining silage should be sealed off for a minimum of 30 days before being used as animal feed.

8.2.6.2 - It may be necessary to plow under fields of crops that are contaminated.

8.2.7 Milk and Milk products:

8.2.7.1 - All milk and milk products on infected farm should be acidified before disposal by mixing sufficient acetic acid to lower the pH to below 5 (3 parts glacial acetic acid to 97 parts milk).

8.2.7.2 - Milk should be placed in an open container such as a wide mouthed barrel because the addition of acid will cause the milk to curdle. After acidification the milk should be buried.

8.2.8 Milking Equipment:

8.2.8.1 - The pipeline milking system should be assembled as for normal cleaning operations and a hot detergent solution pumped through it for at least one hour. Following this procedure, the system must be disassembled and cleaned with a 3 percent sodium hydroxide solution. Air lines and other parts not reached by the normal pump through cleaning should be disassembled and cleaned with 2 percent sodium hydroxide solution.

8.2.8.2 - Bucket type systems should be disassembled and rubber and plastic parts burned. Metal parts should be washed in detergent and dipped in 2 percent sodium hydroxide solution.

8.2.8.3 - All milk holding tanks, buckets, cans, wash basin and other equipment in the dairy should be thoroughly washed with detergent and 2 percent sodium

hydroxide solution applied afterwards. Miscellaneous items as sponges, rags must be burned. Milk parlor and milk room will be cleaned and disinfected as other buildings with 2 percent acetic acid being used in place of 2 percent sodium hydroxide.

8.2.9 Dogs and other non-susceptible domestic species on the infected premises:

All such animals should be confined until disinfection of the premises is completed. Before being released, dogs, cats and such animals should be dipped, sprayed or sponged with a 2 percent acetic acid solution. Stray dogs and cats should be confined or destroyed. Farmers should be informed on this matter.

8.2.10 Eggs and poultry on the infected premises:

8.2.10.1 - Poultry should not be allowed to leave the infected premises until 30 days after the completion of cleaning and disinfection.

8.2.10.2 - Eggs should not be allowed to leave the infected premises except by permit issued by the Field Coordinator. Permits for the movement of eggs may be issued provided the trays, cases or other container are cleaned and disinfected.

8.2.11 Clothing and equipment belonging to personnel on the infected premises:

Shoes, clothing, ropes, curry combs, farm vehicles, personal cars, veterinary syringes, needles and other possibly contaminated items used by the owner or others in handling animals should be destroyed or thoroughly cleaned and disinfected or fumigated.

8.2.12 Fumigation:

8.2.12.1 - Items to be fumigated should be placed in a tight enclosure or room. For every 1000 cubic feet (28 cubic meters) of space to be fumigated, 1 pound (454 g) of potassium permanganate and 1 pint (.6 liter) of formalin (40 percent formaldehyde solution) should be mixed.

8.2.12.2 - The potassium permanganate must be placed in an open container and the formalin poured on just before the enclosure is sealed.

8.2.12.3 - The container should be made of metal and must be deep enough to ensure that the contents do not spill on the material being fumigated.

8.2.12.4 - The gas should be allowed to act for at least 10 hours before the enclosure is opened. The temperature of the room must be over 65° F (18°C). Formaldehyde is most effective in moist air. The humidity of the sealed room may be raised with pans of water or by hanging wet blankets. The procedure is not recommended for items that can be washed with liquid disinfectant.

8.2.12.5 - Ethylene oxide may be used for fumigation in small packages or containers.

8.2.13 Insects and Rodents:

8.2.13.1 - Insects and rodents may serve as mechanical vectors. When the cleaning and disinfection operations are initiated, the rodents will migrate to other farms in search of food. An early survey should be made to determine the need for insect and rodent control.

8.2.13.2 - A tick and louse control program may be necessary in some foreign disease outbreaks.

8.2.14 Cleaning and Disinfection at Slaughter Plant (Abattoir):

When it is determined that the plant has handled infected or exposed animals the following procedures should be followed:

8.2.14.1 - Investigate whether meat already passed for human consumption has been contaminated or exposed to the virus.

8.2.14.2 - Meat and hides from infected or exposed animals should be burned or buried.

- Other hides may be placed in an approved soak or moved under supervision directly to a tannery.

- The approved soak is 1:10,000 solution of sodium bifluoride at an initial pH of 3.8. Hides must be soaked for 24 hours during which time the solution should not exceed a pH of 5.

8.2.14.3 - Horns, hoofs and offal from unexposed animals may be rendered on the premises, moved under supervision direct to an approved rendering plant or buried.

8.2.14.4 - The building, other facilities and equipment should be cleaned and disinfected as indicated under "Buildings" (see section 8.2.2).

9. TESTING OF PREMISES

9.1 - No animal should be allowed on the farm for at least 30 days following completion of cleaning and disinfection. At the end of this period test animals should be placed on the farm for 30 days to detect residual virus which may have escaped the cleaning and disinfection procedures.

9.2 - The number of test animals to be placed on the farm will be determined by the size of the farm and the number of animals normally kept on the premises. The number of test animals should be 5 percent of the susceptible animals normally kept on the premises but not less than 5 animals. Each group of test animals should include pigs and cattle. Sheep and goats should also be included if the farm had sheep and goats at the time of the outbreak of the infection. Swine weighing about 100 lb (45 kg) each and yearling calves are the most desirable for testing purposes.

9.3 - Test animals should be procured from an area known to be free from foot-and-mouth disease.

9.4 - Test animals should be individually identified. A 20 ml blood sample should be collected from all test animals and a probang sample should be collected from each ruminant before the animals are placed on the farm to be tested.

9.5 - Each animal should be thoroughly examined and all lesions, scars of the oral mucosa, feet, udder and body recorded.

9.6 - Feed for test animals should not irritate the mucosa and should be obtained from an area known to be free of foot-and-mouth disease.

9.7 - The vehicles transporting such feed should be cleaned and disinfected.

9.8 - Test animals should be allowed to come in contact with all parts of the premises.

9.9 - Cleaning and disinfection requirements for entering and leaving the premises should remain in force during the test period.

9.10 - Veterinary inspection of test animals should be initiated 48 hours after the animals have been placed on the premises and should continue at 48-hour intervals for the first 10 days. Afterwards, the inspection intervals may be extended to semiweekly inspections for the remainder of the test period.

9.11 - At the conclusion of the 30 day test period, a 20 ml blood sample should be collected from each animal. The serum separated and submitted along with a probang sample from each ruminant to the laboratory.

9.12 - Provided the tests are negative and there has been no infection within a 10-mile (16 km) radius within 30 days, the owner may be permitted to restock to 20 percent of the original livestock population on the farm.

9.13 - The restocked animals shall be inspected every week for 60 days after which the owner will be allowed to restock completely.

9.14 Quarantine Release (see Annex IX):

9.14.1 When a euthanasia policy is adopted, infected premises may be released from quarantine at the discretion of the Task Force Coordinator, after premises have been tested, provided there is no active infection within a 10-mile (16 km) radius of the premises. This involves the issue to the owner or his designated representative a "Withdrawal of Quarantine Notice". Such notice should be gazetted.

9.14.2 The withdrawal of quarantine of Infected Areas, Quarantine and Buffer Zones should be at the discretion of the Task Force Coordinator and should be gazetted.

9.14.3 When a vaccination policy is adopted the withdrawal of quarantine on Infected Premises, Infected Area, Quarantine and Buffer Zones should be at the discretion of the Task Force Coordinator based on epidemiological evidence such as surveillance of virus-infection-associated (VIA) antigens and detection of virus carriers. Such withdrawal of quarantine should be gazetted.

10. TRACING ANIMALS AND ANIMAL PRODUCTS

10.1 NEED FOR TRACING

10.1.1 The ability to rapidly and effectively trace the movement of animals, animal products and related materials in the very beginning of an outbreak of foot-and-mouth disease is the key to the successful control of the disease as well as the determination of its source.

10.1.2 Tracing affords the opportunity of slaughtering or otherwise dealing with exposed herds before they develop the disease, thus preventing further spread.

10.1.3 Depending on the number of movements, tracing may require much manpower and careful and systematic coordination.

10.2 TRACING MOVEMENTS OF ANIMALS, ANIMAL PRODUCTS AND RELATED MATERIALS TO AND FROM AN INFECTED PREMISES

10.2.1 Immediately upon confirmation of diagnosis of infection on a farm and concurrently with the initiation of eradication procedures, information must be obtained from the owner and employees regarding movements of animals, milk, meat, manure, farm equipment, vehicles, feedstuffs, people, pets, etc. onto or from the farm within the past 21 days, or longer, if the infection has been on the premises for some time.

10.2.2 The date of movement, the type of movement and the destination of the movement with complete addresses must be provided to ensure that such exposed premises are located and quarantined immediately.

10.2.3 It is advisable to plot on a map all the movements to and from the infected premises. Premises may then be assigned for investigation to prevent any being overlooked. On the map, specific marks of identification may be used to identify the current situation, e.g. black pins for movement,

pink pins for quarantine, blue pins for "free" at first inspection, yellow for "free" at second inspection. If infection is found or the herd is to be slaughtered because of exposure, the pin should be changed to red; green pins for release from quarantine.

10.2.4 The Veterinarian coordinating the tracing should be knowledgeable in epidemiology.

10.3 TRACING FROM AN INFECTED ABATTOIR OR PACKING PLANT

Tracing of fresh, frozen or chilled animal products may prove to be an arduous task. Movements should be listed and grouped with each shipment evaluated in terms of its potential for spread of the disease.

10.4 TRACING VETERINARY PRACTITIONERS' MOVEMENTS

10.4.1 Veterinary practitioners working in the Affected Area should be informed of the existence of the disease. They should be requested to report:
(a) whether they have visited any premises which subsequently were considered as infected, and
(b) whether other farms were visited following the visit to such premise(s).

10.4.2 Detailed reports should be obtained identifying animals treated, method of treatment, equipment used, disinfection procedure used on all the farms visited.

10.4.3 The practitioner's vehicle, work clothes, equipment should be cleaned and disinfected and a request made not to have contact with livestock for 7 days. The remainder of any drugs used and which may have been contaminated should be burned or buried.

10.4.4 Each farm potentially exposed should be placed under daily inspection for a minimum of 21 days. if visits were made outside the Quarantine Zone, those farms should be quarantined if exposure was of sufficient magnitude.

10.4.5 The above measures may be applicable to Artificial Insemination Officers, Agricultural Extension staff and other livestock personnel.

11. ARTIFICIAL INSEMINATION

11.1 RESTRICTIONS INSIDE QUARANTINE ZONE

11.1.1 Artificial insemination may only be practiced in a Quarantine Zone by the individual owners provided semen is obtained from outside the Quarantine Zone and administered by the owner or his employee residing on the premises.

11.1.2 All artificial insemination centers and stud stations located in a Quarantine Zone shall cease to dispense or ship semen.

11.2 RESTRICTIONS OUTSIDE QUARANTINE ZONE

11.2.1 Artificial inseminators may continue to operate with semen from collection establishments outside the Quarantine Zone provided they do not enter a Quarantine Zone.

11.2.2 All artificial inseminators must practice approved personal cleaning and disinfection procedures upon entering and leaving each farm.

12. WILDLIFE

12.1 ERADICATION OF FOOT-AND-MOUTH DISEASE IN WILDLIFE

12.1.1 Initial actions:

12.1.1.1 - Establish a wildlife unit under the supervision of the Field Coordinator. It is advisable to have in the unit a wildlife biologist or a representative of Wildlife Conservation.

12.1.1.2 - Review maps with local personnel and determine area to be included in quarantine and buffer zones.

12.1.1.3 - Determine the need for euthanasia and all it entails. The size of the area, wildlife density, methods of control and disposal will influence personnel requirements.

12.1.1.4 - Military personnel should provide significant assistance in this exercise.

12.1.2 Euthanasia procedures:

12.1.2.1 - Establish quarantine and buffer zones following the same recomendations as for cattle.

12.1.2.2 - The Buffer Zone could vary in size and it is recommended a radius of 5 miles (8 km) or more for high animal density or 3 miles (4.8 km) for low animal density.

12.1.2.3 - The Quarantine Zone should be divided into sectors and euthanasia personnel assigned accordingly.

12.1.2.4 - Inspection and diagnostic team(s) should accompany the wildlife euthanasia personnel and collect tissue, blood and oesophageal-pharyngeal fluids for laboratory tests.

12.1.2.5 - Disposal should not be attempted in inaccessible places or should be on a limited basis. When carcasses are accessible, they should be burnt or buried.

12.1.3 Cleaning and Disinfection:

12.1.3.1 - Personnel, equipment, vehicles, etc. on leaving the Quarantine and Buffer Zones must be cleaned and disinfected.

12.1.3.2 - Ethylene oxide may be used as fumigant on corrosive sensitive equipment such as guns and binoculars.

12.1.3.3 - Sodium carbonate should be used to disinfect all other equipment.

GENERAL SUPPLY GUIDELINE

1. ADMINISTRATIVE SUPPLIES FOR EMERGENCY FIELD KIT

- Pads
- Pencils
- Ballpoint pens
- Carbon paper
- Stapler and box staples
- Paper clips
- Thumbtacks
- Rubberbands
- Manila folders
- Scotch tape
- Masking tape
- Adhesive tape
- Markers: assorted colors
- Wax pencils: assorted colors
- Stamp pad
- Stamp pad ink
- Maps
- Scissors
- First air kit
- Expansion folders
- Note books
- Copy of Animal Disease Act (Ordinance)

2. VEHICLES FOR INSPECTIONS AND PATROLS

3. PROTECTIVE CLOTHING AND PERSONAL DISINFECTION EQUIPMENT

- Fiberglass, metal, or other suitable container for equipment
- Coveralls
- Plastic or rubber coat
- Plastic or rubber pants
- Plastic or rubber boots
- Plastic or rubber gloves (heavy)
- Surgical rubber gloves
- Large plastic bags
- Rubber hat
- Bucket
- Sponge
- Brush (boot)
- Appropriate disinfectant

4. EQUIPMENT FOR VETERINARIANS MAKING INSPECTIONS

- 20 cc vials of phosphate buffered glycerine or other conservation medium
- Probangs - 1 large and 1 small
- Conservation medium (B or C) for OP samples
- Nose lead
- Lariat
- Flashlight
- Towels
- Veterinary thermometers
- Thermos bottle
- 5-1/2 in. sharp pointed scissors
- Bard Parker Handle No. 3 and pack of 10 blades
- 5-1/2 in. tissue forceps

- 20 cc disposable syringes of 15 cc BV-Vacutainers
- 20 cc sterile glass vials
- 1-1/2 in. 20 gauge disposable needles
- 1 in.-wide masking tape
- Metal clip board
- Swine mouth speculum
- Hog holder - 1
- Fiberglass or metal case 12x23x24 in.
- Official ear tags and ear tag pliers
- Ethyl alcohol (can be isoprophyl)
- Dry ice
- Waterproof tape
- Metal pan 12x12x4 in.
- Styrofoam specimen container with ice

This list is not intended to limit or prevent selection of additional equipment deemed necessary.

5. DISPOSAL EQUIPMENT AND SUPPLIES

5.1 Heavy Equipment:

- Draglines
- Bulldozers
- Hydraulic diggers
- Chain link fencing material
- Tractors with scoops and scrapers and forklifts
- Trucks and trailers

5.2 Burning Supplies:

- Straw
- Heavy timber
- Old tires
- Wood
- Coal
- Fuel oil

5.3 Miscellaneous Equipment:

- Knives for slashing and knife scabbards
- Sharpening stones and steels
- Heavy chains (logging chains) for lifting carcasses onto firebed
- Tents, trailers
- Ethylene oxide for fumigation

6. CLEANING AND DISINFECTION EQUIPMENT

The following list of equipment is to be supplied to each cleaning and disinfection team on each infected premises immediately upon confirmation of disease. If all items are not readily available, improvise:

- Manure forks
- Shovels
- Garden rakes
- Pliers
- Buckets
- Wire brushes with scraper noses
- Scrapers (long handle)
- Hoes
- Heavy brooms
- Power spray unit and tank
- 50 ft. lengths of 3/4 in. pressure hosewith connector on each end
- 15 ft. suction hose with connectors
- Spray nozzle
- Rubber gloves
- Screw driver
- Claw hammer
- Vineger (to counteract sodium hydroxide NaOH accidentally spilled onto a person
- Rubber coats
- Rubber hats
- Adjustable crescent wrench 12 in. size
- Sponges
- Safety goggles
- Plastic tub, 10 gal.
- Long-handle fiber brushes
- Soda ash
- Sodium hydroxide
- Liquid detergent
- Long handle-scrapers (may improvise by straightening garden hoe)
- Axes
- Crowbars
- Hatchets
- Cans (10 gal.)
- 1,000 watt generator with 100 feet of wiring and 10 sockets
- Post hole diggers
- Tent or shelter

INSTRUCTIONS FOR THE PREPARATION OF CONSERVATION MEDIUM (A) PHOSPHATE BUFFERED GLYCERINE*

1. FORMULA

Monobasic potassium phosphate (KH_2PO_4)	1.80 g
Diabasic potassium phosphate (K_2HPO_4)	2.30 g
Distilled water	1000 ml

2. To this solution should be added an equal quantity of neutral glycerine.

3. pH. This glycerine buffer solution normally has a pH of 7.4 - 7.8. If the pH proves too high, more monobasic potassium phosphate (KH_2PO_4) should be added. In the case of a too low pH, this could be corrected by adding more diabasic phosphate (K_2HPO_4).

   This formula could be replaced by any other glycerine-phosphate mixture with a pH of 7.4 - 7.8.

*Phosphate buffered glycerine is recommended for the conservation of epithelial tissues only.

EPIDEMIOLOGICAL REPORT

EPIDEMIOLOGICAL REPORT	Name of Veterinarian	Date of Report	Date observed by owner	Date of Investigation	Date first reported to Task Force

Name and Address of owner of animals	Name and Address of owner of premises

Location of Premises	Ward/District	County/Parish/Region	Distance from nearest city or town	Reported by:

History and examination of animals

Kind	ANIMALS						LESIONS										Age of Lesion
	Total Number	AFFECTED			NUMBER		MOUTH				FOOT				Udder		
		Number	Age	Temp	Dead	Recovered	Vesicular		Necrotic		Vesicular		Necrotic				
							Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
Cattle																	
Swine																	
Horses																	
Sheep																	
Goats																	
Others (specify)																	

Other Lesions	Tentative Diagnosis

Data on origin of infection

Source of affected animals	Date acquired

Transportation history

Source of other recently acquired animals	Date acquired

Transportation history

History of possible sources of infection

Distribution data for disease control

History of all animal by-products, feed litter or other material (which may be contaminated) moved from the farm within a 3-week period prior to initial signs

Possible distribution by insect vectors or any other means e.g. adjoining farms and pasture, vehicles, predatory animals, birds, rodents

Disease Control - Disinfection - Quarantine

Outline disinfection measures used and list quarantines established

INSTRUCTIONS FOR THE PREPARATION OF CONSERVATION MEDIUM (B)

BHK Medium (Eagle P)

(MacPherson-Stoker)

		10 liters
1.	MEM concentrate-GIBCO (Earles, without N_aHCO_3)	88.2 g
2.	Vitamin stock (PANAFTOSA)	18 ml
3.	Glucose	31.5 g
4.	Ferric nitrate .9 H_2O (0.001 g/ml)	0.9 ml
5.	Tryptose PO_4 Broth (29.5 g/l)	1000 ml
6.	N_aHCO_3	24.75 g
7.	H_2O to adjust to 10 liters	

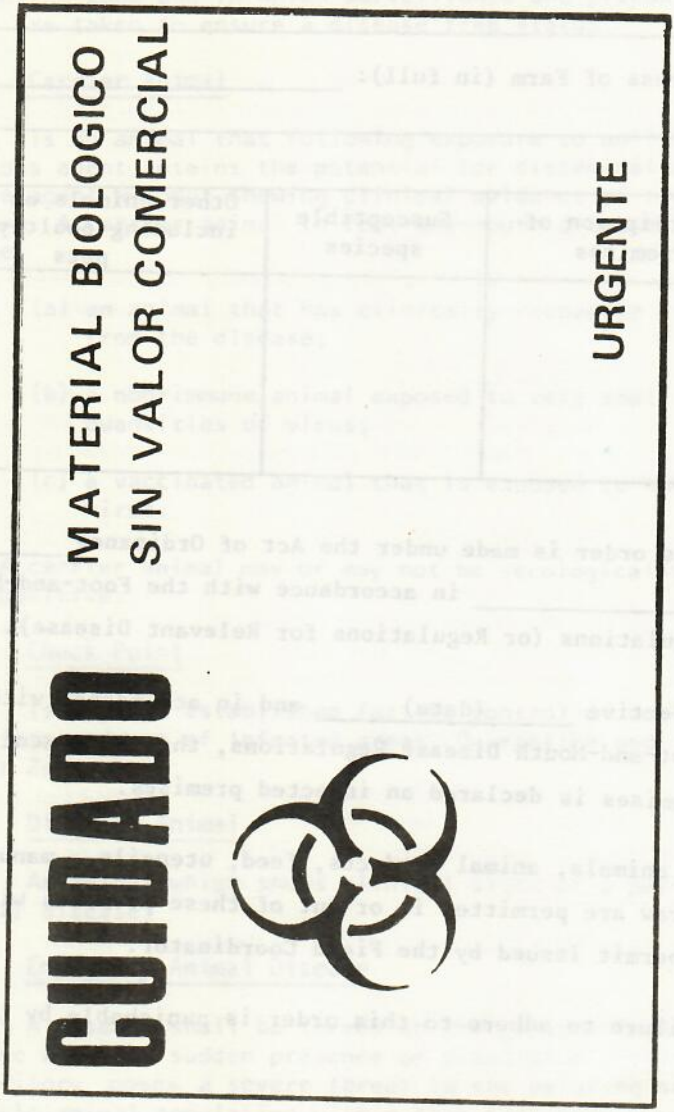
NOTE: Before filtrating the medium should be bubbled with CO_2 until reaching pH 6.8.

INSTRUCTIONS FOR THE PREPARATION OF CONSERVATION MEDIUM (C)

EARLES, 0.5% LACTALBUMIN, 0.1% YEAST EXTRACT

		1 liter
1.	NaCL	7.3 g
2.	K CL	0.4 g
3.	$MgSO_4 . 7H_2O$	0.2 g
4.	$Na\ H_2PO_4 . H_2O$	0.15 g
5.	Dextrose	1 g
6.	$Ca\ CL_2$	0.2 g
7.	Lactalbumin hydrolysate	5 g
8.	Yeast extract	1 g
9.	$Na\ H\ CO_3$	2.2 g
10.	Phenol red 1%	1.2 ml
11.	H_2O to adjust to 1 liter	
12.	pH 7.3	

LABEL - FOR SHIPMENT TO PANAFTOSA



QUARANTINE ORDER

Name of owner of animals: _____

_____

Address of Farm (in full): _____

_____

Description of Premises	Susceptible species	Other animals on farm including poultry and pets

This order is made under the Act of Ordinance _____ _____ in accordance with the Foot-and-Mouth Regulations (or Regulations for Relevant Disease).

Effective _____(date)_____ and in accordance with the Foot-and-Mouth Disease Regulations, the above-mentioned premises is declared an infected premises.

No animals, animal products, feed, utensils, manure or straw are permitted in or out of these premises without a permit issued by the Field Coordinator.

Failure to adhere to this order is punishable by Law.

Date: _____ _____
Field Coordinator

C E N S U S

1. Name of owner of animals: _____

2. Address: _____

3. Location of farm: _____

4. Type of farming:

   Dairy_____ Beef_____ Pigs_____ Poultry_____

   Sheep_____ Goat_____ Mixed_____

5. Animal population:

Species	Breed		
	Purebred No.	Crossbred No.	Total
Cattle			
Calves			
Heifers			
Cows			
Steers			
Bullocks			
Bulls			
Pigs			
Sheep			
Goats			
Buffaloes			
Horses			
Donkeys			
Poultry			
Pets			
Total			

6. Personnel on farm:

Position	Number

FORM FOR VALUATION OF ANIMALS/MATERIALS

Ministry of Department of Agriculture.

Disease of Animals Act (Ordinance).
Foot-and-mouth disease or other particular disease.

Animal Appraisal.

When completed send to: _____
Ministry or Department of Agriculture.

Name and address of owner of animals (claimant): _____

_____

If joint ownership give full name of all partners: _____

_____

Type of farming:

Dairy_____ Beef_____ Pigs_____ Poultry_____

Sheep_____ Goat_____ Horses_____ Mixed_____

Type of farming operation:

Breeding_____ Fattening_____

Milk_____ Others_____

Name and address of appraiser(s): _____

_____

_____

Date of appraisal: _____

1. APPRAISAL OF ANIMALS

Species	Number of animals	Description of animals	Estimated value at time of slaughter per head	Remarks
Cattle				
Pigs				
Sheep				
Goats				
Buffaloes				
Horses				
Poultry				
Pets				

2. APPRAISAL OF BUILDINGS OR MATERIALS TO BE DESTROYED

Description	Number	Estimated value at time of destruction	Remarks

3. STATE WHETHER ANIMALS, BUILDINGS OR MATERIALS MORTGAGED: _____

4. OWNER - CLAIMANT CERTIFICATE

I certify that I own/am authorized to represent the owner of the animals or materials identified in this claim. I make claim for all amounts due me in accordance with all applicable laws and regulations governing the payment of indemnities for the animals or materials identified and to be destroyed because of the disease specified. I further agree to the slaughter of the said animals and accept the appraisal value of each.

Signature of Owner - Claimant or Authorized Representative: _____

Date signed: _____

Title (if signed by authorized representative): _____

Signature of member of Valuation Team: _____

Date: _____

Signature of member of Valuation Team: _____

Date: _____

Signature of member of Valuation Team: _____

Date: _____

5. SLAUGHTER CERTIFICATE

I certify that the animals valued and listed at (1.) have been slaughtered.

I certify that buildings and materials valued and listed at (2.) have been destroyed.

Signature of Field Coordinator: _____

Date: _____

LIST OF APPROVED DISINFECTANTS

DISINFECTANTS FOR EMERGENCY DISEASES

Disinfectant	Percent	Mixture	Disease
Sodium hydroxide*(lye)	2	13-1/2 oz. can to 5 gal. water	Foot-and-mouth disease
Sodium carbonate (soda ash)	4	1 lb. to 3 gal. water	
Acetic acid	2	2 parts glacial acetic acid to 98 parts water	
Citric acid	2	1 lb. to 6 gal. water	
Cresylic disinfectant	4	4 oz. to 1 gal. water	Vesicular exanthema Vesicular stomatitis
Sodium orthophenylphenate		1 lb. to 12 gal. water	Sheep pox Bovine infectious petechial fever Contagious agalactia Contagious bovine pleuropneumonia East Coast fever Fowl plague Heartwater Infectious or epizootic infertility of cattle Nagana-Trypanosomiasis Nairobi sheep disease

*When using lye disinfectant of any strength, wear protective goggles, rubber gloves and coveralls. Wash areas of the body exposed to lye and treat with vinegar.

WITHDRAWAL OF QUARANTINE NOTICE

Name of owner of animals: _____

_____

Address of farm (in full): _____

_____

DESCRIPTION OF PREMISES

_____

_____

This notice is made under the Act or Ordinance _____ in accordance with the Foot-and-Mouth Disease Regulations (or Regulations for Relevant Disease).

Effective (date) and in accordance with the Foot-and-Mouth Disease Regulations, the quarantine order is hereby withdrawn from the premises described above.

Date: _____ _____

Field Coordinator

SURVIVAL OF FOOT-AND-MOUTH DISEASE VIRUS

Location	Period of survival	Conditions
Inside barns	15-28 days	AT, summer*
On walls, etc.	35-68 days	AT, winter
Outside buildings	9-15 days	AT, summer
on walls, etc.	52-79 days	AT, winter
Walls, plaster	27 days	AT, summer
Brick	14 days	AT, summer
Abattoir waste	3 days	68° F
Sewage	Over 100 days	36-45° F
Fresh water	At least 30 days	AT, about 34° F
Salt water	Over 100 days	AT, summer
Manure, liquid	39 days	AT, autumn open tank
	16 hours	closed tank
Manure, solid	29-33 days	AT, summer
	156-168 days	AT, winter
	6-9 days	Depth 30 cm. in pit
Garden soil	25-30 days	AT, summer
Soil, surface	6-7 days	AT, summer
	136-146 days	AT, winter
Corrals	345 days	AT, one instance (Calif.)
Barn mud	70 days	AT, summer
Dry sand, deep	11 days	AT
, surface	2-3 days	AT
Hay on surface	1-10 days	AT
Hay, inside stack	30 days	AT, summer
	185-200 days	AT, winter
Hay, fodder	56-105 days	AT
Barn, fodder	140 days	AT
Straw, flour meal	5-49 days	AT
In pasture plants	1-7 days	AT, summer
	52 days	AT, winter
Mountain pastures	26 days	AT, summer
	258 days	AT, winter
ANIMAL PRODUCTS		
Blood, citrated	5 days	98.6° F
	10 days	AT

* AT = Ambient Temperature.

ANNEX X (cont.)

Location	Period of survival	Conditions
CLOTHING		
Gum boots	102 days	AT
Cotton cloth	63-68 days	AT
Silk, linen	3-14 days	AT
Leather (shoes)	30-35 days	AT
DRIED BLOOD		
On glass, brick, wood	2-3 days	AT
In meat wrappers	45 days	AT
HIDES		
Green	90 days	59° F
	352 days	39° F
Dried	42 days	68° F
Salted	46 days	AT
Cowhair (live)	28-42 days	AT, winter
MILK AND MILK PRODUCTS		
Milk, whole fresh untreated	25 hours	AT
	12 days	41° F
Milk, skim	30 hours	AT
Butter, unsalted	8 days	AT, after precooling
	26 hours	AT, no precooling
Butter, salted	9 days	AT, after precooling
	4 days	AT, no precooling
Cream, butter	45 days, even when rancid	AT
Buttermilk, skim milk, etc.	less than 20 hrs viability depends on pH (acidity)	AT, pH is about 6 or less
Cheese	5-22 hrs depending on the amount of souring, heating	
DRIED MILK POWDER		
Moisture <6%	2 years	AT
<7%	1-1/2 years	AT
Milk, dried on wood	2 days	AT

Location	Period of survival	Conditions
MEAT PRODUCTS		
Pork flesh	4-6 days	AT
Kidney	10 days	AT
Bovine carcass meat	73 days	39° F
	194 days	32+° F
SALIVA	1 days (not 2 days)	98.6° F
	24 days (not 35 days)	73° F
	35 days	41° F
URINE		
Bovine	5 hours	AT, pH 6.8-7.6

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