



FEDERAL PUBLIC SERVICE
MINISTRY OF AGRICULTURE, LIVESTOCK AND FOOD SUPPLY
Secretariat of Animal and Plant Health and Inspection – SDA

Animal Health Department – DSA

DIRECTOR'S OFFICE

MINISTRY OF AGRICULTURE, LIVESTOCK, AND FOOD SUPPLY
SECRETARIAT OF ANIMAL AND PLANT HEALTH AND INSPECTION – SDA

INTERNAL INSTRUCTION DSA No. 05 of 2009

THE DIRECTOR OF THE ANIMAL HEALTH DEPARTMENT, considering his regimental jurisdiction, with the objective of adding to the formulation of agricultural policies and considering the maintenance of Classical Swine Fever-Free Zones in the states belonging to the free zone, approves the manual of operating procedures for health surveillance systems in the Classical Swine Fever-Free Zone.

JAMIL GOMES DE SOUZA
Director



FEDERAL PUBLIC SERVICE
MINISTRY OF AGRICULTURE, LIVESTOCK AND FOOD SUPPLY
Secretariat of Animal and Plant Health and Inspection – SDA

Animal Health Department – DSA

DIRECTOR'S OFFICE

HEALTH SURVEILLANCE SYSTEM FOR THE CLASSICAL SWINE FEVER-FREE ZONE

MANUAL OF PROCEDURES

1. ACRONYMS AND DEFINITIONS

The definitions that follow are used to facilitate understanding and clarify the use of some of the terms used in the Internal Instruction.

CGAL: General Coordination for Laboratory Support

FARROWING FARM (CR): establishment or structure specialized in maintaining piglets, from weaning up until the fattening phase;

SWINE BACKYARD HOLDINGS (CS): these are facilities that are for family use, homely and backyard facilities that do not have commercial interests;

DIPOA: Department of Inspection of Animal Origin Products;

DSA: Animal Health Department;

DSS: Swine Health Department

PIG HOLDING: establishments where pigs are kept or reared for whatever purpose;

SWINE FARM (GS): commercial pig holdings registered with the official veterinary service. These are usually classified as full cycle (CC) farms, piglet units (UPL), farrowing farms (CR) or fattening farms (T);

ACCREDITED SWINE BREEDING FARM (GRSC): establishment that is officially accredited and monitored, in accordance with the laws in force, where pigs are raised and kept for commercial purposes or distribution and the final product being meant for reproduction;

FATTENING FARM (T): swine farm for fattening and then slaughter;

INTERDICTION: blocking the entrance and exit of pigs from a pig holding, for whatever reason, as well as monitoring people and materials that, according to the official veterinary service, may be a source of disease transmission;

DISEASE INVESTIGATION FORM – PRELIMINARY (FORM-IN): A form used specifically by the official veterinary service to register and send material from pig holdings suspected of having had occurrences of animal disease;

LANAGRO: National Animal and Plant Laboratory of the Ministry of Agriculture, Livestock and Food Supply;

OFFICIAL VETERINARY: professional working with the official veterinary service at the federal or state level;

OIE: World Organization for Animal Health;

SLAUGHTERHOUSE: establishment used for slaughtering of pigs for human consumption and other purposes;

ACCREDITED VETERINARY: private sector professional who has received MAPA's accreditation to carry out specific activities regarding animal health and swine farming.

CLASSICAL SWINE FEVER (CSF): transmissible disease in pigs caused by a virus of the pestivirus genus.

BREEDING STOCK: a group of females and males used for breeding within a pig holding.

PNSS: Brazil's National Program for Swine Health



FEDERAL PUBLIC SERVICE
MINISTRY OF AGRICULTURE, LIVESTOCK AND FOOD SUPPLY
Secretariat of Animal and Plant Health and Inspection – SDA

Animal Health Department – DSA

DIRECTOR'S OFFICE

OWNER: anyone, whether an individual or a company, who owns, keeps or in some way is in charge of one or more pigs.

HERD: group of all pigs rearred under the same management conditions, within a single pig holding.

SEDESA: State Animal Health Service of the Federal Superintendency of Agriculture in state units;

SIF: Federal Inspection Service of products of animal origin in swine slaughterhouses;

SIE: State Inspection Service for products of animal origin;

SDA: Animal and Plant Health and Inspection Secretariat for MAPA;

SFA: the Federal Superintendency of Agriculture in state units

OFFICIAL INSPECTION SERVICE: inspection service of products of animal origin, at the federal or state level;

OFFICIAL VETERINARY SERVICE: animal health division, at the federal or state level;

PIG: any animal belonging to the genera *Sus scrofa domesticus* (domestic pig) or *Sus scrofa scrofa* (wild pig).

UPL: piglet farm

LVU: local veterinary unit of the official veterinary service;

HEALTH SURVEILLANCE: determines the investigations that are carried out for a population or a specific subgroup for the early detection of an etiological agent or disease;

CSF-FREE ZONE: zone or region of the country in which CSF is systematically shown to be absent, in accordance with the guidelines for the OIE Terrestrial Animal Health Code and determined by specific rules from MAPA.

2. INTRODUCTION

Health surveillance is composed of a set of actions that aim to block the entrance and detect direct or indirect signs of the presence of one or more pathogenic agents in a susceptible animal population early on to allow for fast actions.

This Manual intends to intensify the active and passive surveillance activities in areas known to be CSF-Free Zones, focusing on areas with a greater chance of virus reintroduction (vulnerability) and greater chance of the virus circulating within the herd (receptivity); avoiding the virus from spreading if it does enter a free zone, (diffusibility) thus minimizing the losses. These activities should be applied systematically and continuously until the desired results are obtained and a new evaluation of the program's objective is made.

3. OBJECTIVE

The objective of this Manual is to standardize health surveillance actions in pig herds of holdings located in the CSF-free zone, so as to ensure the maintenance of the obtained health status.

The result of the activities related to serological monitoring is complementary to the surveillance actions carried out by the official veterinary service at state units, as well as to those carried out every six months in GRSCs.



FEDERAL PUBLIC SERVICE
MINISTRY OF AGRICULTURE, LIVESTOCK AND FOOD SUPPLY
Secretariat of Animal and Plant Health and Inspection – SDA

Animal Health Department – DSA

DIRECTOR'S OFFICE

3.1. SPECIFIC OBJECTIVES

To increase the sensitivity of the surveillance system aiming at the:

- early detection of hemorrhagic diseases in pigs;
- detection of other diseases in pigs;
- production of data to support risk analysis processes in swine farming;
- assistance in establishing health strategies and in decision-making to support the PNSS; and
- registering of activities and awareness of the health and breeding reality of swine farming in Brazil.

4. SECTORS INVOLVED

The following sectors are part of the Health Surveillance System in the CSF-Free Zone:

4.1 Secretariat of Animal and Plant Health and Inspection:

- Animal Health Department (DSA);
- Department of Inspection of Animal Origin Products (DIPOA);
- General Coordination for Laboratory Support (CGAL).

4.2 Federal Superintendencies of Agriculture (SFA):

- State Animal Health Service of the Federal Superintendency of Agriculture (SEDESA)
- Agriculture and Livestock Inspection Service (SIPAG).

4.3 Secretariat of agriculture at state units and other animal health divisions:

- structure of animal health at state units;
- State Inspection Service (SIE);
- laboratories accredited by MAPA

4.4 Private enterprise:

- swine slaughterhouses;
- independent veterinarians
- accredited veterinarians
- swine farmers
- agroindustry

5. PLACES OF OPERATION

5.1 Accredited Swine Breeding Farms (GRSC);

5.2 Swine farms (GS)

5.3 Swine Backyard Holdings (CS);



FEDERAL PUBLIC SERVICE
MINISTRY OF AGRICULTURE, LIVESTOCK AND FOOD SUPPLY
Secretariat of Animal and Plant Health and Inspection – SDA

Animal Health Department – DSA

DIRECTOR'S OFFICE

5.4 Swine slaughterhouses with SIF and SIE.

6. SYSTEM STRATEGIES FOR THE SURVEILLANCE OF CSF

Operating procedures for the system strategies for the surveillance of CSF are described in the next topic. The system strategies are:

- 6.1 Clinical passive surveillance, that is, from the time of notification by the owners, Official Veterinary Service or third party;
- 6.2 Notification about increase of mortality rates from accredited veterinaries that provide services to pig holdings;
- 6.3 Active and continuous clinical surveillance of farms identified as high-risk CSF establishments within the free zone;
- 6.4 Serological monitoring of GS through sample collection in slaughterhouses, from breeders designated for culling;
- 6.5 Seroepidemiological monitoring in CS within regular intervals;
- 6.6 Serological monitoring every 6 months at GRSCs;
- 6.7 Ante- and post-mortem inspections in swine slaughterhouses.

Surveillance is a continuous and permanent process. All components listed above contribute to the sensitivity of the system by increasing its confidence in determining a large area of Brazil as free of CSF.

7. OPERATING PROCEDURES

7.1 Passive surveillance of diseases:

Refers to the notification of suspected occurrences of diseases to the official veterinary service by the owner, veterinary or anyone who knows of animals showing clinical signs compatible with hemorrhagic diseases in swine or other immediate notification diseases. All notifications should be attended to by the official veterinary service, in accordance with Normative Instruction SDA No. 27, of 20 April 2004.

7.2 Monitoring of GRSCs:

In Brazil, the commercialization and distribution of pigs designated for reproduction is only allowed when coming are from Accredited Swine Breeding Farms (GRSC). To achieve accreditation, these holdings must carry out serological tests every six months for CSF, among other diseases, in accordance with Normative Instruction No. 19 of 15 February 2002.

7.3 Monitoring in GS:

See below how Swine Farms (GS) can be classified according to the phases of production that are present in the holding:



FEDERAL PUBLIC SERVICE
MINISTRY OF AGRICULTURE, LIVESTOCK AND FOOD SUPPLY
Secretariat of Animal and Plant Health and Inspection – SDA

Animal Health Department – DSA

DIRECTOR'S OFFICE

- Piglet Unit (UPL);
- Full Cycle Farm (CC);
- Farrowing Farm (CR); and
- Fattening Farm (T).

Every month, the mortality rates at these farms will be monitored according to the company's control measures or in accordance with Executive Act concerning the issue. If the mortality rate exceeds the critical limit shown by TABLE 01, this increase in mortality should be notified at the same time to the closest official veterinary service and to SEDESA of the corresponding state unit. This notification should be made by using the form (ANNEX 1) and sending it via fax or phone.

This alert system does not characterize a suspected case of CSF. As the official veterinary service is called, however, a visit will be made to the pig holding for clinical inspection of the animals within 48 hours. If the suspicion is “**discarded**” for hemorrhagic diseases or other immediate notification diseases in pigs, a serological sample will be taken for active surveillance. The Sampling Collection Form (ANNEX II) should be used. The samples collected can be sent to an accredited laboratory. For these cases, it is necessary to fill in FORM-IN to be kept on file at the LVU for auditing. FORM-IN can be sent attached to the sampling form to any accredited laboratory. The OBSERVATIONS field should include the following phrase: “SAMPLES COLLECTED FOR SURVEILLANCE OF CLASSICAL SWINE FEVER, IN ACCORDANCE WITH INTERNAL INSTRUCTION DSA No. 05/2009.” The FORM-IN number should be included in the sampling collection form.

If during the visit the suspected case is “**legitimated**” for hemorrhagic disease or other immediate notification disease for pigs, all the procedures described in the laws in force should be followed. Some of these include: blocking of establishment and sending of FORM-IN immediately to the epidemiology sectors at the federal and state levels and samples to an official laboratory of the LANAGRO network.

TABLE 01. Critical limits on monthly mortality rates for notification by veterinaries to the official veterinary service.

Production Phase	MR %
Breeders	>2
Piglets	>15
Nursery pigs	>7
Animals for fattening	>9

Note: When dealing with fattening farms, a mortality rate above 9% should be considered for the batch (with approximately four months of duration), and not for a single month. Nonetheless, in the CC farms that do not practice withdrawal period between fattening batches, the monthly rate above a 9% critical limit should be kept.

The number of animals to be sampled in the pig holding can be seen on TABLE 02. The following guidelines should be followed:



FEDERAL PUBLIC SERVICE
MINISTRY OF AGRICULTURE, LIVESTOCK AND FOOD SUPPLY
Secretariat of Animal and Plant Health and Inspection – SDA

Animal Health Department – DSA

DIRECTOR'S OFFICE

- the samples should be collected from animals in the production phase that showed changes in mortality rates;
- when sampling from breeding males and females, animals in gestation or withdrawal period should be given priority. Sows that have had more than three pregnancies should be given preference. Whenever possible, sows that are in the lactation period or close to farrowing should be avoided;
- factors such as unsoundness or a history of health and reproductive problems should be taken into account when choosing animals for sampling;
- samples should be taken from the various facilities and pens at the establishment;
- rules of biosecurity adopted by the sampled establishment should be followed.

TABLE 02. The number of animals sampled at each pig holding

No. of animals in the herd	Sample
10	8
20	13
30	17
40	19
50	21
60	22
70	24
80	25
90	25
100	26
120	27
140	28
160	29
180	30
200	30
250	31
300 to 400	32
400 to 600	33
Over 600	35

7.4 Monitoring in CS:

Each State unit should send a list with the estimated total of CSs present at each municipality. From the list of existing backyard holdings at each municipality, MAPA will develop a sampling design and will send all state



FEDERAL PUBLIC SERVICE
MINISTRY OF AGRICULTURE, LIVESTOCK AND FOOD SUPPLY
Secretariat of Animal and Plant Health and Inspection – SDA

Animal Health Department – DSA

DIRECTOR'S OFFICE

units the list of municipalities to undergo sampling, as well as the number of target CSs in the monitoring of each selected municipality.

The choice of pig holdings to be sampled will be made by the official veterinary service, at the local veterinary unit, based on the following criteria:

- pig holding on international and CSF-Free Zone borders that exist in Brazil;
- proximity to natural reservations, areas of environmental protection or national parks that house wild pigs;
- backyard holdings located in peri-urban or poor areas;
- areas with extensive swine farming
- rural settlements or indigenous reserves;
- pig holdings that feed leftovers (swine feed) to pigs;
- proximity to waste sites;
- pig holdings that belong to an owner who has property in another country or endemic area;
- proximity to rendering facilities;
- proximity to swine quarantine facilities

The identification of these CS depends essentially on the involvement of veterinaries from the animal health system LVUs who are in charge of the production in the municipalities in which they work.

In the CS identified as at high risk, the official veterinary doctor should not count solely on passive surveillance. The actions described in this Manual will serve to establish a monitoring routine for establishments. The visits carried out for surveillance should be recorded (Annex 4 of DDA Service Instruction No. 12-A/02) or another corresponding form of auditable records to be kept at the LVU.

7.5 Surveillance in swine slaughterhouses:

7.5.1 Culling of breeder pigs

The official inspection service, at the federal (SIF) and state (SIE) levels, will collect samples from male and female breeders that are designated for culling. Serological samples will be taken from 1 breeder in each consignment, for every consignment where there are breeders. Older animals should be chosen, for they are better representatives of the monitored herd's health conditions. The official veterinary unit closest to the slaughterhouse should be notified so they can go ahead with the collection of the selected serological sample and with the filling out of the Sample Identification Form (ANNEX III). The LVU will be in charge of labeling the sample to be sent to an official or accredited laboratory, and when possible for the centrifugation of the material so as to improve sample quality.



FEDERAL PUBLIC SERVICE
MINISTRY OF AGRICULTURE, LIVESTOCK AND FOOD SUPPLY
Secretariat of Animal and Plant Health and Inspection – SDA

Animal Health Department – DSA

DIRECTOR'S OFFICE

The Animal Movement Permits (GTA) for culling of breeders can only be issued by the official veterinary service of the municipality from where the animal originated. The number of GTAs carried by the transporter of swine animals should be equivalent to the number of establishments from where animals originated.

In state units in which the presence of SIF and SIE is not significant, that is, do not represent the majority of slaughtered swine in the state, for monitoring reasons, samples should be collected every six months from a breeder animal by a UPL or registered CC at the official veterinary service.

7.5.2 Animals with lesions consistent with hemorrhagic diseases:

The official inspection service, when inspecting viscera of slaughtered animals, will immediately notify the official veterinary service if there is any occurrence of multiple lesions consistent with hemorrhagic diseases. The carcass should be labeled. The origin of this animal should be traced by the official veterinary service up until the UPL phase (or the fattening phase, if it comes from a lot where part of the animals was slaughtered). The official veterinary service will visit the pig holding for a clinical and epidemiological evaluation.

After inspection, whether or not the suspicion is legitimated, the procedures under item 7.3 of this manual should be followed.

The beginning of these activities should be preceded by training for the official inspection service, so as to qualify them to carry out Surveillance System procedures.

8. COMPLEMENTARY EPIDEMIOLOGICAL INVESTIGATION

The aim of the first phase of this monitoring is to detect pig holdings with indirect indicators of infections through serological tests that identify and quantify the presence of humoral responses against CSF antibodies in animals taking part in the survey. This reactivity to the serological tests, however, can be caused by a range of factors:

- Cross-reaction with other pestiviruses (BVD and Border Disease (BD) in ovine animals);
- Persistence of maternal antibodies (for up to 135 days);
- Inappropriate vaccination of pigs against CSF;
- Unspecific reactions to the differential diagnosis (similar responses between CSF and BVD);
- Infection by field virus.

Considering the above, the pig holdings, or in the batches for slaughter where at least one animal was reagent after the screening serological test, the official veterinary service should visit the property and carry out a detailed complementary epidemiological investigation to come to a final diagnosis on the presence or absence of infection by the CSF virus. When the sample taken from the reagent animal comes from a slaughterhouse, all the properties that were part of the lot to which the animal belonged should also be visited. If there are animals showing clinical symptoms consistent with swine hemorrhagic disease or immediate notification disease, the property (ies) should be blocked and all the procedures under the **CSF Contingency Plan** should be adopted. For



FEDERAL PUBLIC SERVICE
MINISTRY OF AGRICULTURE, LIVESTOCK AND FOOD SUPPLY
Secretariat of Animal and Plant Health and Inspection – SDA

Animal Health Department – DSA

DIRECTOR'S OFFICE

cases in which animals do not show consistent clinical symptoms, the property should remain under surveillance. There should be weekly visits and the owner should be instructed to observe any changes in animal behavior or increase in mortality rate. Should any of these be observed, the owner should **immediately** notify the official veterinary service.

9. FINAL REPORT FOR HEALTH SURVEILLANCE ACTIONS FOR CSF

The control of results obtained in each component of the CSF Surveillance System will be carried out by each state unit's SEDESA. SEDESA will conduct Reports every six months that should be sent to the Animal Health Department. The first report of the year should include partial data of the first semester and the second report should include all activities carried out throughout the year. These data will be collected by DSA and will be used to elaborate the ANNUAL REPORT OF HEALTH SURVEILLANCE ACTIONS FOR CSF.

Pig movements, as well as the history of swine, swine product and by-product imports should all be included in the semester report.