FELASA recommendations for the health monitoring of breeding colonies and experimental units of cats, dogs and pigs

Report of the Federation of European Laboratory Animal Science Associations (FELASA) Working Group on Animal Health

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Contents

Introduction

The health of an animal is always at risk from a variety of infections. Infections in animals, whether clinically manifest or subclinical may, when the animals are used in biomedical research, produce effects that change the outcome of the experiments undertaken. Depending upon the specific infection a variety of biological parameters may be affected such as behaviour, growth rate, relative organ weights, immune response, tumour development etc. Subclinical infections can also lead to contamination of biological materials, tissue cultures, cell-lines, transplantable tumours and biological products. All infections, apparent or inapparent, are likely to increase biological variability. In addition, some animal infections are transmissible to man.

For all these reasons, an animal health monitoring programme is important, decreasing the risk of zoonotic infection and adding to the reliability and reproducibility of research data. These recommendations propose such programmes for pigs, dogs and cats, specifically bred and used for biomedical research, with the intention of harmonizing procedures and achieving similar standards of testing within the FELASA member countries. Another goal of these recommendations is to ensure that health monitoring

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reports have a common standard and format, identifying the presence or absence of specific microorganisms in laboratory animal colonies.

1. General considerations

1.1 Depending upon local variations throughout Europe, the number of agents monitored will vary from country to country. Diseases declared to be absent in a region by a national authority do not need to be monitored. Actual practice may exceed these recommendations in various ways, depending on local circumstances—for example colony size, regional prevalence of specific organisms, intended use of progeny or existence of national monitoring schemes. Additional investigations may be deemed necessary. The results of these investigations should be reported.

1.2 These recommendations are intended for all breeding colonies and experimental units of cats, dogs and pigs used for biomedical research.

1.3 Each breeding unit to be monitored is considered to be a self-contained microbiological entity.

1.4 Detailed written procedures—Standing Operating Procedures (SOPs)—within monitoring laboratories must be available.

1.5 Monitoring laboratories should follow the principles of Good Laboratory Practice (GLP) where applicable and participate in a Quality Assurance Programme.

1.6 An agent must be declared as present if it is identified or if antibodies to it are detected in the animals screened, with the exception of vaccinated animals (see 1.11). It should be emphasized that negative results mean only that the presence of the microorganisms monitored has not been demonstrated in the animals screened by the test(s) used. The results are not necessarily a reflection of the status of all the animals in the breeding unit.

1.7 The presence of antibodies against organisms for which the animals have not been vaccinated is an indicator of infection in the colony. The actual presence of the agent, when still remaining in the animal, can be verified using methods other than serology.

1.8 Equivocal or unexpected positive serological test results must be confirmed by an alternative test method and/or repeated investigation.

1.9 Written copies of vaccination and/or deworming policies should be provided.

1.10 When deworming, the brand name and the date and dose must be recorded. Information on manufacturer, batch number and expiry date of the product should also be recorded.

1.11 Most cats, dogs and pigs are vaccinated according to general conditions (non-barrier) of the breeding colony and buyers' requirements, on request and according to import/export regulations. The brand name of the vaccine, the dose used, and the date must be recorded. Information on manufacturer, batch number and expiry date of the product should also be recorded. Monitoring of agents against which the colony is vaccinated is not mandatory and is undertaken only when requested.

2. Inspection of the colony

A clinical health monitoring programme shall be established under the direction of a veterinarian. The health status of the colony should be assessed by the veterinarian at least every month.

All animals will be observed daily by an animal technician. Any signs of disease among the animals should be immediately reported to the veterinarian in charge of the animal health monitoring. Unusual or unexpected occurrences should be investigated by suitable diagnostic methods in accordance with accepted veterinary practices. The presence of organisms and lesions listed in these recommendations and the results of clinical and pathological examinations during the preceding 3-month period should be part of the health monitoring report. Results obtained from other diagnostic investigations should be made available on request.

Table 1 Health monitoring of laboratory cats, dogs and pigs: sample size and frequency

Sampling frequency	Sample size		Testing/animal		
	Age	No. of animals	Viruses	Bacteria	Parasites
Every 3 months	Weanlings	⩾2	–	+*	+†
	2–7 months*	⩾4	+	+	+
	⩾8 months*	⩾4	+	+	+

*If not available, increase the number of samples from the other age group(s)
†If not available at the time of scheduled testing, test for parasites later when available

3. Monitoring procedures

3.1 Laboratory investigations

All samples obtained in connection with routine health monitoring are to be taken from live animals. However, additional samples may be obtained from dead or euthanized animals. Samples (bacteriology, serology, parasitology) are preferably monitored individually (see Table 1).

3.2 The scope of the screening programme

A minimum of 10 animals, randomly selected, should be sampled at least every three months or according to the respective national disease control programmes and import/export regulations.

Infectious diseases that do not need to be monitored are those included in an official, national governmental screening programme (but with the results included in the health monitoring report), diseases officially declared absent in that region and diseases for which the animals are vaccinated.

Some agents are to be monitored on request or

- when associated with lesions
- when associated with clinical signs of disease
- when there is evidence of perturbation of physiological or experimental parameters and/or breeding performance.

4. Health monitoring report

The main purpose of the health monitoring of experimental units is to supply investigators with data on variables that might influence the outcome of an experiment. These data are part of the experimental work and have to be considered during the interpretation of the experimental results by the investigator and by the readers of a publication. Results of health monitoring should, therefore, be included in scientific publications. While FELASA cannot accept responsibility for tests or their implications, breeders or users of laboratory animals who are reporting the health monitoring of their animals may use the words 'in accordance with FELASA recommendations' but only where that is in fact the case. The report should also include, when related to colony-wide measures, a note of the occasional or regular use of antibiotics and other microbiologically active substances.

4.1 General information on each report

The title of the report should be *FELASA-Approved Health Monitoring Report.*

This wording can only be used if the methods, frequency, sample size, species-list of organisms monitored and reported are in full accordance with the recommendations published by FELASA. The design of the report could be changed, but only if it incorporates the data requested in the recommendations. At the top of each report should be: date of the report, date animals tested, the species and breed, the identification of the colony or unit, the date when the colony was established and month and year when it was last rederived or restocked.

Description of the strain/stock screened is as follows: name of the species, followed by the current accepted nomenclature.

4.2 Lay-out of the report with respect to microorganisms monitored and the colony status

Except for general information (see section 4.1) the report is divided into five columns,

the first listing the microorganisms monitored, the second recording the historical status of the colony (section 4.4), the third giving the results of the current screen (section 4.5) the fourth recording the laboratory carrying out the test and the fifth column showing the method used (section 4.3). All samples should be monitored individually. Species names of microorganisms should be used in preference to the more general generic names. The suggested test methods are given as illustrations of current available techniques. In general the most appropriate and updated methods should be used.

4.3 Listing of microorganisms, methods and names of monitoring laboratories

The organisms detailed in these recommendations should be listed alphabetically in their appropriate sections in the order: 1st section: viruses; 2nd section: bacteria, mycoplasma, and fungi; 3rd section: parasites. Current accepted abbreviations for microorganisms may be used in the report. The full or abbreviated name of the laboratory carrying out the test must be recorded for each organism/agent, but where it is abbreviated the full name must be given at the bottom of the report.

Where both a method and laboratory name are to be recorded, they should be in the order: microorganism, laboratory, method (Rehbinder *et al.* 1996).

4.4 Historical status of the colony

Against each organism must be recorded:

Pos if the organism has ever been detected (i.e. positive).
Neg if the organism has never been detected in previous screens (i.e. negative).
NE if the organism has not been included in the health monitoring programme (i.e. not examined).

4.5 Current health monitoring results

Each organism must be recorded:

Pos/tested if the organism has been detected in the current screen of animals (number of animals positive out of numbers tested).
Neg if the organism has not been detected in the current screen of animals.
NE if the organism has not been examined for in the current screen of animals.

The results of special investigations of unusual or unexpected occurrences should be reported separately.

4.6 Additional information

Any additional information should be given on a separate sheet accompanying the main report and not on the *FELASA-Approved Health Monitoring Report* itself. If an

Table 2 Monitoring of viral infections (cat)

List of viral infections to be serologically monitored: Virus	Suitable test methods
Feline calicivirus	NT
Feline immunodeficiency virus (FIV)	ELISA, Western blot
Feline infectious peritonitis virus (coronavirus) (FIP)	ELISA, PCR
Feline parvovirus	ELISA
Feline rhinotracheitis virus	NT
List of viral infections to be monitored by other methods: Antigen	**Suitable test methods**
Feline intestinal coronavirus	Detection of antigen in faeces by ELISA; EM or latex-agglutination
Feline leukaemia virus (FeLV)	Detection of antigen in serum by ELISA
Rotavirus	Detection of antigen in faeces by ELISA; EM or latex-agglutination

ELISA=enzyme-linked immunosorbent assay; EM=electron microscopy; IFA=immunofluorescence assay; NT=neutralization test; PCR=polymerase chain reaction

Table 3 Monitoring of bacterial infections (cat)

List of bacterial and fungal infections to be monitored compulsorily: Agent/Antigen	Suitable test method
Bartonella spp.	Culture
Bordetella bronchiseptica	Culture
Campylobacter spp.	Culture
Chlamydia psittaci	Serology
Microsporum spp.	Culture
Pasteurellaceae	Culture
Salmonella spp.	Culture
Staphylococcus spp. (when associated with lesions)	Culture
Streptococci beta-haemolytic serogroup G	Culture
Trichophyton spp.	Culture
Yersinia enterocolitica	Culture
Bacterial infection to be monitored on request: Agent	**Suitable test method**
Helicobacter spp.	Culture

Table 4 Monitoring of parasites (cat)

Compulsory list of parasites to be monitored:
- All arthropods
- All helminths
- *Eperythrozoon felis*
- *Haemobartonella felis*
- *Isospora* spp.
- *Sarcocystis* spp.
- *Toxoplasma gondii*

Examples of parasites to be monitored on request:
- *Giardia* spp.
- *Ollulanus tricuspis* (necropsy)*

*Histopathological evaluation of gastric mucosa when available due to death or from euthanasia or other causes

infection is discovered outside of the routine monitoring schedule, users should be informed immediately.

5. Cat

Viral infections (Table 2)

Equivocal or unexpected positive serological test results must be confirmed by an alternative test method and/or repeated investigation.

Bacterial and fungal infections

Culturing is the method of choice unless otherwise stated. Bacteriological investigations must always include the use of non-selective, as well as selective, media.

Table 5 Monitoring of viral infections (dog)

List of viral infections to be serologically monitored when present in the country: Virus	Suitable test methods
Canine adenovirus type 1 (HCC)	CF, NT
Canine distemper virus	ELISA, NT, IFA
Canine parainfluenza virus	ELISA, HI
Canine parvovirus (CPV)	ELISA, HI
List of viral infections to be monitored on request by other methods: Antigen	**Suitable test methods**
Intestinal coronavirus when associated with disease	Detection of antigen in faeces by ELISA; EM or latex-agglutination
Rotavirus, when associated with disease	Detection of antigen in faeces by ELISA; EM or latex-agglutination

CF=complement fixation test; ELISA=enzyme linked immunosorbent assay; EM=electron microscopy; HI=haemagglutination inhibition test; IFA=immunofluorescence assay; NT=neutralization test

Serological methods exist for the detection of antibodies to various pathogens.

Samples to be investigated

Samples from the following sites must be cultured: tonsillary region (swab), skin/hair (combed sample), faeces (fresh faecal material collected by a suitable method) (Table 3).

Table 6 Monitoring of bacterial infections (dog)

Compulsory list of bacterial infections to be monitored: Agent/Antigen	Suitable method
Bordetella bronchiseptica	Culture
Borrelia spp.	Serology
Brucella canis	Culture
Leptospira spp.	Serology
Salmonella spp.	Culture
Streptococci beta-haemolytic, serogroup G	Culture
Bacterial and fungal infections to be monitored on request or when associated with lesions or clinical signs: Agent/Antigen	**Suitable test method**
Campylobacter spp.	Culture
Ehrlichia spp.	Serology, PCR
Escherichia coli	Culture
Microsporum spp.	Culture
Pasteurellaceae	Culture
Staphylococcus spp.	Culture
Trichophyton spp.	Culture
Yersinia enterocolitica	Culture

Parasitology

Routine methodology.
Faecal flotation.
Microscopic examination of wet mounts.
Microscopic examination for *Otodectes cynotis*.
Blood smears stained with May-Grünwald-Giemsa for the screening of *Haemobartonella felis*.
Serum samples examined for the presence of antibodies to *Toxoplasma gondii*.
The organisms in Table 4 must be included in the final report of results, with a declaration of whether they have been detected or not (numbers of animals positive), or not examined (Table 4).

6. Dog

Viral infections (Table 5)

Bacterial and fungal infections

Culturing is the method of choice unless otherwise stated. Bacteriological investigations must always include the use

Table 7 Monitoring of parasites (dog)

Compulsory list of parasites to be monitored:
- All arthropods: (*Demodex* sp., dermal scrapings only when associated with lesions, *Sarcoptes scabei*, serology and/or dermal scrapings)
- All heminths
- Coccidiae
- *Giardia* spp.
- *Haemobartonella canis*: blood smears

Examples of parasites to be monitored on request:
- *Angiostrongylus vasorum*
- *Babesia* spp.: serology, blood smear
- *Dipetalonema reconditum*: blood smear
- *Dirofilaria immitis*: blood smear
- *Filaroides* spp.*
- *Leishmania* spp.: serology
- *Pneumonyssus caninum*: serology or direct examination at necropsy

*Histopathological evaluation for *Filaroides* spp. in lung tissue when available due to death or from euthanasia for other causes

Table 8 Monitoring of viral infections (pig)

List of viral infections to be serologically monitored, when present in the country (see 1.1): Virus	Suitable test method
African swine fever	ELISA
Aujeszky disease virus (pseudorabies)	ELISA
Classical swine fever (hog cholera)	ELISA
Encephalomyocarditis virus	ELISA, PCR
Haemagglutinating encephalomyelitis	HA, NT, ELISA
Porcine cytomegalovirus (inclusion body rhinitis)	NT
Porcine influenza (H1N1), (H3N2)	ELISA, HI
Porcine parvovirus	ELISA, HI
Porcine reproductive and respiratory syndrome (PRRS)	ELISA
SMEDI	NT
Teschen/Talfan disease virus	IFA, NT
Transmissible gastroenteritis (TGE)	ELISA
List of viral infections to be monitored by other methods: Antigen	**Suitable test method**
Porcine epidemic diarrhoea (when associated with disease)	Detection of antigen in faeces by ELISA; EM or latex-agglutination
Porcine rotavirus	Detection of antigen in faeces by ELISA; EM or latex-agglutination
Examples of viral infections to be monitored on request and when present in the country: Antigen	**Suitable test method**
Foot and mouth disease virus (FMD)	ELISA
Porcine respiratory coronavirus	ELISA
Swine vesicular disease virus (SVDV)	ELISA
Vesicular exanthema virus (VEV)	NT
Vesicular stomatitis virus of swine (VSVS)	NT

ELISA=enzyme linked immunosorbent assay; EM=electron microscopy; HA=haemagglutination test; HI=haemagglutination inhibition test; IFA=immunofluorescence assay; NT=neutralization test; PCR=polymerase chain reaction

of non-selective, as well as selective, media. Serological methods exist for the detection of antibodies to various pathogens e.g. *Leptospira* spp., *Borrelia* spp. and *Ehrlichia canis*. Other validated methods may be used.

Samples to be investigated

Samples from the following sites must be cultured: tonsillary region (swab), skin/hair (combed sample), faeces (fresh material collected by a suitable method) (Table 6).

Parasitology

Faecal flotation and sedimentation.
Microscopic examination of wet mounts.
Microscopic examination for *Otodectes cynotis*.
Blood smears stained with May-Grünewald-Giemsa for the screening of *Haemobartonella canis* (Table 7).

Special attention should be given to ectoparasites such as fleas, lice, ticks and mites. Inspection should be performed at an appropriate time after any use of an ectoparasiticide.

7. Pig

Viral infections (Table 8)

Equivocal or unexpected positive serological test results must be confirmed by an alternative test method and/or repeated investigation.

Bacterial, mycoplasmal and fungal infections

Culturing is the method of choice unless otherwise stated. Bacteriological investigations must always include the use

Table 9 Monitoring of bacterial infections (pig)

List of bacterial and mycoplasmal infections to be monitored compulsorily: Agent/Antigen	Suitable test method
Actinobacillus pleuropneumoniae	Serology
Bordetella bronchiseptica	Culture
Erysipelothrix rhusiopathiae	Culture, serology
Eubacterium (Corynebacterium) suis	Culture
Haemophilus parasuis	Culture, serology
Leptospira spp.	Serology
Mycoplasma hyopneumoniae	Culture, serology
Pasteurella multocida (toxin producing)	Culture, serology, demonstration of toxin by ELISA
Salmonella spp.	Culture
Staphylococcus hyicus	Culture when associated with skin lesions
Streptococci beta-haemolytic	Culture, designation of Lancefield group if possible
Streptococcus suis	Culture
Yersinia enterocolitica	Culture
Examples of bacterial and fungal infections to be monitored on request: Agent/Antigen	**Suitable test method**
Actinomyces pyogenes	Culture
Brucella suis	Culture
Clostridium perfringens	Culture
Escherichia coli when associated with enteric disease	Culture, designation of serotype if possible
Microsporum spp.	Culture
Serpulina hyodysenteriae	Culture and serology
Trichophyton spp.	Culture

of non-selective, as well as selective, media. Serological methods exist for the detection of antibodies to various pathogens e.g. *Actinobacillus pleuropneumoniae, Haemophilus parasuis, Leptospira* spp., *Mycoplasma hyopneumonia* and others.

Samples to be investigated

Samples from the following sites must be cultured: nose (swab), faeces (fresh faecal material collected by a suitable method) (Table 9).

Parasitology

Routine methodology including faecal flotation. Serology for *Toxoplasma gondii* and *Trichinella spiralis*. Individual blood/serum samples.

No anthelmintic or ectoparasite treatment should have been undertaken within 10 weeks before sampling.

Table 10 Monitoring of parasites (pig)

Compulsory list of parasites to be monitored:	
All helminths	
Eimeria spp.	
Isospora spp.	
Sarcoptes sp. (other arthropods when associated with lesions)	
Examples of parasites to be monitored on request:	
Cryptosporidium parvum	(Ziehl-Neelsen staining, IFA)
Eperythrozoon suis	(serology HA)
Toxoplasma gondii	(serology)
Trichinella	(serology)

Sampling time for parasitological examination should be immediately before retreatment with a parasiticide or when consistent with the sanitary policy (Table 10).

This document was compiled using the combined expertise of the Working Group and information contained in the following key references:

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FELASA-APPROVED HEALTH MONITORING REPORT

Name and address of the breeder:

Date of issue: Unit No: Current test date:

Species: **Cat** Breed:

	HISTORICAL results pos/tested	CURRENT TEST results pos/tested	LABORATORY	METHOD
VIRAL INFECTIONS				
Feline calicivirus				
Feline immunodeficiency virus (FIV)				
Feline infectious peritonitis virus (coronavirus, FIP)				
Feline intestinal coronavirus				
Feline leukaemia virus (FeLV)				
Feline parvovirus				
Feline rhinotracheitis virus				
Rotavirus				
VIRAL INFECTIONS TO BE MONITORED ON REQUEST				

FELASA-APPROVED HEALTH MONITORING REPORT

Name and address of the breeder:

Date of issue: Unit No: Current test date:

Species: **Cat** Breed:

	HISTORICAL results pos/tested	CURRENT TEST results pos/tested	LABORATORY	METHOD
BACTERIAL AND FUNGAL INFECTIONS				
Bartonella spp.				
Bordetella bronchiseptica				
Campylobacter spp.				
Chlamydia psittaci				
Microsporum spp.				
Pasteurellaceae				
Salmonella spp.				
Staphylococcus spp. (when associated with lesions)				
Streptococci beta-haemolytic serogroup G				
Trichophyton spp.				
Yersinia enterocolitica				
BACTERIAL AND FUNGAL INFECTIONS TO BE MONITORED ON REQUEST				
Helicobacter spp.				

FELASA-APPROVED HEALTH MONITORING REPORT

Name and address of the breeder:

Date of issue: Unit No: Current test date:

Species: **Cat** Breed:

	HISTORICAL results pos/tested	CURRENT TEST results pos/tested	LABORATORY	METHOD
PARASITIC INFECTIONS				
All arthropods				
All heminths				
Eperythrozoon felis				
Haemobartonella felis				
Isospora spp.				
Sarcocystis				
Toxoplasma gondii				
PARASITIC INFECTIONS TO BE MONITORED ON REQUEST				

PATHOLOGICAL LESIONS OBSERVED

Organ: _____ Lesions: _____
Organ: _____ Lesions: _____
Organ: _____ Lesions: _____
Organ: _____ Lesions: _____
Organ: _____ Lesions: _____
Organ: _____ Lesions: _____

ABBREVIATIONS FOR LABORATORIES

_____ _____ _____
_____ _____ _____

Standard operating procedures can be obtained from _____

FELASA-APPROVED HEALTH MONITORING REPORT

Name and address of the breeder:

Date of issue: Unit No: Current test date:

Species: **Dog** Breed:

	HISTORICAL results pos/tested	CURRENT TEST results pos/tested	LABORATORY	METHOD
VIRAL INFECTIONS				
Canine adenovirus type 1 (HCC)				
Canine distemper virus				
Canine parainfluenza virus				
Canine parvovirus (CPV)				
VIRAL INFECTIONS TO BE MONITORED ON REQUEST				
BACTERIAL AND FUNGAL INFECTIONS				
Bordetella bronchiseptica				
Borrelia spp.				
Brucella canis				
Leptospira spp.				
Salmonella spp.				
Streptococci beta-haemolytic, serogroup G				
BACTERIAL AND FUNGAL INFECTIONS TO BE MONITORED ON REQUEST				

FELASA-APPROVED HEALTH MONITORING REPORT

Name and address of the breeder:

Date of issue: Unit No: Current test date:

Species: **Dog** Breed:

	HISTORICAL results pos/tested	CURRENT TEST results pos/tested	LABORATORY	METHOD
PARASITIC INFECTIONS				
All arthropods				
(*Demodex* sp. only when associated with lesions)				
All helminths				
Coccidiae				
Giardia spp.				
Haemobartonella canis				
PARASITIC INFECTIONS TO BE MONITORED ON REQUEST				

PATHOLOGICAL LESIONS OBSERVED

Organ: Lesions:

Organ: Lesions:

Organ: Lesions:

Organ: Lesions:

ABBREVIATIONS FOR LABORATORIES

Standard operating procedures can be obtained from

FELASA-APPROVED HEALTH MONITORING REPORT

Name and address of the breeder:

Date of issue: Unit No: Current test date:

Species: **Pig** Breed:

	HISTORICAL results pos/tested	CURRENT TEST results pos/tested	LABORATORY	METHOD
VIRAL INFECTIONS				
African swine fever				
Aujeszky disease virus (pseudorabies)				
Classical swine fever (hog cholera)				
Encephalomyocarditis virus				
Haemagglutinating encephalomyelitis				
Porcine cytomegalovirus (inclusion body rhinitis)				
Porcine epidemic diarrhoea (when associated with disease)				
Porcine influenza (H1N1, H3N2)				
Porcine parvovirus				
Porcine respiratory coronavirus				
Porcine reproductive and respiratory syndrome (PRRS)				
Porcine rotavirus				
SMEDI				
Teschen/Talfan virus				
Transmissible gastroenteritis (TGE)				
VIRAL INFECTIONS TO BE MONITORED ON REQUEST AND WHEN PRESENT IN THE COUNTRY				

FELASA-APPROVED HEALTH MONITORING REPORT

Name and address of the breeder:

Date of issue: Unit No: Current test date:

Species: **Pig** Breed:

	HISTORICAL results pos/tested	CURRENT TEST results pos/tested	LABORATORY	METHOD
BACTERIAL, MYCOPLASMAL INFECTIONS				
Actinobacillus pleuropneumoniae				
Bordetella bronchiseptica				
Erysipelothrix rhusiopathiae				
Eubacterium (Corynebacterium suis)				
Haemophilus parasuis				
Leptospira spp.				
Mycoplasma hyopneumoniae				
Pasteurella multocida (toxin producing)				
Salmonella spp.				
Staphylococcus hyicus				
Streptococci beta-haemolytic				
Streptococcus suis				
Yersinia enterocolitica				
BACTERIAL, MYCOPLASMAL AND FUNGAL INFECTIONS TO BE MONITORED ON REQUEST				

FELASA-APPROVED HEALTH MONITORING REPORT

Name and address of the breeder:

Date of issue: Unit No: Current test date:

Species: **Pig** Breed:

	HISTORICAL results pos/tested	LATEST TEST results pos/tested	LABORATORY	METHOD
PARASITIC INFECTIONS				
All helminths				
Eimeria spp.				
Isospora spp.				
Sarcoptes (other arthropods when associated with disease)				
PARASITIC INFECTIONS TO BE MONITORED ON REQUEST				

PATHOLOGICAL LESIONS OBSERVED

Organ: _____ Lesions: _____

Organ: _____ Lesions: _____

Organ: _____ Lesions: _____

Organ: _____ Lesions: _____

Organ: _____ Lesions: _____

ABBREVIATIONS FOR LABORATORIES

Standard operating procedures can be obtained from _____