

BOSSS

Bovine Syndromic Surveillance System



Disease Reporting and Investigation system

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OBJECTIVE OF THE BOSSS SYSTEM

Introduction

The Bovine Syndromic Surveillance System (BOSSS) is a web-based program for recording and analysing cattle disease information. BOSSS has been developed to allow producers to investigate disease within their cattle herd and to assist with national cattle disease surveillance.

Disease investigation

BOSSS allows busy cattle managers investigate cattle diseases easily and efficiently. There is an on-line cattle disease diagnostic computer program and the program has been designed to be operated by non-veterinarians. BOSSS provides users with a specific plan to further investigate complex problems. The system prompts the cattle producer to contact their veterinarian if there is any risk of the disease being exotic, a zoonosis (can be spread to man) or contagious to other cattle. Therefore BOSSS is designed to make the relationship between you and your veterinarian more fulfilling. You will be directed to your veterinarian if there is a disease risk to your enterprise or your staff and your veterinarian will be provided with more complete disease information. You have the option to send information by email about your disease outbreak to the BOSSS list-server. This is a national list of invited experts on topics ranging from cattle production, to toxic plants to veterinarians. These people can respond to you directly by email with suggestions and contacts.

Disease surveillance

Australia must continually monitor the health of the national cattle herd. We need to be able to rapidly detect exotic and emerging diseases should they occur in Australia. The information you provide to BOSSS will contribute to the evidence that Australia provides to trading partners to support our claims of freedom from many cattle diseases thereby maintaining access to our existing international markets and by opening up trading opportunities with new markets. It is important to note that information provided to BOSSS cannot be used to diagnose individual diseases with certainty (like a blood test). The only way that specific diseases such as Tick Fever can be diagnosed with certainty is through use of traditional tests. Therefore simply providing information to BOSSS will not result in trading restrictions. Reports that indicate that a serious exotic disease may be present will require follow-up by the department of agriculture in your state and the local stock inspector or veterinary officer will be notified by the system.

Information will be largely provided by producers, but some stock inspectors and vets will also participate. The information will be used for disease surveillance in Australia and the development of strengthened warning systems in the event of infectious and exotic diseases. The pattern of diseases within the cattle population will be monitored and any unusual combination of signs or change to the frequency of disease will result in the generation of warnings.

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USING THE BOSSS WEB SYSTEM

Location: **<http://www.ausvet.com.au/bosss/>**

BOSSS has developed a user-rich approach to its functions. The people who developed the program acknowledge that producers have many other responsibilities and that often time is short. So in order to encourage regular reporting and contact they made sure that BOSSS gives to its users *more* than it demands of them. Both the users and Australia's surveillance systems come out winners. The users of the system and the information they provide will play a key role in strengthening disease surveillance in Australia. In turn, the information and functions available to users of BOSSS constitutes a robust system of supports, tools and other resources as well as new connections to experts and other producers. These should make you feel like you have good backup, immediate feedback and analysis on the data you provide, as well as a few extras to make your job as a producer just a little easier.

Users provide;	BOSSS provides these benefits to users;
Monthly reports Disease event reports	Analysis Tools Disease Investigation Tools Disease Mapping Tools Post-Mortem Examination Guide Discussion list Expert advice via Email Resources to download Useful links Library of disease descriptions Library of disease case photographs Glossary of terms

Users provide reports

As a user of BOSSS you are asked to report both **regular** information and **event-based** information.

Monthly reports

Regular updates on the state of your herd and the conditions in which they have been living are useful when investigating potential disease causes. This information also provides a history of conditions on your property over time.

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Disease-event reports

Event-based reporting will allow users to enter information about a disease case, the symptoms you observe in a sick animal or herd and have these immediately analysed. BOSSS offers the opportunity to conduct a guided investigation, and then is able to recommend further investigations of the case by describing additional, specific observations, examinations, sample collections or post-mortem examinations that may be useful to more clearly identify the disease in the particular case.

The reporting of information by users will provide the backbone of the BOSSS surveillance system. This information will be stored and built upon over the years to develop into a formidable surveillance tool.

BOSSS benefits users

Disease Investigation Tools

It is also possible for users to have access to the disease investigation tools *without* submitting a report. This means that as a user, you may just wish to better acquaint yourself with a disease or to find out more about various symptoms you have seen in the past. After entering information about symptoms using the easy to use drop-down menus and graphical aids, BOSSS provides you with a list of possible disease causes to consider and then, importantly, the program will ask you further questions about the affected animal/s as it attempts to identify the disease more accurately.

After this guided investigation, BOSSS is able to recommend further investigations of the case by describing additional, specific observations, examinations, sample collections or post mortem examinations that may be useful to more clearly identify the disease in the particular case.

Post-mortem Examination Guide

So that you can get the most out of BOSSS and get even closer to pinpointing the cause of a disease on your property, BOSSS provides a comprehensive guide to post-mortem examination procedures. This clear, easy-to-follow tutorial will improve your taking and handling of specimens and increase the overall safety and efficiency of your post-mortem techniques.

Expert assistance

From time to time you will no doubt come across a case which is baffling or worrying, something way out of your experience or something you really want to get to the bottom of. BOSSS provides a means for you to link with experts in disease and cattle production. You can choose to send information on difficult cases to the network BOSSS experts. These experts can personally reply to you via email with advice and guidance for further work up. This allows for a strong dialogue between users and other experts working in the field and offers an additional means to finding a solution to those really hard to crack cases.

Disease Distribution Mapping

Users can also use BOSSS to obtain information on disease occurrence in Australia. Maps describing the distribution and rate of spread of common diseases (like 3-Day Sickness) are available for you to examine at any time. You will also be able to look at and compare the disease and mortality performance of your own herd over time and against district averages using the benchmarking module.

Disease Library

BOSSS contains a vast amount of information on animal disease which can be searched in different ways and used either for increasing your knowledge or clarifying your understanding about diseases. Each disease explanation is written in straightforward language and may have photos to view as well.

Glossary of terms

BOSSS users can at anytime refer to the glossary of terms which are used to describe diseases, signs or procedures. This eliminates confusion and really helps users to feel confident they have understood. Some of the signs in the BOSSS database, for example, may not use the kind of language you are used to when describing diseases. Just take a quick trip to the glossary and you will be able to get a brief, clear explanation of any confusing terms.

Photo Library of Diseases

To complement the library of disease descriptions, BOSSS also provides users with a comprehensive bank of photographs of animal disease cases. This is yet another resource to help you to reach solutions more efficiently. It is also a great learning tool for when you have a few minutes to browse.

Discussion forum with other producers

BOSSS provides an open forum for discussion for users and other invited experts to ask questions, share knowledge and experiences and to strengthen links between producers.

Downloadable Resources

Ongoing support through a wide range of up-to-date, useful resources is provided to users. You can download them for your own use or view and print from the menu.

Ongoing support and HELP

This user manual will take you through the major functions and features of BOSSS but you will also find lots of additional help within the program once you are able to log in. If you are still stuck after exhausting these options, please send an email to your local coordinator. Select **Contact us** from the menu, select your state and this will generate an email for your local state coordinator.

Logging in

Enter your **Username** and **Password** on the home page to log in to the program. These will have been assigned to you on registration. You can change your password to something more meaningful if necessary once you have logged in.

BOSSS - Bovine Syndromic Surveillance System

'Like having a copy of 'Hungerford's on line'



This site helps you investigate sick cattle within your herd. Your description of the cattle is used to identify potential diseases. BOSSS will: ask you questions about the sick cattle, recommend investigations you can undertake, suggest people who can help you, list potential diseases and provide information on these diseases and their controls.

Your data is confidential and can only be viewed by you, but will contribute to district averages that all participants can access. Information that you provide helps monitor our cattle for disease and provides vital support for international trade by maintaining market access.

This site is part of a remote area surveillance system for the Australian livestock industries, developed as a project of the Australian Biosecurity Cooperative Research Centre.

This site contains:

[\[User's Manual\]](#) - [\[Surveillance Database\]](#) - [\[Downloadable Resources\]](#) - [\[Project Coordination\]](#) - [\[Image Library\]](#) - [\[Links\]](#)

News and Events

Log in

Username:

Password:

A guest user name and password is available. Visitors to BOSSS may use this to gain entry to the site. Registered users may practice under this user name to gain familiarity with various BOSSS features.

Guest User Name: 'guest'

Guest Password: 'default'

Note that all events entered by guest users are assumed not to have occurred and are not analysed or reported

Main Menu

Menu

Disease Reporting

	New Monthly Status Report
	Review or Edit Monthly Status Report
	New Disease Observation Report
	Review or Edit Disease Observation Report
	Disease Investigation (no report stored in database)
	Discussions

Analysis and Mapping

- [Standard Analysis](#)
- [User-defined Analysis](#)
- [Disease maps](#)

Tools

- [Post Mortem Examination Guide](#)
- [Disease Information](#)
- [Information on Clinical Signs](#)
- [Setup Paddock List](#)
- [Download Resources](#)
- [Useful Links](#)

Your Account

- [Change Email Settings](#)
- [Change Password](#)
- [Logout](#)

The main menu provides access to:

Disease Reports -

Here you can lodge your monthly reports and disease event investigation report

Analysis and Mapping -

Examine what disease and signs have been reported in your region

Tools -

All the different tools and resources available to users within the program

Your Account -

Manage your account

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Disease Reporting

Monthly Status Reports

We ask that you take the time to complete this form each time that you enter case details.

You can provide basic details on the herd, feed, water and weather over the preceding period. Knowledge of stock type, body condition, nutritional status and weather is useful when investigating potential disease causes and this information provides a history of conditions on your property over time.

Monthly Status Report

Report Month	November	2004
Rainfall (total for month)	33	mm
Weather	Occasional storm	
Feed and Water	Standing dry feed only. Permanent water OK	
NIRS	Not tested	
Condition Scores (average)	Cows:	3.5
	Calves:	4
	Yearlings:	4
Comments	Stock in good shape for time of year. Wet cows slightly lighter.	
<input type="button" value="Submit"/> <input type="button" value="Cancel"/>		

Disease Observation Reports

Information on the locality, type of stock, mob size, type of stock, numbers affected and numbers dead are entered here. Individual disease signs are entered using the drop-down menu or the graphical interface (see below). Photographs from the case can be uploaded too.

Information (and photographs) recorded here is forwarded to experts on the list server for comment if you choose to do so.

Bovine Syndromic Surveillance System (BOSSS)

Disease Observation Report

Observation Date	<input type="text" value="07/10/2004"/>			
Location	Paddock:	<input type="text"/>		
	Latitude:	<input type="text" value="-19.259"/>	<input type="button" value="Lookup"/>	
	Longitude:	<input type="text" value="139.8258"/>		
Mob Details	Class of Stock	<input type="text" value="Calf"/>	<div>Calf,365;5;1</div>	
	Total in mob	<input type="text" value="365"/>		<input type="button" value="Add ->"/>
	Affected	<input type="text" value="5"/>		<input type="button" value="-> Delete"/>
	Dead	<input type="text" value="1"/>		
Breed	<input type="text" value="Cattle"/> <input type="text" value="Brahman"/>			
Last Observed	<input checked="" type="radio"/> 1 Week <input type="radio"/> 1 Month <input type="radio"/> 3 Months <input type="radio"/> >3 Months			
Similar Signs	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unsure <input type="radio"/> NA			
Vet visit?	<input type="radio"/> Yes <input checked="" type="radio"/> No If yes, diagnosis: <input type="text"/>			
Clinical Signs	<input type="text" value="RAPID FIELD DIAGNOSTIC TESTS"/>		<div>found dead (duration of illness prior to death unk (Yes) affected cattle - body weight less than normal (Yes) posture recumbency (downer) (Yes) skin wound (lesion) discrete, unspecified (Yes)</div>	
	<input type="text"/>			
	<input type="text"/>			
Graphical interface	<input type="text"/>		<div><input type="button" value="Add ->"/> <input type="button" value="-> Delete"/></div>	
Options for this case	<div><input type="button" value="Upload photographs of this case"/> <input type="button" value="Ask the experts about this case"/></div>			
	<div>Comments <input type="text" value="Likely to be infected castration wounds"/></div>			
<div><input type="button" value="Next Observation"/> <input type="button" value="Finished"/> <input type="button" value="Cancel"/></div>				

Guided Investigation of possible causes

Once you have entered a certain amount of data you may wish to investigate a case further by going through a guided investigation. Click on this button. You will then be asked a series of questions pertinent to the case in order to more finely determine the symptoms and, ultimately, the list of possible causes.

This function can also be useful for further developing your observation and investigation skills. If used in this exploratory manner, any data entered will not be submitted as a disease observation report.

Click the button if you wish to describe the signs present in another (different) case. You should use one observation report for each syndrome that you see. Include the signs from all animals affected with the same syndrome on the one report – even if not all animals show all signs that you select.

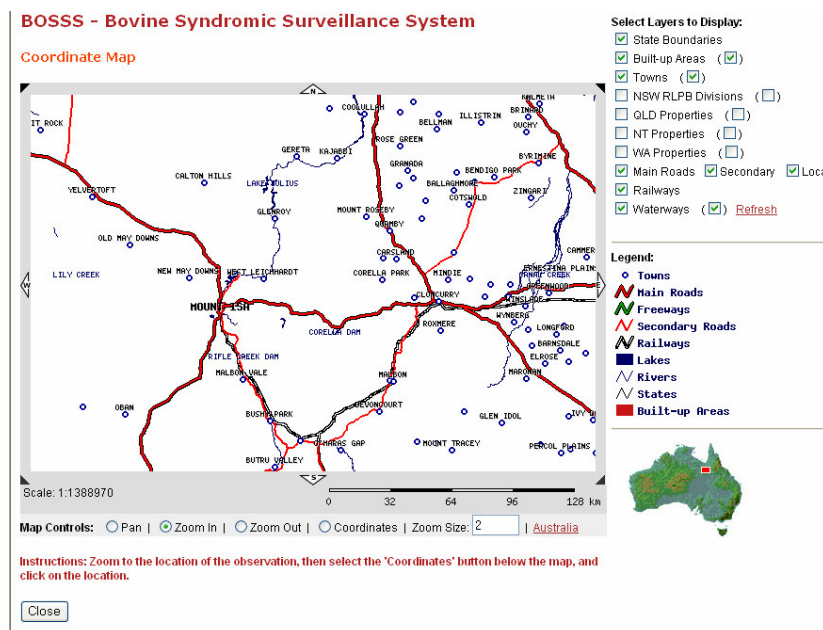
Tools for users

Mapping

Comprehensive mapping software is available allowing you to register your own paddock details and then whenever you submit reports to accurately pin-point the location of disease on your property. Select the globe icon to enter the mapping program.



The mapping facility allows you to examine the pattern of disease occurrence across the country when examining the whole database. You will also be able to benchmark your own property against the data available for your region.



Change the scale of the map by using these buttons. Select one of these options and then click on the appropriate location on the map.

☒ Zoom In | ☐ Zoom Out |

Obtain exact longitude and latitude coordinates by first selecting this button and then clicking on the appropriate location on the map

☐ Coordinates |

Ask the Experts

If you would like some expert feedback to help you to get to the bottom of a tough case you can do so when you are making a disease observation report. When you submit the case information you need only add a few extra lines describing the problem to the list server experts. This message will be attached to your disease observation report. The more fully you describe the problem and circumstances the easier it will be for the expert panel to answer your question fully.

Expect answers to be emailed back to you within a day or so of submitting.

Ask the Experts

Questions related to this disease report will be automatically directed to a panel of local and national experts for their comment. The more detail provided in the disease report, the easier it will be to answer the question. Clear photographs are also very useful.

Case report number 146

Subject	Weaner scours
Text	<p>The weaners in this report have a black scour. As you can see from the accompanying data there are only a handful affected at any one time but they do poorly and scour for weeks. I have not noticed any association with plants or lick. Suggestions appreciated.</p> <p>Thanks, Trevor Smith</p>
<input type="button" value="Submit Question"/>	

Disease Investigation Tools

This module lets you enter disease signs to find potential causative diseases. You can find information on potential diseases, signs and advice on further investigations for the case. It is a useful tool and an excellent educative function.

BOSSS - Possible causes of the signs that you see

Instructions

1. Using the drop-down lists on the left, select the signs observed in the animal or mob.
 - o Start with the first drop down and choose the type of sign
 - o Then select more detail from the second drop down
 - o Continue until there are no more levels, or you can't provide any more detail.
2. When the sign has been selected, click **Add** to add the sign to the list at the right.
3. Continue adding signs, until you have described your important observations.
4. If you make a mistake, highlight the incorrect sign in the list by clicking on it, and then click the **Delete** button. Highlight more than one by holding down the SHIFT or CTRL key while you click.
5. When you have finished, click **Check Diseases** to get a list of possible diseases.

Pick observations from the lists below, or use Graphical interface

DISEASE HISTORY

Beef (wet season)
Beef (dry season)
Dairy

Add ->
<- Delete
Explain
Check Diseases

[[Home](#) | [Change Password](#) | [Logout](#)]

Disease signs may be entered using the drop down menu provided on the left side of the screen. The signs are organised in a hierarchical format beginning with a general descriptive sign (all in capitals) and then moving down to specific signs (all in lower case) appropriate to the general sign. If you cannot differentiate signs further down the list, choose a more general sign (in capitals).

Add the signs that you are confident are present by clicking . They should appear in the list of Your Selected Observations on the right hand side of the screen.

Highlight signs that you wish to remove from your selection and press . Use this option if you make a mistake or have second thoughts about one of the signs in your list.

Pick observations from the lists below, or use Graphical interface

DEATHS / REDUCED PRODUCTION

DISEASED STOCK REDUCED PRODUCTION / MORTALITY

affected cattle - body weight less than normal

Beef (wet season)
Beef (dry season)
Dairy

Add ->
<- Delete
Explain
Check Diseases

Your selected observations

gait falls easily (Yes)
ABNORMAL MOVEMENTS (INCL. PROGRESSION, PARALYSIS, (Yes)
affected cattle - body weight less than normal (Yes)

The **Explain** button will take you to a definition of the highlighted sign. The definition for the sign generalised spastic paralysis/paresis is provided here as an example

Paralysis/paresis spastic generalised

Inability to move parts of the body, or serious weakness of the movements. All muscles are in a state of tetany so that the limbs are extended rigidly and the head and neck dorsiflexed

Close Window

The **Check Diseases** button will take you to a new screen which will display a list of diseases that can explain the signs that you entered. See below for more details.

The **Graphical interface** button will take you to the linked picture of the cow - this is an alternative site for easy data entry.

1) Click on the affected part of the animal

2) Select details from the lists below

Head and Brain

ABNORMAL BEHAVIOUR, ACTIONS, MENTAL STATES

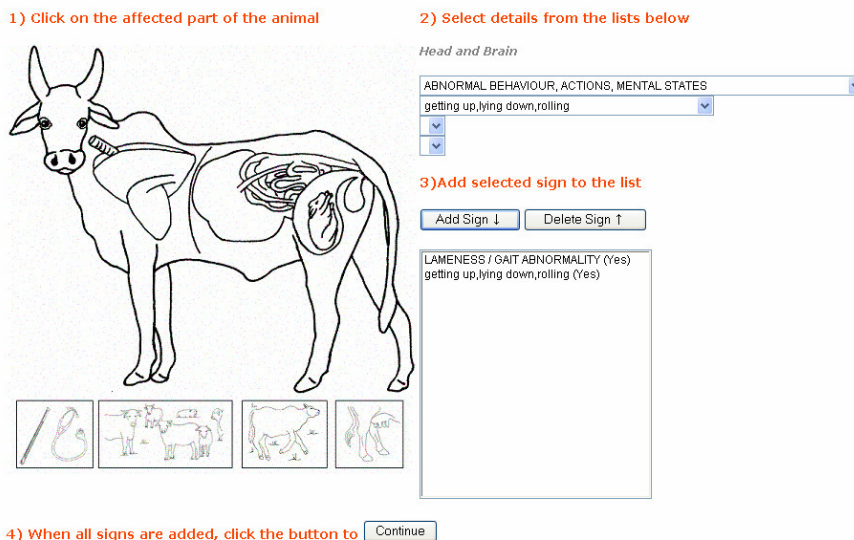
getting up, lying down, rolling

3) Add selected sign to the list

Add Sign ↓ Delete Sign ↑

LAMENESS / GAIT ABNORMALITY (Yes)
getting up, lying down, rolling (Yes)

4) When all signs are added, click the button to Continue

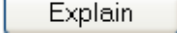


Bovine Syndromic Surveillance System (BOSSS)


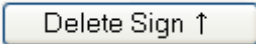
Select a sign by first clicking on the appropriate body part. This will limit the sign menu list on the right to only include relevant signs for that body part. Then select the specific sign that you need from the reduced list. You should proceed down the list (towards more specific signs) only as far as you are confident.

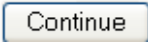
Most users will find this method the easiest way to enter signs

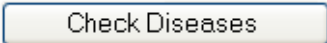
Use a general sign from higher up the list (CAPITALS) rather than a specific sign from lower on the list (lowercase) if you are unsure about the exact nature of a sign. The example above has selected the general sign **LAMENESS/GAIT ABNORMALITY** as well as the specific sign **getting up, lying down, rolling**.

Definitions for each sign are provided by the system. The  button will take you to a definition of the highlighted sign. You can also access sign explanations from the main menu by clicking.

Signs are listed in alphabetical order here

Select   to add a new sign or remove a selected sign from your description of disease

Click  when you have entered all the signs for this case.

Click  to examine the list of possible diseases that can produce the signs that you have seen

Check Diseases

Once you click on the Check Disease button you will be taken to a new screen that lists the diseases in order of likelihood as possible causes of the signs that you have seen.

The rank bar indicates the confidence that an individual disease is the real cause – the more the bar fills the greater the confidence in the diagnosis. Ephemeral fever has been identified as the most likely cause in this example. However the rank bar level is low indicating that more information is needed to determine the likely cause. Proceed to guided examination to provide this information

Possible Diseases

The following list contains diseases that may be causing the problem you have described. Always check with a vet if you want to know what get a real diagnosis in case of sick animals. To find out more about a particular disease, click on the name of the disease below.

Disease	Rank
Ephemeral fever	<div><div></div></div>
Toxaemia undifferentiated	<div><div></div></div>
Endocarditis	<div><div></div></div>
Starvation	<div><div></div></div>
Spondylitis	<div><div></div></div>
Hydrocephalus	<div><div></div></div>
Poisoning salt acute	<div><div></div></div>
Poisoning lead dumb form	<div><div></div></div>
Akabane virus disease neonatal hydranencephaly	<div><div></div></div>
Cerebrospinal larval migrans	<div><div></div></div>
Localised infection	<div><div></div></div>
Brain trauma	<div><div></div></div>
Dehydration undifferentiated	<div><div></div></div>
Malnutrition	<div><div></div></div>
Otitis media/interna	<div><div></div></div>
Encephalitis undifferentiated	<div><div></div></div>
Flv / mosquito / midge infestation	<div><div></div></div>
Polioencephalomalacia acute	<div><div></div></div>
Poisoning algae	<div><div></div></div>
Liver abscess acute local	<div><div></div></div>

Risk Levels

Risk of being a **very contagious** disease
 Risk of being a **zoonotic** disease
 Risk of being an **exotic** disease

This appears to be a **low risk** disease. You should however always use appropriate caution when dealing with unknown diseases.

What next?

1) Add or Remove Signs

Return to the previous page to edit the list of signs.

Add or Remove Signs

2) Guided Examination

The system can attempt to narrow down the list of possible diseases by asking specific questions about the case.

Guided Examination

3) Recommended Actions

Should I call a vet? Should I collect samples for analysis? If so, which ones? The system can provide advice on what to do now.

Recommended Actions

You will find that the rank bar fill will change for each disease after undertaking the guided examination – leaving only a few feasible possibilities. The guided examination obtains extra information from you on key signs that are present (or missing) in the case.

Guided Examination

Guided Examination

Click the guided examination button.

This will take you to a page of questions that are relevant to your case. The program takes the information that you have provided and makes a list of possible disease causes and to generate a series of questions that can be used to further sort through the diseases. The interrogation module takes you to these questions.

Bovine Syndromic Surveillance System (BOSSS)

Questions have been grouped into two basic categories – signs that you may observe from a distance, and signs that require you to examine the animal from very close range (eg in a crush). Within each broad category similar signs have been grouped together (eg breathing and respiratory tract). All questions are of the form “did you see the following sign?” and answers can be entered quickly using your mouse to click the appropriate answer.

Guided Examination

Please indicate if the following signs were present or absent, or if you are unsure.

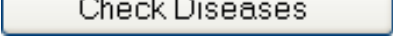
- [Observations from a distance](#) (may be done in the field)
- [Hands-on examination](#) (usually requires restraint)

1) Observations from a distance

Did you observe any of the following signs?

Clinical Sign	Yes	No	Not Sure
Animal details -sex, age, status, etc (signalment)			
lactating cow	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
calving, during first month afterwards	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
age adult	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
female	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
dry cow	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Behaviour, actions, mental state			
excessive response to external stimuli (hyperrespon	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
restlessness	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
convulsions unspecified	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
convulsions tetanic (rigid)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

You will be able to provide many answers to questions, especially by confirming the absence of certain signs. The answers that you provide improve the chance of identifying the correct disease. Your answers also increase the surveillance worth of the case information. You are encouraged to use this tool each time that you enter a case.

Once finished, click  to see how the information that you have entered has modified the disease list.

You may re-enter the interrogation again. The list of questions offered to you this time will be different because BOSSS has since updated the disease list resulting in a new series of questions. Greatest accuracy will be achieved by only answering questions on signs on which you are sure followed by rechecking the disease list, then returning to the interrogation module to repeat the process. Do this until you can provide no more information with certainty.

The guided examination will help you to investigate a case thoroughly

Disease information

You can access information on listed diseases by clicking on the disease name.

This will provide you with information on the factors that combine to produce disease (epidemiology), diagnosis, treatment and control. References to the disease in common veterinary text books are also provided. Links to relevant AgNotes and photographs of cases may be available for some diseases.

Acute salt poisoning information is provided here as an example

Poisoning salt acute

Epidemiology

Thirsty cattle given access to saline water. Cattle on normal salt intake given access to normal water after prolonged period of water deprivation. Young cattle most susceptible

Diagnosis

Laboratory test: High levels of sodium chloride in liver nad brain at post mortem.

Treatment

Limit amount drunk when very thirsty cattle are first returned to water. Eliminate saline water sources.

Control

Limit access to saline water. Ensure water available at all times; after deprivation allow access to water gradually.

References

Radoszits et al. Ed8p.1499; Blood PCp.568 Malmo USVM18p.150; Bryden USVM4p.60

Clinical signs

Information on [Clinical signs](#) are provided when you click this button. The signs present within the individual disease are listed with the most common signs listed first. The rank is an estimate of the proportion of cases of disease that show this sign.

Note that not all signs occur in every case of the disease. This is why the guided examination is important – it is the combined effect of all signs (present and absent) from a case that determine the likelihood that an individual disease is the cause.

Signs for Akabane virus disease neonatal hydranencephaly

Sign	Rank
blindness indicated by behavior (bumping into obje	99.90%
illness lasts >2 weeks (course chronic)	99.90%
voluntary feed intake < 50% of normal	95.00%
age 1 to 7 days	95.00%
poor response to external stimuli (hyporesponsive)	95.00%
eye(s) menace response absent (no blink reflex)	95.00%
cattle numbers affected > 1; outbreak	95.00%
illness present since birth (congenital)	95.00%
affected cattle - body weight less than normal	90.00%
eating slow	70.00%
walking, aimless or compulsive	70.00%
brain hydranencephaly PM	70.00%
fetus small PM	70.00%
sucking/teat-seeking absent	70.00%
gait abnormal all four limbs	30.00%
gait stumbling	30.00%
abortion	30.00%
gait abnormal unspecified	30.00%
infectious hydranencephaly PM	30.00%

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Discussions

Interesting cases and comments from experts can be viewed within the discussions menu. They can only be viewed by registered users of the system.

Discussions

[New Message](#)

(Page: 1)

From	Subject	Message	Date	Replies	
Angus Cameron	Problems fixed	Yesterday's "problems" with pu...	30/09/2004 at 23:01	0	Delete
Angus Cameron	How's this for a "subject" line?	Things seem to be 'working' no...	30/09/2004 at 22:57	0	Delete
Angus Cameron	New test message	Test 'message'....	30/09/2004 at 22:54	1	Delete
Angus Cameron	Abortion causing bulging eyes	How can this be possible? Bovi...	23/05/2004 at 14:37	3	Delete
Angus Cameron	Detailed BOSSS investigation	This is a case with informatio...	21/05/2004 at 16:10	2	Delete
Angus Cameron	Blood running from nose	What causes this?...	21/05/2004 at 15:13	3	Delete
Angus Cameron	MCF	BOSSS says this might be MCF. ...	21/05/2004 at 15:03	3	Delete

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Analysis and Mapping

Various reports may be generated. You can examine the most commonly reported signs and the most likely diseases reported in various districts by selecting the appropriate query

Surveillance Program Automated Data Analysis and Reporting

- [Most Common Signs](#)
- [Most Likely Diseases](#)

Each query will require you to select the time period in question and for some, the region of interest.

Most Commonly Reported Signs

Sign Detail Level:

Start of Period:

End of Period:

State:

Table contains no

[[Home](#) | [Chang](#)]

led by [AusVet Anim](#)

For the Australian Livestock Industry:

Most likely diseases

This report calculates a ranked list of the most likely diseases to be occurring.

Start Date:

Enddate:

State:

Future enhancements will include the ability to map likely diseases and signs over time for your region. This may give you some idea of the likely future threat of certain diseases such as ephemeral fever.

Post-mortem examination guide

A guide to conduct of a post mortem in a ruminant (sheep or cattle) is provided. This section provides information on equipment, risks, sample collection and conduct of post mortem examinations. You will be directed to the relevant section of the post mortem guide when undertaking a guided examination of a case.

How to conduct a post mortem examination on sheep or cattle

Contents

Before you start

- [Training](#)
- [Safety](#)
- [Equipment](#)
- [How to collect laboratory samples](#)
- [Sample containers](#)
- [Guide to common samples](#)

Getting started

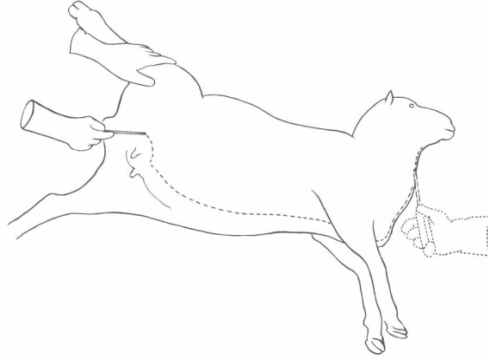
1. [Positioning the carcass](#)
2. [Skinning](#)
3. [Cutting through the hip joint](#)
4. [Opening the abdomen](#)
5. [Open the chest cavity from inside the abdomen](#)
6. [Opening the chest cavity](#)

Removing the organs

7. [Removing the omentum](#)
8. [Remove the windpipe and oesophagus from the neck](#)
9. [Cut the oesophagus and windpipe as they enter the chest](#)
10. [Remove the organs within the chest](#)
11. [Begin the removal of the small intestine](#)
12. [Remove the small intestines from the abdomen](#)
13. [Cut the small intestines free of the abdomen](#)
14. [Examine and remove the kidneys](#)
15. [Remove the large intestine](#)
16. [Remove the stomachs and spleen](#)
17. [Remove the liver](#)

Step 1: Positioning the carcase

1. Check the environment. Examine feed and water supplies
2. Place the animal on its left side. This will place the rumen on the underside of the body.
3. Study the external surfaces of the body before cutting. Determine body condition and examine skin and hair. Look inside the external orifices (mouth, nose, ears, vagina/penis, rectum). Examine hooves, limbs and joints. Check for injury, parasites, wounds or struggle.
4. Cut the skin along the middle of the abdomen from underneath the jaw through to the pelvis. Do not cut into the abdomen or chest at this stage.
5. Cut around the udder or penis



A guide to tissue sample type is also provided. This useful summary will guide your sample collection ensuring that appropriate samples are collected into correct jars and preservatives.

Tissue sample guide

You may be required to collect some of the samples listed below:

1. It is better to provide too many samples than not enough so if in doubt, collect the sample
2. Other (non-listed) specimens may be required when investigating specific diseases. Consult with your local animal health authority to find out which specific samples may be required

Organ or tissue	FRESH Sample (chilled or frozen) Block = 3-5 mm thick	FIXED Sample (in formalin solution) Block = 10mm thick
Abnormal tissues	Slice of tissue in yellow top (sterile) jar	Slice of tissue including the border between normal & abnormal tissue
Blood	Red top (plain) and purple top (EDTA) blood tubes	
Brain		Whole brain + early spinal cord (in 5 litre jar)
Eye	Fluid from front chamber in red top tube	Whole eye
Heart		Slice of heart muscle
Lung		Slice of lung
Spleen		Slice of spleen
Rumen-Reticulum	Sample of content in yellow top (sterile) jar	Slice of stomach wall
Fourth stomach (Abomasum)	Whole organ and first 3 metres of small intestine and the contents if a total parasite worm count is required	Slice of wall
Intestines	Slice of tissue in yellow top (sterile) jar. Gut contents may also be collected in a yellow top (sterile) jar.	Slice of intestines (you may need specific sections of gut for certain diseases)
Gut lymph glands	Slice of tissue in yellow top (sterile) jar	Slice of lymph glands
Liver	Block of liver in yellow top (sterile) jar	Slice of liver
Bile	Red top blood tube or yellow top (sterile) jar	
Kidney	Full thickness block of kidney in yellow top (sterile) jar	Full thickness block of kidney
Bone marrow - red		From thigh bone (young animal) or slice of rib
Urine	Red top blood tube or yellow top (sterile) jar	
Milk	Sterile tube or swab	
Dung	Sterile yellow top	

Information on clinical signs

Information on clinical signs can also be accessed from the main menu. Here, the signs are listed in alphabetical order.

A brief description follows as well as access to diseases that may show that sign.

Tongue swollen

General Information

The tongue is swollen and may also be hard and painful. Inability to close the mouth and excess salivation may also be present

Disease information

Information on diseases can also be accessed from the main menu. Here, the diseases are listed in alphabetical order.

Disease Information

Administration and help

Set up paddock list

You may wish to record disease at the paddock level. If so, you will need to enter each paddock on your property via this screen. You can select the mapping tool to identify the centre of the paddock and capture the latitude and longitude. Click the globe icon to enter the mapping program.

Administration

Edit Paddocks and other stock locations

Paddock/Location Name	<input type="text"/>
Latitude	<input type="text"/>
Longitude	<input type="text"/>



Download Resources

Download resources is a library of useful resources which will be updated regularly. It includes documents, images and information relevant to current disease trends and disease management regulations. This will be a useful site to access for current information. You can save these documents onto your own computer or print all or part of them if you require a hardcopy.

Remote Area Surveillance Resources

- [Publications](#)

Useful Links

Contributing organisations with web pages are listed here. This site will include links to your state department of agriculture.

Useful Links

- [Research Organisations](#)

Research Organisations

[Australian Biosecurity CRC](#)

<http://www.abccrc.org.au>

CRC

Email your state coordinator

Choose this option to email your state coordinator if you are experiencing difficulties or wish to seek clarification.

Download Users Manual

A copy of this manual is available for downloading from within the program and from the main page

Change Email Settings

You can choose to receive or cancel emails generated by the discussion list at any time. All users will be set to receive emails lodged to the discussion list if generated from a nearby location. You can disable this function if you choose.

Email Settings

When a message is submitted to the discussion list, the following people will normally automatically receive a copy via email:

- Everybody nearby
- Everybody higher in that person's reporting hierarchy
- All participating experts

If you wish to change your email settings for the discussion group indicate this below. If you disable emails, you will still be able to log on to the system and browse the discussions on-line, or reactivate them on this page at any time.

Your emails are currently **Enabled**

[Disable Discussion List Emails](#)

Change Password

This function allows you to change your assigned access password.

Change Password

Use this form to change your password. You can change your password as often as you want. numbers and punctuation.

New Password (once)

New Password (again)

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