

Healthy Hens 

Safe Eggs 

Healthy People

Biosecurity information for new staff
in the Australian egg industry





HEALTHY HENS

Everyone in the egg industry has a role to play – keeping the national flock **healthy** – and providing **safe** eggs to the community.

Knowing the basics of **biosecurity** – keeping yourself clean and healthy at work – protects you, your co-workers and the community.

In this booklet we'll explore the answers to these questions:

1

What is **BIOSECURITY**?

2

Which **DISEASES** are **IMPORTANT** to the **LAYER INDUSTRY**?

3

What are the **SIGNS** of **DISEASE** to look out for?

4

How do **BACTERIA** and **VIRUSES ENTER, MOVE WITHIN**
and **EXIT THE FARM**?

5

What **BIOSECURITY PRACTICES** are in **PLACE ON FARM**
and how do they **STOP BACTERIA** and **VIRUSES** from
INFECTING the **FLOCK**?



SAFE EGGS

This booklet will also inform you about the **importance** of **biosecurity** and **food safety** on an egg farm.

6

What is **FOOD SAFETY**?

7

How can eggs **MAKE PEOPLE SICK**?

8

What is **SALMONELLA** and why does it matter?

9

What is **MY ROLE** in **FOOD SAFETY**?



At the back of this booklet there are **three worksheets** to record what you learn about biosecurity and food safety.

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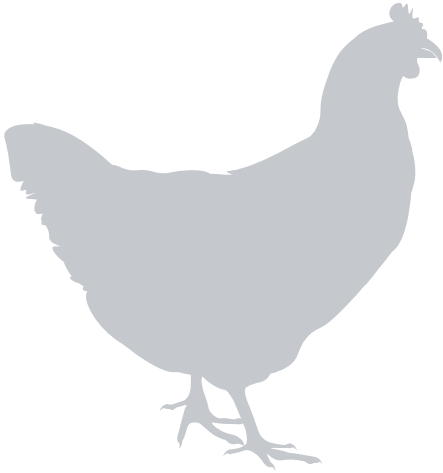
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HEALTHY HENS

Egg farms have many processes in place to protect people and poultry from viruses and bacteria.

Together, these processes are called **biosecurity** and are often mapped out in a **biosecurity plan**.

BIOSECURITY: measures aimed at preventing the introduction and/or spread of harmful organisms to animals and plants in order to minimise the risk of transmission of infectious disease.

Because keeping our plants and animals healthy is so important, biosecurity processes are in place in every farm, at every state border and at our international borders.

Everyone on an egg farm needs to comply with the farm's biosecurity processes, and as a staff member you will play an important role in preventing animal and human disease.

The farm that you work on will have a biosecurity plan, which includes all the processes in place to:

- stop bacteria and viruses getting onto the farm
- stop bacteria and viruses spreading throughout the farm
- stop bacteria and viruses from leaving the farm.

Bacteria and viruses:

- are tiny and invisible, and
- can't transport themselves.

So, on the farm, they are carried around by: rodents, wildlife and pests, people and their clothes and shoes/boots, vehicles, equipment, new chicks, water, manure, spent hens or carcasses.

Maintaining good biosecurity means removing as many biosecurity risks as possible, this will involve both:

- biosecurity at the farm gate
- biosecurity inside the farm.



FACT

There are many viruses and bacteria that cause disease and:

- Make the hens sick
- Cause flock mortalities
- Make people sick

FACT

Everything that enters, or moves within the farm is a biosecurity risk.

BIOSECURITY PROCESSES FOR ENTERING THE FARM

Because any person, vehicle or item that enters the farm is a biosecurity risk, only necessary people, vehicles and items should be allowed to enter the farm.

For people, vehicles and items that do need to enter the farm, common biosecurity processes for entering include:

- having a visitor parking space, so that visitors don't bring their vehicles onto the farm
- having a vehicle or wheel wash for vehicles to be cleaned before they come onto the farm
- having a sign in process for visitors, which asks them about their level of biosecurity risk
 - a visitor sign in sheet also helps the farm track any disease outbreaks
- having a change of clothes and boots for visitors that enter the farm, in case they are carrying bacteria or viruses on their clothing
- having a cleaning procedure for items that removes any viruses or bacteria they may be carrying.

The farm you work on may have other processes in place so that biosecurity risks are minimised at the farm gate, and you should be aware of these.

BIOSECURITY PROCESSES FOR MOVING WITHIN THE FARM

Sick hens can carry harmful viruses and bacteria but sometimes hens can be sick without showing any signs of illness. This means if you have been in the sheds, touched hens, or hen faeces; any viruses or bacteria in the flock could be transferred to you.

If you are moving between sheds then you could be carrying invisible viruses or bacteria, meaning you are a biosecurity risk!

This is why it's important to follow all biosecurity processes in place when you enter or exit the shed. The following processes are common on egg farms:

- Hand washing when entering and exiting sheds
- Boot washing or boot dipping or changing boots
- Changing clothes.

Because young hens are the most likely to catch disease, in some farms, staff must always move from younger flocks to older flocks.



EQUIPMENT

Equipment that's used in multiple sheds can also be carrying viruses or bacteria. It's important that any equipment that needs to move within the farm is properly cleaned between sheds. This will involve cleaning off any dirt but also chemically disinfecting or sanitising it.

These processes are common in the industry, but make sure you know what the processes are on the farm you work on.

BIOSECURITY PROCESSES FOR LEAVING THE FARM

Part of good biosecurity is making sure any virus or bacteria on the farm doesn't leave the farm, as it can present a risk to your family, community or other farms.

As with entering the farm, only vehicles and items that need to leave the farm should be allowed to. Vehicles and items should be cleaned before they leave, as viruses and bacteria are invisible this cleaning process should involve getting rid of dirt and sanitising or disinfecting.

At some point all people will need to leave the farm and it's common for people to shower and/ or change into a clean change of clothes before they go home, to be sure they're not carrying any viruses or bacteria off the farm.

HIGH RISK ITEMS THAT LEAVE THE FARM

All hens (dead or alive) and manure leaving the farm are a high biosecurity risk, as there is a greater chance they are carrying bacteria or viruses. These items should always be handled with care, make sure you know how the farm you work on safely manages these risky items.

CONTROLLING OTHER ANIMALS

Wild birds, rodents, insects and wildlife that move through the farm can also spread disease. In particular:

- Wild birds carry diseases that can severely effect hens, and
- Rodents can carry *Salmonella* which a serious food safety concern.

The farm you work on will have processes in place to:

- discourage animals from visiting the farm; like keeping the farm clear of places that rodents can nest and immediately cleaning up feed spills that could attract wild birds and rodents.
- reduce the populations of insects and rodents; through pest control programs.



MORE INFO

For a full run- down on biosecurity best practice, see the *National Farm Biosecurity Manual for Egg Production*



WORKSHEET TIP

If you're using the worksheets, record how the farm you work on manages biosecurity at the farm gate and within the farm.



HOW DISEASE SPREADS BETWEEN HENS

In earlier sections we describe how disease can enter or leave the farm. The first goal of biosecurity is to prevent disease from entering the farm, however if disease does enter the farm it's important to understand how it can spread between hens.

Some diseases are spread in droplets in the **air**.

- for example, if an infected hen coughs, bacteria or virus particles are breathed out which can then be breathed in by another hen.

Some diseases are spread in **faeces**.

- for example, a sick hen will shed bacteria or virus particles in their faeces, which will be pecked and picked up by another hen, particularly in non-cage systems.
 - bacteria or viruses in rodent and wild bird faeces can be picked up in this way too.
 - food or water that comes into contact with faeces can become contaminated with bacteria or viruses.

As you can see, once disease infects a few hens in the flock, it can quickly spread to many hens through the air or faeces. The farm keeps hens healthy by:

- Vaccination
- Providing good animal care
- Providing clean water
- Providing safe, healthy food.

On the farm, you will contribute to keeping the hens healthy and disease free. Some signs of disease you should keep a look out for are:

- decreased egg production
- loss of appetite
- diarrhoea
- discoloured or swollen comb
- poor quality eggs
- ruffled feathers
- closed eyes and droopiness
- unwillingness to move
- leaking of fluid from the eyes, or crustiness of eyes and feathers around the face
- sudden hen deaths
- difficulty breathing
- coughing, rasping, sneezing.

Make sure you know the steps you need to take on your farm when you find dead hens or if you think hens are sick.

FACT

Everyone working on an egg farm is responsible for keeping hens healthy and safe.

IMPORTANT DISEASES OF LAYING HENS

Just like people, there are many diseases that can cause hens to become sick, the below is a short list of diseases which can have a significant impact on the flock and farm.

- Avian Influenza (AI)
- Infectious laryngotracheitis (ILT)
- Newcastle Disease
- Fowl Cholera
- *Salmonella* Enteritidis
- Spotty Liver Disease

Avian Influenza, ILT, *Salmonella* Enteritidis and Newcastle Disease are **NOTIFIABLE DISEASES**, which means the government needs to be notified if the disease is found on the farm.





SAFE EGGS

Food safety: is handling, preparing and storing food so that it doesn't cause human illness. All food in Australia provided to humans to eat must be safe to eat.

Food safety is the responsibility of all people working in an industry that produces food, if you are working on an egg farm, this includes you.

In the egg industry, egg farmers work very hard to prevent consumers from getting gastroenteritis or 'gastro' from eggs. Gastro can be very serious and sometimes cause death.

EGGS AND GASTRO

Like hen diseases, gastro is caused by bacteria and viruses.

- These bacteria and viruses live in the gut of humans and animals, including rodents and wild birds.
- These bacteria and viruses are shed in human and animal faeces.

Bacteria and viruses shed in faeces can find their way onto your hands, body and clothes and be spread to eggs when you handle them.

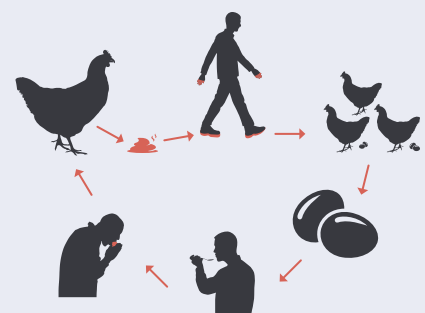
A hen with a 'gastro' bacteria or virus in their gut can also contaminate eggs with her faeces – this is the main reason eggs with dirty shells are washed or discarded. Hens can carry 'gastro' bacteria or viruses in their gut that don't cause 'gastro' in the hens, but can cause 'gastro' in humans.

YOUR ROLE IN KEEPING EGGS SAFE

Because bacteria and viruses are invisible, there is always a chance that you have bacteria or viruses on your hands, face, body, shoes, hair or clothes that could make people or hens sick, or contaminate eggs.

FACT

Clean staff keep eggs safe to eat.



Your goal as a food handler is to make sure you are staying clean, and free from bacteria or viruses on your hands, body or clothing.

Do not come to work if you are sick, or recovering from being sick because:

- you're likely to be carrying the bacteria or virus on your body and clothes
- you're likely to make others sick and contaminate the hens and/or eggs.

Wash your hands (and sanitise):

- after touching your face, hair or shoes/boots
- after having a break
- after eating
- after going to the toilet
- after touching eggs
- after touching hens
- when entering the shed
- when leaving shed

Keep your clothes and footwear clean

- wear a new change of clothes every day
- you can wear coveralls to keep your clothes clean
- the farm you work on might require you to change footwear in some places on the farm.

EGGS, FOOD SAFETY AND THE LAW

The law for food safety in the egg industry is the *Australia New Zealand Food Standards Code- Standard 4.2.5- Primary Production Standard for eggs and egg products*.

Egg farms and processors must comply with this code and to be able to demonstrate compliance otherwise they will lose their licence to produce eggs.

(Each State and Territory also has additional food safety and biosecurity regulations for egg farms and processors, which they enforce in different ways.)

YOUR ROLE, ACCORDING TO LAW

'A person involved in egg production must exercise personal hygiene and health practices that do not make the eggs unsafe or unsuitable'.

This means it is your responsibility to ensure your personal hygiene or health does not impact the safety of the eggs produced at the farm you work on.

WORKSHEET TIP

If you are using the worksheets, record how food safety is managed on the farm and what you will be required to do on farm to keep eggs safe in Worksheet 2.

FOOD SAFETY AND BIOSECURITY IN PRACTICE

Salmonella is a bacteria that is often associated with food-related illness from eggs.

Other bacteria of importance are *Campylobacter* and *Listeria*.

These bacteria live in the faeces and intestines of animals and humans and spreads to humans who eat food contaminated with faeces.

In the egg industry, *Salmonella* and other bacteria can contaminate egg shells when:

- Egg farm workers transfer bacteria to the egg shell when handling eggs (especially if they haven't washed their hands before handling the eggs)
- Egg farm workers don't wash their hands before touching equipment or packaging that comes into contact with eggs
- Animal faeces come into contact with eggs or are eaten by hens who then end up with the bacteria in their faeces
- Dirty eggs transfer bacteria from the dirt and faeces on their shells onto egg transport, grading and packing equipment which can then contaminate other egg shells.



A CASE STUDY FROM THE AUSTRALIAN EGG INDUSTRY IN 2018

There are many types of *Salmonella*. Most types live on the egg shell, but some are able to make their way inside the egg. If *Salmonella* is in the egg, then it is particularly unsafe for consumers.

Salmonella Enteritidis (SE) can infect hens **and** can also enter the egg. This makes it more of a concern than other types of *Salmonella*.

Hens infected with *Salmonella* often don't appear very sick which means *Salmonella* can go undetected in the flock, and contaminated eggs can end up being sold to consumers.

- In May 2018 there was an outbreak of SE on one NSW egg farm.
- The bacteria was transported on people, hens, manure, eggs and equipment that were moved between farms, and 16 farms in NSW and 5 farms in Victoria ended up contaminated.
- Some farms had to have **every hen** culled, and for some the process of restarting the business has taken years.
- **SE is a very serious problem. If SE infects the farm you work on, it could be forced to stop trading, depopulate and all staff could lose their jobs.**
- SE can be spread through the movement of birds, eggs, manures, produce, equipment, feed, rodents, people and vehicles.
- SE can even spread on cardboard which moved between farms.
- SE survives in the soil, so once it enters the farm it is very hard to eliminate.

SE remains a risk to Australian egg farms, the best protection against SE is consistent, robust biosecurity and food safety on farm.

Food safety and Biosecurity protects the farm against SE and other bacteria, viruses and diseases which could seriously harm the hens and the farm.

There are steps taken on farm to prevent *Salmonella* from contaminating hens and egg shells:

1. Ensuring staff wash their hands before and after handling or packing eggs
2. Ensuring staff wash their hands before and after handling hens
3. Discarding cracked and dirty eggs, which have an increased risk of contamination
4. Effective egg washing to kill bacteria with clean water
5. Maintaining good biosecurity.



WORKSHEET 1

MAKE NOTES BELOW ON DETAILS OF THE FARM'S BIOSECURITY PLAN

How does the farm stop bacteria and viruses getting onto the farm?

How does the farm stop bacteria and viruses spreading through the farm?

How does the farm stop disease from leaving the farm?

W1 cont.

If you like, use the below to provide more detail on how each biosecurity risk is managed.

PEOPLE

| |
|------------------------|
| Entering the farm |
| |
| Moving within the farm |
| |
| Exiting the farm |
| |

VEHICLES

| |
|------------------------|
| Entering the farm |
| |
| Moving within the farm |
| |
| Exiting the farm |
| |

W1 cont.**EQUIPMENT**

Entering the farm

Moving within the farm

Exiting the farm

NEW CHICKS

Entering the farm

Moving within the farm

Exiting the farm

W1 cont.

WATER

| |
|------------------------|
| Entering the farm |
| |
| Moving within the farm |
| |
| Exiting the farm |
| |

WATER

| |
|------------------------|
| Entering the farm |
| |
| Moving within the farm |
| |
| Exiting the farm |
| |

W1 cont.

ANIMALS

Entering the farm

| |
|--|
| |
|--|

Moving within the farm

| |
|--|
| |
|--|

Exiting the farm

| |
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| |
|--|

MANURE

Entering the farm

| |
|--|
| |
|--|

Moving within the farm

| |
|--|
| |
|--|

Exiting the farm

| |
|--|
| |
|--|

W1 cont.

SPENT HEN AND CARCASSES

| |
|------------------------|
| Entering the farm |
| |
| Moving within the farm |
| |
| Exiting the farm |
| |

OTHER RISK:

| |
|------------------------|
| Entering the farm |
| |
| Moving within the farm |
| |
| Exiting the farm |
| |

W1 cont.**OTHER RISK:**

Entering the farm

Moving within the farm

Exiting the farm

OTHER RISK:

Entering the farm

Moving within the farm

Exiting the farm

WORKSHEET 2

MAKE NOTES ON YOUR ROLE WITHIN THE FARM'S BIOSECURITY PLAN

Steps you are required to take when:

At home

Entering the farm

**Entering the production area
(if relevant on your farm)**

Moving between sheds or areas of the farm

Entering and working in the shed

Handling farm equipment

W2 cont.

Handling eggs

Using the bathroom

Taking a break at work

Dealing with visitors or contractors

If you suspect a flock may be showing signs of disease

Leaving work

W2 cont.

Other – farm to specify

Other – farm to specify

Other – farm to specify

WORKSHEET 3

MAKE NOTES ON HOW FOOD SAFETY IS MANAGED AT THE FARM YOU WORK ON

Steps you are required to take when:

According to the law, your role in keeping eggs safe is:

The farm has the following food safety procedures or processes in place:

According to these procedures or processes, to keep eggs safe, I will need to:





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