

## Bioexclusion: Keeping Infectious Diseases Out of Your Herd

Information leaflet for Irish farmers, advisors and vets



THIS GUIDE IS PART OF A SERIES OF LEAFLETS ON VARIOUS ASPECTS OF BIOSECURITY

1. Understanding Infectious Diseases
2. Bioexclusion: Keeping Infectious Diseases Out of Your Herd
3. Purchasing Stock: Reducing Disease Risks
4. Preventing Disease Spread within Your Farm – Biocontainment
5. Managing an infectious disease outbreak

AHI gratefully acknowledges the financial and other contributions of our stakeholders.



BIOSECURITY CONTROL PROGRAMME



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The information in this leaflet can be used to assist you and your veterinary practitioner in formulating a Bioexclusion Plan for your farm. This involves an assessment to identify infectious disease risks outside your farm followed by developing an action plan to minimise these risks.

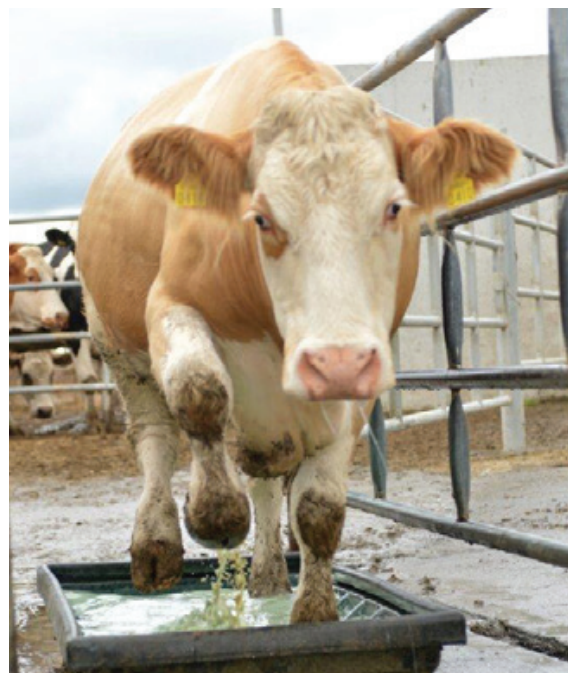
## BIOSECURITY

Healthy cattle are one of the most valuable economic assets on modern Irish livestock farms, and will only increase in importance as on-farm production increases. Threats to the health of your stock may come from outside your farm and from within your farm. Protecting the health of animals on your farm by implementing simple preventative practices is called Biosecurity.

There are two types of BIOSECURITY PRACTICES:

1. Actions taken to reduce the risk of infectious disease coming into your farm (BIOEXCLUSION).
2. Actions taken to reduce spread of infectious diseases within your farm (BIOCONTAINMENT).

You can reduce (but not always eliminate) the risk of bringing-in disease by implementing bioexclusion practices. This leaflet deals with practical steps to help you improve and maintain a high level of Bioexclusion. As herds expand farmers need to be even more conscious of implementing bioexclusion practices.



*Foot bathing animals on arrival to your farm is good practice*

## What are the most important disease threats to my stock from outside my farm?

In order of importance the disease threats to your stock from outside your farm are indicated in Figure1.



*Figure 1: The most important disease threats to your stock from outside your farm.*

## DIRECT DISEASE SPREAD

### What can I do to reduce the risk of disease coming into my farm with **ADDED ANIMALS**?

Added animals are those bought-in, 'borrowed' or returned from marts, shows or contract rearing premises. Therefore they can include both new animals and existing home-farm animals. Bought-in animals are the highest risk. Many diseases are carried by animals that are not sick and appear completely normal. They are silent carriers which can bring disease into the herd quietly but effectively. All ages of animals being bought in have disease risks.

*The highest risk of introducing disease is from added animals*



#### How to reduce disease risks from **ADDED ANIMALS**

- The best and most obvious way to reduce the risk of new diseases coming into your herd from added animals is to **close your herd**.
- Purchase **semen and embryos** from reputable suppliers.



*On arrival, quarantine new stock away from your own stock*



#### You don't have a **CLOSED HERD** if you are:

- buying in **bulls**
- borrowing **bulls**
- exhibiting at **shows**
- sharing cattle handling **facilities**
- returning **unsold cattle** to your farm
- using **common grazing or housing**.
- poor **boundary fences**



*Don't forget even if you "only" buy a bull there is a risk of new diseases coming into your herd*

Maintaining a closed herd may not always be possible. It may be incompatible with certain farming systems e.g. contract rearing heifers. Therefore you need to stop and think about what steps you can take to reduce the chances of bringing new diseases into your herd with added animals. AHI has produced a guide to reducing disease risks from purchased stock which is available on [www.biosecurity.ie](http://www.biosecurity.ie) '**Purchasing Stock: Reducing Disease Risks**'. This guide has many useful hints that can help to reduce the chances of introducing new diseases. Ten minutes spent reading this guide could save you a lot of money and stress.

### Know your own **HERD HEALTH STATUS**

This can be achieved by monitoring your own herd for the absence or presence of disease through examination of clinically ill animals, laboratory testing (culture, PCR, serology) and pathological (post mortem) examinations. Discuss the options most appropriate to your herd with your own veterinary practitioner.



## What can I do to prevent disease coming into my farm from NEIGHBOURING ANIMALS?

Good boundary fencing should prevent break-outs, break-ins, nose-to-nose contact between herds and reduce aerosol spread of infectious agents by livestock. Double fencing may include electric fences; ditches and hedging also reduce the risk of contact with neighbouring animals. These measures are also important on out-farms and with other species, e.g. sheep.

*Good boundary fences are critical*



### How to reduce disease risks from NEIGHBOURING ANIMALS

- Prevent **nose-to-nose contact** and animal break-ins/break-outs.
- Maintain stock-proof **farm boundaries**, e.g., rebuild stone walls, block gaps in hedging.
- When possible, avoid grazing fields at the same time as bounding neighbours' fields are also occupied with livestock.
- **Double-spaced** boundary fencing with a gap of at least 5 m should provide adequate protection.



*Double fencing done well should never allow neighbouring cattle to touch each other.*

# INDIRECT DISEASE SPREAD

## What can I do to prevent disease coming into my farm from FARM VISITORS?

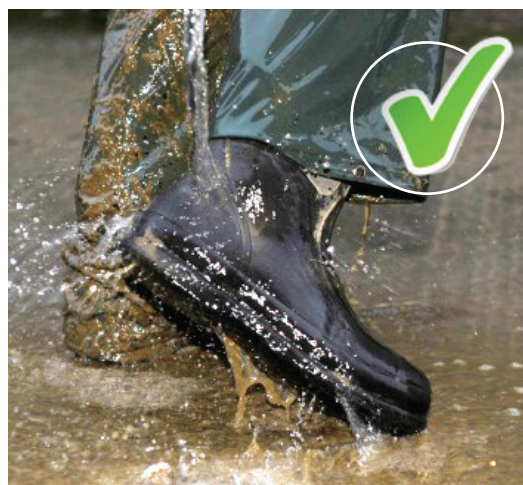
*Clean boots are essential for visiting farms*

Every farm has visitors, and every farmer should aim to minimise disease risks from outsiders. High risk visitors are those who have direct and frequent contact with other farm animals and your cattle, e.g. veterinary practitioners, other farmers (especially those who also work on your farm), AI technicians, agricultural consultants, hoof trimmers, scanners, sales personnel and collectors of deadstock.



### How to reduce disease risks from FARM VISITORS

- Keep farm visitors to a **minimum**.
- Have **only one** farm entry point.
- Use **signage** to direct farm visitors to a contact point or a mobile number.
- **Reduce direct contact between visitors and your stock.**
- **Provide personal protective clothing for visitors** such as gloves, footwear, overboots, overalls/gowns. This is a cheap measure that is easy to enforce on your farm for visitors. This is common practice on farms within other countries and other species e.g pig, equine and poultry farms.
- **Provide cleaning facilities for visitors**- maintain and use hand-washing and boot-washing and disinfection facilities. Make it routine practice to have all visitors disinfect all protective clothing on entry to the farm.
- **Restrict deadstock collectors to areas away from where livestock are kept** - bring deadstock out to the truck rather than bringing the deadstock collector vehicles into the farmyard.
- Other farmers visiting your farm for farm walks or **discussion groups** should be encouraged to clean and disinfect footwear on arrival.



A list of approved disinfectants can be found from the DAFM or DARDNI websites. These are available on [http:// www.agriculture.gov.ie/animalhealthwelfare/animalhealthpublications/](http://www.agriculture.gov.ie/animalhealthwelfare/animalhealthpublications/) and <http://www.dardni.gov.uk/dard-approved-disinfectant s>.

*Footbaths are effective if kept clean – however, the most effective way to prevent disease spread is to provide visitors with clean boots on arrival at the farm.*



## What can I do to prevent disease coming into my farm from SLURRY?

Imported (brought in from another farm) untreated slurry, farm yard manure, sewage and other bio-wastes are possible sources of disease. In addition, biogas digestate from anaerobic digestion plants not processing manure to a defined temperature standard presents a risk of spreading disease. Introduction of these materials into a farm presents potential disease risks, e.g. Salmonellosis, TB and Johne's disease. The disease risk reduces with storage. However, disease-causing organisms such as Johne's disease bacteria can still be present for many months and sometimes for over a year. See AHI leaflets on **Johne's disease** available online at <http://www.animalhealthireland.ie/page.php?id=108>. Discuss the risk of using imported slurry or other manure based products both other cattle farms, pig and poultry farms, or anaerobic digestion plants with your vet.

*Slurry can be a risk for disease infection*



### How to reduce disease risks from slurry and other manure based products

- **Don't use imported slurry** and other wastes from other farms where possible.
- If purchasing from external sources- enquire about the **farms' disease status**.
- If purchasing from an **anaerobic digestion plant** using manure – enquire about the temperature standard being used and the source of the material being used in the plant.
- If using imported biological waste - **spread on tillage or silage ground in preference to grazing land**.
- **Do not use** imported biological wastes on grazing land.
- Discuss with your own veterinary practitioner the **risks of using imported waste** - the source, time and treatment.
- Where possible, restrict slurry spreading to **farm-owned machinery**, thus avoiding the biosecurity risk associated with third party owned slurry spreaders.
- Discuss with your own veterinary practitioner or your DVO the **option of treating slurry with lime** to reduce certain disease threats from imported slurry.
- Every effort should be made to **avoid the storage of poultry litter during warm weather**. Poultry stacks should be completely covered (in the same way as silage is covered), on dry ground away from rivers, streams and other water courses and in places where livestock cannot gain access to them or they cannot contaminate livestock feed or bedding.
- Poultry litter should not be spread on land adjacent to water courses, nor should silage be made from lands on which poultry litter has been spread.
- Farmer using poultry litter as an organic fertilizer should advise their neighbours who have livestock, of the days on which poultry litter will be spread so that those neighbours can **remove their animals** from the surrounding fields.
- Trailing shoe slurry spreaders will minimise disease risk from aerosols.



*Slurry needs careful management to reduce disease threats especially if it is imported from another farm*

## Botulism

Poultry litter presents a risk of transmitting of botulism to cattle. There are two risk periods in relation to botulism transmission:

1. **when poultry litter is being stored prior to land-spread.**
2. **when poultry litter is actually being applied to land.**

These risks are not confined to farms on which the poultry litter is being stored or spread, they may also affect neighbouring farms. Improperly stacked poultry litter (and wash water from poultry sheds) is a risk for botulism. There is also a risk from dogs and wildlife bringing poultry carcass fragments from a neighbouring farm onto your land. For more information on measures that should be taken to control the botulism risk and in relation to botulism in general, see <http://www.agriculture.gov.ie/animalhealthwelfare/diseasecontrol/botulism/>.

## What can I do to prevent disease coming into my farm from ANIMAL EQUIPMENT?

*Sharing animal equipment is a disease risk*

High risk animal equipment is that which is contaminated with body fluids (saliva, mucus, blood, nasal secretions, and birth fluids) or faeces and is used directly on or by your animals. These fluids can all carry disease causing organisms. Examples include ear notch taggers, calving equipment, hoof paring equipment, scanning equipment, nose tongs, stomach tubes, gloves, portable crushes, multiple injectors, weighing scales and trailers.



### How to reduce disease risks from ANIMAL EQUIPMENT

- Provide your **own animal equipment** and don't lend it out.
- Use **disposable equipment** and dispose of it after use.
- **Wash and disinfect** non-disposable equipment.
- **Don't share** a crush, race or loading pen with neighbours. If this is unavoidable, disinfect these facilities before and after use.
- Install and maintain a **vehicle wheel bath** at the farm entrance,
- Store all equipment **safely** between use.



Clean and disinfect your dosing equipment



## What can I do to prevent disease coming into my farm from WILDLIFE AND OTHER ANIMALS?

Infections can potentially come in from wildlife such as badgers (TB), crows/pigeons/seagulls (Salmonellosis), cats (Toxoplasmosis), deer (TB), dogs and foxes (Neosporosis), goats (TB), rats (Leptospira) and midges (Schmallenberg).

Wildlife and vermin are attracted into farmyards by easy access to feedstuffs including deadstock and placentae. In addition they may bring diseased material onto your farm e.g. parts of chicken carcasses (Botulism) or aborted foetuses.

*It's hard to make the feed shed vermin proof – but essential*

### Veterinary Technical Information

The strains of *Leptospira* in rats are uncommon in cattle. Rats are not the primary source of *leptospirosis* in cattle. *Leptospira* infection from rats can cause leptospirosis in humans (Weil's disease).

Schmallenberg virus is transmitted by biting midges and the severity of infection depends on the stage of pregnancy that the animals are in when bitten. It causes abortions, congenital malformations and stillbirths in cattle, sheep, goats. It is believed that there is no direct transmission from animal to animal, other than maternal transmission from mother to offspring in utero.

Further updates are available from <https://www.agriculture.gov.ie/animalhealthwelfare/diseasecontrol/schmallenbergvirus/>.



Aborted foetus from a suspected schmallenberg virus outbreak - all abortion outbreaks should be fully investigated



### How to reduce disease risks from WILDLIFE AND OTHER ANIMALS

#### Operate a vermin / rodent control program.

- Maintain **bait** at appropriate protected sites in the farmyard to reduce vermin numbers.
- Make sure that all bait points are clearly identified and are fixed to a wall or the ground.
- All bait points should be dog-proof and child-proof.
- Vermin control programmes not involving bait are also available.

#### Reduce access to feed and animal wastes

- Provide netting or flaps to reduce **bird access** to feed.
- Provide a **closed shed** for stored feed.
- Clean up feed spillages.

#### Maintain wildlife-proof farm boundaries

- Where significant wildlife populations exist, provide fencing appropriate to the risk, e.g. badger-proof fencing (buried at least 0.6m) and deer-proof fencing (at least 2.5m high).



Dogs or wildlife should not have access to feed stores, feeding areas or calving areas

## What can I do to prevent disease coming into my farm from BIOLOGICAL MATERIALS?

Introduction of biological material (colostrum, embryos, semen, unregulated vaccines or whole milk) into a farm presents potential disease risks. See the AHI website leaflet '*Johne's Disease FAQ's*' on <http://www.animalhealthireland.ie/page.php?id=108> for further information on guidelines regarding bringing colostrum into the farm.

*Freeze colostrum from cows with a low risk of Johne's disease for emergencies*



### How to reduce disease risks from BIOLOGICAL MATERIALS:

- Do not 'borrow' and feed **colostrum** or whole milk from a neighbouring farm.
- Purchase **semen** and **embryos** from reputable suppliers.
- Ensure your veterinary practitioner uses **new syringes** and **needles** when coming onto farm or keep your own supply on farm.
- Only use **medicines** which are properly licensed and legal to use in this country (<http://imb.ie/>).
- Always purchase approved medicines from **licensed suppliers**.
- If considering using **autogenous vaccines** (e.g. warts) discuss the legalities and their use with your own veterinary practitioner.



Don't bring in colostrum from a neighbouring farm



Store your farms own frozen colostrum for emergencies



## What can I do to prevent disease coming into my farm from THE ENVIRONMENT?

The environment surrounding and in your farm, e.g. waterways, shared grazing, housing facilities, yards or crushes can be a source of disease for your farm stock when it is contaminated with faeces or body fluids.

*Drinking from ponds exposes cattle to increased disease risk*



### How to reduce disease risks THE ENVIRONMENT

- Fence off **waterways** and **lakes** both bounding and within your farm
- Prevent stock access to **land which is flooded**
- Don't use **shared** handling facilities or housing.



*Unfenced waterways and ponds are a disease risk for animals. Fencing them off is a good biosecurity practice.*

## What can I do to prevent EXOTIC DISEASES from coming into my farm?

Exotic diseases are those diseases not currently in the country, e.g. Foot-and-Mouth disease, Brucellosis and Bluetongue. Exotic diseases threaten not only your animals' health but also Ireland's ability to trade. Most exotic diseases are highly infectious so it is important to act quickly if you are suspicious of a case. Animals imported from other countries have increased risk of bringing in exotic disease.

*Always check the disease status of bought-in cattle.*

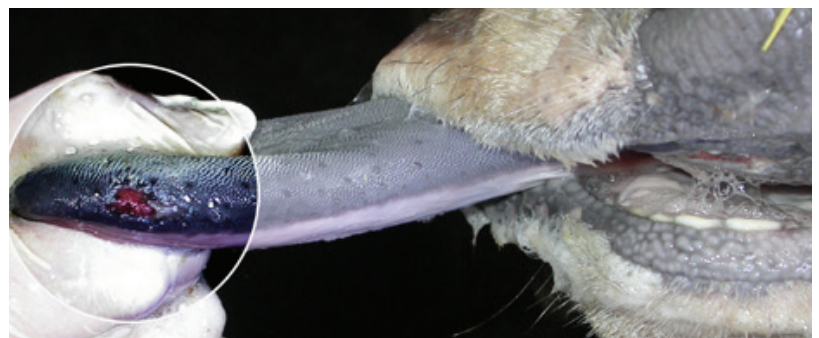
See the AHI leaflet on **Purchasing stock: Reducing Disease Risks** for more information.

Further information on exotic diseases is available from the DAFM website <http://www.agriculture.gov.ie/animalhealthwelfare/diseasecontrol/>. Many exotic diseases are notifiable and farmers must notify their DVO if they suspect they have an exotic disease on farm.

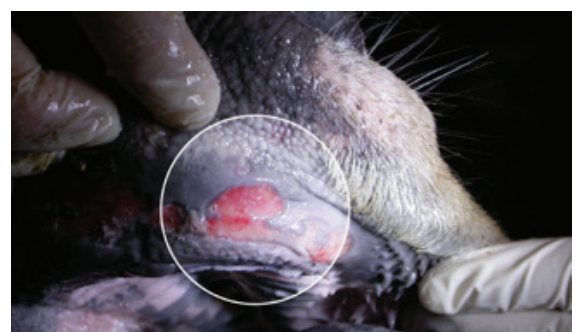


### How to avoid bringing in EXOTIC DISEASES

- Choose not to buy **imported cattle**.
- If buying imported cattle- ensure they have been fully tested in-line with current **DAFM guidelines**.
- Discuss with your own veterinary practitioner / local DVO any **further testing** you should do for any diseases you are particularly concerned about.
- Observe a **quarantine period** of at least 4 weeks.



*If you suspect an exotic disease immediately contact your own veterinary practitioner and your local DVO*





*Farmers are responsible for keeping diseases out of their herds*

*Bought-in cattle are the biggest disease risk to your stock*

*A herd is not closed if you borrow or buy a bull*

*Stock-proof boundary fencing can keep disease out*

*Don't share animal equipment*

*The risks of bringing in infectious diseases into your herd are manageable*

*Draw up a Bioexclusion Plan with your own veterinary practitioner that is farm-specific, practical and effective*

#### TECHNICAL WORKING GROUP

**John Mee** (Chair) - Teagasc, Moorepark, **Stephen Conroy** - National Bull Performance Centre Tully, **Bosco Cowley** - MSD Animal Health, **Bernard Eivers** - National Cattle Breeding Centre, **Tim Geraghty** - University of Glasgow, **David Graham** - Programme Manager AHI, **Richard Fallon**, **Pat Kirwan** - Veterinary Practitioner, **John Moriarty** - CVRL, DAFM, **Luke O'Grady** - UCD, **Ronan O'Neill** - CVRL, DAFM, **Michael Sexton** - Veterinary Practitioner.

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## STAKEHOLDERS

### GOVERNMENT & STATE AGENCIES

Bord Bia  
Department of Agriculture, Food and the Marine (DAFM)  
Teagasc

### DAIRY AND BEEF PROCESSORS

ABP Ireland  
Arrabawn Co-op  
Carbery Group  
Connacht Gold  
Dairygold  
Dawn Meats  
Glanbia  
Kepak Group  
Kerry Agribusiness  
Lakeland Dairies  
Slaney Foods  
Tipperary Co-op  
Town of Monaghan Co-Op  
Wexford Milk Producers

### FARMERS' ORGANISATIONS

Irish Cattle and Sheep Farmers' Association (ICSA)  
Irish Charolais Cattle Society  
Irish Co-Operative Organisation Society (ICOS)  
Irish Creamery Milk Suppliers' Association (ICMSA)  
Irish Farmers' Association (IFA)  
Irish Holstein Friesian Association (IHFA)  
Irish Milk Quality Co-operative Society (IMQCS)  
Macra na Feirme  
Pedigree Cattle Breeders' Council of Ireland

### PROFESSIONAL/ ADVISORY/ SUPPORT SERVICES

Cork Marts  
DAFM- Veterinary Lab Services  
ICBF  
Irish Dairy Board  
UCD  
Veterinary Ireland



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