SIMPLY SUSTAINABLE BIOSECURITY

Six Simple Steps to help improve biosecurity measures on your livestock business
For many farm businesses, biosecurity measures are part of the daily routine, however for others, these measures can slip, potentially resulting in an increased risk of emergency or disease outbreak as well as being less prepared to address such incidents.

Getting into the habit of establishing best biosecurity practices should be considered as a core part of your business risk assessment and Integrated Farm Management approach, and this booklet sets out how to do just that.

You can achieve financial benefits by better targeting your resources, protecting your assets and avoiding costly mistakes. Observation, cleanliness and smart management of farm inputs, outputs and by-products are key measures to reduce your risks to exposure of disease and biosecurity. These areas form the basis of Simply Sustainable Biosecurity – Six Simple Steps to help improve biosecurity measures in your livestock business.

The potential benefits of implementing biosecurity practices on your property include: greater productivity, reduced risks, early detection and management of any pests or diseases and reduced costs in the short and long run; allowing you to ensure peak performance of your business. Tight biosecurity measures also have an important part to play in showing your farm in a positive light, whether that be to any visitors or more widely in influencing the opinion of the industry as a whole.

Simple and effective measures can help protect your farm and your livestock from diseases and pests. In fact, you’re probably already doing some now, but it is also important to consider your farm as a whole, to discover those areas where your weaknesses are and therefore identify your biggest risks.

LEAF is delighted to have developed this booklet to demonstrate our commitment to maintaining and enhancing animal health and welfare. We hope you will find this practical guidance a useful aide-memoire by following the **Six Simple Steps** for you to implement to protect your livestock.

**Caroline Drummond** Chief Executive, LEAF
Credits
This brochure has been developed by LEAF with particular thanks to:

Jenny Clark LEAF
Whitley Animal Protection Trust
Stephen Fell H.R. Fell & Sons Ltd
LEAF Innovation Centre: Hugh McClymont SRUC’s Dairy Research Centre
LEAF Demonstration Farmers: Tim Pratt Wantisden Hall Farm, and John Renner Renner Farming
Livestock production is a central element of sustainable farming - providing nutrition, fibre, environmental stewardship and energy production. In the future, we will need to feed a growing and more affluent population. The livestock sector is predicted to continue to grow in order to meet these demands whilst high quality management of the livestock and the environment in which they are reared will need to be maintained.

Good animal health and welfare is paramount not only for happy and healthy animals but is also critical for successful livestock businesses and a sustainable agricultural industry. Unhealthy animals are less productive, more expensive to rear, use more feed, water, energy and soil resources, and produce more outputs, including manure and greenhouse gas (GHG) emissions.

At a global scale, the costs of unhealthy animals are hard to quantify. Livestock productivity and product prices vary widely and there are differing costs for disease monitoring and control. However, social and economic impacts of outbreaks are significant. Costs can broadly be broken down into direct costs, such as deaths, stunted growth and reduced fertility, and indirect costs, including mitigation efforts, losses of income, and the impacts on human health.
There are still persistent problems of emerging and re-emerging diseases. These problems are further compounded by increasing antimicrobial resistance (AMR) and climate change. However, we are increasingly seeing animal diseases managed successfully and even eradicated. This is down to dedicated farmers and animal health professionals focussing on a range of disease prevention management practices including: high standards of animal welfare and nutrition to promote a strong immune response, good husbandry, breeding and hygiene strategies to limit the spread of infection, and strict biosecurity measures to protect farms from incoming disease.

This booklet is designed to help you develop an effective on-farm management strategy for controlling disease emergence and spread, resulting in healthy and productive animals. It is based on **Six Simple Steps** to create an effective plan for biosecurity measures on your livestock business.

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**2001 – A catastrophic year**

On the 19th February 2001, a routine inspection at an Essex abattoir discovered signs of foot-and-mouth disease (FMD). In a matter of days arguably one of the most catastrophic animal disease epidemics had hit the UK.

FMD is one of the most infectious animal diseases and affects cattle, sheep, goats and swine. The virus can be transmitted in a wide range of ways, from contact between animals to being blown long distances by the wind. It was this that contributed to the catastrophic epidemic.

FMD had previously been eradicated in the UK and therefore there were large numbers of animals who had had no prior exposure and thus highly susceptible to the disease. Use of vaccinations in the UK was not available at the time and existing government contingency plans were overwhelmed by the extent of the outbreak.

In the 5 short months that the UK epidemic lasted for, over 6 million animals were culled and the crisis was estimated to have cost the UK £8 billion, not including the intangible costs to the psychological wellbeing of those involved.

The crisis raised an awareness of the importance of good biosecurity.

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2001 – A catastrophic year
Introduction

The list of how disease can spread is long – from the movement of animals, wildlife, people and machinery, to contaminated feed, water, semen and bedding. Effective biosecurity is about being aware of the ways diseases spread and taking every practical measure to minimise the risk of spread and to prevent disease sources from entering your farm.

While in some cases biosecurity may be important in crop production, due to invasive weeds and pests for example, in Simply Sustainable Biosecurity, we concentrate on the approach and impact for businesses with livestock.

Once you have healthy animals on your farm you do not want to introduce sources of disease or spread any infection. Limiting your farm and its inhabitants from contact with disease-causing agents through managing stock movements, controlling access, good on-farm hygiene, and in some cases an effective vaccination programme, can help achieve this.

The prevention of disease in your herd or flock through good biosecurity measures not only ensures your livestock remain healthy, but can improve your farm’s efficiency, through more productive livestock and the reduced costs of treatments and long-term workload. Being proactive in this area pays off.
Integrated Farm Management (IFM)

In sustainable farming, nothing works in isolation and therefore it is important to consider the whole farm in an integrated way.

‘Integrated Farm Management (IFM) is a whole farm business approach that delivers more sustainable farming.’

IFM is geared towards sustaining and optimising the use of all resources on farm, including soil, water, air, staff, machinery, capital, wildlife habitats, landscape and archaeological features, addressing regulation and embracing innovation. Successful uptake requires a detailed understanding of the business and an innovative and challenging approach. The implementation of IFM is built around increasing knowledge and innovation alongside beneficial husbandry principles and traditional methods. It is built around the development of a risk management approach to anticipate, assess, manage and develop contingency plans for any unplanned and/or natural events.

Figure 1: LEAF’s Integrated Farm Management
Getting Started

This booklet is based on Six Simple Steps to help you manage disease emergence and spread on your farm. The booklet will help you to understand and manage the health of your animals, and support your business in becoming more efficient and resilient to change.

As you work through this booklet, think about:

• Your whole farm and the life cycle of all the livestock on it
• Integrating your biosecurity decisions with your other management plans, in particular your Livestock Health Plan and Farm Risk Assessment, and contingency planning
• Scoring each section on an annual basis

Creating a plan of best practice measures for biosecurity on your farm is key. Biosecurity risks will be different for every farm so creating a specific plan allows you to identify your risks and the steps to address them. Regular review of your progress will help you to continually improve.

Good biosecurity should be carried out at all times, not just during a disease outbreak, so consider creating your plan around your daily, weekly or even annual tasks so that biosecurity measures become second nature. Practices that are simple and easy to carry out every day on your farm are often the best defence against biosecurity risks.

When creating your plan, have you considered the following:

• What are the key risk factors in your local area?
• Have you got advice from your vet(s) when creating the plan?
• Have you identified diseases that are your biggest risk?
• Have you identified the risk hotspots?
• Have you identified any carriers (vectors) of disease?
• Which diseases are already present on your farm that need to be prevented from spreading further?
• Is your plan understandable and easily followed by all staff and regular visitors to your farm such as vets, contractors, drivers and family members?
• Can your measures be easily escalated in case of a disease outbreak?
What to include in my Biosecurity Plan?

Six Simple Steps for managing Biosecurity on your farm

Monitoring
  Step 1  Observe
  Step 2  Record

Limiting Exposure
  Step 3  Manage Stock Movements
  Step 4  Control Access
  Step 5  Be Clean

By-Product Management
  Step 6  By-Product Management Best Practice
Monitoring

Step 1 – Observe

Effective monitoring and observations are the first line of defence for minimising risks associated with disease. Quick identification that a disease outbreak has occurred, what the source of the outbreak is and the path of infection will save time, preventing the disease from spreading and more animals becoming vulnerable to infections.

It is crucial that you and all relevant workers, contractors and family members are able to observe the stock and detect signs of disease. The first step to this is being aware of the animals normal patterns of feeding, drinking, movement (including foot health and mobility) and growth. Also try to be aware of any specific genetic traits of a particular species, breed or breed line.

A good observer should:

• Regularly check all stock
• Take time and be thorough
• Increase the frequency of observations during periods of high risk, for example when there has been an outbreak of a pest or disease or at times when the animals are particularly vulnerable (e.g. young, pregnant, new to the farm)
• Know the clinical signs of common diseases

The observer should be able to take immediate and correct action based on what they observe, whether this be a serious or an early concern. This may include seeking further guidance from a vet if unsure. Keeping your emergency contact information up to date will help.

Becoming a good observer requires practice. Place information posters around the farm as reminders. If your farm has multiple observers, consider holding regular information sessions for staff or engaging with training courses to maintain and improve their skills.

Remember to also monitor the news, industry regulations and national level surveillance information sources so that you are aware of any local, regional and national outbreaks and are able to implement your measures accordingly.
## Step 1 - Biosecurity Score

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Poor (0)</th>
<th>Medium (1)</th>
<th>Good (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Observation (a)</strong></td>
<td>No routine observation of stock</td>
<td>Sporadic monitoring of stock. Remedial action taken when required</td>
<td>All stock are monitored thoroughly and routinely, and immediate action taken accordingly. Observation is increased during times of high risk</td>
</tr>
<tr>
<td><strong>Staff training (b)</strong></td>
<td>Staff (including yourself) have had no training</td>
<td>Staff (including yourself) are familiar with the signs of disease and the biosecurity measures to take</td>
<td>Staff (including yourself) are regularly trained in the signs of disease and the biosecurity measures to take</td>
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Step 2 – Record

As a minimum, your record keeping should meet national and/or industry regulations. There are many areas where further records (automated, electronic or hand-written) are useful.

Animal Health Activities

Keep good records of all your animal health activities and treatments, including drenches and vaccinations. As part of meeting all legal requirements, make a note of veterinary medicine expiry dates to ensure that medicines are not used after this date and are disposed of correctly. Records of live-weight gain and feed and water consumption can also help to give early indications of an illness. You should also record all livestock mortalities and reason for their death.

Aim to keep records of staff monitoring and observations of stock, noting anything out of the ordinary as well as if monitoring was undertaken but nothing was found – this will help track back to when the change happened (see Step 1 for more information).

Records of all livestock that come onto and leave your farm should include their origin or destination (as applicable), date of movement, recent animal health treatments and certificates or accreditations they may hold related to animal health. Any information regarding the animal’s genetic makeup particularly in relation to their susceptibility or resistance to disease should also be retained.

Integrating your records with the animal health strategies outlined in your Livestock Health Plan will help you to monitor progress accurately and ensure herd or flock performance is improving.

Ensure that all animal identification is up to date (as per legal requirements) to enable you to accurately record any changes and preventative health activities, such as vaccinations. Consider using electronic ear tags (e.g. EIDs) for cattle, sheep and pigs to make this easier.
**Farm Inputs and Outputs**

Consider keeping a record of all vehicles and equipment that enters and leaves your farm, including their origin or destination. If possible, consider also keeping a record of every visitor who comes into contact with your livestock, and note those who are at most risk from zoonoses (e.g. pregnant women).

Also keep a record of all animal feed, including source and expiry date, and a cleaning record.

**Step 2 - Biosecurity Score**

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<thead>
<tr>
<th>Indicator</th>
<th>Poor (0)</th>
<th>Medium (1)</th>
<th>Good (2)</th>
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<tbody>
<tr>
<td>Monitoring</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Records (c)</td>
<td>Records meet national and/or industry requirements</td>
<td>Limited written biosecurity records</td>
<td>Up-to-date, full written records are available</td>
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LEAF Demonstration Farm and LEAF Marque certified business, Renner Farming is a mixed 202 hectare farm in Northumberland with a focus on livestock production, including Aberdeen Angus suckler cows and Texel and Suffolk cross ewes. John Renner explains how being fanatical about disease has resulted in a top herd health status, believed to be held by just 4% of UK farms.

“We are certified clear of Johne’s disease, and are TB-free. We are also part of the Premium Cattle Health Scheme, run by SRUC”. For John, achieving this status was about focusing on record keeping and preventing any disease getting onto the farm.

“We work very closely with our vet. She knows our aim of achieving this status and wants to help us remain there.” Together they devised their flock and herd health plan which is based around the calendar and helps to address any health problems and identify potential problem areas.

Blood and tissue testing at Renner Farming is rigorous. Johne’s blood testing is carried our every year and ten 9-month-old calves are selected to be BVD (Bovine Viral Diarrhoea) tested annually. All stock are also vaccinated for BVD and Leptospirosis every year. “This is crucial to ensure we keep our certified status.”

“Currently we are calving around 50 cows but we are hoping to increase this to 100-120. Trying to increase herd numbers while maintaining our status will be time consuming and increase our resources, management and labour costs, but it is key to us achieving our aim.”

“We try not to buy in any stock and we breed our own replacements.” Bulls brought onto the farm are sourced from certified pedigree farms where the health status and EBV (Estimated Breeding Value) can be confirmed. These are also purchased directly from the farm to remove the risk factor that livestock markets can pose. Renner Farming also don’t use contract hauliers because they feel they can’t confirm their hygiene practices. Instead they have invested heavily in their own trailers.

John feels that these tight biosecurity measures within an Integrated Farm Management approach have increased the market opportunities for the replacement heifers because of their guaranteed status, and therefore have ultimately benefited the business.
Limiting Exposure

Step 3 – Manage Stock Movements

Operating a closed herd or flock, by breeding your own replacements or using AI (Artificial Insemination), is a good way to control the health status of your animals. However, where this is not possible you should ensure that you take precautions to reduce the risk of bringing in and spreading disease from incoming stock.

Strict measures should apply to livestock that are returning to your farm as well as those new to the farm, and should apply to all of your stock regardless of their age, gender, breed or species. You should also include livestock that are temporarily on your farm, such as hired or shared bulls and tups. Remember that bringing in hired or shared bulls and tups means you are no longer operating a closed herd.

Healthy Stock from Reliable Sources

Make sure you know as much as possible about the animals you are purchasing before bringing them onto your farm. Request records of the stock’s health status from the seller, making particular reference to diseases of major concern (e.g. bovine Tuberculosis (bTB), Johne’s, Maedi Visna (MV), enzootic pneumonia (EP) etc.). If no records are available it can be advisable to conduct tests yourself before purchasing. Do not buy livestock from sources in known disease hotspots, unless you can be certain of the animals’ health history, or that they have been recently and reliably tested for relevant diseases. It is also useful to gather information about any vaccinations bought-in stock have had.

There are accreditation schemes available for certain species and diseases so it may be worth researching these and only purchasing from certified sources to give you the added reassurance. You could also consider a genetic evaluation of your livestock which may indicate their susceptibility to diseases.

As well as consulting the records, inspect the animals yourself before purchasing and get a second opinion, preferably from a vet. Trust your instincts. Consider limiting the number of sources you buy from to reduce the chance of importing diseases.
Remember to consider the hygiene and handling practices of transport providers. As a minimum, make sure that the vehicles are cleaned and disinfected in-line with legislation.

Inspect the stock upon arrival and ensure they are not showing any signs of disease and are in the same condition that you purchased them in. Again, try to get a second opinion from a vet.
Quarantine

Isolate new stock for an appropriate period to see if any signs of disease emerge. If you have brought sick animals onto the farm it will be easier and cheaper to treat a few sick animals than to treat the whole herd or flock once the disease has spread.

Set aside or construct a separate building or pen for stock that are new or returning to your site. Consider placing this near to the farm entrance to limit the distance that animals carrying disease have travelled within your farm. Ensure that the other livestock on the farm do not have any direct contact with the isolated stock by making sure this enclosure is separate from other livestock housing. If you are using a pen, consider double fencing it.

Try to minimise the sharing of all bedding, equipment, vehicles and feed for both the isolated enclosure and your existing stock to prevent cross-contamination. Prevent faeces and urine from the quarantined animals coming into contact with existing stock. Ensure that you have a good hygiene and disposal routine for the isolation enclosure (see Step 5 for more information) and at least clean and disinfect the enclosure between groups. If possible, use separate members of staff to manage the isolated group.

Consult your vet for the optimum period to keep these animals isolated for and whether the animals should receive any treatments on arrival. Your vet can also advise whether a testing routine and/or vaccination or worming programme is appropriate. Consider starting to acclimatise the new stock to your feeding and management routines during the isolation period to enable a smooth transition once they come out of quarantine.
### Step 3 - Biosecurity Score

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Poor (0)</th>
<th>Medium (1)</th>
<th>Good (2)</th>
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<tbody>
<tr>
<td><strong>Limiting Exposure</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Source of stock (d)</td>
<td>Biosecurity is not a consideration</td>
<td>Use familiar sources not in disease hotspots</td>
<td>Operate a closed herd/flock OR Use a limited number of reliable sources</td>
</tr>
<tr>
<td>Health of new stock (e)</td>
<td>Unaware of the health of new stock</td>
<td>Visually check stock before and after purchasing</td>
<td>Operate a closed herd/flock OR Request health records, and check stock before and after purchasing</td>
</tr>
<tr>
<td>Isolation (f)</td>
<td>No isolation of new or returning stock</td>
<td>Isolate new or returning stock for a limited amount of time with some contact with existing stock</td>
<td>Operate a closed herd/flock OR Isolate new or returning stock for appropriate period of time with no contact with existing stock</td>
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Case Study – Tim Pratt, Wantisden Hall Farms, Suffolk

After a history of specialising in field vegetable production, LEAF Demonstration Farm and LEAF Marque certified business Wantisden Hall Farms has recently diversified into livestock, including sheep and free-range pigs into the rotation to help improve soil quality. Farm Manager, Tim Pratt explains the biosecurity measures that were introduced with these new enterprises.

“We are actively trying to build-up our sheep population, and now have around 250 Dorset Horn and Poll Dorset ewes, whilst also aiming to have a closed ewe flock. This means we keep most ewe lambs as replacements and are just bringing in rams in May each year”.

The rams are purchased from two known breeders whose flocks are recorded with Signet Breeding Services and are Maedi Visna (MV) accredited. “This means we can be certain of their health status and genetic potential prior to them coming onto the farm”. The rams are also wormed and kept separate for a month with no contact with the ewes to ensure no signs of disease emerge before they are put to the ewes in July for ewes to lamb in December, or again in April in the following year. Lambing is outdoors with the lambs being finished on the cover crops.

The outdoor pigs are also a relatively new venture, introduced onto the lighter land and are managed in order to limit their access to sources of disease. The pigs are restricted by electric fences to ensure they do not come into contact with the sheep or members of the public. “To stop birds and pests becoming a problem we have invested in anti-rook feeders. Each pig pen now has an individual feeder designed to keep the birds and pests out and reduce this risk factor.”

Wantisden Hall Farm also has an anaerobic digestor (AD) plant as an additional income source and the digestate is spread on the land. This digestate is pasteurised and is used in the rotation ahead of crops grown for the AD plant to ensure it is not a risk factor for the livestock.
Step 4 – Control Access
Practical management of any unavoidable potential disease sources is vital to keep your animals healthy and prevent the spread of disease.

Other Animals
If your farm borders another livestock farm, limiting contact between your stock and theirs will reduce the risk of spreading infection. Regularly check all your boundaries (e.g. fences, hedges, walls and gates) to ensure they are well-maintained and prevent not only animals escaping but limit physical contact. Double fencing or wide fences can help, as can using buffer strips or field margins which also provide good habitats for biodiversity. Work with your neighbours to achieve this.

The linking of biodiversity and agriculture and having a thriving wildlife population on your farm is a core part of Integrated Farm Management. However, bear in mind that wildlife can be carriers of disease, as can other animals that may enter your property such as pests and pets. The risks that these animals pose to your stock will vary in severity depending on many factors such as your location, species management system, weather, and local disease outbreaks (if any) so seek professional, targeted advice in this area.

General steps to discourage animals mixing with your stock include:
- Maintain farm buildings
- Maintain farm boundaries and consider double fencing
- Protect feed and water sources
- Keep feed in clean, dry storage areas and regularly inspect them
- Clean up feed spills
- Implement an effective pest control programme and review and update this regularly
- Keep pets and pests away from your livestock housing
Watercourses
Consider also limiting contact with watercourses as this can help prevent animals contaminating the water, as well as stock drinking contaminated water, picking up waterborne diseases or coming into contact with wildfowl or other pests. Fences or buffer strips help, however remember that watercourses can be an important habitat for many species and this should be considered when making any changes to your land.

Feed
When not managed well, the feed that you provide to your livestock can be a source of disease. Do not feed swill, animal material or catering waste. Regularly empty, clean and maintain feeders, feed storage and feed transport. Consider ways to prevent feed transport from entering areas where animals are kept, such as blowing feed into storage equipment containers or storing feed near to the farm’s perimeter. Clean up feed spills to discourage unwanted animals (e.g. rodents and wildfowl).

Water
Provide fresh clean water where possible. Water storage tanks should be clean, pest-proof and, where possible, have a lid on. If your water supply does not come from mains supply, regularly test it for bacteria or other contamination.

Veterinary Medicines
When used correctly veterinary medicines can improve animal welfare and cure and even prevent diseases. However incorrect storage of medicines and delivery systems (e.g. drench guns, needles etc) can result in them becoming sources of disease. Incorrect or irresponsible administration of medicines can increase the risk of diseases and/or resistance. Consideration should be given to the types of medicine used, the animal being treated, timing, dosage, medicine expiry dates, withdrawal period, storage and disposal. Work closely with your vet and only use veterinary medicines in accordance with your Livestock Health Plan.
Visitors

Visitors to your farm should also know your biosecurity measures. This will prevent the spread of disease to and from your farm, enhancing the reputation of your business and of the farming industry.

Make sure that you have carried out a risk assessment and be clear on where you want your visitors to access. It is a good idea to have a limited number of clearly signposted entry points, designated parking and reception areas. Consider also using a bell or horn so that visitors can attract the attention of a staff member. Try to keep visitors away from direct contact with your livestock and provide appropriate handwashing facilities in case they do. If possible, try to pre-arrange as many visits as possible and consider also providing protective clothing and/or footdips.

If you or your staff are visiting other farms, markets or gatherings, you should also consider what measures can be taken to prevent bringing back any potential diseases to your own farm.
### Step 4 - Biosecurity Score

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<th>Poor (0)</th>
<th>Medium (1)</th>
<th>Good (2)</th>
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<tbody>
<tr>
<td>Limiting Exposure</td>
<td>Have no control measures around sources of disease</td>
<td>Control some sources of disease but not all</td>
<td>Have stringent, regularly updated control strategies to reduce the risk of livestock coming into contact with sources of disease</td>
</tr>
<tr>
<td>Control access (g)</td>
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The family business of H.R. Fell & Sons embarked on a new challenge in August 2017, opening a free-range egg unit managed alongside their 1,200 ewes, Wagyu cattle and 300 hectares of turf. The diversification required tight biosecurity measures which has enabled them to be certified as British Lion Eggs and RSPCA Freedom Foods.

“We have strict controls over who enters the site, mainly our staff members and scheduled visits from the feed and egg lorries. We are looking into installing a gate and wheel-wash to tighten this even further.”

At Biosecurity Zone 1, in the egg packing room, all visitors must dip their boots, sign-in and change into protective clothing, which is carefully disposed of after use. The egg-packing room is separate from the poultry housing, which has the added benefits of removing some of the dust from the eggs and creating a lighter, cleaner working environment. The drivers for the egg lorry, the most common visitors, even have a separate entrance in the storage room.

Everything in the poultry housing unit itself has a carefully controlled environment. The 32,000 layers are divided into 8 pens with access to 3 tiers of perching, nesting, feeding and drinking space, an area of litter, and access to 40 acres of outdoor space. Sheep are used to keep the grass at the ideal length and there are plans to plant trees to complement the shelters in the ranges. They have chosen a very dry litter to encourage dust bathing while still keeping air quality good. Ventilation and lighting changes are gradual and automated, and the birds are familiar with people to keep stress levels low.

“We record everything automatically – temperature, air flow, weight of the birds, number of eggs laid, feed consumed, animal health activities, the list goes on. This helps us to control the environment, monitor any changes and be proactive.”

The biggest risk for the unit is contact with wildfowl that may carry diseases. “We don’t discourage wildfowl but neither do we encourage them, and the site is set apart from the nearest pond.”
Step 5 – Be Clean

Keep yourself clean

As a minimum, you should clean and disinfect your footwear before entering and leaving your isolation pen or areas where sick animals are housed. Place footdips or disinfectant pads in priority areas around your farm and manage them well to encourage use. Use approved disinfectants at the correct concentration and regularly refresh footdips.

It is a good idea to have special protective clothing and footwear (PPE) to wear around your stock. To keep these clean follow these guidelines:

- Disposable protective clothing should be responsibly disposed of after use
- Non-disposable protective clothing, such as cotton boiler suits, should be thoroughly laundered before re-use. Preferably these should be washed on the farm
- Waterproof protective clothing, including wellington boots, should be cleaned and disinfected after every use

Consider using separate protective clothing and footwear for each housing area. If you have intensive housing units consider adding a shower as this has the added benefit of encouraging workers to change their clothing after coming into contact with animals.

Keep your housing clean

Animal bedding can harbour pests and disease so ensure it is fit for purpose, refreshed regularly and stored in a clean and dry location away from pests. Do not re-use bedding that has come into contact with livestock, their manure or pests and vermin unless it has been properly treated.

Consider optimising your ventilation and stocking rates allowing for good circulation of air and keeping animals clean and healthy.
Keep your equipment clean

Equipment, tools and storage containers should be regularly washed, disinfected and stored away from any potential contaminants. If you are using equipment that is borrowed or second-hand then this should be cleaned and disinfected before you use it. Try to avoid sharing animal health equipment (e.g. injecting and drenching equipment).

When cleaning machinery, clean the outside of machinery from top down followed by cleaning internal spaces as much as possible.

Feeders and drinkers should be regularly cleaned to avoid contamination, especially from manure. Careful thought about the type, location and height of the feeders and drinkers, and if you use any barriers, will help to prevent this from happening. Ensure that you are supplying clean, fresh water.

Keep your farm clean

Keep farm access routes, parking areas, yards, feeding and storage areas clean and tidy.

Ensure visitors’ vehicles are clean and parked in designated area(s) away from livestock (see Step 4 for more information).

Washdown Area

It may be a worthy investment to create a designated washdown area for vehicles, equipment, footwear and clothing. A good washdown area should include a pressure washer, clean water, brushes and disinfectant. It should be placed well away from your stock and ideally be near to the farm entrance so that visitors can easily use it. Ensure that any run-off is directed away from livestock housing, paddocks, crops and watercourses, and, if possible, collect the waste water and keep it separate from clean water as part of your Water Management Plan. Remember to regularly check and clean the washdown area and keep up-to-date equipment and cleaning records.
### Step 5 - Biosecurity Score

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<tbody>
<tr>
<td>Limiting Exposure</td>
<td>Biosecurity is not considered during cleaning</td>
<td>Some cleanliness procedures are put in place to minimise biosecurity risk</td>
<td>Measures fully in place and regularly reviewed for effectiveness</td>
</tr>
<tr>
<td>Be clean (h)</td>
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By-Product Management

Step 6 – By-Product Management Best Practice

Fallen Stock
As the saying goes, “with livestock comes deadstock” and therefore you should have procedures in place to dispose of fallen stock promptly and correctly, and without any adverse effects to the environment. Start by reviewing the legal requirements and regulations to ensure that you are correctly collecting, identifying, storing and transporting fallen stock. Then, it is advisable to securely store dead stock so that no other animals can come into contact with them. If fallen stock are being collected by a third-party consider storing close to the perimeter or, if possible, using a separate access route.

Farm Inputs
Dispose of all unused veterinary medicines, treatments and sharps safely. Feed and medicines past their expiry date should also be disposed of responsibly. Incorrect disposal can result in lasting negative effects on the environment or even result in prosecution. Try to identify the disposal route before buying in medicines and feed.

Effluent
Animal manure and slurries can be valuable by-products but without effective management they can become a source of disease. Effective effluent storage, re-use and/or disposal should be considered as part of your Manure Management Plan. If you choose to spread manure and/or slurry onto your land this should be done in relation to your soil requirements and as part of your Nutrient Management Plan. Seek guidance on how long to leave between spreading slurry and grazing livestock to reduce risks. Also consider the source of the slurry and manure used as this may pose a disease risk.
Disposal Area

Consider constructing a disposal area or multiple disposal areas to keep wastes segregated. These areas should be cleaned and disinfected regularly. Ensure that any contaminants are prevented from entering watercourses. When deciding on the location of this disposal area, try to take into account public health and environmental considerations.

Step 2 - Biosecurity Score

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Poor (0)</th>
<th>Medium (1)</th>
<th>Good (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>By-Product Management</strong></td>
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<tr>
<td>By-product management best practice (i)</td>
<td>By-product management does not consider biosecurity risks</td>
<td>Remedial steps are taken to manage by-products effectively</td>
<td>There is a clear strategy in place to promptly and correctly manage by-products. A dedicated disposal area is used</td>
</tr>
</tbody>
</table>
Case Study – Hugh McClymont, SRUC’s Dairy Research Centre, Dumfries

LEAF Innovation Centre, SRUC’s Dairy Research Centre (Crichton Royal Farm) aims to find ways to improve the health and welfare of UK dairy herds. Hugh McClymont explains how his approach to biosecurity was focussed after the outbreak of Foot and Mouth Disease in 2001.

“During the outbreak, it probably took us 5 days to get our biosecurity up to its highest measures – we now have a higher-level biosecurity plan that we could immediately activate and then ease back from there. It was important to sit down with our vet and to be disease-specific. We now concentrate on diseases that are high-risk to our farm and that biosecurity measures can prevent or, if diseases were already present on the farm, stop from becoming worse.”

Neighbours’ stock with unknown health status’ are a threat from nose-to-nose contact or from breaking into the fields. Wide fences are used alongside fenced-off field margins that are good for biosecurity and biodiversity. Youngstock are managed through the grazing period to be at least a field distance from neighbours’ animals and the layout of the milking cows grazing platform means the risk of contact is minimal. Stock are purchased from known sources, are checked, and placed in a strict quarantine. Milking cows are no longer purchased as their welfare cannot be easily maintained while they are quarantined.

For Crichton Royal Farm, another risk was determined to be farm staff, contractors and vets, who are likely to be moving between many farms. A designated car park and biosecurity requirements are targeted towards the individual according to their risk factor: “Assess which of your contractors are of most risk and be practical about what measures you ask of each of them. Vets can be a potential risk and so we work with a practice that has high standards of biosecurity.” Visiting farm groups were seen as a low risk however the farm has moved towards providing disposable over-boots as a precaution. Dead stock is housed in a small trailer on the outskirts of the farm so the third-party collection company does not have to come onto the farm.

Plans for new developments also take into account how to improve biosecurity, with bulk feed bins placed nearer to the edge of the farm and consideration given to the future position of the bulk tank room.

Each risk is ultimately balanced with what practical measures can be taken and the other benefits that they may bring: “We overwinter sheep which do bring a disease risk but they are an important income source so we have accepted that risk and taken steps to minimise it.”
How are you doing?

Now you have carried out the Simply Sustainable Biosecurity Six Simple Steps, how did you do?

Complete the table overleaf to get an idea of how well you are managing biosecurity. Consider first targeting any areas where you score lower and may be the biggest biosecurity risks for your farm. Revisit your score on an annual basis. These are the first steps to developing a more sustainable biosecurity strategy for your business.

Overall score for your business

- Poor: 0 – 4
- Medium: 5 – 8
- Good: 9 – 12

Photocopy the sheet overleaf for each farming year to monitor your progress.
## Your Biosecurity Score

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Score</th>
<th>Value</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
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<tbody>
<tr>
<td><strong>Indicator</strong></td>
<td>Score</td>
<td>Value</td>
<td>Year 1</td>
<td>Year 2</td>
<td>Year 3</td>
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<td><strong>Your Biosecurity Score</strong></td>
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<tr>
<td><strong>Step 1 - Observe</strong></td>
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<td>Observation</td>
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<td><strong>Step 1 Total</strong></td>
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<td><strong>Step 2 - Record</strong></td>
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<td><strong>Step 3 - Manage Stock Movements</strong></td>
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<td>Health of new stock</td>
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<td>Isolation</td>
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<td><strong>Step 3 Total</strong></td>
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<td><strong>Step 4 - Control Access</strong></td>
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<td><strong>Step 4 Total</strong></td>
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<td><strong>Step 5 - Be Clean</strong></td>
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<td>Be clean</td>
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<td><strong>Overall Total</strong></td>
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Further Information

There is a wide range of information on how to improve biosecurity. These are readily available for farmers, including:

- LEAF Sustainable Farming Review (for LEAF Members only)
- Simply Sustainable Biodiversity
- Simply Sustainable Water
- Simply Sustainable Soils
- Open Farm Sunday Host Farmer Handbook
- Preventing or Controlling Ill Health from Animal Contact at Visitor Attractions – Industry Code of Practice. Access To Farms

- Farm Biosecurity: www.farmbiosecurity.com.au
- HealthforAnimals: www.healthforanimals.org
- National Office for Animal Health (NOAH): www.noah.co.uk
- Responsible Use of Medicines in Agriculture Alliance (RUMA): www.ruma.org.uk
- Department for Environment, Food and Rural Affairs (DEFRA) www.gov.uk/guidance/disease-prevention-for-livestock-farmers

References

- Centre for Rural Economy (2006) – Foot and Mouth – Five Years On
- SRUC (2009) Stockowner Biosecurity
About LEAF

LEAF (Linking Environment And Farming)

LEAF is the leading global organisation delivering more sustainable food and farming. We work with farmers, the food industry, scientists and consumers, to inspire and enable sustainable farming that is prosperous, enriches the environment and engages local communities. LEAF promotes Integrated Farm Management (IFM), a whole farm business approach that delivers sustainable farming.

Integrated Farm Management (IFM)

IFM is a whole farm business approach that delivers more sustainable farming. It uses the best of modern technology and traditional methods to deliver prosperous farming that enriches the environment and engages local communities. A farm business managed to IFM principles will demonstrate site-specific and continuous improvement across the whole farm.

The LEAF Marque

The LEAF Marque is a global environmental assurance system recognising more sustainably farmed products, based on IFM principles. All LEAF Marque certified farms are independently inspected to ensure they meet stringent criteria to demonstrate that food is being produced to high environmental standards, across the whole farm.
The LEAF Network

The LEAF Network of Demonstration Farms and Innovation Centres supports the research, development and promotion of IFM. LEAF Innovation Centres represent some of the UK’s leading education and research establishments which focus on specific areas of IFM. This cutting-edge research is fed back to LEAF Demonstration Farms, whose role is to show the beneficial practices of IFM to a broad range of audiences, through organised visits. This ‘science into practice’ approach is key to delivering IFM on the ground.

The LEAF Sustainable Farming Review

The LEAF Sustainable Farming Review is a self-assessment, online management tool for LEAF members to help them farm more sustainably. It enables them to monitor their performance, identify strengths and weaknesses and set targets for improvement across the whole farm, covering the 9 sections of IFM. It is a very easy to use, practical resource to help farmers make more informed management decisions to drive their businesses forward - economically, environmentally and socially.

Education and Public Engagement

LEAF leads a collaborative approach within the industry for better education and public engagement in farming and food production. Through the LEAF Network of Demonstration Farms and Innovation Centres, LEAF Open Farm Sunday, LEAF Open Farm School Days and our wide range of education resources and training, we work to improve public understanding and trust in food and farming. In July 2017, LEAF merged with FACE (Farming and Countryside Education), further strengthening our role as the interface between agriculture and schools.
LEAF
Linking Environment And Farming
Stoneleigh Park, Warwickshire, CV8 2LG

T: 024 7641 3911    E: enquiries@leafuk.org
W: www.leafuk.org

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