



HM Government

Safeguarding our animals and plants





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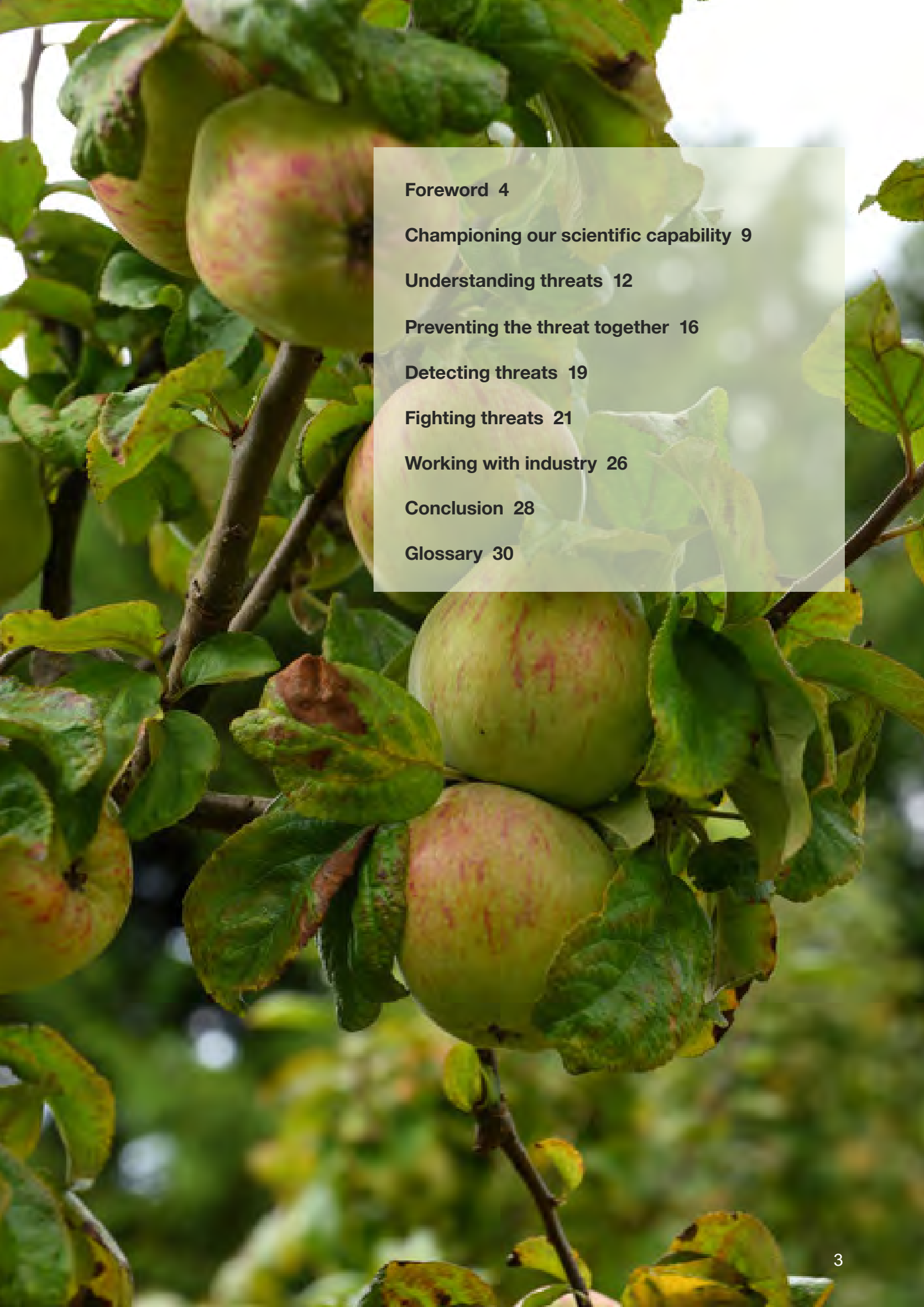
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Foreword

As the United Kingdom's Chief Veterinary and Chief Plant Health Officers, we are passionate about maintaining our national biosecurity so that trading partners, consumers, and industry can be confident in the high UK standards of food safety, animal and plant health. The UK is home to a thriving food and farming industry which exported £23.6 billion worth of food, feed and drink in 2019.

We are proud of the UK's reputation for excellence in this field.

The UK's approach to biosecurity is internationally recognised for delivering the highest standards of protection from pests, disease and invasive non-native species. This begins with the vital process of horizon scanning to detect potential risks, it includes robust measures to prevent and detect incursions as well as a capacity to respond effectively to contain or eradicate outbreaks that may occur.

This is underpinned by world-class scientific capabilities and collaboration across government through key links with industry, stakeholder organisations and the wider public. Across the UK, government departments, their agencies, the internationally renowned expertise of National Reference Laboratories, vets, farmers, industry, the public (through citizen science) and academia work together, to contribute the most accurate information and highest expertise. The result is an integrated and coherent biosecurity strategy that protects our animal health (which includes fish, crustaceans, molluscs and other aquatic animals), plant health, biodiversity and food safety.

The UK's commitment to maintaining and progressing its capabilities means we can declare freedom from many notable pests and diseases. These include foot and mouth disease, African horse sickness, Colorado beetle, Asian longhorn beetle and bluetongue among others. These pests and pathogens are not established in the UK and any incursions have been swiftly and successfully eradicated.

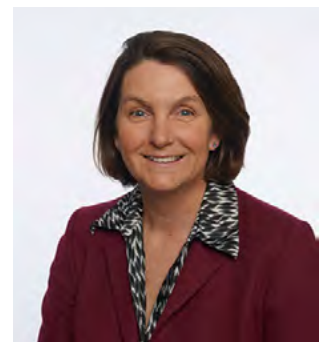
The UK is home to a thriving food and farming industry which exported £23.6 billion worth of food, feed and drink in 2019

We continuously strive to improve our safeguarding measures and scientific expertise to maintain our high health status of plants, animals and products of animal origin. We will continue to invest resources and expertise to ensure our national biosecurity remains at the forefront to protect our plants and animals and the wider natural environment and to continue to make the UK a trusted trading partner globally.



Christine Middlemiss

Christine Middlemiss
UK Chief Veterinary Officer



Nicola Spence

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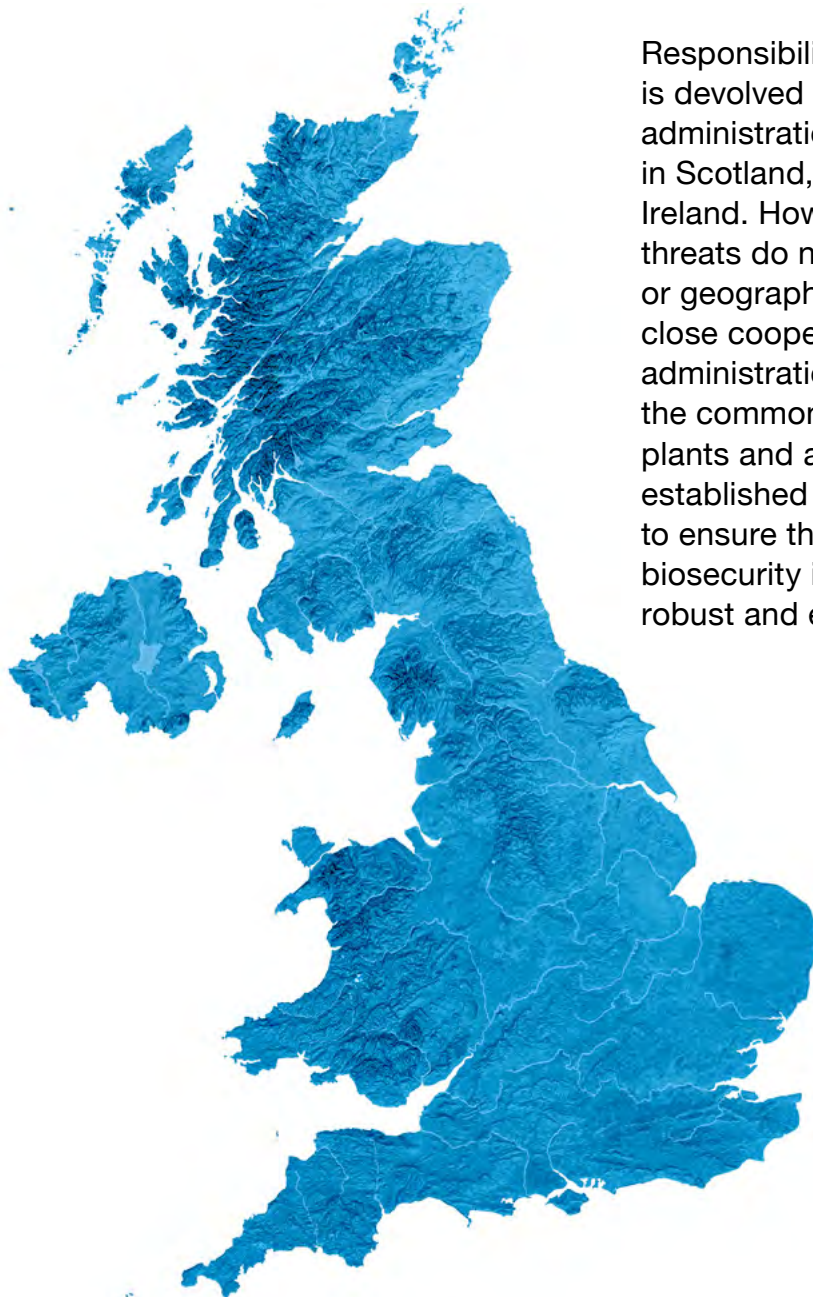


We continuously strive to improve our safeguarding measures and scientific expertise to maintain our high health status of plants, animals and animal products



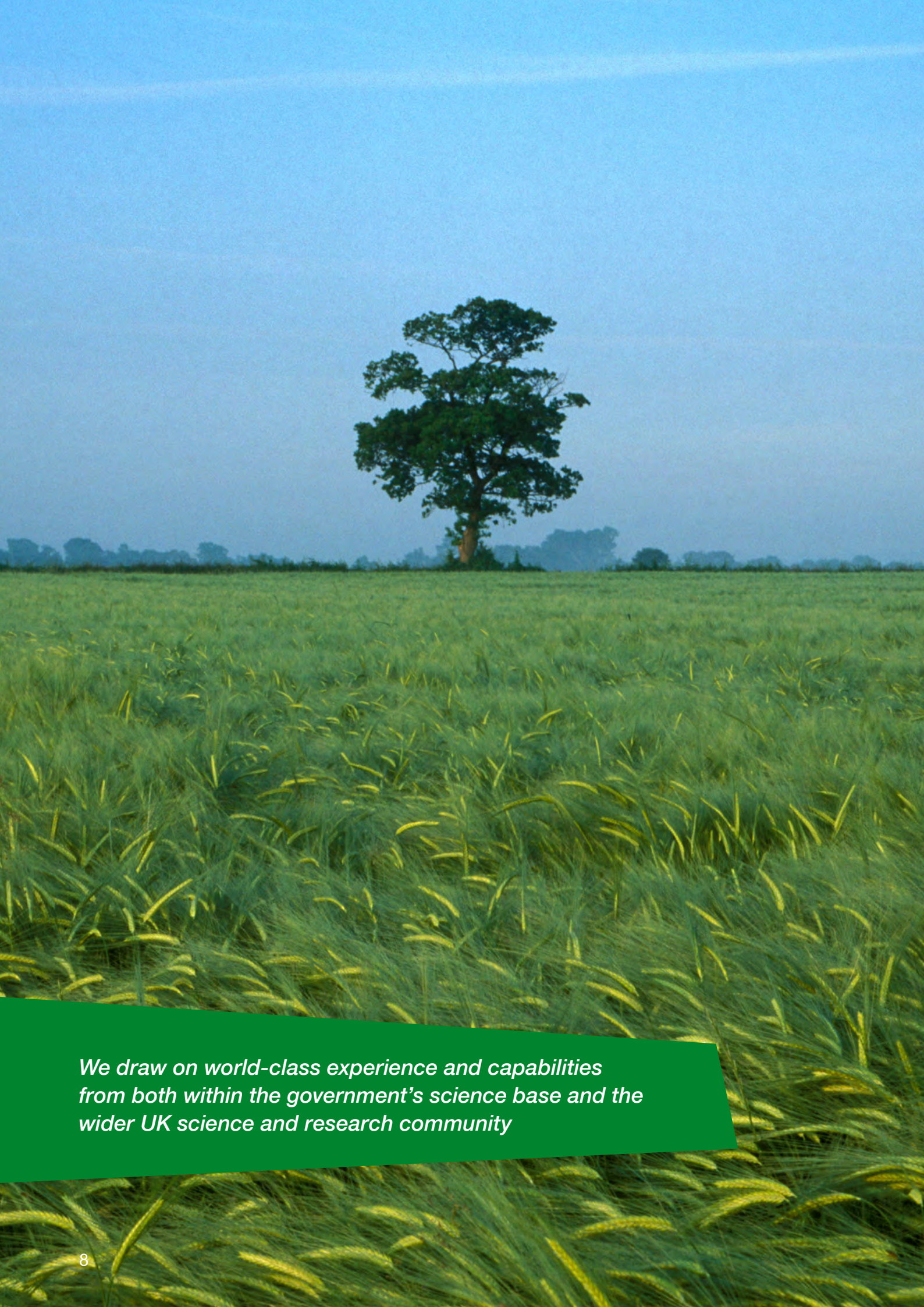
Introduction to devolution

The United Kingdom comprises the nations of England, Scotland and Wales (collectively referred to as Great Britain) and Northern Ireland. We trade as the UK and the Department for Environment, Food and Rural Affairs (Defra) represents the UK as a whole internationally.



Responsibility for biosecurity is devolved to the government administrations and legislatures in Scotland, Wales and Northern Ireland. However, as biosecurity threats do not respect administrative or geographic boundaries, there is close cooperation between all the UK administrations who work towards the common aim of safeguarding our plants and animals. We have well established governance structures to ensure the UK's approach to biosecurity is well co-ordinated, robust and effective.

In addition to the close cooperation between the UK administrations, Northern Ireland works closely with Ireland on an all-island basis. They hold bilateral agreements which cover communications, preparedness and operational responses in the event of suspicion or the detection of specific pests or diseases. This is essential, given the shared land border, and recognises the island of Ireland as a single epidemiological unit. There is also close cooperation between the UK and the governments of Crown Dependencies (Jersey, the Isle of Man and Guernsey) with broadly aligned systems and standards.



We draw on world-class experience and capabilities from both within the government's science base and the wider UK science and research community

Championing our scientific capability

Evidence based decision making is key to protecting the UK from biosecurity risks, both now and in the future. Cutting edge science and technology run through every aspect of our national biosecurity, from understanding the nature of a risk to responding in the rare instances outbreaks do occur.



We draw on world-class experience and capabilities from both within the government's science base and the wider UK science and research community. The Scottish Government funded Centres of Expertise are an excellent example of how the capabilities of our wider research community support us during outbreaks. These virtual centres bring together multi-disciplinary expertise, ranging from epidemiology to social science and economics, from across universities and research institutes to provide high quality responsive analysis and advice to inform disease control options, support contingency planning and undertake horizon scanning.



The UK is at the forefront of work to develop and implement new techniques and technologies to enhance the effectiveness of national biosecurity



World-leading research

The UK is the proud home of some of the world's leading research centres. We have more than 25 International Reference Laboratories accredited by the World Organisation for Animal Health (OIE), World Health Organisation (WHO) and Food and Agriculture Organisation of the United Nations (FAO). Our laboratories hold these roles by operating at the cutting edge of modern technology and the forefront of their fields. For example, The Pirbright Institute is the World Reference Laboratory for foot and mouth disease (FMD) to support global surveillance and control of FMD.

The UK is at the forefront of work to develop and implement new techniques and technologies to enhance the effectiveness of national biosecurity. For example, our scientists are working to move diagnostic technologies, out of the laboratory and into the field (where appropriate) to enable more rapid testing and faster response. We are also deploying portable diagnostic tests at key points of entry for plants and animals. Including Heathrow Airport where LAMP (Loop mediated isothermal amplification) technology, which allows rapid molecular diagnostic tests to be carried out in the field, is being deployed to look for specific plant pests and pathogens.

Sharing expertise globally

The UK works to support international collaboration to ensure that we share our expertise and benefit from a global pool of knowledge. We are proud that our Centre for Environment, Fisheries and Aquatic Science (Cefas) has been designated as the Collaborating Centre for Emerging Aquatic Animal Disease (EAAD). It will play a central role in achieving effective aquatic animal disease control in developing countries where aquaculture is one of the fastest growing food sectors and a critical component of food and income for those nations. The Animal and Plant Health Agency (APHA) and the Royal Veterinary College (RVC) also now host an OIE collaborating centre for risk assessment. OIE Collaborating Centres are centres of expertise and the new RVC and APHA Collaborating Centre will support the management of animal health issues internationally by providing expertise in risk analysis and modelling for a fixed five year term in the first instance.

Collections

The UK's animal and plant health science is supported by internationally recognised collections, for example:

- Fera Science Ltd. hosts the National Collection of Plant Pathogenic Bacteria, one of the most important plant pathogen collections in the world.
- SASA, which provides scientific advice and support to Scottish agriculture, maintains over 700 commercial potato varieties in tissue culture as well as unique cereal and field vegetable seed collections.
- The James Hutton Institute holds the internationally important Commonwealth Potato Collection.
- The OIE Reference Laboratories at The Pirbright Institute, the Centre for Environment, Fisheries and Aquatic Science (CEFAS) and the Animal and Plant Health Agency (APHA) Weybridge all keep international collections of animal pathogens against which they can compare any new outbreaks.

Understanding threats

As a trading nation, it is essential we remain vigilant to the global pest and disease picture to understand the impact of these risks, both now and in the future. The assessment of risk drives the UK's approach to biosecurity as it enables us to effectively identify, detect and respond to threats. We have a world-class network of scientific risk analysts for both terrestrial and aquatic animal and plant health.

To gather information on global changes in animal and plant pests and disease distributions, we routinely carry out horizon scanning and risk analysis, including monitoring developments around the world. Collaboration with international colleagues provides vital information for the risk assessment process, enhanced by extensive in country surveillance to understand patterns and trends from pests and diseases already present in the UK.

These outputs are used to not only inform government policy and decision making but also are shared publically for use by external bodies and international partners. They work to raise awareness among the public, vets, farmers and industry so that they can understand any risks and potential impacts.

Risk groups

The UK has an established Veterinary Risk Group (VRG) which identifies and assesses how to manage new and re-emerging animal health and welfare threats in the UK. The VRG is directly supported by a network of expertise across all UK policy areas, animal health and welfare delivery agencies, and enforcement bodies. Notably, it is supported by species specific expert groups, working closely with private and government vets to provide focal points of expertise.

An established UK Plant Health Risk Group advises the UK government of new and emerging plant health threats and provides recommendations for action. The UK Plant Health Risk Register is used by the group as a screening tool to prioritise risk analysis plus the need for legislation, development of contingency plans and consultation on risk management measures; against plant pests and pathogens which pose a potential risk to UK crops, trees and ecosystems. Each month the Plant Health Risk Group update entries in the Risk Register in the light of new intelligence from around the world and developments in the UK.



The UK Plant Health Risk Register records and rates risks to UK crops, trees, gardens and ecosystems from plant pests and pathogens. It provides an evidence based framework for decisions on priorities for actions by government and plant health stakeholders. Established in 2014, it now has more than 1,000 plant pests and pathogens listed on it. Tailored risk registers have been developed by each of the devolved administrations to reflect their different habitats and industries.



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for both terrestrial and aquatic animal and plant health*



Outbreak prevention: Bluetongue virus

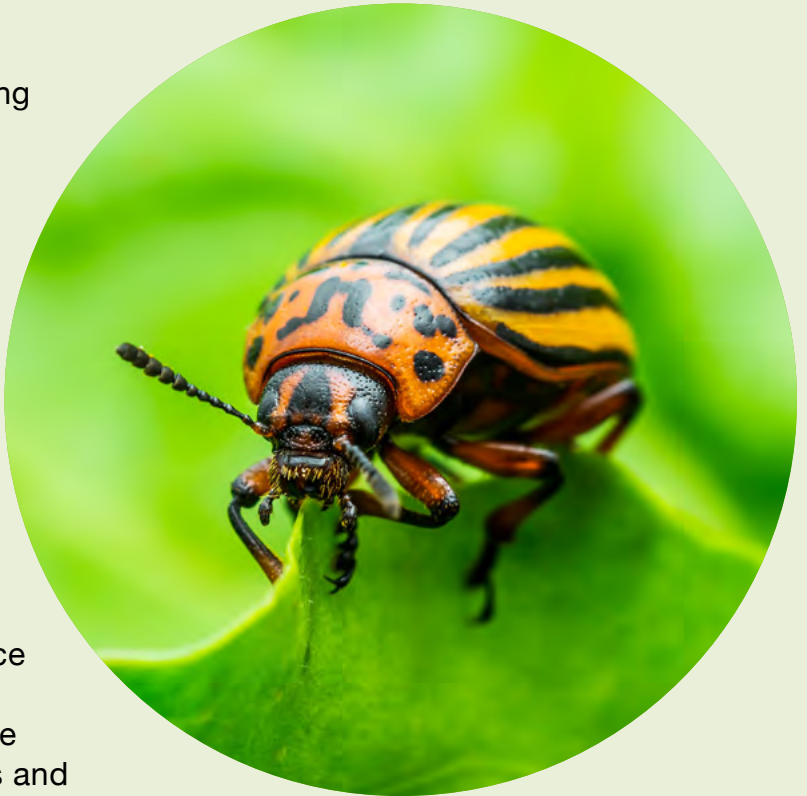
Bluetongue virus (BTV) is an insect-borne virus transmitted by biting midges and causes an infectious, non-contagious disease, bluetongue (BT) in susceptible ruminants (including sheep and cattle) and camelids. While the virus does not affect people or food safety, outbreaks are costly and can cause prolonged animal movement and trade restrictions.

The UK has been officially free from BTV since July 2011, with the last outbreak in GB in 2007. The UK utilises a multi-disciplinary approach to BTV surveillance combining passive surveillance, risk assessment, entomological surveillance of biting midge populations and targeted surveillance for BTV in high-risk ruminant populations.

The Government routinely post-import tests all ruminant animals arriving from countries where any part of their territory is in a BTV restricted zone or within 150km of a BTV infected premises. This surveillance ensures the UK can reassure its trading partners of our disease free status and facilitate trade.

Pest prevention: the Colorado beetle

Colorado potato beetle, *Leptinotarsa decemlineata*, is one of the world's most serious potato pests and has long been recognised as a threat to potato production in the UK. It was one of the first pests to be targeted by international plant health agreements. While the pest is widespread in continental Europe, the UK plant health service has successfully prevented the beetle from establishing in the UK for over 140 years. A collaborative monitoring and control campaign is jointly conducted by the UK, European and Mediterranean Plant Protection Organisation (EPPO), France and the Channel Islands to minimise the risk of this pest spreading from the continent to the Crown Dependencies and the UK.



Preventing the threat together

To prevent pests and diseases from entering or becoming established in the UK, we actively engage with international groups and organisations such as the Food and Agriculture Organization (FAO); the World Health Organisation (WHO); the International Plant Protection Convention (IPPC) and the World Organisation for Animal Health (OIE). Participation in this international system supports the protection of the UK's high health status and enables us to negotiate new and improved international standards for a global benefit. This further supports our scientific capability and risk assessment activity.

The UK supports the development of capability internationally by supporting the FAO and the OIE. We work closely with other exporting countries to ensure that health certification requirements meet the standard for trade into and out of the UK.

The UK border is an important line of defence against pests and diseases. Our teams of expert inspectors ensure that certification requirements are met for

We work closely with other exporting countries to ensure that health certification requirements meet the standard for trade into and out of the UK

both imports and exports and we carry out inspections at points of entry. We work closely with other UK government organisations, for example with UK Border Force and inspectors to ensure their response is proportionate to the level of risk identified through horizon scanning and with the FSA on shared threats facing the food chain such as those raised by the Covid19 epidemic.

The UK has robust systems in place to prevent the spread of pests and diseases if they are not detected at the border. For example, aquaculture production businesses have biosecurity plans as part of their authorisation requirement. Whilst the plant passport regime is key to preventing movement of plant pests and diseases within the UK. To issue plant passports, businesses require authorisation and are audited up to four times a year. The UK has an effective and secure system of registering livestock keepers who must by law register the land they use to keep livestock and report livestock movements. All cattle, sheep and goats are identified with a unique individual animal number which is issued centrally by Government through an Eartag Allocation System.





Disease control: livestock movement standstill

The livestock movement standstill is a key component in our approach to animal health disease control. Scientific and veterinary advice strongly supports this approach as it offers the best protection against the spread in the event of an outbreak of fast moving, undetected disease occurring. This disease mitigation measure restricts the ability to move animals for a period after they have arrived on a farm. Its purpose is to limit the number of holdings to which disease spreads before an outbreak is detected (the 'silent spread' period), and helps to reduce the size and cost of a potential disease outbreak. If animals are placed under standstill the chances of detecting clinical signs of any disease are significantly increased.

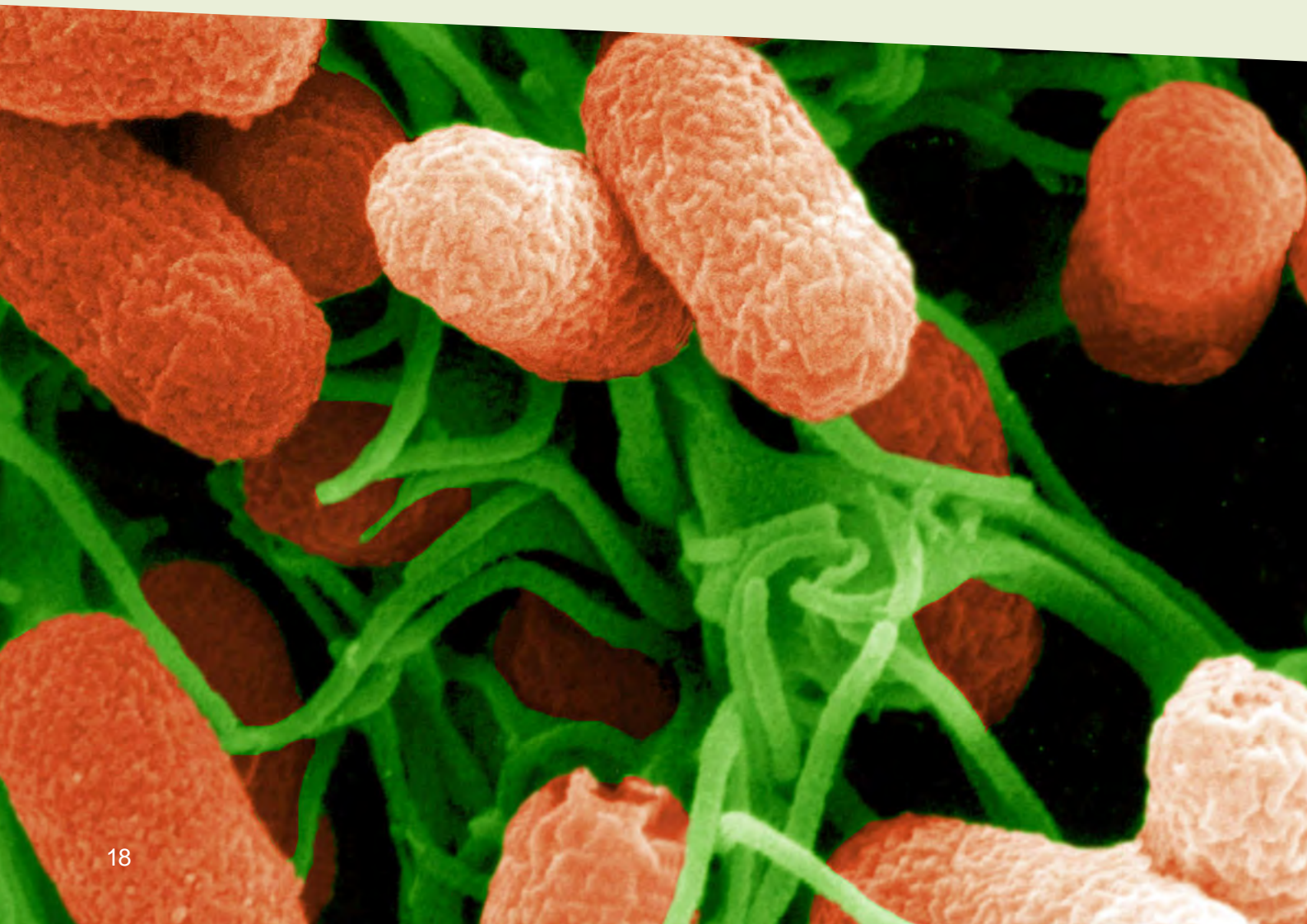
All of this work is supported by guidance and training on biosecurity for industry and the wider public to ensure they can play their part in minimising the risk of importing and spreading pests and diseases.

A global priority: Antimicrobial Resistance

Antimicrobial Resistance (AMR) is a recognised global priority at both G7 and G20 level. The UK Government has long been an advocate of action to address AMR in both humans and animals (as inappropriate use of antibiotics in humans, animals and in crop protection may have an impact on human or animal health), with a UK strategy and action plan in place since 2000. In the animal health sector, the UK reduced the use of antibiotics for food producing animals (in mg per kg) by 53% between 2014 and 2018 with current levels the lowest they have been since records started in the early 1990s.

Sales of veterinary antibiotics classed as highest priority critically important antibiotics for human health dropped 18% between 2017 and 2018 from already low levels, and now account for 0.7% of total sales.

The engagement of UK livestock sectors and the significant fall in veterinary antibiotic use in recent years are strong indicators that current action is effective. The UK's refreshed AMR strategy includes a 20 year vision and a new five year national action plan which will build on this. We have also established the Defra Antimicrobial Resistance Coordination (DARC) group, which co-ordinates antimicrobial resistance surveillance across the UK. The FAO has awarded official designation to the UK International Reference Centre for Antimicrobial Resistance.



Detecting threats

The UK has a comprehensive and well tested system for rapidly detecting and identifying incursions and outbreaks of animal and plant health pests and diseases. Early detection enables us to minimise spread through a tailored and timely response.



By drawing together the outputs of surveillance systems and reporting, our experts can identify patterns from apparently unconnected cases and events. This provides an early warning system for the spread of pests, diseases and invasive non-native species. We carry out both active surveillance (such as targeted surveillance based on risk analysis) and scanning surveillance (such as to identify when a risk changes, through sampling and testing in response to reports from inspectors or vets). Collaboration through groups such as the UK Surveillance Forum (UKSF) provides us with a comprehensive and co-ordinated picture of surveillance across the UK, which underpins our approach to biosecurity and trade. Results are fed back into our risk assessment work.

To help people to report suspected Asian hornet sightings we have developed an app which allows people to send a photo and their GPS co-ordinates

At the front line of this effort are our clinicians, veterinary surgeons, plant health and seeds inspectors, fish health inspectors, bee health inspectors, scientists, the public (through citizen science) and industry professionals who identify and report the first signs of pest and diseases.

These experts are the eyes and ears of the system, and awareness in the veterinary profession, scientists, industry and the wider public also expands the capability to detect pests and diseases significantly. The government provides training and guidance to ensure they know what to look out for and what to do if they detect something, including reporting to government where appropriate. We have clear processes for reporting suspect cases or suspicion of pests or diseases and respond to those reports with advice and investigation where needed. For example, to help people to report suspected Asian hornet sightings we have developed an app which allows people to send a photo and their GPS co-ordinates. This helps to triage reports and pinpoints suspect cases for rapid follow up.



Citizen science in tree health surveillance

The UK Government, working with partners from the public and charitable sector, have developed a portfolio of projects to develop a tree health early warning system to support official surveillance. Observatree (www.observatree.org.uk), led by Forest Research, is a collaboration between government, Fera Science Ltd, the Woodland Trust and the National Trust who have developed a UK wide network of trained volunteers to survey tree health and report the presence of 22 high priority pests and diseases. Volunteers have completed over 8,000 surveys in six years and reported suspect cases of 12 of the 22 priority organisms shaping both policy and operational decisions. Central to Observatree's success was the establishment of a common reporting mechanism, known as TreeAlert, which allows data to be submitted online.

Fighting threats

The UK is fully prepared to respond decisively when a pest, disease or invasive non-native species is detected. We have tried and tested contingency plans in place, to manage and eradicate outbreaks with specific plans for high-risk pest and disease threats. These contingency plans and control strategies set out what Government, agencies and people who keep animals and plants must do in an outbreak. We regularly test and refine these plans through desktop and real-time exercises to ensure they remain robust if needed.

Traceability systems enable the source of incursions and outbreaks and potential spread to be determined. Plant passports, for example, enable traceability for plants. The UK has secure centralised systems to register livestock keepers, the land they use to keep livestock, and to control the issue of official identifiers; and is now embarking on ambitious digital programmes to ensure that the UK remains at the forefront of livestock traceability.

Learning lessons for the future

Managing outbreaks teaches us valuable lessons for the future and helps us to improve our disease control and adapt our policies where necessary. The UK facilitates the development of new and improved treatments or management measures so that control options can be in place for potential outbreaks.



Building resilience

Government works with industry and operational partners to build resilience to be better protected against animal and plant pests, diseases and other hazards, with strong response and recovery capabilities. Not all biosecurity threats are novel and the UK ensures that we are also managing the highest risk threats that are already present in the UK to minimise their spread and to ensure the high health status of our exports. UK administrations have robust programmes to secure bovine tuberculosis freedom for England, Wales and Northern Ireland, alongside Scotland. The Government has made a commitment in its 25 Year Environment Plan to work with the farming industry to tackle endemic disease in England. Data gathered on livestock disease is publicly available and livestock holders are therefore able to see which diseases have been reported in their area and respond accordingly.

Contingency testing: Exercise Blackthorn

Exercise Blackthorn was a UK national exercise which tested the government's contingency plans for dealing with an outbreak of foot and mouth disease (FMD). It was conducted over ten months and included several field exercises, two table-top exercises and multiple strategic response meetings held prior to a two day real-time (live) national exercise. The exercise concluded with a final table-top exercise focusing on the recovery arrangements. Over 400 participants took part with representatives from government and industry stakeholders.

This exercise was part of an ongoing programme of local and national exercises and met our statutory requirements to conduct at least two exercises every five years. The findings have informed operational plans and the FMD disease control strategy, ensuring the UK is better prepared should an outbreak occur.





Asian longhorn beetle: Outbreak response

Asian longhorn beetle (*Anoplophora glabripennis*) (ALB) is a serious wood-boring pest whose larvae feed on many tree species. Its spread around the world has been linked to the movement of solid wood packaging material associated with particular commodities, including stone and slate.

When an outbreak of ALB was detected in Kent in 2012 an eradication plan was implemented with infested host trees being removed together with potentially infested hosts within the area. Extensive surveys were conducted over the next seven years with thousands of trees examined for symptoms of ALB infestation. No further beetles were found during this surveillance programme and the outbreak was officially declared eradicated in spring 2019.

Livestock traceability

There is work across the UK to replace the existing separate species traceability databases with a digital multi-species system in each UK administration. The multi-species systems will share data to inform and develop world leading standards of livestock traceability within the UK.

The new services will offer a one-stop shop to identify and track livestock, with data and other relevant information available to industry and government. We are also looking at how movement reporting can be captured in real-time. By having data for all species brought together on a modern technological platform, tracing tools will make it easier and faster to track animals in the event of a disease outbreak. The services will streamline processes, limit paper use, to reduce the possibility of duplication and improve data quality. The current roll-out plans for each UK Administrations differs, but the intention is to implement a new service in England for sheep and goats in spring 2021 and then to continue to evolve and improve the services across the UK for cattle and pigs.





The UK facilitates the development of new and improved treatments or management measures so that control options can be in place for potential outbreaks

Working with industry

Effective biosecurity cannot be delivered by government alone. Our work is supported by engagement with industry and stakeholder groups. Groups such as the Animal Health and Welfare Board for England, the Wales Animal Health and Welfare Framework Group, the Bee Health Advisory Forum and the UK Plant Health Advisory Forum ensure industry and stakeholders play a vital role in shaping government policies underpinning the approach to biosecurity and the delivery of measures to support them.

Additionally, there are a number of industry led schemes raising awareness of biosecurity independently of government. In some cases this is to manage pests, disease and invasive non-native species which are not controlled by government since statutory action can no longer be justified. In others it is to raise general awareness of biosecurity to improve the capacity of industry.

Examples include the Pig Health Scheme which monitors English pigs at slaughter for prevalence and severity of 12 key conditions; and the Plant Health Management Standard (PHMS) developed by industry (working with government, NGOs and businesses) which provides a set of requirements for businesses to meet, in order to protect the horticultural supply chain and the wider countryside from damaging pest and diseases.





Our work is supported by engagement with industry and stakeholder groups

Conclusion

Our high biosecurity standards not only protect our animals, plants and the wider environment, but also provide important assurances to our global trading partners that UK exports are of the highest health status. We are proud of our world-class scientific capability that is risk based and underpinned by robust evidence. However, we realise the situation is not static and continue to progress and improve our processes, investing in new technologies that help us to develop further. We intend to remain at the forefront of biosecurity globally by working internationally to collaborate, learn and share our expertise.

The UK's approach to biosecurity is delivered by a dedicated and expert network of government officials, vets, scientists, industry and members of the public, all sharing the common goal of ensuring the UK is a safe and reliable trading partner to the rest of the world. We continue to support and develop this front line network to ensure the continued reliability of our biosecurity standards.



We intend to remain at the forefront of biosecurity globally by working internationally to collaborate, learn and share our expertise



Glossary

Animal and Plant Health Agency (APHA):

An executive agency of the Department for Environment, Food and Rural Affairs responsible for safeguarding animal and plant health for the benefit of people, the environment and the economy.

Antimicrobial resistance (AMR):

Resistance of micro-organisms which cause infection to a medicine that would normally kill them or stop their growth.

Biosecurity: A strategic and integrated approach that encompasses the policy and regulatory frameworks (including instruments and activities) that analyse and manage risks in the sectors of food safety, animal life and health, and plant life and health, including associated environmental risk.

Centre for Environment, Fisheries and Aquaculture Science: An executive agency of the Department for Environment, Food and Rural Affairs and an internationally renowned aquatic scientific research and consultancy centre.

Department for Environment, Food and Rural Affairs (Defra): The UK Government department responsible for safeguarding our natural environment, supporting our world leading food and farming industry, and sustaining a thriving rural economy.

European and Mediterranean Plant Protection Organisation (EPPO): Regional Plant Protection Organization responsible for cooperation in plant health within the Euro-Mediterranean region.

Food and Agriculture Organization (FAO):

The international organisation within the United Nations that leads international efforts to defeat hunger.

Food Standards Agency (FSA):

A non-ministerial department responsible for food safety and food hygiene in England, Wales and Northern Ireland.

Food Standards Scotland (FSS):

Responsible for food safety and food hygiene in Scotland.

International Plant Protection Convention (IPPC): An international plant health agreement that aims to protect cultivated and wild plants by preventing the introduction and spread of plant pests and diseases.

OIE (World Organisation for Animal Health ('formerly' Organisation International des Épizooties): The international organisation within the United Nations responsible for improving animal health worldwide.

Sanitary and Phytosanitary (SPS):

Measures to protect humans, animals and plants from diseases, pests or contaminants.

World Health Organization (WHO): The international organisation within the United Nations responsible for directing global health responses.





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