

# Biosecurity practices to support plant health: a review of knowledge and practice

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## Policy Summary



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# 1 Policy Summary

## 1.1 Background

The last 20 years have seen the introduction and spread of several new plant pests and diseases within the UK (referred to as “pests” from this point on). Some of these pests have gone on to have significant financial and ecological impacts on horticulture, forestry, agriculture, and the wider natural environment in Scotland. Measures to reduce the spread have often focussed on control of plant movements and movement of infected plant materials.

There are also several ways in which pests can be inadvertently spread, for example via visitors to sites (e.g., on footwear, bike tyres, pram wheels, etc.), on equipment and tools (e.g., chain saws, secateurs, etc.), and on large machinery (e.g., tractor tyres). Biosecurity practices may prevent or mitigate such spread but require awareness and consistent implementation, and it is uncertain whether this is being achieved.

## 1.2 Key Research Questions

Scotland’s Plant Health Centre (PHC) commissioned this review to:

1. Determine what official cross sector advice (agriculture, forestry, horticulture and natural environment) already exists in Scotland for the biosecurity risks posed by visitors, tools and machinery.
2. Establish what biosecurity procedures are already being used to address these risks at various locations across Scotland and the UK.
3. Explore other sectors to learn if they could provide additional insights and novel approaches into these aspects of plant biosecurity.
4. Carry out a thorough assessment of what procedures are in place, or being considered and developed, in different countries/regions to address these specific biosecurity risks.

## 1.3 Research Undertaken

Between January 2022 and June 2022 this study engaged with businesses and organisations within the UK via an online survey to explore how aspects of biosecurity are understood and what procedures may be in place to address them. Data were gathered on, among other things, respondents’ awareness of previous biosecurity campaigns, biosecurity responsibility within organisations, how risks are assessed, what procedures are already in place to manage visitor biosecurity, machinery sharing activities, and what barriers may exist to behaviour change. The survey was supplemented with interviews and review of available literature.

Research considered activities underway internationally to address plant biosecurity risks. Data were gathered from the available literature as well as discussions with international plant health practitioners. In addition, to encourage novel thinking for plant biosecurity, other sectors were explored (e.g., health & safety, human health, and animal health) to identify lessons and ideas which might be applied.

## 1.4 Main Findings

- Some biosecurity awareness exists across sectors in Scotland. Examples are provided in the project case studies such as using footwear cleaning facilities in a National Nature Reserve and a botanic garden. Businesses also reported carrying out activities such as cleaning tools between jobs, restricting visitor access to high-risk areas and ensuring machinery arrives on site clean. Some also provided biosecurity training to staff.
- However, biosecurity guidance on visitors, tools and machinery is siloed and not widely integrated within and between sectors in Scotland. There is no consistent set of

recommendations and there appears to be a difference in perception of the relevance of biosecurity in different sectors. Evidence of efficacy of measures is scarce.

- Assessing biosecurity risks is considered very difficult for individual organisations and as a result an ad hoc approach has developed dependent upon the information sources which have been found.
- Publicly accessible gardens have an important role to play in biosecurity awareness-raising given the potentially high numbers of visitors they attract. Initiatives, such as a biosecurity trail within a botanic garden, present good opportunities to explain the issues to visitors.
- Similarly, recreational forest visitors (e.g., mountain bikers, dog walkers and hikers) could be targeted for awareness raising, building on the existing “Keep it Clean” campaign.
- Integrating biosecurity into existing publications, such as the Countryside Code, would be an easy way to consistently introduce biosecurity concepts to all countryside users. Biosecurity success is likely to depend on coordination across sectors through a shared understanding of the issues and aligned activity to address them.
- Awareness of the risk of pest spread by agricultural machinery was high. However, a large number of businesses use machinery contractors (e.g., machinery rings) on their sites which poses a biosecurity risk if no checks are made to ensure that machinery arrives clean.
- When it comes to behaviour change, there are significant lessons to be learned from other sectors such as food safety and workplace health and safety. In addition, international biosecurity initiatives can provide tried and tested examples of where biosecurity behaviour change has been achieved and where it has not, helping to produce effective messaging.
- Human health research shows that behaviour change is complex and likely to take time.
- Regulation has a role to play, as do voluntary initiatives such as the Plant Healthy Standard.

### *1.5 Recommendations*

- There is an urgent need for clear, evidence led, sector-relevant, biosecurity guidance for businesses and organisations involved in managing the biosecurity risks associated with visitors, tool hygiene and machinery movement.
- The biosecurity language used in this study was more familiar to ornamental growers and foresters, suggesting that more targeted information using different terminology may be required for the agricultural sector.
- More thought needs to be given to how to provide advice to contractors who may not be aware of biosecurity risks but may be visiting plant production sites from day to day. There is probably also scope for improvements in the recommended practices to ensure efficacy.
- Biosecurity messaging should be incorporated into other publications such as countryside codes or cycling codes of practice to raise awareness.
- International examples show that a proactive, long-term, coordinated, biosecurity awareness raising plan with clear leadership, objectives, and realistic metrics, is possible. The GB Plant Biosecurity Strategy was a recognition of this and has resulted in wider awareness of biosecurity across sectors, the 2022 version aims to go further by strengthening engagement with the public.
- A much simpler resource is required to help organisations assess risk, perhaps as part of the UK Plant Health Risk Register (UKPHRR), showing the highest risk and notifiable pests for each sector, updated regularly. This would help organisations trying to understand the vulnerability of their sites to the risks discussed in this review. The Pest Risk Index, based on the UKPHRR is a useful first step.
- There are lessons to be learned from other sectors and international initiatives regarding awareness raising and behaviour change. Further, in depth research is required into several areas described in this review, particularly international approaches to improving biosecurity compliance, behaviour change science in human health, and increasing the evidence around efficacy of different biosecurity measures.

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