Plant Health Centre
Scotland's Centre of Expertise

Scottish Government
Riaghaltas na h-Alba

The impact of agricultural policy reforms on plant health risks in Scotland: Guidance on maximizing plant health benefits

Policy Summary

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1 Policy Summary

1.1 Background

As part of the Scottish Government's drive to net zero agriculture by 2045, whilst restoring and regenerating biodiversity, a major shift in agricultural support is underway. The new Agriculture Bill in the Scottish Parliament supports farmers to adopt measures that aim to restore nature, increase business efficiency and reduce greenhouse gas emissions. As part of the Agricultural reform, the Scottish Government are appraising a range of more regenerative farming practices to be implemented under enhanced conditionality. It is conceivable that these measures could have unintended consequences on plant health, which may require further investigation. To assess the potential effect of these changes in practice we reviewed and evaluated available scientific and technical information available to farmers and policymakers. We also gauged the expectations of the farming community on the impact that the proposed changes in management practices will have on weed, disease and pest issues in crops.

1.2 Key Research Questions

To identify

1. The plant health impacts of the proposed List of Measures, with reference to Scotland's key crops and the likely uptake of measures.
2. If the proposed measures could pose a risk for plant health and biosecurity, and therefore have implications for the current regulatory framework.
3. Best practice guidance to mitigate plant health risk whilst delivering biodiversity, climate and wider environmental goals.

1.3 Research Undertaken

A Rapid Evidence Assessment (REA) of scientific literature relating to the potential impact of widespread change in management practices on plant health was carried out and this was supplemented by information from technical sources. The impact of the adoption of measures on the Agricultural Reform list on plant health regulations was assessed.

Farmer perceptions of how the adoption of eight of the reform measures could impact on plant health was assessed by questionnaires at knowledge exchange events.

1.4 Main Findings

The evidence gathered through the REA was inconclusive as to the impacts of many of the proposed Agricultural Measures on plant health. However, the evidence is limited and impacts on plant heath differed between studies, type of organism and crops. Hence, the adoption of changes in practice are difficult to predict and likely to vary between crops, rotation design, geographically and environmental conditions. Evidence suggests that while one measure may have a positive effect on one aspect of plant health e.g. weeds, it may simultaneously have a negative effect on another aspect e.g. diseases. Moving to reduced pesticide inputs and reduced cultivation is expected to increase weed burden in crops. Improving hedgerows, while boosting diversity could increase disease risk to crops.

It is likely that some of the measures will be implemented as a package by farmers. As such, there may be interactions between the measures which affect the overall outcome. In addition

to changes in practice, weather, soil conditions and crop choice will also have a strong influence on impacts to plant health.

Farmer perception of how the list of proposed measures could impact plant health were varied. Crop rotation and the use of more grass leys in rotations were typically viewed as beneficial while cover crops and reduced tillage were viewed as being detrimental to plant health. Intercropping and minimum tillage are less likely to be adopted by farmers because of the financial implications of changed costs and revenue structure.

In conclusion, the evidence shows that impacts on plant health that might arise from the reform measures are often case specific, and complex due to the multifactorial effects of changes to practice. While some risks such as increased pest numbers have been identified these are in part counteracted by benefits such as improved soil structure and increasing biodiversity and resultant natural predators. On balance the review highlighted no obvious or significant plant health implications. The introduction of the proposed practices on farms are not expected to require changes in regulations pertaining to import of material, plant passports etc.

1.5 Recommendations

- Although the REA was inconclusive, it is expected that the introduction of changes will not have a significant effect on plant health.
- There is no evidence that additional regulations need to be applied following the adoption of new management practices.
- It is crucial that support for routine monitoring of plant health continues. This will ensure that if any changes occur, mitigation can be introduced quickly to protect production and biodiversity.
- Where there is a change in practice and there is little evidence on the risks posed to plant health of this new practice it would be advisable to carry out additional monitoring to assess impact in real life situations, this could be trapping of invertebrate pests or using eDNA from water and soil to assess bacterial and fungal pathogens.
- Funding research to elucidate the impact of climate change and soil conditions, in combination with changes in practices, on plant health should remain a priority.
- Knowledge exchange activities and development of best practice guidance should be prioritised, particularly where farmer perceptions of plant health risks differ from the evidence gathered in the review.

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