

Understanding crop producers' perceptions around crop health decision making and the impact of that on key metrics such as pesticide usage

Policy Summary



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Please cite this report as follows: H. Creissen, H. Botero Degiovanni, K. Maloney, P Burgess, A. Karley, C. Lacomme, P. Dodds, M. McKay, M. Bowsher-Gibbs, A. Evans (2024). Understanding crop producers' perceptions around crop health decision making and the impact of that on key metrics such as pesticide usage: Project Policy Summary. PHC2022/02. Scotland's Centre of Expertise for Plant Health (PHC). DOI:10.5281/zenodo.12685954

Available online at: planthealthcentre.scot/publications

Dissemination status: Unrestricted

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1 Policy Summary

1.1 Background

Increased uptake of Integrated Pest Management (IPM) measures on Scottish farms will be key in improving resilience against pests, weeds, and diseases, and maintaining or improving crop yields and farm profitability, whilst reducing environmental impact and reliance on pesticides. Evidence shows that better informed producers (growers/farmers) can make better IPM decisions. To understand crop producers' perceptions for decision making in crop health and the impact of that on key metrics such as pesticide usage we must understand how attitudes and responses to pest risk are influenced by perceived threat, economics and information sources in order to identify viable IPM solutions and routes to encourage the adoption of best practice.

1.2 Key Research Questions

To identify:

- a) Drivers for IPM uptake e.g. pesticide withdrawals/loss of efficacy, economic/environmental cost of current pest management strategy.
- b) Enablers of IPM uptake e.g. evidence of effectiveness, knowledge/advice provision, subsidies/incentive schemes.
- c) Barriers to IPM uptake e.g. lack of supporting evidence, lack of knowledge/advice provision, market constraints, legislation issues.
- d) Routes to improved IPM adoption e.g. research, knowledge exchange, policy.

1.3 Research Undertaken

Three case studies were selected due to their importance for Scotland: 1) Aphid borne virus control in seed potatoes, 2) Aphid control in strawberries, 3) Disease management in spring barley. Each case study used stakeholder workshops and grower surveys to gather data on attitudes and responses to pest risk relating to the Key Research Questions.

1.4 Main Findings

Adoption of IPM is related to the risks associated with a reduction in pesticide use. Seed potatoes and strawberries are only profitable if pests can be managed effectively to reduce viral infection (in the case of seed potato), and cosmetic damage (in the case of strawberries), both of which can lead to rejection. There is higher potential for a reduction in pesticide (fungicide) use amongst spring barley producers who are more able to consider taking risks associated with lower levels of control as the effect on profits are more quantitative (i.e. reduced yield) rather than qualitative (i.e. crop rejection).

Varying perceptions and risk tolerance levels across different crop production sectors must be recognised and support programmes should be tailored accordingly.

Within sectors, producers with greater access to advice (i.e. often provided by independent agronomists) were found to be more tolerant to risk and open to reducing pesticide inputs.

Incentive programs or support payments to encourage the adoption of sustainable agricultural practices that reduce risks associated with pests and pesticides can reduce the level of economic risk associated with a reduction in pesticide use and thereby encourage further IPM adoption.

1.5 Recommendations

New pest management solutions, technologies and strategies are required to address pest threats while minimizing economic and environmental impacts. Research and development

funding should prioritise developing innovative pest management solutions and IPM strategies which should be tested and verified by independent bodies to increase confidence in the findings.

Knowledge Transfer and Exchange (KTE) on pest threats, IPM and other risk management strategies could be improved. Ensuring that producers have access to reliable information can help them make informed IPM decisions.

Access to independent advice was linked to greater uptake of IPM, and therefore more investment in engagement with agronomists on IPM matters should be encouraged and incentivised. Policymakers could focus on facilitating and promoting greater access to independent advisory services for all sectors. This could involve funding programs to support advisory/extension services, providing training opportunities, or establishing partnerships with agricultural experts and institutions.

Incentive programs or support payments which encourage the adoption of sustainable agricultural practices that reduce risks associated with pesticides and other pest control measures while maintaining or enhancing productivity should be developed or enhanced, and these should be tailored to each sector. This could involve providing financial support for implementing IPM strategies including biologicals, crop rotation, diversification of crops, and soil health improvement measures.

Specific recommendations for spring barley

- Growers with access to independent advice were found to be more tolerant to risk and open to reducing fungicide inputs, therefore this type of advice should be supported and encouraged.
- Farming system (arable/mixed) also influenced attitudes and willingness to uptake IPM indicating more potential for IPM uptake amongst mixed farmers.

Specific recommendations for strawberries

- There is a need to understand the potential to reduce insecticide sprays as current opinion indicates omitting insecticides would be disastrous for their businesses.
- Requirement for independently acquired evidence on innovative and novel approaches to IPM including efficacy and economic data.
- Co-developed IPM programmes must be introduced so that producers, advisers, buyers etc. are aware of the potential for, and limits to, IPM in current systems and collaborative R&D and KTE initiatives may result.

Specific recommendations for seed potatoes

- Policy interventions e.g. relating to easing current regulatory restrictions around the use of mineral oils, are likely to have a large impact.
- Locally acquired, independent data are needed on the efficacy of many IPM measures e.g. mesh covering. This includes demonstrations of practicalities for producers, ideally by producers themselves. This approach has a higher potential of encouraging uptake.
- Requires a focused KTE programme on seed potato IPM that involves industry, agronomists, researchers, ware and seed potato producers.

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