Soil Association advice and support

Contact our Farming and Land Use Team
Scotland enquiries: 0131 370 8150
Speak to a farming advisor: 0117 314 5100
Email: producer.support@soilassociation.org

Find out more at www.soilassociation.org/our-work-in-scotland/

For more information on IPM and Reducing Inputs, see www.soilassociation.org/our-work-in-scotland/scotland-farming-programmes/current-scotland-programmes/reducing-inputs/

Do you know about Soil Association Exchange?

Developed to enable farmers to reap the rewards of sustainable farming that works with nature. Register today for updates and to have first access to a service that works with farmers to help evolve the way we farm for the better. **www.soilassociationexchange.com**

Further advice and information

Scottish IPM assessment plan www.planthealthcentre.scot/scottish-ipm-assessment-plan

Agricology IPM Case Studies www.agricology.co.uk/sharing-farmer-knowledge-across-farming-sector-ways-work-nature-reduce-pesticide-use

Flower power field lab www.innovativefarmers.org/news/2021/november/16/farmers-treating-insects-as-livestock-in-trial-to-harness-flower-power-to-fight-pests/

Integrated Pest Management for Sustainable Farming VoluntaryInitiative.org.uk

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Reducing Inputs

Integrated Pest Management

Integrated Pest Management (IPM) is a whole-system approach encompassing a wide range of options, which can be incorporated into a tailored strategy to optimise productivity whilst minimising negative environmental impacts. Adopting an IPM approach can play a crucial role in reducing reliance on pesticides, maximising productivity and improving farm resilience.

IPM is an iterative process of:

- Prevention (e.g. cover crops)
- Monitoring/detection
- Intervention (e.g. biological control)
- Evaluation.

Make a Plan

Planning is key for a successful IPM strategy. An IPM Plan can help identify key threats and possible prevention measures; establish a baseline to benchmark against going forward; and track improvements. Different components of IPM are weighted and give a farm a total score between 0 and 100. Some assurance schemes already require an IPM Plan.

IPM Principles

- Preventing and suppressing the build-up of harmful organisms
- Monitoring pest populations and forecasting of impact
- Use of thresholds to determine when to intervene
- Considering all options for pest control (including/ especially non-chemical)
- Selection of appropriate interventions considering all potential risks
- Minimising chemical intervention by maximising efficiency of application
- Strategising to prevent the build-up of resistance in pest populations
- Reviewing the success of a chosen strategy to facilitate continuous improvement.

IPM Measures

The diverse range of measures available can be broadly categorised into cultural, biological, physical and chemical interventions:

Cultural actions like increasing diversity in the crop rotation, intercropping, pest ID/ monitoring, record keeping, monitoring pest thresholds, good hygiene (separating livestock with hedges), planning, and crop variety choice.

Biological factors include allelopathy (chemical inhibition of one plant by another), competition (increasing seed rate to suppress weeds), habitat for predators (flower margins, beetle banks), and maintaining good soil health (adding soil organic matter, reducing tillage).

Physical actions include burying trash, rogueing volunteers, keeping soil covered with mulches/ living mulches/ green manures and cover crops; and mechanical weeding.

Chemical interventions (in non-organic systems) should be used only once pest thresholds are exceeded, and used 'as much as necessary but as little as possible'.

Key Themes

Soil health Maintaining good soil health can lower disease susceptibility. Reducing tillage, soil testing (esp. pH), building fertility, supporting biology, increasing soil organic matter (SOM), and improving structure are all key practices.

Diversity Increasing crop diversity, varieties, and rotations (plus companion/ intercropping) can reduce build-up of pests and diseases.

Habitats An interlinked system of margins, buffer zones, hedges and trees can provide an effective means of supporting the farm's resilience by providing habitat for predators, other ecosystem services (flood risk reduction); and acting as physical barriers (providing a biosecurity break in livestock).

Things to Consider

- The Scottish Agri Environment Climate Scheme (AECS) can be a useful tool to cover the cost of some measures (green manures, flower margins, buffer strips and hedges).
- If trying IPM approaches for the first time, designate a small trial area, or 'ok to fail' plot.
- Make an action plan, and review actions (e.g. annually) – what did/ didn't work?
- IPM aims to control, not eliminate. It may be more cost-effective to avoid intervening for pests/ weeds below a pre-determined threshold.
- In organic systems, the key elements of effective IPM are establishing a long, diverse rotation, supporting soil health, and variety/ breed choice for disease resistance.
- Not all seed mixes are created equal - careful formulation is required to ensure that sown flower margins can support pest predators as well as pollinators.
- Change can take time. Patience, planning, and an awareness that productivity may dip initially before improving; are all important when implementing new IPM approaches.