

WORK PACKAGE 2.1: CROP AND GRASSLAND PRODUCTION AND DISEASE CONTROL

The aim of Work Package (WP) 2.1 is to provide the science needed for Scotland to improve the efficiency and resilience of crop production whilst protecting the environment and rural communities.

The science is useful to a broad range of end users, from government to businesses, and aims to strengthen the performance and sustainability of agricultural systems in Scotland. Tools, knowledge and practical approaches will be delivered to support the productive and sustainable management of rural economies by rural communities.

Building on previous Strategic Research Programmes, the research aims to provide the evidence base to underpin resource use efficiency and increased production of quality food from agricultural land (e.g. sustainable intensification) to improve the competitiveness of Scotland's rural economies, and to help Scotland become a "Good Food Nation", through activities promoted by Scotland's Food Commission.

Plant disease (amongst others) is a key challenge to resource use efficiency in agricultural crop production and the aim for WP 2.1 is to tackle that challenge at all scales, from an understanding of host-pathogen interactions, to explaining patterns of infection in the environment and ultimately to informing disease control strategies.

WP 2.1 will deliver, against a background of environmental change, to sustainable intensification, food security and improved agricultural practice through:

- The provision of crop cultivars and varieties with improved quality, yield and resource efficiency traits, which are resilient to key biotic and abiotic stresses with a focus on barley, potato and soft fruits.
- Integrated Pest Management systems which translate an understanding of plant-pest interactions, host resistance, epidemiology and new disease threats, supported by the use of monitoring, modelling and diagnostic technologies to improve crop performance.
- Outputs that contribute to more efficient production systems, healthier soils and more sustainable rotations delivered through the uptake of best practice by stakeholders facilitated by close stakeholder interactions and co-ordinated Knowledge Exchange strategies.
- Realising the potential of novel and minor crops that could underpin the circular or bio- economy by developing novel methods and approaches to support their integration into existing rotations, practices, processes and supply chains.
- Research that is underpinned by the best use of resources and technologies including germplasm and pest collections, computational analyses, statistical modelling, diagnostics, and metagenomics.

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