



Legume Futures



Legume Futures: for more diverse and sustainable farm systems

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Introduction

- Nitrogen (N) is essential for optimal crop production
- Large quantities of man-made N-fertiliser are applied in arable-grass systems
- This is expensive and environmentally damaging (eg greenhouse gas emissions)
- Costs include ecosystem damage and global movement of N-rich plant products

The challenge

- N applications are not essential: *e.g.* clover has low N-dose response
- Biological nitrogen fixation (BNF) should be exploited more widely
- Plants of the family Fabaceae (legumes) can provide N naturally *via* BNF
- However, legume cropping has declined in Europe over the past 20 years



Balruddery Farm showing the location of the long-term research platform (fields 1-6).

Legume Futures

- Is an 18 member consortia
- Is funded by the European Union under FP7
- Started on March 1st 2010 for 4 years
- 18 case studies (see map) n established legume trials

Legume Futures - Main Aims

- Design novel legume-supported cropping systems
- Which are tailored for Europe's regions
- To reduce environmental impact whilst optimising production
- Improve supply chains/livestock feeding (including aquaculture)

Specific Research Objectives

- Uses quantitative and qualitative data
- Data linked to socio-economic and bio-physical modelling
- Assess impact of scenarios at a range of scales
- Disseminate findings and resources to production system stakeholders

Uptake of the best crop rotations

- Will include the use of study-site demonstrations
- Legume Futures demonstration sites in Scotland include:

At SCRI - The Living Field - <http://livingfield.scri.ac.uk/welcome>

- Balruddery Farm - <http://www.scri.ac.uk/research/sustainability/balruddery>

At SAC - Craibstone Farm - <http://orgprints.org/6755/>

- Bush Estate - <http://www.sac.ac.uk/research/centres/farms/bush/>

- Note your interest by emailing: legumefutures@scri.ac.uk

Acknowledgements & Reference

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- Metzger et al., (2005) *Glob Ecol Biogeog* **14**, 549-563



Register for updates at www.legumefutures.eu

