Re-bugging the system:
Promoting Adoption of Alternative Pest Management Strategies in Field Crop Systems

Alastair Bailey
Matt Thomas, Iain Fraser, John Holland, John Pickett, Wilf Powell & Lester Wadhams
Motivation for the proposal

• Numerous Bio-control techniques (of insect pests) applicable for UK agriculture.
• Few have seen commercial scale adoption to displace agro-chemical use.
• Reasons for lack of adoption?
  – Economic
  – Technical
  – or both?
• Total value of our award is £1 million
Project Design

• Interdisciplinary examination and demonstration. Scientists and economists working together.
• Economics of technological adoption –
  – Path dependency and technological ‘lock-in’
  – The problem of ‘jointness’
  – The role of risk in technological switch decisions
  – And the importance of differential cost structures
• Guiding experimental and dissemination design.
• Design of policies, contracts or other instruments to promote the commercial adoption – science guiding economics and policy
Technological Focus

• Two potentially complementary techniques:
  – Habitat management for the promotion of natural enemies.
  – Semiochemical (Push-Pull) techniques to manipulate predator and pest behaviour.

• Examination in UK Field-Scale cereal crop systems.

• 20 experimental sites across 4 seasons.

• Examination of technical efficacy at a range of spatial scales from glass-house, field and farm levels and analysing dynamic issues of adoption.
Outputs

- Project output is expected to include:
  - Examination of the efficacy and economic efficiency of the 2 technologies jointly and in isolation.
  - A Blueprint for interdisciplinary effort to promote the adoption of technologies which are beneficial to the farmer and the wider society.
  - A bio-economic model incorporating scaling and issues of non-linearities of emergence to inform private adoption and optimal public policy design.