Rothamsted Research, collaboration

Opp.

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Rothamsted Research

Broom's Barn (1987)

North Wyke (2009)
Our Achievements

- Invented inorganic fertilisers
- Created pyrethroid insecticides
- Developed modern statistics
- Created phenoxy acid herbicides (under conditions of wartime secrecy!)
North Wyke Farm Platform

- A globally unique facility covering 68ha addressing the issues of sustainable intensification
- Collects key data at the field-scale to enable farm relevant research-15 min
<table>
<thead>
<tr>
<th>Soil</th>
<th>Atmosphere</th>
<th>Farm Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Moisture</td>
<td>Rainfall</td>
<td>Field inputs/outputs</td>
</tr>
<tr>
<td>Temperature</td>
<td>CO₂ and N₂O</td>
<td>Liveweight gain</td>
</tr>
<tr>
<td>pH</td>
<td></td>
<td>Farm activities</td>
</tr>
<tr>
<td>Bulk density</td>
<td></td>
<td>Labour hours</td>
</tr>
<tr>
<td>N, P &amp; C status</td>
<td></td>
<td>Machine hours</td>
</tr>
</tbody>
</table>

**Water**
- Temperature
- Conductivity
- Turbidity
- pH
- Dissolved O₂
- Ammonium
- Nitrate
- Dissolved organic C

**Sequential/composite sampler**

**Flow cell & sensors**

**Total-P Ortho-P**

**@farmplatform**

**FP Fields**
- Farmlet
- Innovation
- Permanent pasture
- Legumes
- Flumes

**15 flume laboratories**
Areas of interest

• Efficient phosphorus cycling in grassland systems
• Resilience of soil biota and their functions
• Impact of grassland management on C cycling and storage
• Sustainability of livestock production
  • Managing livestock manures
  • Minimising GHG emissions from grassland systems
  • Replacement of N fertiliser with N-fixation by legumes
  • Using plants to manage soils and hydrology
  • Water resource use efficiency
• Systems modelling to design optimal grassland