Site specific land management of cereal crops based on proximal soil sensing

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<tr>
<th>Project number</th>
<th>RD-2010-3728 – PhD project</th>
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<td>Start date</td>
<td>29-11-2010</td>
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<td>End date</td>
<td>28-11-2013</td>
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**The challenge**
Precision Agriculture (PA) aims to adjust land management practices by taking account of soil and crop properties together with landscape variations in order to optimise the output. To achieve this aim the grower must know which parameters are most important in limiting the yield and how they vary spatially. Soil is a complex medium and can be said to have infinite variation. For practical purposes, areas of homogeneity within a field (management zones) can be delineated by several soil attributes such as texture, nutrient levels and topography.

**The project:**
The project aims at utilising the fusion of high resolution data gathered from a collection of sensors (innovative and commercially available) on soil and cereal crops (NDVI and yield), in order to understand and establish new concepts and methodologies of variable rate fertiliser applications.

**The benefits**
The project will test three methods of delineating management zones to be adopted for variable rate fertilization recommendations. Each will use different combinations of soil, crop and landscape properties as well as relevant ancillary data. A variety of proximal sensors will be used in an attempt to minimise the number of soil samples required for expensive and time-consuming laboratory testing.

**HGCA funding** | £37,500
**Lead partner**  | Cranfield University
**Scientific partners** | Douglas Bomford Trust
**Industry partners** | Non
**Government sponsor** | Non

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HGCA is the cereals and oilseeds division of the Agriculture and Horticulture Development Board.