

Use of Hyperspectral Remote Sensing for the Retrieval of Agricultural Soil and Crop Parameters for Precision Agriculture and Yield Estimation (HyLand)

– Sub-Project 1 „Soil“ –

Objectives:

- Development of efficient methods for the quantification of topsoil parameters of agricultural areas from hyperspectral remote sensing data

Duration:

- Start: 01.11.2010 End: 31.10.2013

Products / Parameters:

- Spectral data base
- Models for the quantification of relevant soil properties
- Spatial data on C_{org} , C_{inorg} and texture



Gefördert durch:



Bundesministerium
für Wirtschaft
und Technologie

aufgrund eines Beschlusses
des Deutschen Bundestages

Use of Hyperspectral Remote Sensing for the Retrieval of Agricultural Soil and Crop Parameters for Precision Agriculture and Yield Estimation (HyLand)

– Sub-Project 1 „Soil“ –

Added Value (quantitative /qualitative):

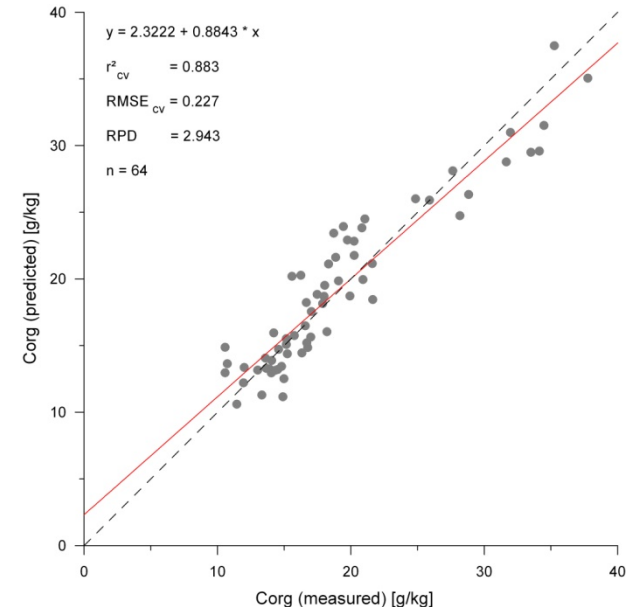
- Spatially and quantitatively higher prediction of soil organic carbon
- Fertilizer reduction and yield optimisation by site-specific fertilization

Involved User Organisations:

- Agrargesellschaft Wulfen mbH
- Agrargenossenschaft Hinzdorf e.G.

Additional:

- Test sites: Region Wulfen/Köthen (Saxony-Anhalt), Braunschweig
- Image data: AISA-DUAL, Penta-Spek



Contact:

Thomas Jarmer, Institute for
Geoinformatics and Remote Sensing /
University of Osnabrueck
Email: tjarmer@igf.uni-osnabrueck.de
Phone: +49 541 969-3914

Use of Hyperspectral Remote Sensing for the Retrieval of Agricultural Soil and Crop Parameters for Precision Agriculture and Yield Estimation (HyLand)

– Sub-Project 2 „Crop“ –

Objectives:

- Development of efficient methods to quantify the nutritional status of crops from hyperspectral remote sensing data

Duration:

- Start: 01.11.2010 End: 31.10.2013

Products / Parameters:

- Maps of the nutritional status of crops
- Processors for the quantification of relevant photobiochemical crop parameters
- Maps for site-specific nutrient application



Use of Hyperspectral Remote Sensing for the Retrieval of Agricultural Soil and Crop Parameters for Precision Agriculture and Yield Estimation (HyLand)

– Sub-Project 2 „Crop“ –

Added Value (quantitative /qualitative):

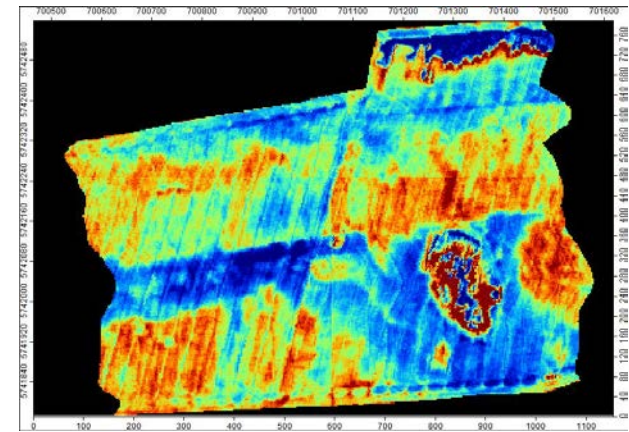
- Spatially and quantitatively enhanced knowledge for site-specific crop nutrition and fertilizer application
- Optimized resource management and yield formation by site-specific fertilization

Involved User Organisations:

- Agrargesellschaft Wulfen mbH
- Agrargenossenschaft Hinzdorf e.G.

Additional:

- Test sites: Region Wulfen/Köthen (Saxony-Anhalt), Braunschweig
- Image data: AISA-DUAL, Penta-Spek



Contact:

Thomas Selige, Lehrstuhl für
Bodenökologie / TU München,
Email: selige@wzw.tum.de

Use of Hyperspectral Remote Sensing for the Retrieval of Agricultural Soil and Crop Parameters for Precision Agriculture and Yield Estimation (HyLand)

– Sub-Project 3 „Yield“ –

Objectives:

- Coupling yield models with vegetation parameters from hyperspectral data, and terrestrial laser scanning
- Spatial projection of the expected yield and quality parameters

Duration:

- Start: 01.11.2010 End: 31.10.2013

Products / Parameters:

- Maps of various vegetation parameters (LAI, biomass, etc.)
- Maps of the expected yield



Use of Hyperspectral Remote Sensing for the Retrieval of Agricultural Soil and Crop Parameters for Precision Agriculture and Yield Estimation (HyLand)

– Sub-Project 3 „Yield“ –

Added Value (quantitative /qualitative):

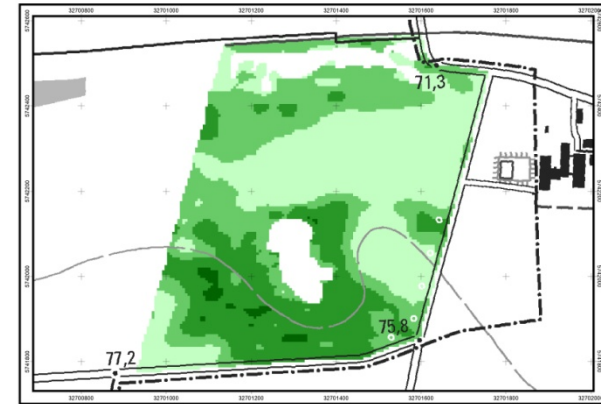
- Successive spatial projection of the yield and crop quality
- Improvement of marketing opportunities through site-specific harvest and marketing to product quality

Involved User Organisation

- Agrargesellschaft Wulfen mbH
- Agrargenossenschaft Hinzdorf e.G.

Additional:

- Test sites: Region Wulfen/Köthen (Saxony-Anhalt), Braunschweig
- Image data: AISA-DUAL, Penta-Spek



Contact information:

Dr. Holger Lilienthal, JKI,
Braunschweig,
holger.lilienthal@jki.bund.de

Jun.-Prof. Dr. Bernhard Höfle,
University of Heidelberg,
bernhard.hoefle@uni-heidelberg.de

