



pro
mapper

Showcase | UAV use in agriculture for manure comparison

Project scope

PRECISION AGRICULTURE	Show visually how different applications of manure have an impact on plant health and growth Analyze plant health differentiation within a field to geo-locate and quantify least stress areas and hotspots
KEY BENEFITS	Results with very high resolution Field specific results at lower cost On-demand availability of data
SHOWCASE DETAILS	Wheat field of 40 hectares, Ontario, Canada



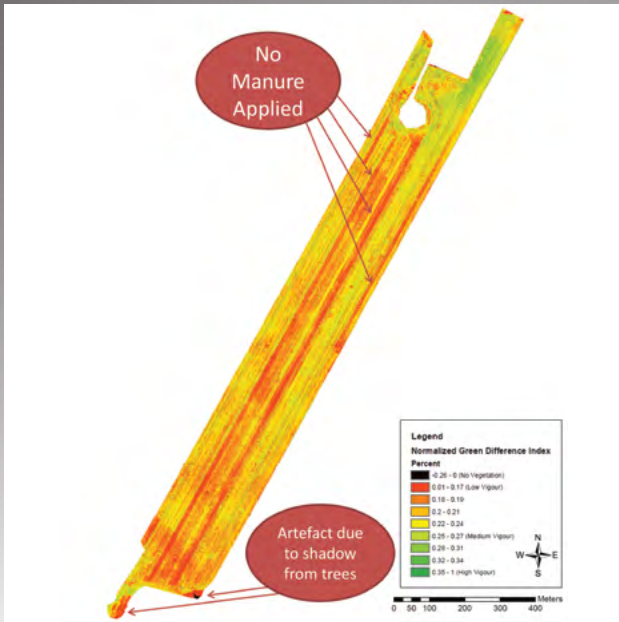
Orthomosaic
false color:
near-infrared,
green, blue

Data acquisition

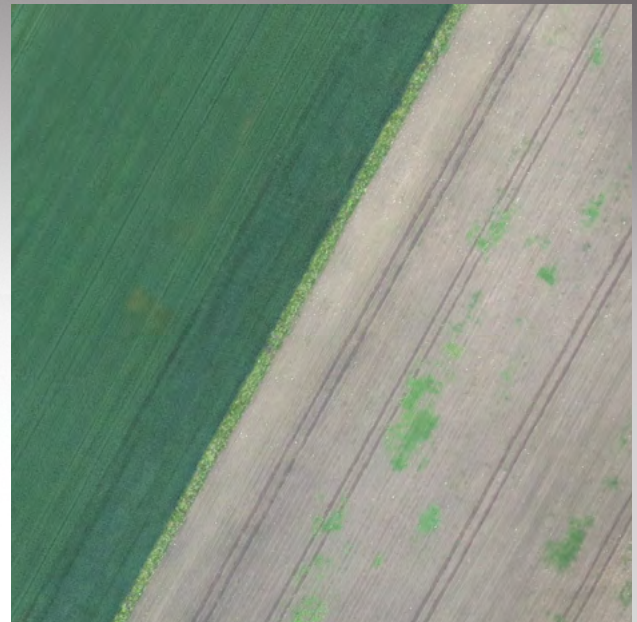
HARDWARE & FLIGHTPLAN	UAV: senseFly eBee Camera: Canon PowerShot ELPH 110HS with NIR-G-B filter Flightplan: 75% - 85% overlap, flight height at 120 m above ground
TIME ON SITE	45 minutes (5 minutes UAV preparation time / 25 minutes flight time / 15 minutes for Rapid Check processing)
DATASET	345 images / GSD of 3.7 cm
COMPARISON WITH TRADITIONAL METHODS	<i>Traditional method:</i> Analysis through yield monitoring or weigh wagon without visual identification during crop season <i>Mapping with UAV:</i> Acquire and analyze fresh data relevant to ground truth. Possibility to quantify patterns visible on the ground that cannot be identified otherwise (without aerial imagery and data analysis) / very fast result return time from start to finish

Output results

DELIVERABLES	<ul style="list-style-type: none"> • Orthomosaic • DSM for elevation (relevant for PH patterns, salinity patterns) • Bare ground images RGB (drainage location, soil type differences, waterlogging) • NDVI crop health differences to find hotspots, quantify area in size for decision making and convert into applications maps after ground proofing
PROCESSING TIME	<p>Project processing: 2 hours Preparation of NDVI: 10 minutes</p>
RESULTS ANALYSIS	<p>NDVI results exactly matched the data recorded during manure application (how much manure was applied in what exact location), proving the accuracy of results acquired with UAV technology and automatic image processing</p>
OVERALL PROJECT DELIVERY	<p>Results delivered to client in 1 business day (24 hours), including travel time to site, flight time, project processing, result production and analysis</p>



Green normalized difference vegetation Index (GNDVI)



Orthomosaic detail (true color: RGB)

Client reference

SHOWCASE COURTESY OF:



Ag Business & Crop Inc. for a test project run by the Ontario Ministry of Agriculture and Food (Canada)

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