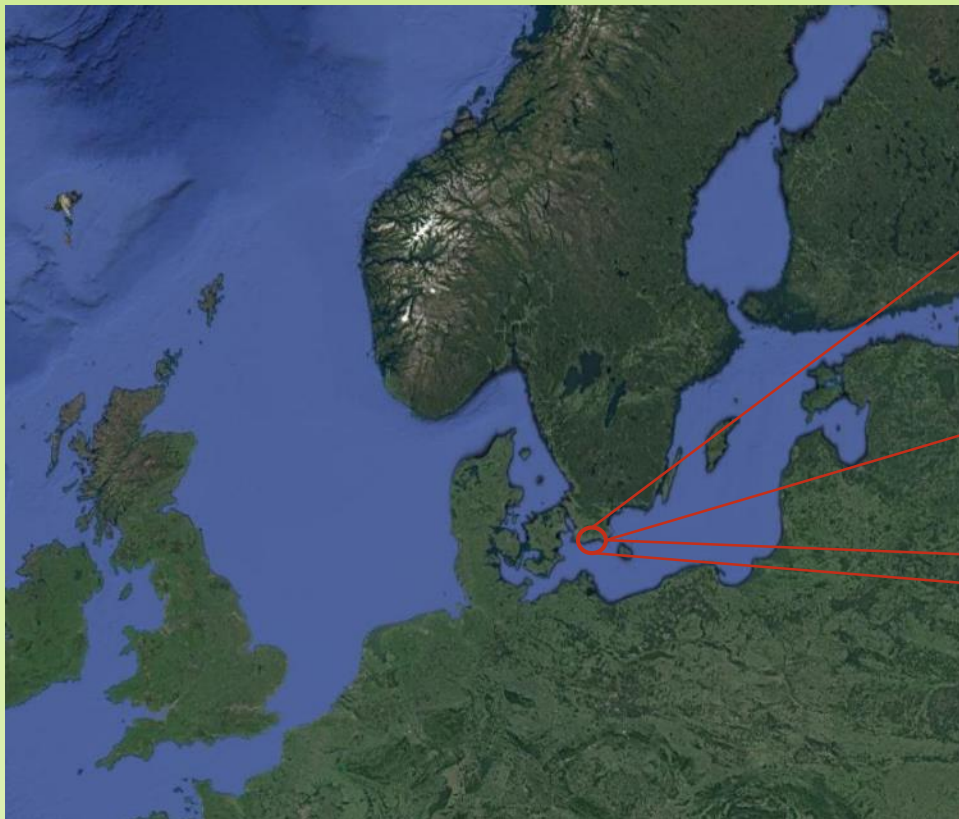


Anders Andersson, Hörtegården, Skivarp

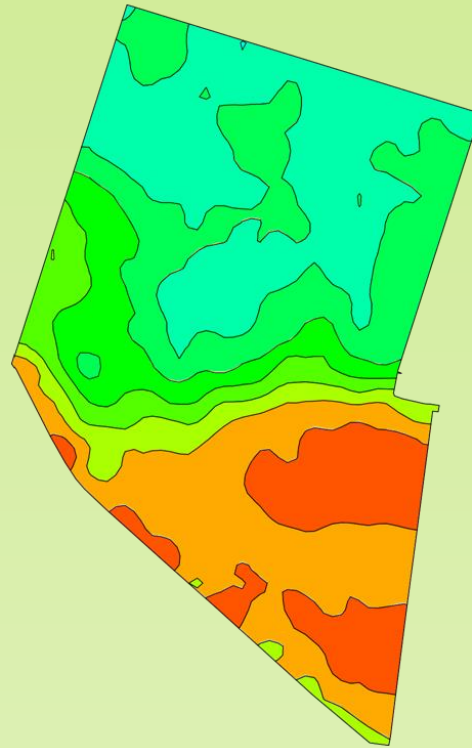


What data is gathered at the farm?

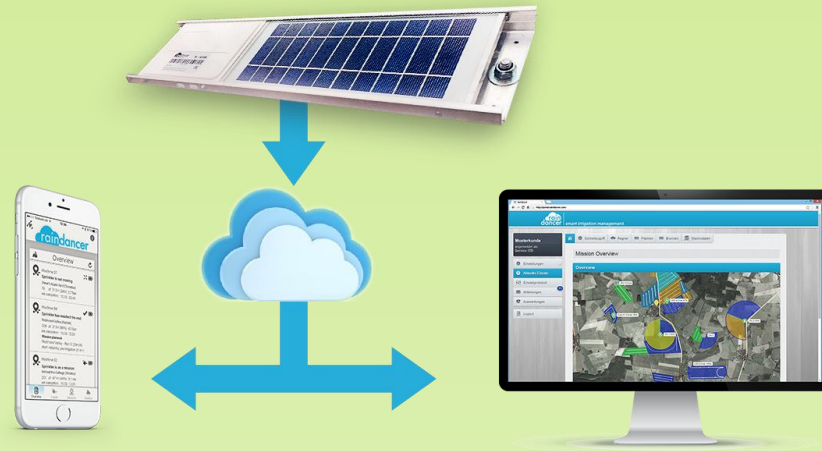
- ▶ Soil data
- ▶ Planting data
- ▶ Irrigation data
- ▶ (Fertilizer data)
- ▶ (Drone data)
- ▶ Harvest data



Scanning the fields with EM 38



Irrigating the fields with logging device



Log files in Excel

Browser tabs: Inkorgen (4 664) - hortegarden®, Adobe PDF Services, Adobe - Installera Adobe Acrobat, Beregning per GPS überwachen, Rindancer

URL: <https://portal.myrindancer.com/Settings/FieldDetails.aspx?ai=settings&guid=ba2cf5d5-6e63-44a9-b2f9-9471bc4618cc>

Excel window: 14_FieldProtocol_20190115_234159.xls - Anders Andersson

Excel ribbon: Arkiv, Start, Infoga, Sidlayout, Formler, Data, Granska, Visa, Hjälp, Berätta vad du vill göra

Excel data table:

Datum	Irr. Maskin	mm	m3	Hours	Distance
09.08.2018 12:11:31 -	01 100/460	15,3	342	11,4	343
09.08.2018 23:50:31	01 100/460	15,4	330	11	326
08.08.2018 18:14:56 -	01 100/460	13,7	126	4,2	123
09.08.2018 05:17:41	01 100/460	13,7	132	4,4	131
08.08.2018 13:12:34 -	01 100/460	15	333	11,1	339
08.08.2018 17:30:31	01 100/460	15,8	354	11,8	344
08.08.2018 07:07:58 -	01 100/460	15,9	339	11,3	326
08.08.2018 11:40:31					
31.07.2018 09:20:29 -					
31.07.2018 20:39:59					
30.07.2018 11:03:37 -					
30.07.2018 23:10:31					
29.07.2018 21:17:12 -					
30.07.2018 08:42:31					
29.07.2018 15:35:57 -					

Excel status bar: Medel: 137,4943182 Antal: 314 Summa: 24199

Export to Excel button

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Version: 1.9.0111.102814 (W) / 1.8.0913.163926 (C)

Windows taskbar: 23:47 2019-01-15



Harvesting potatoes



Log files

harvest_2015.CSV - Excel

planting_2015.csv - Excel

File Home Insert Page Layout Formulas Data Review View Add-ins Team Tell me what you want to do

File Home Insert Page Layout Formulas Data Review View Add-ins Team Tell me what you want to do

Clipboard Font Alignment Number Styles Cells Editing

1	Latitude	Longitude	Altitude	Course	Speed	Fix	Row	#	on/	set plant	actual plant	set granu	set Ferti	F Work	Potato	Potato	Cut potato	Granules	Ferti-Flow	application	
2	55.396520	13.552736	0.000	POTATOE	0.00	80.000	0.042	1	50	2	9	2015-09-28	04:51:30	1	DYBECK SC	40	Unclear_d	213.31	IDAVR610	0.0	0.0
3	55.396520	13.552736	0.000	POTATOE	0.00	80.000	0.042	1	50	2	9	2015-09-28	04:51:30	1	DYBECK SC	40	Unclear_d	213.31	IDAVR610	0.0	0.0
4	55.396521	13.552736	0.000	POTATOE	0.00	80.000	0.042	1	50	2	9	2015-09-28	04:51:30	1	DYBECK SC	40	Unclear_d	213.31	IDAVR610	0.0	0.0
5	55.396525	13.552736	0.000	POTATOE	0.00	80.000	0.042	1	50	2	9	2015-09-28	04:51:30	1	DYBECK SC	40	Unclear_d	213.31	IDAVR610	0.0	0.0
6	55.396526	13.552736	0.000	POTATOE	0.00	80.000	0.042	1	50	2	9	2015-09-28	04:51:30	1	DYBECK SC	40	Unclear_d	213.31	IDAVR610	0.0	0.0
7	55.396521	13.552736	0.000	POTATOE	0.00	80.000	0.042	1	50	2	9	2015-09-28	04:51:30	1	DYBECK SC	40	Unclear_d	213.31	IDAVR610	0.0	0.0
8	55.396523	13.552736	0.000	POTATOE	0.00	80.000	0.042	1	50	2	9	2015-09-28	04:51:30	1	DYBECK SC	40	Unclear_d	213.31	IDAVR610	0.0	0.0
9	55.396520	13.552736	0.000	POTATOE	0.00	80.000	0.042	1	50	2	9	2015-09-28	04:51:30	1	DYBECK SC	40	Unclear_d	213.31	IDAVR610	0.0	0.0
10	55.396521	13.552736	0.000	POTATOE	0.00	80.000	0.042	1	50	2	9	2015-09-28	04:51:30	1	DYBECK SC	40	Unclear_d	213.31	IDAVR610	0.0	0.0
11	55.396521	13.552736	0.000	POTATOE	0.00	80.000	0.042	1	50	2	9	2015-09-28	04:51:30	1	DYBECK SC	40	Unclear_d	213.31	IDAVR610	0.0	0.0
12	55.396523	13.552736	0.000	POTATOE	0.00	80.000	0.042	1	50	2	9	2015-09-28	04:51:30	1	DYBECK SC	40	Unclear_d	213.31	IDAVR610	0.0	0.0
13	55.396521	13.552736	0.000	POTATOE	0.00	80.000	0.042	1	50	2	9	2015-09-28	04:51:30	1	DYBECK SC	40	Unclear_d	213.31	IDAVR610	0.0	0.0
14	55.396526	13.552736	0.000	POTATOE	0.00	80.000	0.042	1	50	2	9	2015-09-28	04:51:30	1	DYBECK SC	40	Unclear_d	213.31	IDAVR610	0.0	0.0
15	55.396523	13.552736	0.000	POTATOE	0.00	80.000	0.042	1	50	2	9	2015-09-28	04:51:30	1	DYBECK SC	40	Unclear_d	213.31	IDAVR610	0.0	0.0
16	55.396526	13.552736	0.000	POTATOE	0.00	80.000	0.042	1	50	2	9	2015-09-28	04:51:30	1	DYBECK SC	40	Unclear_d	213.31	IDAVR610	0.0	0.0
17	55.396525	13.552736	0.000	POTATOE	0.00	80.000	0.042	1	50	2	9	2015-09-28	04:51:30	1	DYBECK SC	40	Unclear_d	213.31	IDAVR610	0.0	0.0
18	55.396525	13.552736	0.000	POTATOE	0.00	80.000	0.042	1	50	2	9	2015-09-28	04:51:30	1	DYBECK SC	40	Unclear_d	213.31	IDAVR610	0.0	0.0

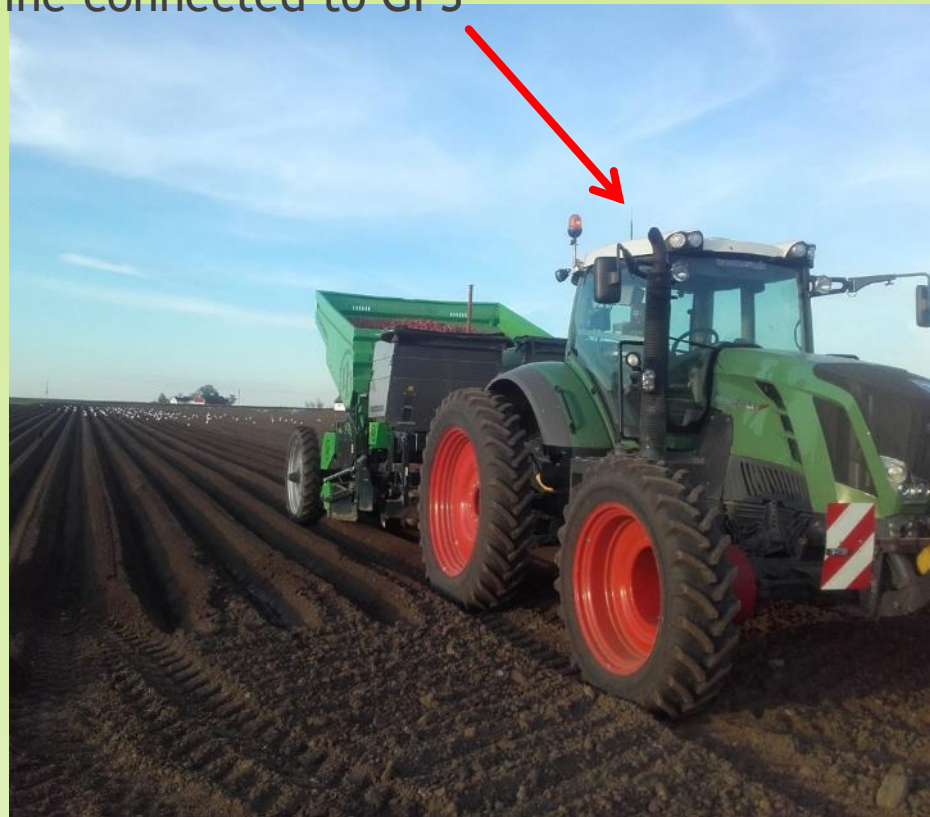
An aerial photograph of a rural landscape with various agricultural fields in shades of green and brown. Several red polygon overlays are placed on the map, indicating specific land parcels. Labels in black text identify these areas: 'Dybäck 2018 arende' (top left), 'Värnhem öster' (top center), 'Värnhem väster' (center), 'Annehill öster' (top right), 'Annehill väster' (center right), and 'Dybäck skogen' (bottom center, near a body of water).

GeoDataFarm

How to analyze geo spatial data generated on a farm

Geo spatial data - What is it???

- ▶ Information that are connected to a geographical point
- ▶ Could be generated by the tractor/machine connected to GPS
- ▶ Could be soil measurement collected
- ▶ Could be images generated by drones



Loading "raw" files into the program



- Free Open source program for visualizing geospatial data
- GeoDataFarm a plugin to QGIS specific developed to make it easier for farmers

Add indata to the model

Add input file Yearly operations TEST

EPGS Coordinate system: 3021 WGS 84 = 4326, RT90 2.5 gon V = 3021, UTM zone 32N = 32632, SWEREF99 TM = 3006 etc.

Separator ☒ Comma ☐ Semicolon ☐ Tab ☐ Other:

Columns in the file:

	1	2	3
9	SWATH_WIDT	0	Integer
10	SPEED	0.2	Decimal value
11	HEADING	22	Integer
12	ELEVATION	17.03	Decimal value
13	Humus content	2.774793	Decimal value
14	Clay	18.179449	Decimal value

Parameters that could be analysed:

1
1 RX_RATE
2 Humus content
3 Clay

Continue

N: y E: nx

☐ Date stored in following column ☐ Date and time are stored in two different columns ☐ Date and time are stored in the same column

Date: Year: Time:

Add data to canvas Cancel



GeoDataFarm



Visualizing the data

It is easy to put the data on a map and color code it

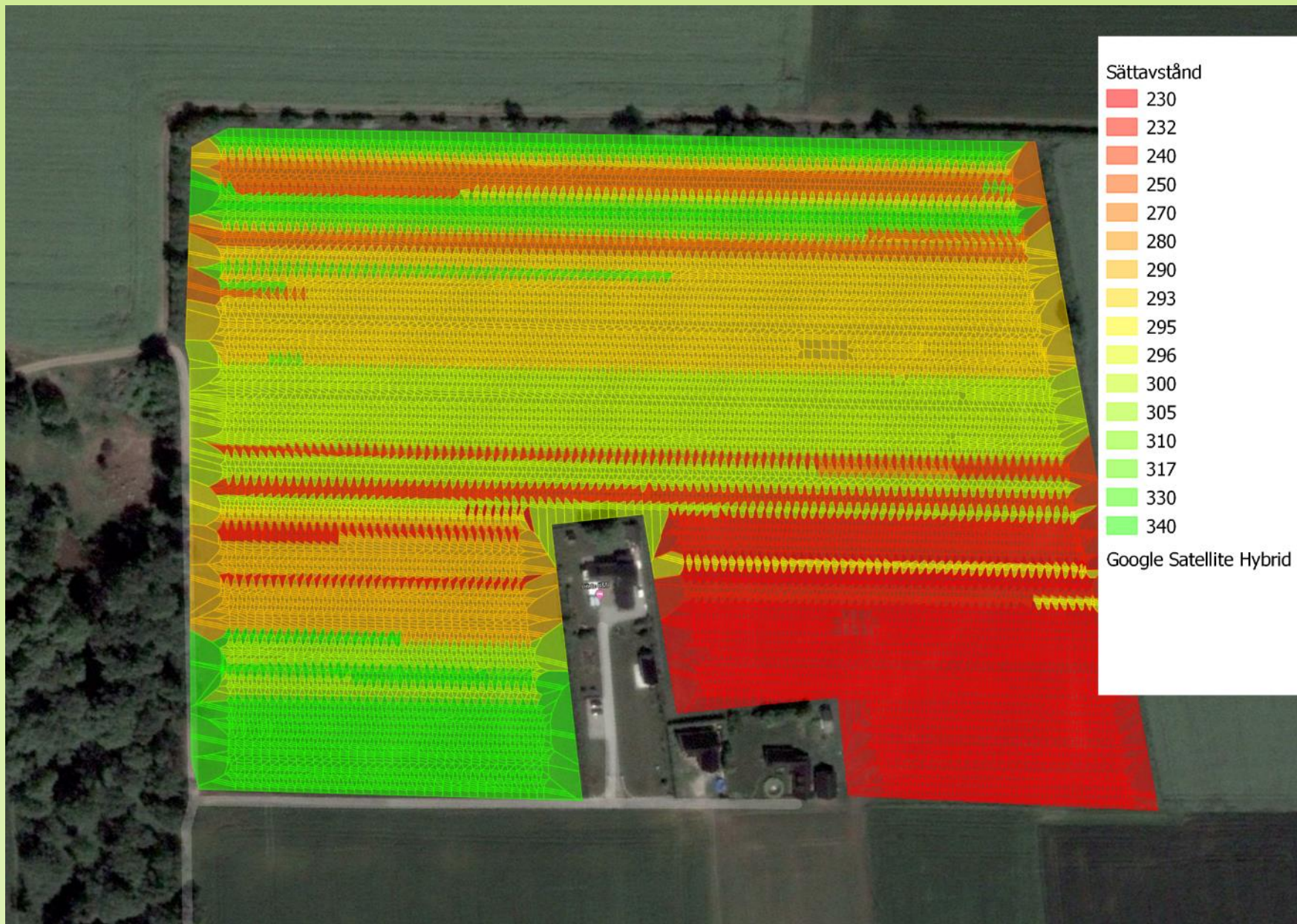


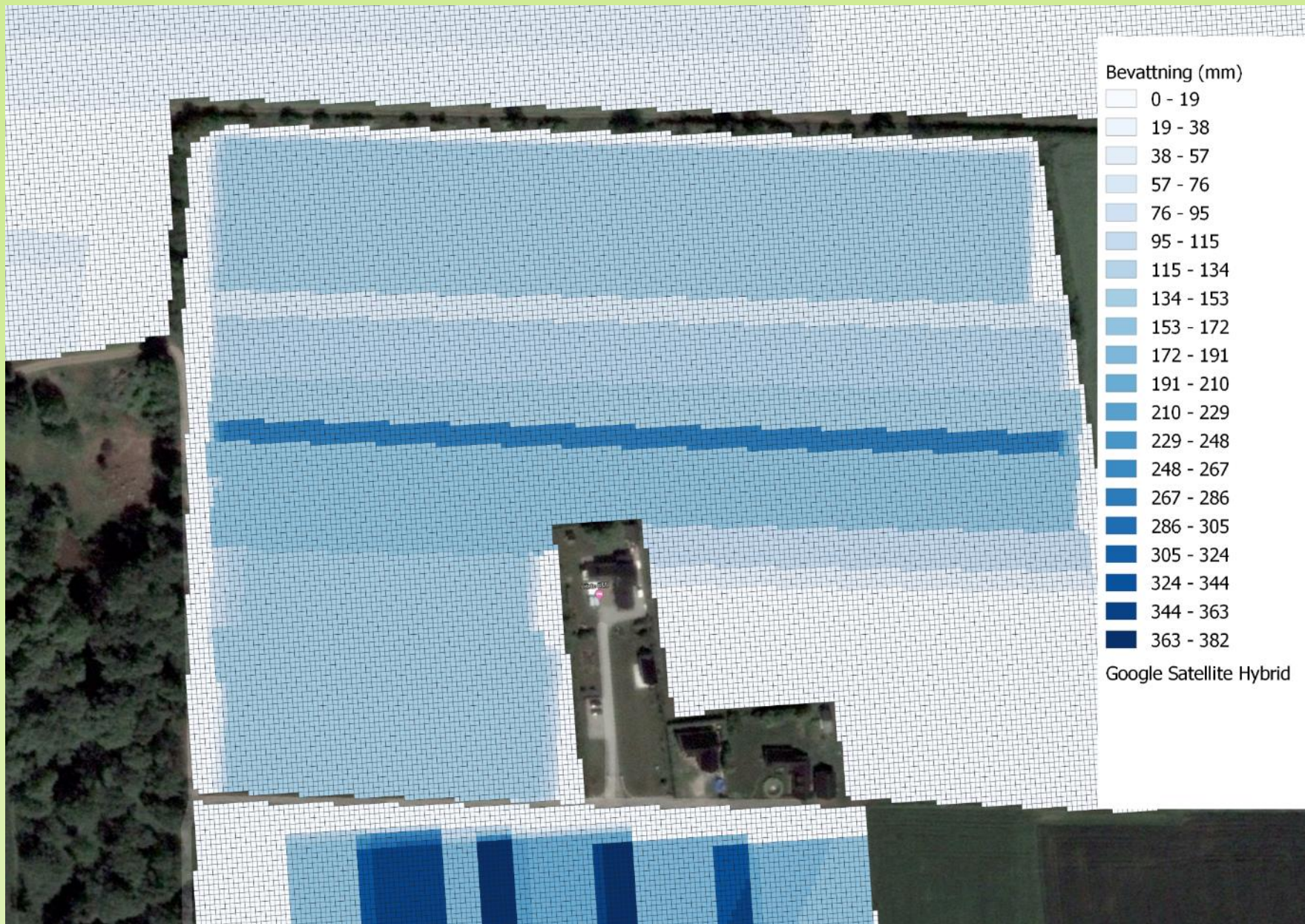
Analyzing the data

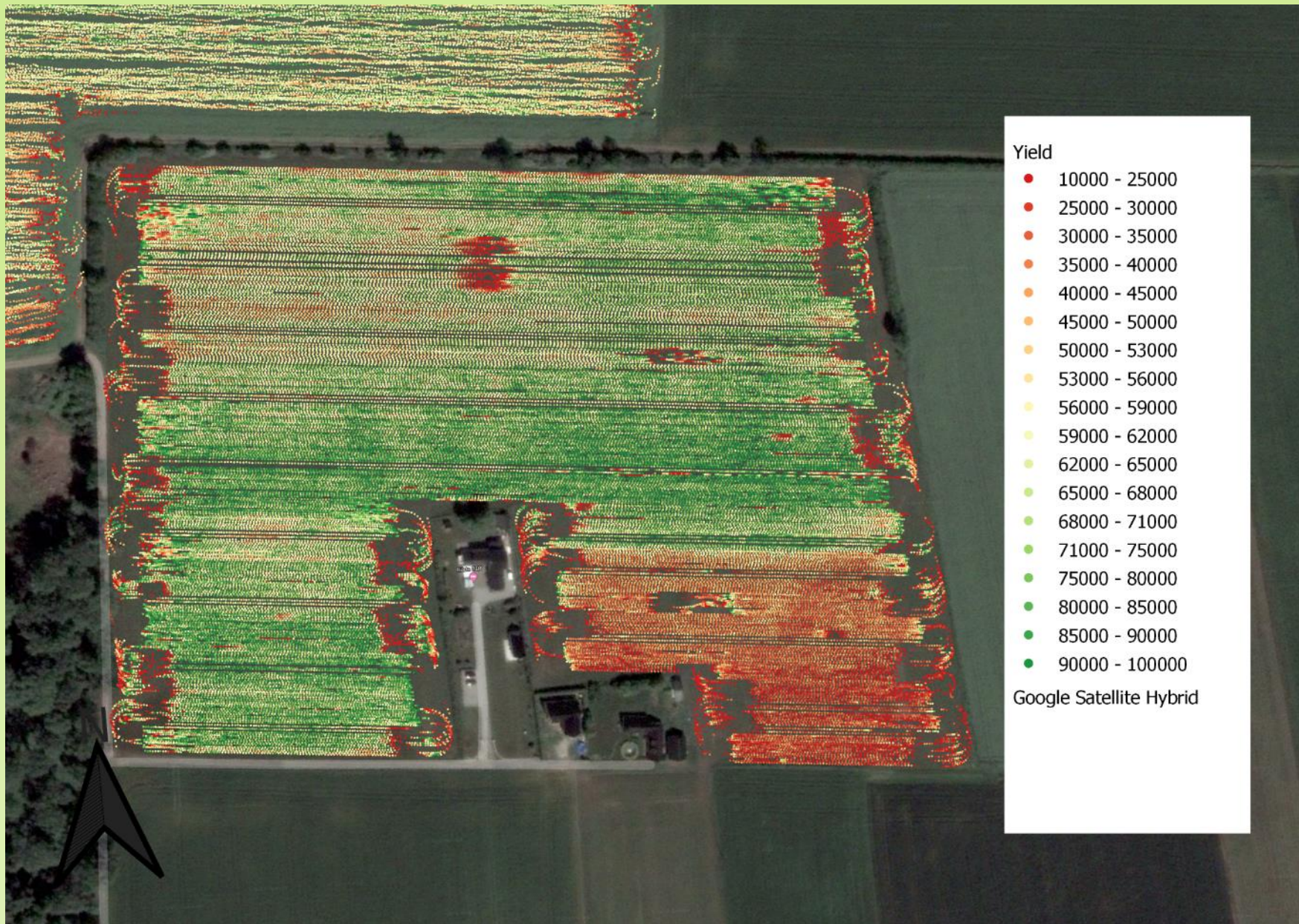
Combining different data sets at same place in order to make conclusions



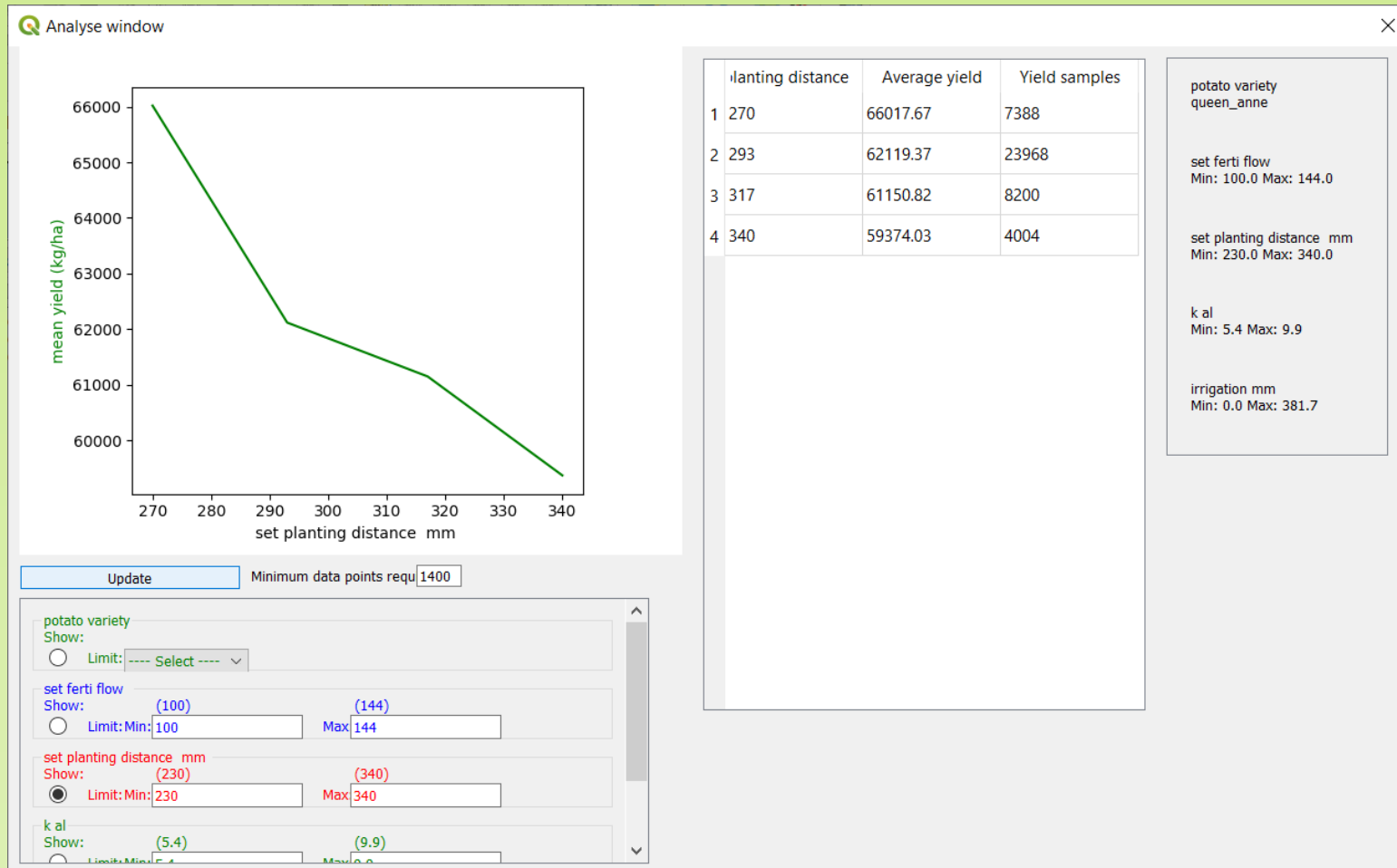




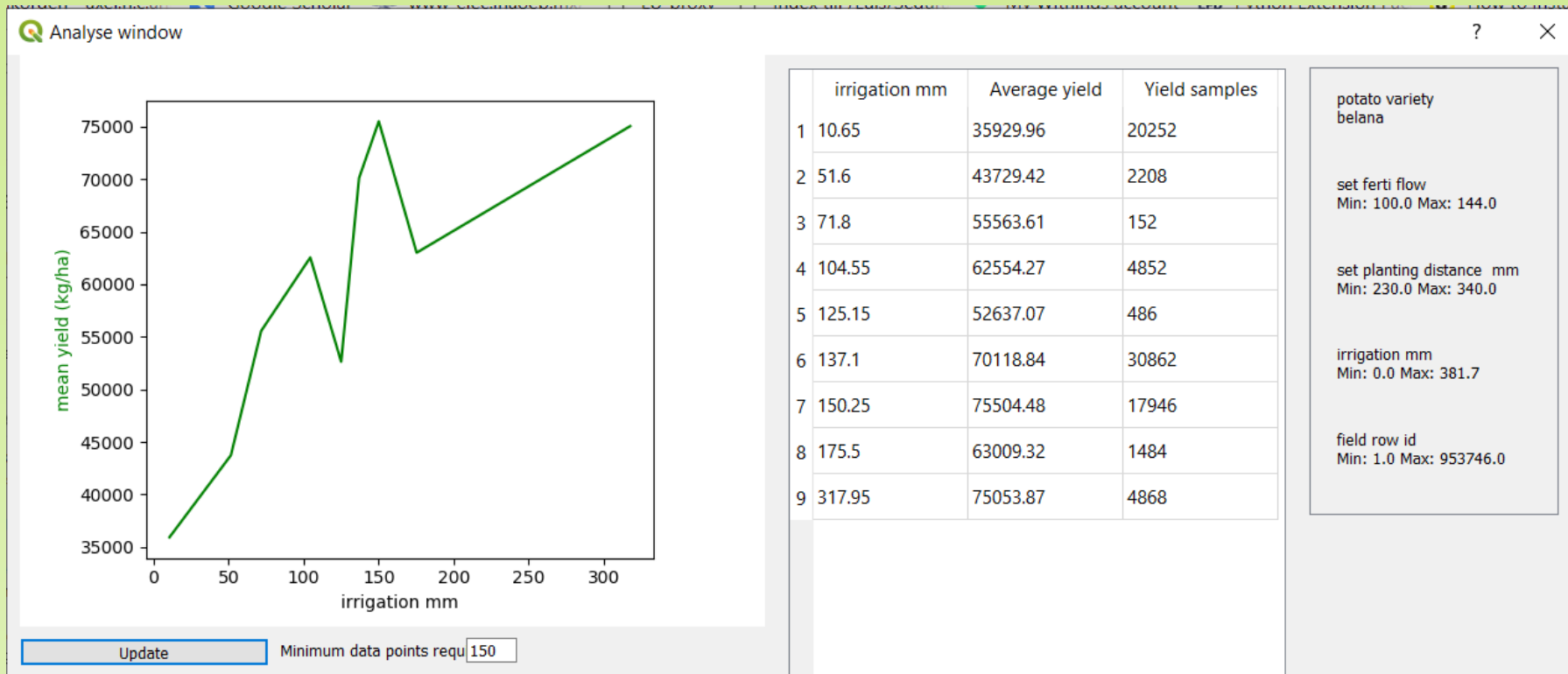


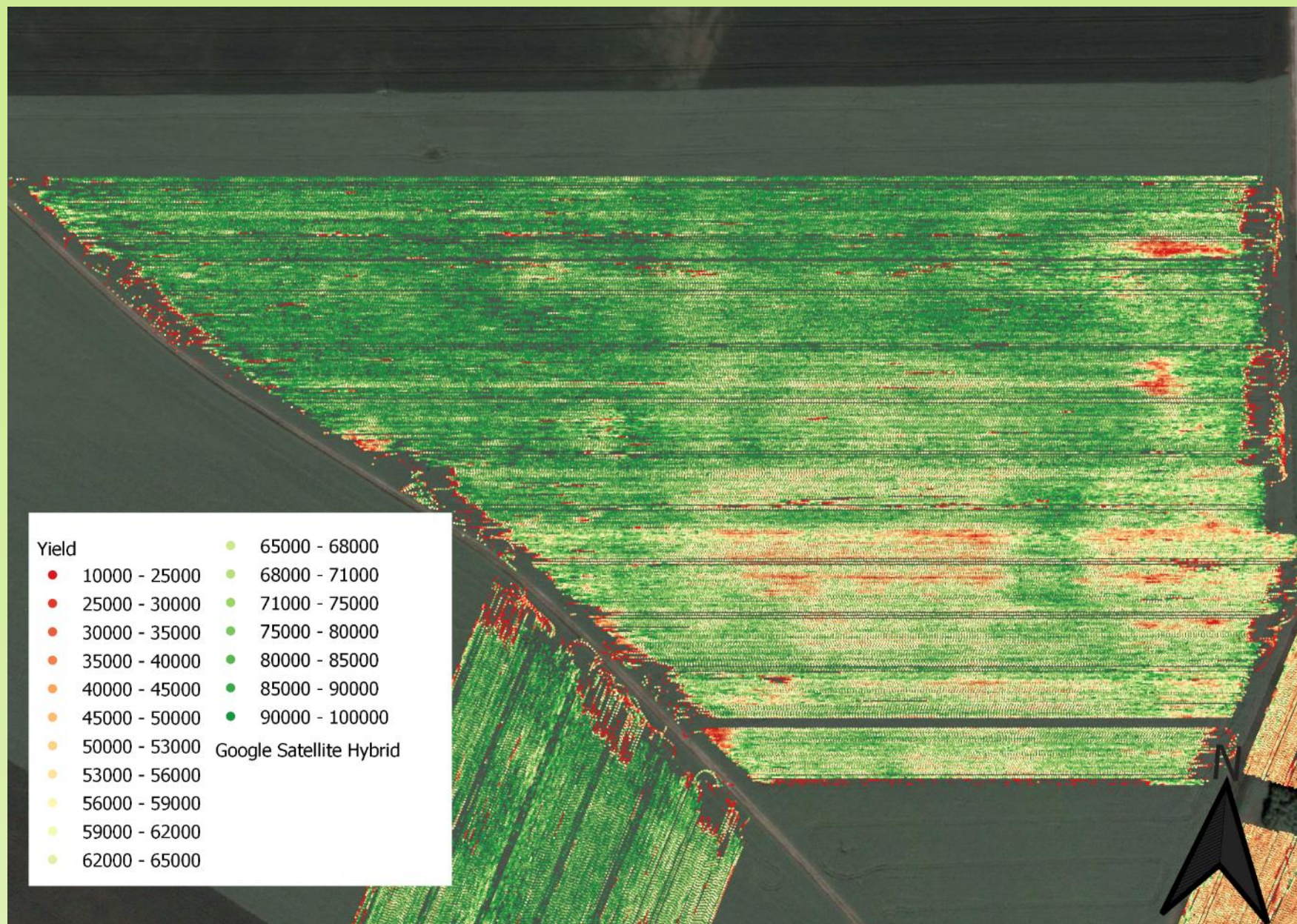


The yield depending on planting distance

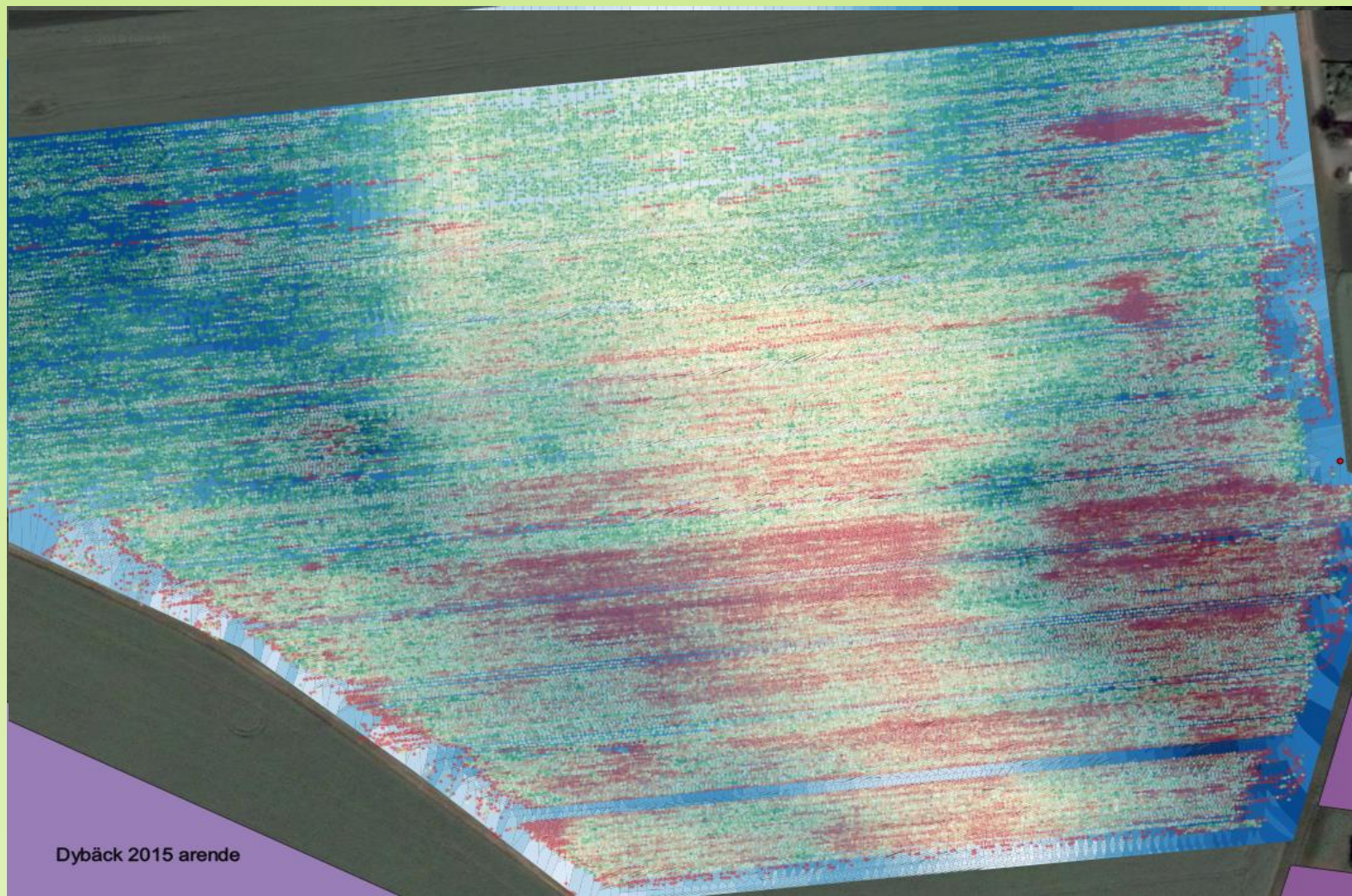


The dependence on irrigation 2018

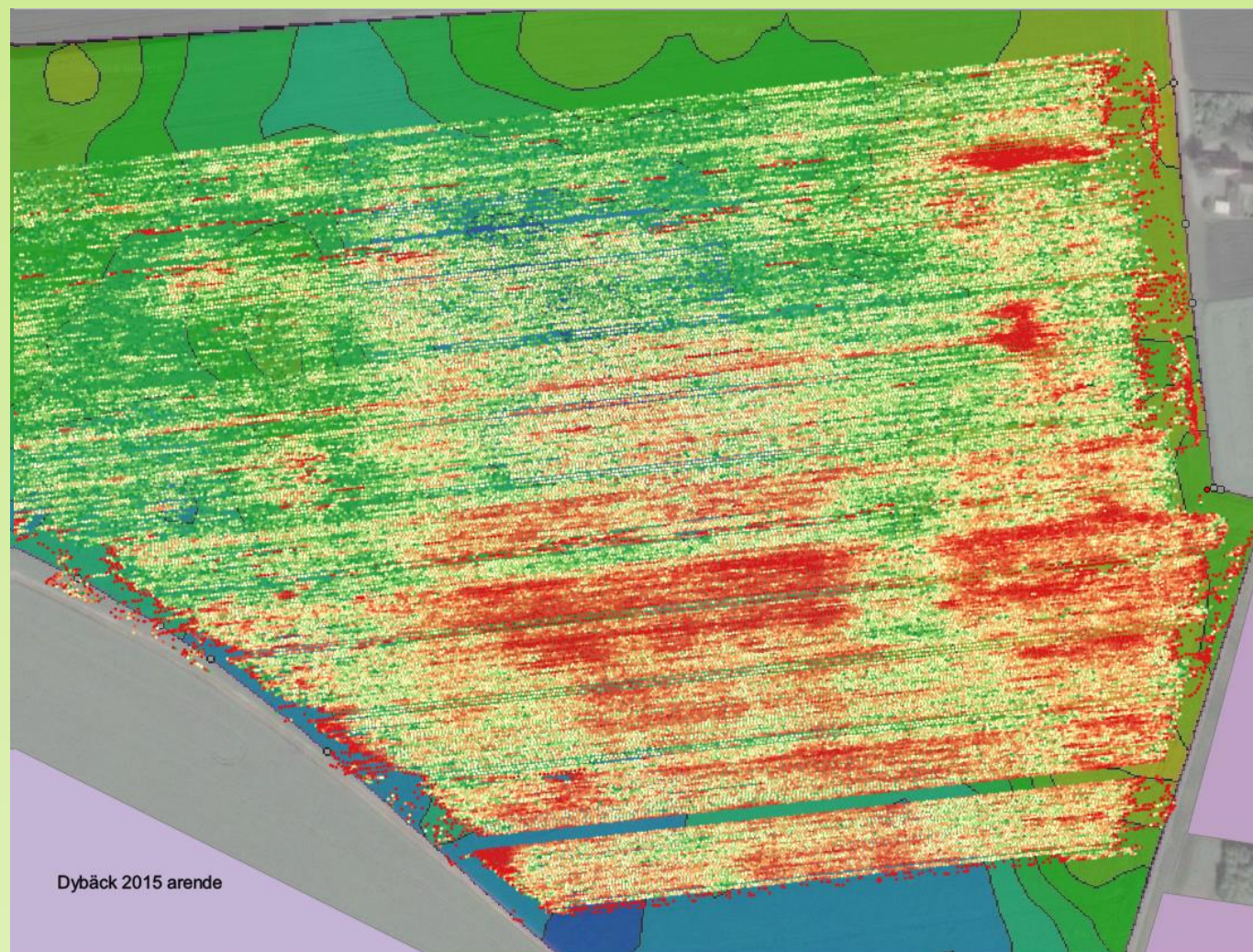




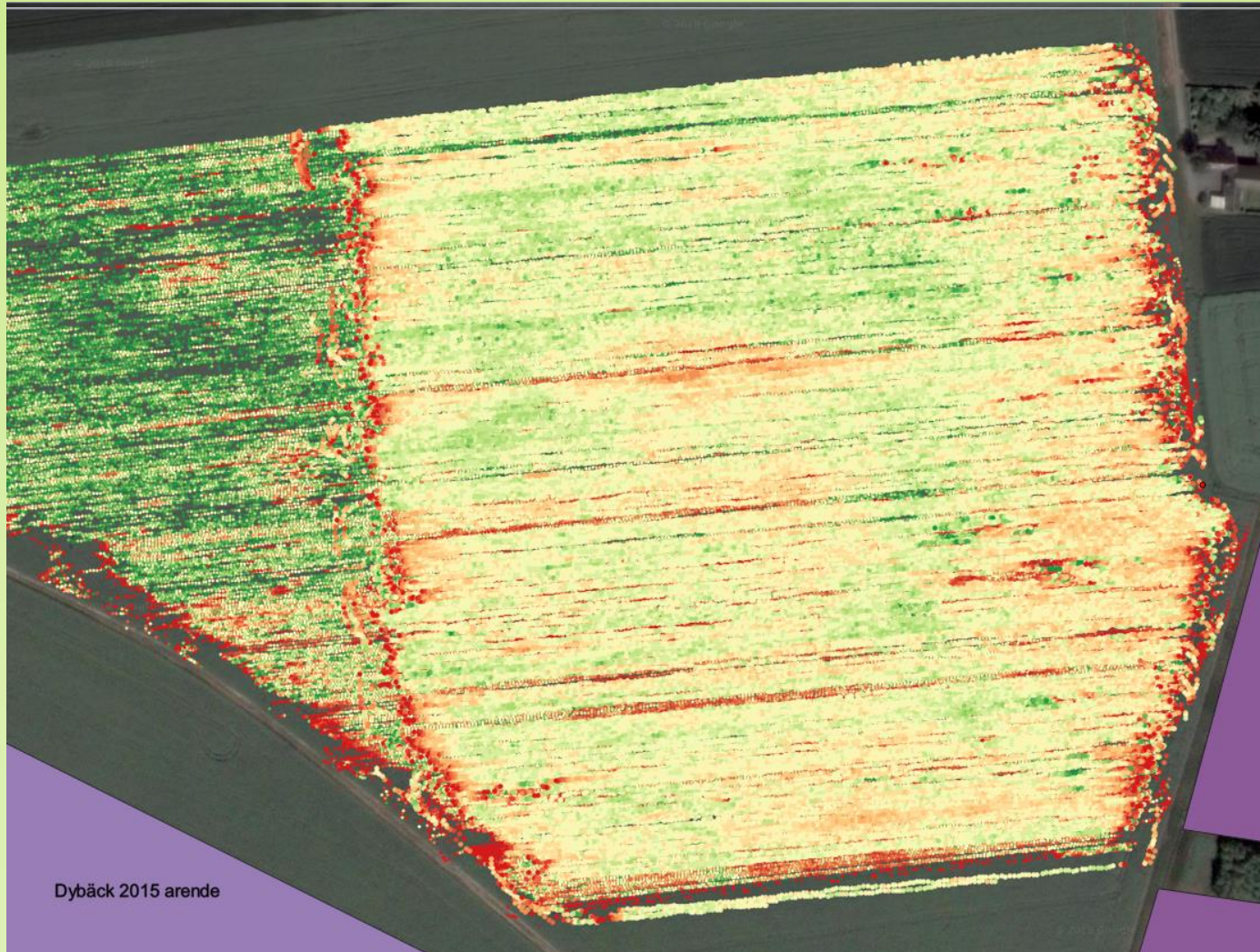
Height data



EM 38









2014 and 2018



Thank You



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