Het gebruik van gewasreflectie voor N-bijbemesting van aardappelen

Frits K. Van Evert, Bert Meurs, Johan Booij, Willem van Geel, Corné Kempenaar

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• Veel N nodig
• Inefficient gebruik N
• Mineralisatie onzeker

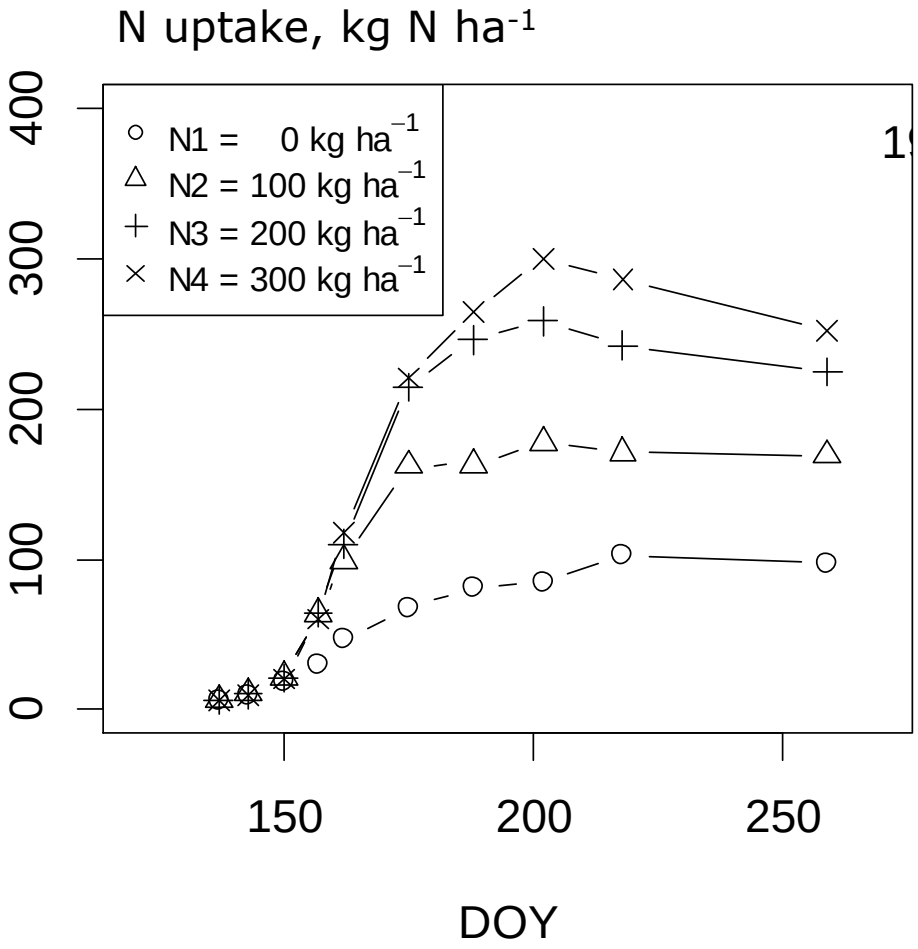
N gift afstemmen of N vraag v/h gewas

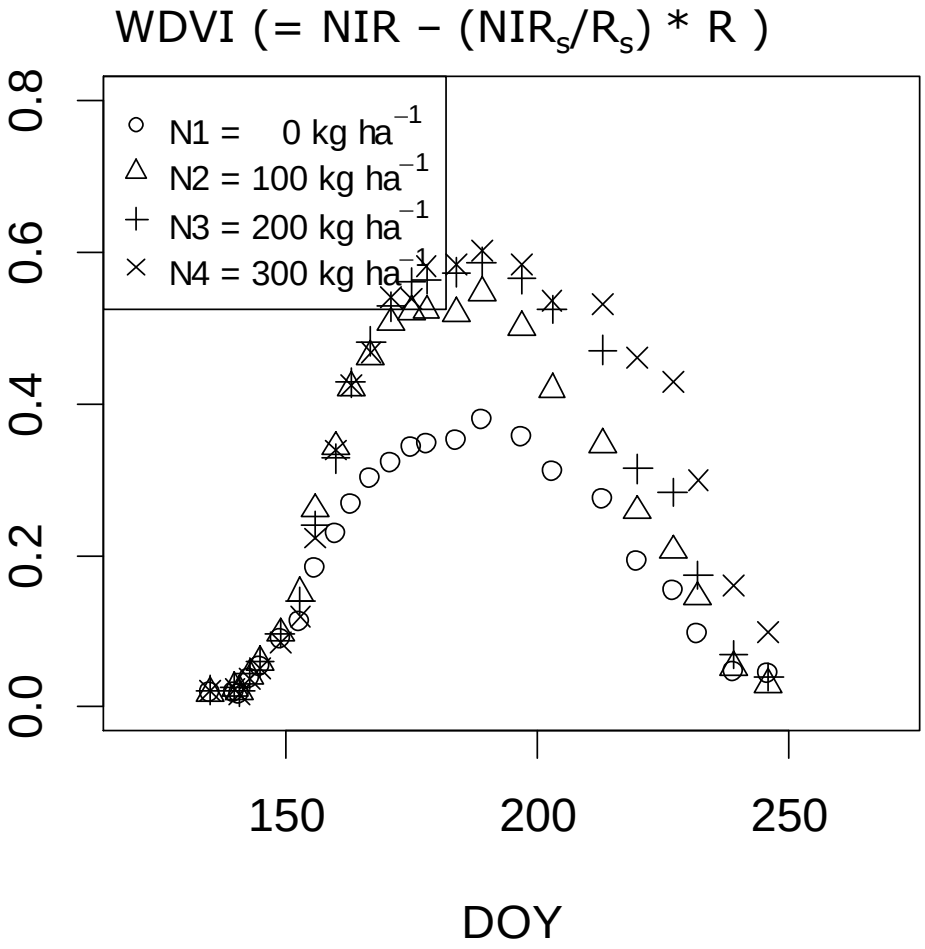
- In tijd en ruimte
- Stikstofdeling; bijmestgift aan de hand van:
  - Plant analyse
  - Bladsteeltjes analyse
  - Bodem analyse
  - Chlorophyll
  - Gewasreflectie

Handboek Bodem en Bemesting

- Kan N opname van aardappelen bepaald worden met een meting van de gewasreflectie?
- Kan N opname van aardappelen vertaald worden naar een N bijmestadvies?

Van Evert et al. (2012). EJA **43**:58-67





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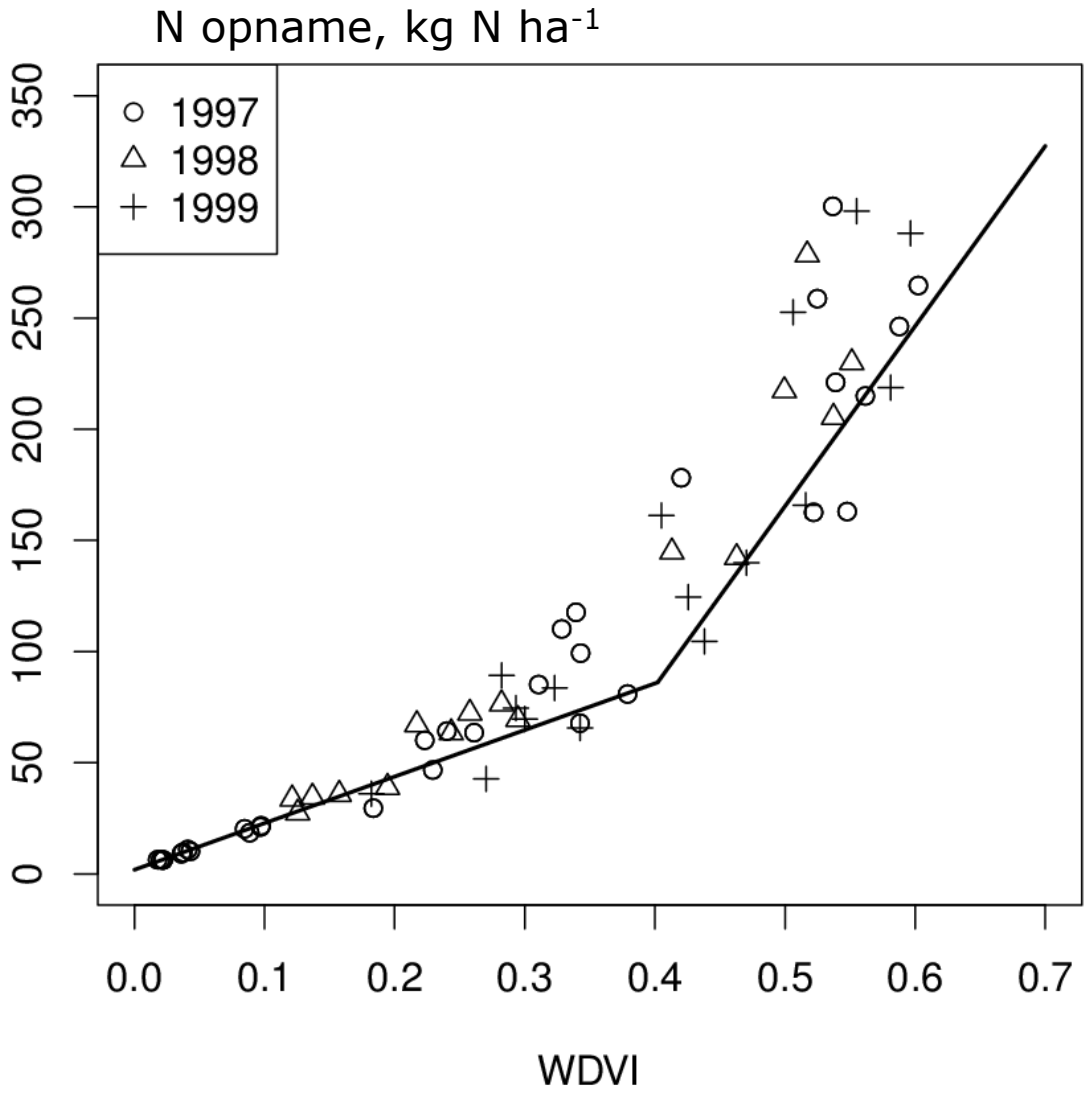

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Verse knolopbrengst, t ha^{-1}

Time of sidedress application	N_{target} (kg N ha^{-1})				
	0	150	200	250	
3rd week of June	49.8	51.9	59.0	58.0	54.7 a
1st week of July	53.0	52.4	58.4	59.0	55.7 a
	51.4 a	52.1 a	58.5 b	58.7 b	

N bijmest systeem

- Geef 60-75% van adviesgift aan de basis
- Gebruik gewasreflectie om bijmestgift te bepalen
- Uitkomst: N gebruik lager - gemiddeld 44 kg ha^{-1}

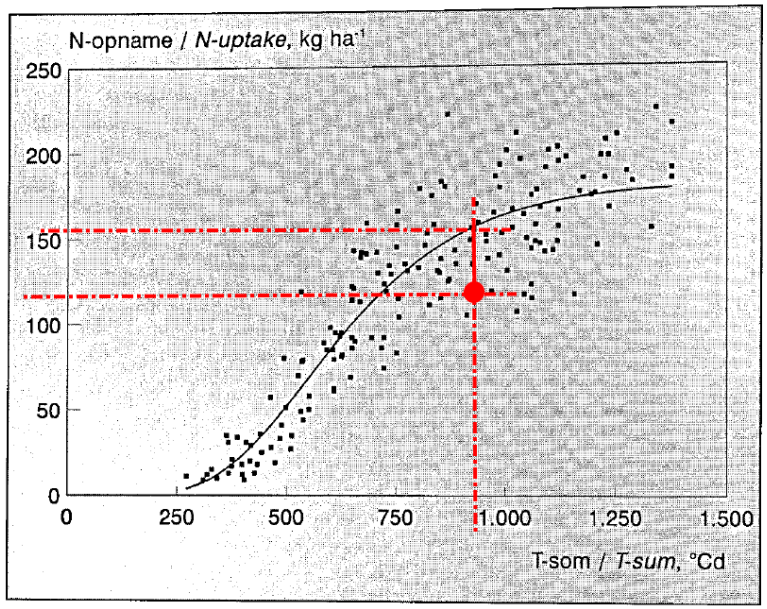

FIGURE 3. Relationship between calculated T-sum and N uptake of potatoes. Data derived from 29 N uptake curves with an optimum N application rate.

From: Steltenpool and Van Erp (1995)

European Journal of Agronomy

Volume 43, November 2012, Pages 58–67

ELSEVIER

Using crop reflectance to determine sidedress N rate in potato saves N and maintains yield ☆

Frits K. van Evert[a], Remmie Booij[a, 1], Jan Nammen Jukema[b, 2], Hein F.M. ten Berge[a], Dik Uenk[a], E.J.J. (Bert) Meurs[a], Willem C.A. van Geel[b], Klaas H. Wijnholds[b], J.J. (Hanja) Slabbekoorn[b]

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DOI: 10.1016/j.eja.2012.05.005

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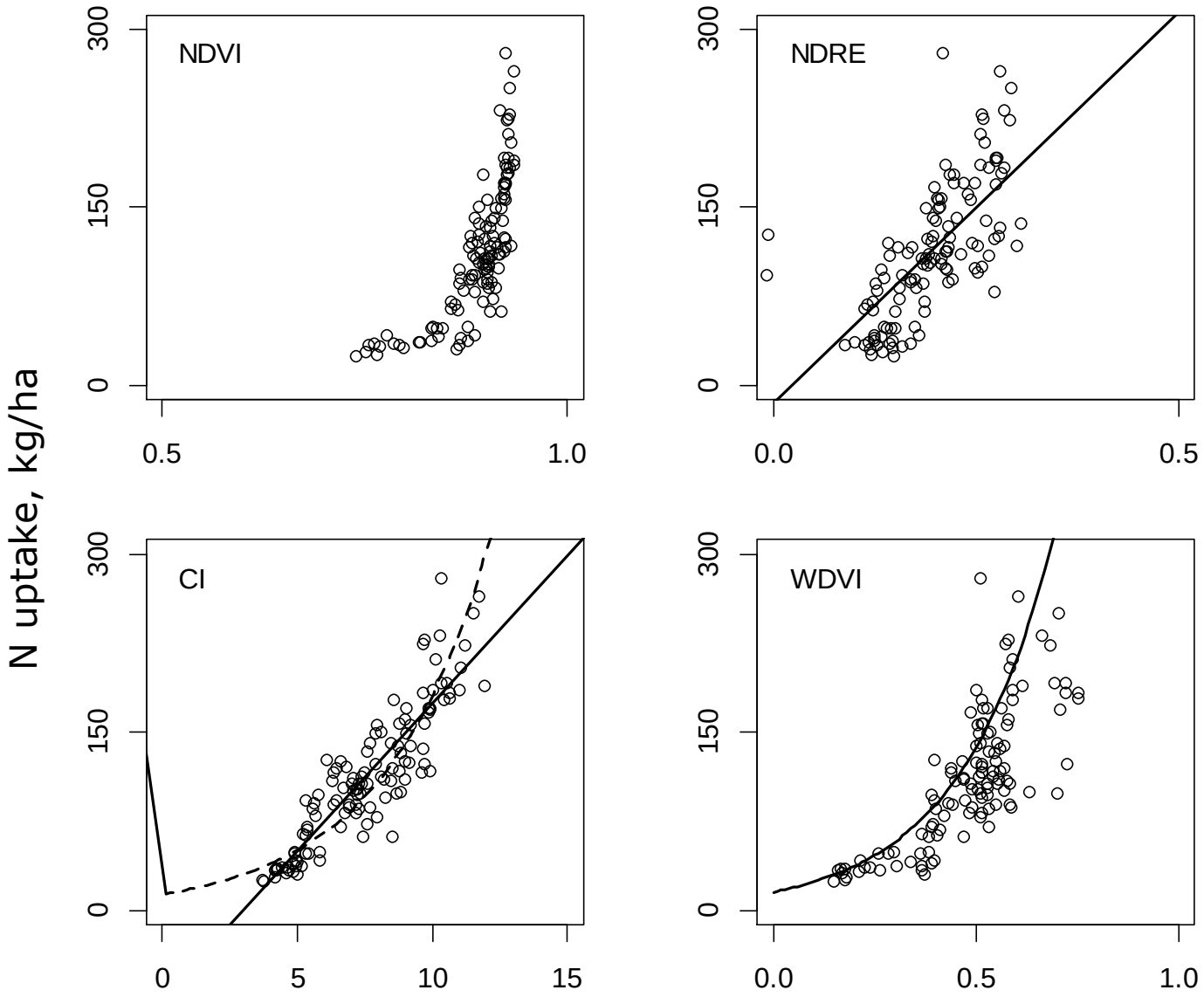
Gewasreflectie sensoren

Valthermond, 15 juni 2016, NIR (0-1)



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Akkerweb - Sensordata | Akkerweb - TopdressNSens | Akkerweb - Sensordata

https://akkerweb.nl/Shell

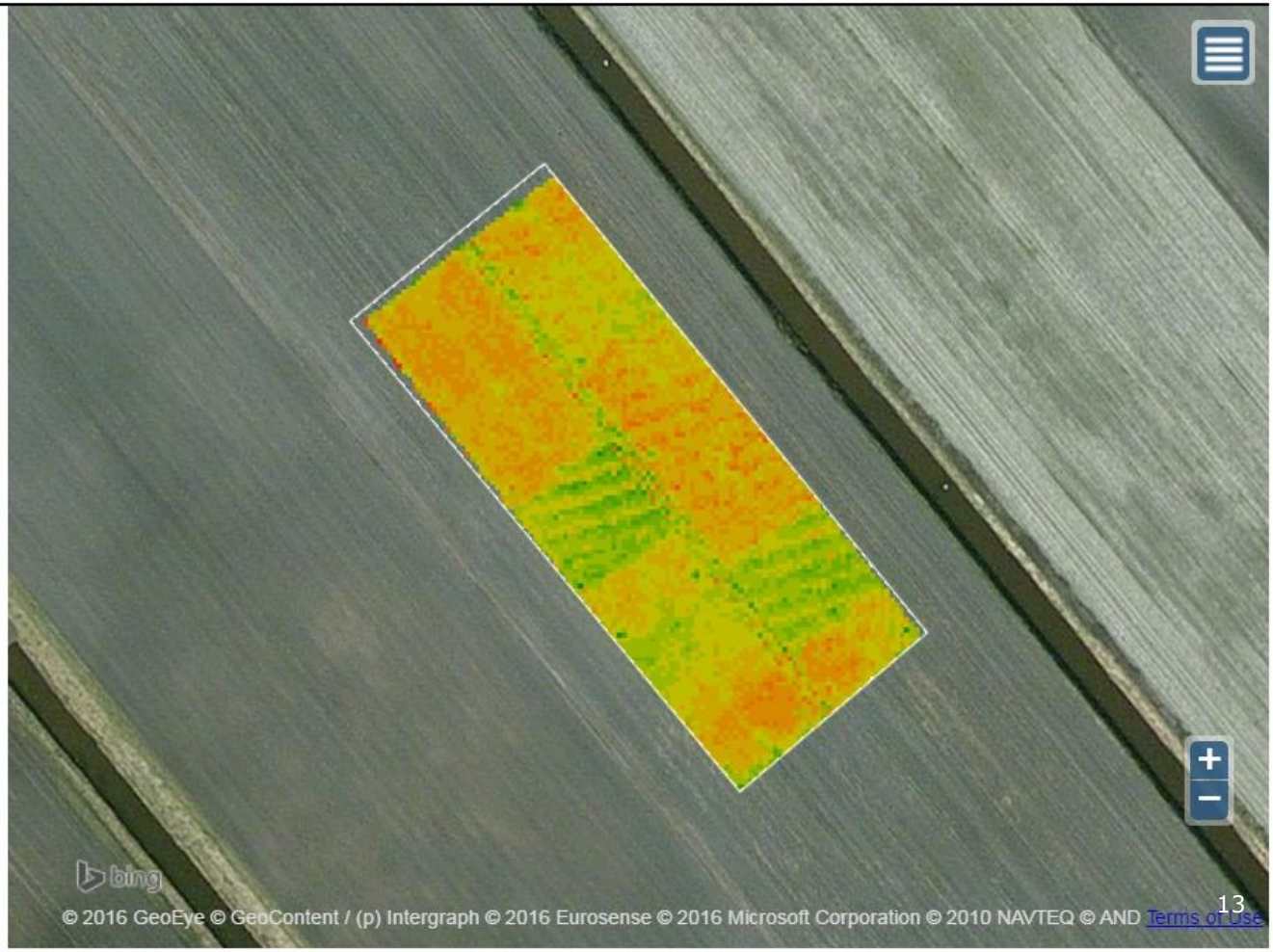
akkerweb sensordata | Dashboard | Search | Map | Frits van Evert

val27JuneNDRE.tif

Quantity	NDRE
Name	NDRE
Data Definition	[BAND1]
Interpolation	
Raster size X (m)	
Raster size Y (m)	
Workingwidth (m)	
Contour Params	

Save Delete Back

- 0.07 - 0.09
- 0.09 - 0.11
- 0.11 - 0.13
- 0.13 - 0.15
- 0.15 - 0.16
- 0.16 - 0.18
- 0.18 - 0.20
- 0.20 - 0.22
- 0.22 - 0.24
- 0.24 - 0.26
- 0.26 - 0.28



Akkerweb - Sensordata | Akkerweb - TopdressNSens | Akkerweb - Sensordata

https://akkerweb.nl/Shell

akkerweb topdressnsensing

Dashboard | Search | Map | Frits van Evert

Crop production purpose: consumption

SeedDate: 4/15/2016

RiseDate: 05/31/2016

Yield: 60

N-target value: 169.91

SensorType: val27JuneS1.tif

Measurement date: 6/27/2016

Layer: N-uptake

Crop is closed: ☑

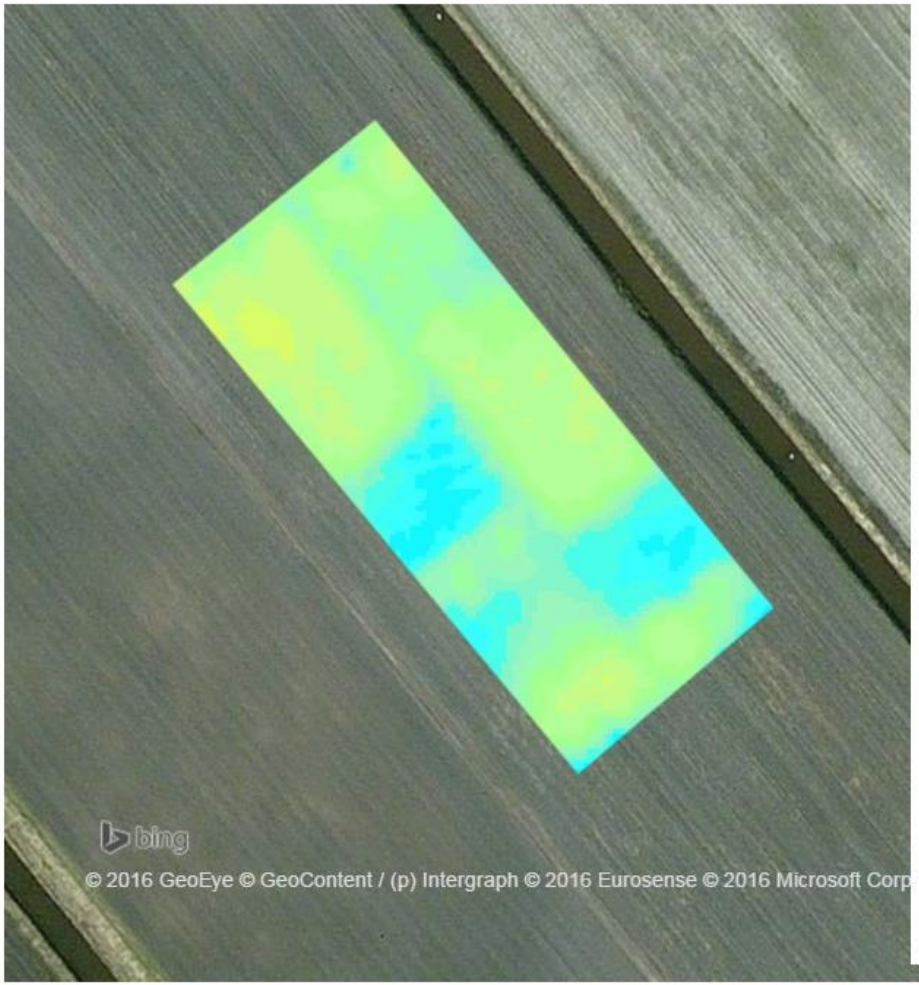
Active light sensor (ALS): ☐

Weather station: HOOGEVEEN

Meststof

N-content (%): 30

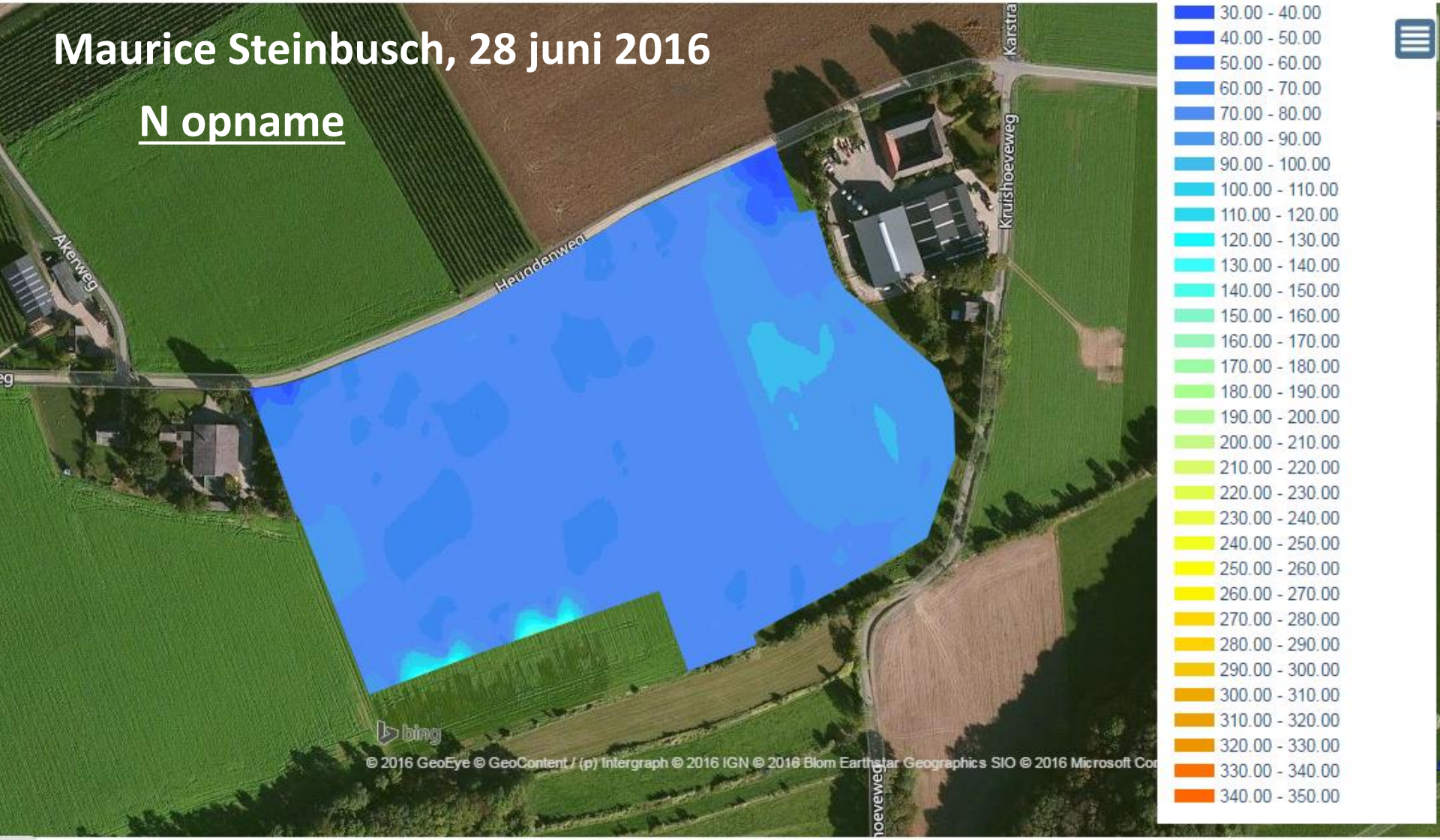
Strooier



60.00 - 70.00
70.00 - 80.00
80.00 - 90.00
90.00 - 100.00
100.00 - 110.00
110.00 - 120.00
120.00 - 130.00
130.00 - 140.00
140.00 - 150.00
150.00 - 160.00
160.00 - 170.00
170.00 - 180.00
180.00 - 190.00
190.00 - 200.00
200.00 - 210.00
210.00 - 220.00
220.00 - 230.00
230.00 - 240.00
240.00 - 250.00
250.00 - 260.00
260.00 - 270.00
270.00 - 280.00
280.00 - 290.00
290.00 - 300.00
300.00 - 310.00
310.00 - 320.00
320.00 - 330.00
330.00 - 340.00
340.00 - 350.00

Maurice Steinbusch, 28 juni 2016

N opname



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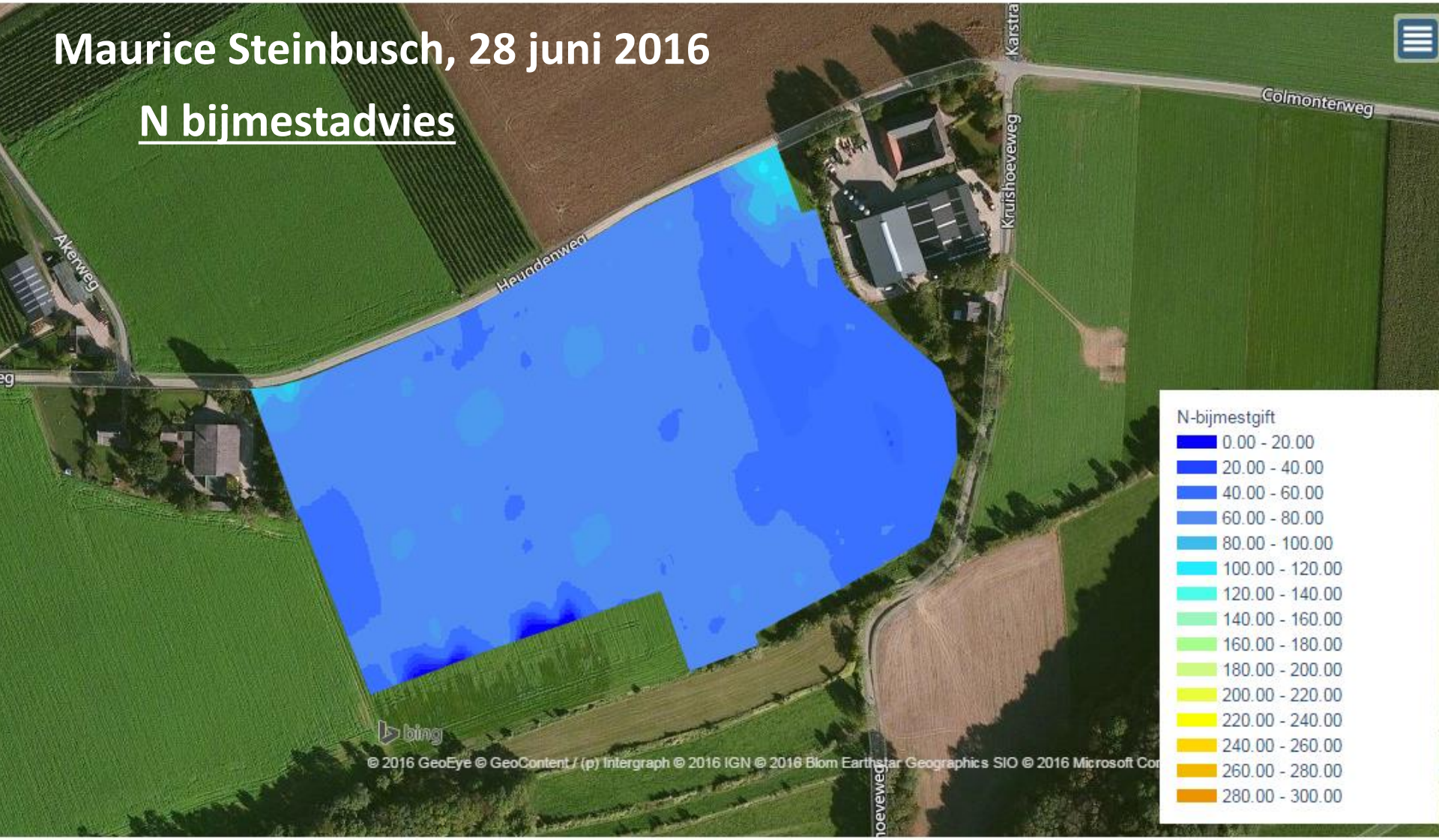
Maurice Steinbusch, 28 juni 2016

N bijmestadvies



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In het kort ..

- Gewasreflectie voor advies N bijmestgift
- Goed onderbouwde beslisregel
- Centrale rol Akkerweb
    - Partners
    - Datastromen
    - Technische verbindingen

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