The Dutch way: farming without conventional manure

Geert-Jan van der Burgt

27 November 2013

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Beginning of this century:

- Many farms (arable, horticultural) use manure from conventional farming
- Manure from intensive conventional farming not allowed (EU)
- Surplusses of P in farm mineral balances

Is this a problem?

- Imago: real organic farming
- Risk: input of undesired materials
- Environment: surplusses of P

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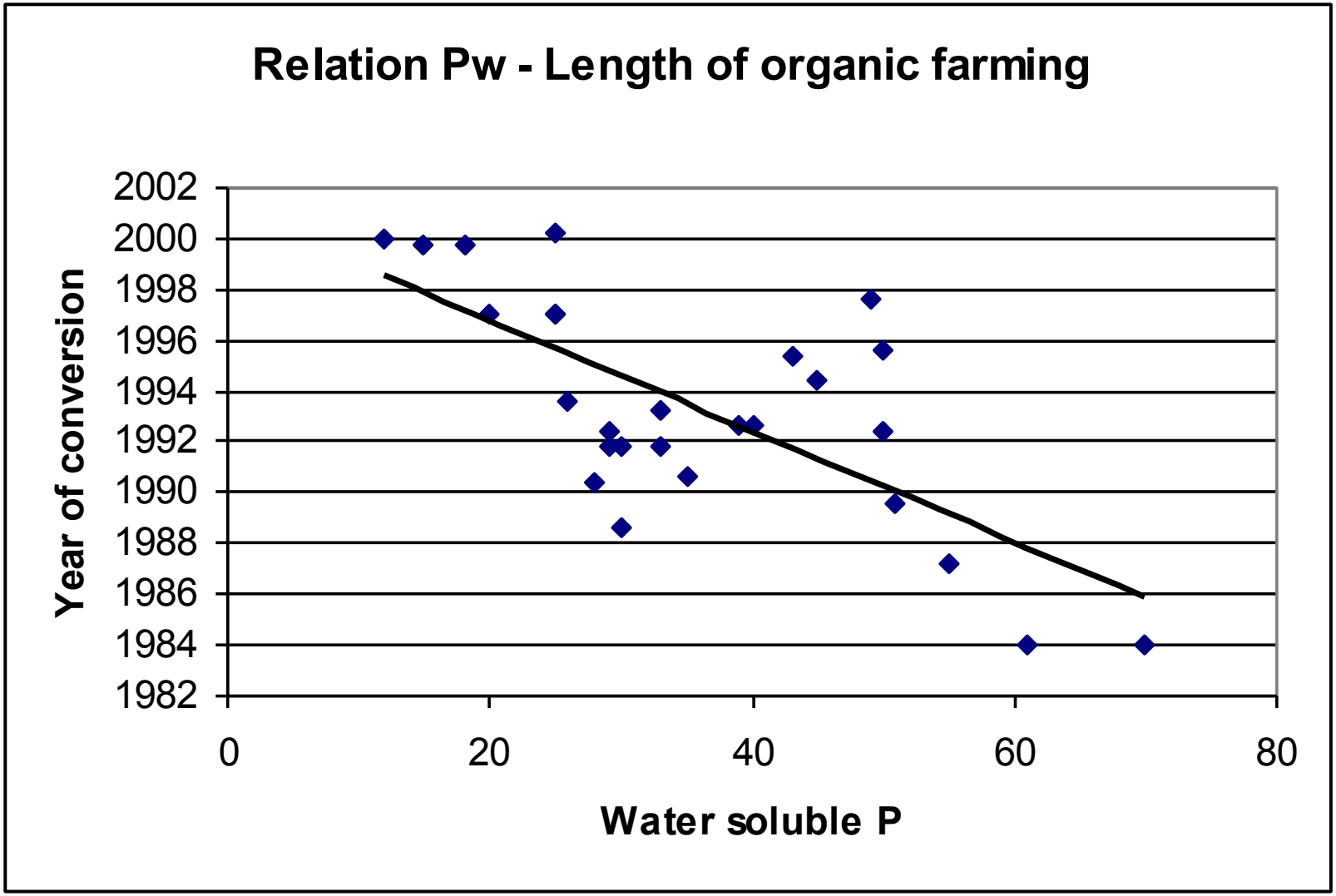
Accumulation of P



Adapted from: Bokhorst (2011): Bemesting in de biologische akker- en tuinbouw bij bodems met een hoge fosfaattoestand

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Action!

- Governmental presure
- Farmers association came with a plan:

- Step by step obligatory more use of manure from organic origin. List of “A” manures (organic), B (conventional, allowed) and C (not allowed)
- Obligation to sell organic manure within the organic sector
- Manure exchange platform

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Step by step:

Planning		Realized	
Year	Minimum %	Year	Minimum %
2010	50%	2010	50%
2012	60%	2012	60%
2014	70%	2015	70%
2016	80%		
2018	90%		
2020	90/100%		

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Expected challenges:

- Shortage of organic manure
- Disbalance: poultry manure not desired by arable / horticultural farmers (N/P ratio)
- Increased price for organic manure (negative price for organic poultry manure?)

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Adaptation of soil fertility strategies (1)

Dairy farms

Sell manure, buy P and K (if needed; based on farm mineral balances). Clover-grass does not need N-applications.

Adaptation of soil fertility strategies (2): Arable / horticultural farms

More effective / efficient use of N:

- less manure
- intelligent rotation / crop choice
- intelligent manure choice and application
- increased farm-based N-fixation
- catch crops for N-transfer fall -> spring

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Two tools

- Cut&Carry fertilizers
- Model calculations of N-availability:
  the NDICEA model

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Cut&Carry fertilizers

clover-grass or lucerne, cut, and applied ON ANOTHER FIELD

Degrees of freedom* for Nitrogen (compared to mulching or ploughing):

- Time
- Amount
- Location

Results: see www.louisbolk.org , publications, maaimeststof

* Van der Burgt and Timmermans (red)(2008). Soil Nitrogen: research and extension. Proceedings QLIF seminar, 13-15 February 2008, Driebergen, The Netherlands

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WWW.NDICEA.NL

- Free download
- Easy to use
- Danish / English

- Output:
  - Nitrogen availability
  - Leaching
  - Organic matter
  - Mineral balance

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VP Biologisch met compost

Fortsæt

Region

Limburg noord

Jordbund

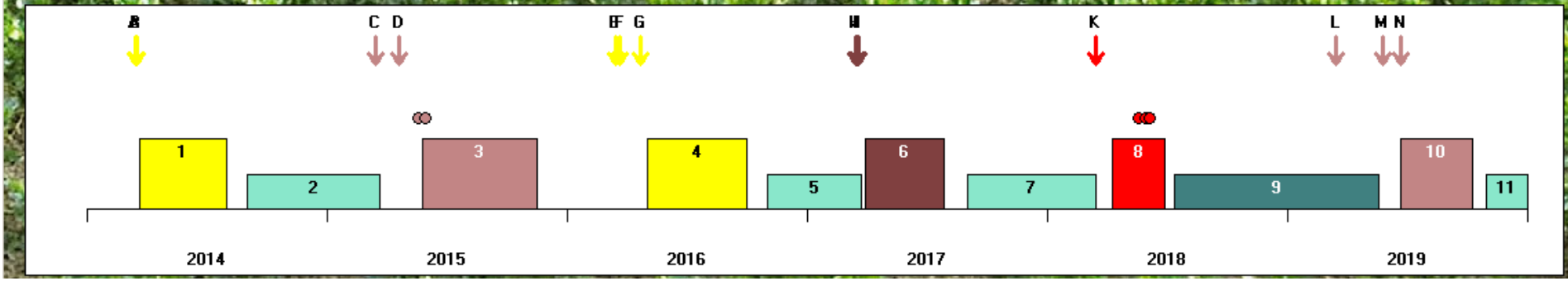
Muldlag:
Lerblandet sandjord
Undergrund:
Lerblandet sandjord

1-2014	Vårbyg
2-2014	Korn
3-2015	Gulerod, vinter
4-2016	Majs, ensilage
5-2016	Korn
6-2017	Kartoffel
7-2017	Korn
8-2018	Konservesærter
9-2018	Kløvergræs
10-2019	Porre, efterår
11-2019	Korn

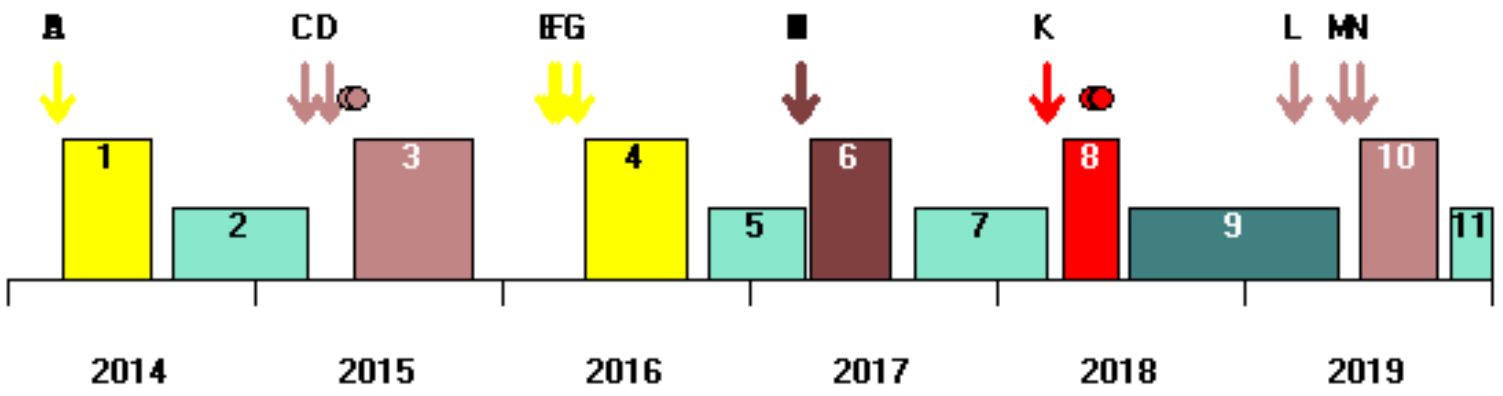
Afgrøder

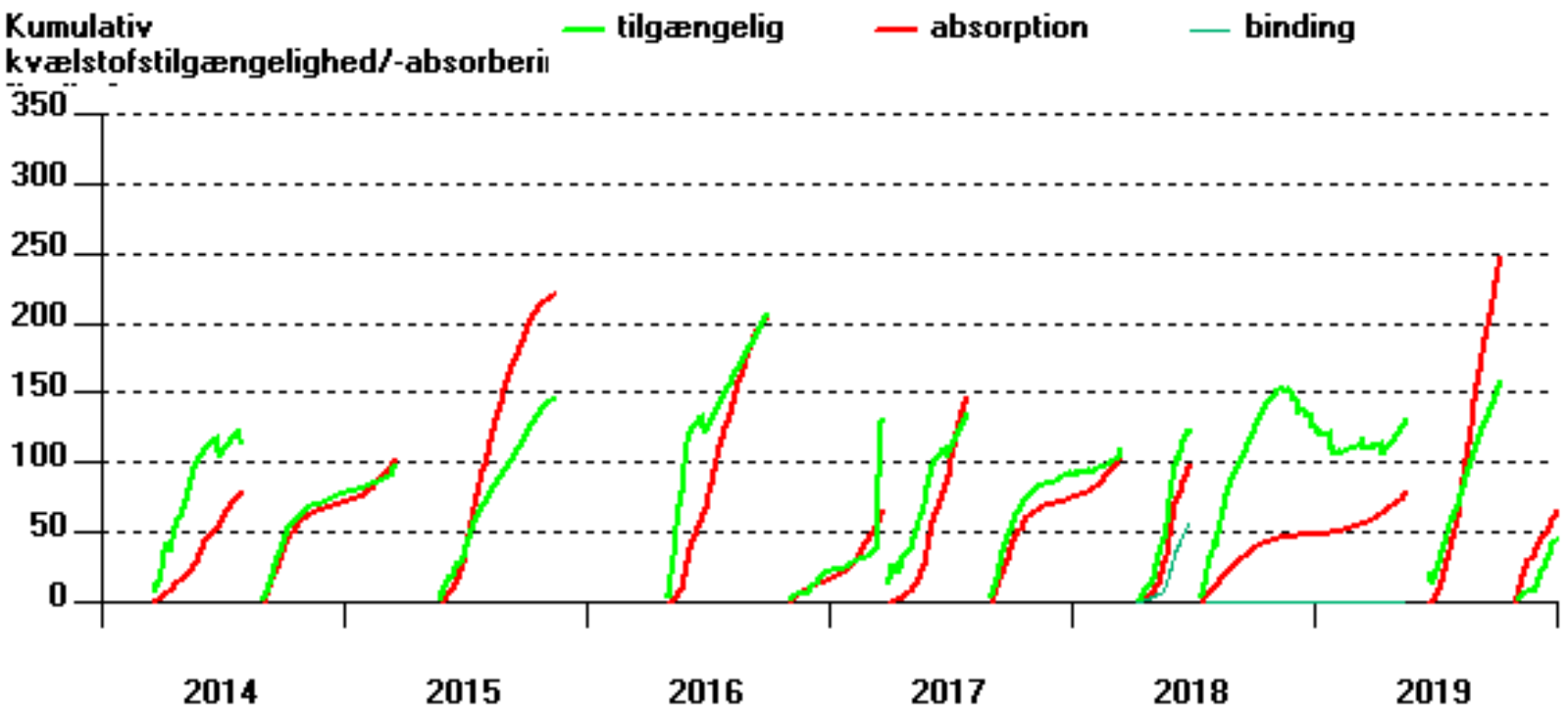
A-2014	Kompost
B-2014	Kvæg gylle
C-2015	Kompost
D-2015	Kvæg gylle
E-2016	Kompost
F-2016	Kvæggødning frisk
G-2016	Kvæg gylle
H-2017	Kompost
I-2017	Kvæg gylle
J-2017	Kvæggødning frisk
K-2018	Kompost
L-2019	Kompost
M-2019	Kvæg gylle
N-2019	Vinasse, flydende

Gødning



NDICEA





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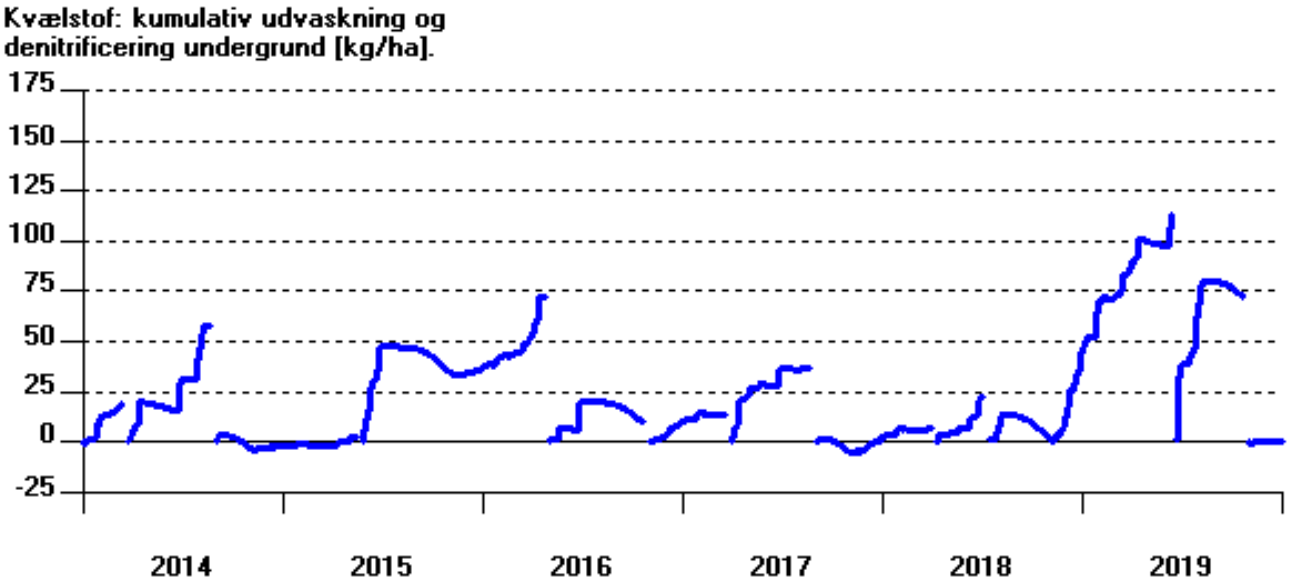
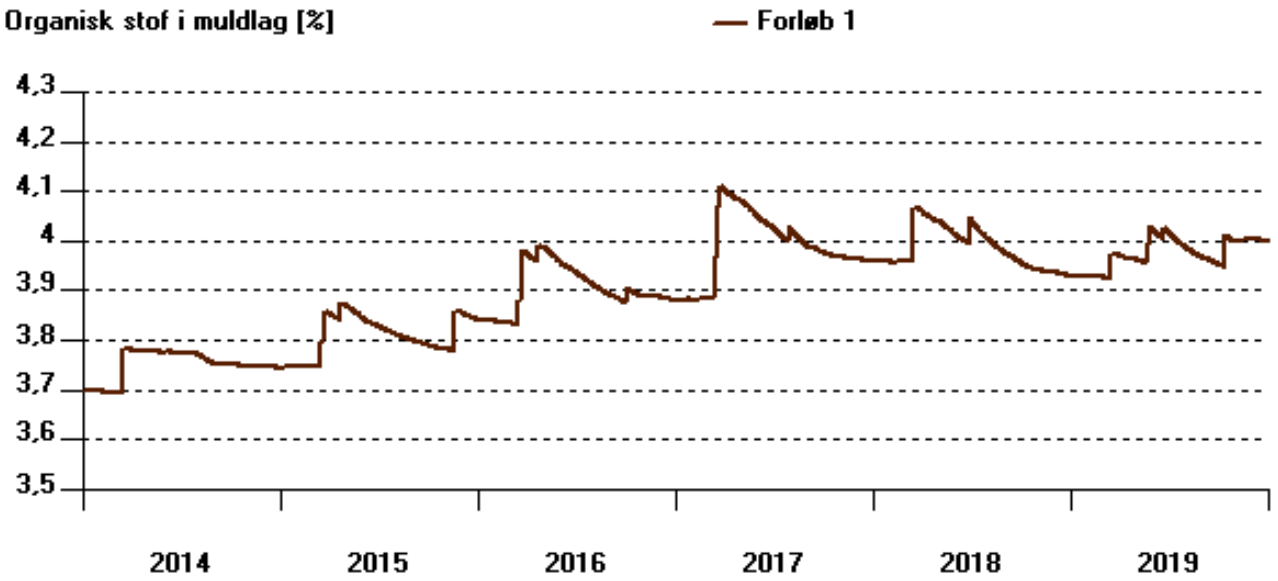
NDICEA





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NDICEA

Example of use of C&C fertilizers and NDICEA:

Burgt, G.J.H.M. van der, M. Bus (2012)

- **PlantyOrganic; Design and results 2012. Report 2012-048 LbP. Louis Bolk Instituut, Driebergen. 37 p.**

http://www.louisbolk.org/downloads/2709.pdf

10 reports hard-copy available here

Thanks for your attention

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