N-mineralisation in flemish soils

Joris De Nies 11/5/2017

Mineralisation in Flemish soils

How many ?? kg N/ha/day

- Differences between fields
- History in use from organic matter

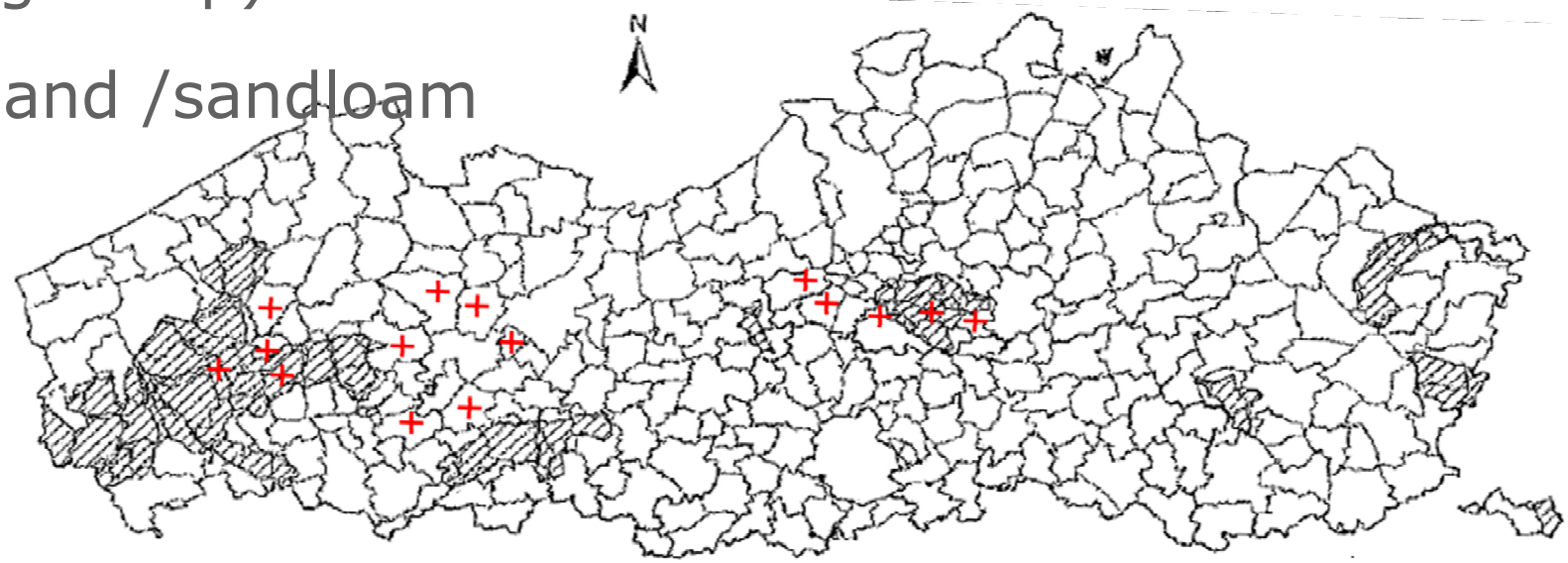
Monitoring experiment on 15 blanco fields on farms, every 2 weeks measurements in soil april-october, 4 Years

→ regular soil sampling = getting idea of mineralisation

Selection trial fields

Fields with:

- ≠ historic use manure (compost, pig slurry farmyard manure/ high-low doses
- Intensive vegetables – extensive (rotation with agr. crop)
- Sand /sandloam



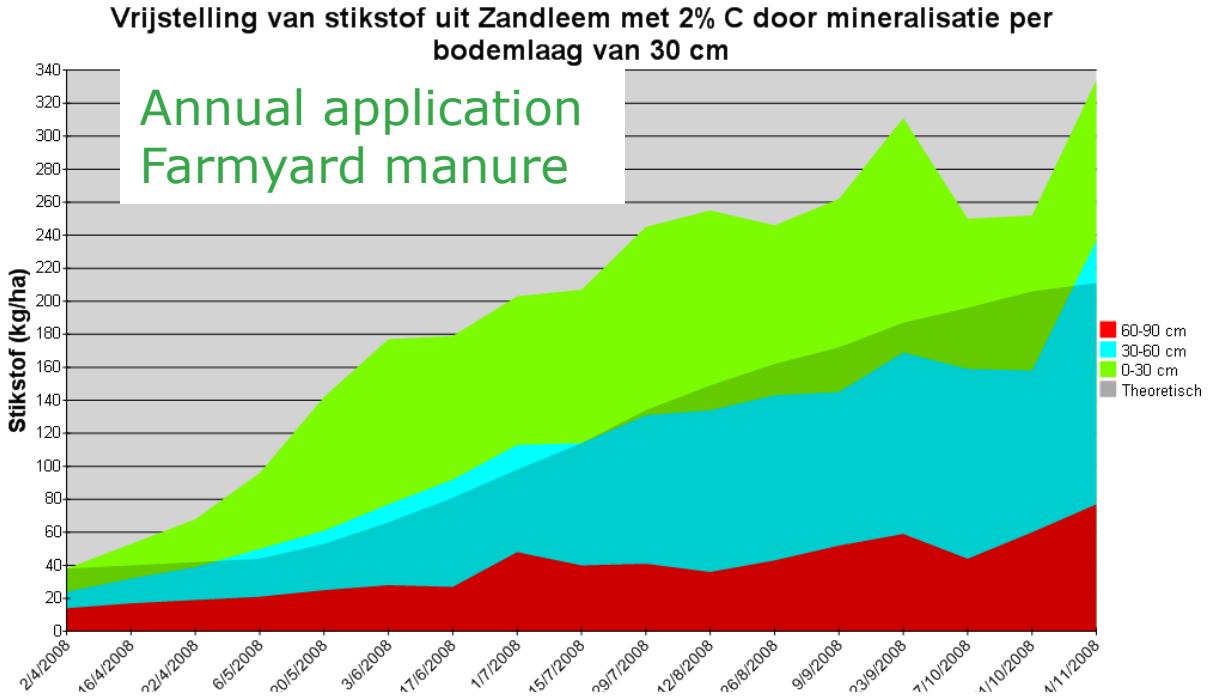
Legende

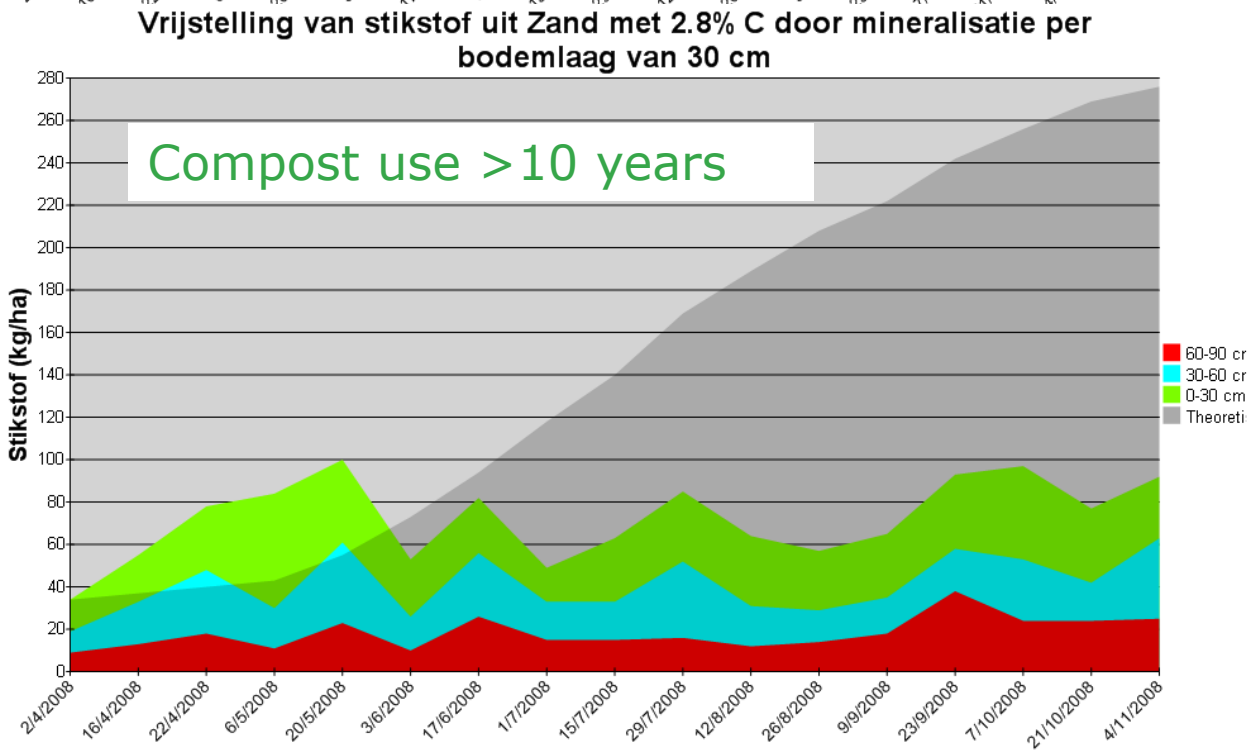
25 VHA-zones algebakend in 2006 als risicogebied

Gemeenten

Important demonstration towards farmers

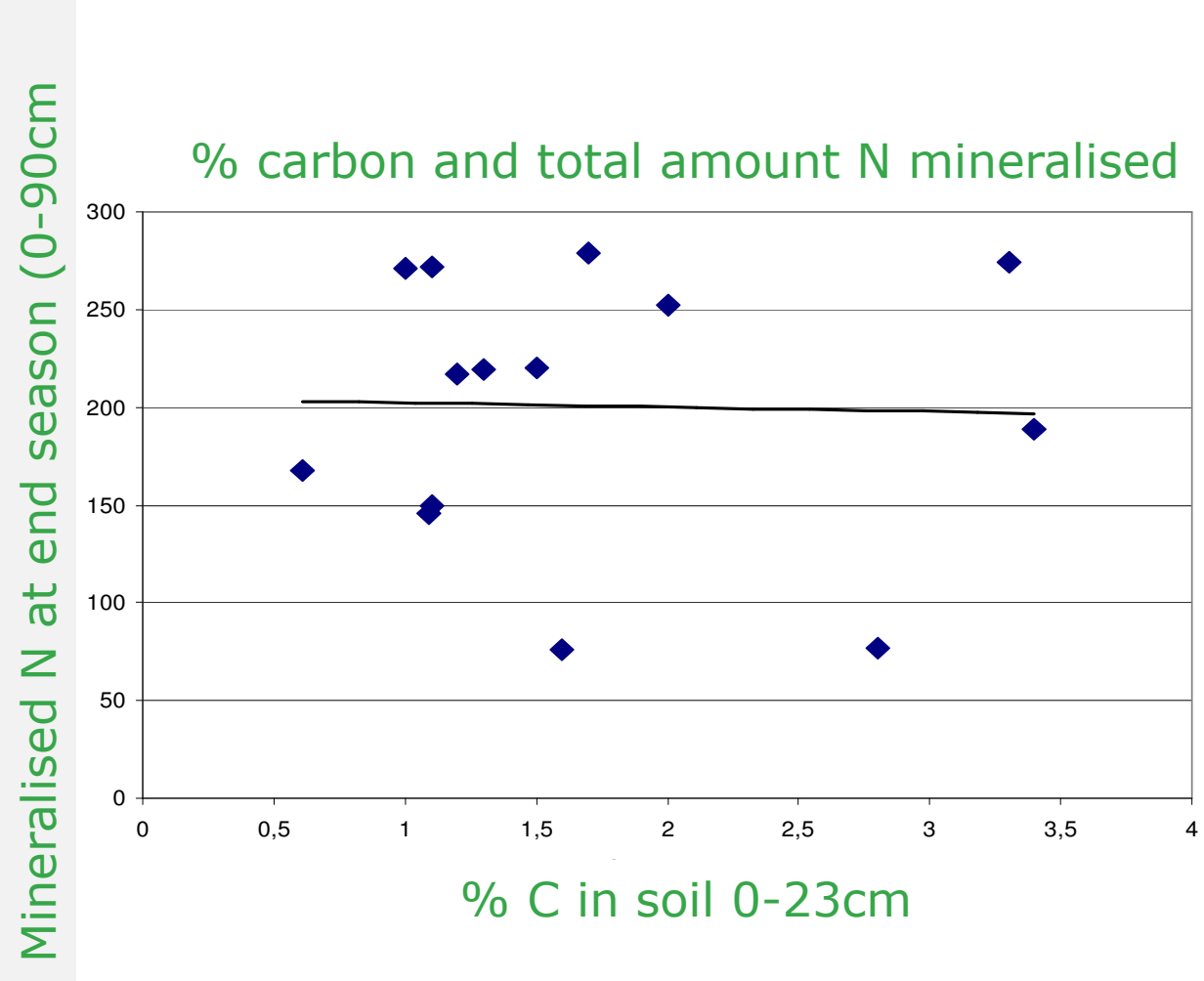
Soil can deliver important fraction of total fertilisation



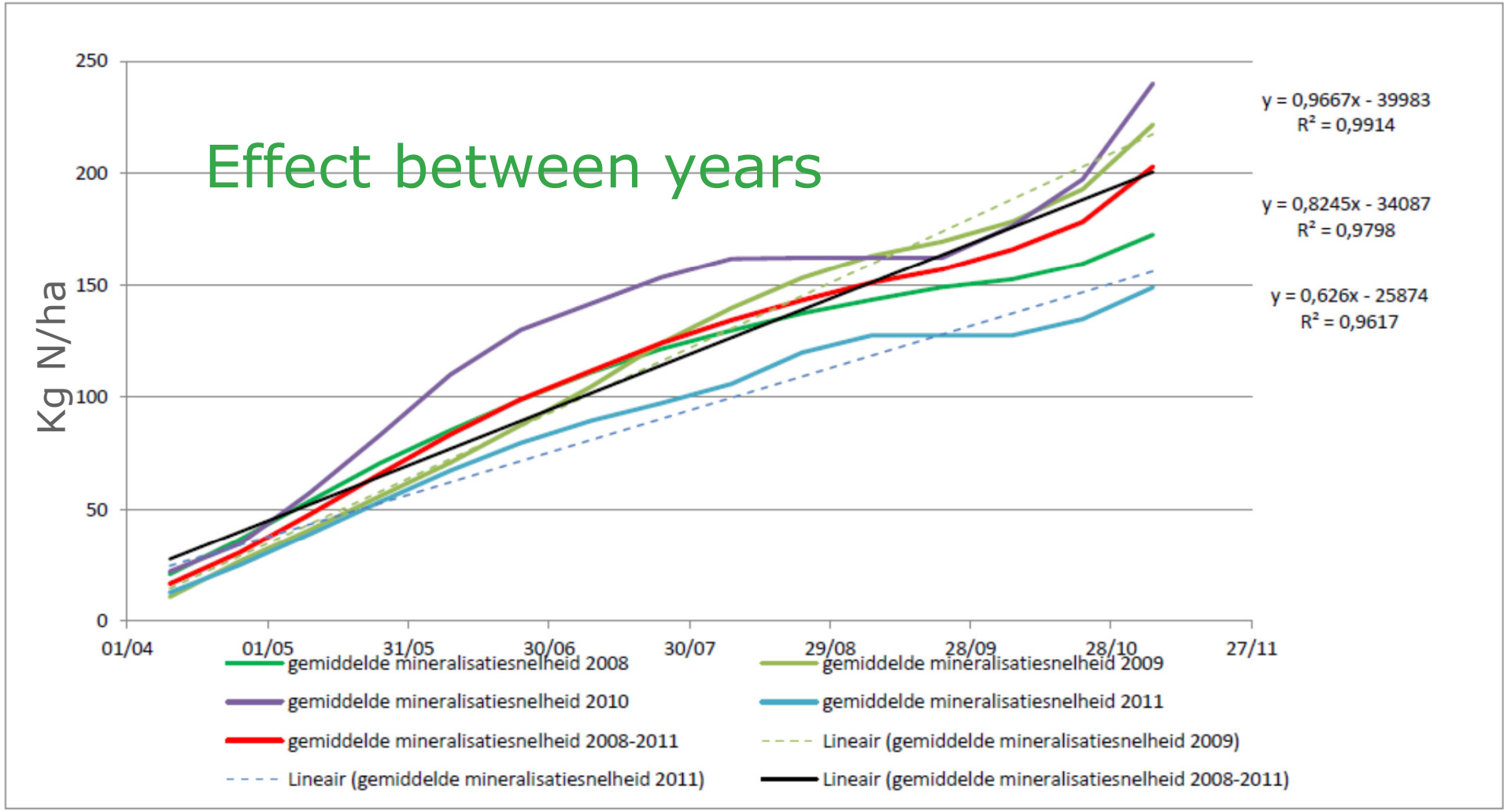


PROEFSTATION VOOR DE GROENTETEELT

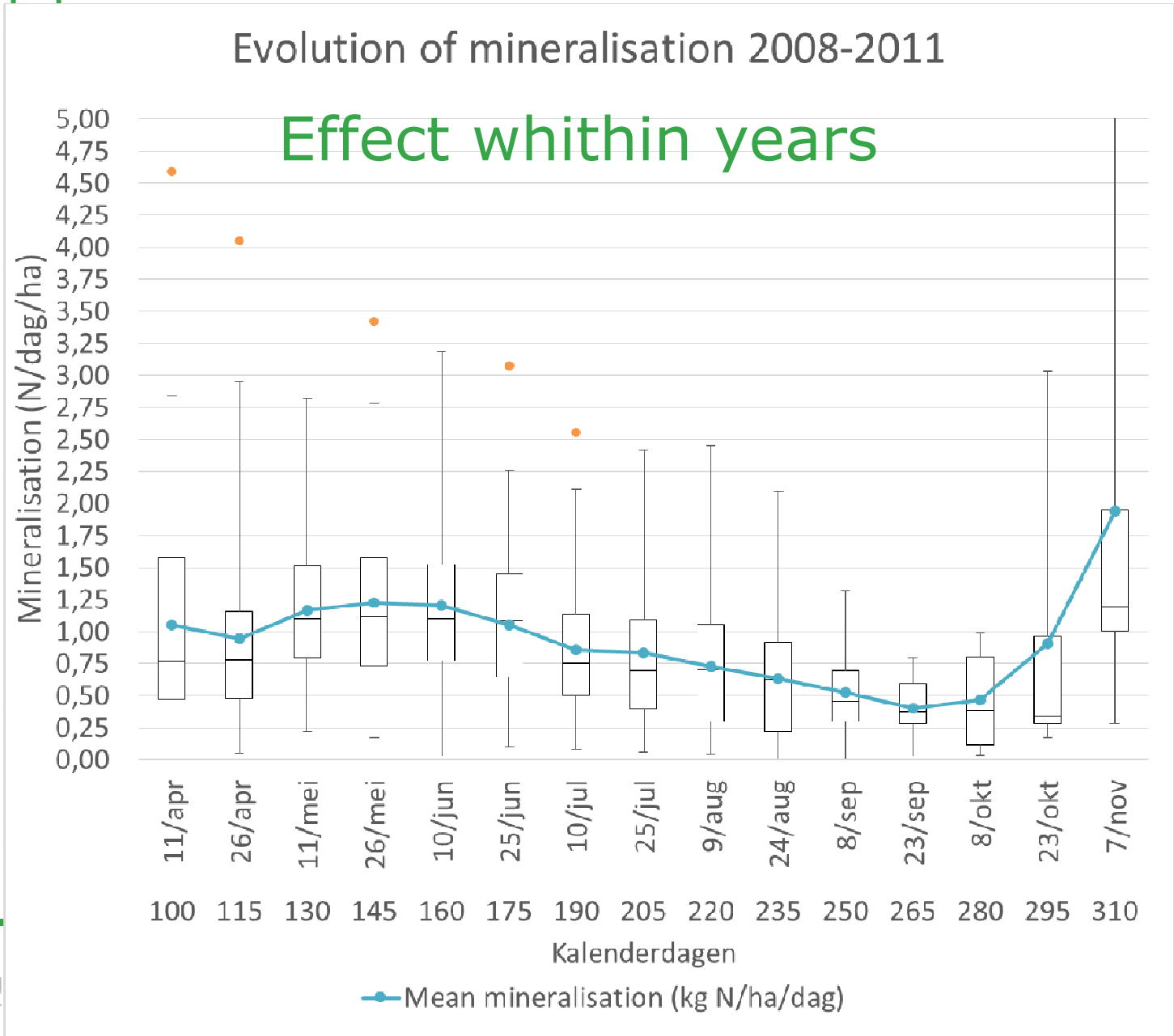
Can mineralisation predicted by % C?



Apparent mineralisation rates



Apparent mineralisation rates



Apparent mineralisation rates

- In practice: wide range
  - Difficult for N-advising: which rate is appropriate?

- Standard calculations 0.8 kg N/ha/day
- Experience advisor (knowledge field) 1 or 1.2 kgN/ha/day
    - Farmyard manure(high doses)→high mineralisation
    - Frequently use of compost→ normal-low min. Rates

Solutions?

Complexity increases when:

- Crop residues /catch crops are incorporated
- N-content tables of crop residue exists but how reliable?
- Uptake N catch crops depending on N-fraction soil

Tools for better calculation? Given the narrow margins for soil residue?

Cost?

Questions?

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