

SPNA Agroresearch

Stichting Proefboerderijen Noordelijke Akkerbouw

Update: 6 maart-2023



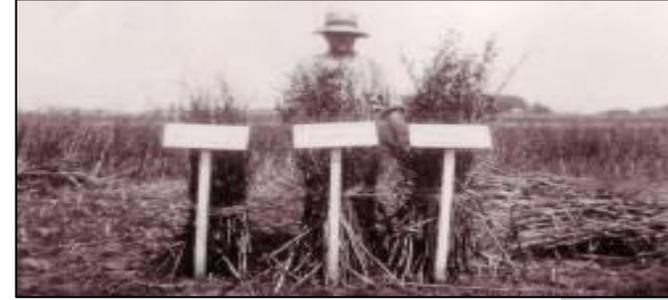
Today's meeting

- ▶ General information SPNA
- ▶ NBS:Reducing the infection of virus spread in seed potatoes due to aphids
- ▶ Questions
- ▶ Alfalfa an Grassclover Pellets Compared to standard fertilizer in winter wheat
- ▶ Questions

SPNA

- ▶ 2 locations, 4 farms, total appr. 250 ha
- ▶ Ca. 15 employees, interns and additional flex workers
- ▶ Flat organisation
- ▶ Independent, strategic cooperation's

- ▶ History: Governmental test farm => privatization
 - ▶ Responsibilities by SPNA
 - ▶ No structural external subsidies
 - ▶ Project based, payed by partners
- ▶ Research, projects and practice
- ▶ Own locations and extern locations
- ▶ Demonstrations and trials
- ▶ Excursions and open days
- ▶ Meeting facilities



Projects - trials and more...

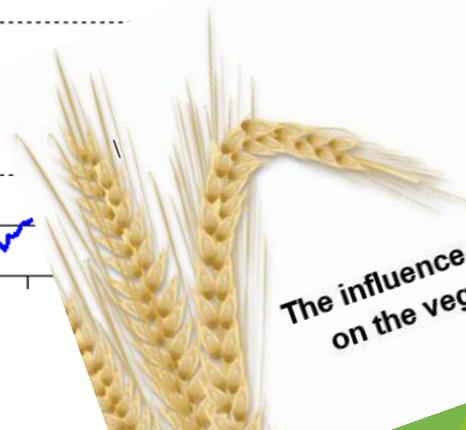
- ▶ Wide tracked tractors
- ▶ Field and property emissions
- ▶ Spray technologies
- ▶ Wheat and Potato academy
- ▶ Mechanisation
- ▶ Covercrops
- ▶ Planty Organic
- ▶ Salinisation research
- ▶ Nature inclusive Agriculture
- ▶ Strip cultivation
- ▶ Climate adaption
- ▶ Fascinating (proteinproject)
- ▶ Trans4Num (nature based-solutions: mown fertilisers)



Stikstof uitspoeling en efficiëntie



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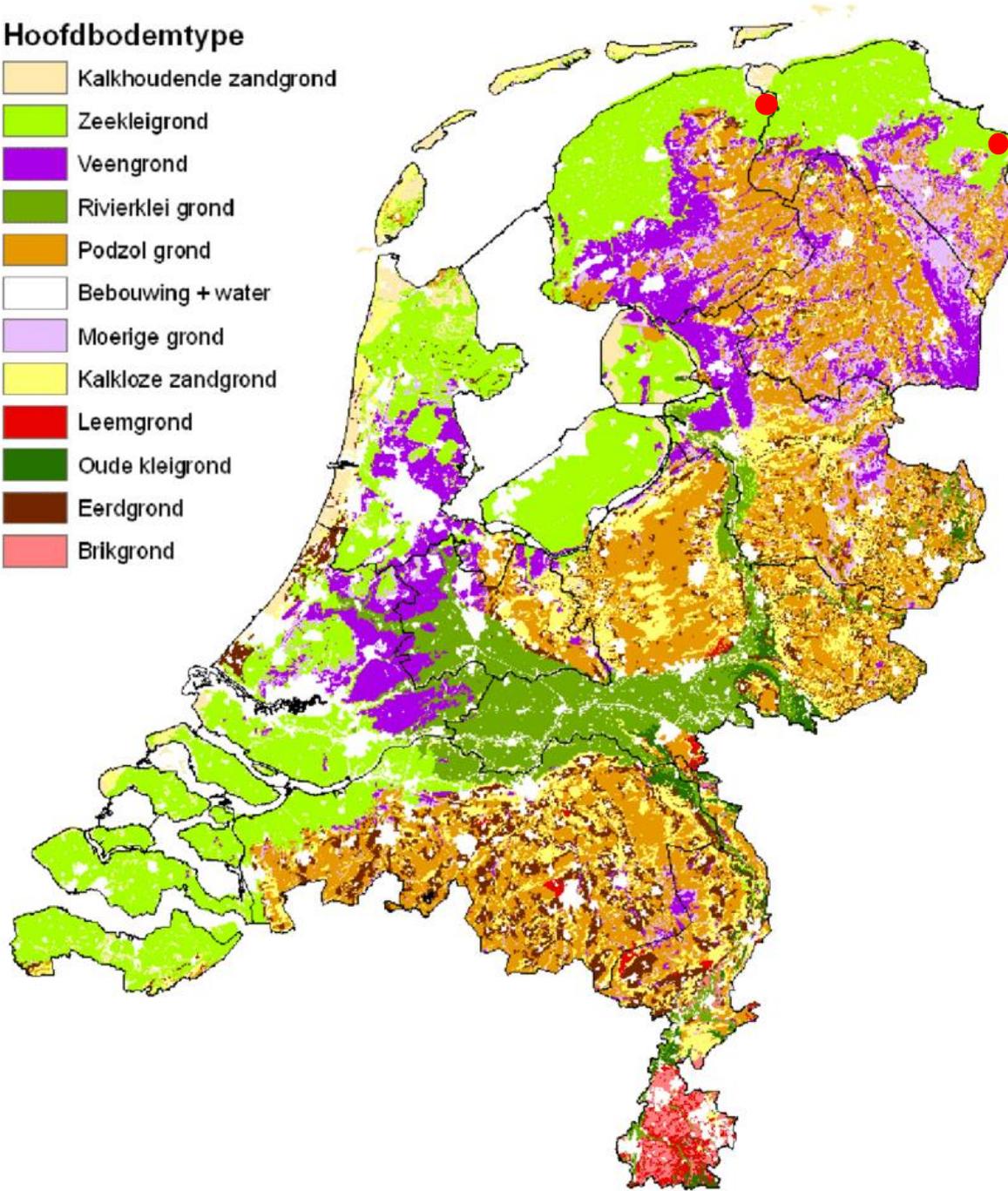
The influence of salinisation and ploughing on the vegetative growth of winter wheat (*Triticum aestivum* 'Extar')
BSc.

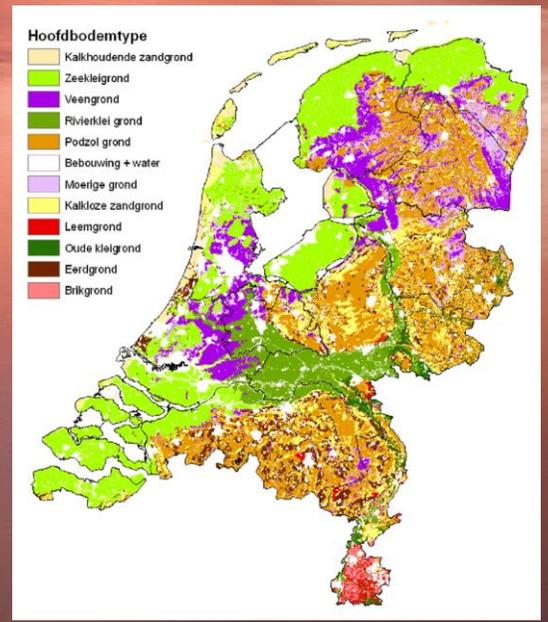
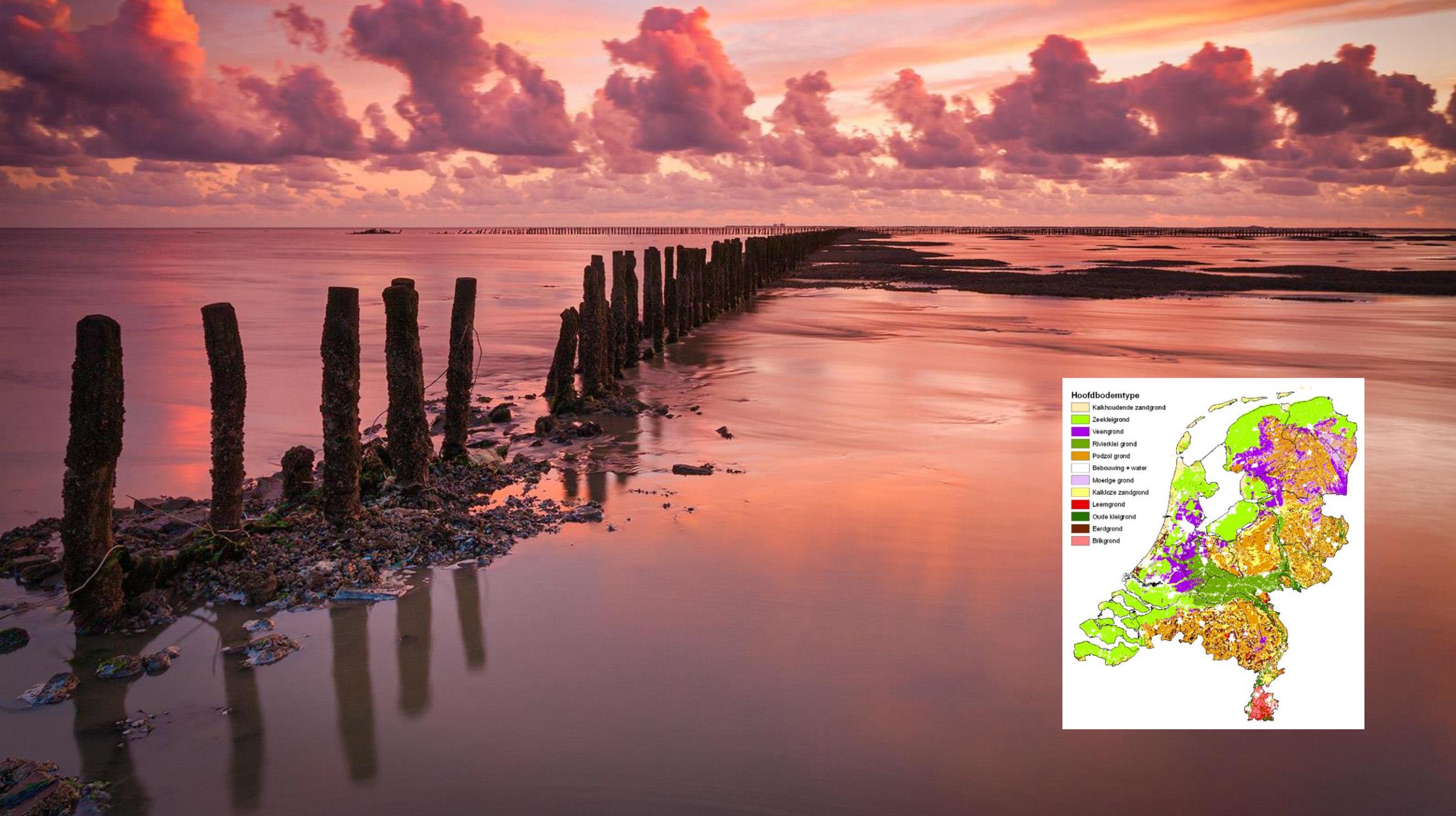


Figuur 1: Diverse waarnemingen aan het gewas half juli.

Hoofdbodentype

- Kalkhoudende zandgrond
- Zeekleigrond
- Veengrond
- Rivierklei grond
- Podzol grond
- Bebouwing + water
- Moerige grond
- Kalkloze zandgrond
- Leemgrond
- Oude kleigrond
- Eerdgrond
- Brikgrond







NBS IN THE NETHERLANDS

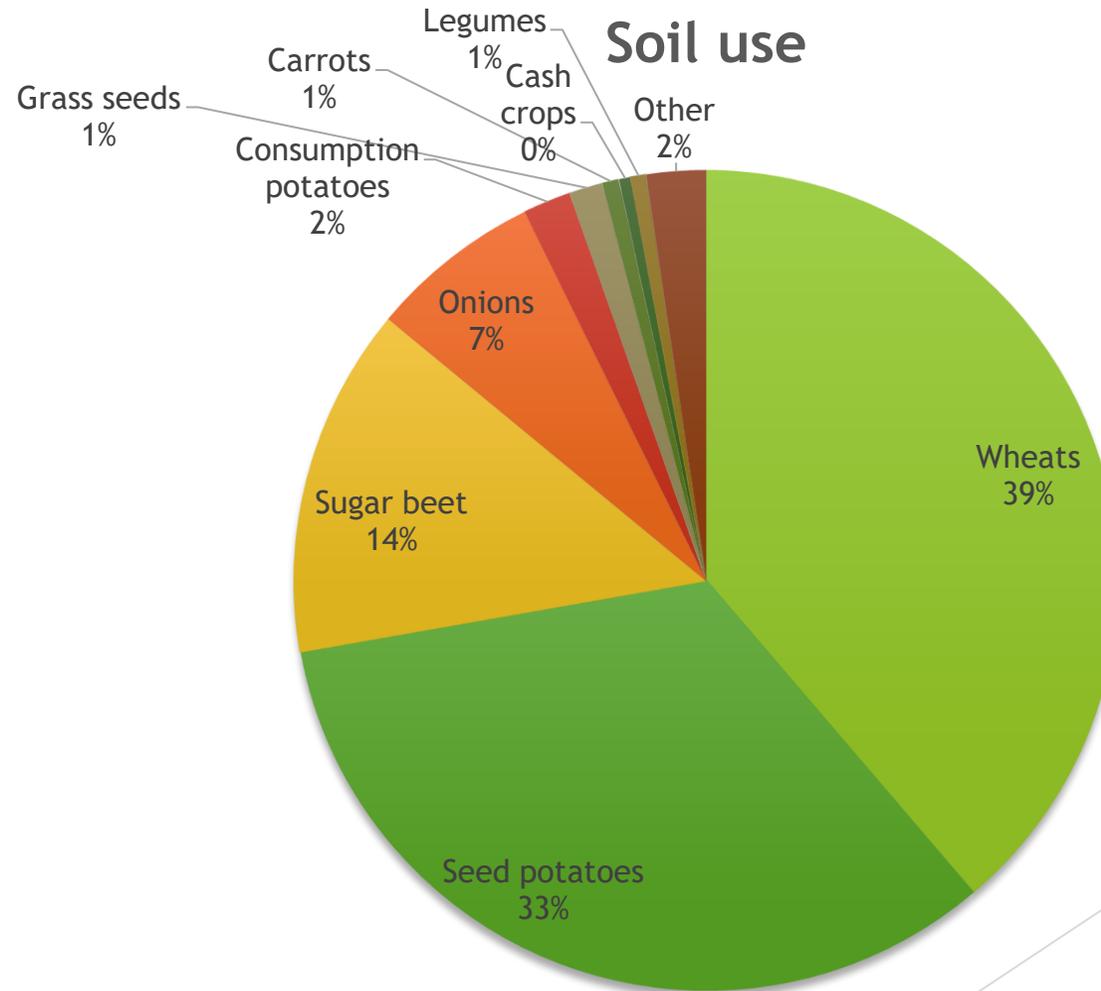
NBS: Reducing the infection of virus spread due to aphids

Alfa Alfa an Grassclover Pellets Compared to standard fertilizer in winter wheat

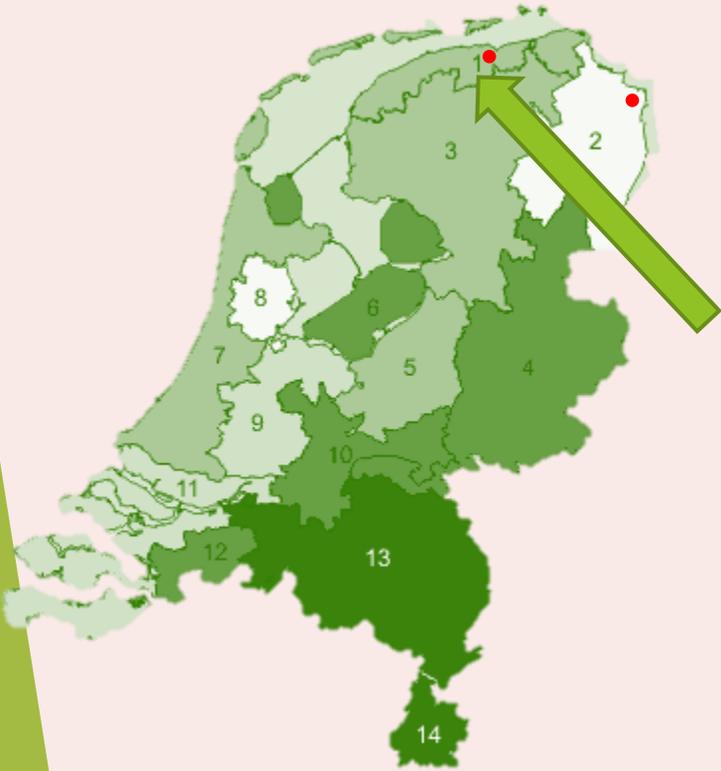
CROP ROTATION NORTHERN CLAY SOILS

Focus on seed potatoes

- Light clay soils



FARMERS

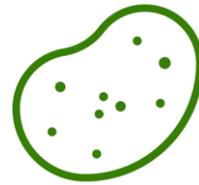


20XX

662 FARMERS KVK



337 SEED POTATO FARMERS



231 BILLION



PREVENT POTATO VIRUS



1. HIGH QUALITY SEED POTATOES

infected potatoes infect aphids which infect other potatoes

2. SEED POTATO SELECTION

Take out the infected plants in the fields (by hand) to prevent spreading the infection.

3. SPRAYING OIL

Closing off the leaf off potatoplant: Aphids don't like the oil and it works like a filter for virus infection

4. APHID KILLERS

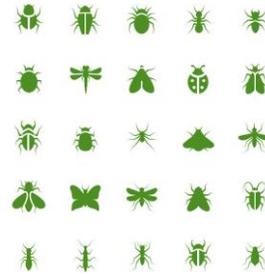
Kill all the aphids that are in the field

TRENDS

CHEMICALS



MORE APHIDS/ INSECTS



FERTILISERS



ANIMAL MANURE



?

BIODIVERSITY



?

LABOUR



Solution?



- ▶ Prevent Aphids to be at the field

How does it work



What aphids
see



Trial

- ▶ Straw and alternatives?
 - ▶ Risks weeds
 - ▶ Grain stock
 - ▶ C/N ratio straw high
- ▶ Spreading straw in seed potatoes
- ▶ Spreading grassclover in seed potatoes
- ▶ Spreading fresh grass in seed potatoes

The plot



	B	
	A	
	D	
	C	
	A	
	B	
	C	
	D	

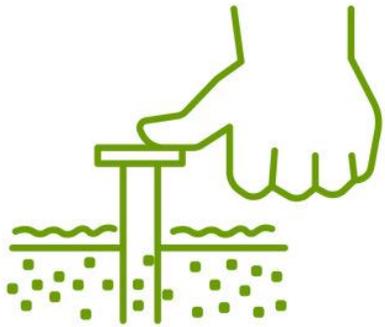
A= As practice

B=Straw

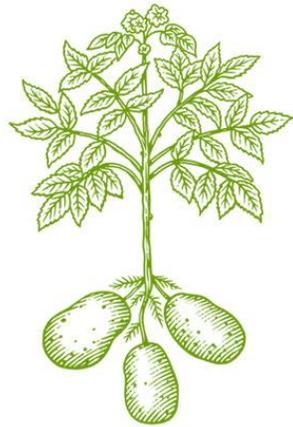
C=Grassclover

D=Fresh grass

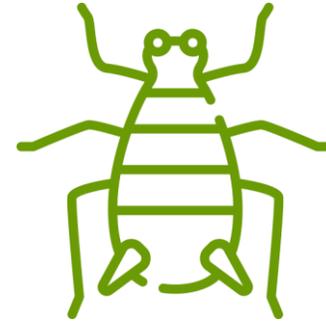
Measurements



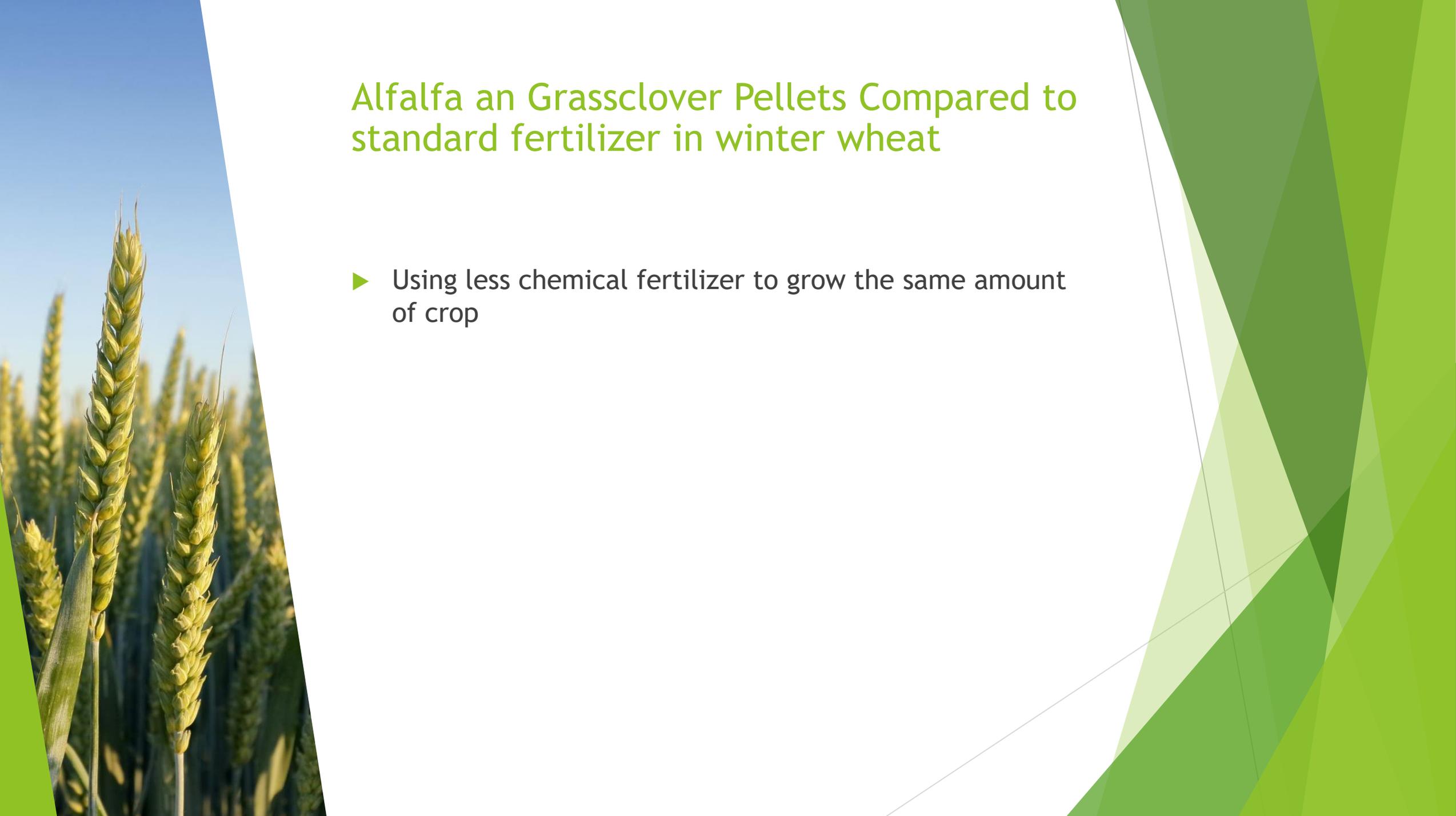
Soil samples N



Yield
PCR



Number of aphids

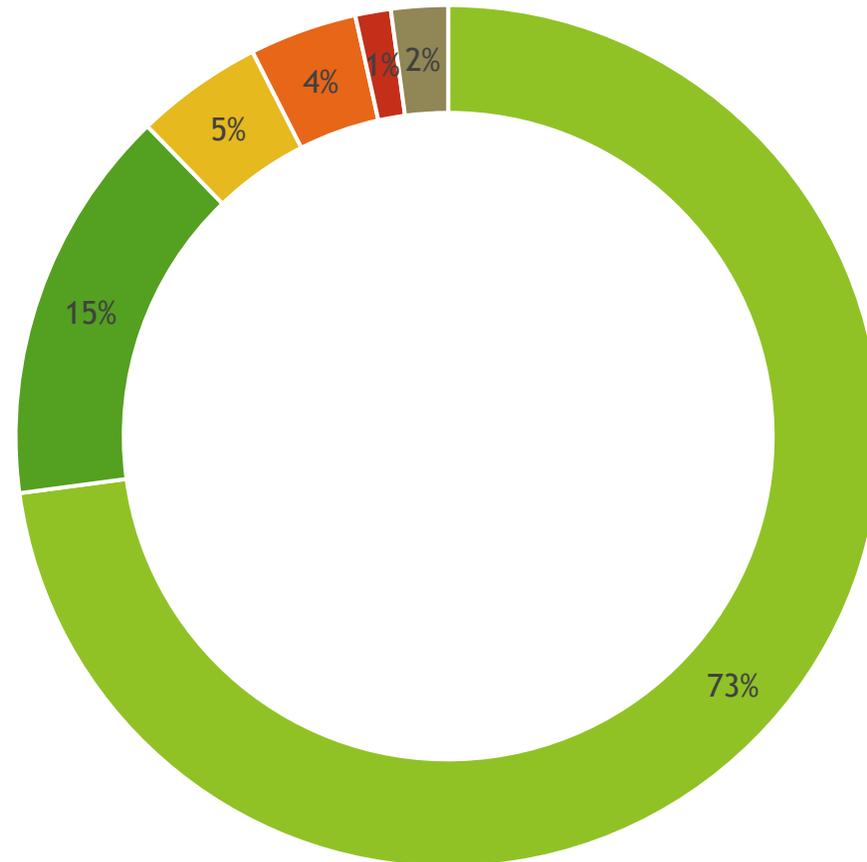


Alfalfa and Grassclover Pellets Compared to standard fertilizer in winter wheat

- ▶ Using less chemical fertilizer to grow the same amount of crop

Crop rotation Oldambt

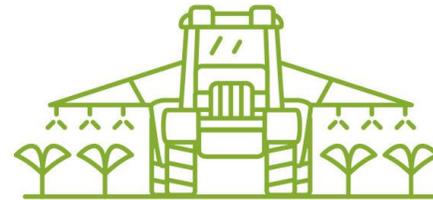
- ▶ Heavy clay soil
- ▶ Main crop: Wheats
- ▶ Mown crops
- ▶ Conventional



■ Wheats ■ Sugarbeet ■ Rapeseed ■ Potatoes ■ Vegetables ■ Other

Fertilizing

- ▶ Start with soil sample
- ▶ Calculate soil stock
- ▶ Give first fertilizer
- ▶ 245 kg N/ha - N-min soil stock
- ▶ 2nd dose



Fertilizer

- ▶ Alfalfa pellets
- ▶ Grassclover pellets
- ▶ Calculate dose of nutrients out of analysis of the product



Why?

- ▶ Natural materials to use
- ▶ Non productive field edges GLB
- ▶ Optimal use of fertilizers



Measurements

- ▶ Yield per applied object
- ▶ General crop overview
- ▶ General quality analyses of the harvested product: protein, starch, zeleny-number and hecto-litre weight.

