



Manure and Organic Fertilizer Trials

Martin Nørregaard Hansen

ph.d., Senior consultant, SEGES Innovation

NFTN Conference

Aarhus 25.01.2026

Field trial studies at SEGES Innovation

- SEGES Innovation conducts about 50 field trial studies annually focusing on fertilization effects of organic fertilisers. An increasing share of those includes studies of the emission of N_2O
- All trials are carried out similar the condition used in practical agriculture
- All trials are managed and processed via the Nordic Field Trial System (NFTS)
- All trials are conducted with equipment adapted to the task and by personal trained for the job
- All results are published in the book "Landsforsøgene"



Field trial for measurement of fertilisation effects and emission of greenhouse gases from organic fertilisers

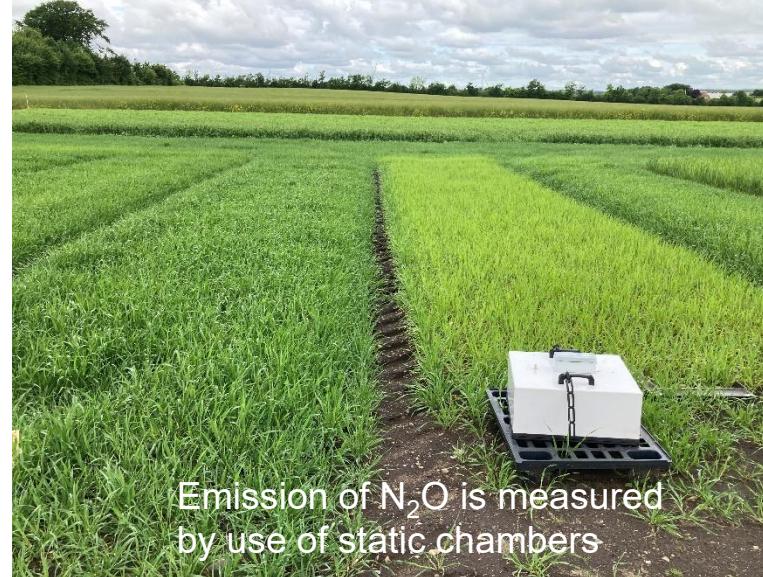


Each experimental plot is:

- 3 x ca. 20 m
- Replicated four times
- Randomly situated



All fertiliser is applied by use of experimental equipment adapted the design of the experimental plots



All fertilisers are applied by use of experimental equipment developed to fit the design of the experimental units



The ammonia emission from land applied manure is depending on the land application technology used

6

So is the N_2O emission



Ammonia loss



N_2O emission



Trailing shoe



Shallow injection

Deep injection



New design of soil injection technology to reduce the emission of N_2O emission – without reducing the Nitrogen fertiliser effects



Narrow tine injector



Goose foot tine injector



Tine injector

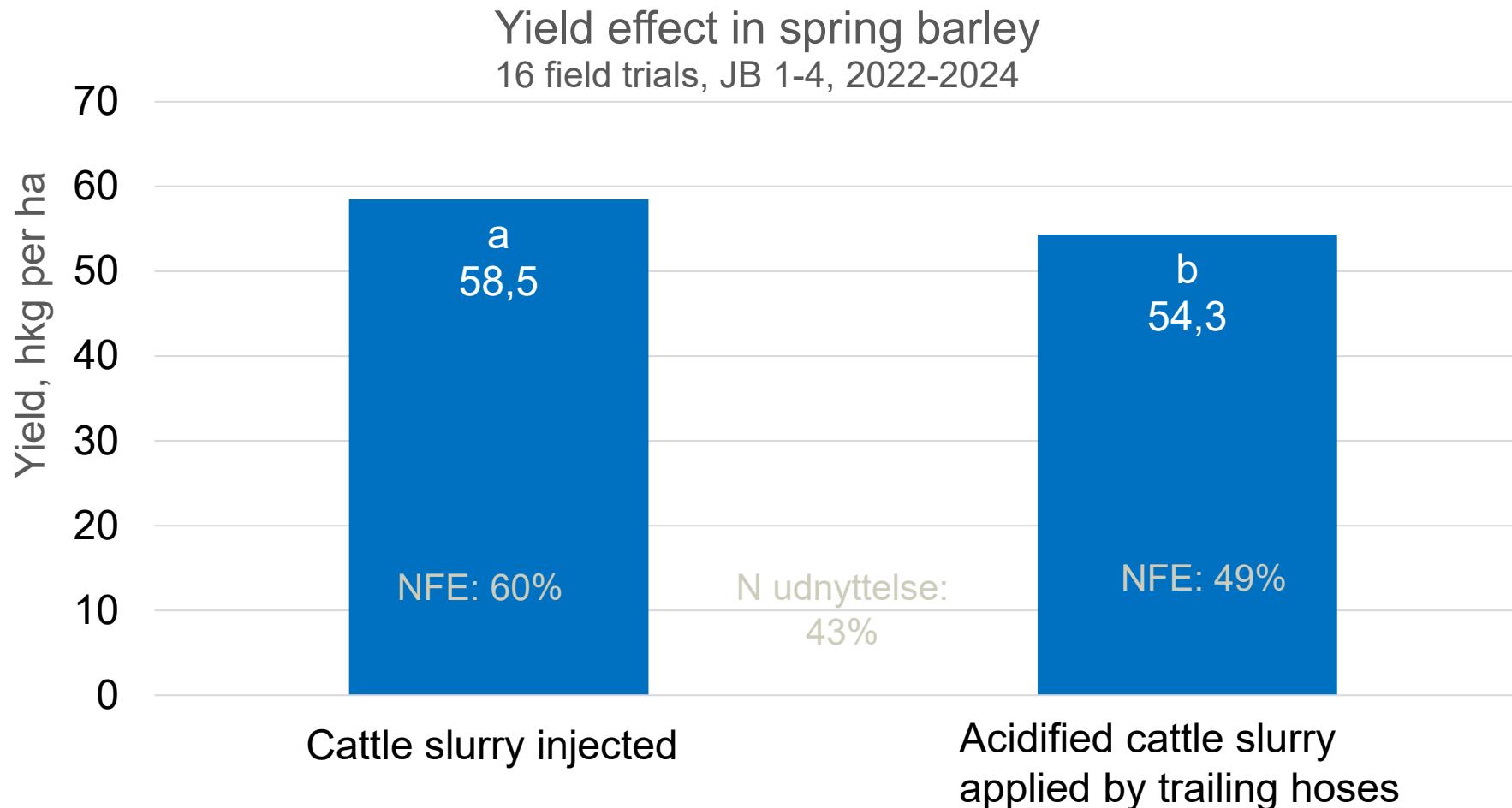


Disk injector



Injection increases yield and nitrogen utilisation

Additional yield of injection: 4,2 hkg pr. ha



Studies of application technologies in Conservation agriculture

Injection



Acidification



Shallow injection



Black soil injection

Foto: Henning Sjørsley, SEGES



Tine injector



Disk injector



Trailing hoses

Yield effects of pig slurry to spring barley in CA systems

Spring barley 2025, 3 forsøg, JB 1, 4 og 7	Acidification	Plants per m ²	Yield, kg N pr. ha	Yield and additional yield, hkg per ha
Tine injector	-	210	114	81,2 a
Tine injector, goose foot	-	215	115	-1,2 a
Trailing hoses + acidification	+	210	101	-5,0 b
Trailing hoses + acid and incorp.	+	224	105	-2,0 ab
Trailing hoses + acid (Bomech)	+	209	106	-1,9 ab
Shallow injection	+	213	104	-1,8 ab
Diskinjection	-	219	108	- 0,5 a



Foto: Henning Sjørslev, SEGES



Thank you
– and thanks to the people doing all the hard work.

Questions, comments?



Foto: Morten Krupa, Ytteborg