

Teknik til nedfældning af gylle i græs og korn

TAVS NYORD, AARHUS UNIVERSITET





Tidligere forsøg

År	Lokaliteter/blokke	Gentagelser per blok	LSD (hkg/ha)
2007	4	5	8,0
2008	4	4	5,3
2009	4	4	6,1

- › LSD værdi ~ mindre 1 hkg/ha
- › Minimum 120 gentagelser per behandling


Forsøgsplan

- › Udbytteforsøget (128 gentagelser):
 - › Skiveskær
 - › UNTER
 - › Slæbeslanger

- › Køreskader (uden gylle) (77 gentagelser):
 - › UNTER, høj hastighed
 - › UNTER, normal hastighed
 - › Ingen nedfældning



Foto: Torkild Birkmose

A close-up photograph of the threshing mechanism of a combine harvester. The image shows a large, circular metal rotor on the left, which is part of the threshing drum. To its right are several curved metal fingers or beards, which are used to separate the grain from the chaff. The metal parts are dark and show signs of wear and rust. In the background, a person wearing a green and white striped shirt is partially visible, working on the machine. The entire scene is set against a bright, green field under a clear sky.

Skiveskær

Foto: Torkild Birkmose

A close-up photograph of a dense patch of green grass, likely a species of sward grass, growing in a rocky and soil-filled area. The grass blades are long, narrow, and pointed, with a vibrant green color. The ground is composed of dark brown soil and numerous small, light-colored rocks and pebbles. The overall appearance is that of a natural, uncultivated area.

Skiveskær

Foto: Torkild Birkmose

A close-up photograph of the lower moldboard plow assembly of a tractor. The image shows three vertical white shafts, each with a dark, pointed moldboard attached. The moldboards are secured with metal brackets and bolts. A metal clamp is visible on each shaft. The background is a field of green grass. The word "UNTER" is overlaid in white text in the upper right quadrant of the image.

UNTER

UNTER

Foto: Torkild Birkmose

Slæbeslanger



A top-down photograph of a dense patch of Slæbeslanger (Sedum album). The plants are characterized by their numerous, narrow, lanceolate leaves that are bright green and arranged in a somewhat upright, clumping pattern. The ground is a mix of dark brown soil and light-colored, possibly calcareous, rocks or pebbles. The lighting is bright, creating some shadows and highlights on the leaves.

Slæbeslanger

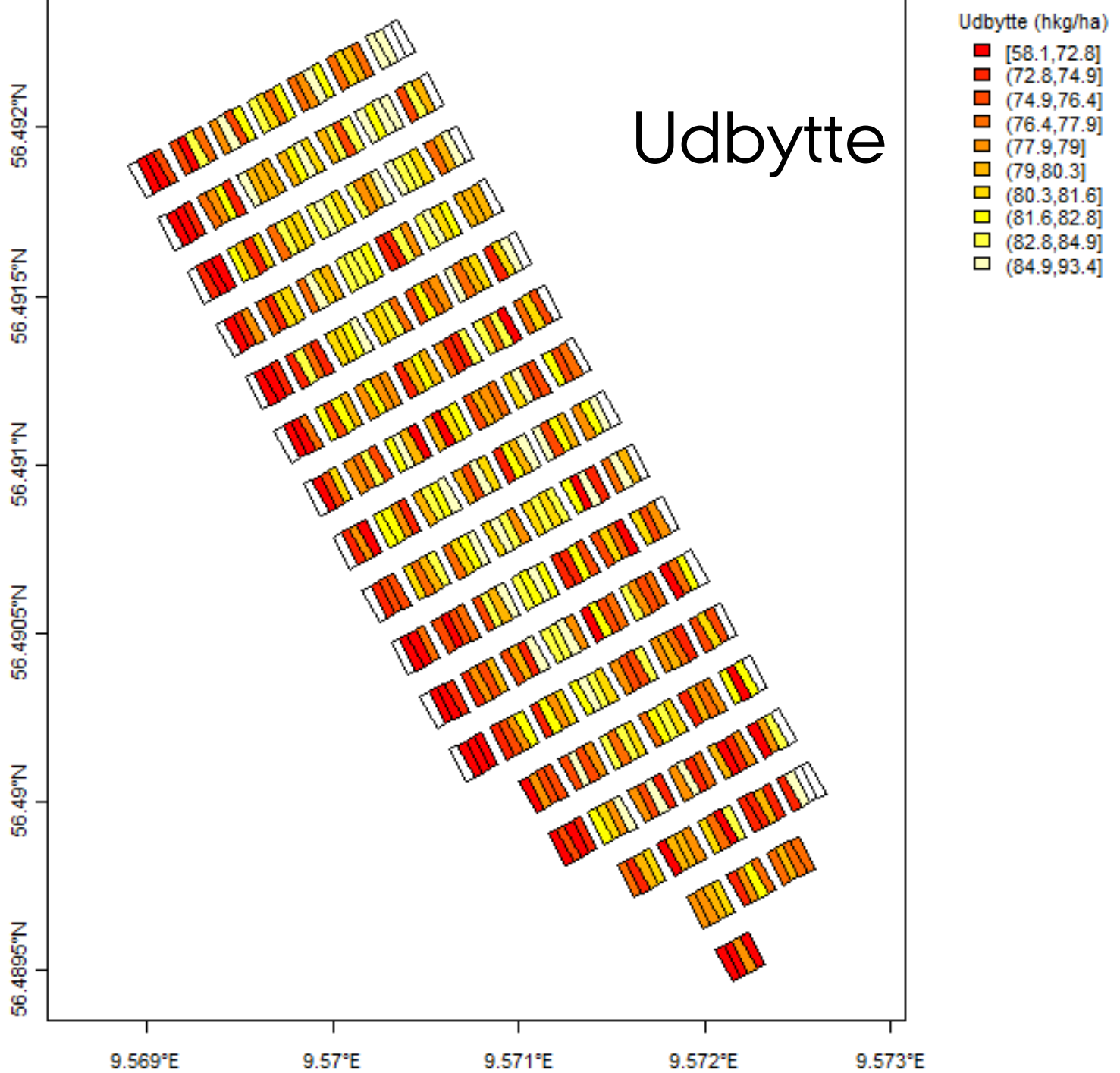
Foto: Torild Birkmose



Foto: Peter Storegård Nielsen, AU



Foto: Jens Bonderup Kjeldsen

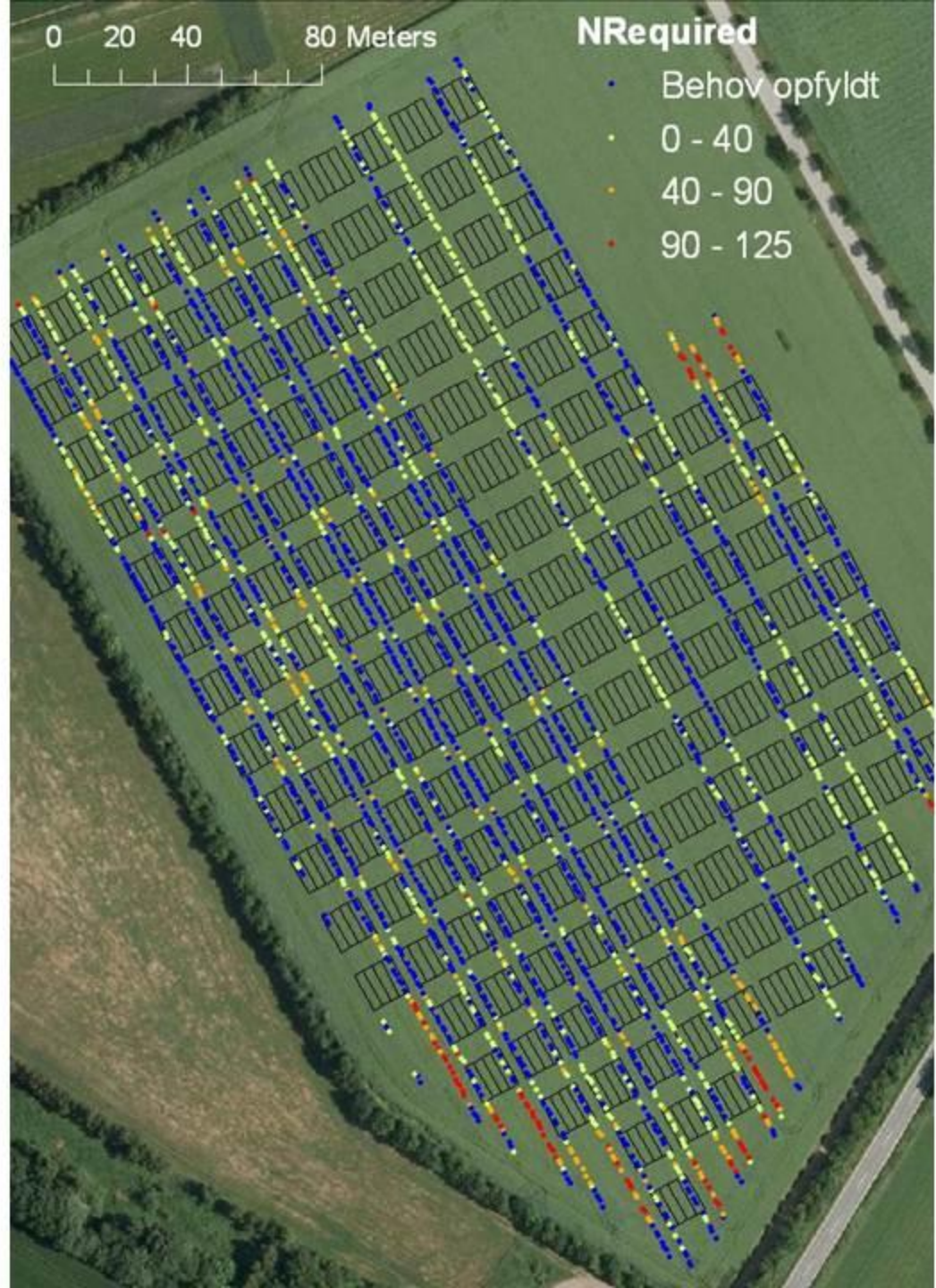


Gylleforsøget

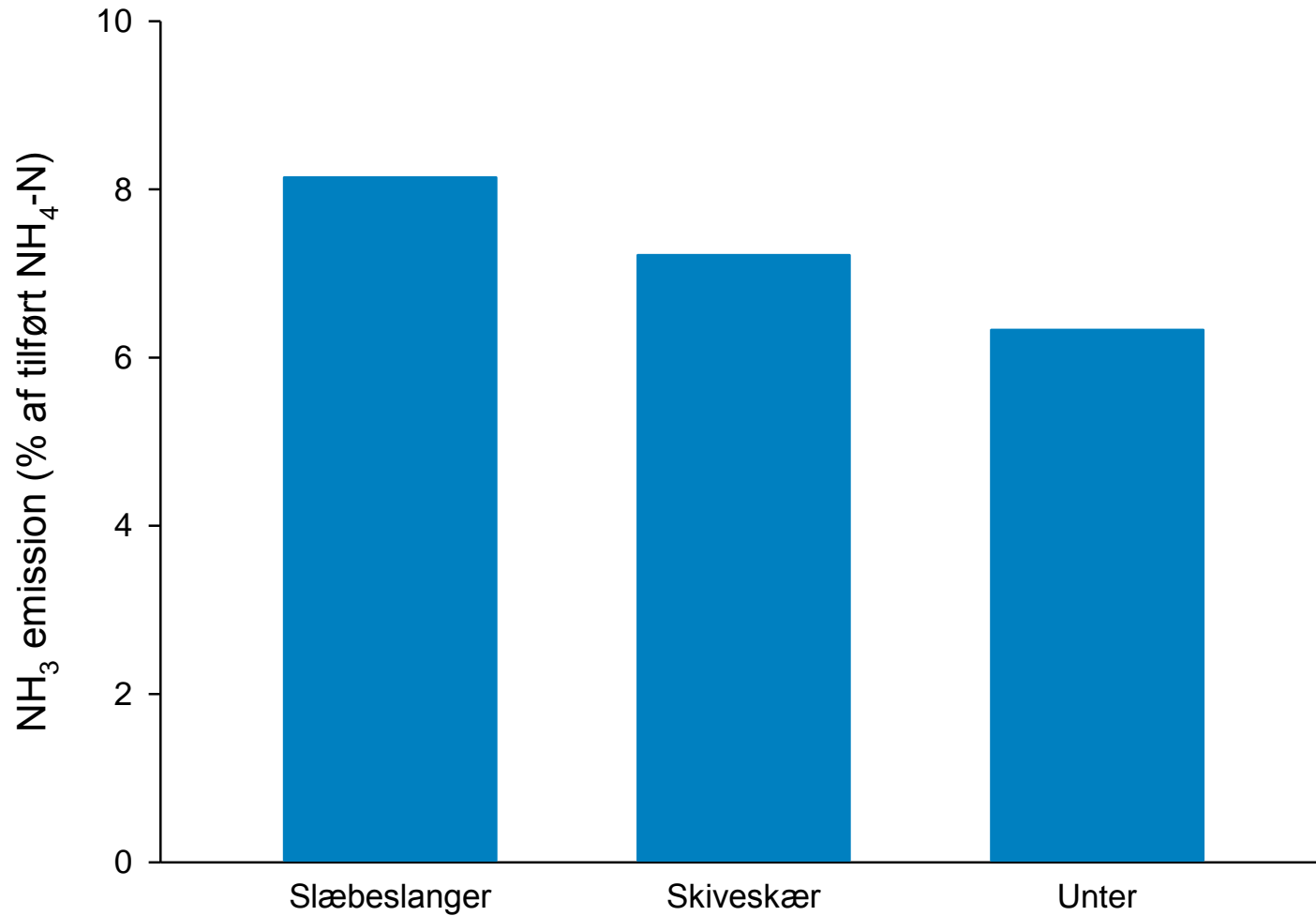
	Pct. råprotein i tørstof	Udbytte, kg N i kerne pr. ha	Udbytte, hkg kerne pr. ha
1. Slangeudlægning	9,0	109	81,5
2. Nedfældning, UNTER	9,6	111	77,5
3. Nedfældning, skiveskær	9,5	109	77,1
LSD	0,1		0,7

Afgrødeskadeborsøg

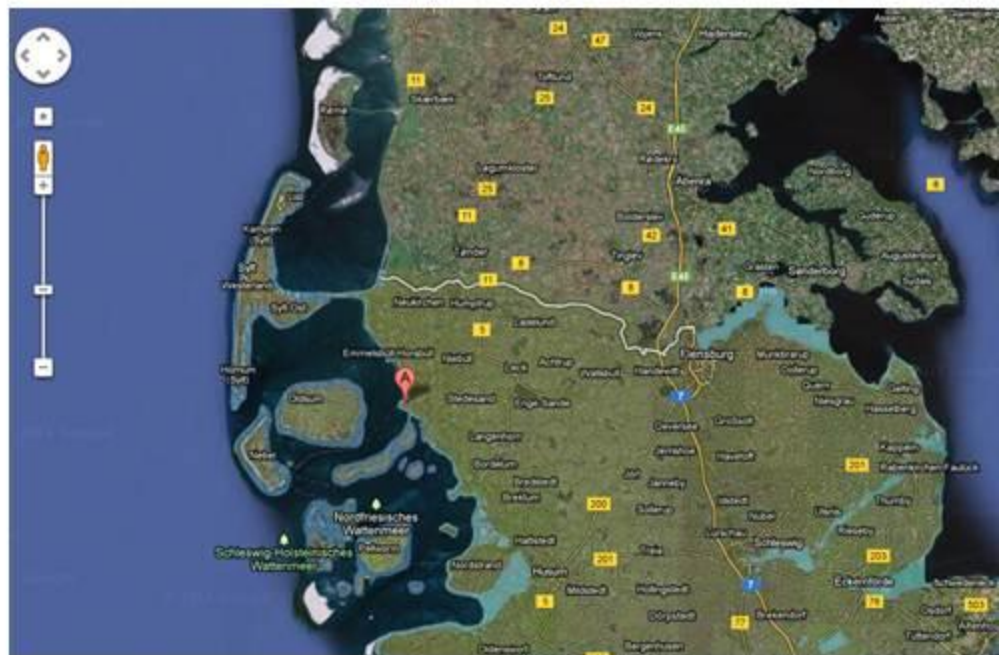
	Pct. råprotein i tørstof	Udbytte, kg N i kerne pr. ha	Udbytte, hkg kerne pr. ha
1. Nedfældning, UNTER, høj hastighed	10,5	117	75,1
2. Nedfældning, UNTER, lav hastighed	10,6	118	74,9
3. Ingen nedfældning	10,2	119	78,7
<i>LSD</i>	<i>0,1</i>		<i>0,9</i>



Emissionsmålinger

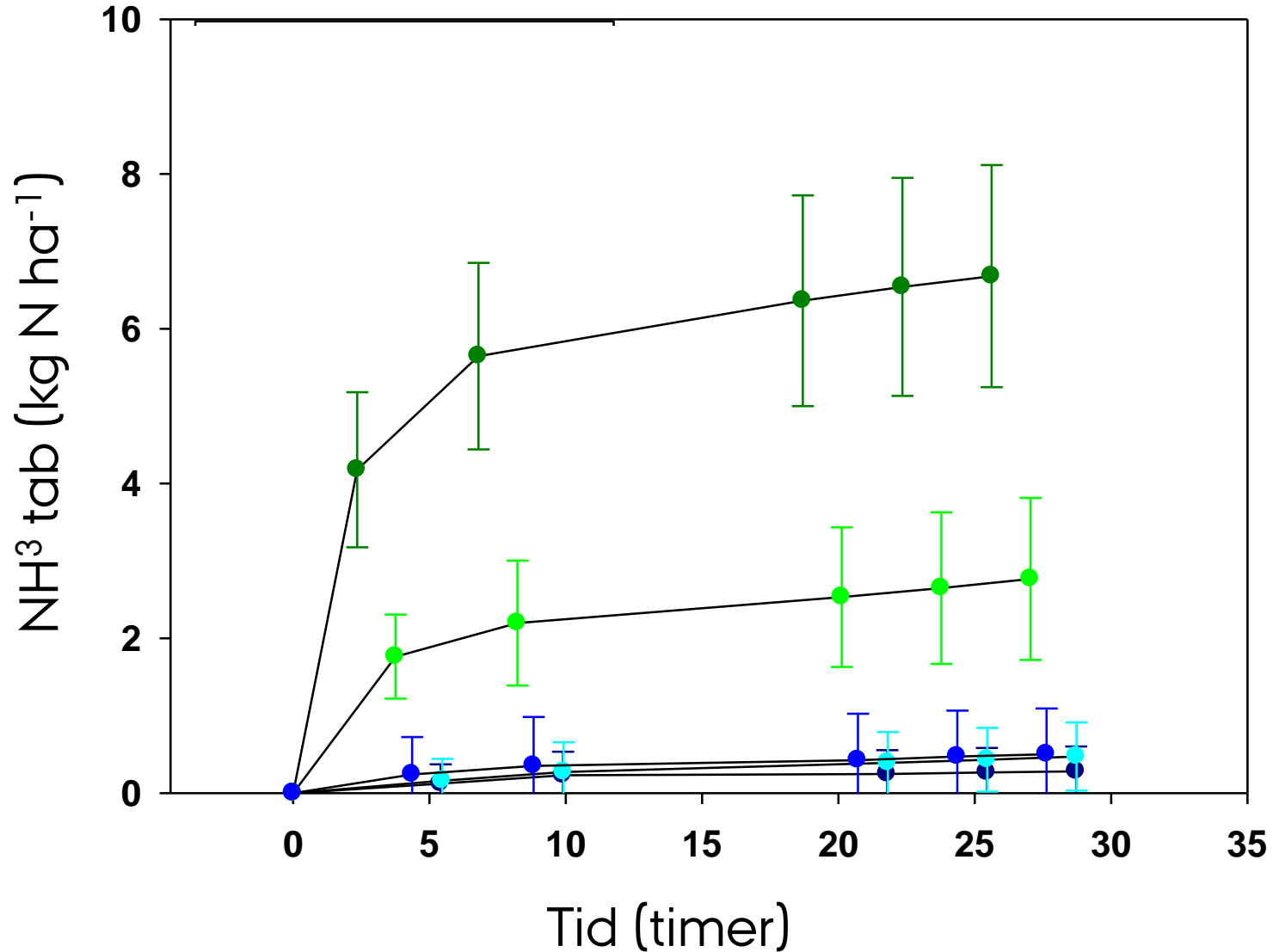


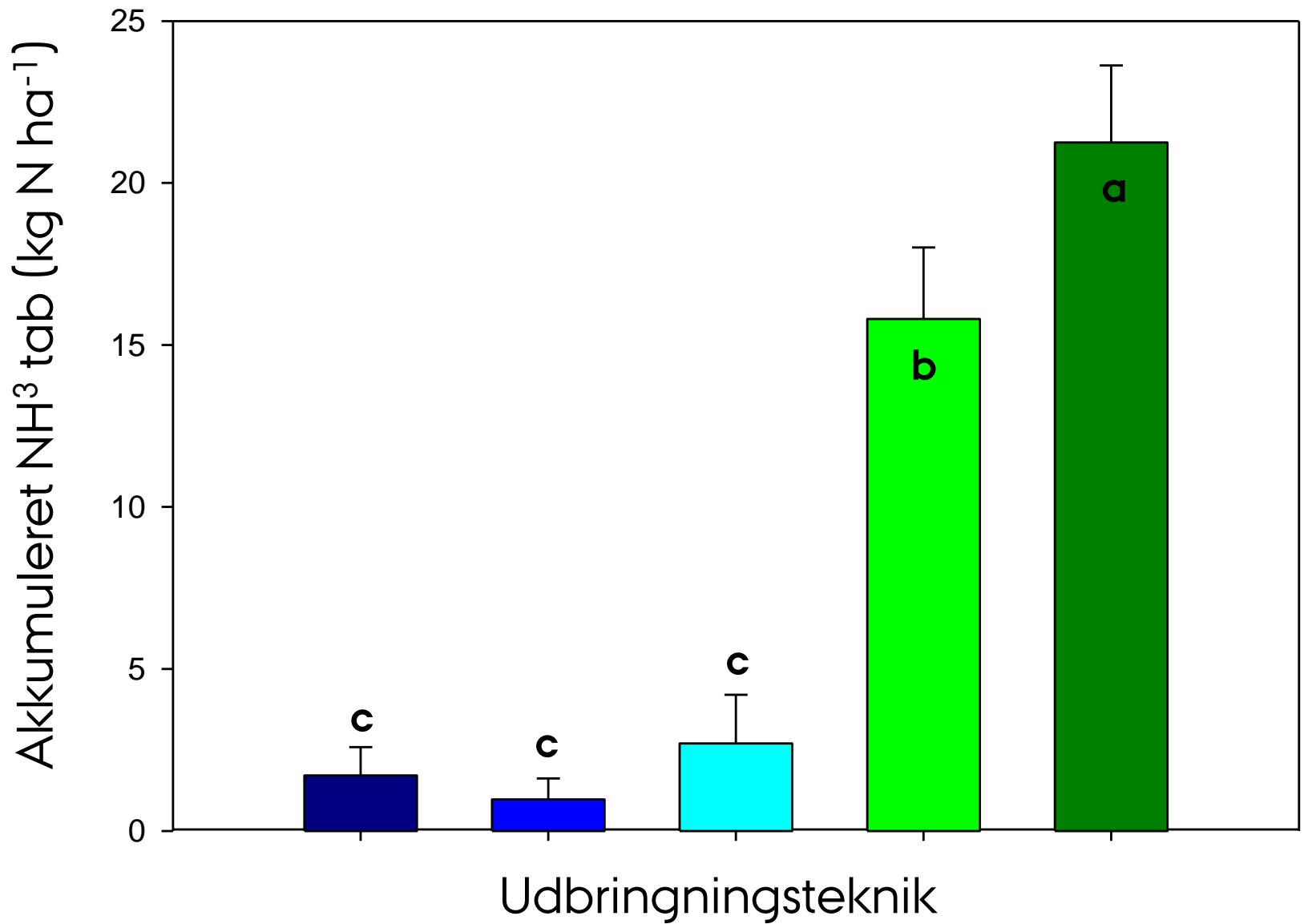
Græsnedfældning

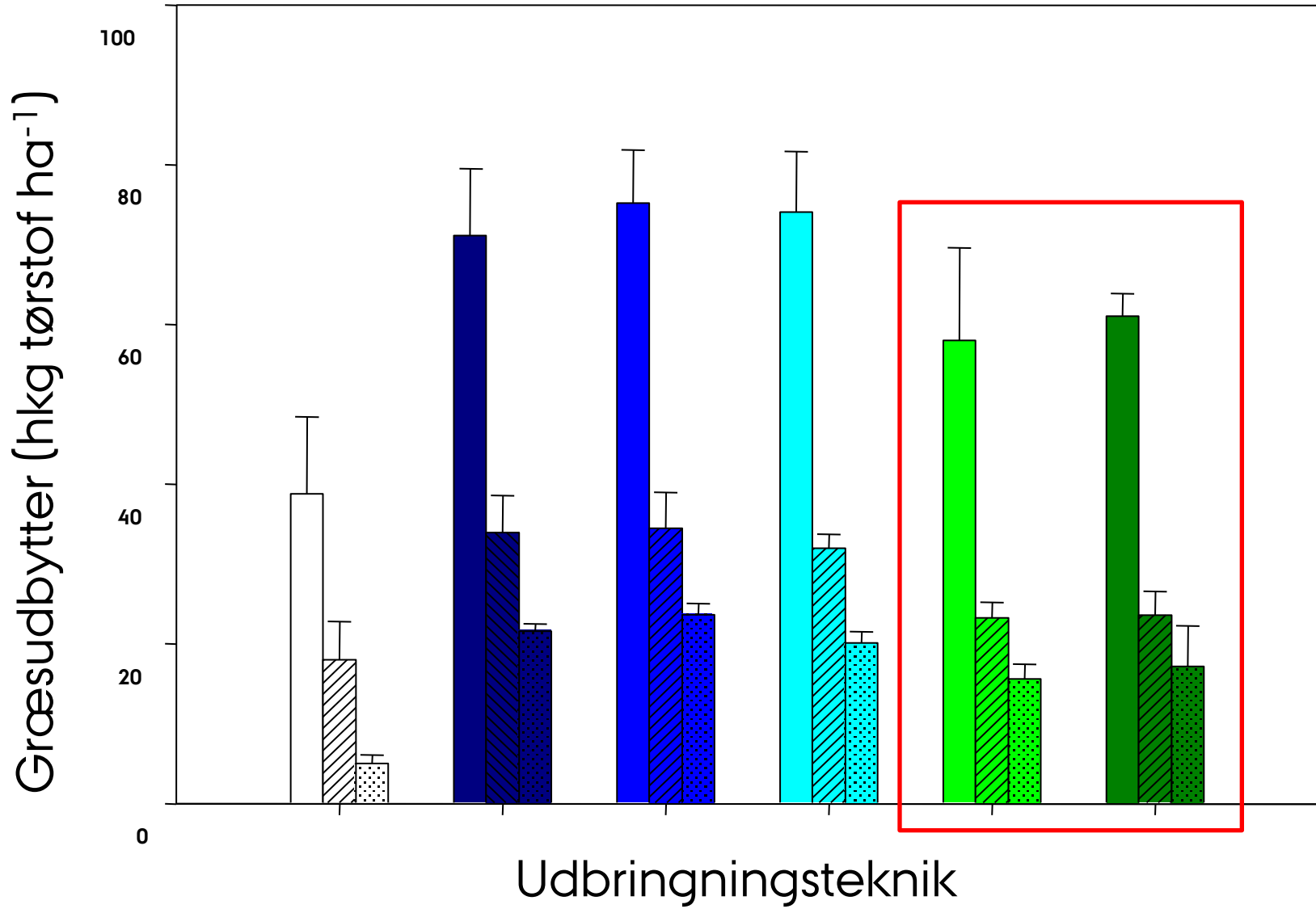


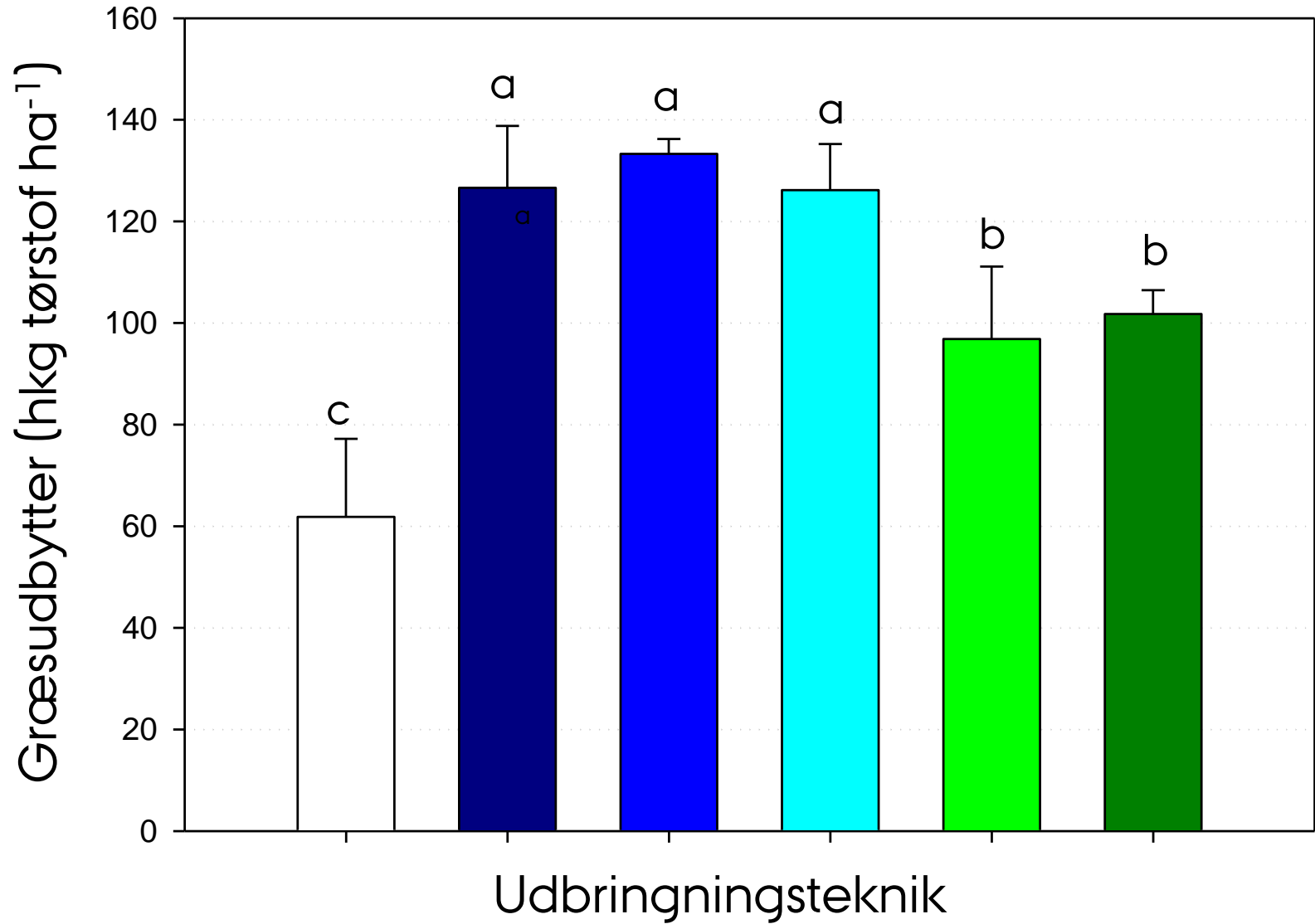
<p>N gødning</p>	<ul style="list-style-type: none"> ○ Handelsgødning - ammoniumnitrat ○ Biogas gylle: Svinegylle + helsæd (hvede/græs) pH ~7.8 $\text{NH}_4^+\text{-N}$ 65% N_{tot} 5 kg m⁻³
<p>Udbringningsteknik</p>	<ul style="list-style-type: none"> ○ slæbeslanger, nedfældet
<p>N niveau (kg N ha⁻¹)</p>	<ul style="list-style-type: none"> ○ 0, 120 (2. slæt), 70 (3. slæt), 70 (4. slæt)

NH₃ tab - før 4. slæt









Sammenfatning

- › Nyt forsøgsdesign virkede efter hensigten 😊
- › Markant reduktion af ammoniakfordampning 😞
- › Relativ stor afgrødeskade ved nedfældning 😞
- › Ikke nogen forbedret kvælstofudnyttelse 😞
- › Sikker metode til at reducere lugtemission 😊

- › Nedfældning reducerer ammoniakfordampningen og påvirker ikke udbytte i slætgræs
- › Forsøg fortsættes i 2012 i både DK og Tyskland og der sammenlignes med SyreN forsuring