

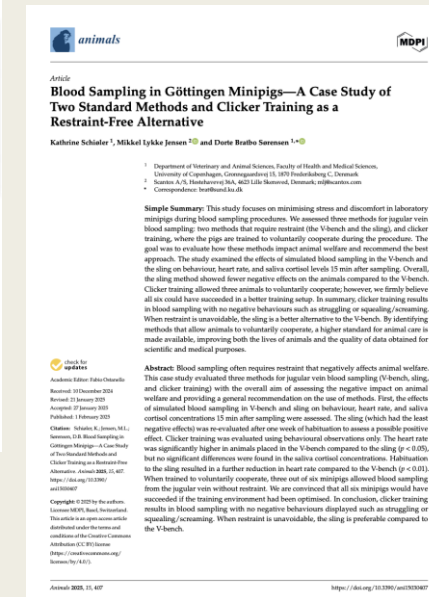


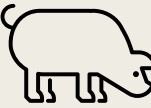
FRA KAMP TIL KLIK: JUGULAR-PUNKTUR PÅ MINIGRISE

Dyrlæge Kathrine Schiøler
Fredag d. 10 oktober · CeLAt symposium

Introduktion

- Hvem er jeg?
 - Dyrlæge på Hårlev Dyreklinik siden Januar 2024
- Speciale
 - Supervisor: Dorte Bratbo Sørensen og Mikkel Lykke Jensen
 - 21 dages klikkertræning → fra kamp til klik





6 Göttingen minigrise

- Reservedyr/stock
- Forskellig baggrund

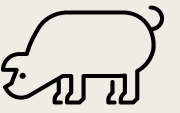
Animal ID	1	2	3	4	5	6
Sex	Boar	Boar	Gilt	Boar	Gilt	Gilt
Date of birth	26.10.22	22.02.23	22.12.22	25.10.22	28.01.23	10.02.23
Weight (kg)	21.6	14.4	21.4	22.6	15.1	15.8
OD	4 x	---	4 x	---	**	---
ID	1 x	---	---	---	**	---
Capsule dosing	---	---	---	1 x	**	---
IM	1 x	---	2 x	2 x	**	---
OA	1 x	---	---	---	**	---
BS, V-bench	1 x	---	1 x	3 x	**	---
BS, sling	---	---	---	---	**	---





- Fikseringsfri blodprøve
 - I en vogn til formålet
- 6 træningstrin
 1. Target stick
 2. Hagetarget
 3. Nye overflader
 4. Rampe
 5. Blodvogn
 6. Berøring
- Adskilt → Kombination

STEP	APPROXIMATION/CRITERIA
1	The click is associated with apple juice
2	Follows the target stick (TS) inside the pen for 4 meters.
3	Stands calmly with the snout into a station drinking apple juice
4	Follows the TS outside of the pen.
5	Follows the TS into a new room, in the back of the stable.
6	Follows the TS onto a ramp placed on the ground in the room (no wagon; ramp is horizontal).
7	Follows the TS into the metal frame of the wagon, with sides attached, but still placed on the ground in the room (no ramp).
8	Follows the TS onto the known ramp and into the known metal frame of the wagon, placed on the ground in the room.
9	Follows the TS onto the ramp and into the metal frame of the wagon with both sides and the station (from step 3) attached. Apple juice is continuously delivered at the station.
10	Follows the TS onto the ramp, up, and into the fully assembled wagon, placed approximately 30 cm above the ground on a lift, and places the snout in the station. Apple juice is continuously delivered at the station.
11	Stands calmly while a technician touched the ventral part of their neck using the verbal signal "touch" in their home pen.
12	Follows the TS onto the ramp, up and into the wagon, places the snout in the station, and stands calmly while a technician used the signal "touch" and simulates the blood sampling procedure in the external jugular vein. Apple juice is continuously delivered at the station.
13	Follows the TS onto a ramp, up and into the wagon, places the snout in the station, and stands calmly while a technician first uses the signal "touch" and thereafter uses the signal "pinch" followed by drawing blood from the external jugular vein. Apple juice is continuously delivered at the station.



Fra teori til praktisk anvendelse – Dag 1



- Operant betingning · Positiv forstærkning
 - *Klikker og æblejuice*
- Klikker (betinget forstærker) = Bindeled
 - *Ønskede adfærd · Belønning*
- 10 klik pr. træningssession – 2 sessioner dagligt
 - *21 dage = 60 minutter ialt*
 - *Slut: “Søg”*





Blodvogn, hagetarget og Target Stick





Target Stick – Day 2





Hagetarget – Dag 3





Target Stick – Dag 4





Luftning fra dag 5

- Aldrig luftet før
 - *Daglige lufteture*
 - *Tilvænning til vogn og rampe*
- Males ekskluderet
 - *Bortset fra Male 1*





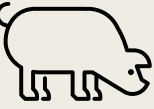
Dag 6, 7 & 8

- Følg TS ind til baglokalet
- Følg TS op på rampe, placeret horisontalt på gulv



Rampe og blodramme adskilt – Day 10





Blodramme, rampe og hagetarget – Dag 11 & 12





Male nr. 1 – Dag 12

- 7 dages træning → Delvist inkluderet efterfølgende





Samlet Blodvogn – Dag 14

- Vigtigt step - Reinforced i 3 dage
- Æblejuice kontinuerligt





“Røre” – Dag 18

- Indelukke → Blodvogn
- Dyrepasser deltog



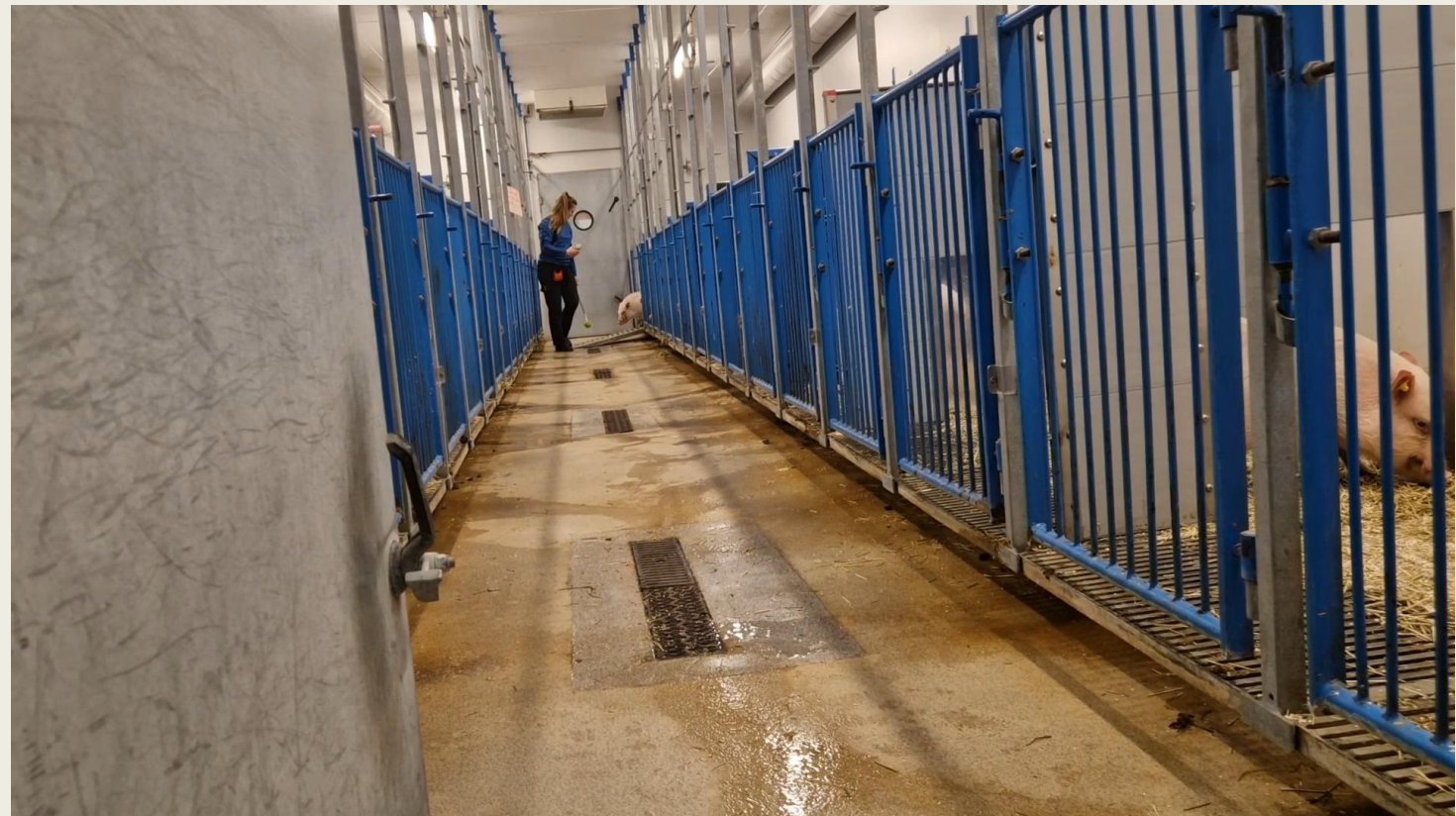
Simuleret blodprøve (Dag 19)

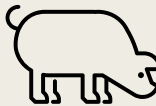




Resultat – Dag 21

- 3/6 minigrise
 - *Male 1: ✓*
 - *Female 3: ✓*
 - *Female 5: ✓*
- Female 6
- Male 1
 - *14 dage · 40 minutter*
 - *Arvæv?*





STEP	APPROXIMATION/CRITERIA	Pig 1	Pig 2	Pig 3	Pig 4	Pig 5	Pig 6
		Boar	Boar	Gilt	Boar	Gilt	Gilt
1	The click is associated with apple juice	X	X	X	X	X	X
2	Follows the target stick (TS) inside the pen for 4 meters.	X	X	X	X	X	X
3	Stands calmly with the snout into a station drinking apple juice	X	X	X	X	X	X
4	Follows the TS outside of the pen.	X	A	X	A	X	X
5	Follows the TS into a new room, in the back of the stable.	X	A	X	A	X	X
6	Follows the TS onto a ramp placed on the ground in the room (no wagon; ramp is horizontal).	X	A	X	A	X	X
7	Follows the TS into the metal frame of the wagon, with sides attached, but still placed on the ground in the room (no ramp).	X	A	X	A	X	X
8	Follows the TS onto the known ramp and into the known metal frame of the wagon, placed on the ground in the room.	X	A	X	A	X	X
9	Follows the TS onto the ramp and into the metal frame of the wagon with both sides and the station (from step 3) attached. Apple juice is continuously delivered at the station.	X	A	X	A	X	X
10	Follows the TS onto the ramp, up, and into the fully assembled wagon, placed approximately 30 cm above the ground on a lift, and places the snout in the station. Apple juice is continuously delivered at the station.	X	A	X	A	X	X
11	Stands calmly while a technician touched the ventral part of their neck using the verbal signal “touch” in their home pen.	X	X	X	X	X	X
12	Follows the TS onto the ramp, up and into the wagon, places the snout in the station, and stands calmly while a technician used the signal “touch” and simulates the blood sampling procedure in the external jugular vein. Apple juice is continuously delivered at the station.	X	A	X	A	X	B
13	Follows the TS onto a ramp, up and into the wagon, places the snout in the station, and stands calmly while a technician first uses the signal “touch” and thereafter uses the signal “pinch” followed by drawing blood from the external jugular vein. Apple juice is continuously delivered at the station.	X/C	A	X	A	X	B



Hvis jeg skulle gøre det igen...

- Blodudtagning i deres indelukke
- Fiderer et al., 2024
 - 12 hungrise
 - 12 dage
 - 2-4 træningssesjoner
 - Hagetarget fastgjort låge
 - 10/12
- Reducerer steps → forkorter træningsperiode



Fra Fiderer et al, 2024: **Figure 1.** Minipig standing with the head held in the plastic target tube.



Hvad skal du bruge?

- Klikker
- Forstærkning/belønning
- Klikkertræning teori
- Planlægning
- Faciliteten og ansatte
- Logbøger
- Ekstra blodudtagningsmetode
- Just do it!



Tak!



- *Stor tak til Dorte Bratbo Sørensen og dyrepasser Pernille Olesen!*
- Spørgsmål?





Fordele ved klikkertræning

- Klikkertræning
 - *21 dage · 60 minutter per gris*
- Aklimatisering- og socialiseringsperiode
 - *21 dage · 30 minutter per gris*
- Ingen tunge løft · Ingen larm
- Target stick → Yderst brugbart!
- Daglige procedure → Refinement
 - *Begrænsninger*
 - Enkelt blodprøve
 - Tidsplan?