

How to handle pigs with an umbilical outpouching?

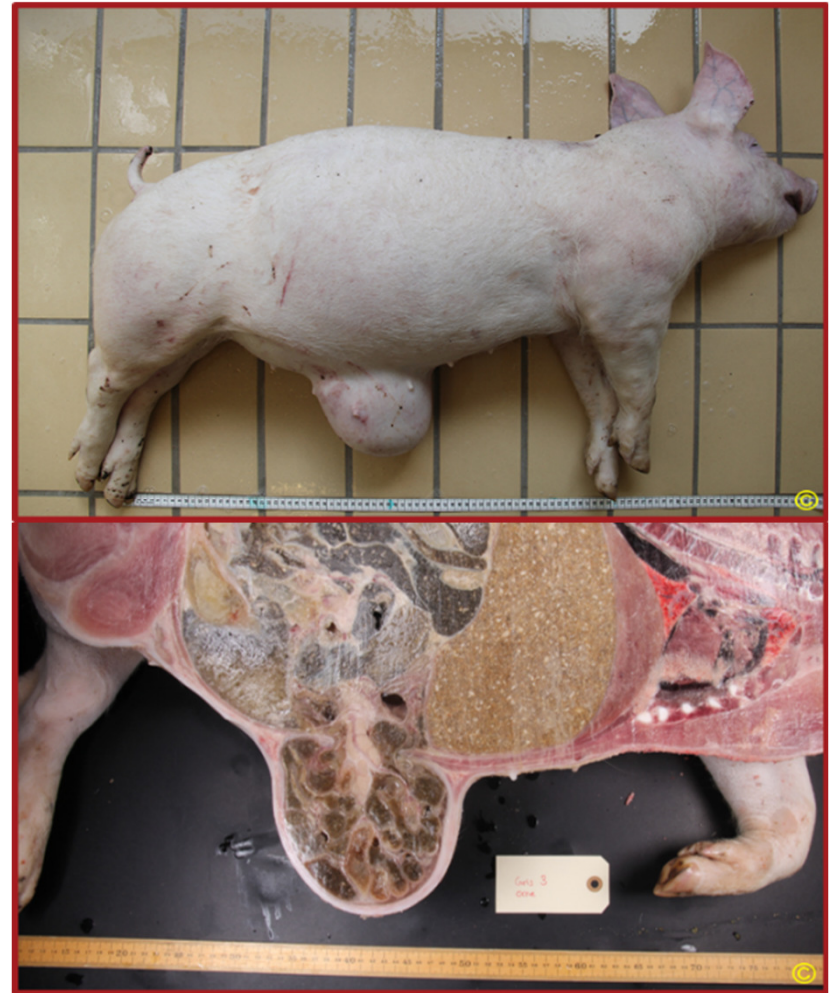
Annual meeting, Danvet 8. marts
2024,

Brædstrup

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Danvet

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Agenda

- **Short presentation**
- **What is an umbilical outpouching**
- **Field study**
 - **When are the umbilical outpouchings detectable ?**
 - **How many pigs dies before slaughter?**
- **Should pigs be euthanized or can they survive until slaughter????**
- **What is the economical potential of pigs with umbilical outpouching?**
- **How to manage pigs with an umbilical outpouching**
- **Summary**

Introduction

- Trine Hovmand-Hansen



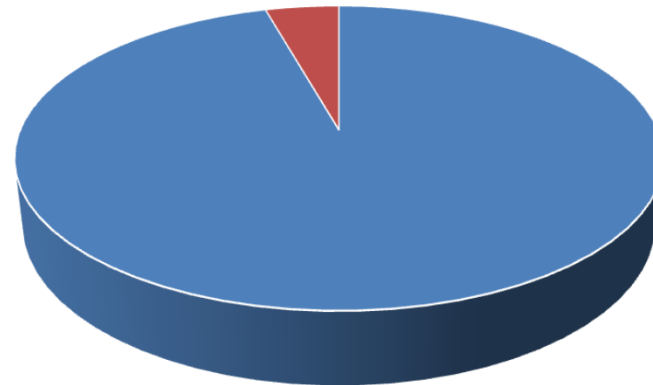
Umbilical outpouching

- Frequency in DK 4,2%*



Annual production DK ≈31,5 mio.

■ 1,3 mio.



■ Pigs with umbilical outpouching

Kilde:

Hansen ML, Jensen TB, Kristensen CS, Larsen I, Pedersen KS. Umbilical outpouchings in Danish piglets and weaners: prevalence and clinical characteristics-a cross-sectional study at herd level. Porcine Health Manag. 2024 Jan 13;10(1):3. doi: 10.1186/s40813-023-00352-8. PMID: 38218966; PMCID: PMC10788040.

What's inside?



Other diagnoses/ no findings
13%

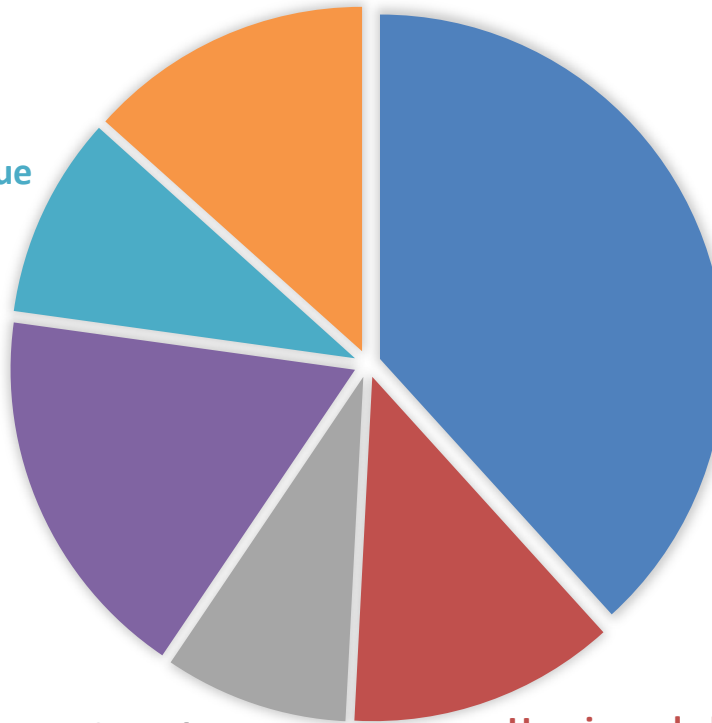
Number of pigs: 614



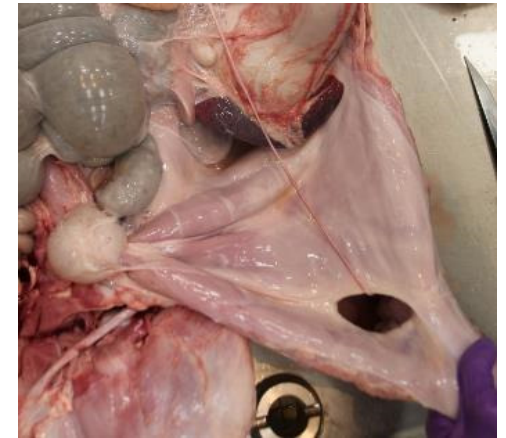
Abscess/scar tissue
9%



Cysts
18%



Hernia
38%



Hernia and cysts
9%

Hernia and abscess/scar tissue
13%

Higher risk of complications

- Increased risk of wounds mainly in hernia and enterocystoma
- Increased risk of strangulation and adherence in hernia
- Growth retardation
- Impaired mobility



Billeder: T. Hovmand-Hansen

Frustration and management



FVST:

Significant disadvantage

Pga. umbilical outpouching > 15 cm, without wound.

NOT housed with soft bedding.

**Intensification
Follow up visit**

Frustration and management



FVST:

Significant irresponsible behaviour.

Umbilical outpouching > 15 cm with a wound:

NOT housed with soft breeding

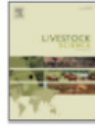
- General condition, growth and mobility affected.

Sanction!
(Police incl. Penalty)

I) Early riskfactors?



Livestock Science
Volume 251, September 2021, 104654



Early risk factors, development, disappearance and contents of umbilical outpouching in Danish pigs

Trine Hovmand-Hansen ^{a,✉}, Tina B. Jensen ^b, Kaj Vestergaard ^b, Mai Britt F. Nielsen ^b, Páll S. Leifsson ^a, Henrik E. Jensen ^a

II) Survival of pigs with umbilical outpouching?



Preventive Veterinary Medicine
Volume 191, June 2021, 105343



Survival of pigs with different characteristics of umbilical outpouching in a prospective cohort study of Danish pigs

Trine Hovmand-Hansen ^{a,✉}, Søren Saxmose Nielsen ^a, Tina B. Jensen ^b, Kaj Vestergaard ^b, Mai Britt F. Nielsen ^b, Henrik E. Jensen ^a

III) Should UO pigs be euthanized or can I survive until slaughter?

SEGES
INNOVATION

MEDDELELSE

Nr. 1297

Udgivet 12. januar 2024

GIV GRISE MED EN LILLE NAVLEBULE EN CHANCE

Flemming Thorup ^a, Mai Britt Friis Nielsen ^a, Michael Groes Christiansen ^a, Henrik Elvang Jensen ^b og Trine Hovmand-Hansen ^c

^a SEGES Innovation P/S, Den rullende Afprøvning

^b Pathobiological sciences, IVH, Københavns Universitet

^c DanVet, Blåkildevej 17, 9500 Hobro

STØTTET AF

Svineafgiftsfonden

Material and method

- **2 farrow-to-finisher herds - 3031 pigs (Landrace x Yorkshire x Duroc)**
- Period: Birth to slaughter (115kg)
- Pigs with UOs were clinically examined once a month
- 255 pigs developed an umbilical outpouching



Data collection



At birth (2nd week after birth)

- Sow ID/litter registrations
- Piglet earmark
- Piglet registration
- Umbilical features



Monthly

- UO screening of healthy pigs
- Clinical examination of UO pigs



Gross evaluation

- Spontaneous death
- Euthanasia
- Slaughter

Material and method

An umbilical outpouching was defined as a protrusion in the umbilical area.

Criteria for euthanization

- Wounds > 1 cm across the surface
- Gait and movement was affected
- General condition was **severely** affected



Data collection

Clinical examination once a month

- General condition
(skin, hair coat, eyes and behaviour)
- Size of the UO (circumference/height)
- Form
- Reducible
- Skin lesions was scored



Clinical examination



- All pigs were screened once a month for the development of new UOs



- 776 clinical examinations (249 pigs)
- 6 pigs died before 1th examination
- 3,12 times in average (1-9)

Pig 215

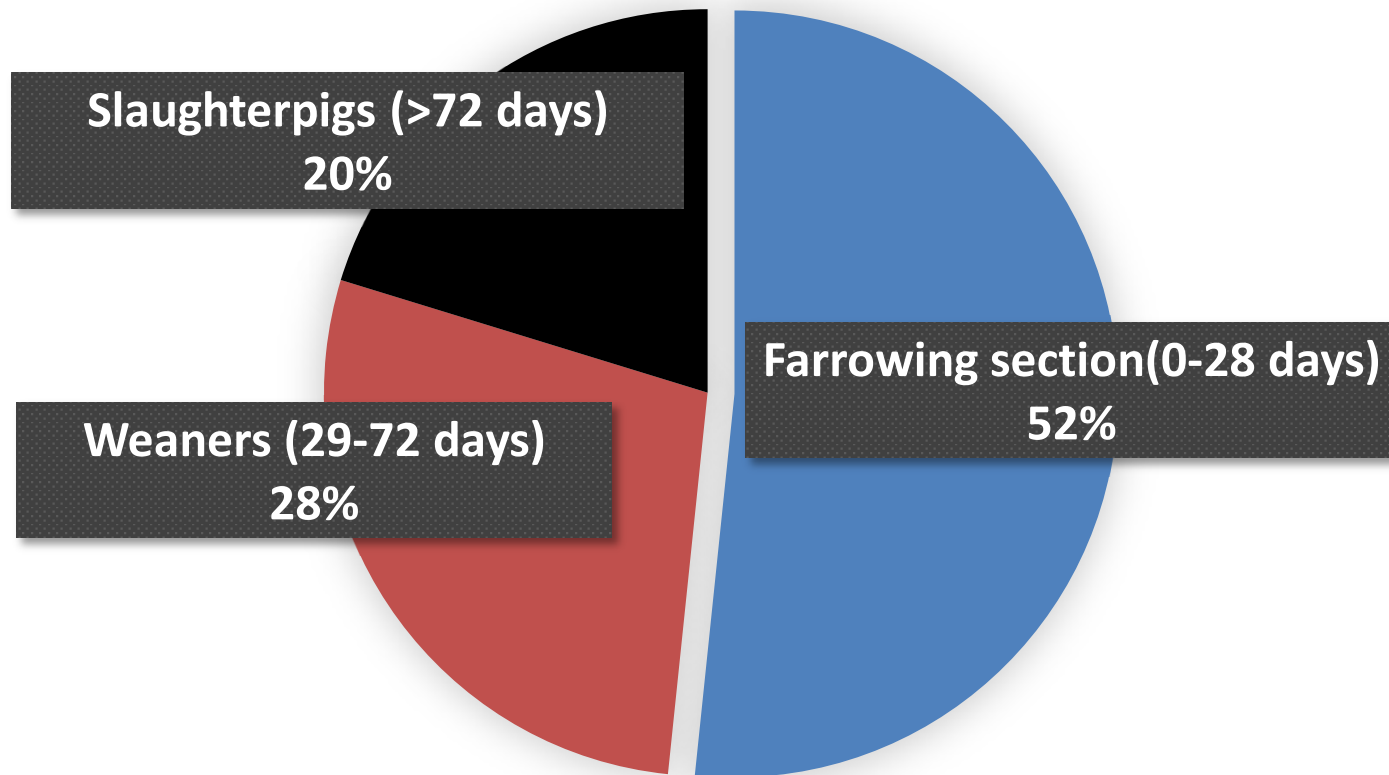


Date	History
20-02-18	Newborn
07-03-18	UO discovered
13-03-18	Bloodsample
20-03-18	Clinical examination
30-04-18	Clinical examination
24-05-18	Clinical examination
27-06-18	Clinical examination
24-07-18	Clinical examination
25-07-18	Euthanasia

Frequency umbilical outpouching

255 from 3031 pigs (8%)
developed and umbilical outpouching

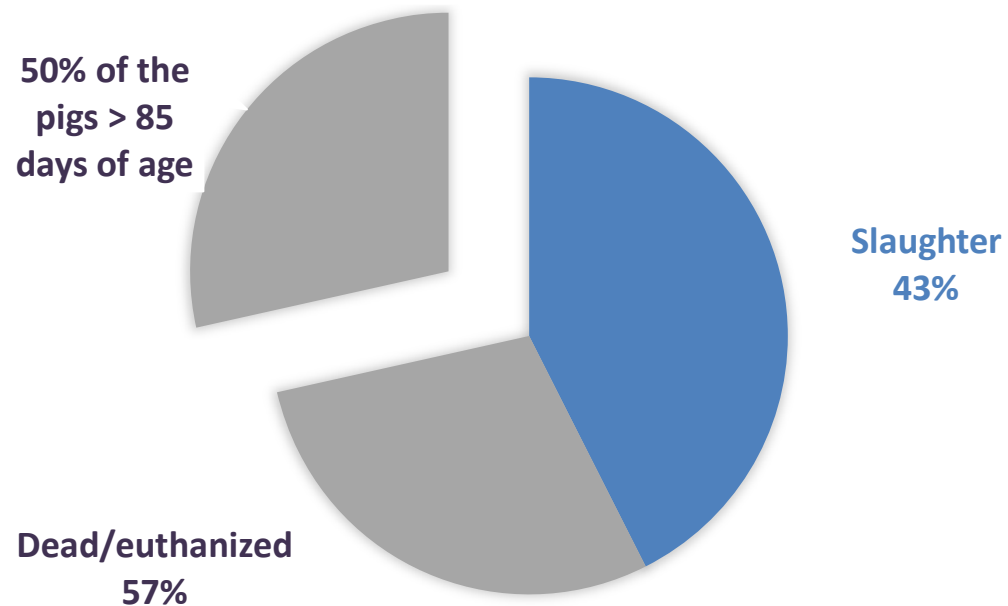
When are the umbilical outpouching detectable?



36 (15 %) spontaneously regression

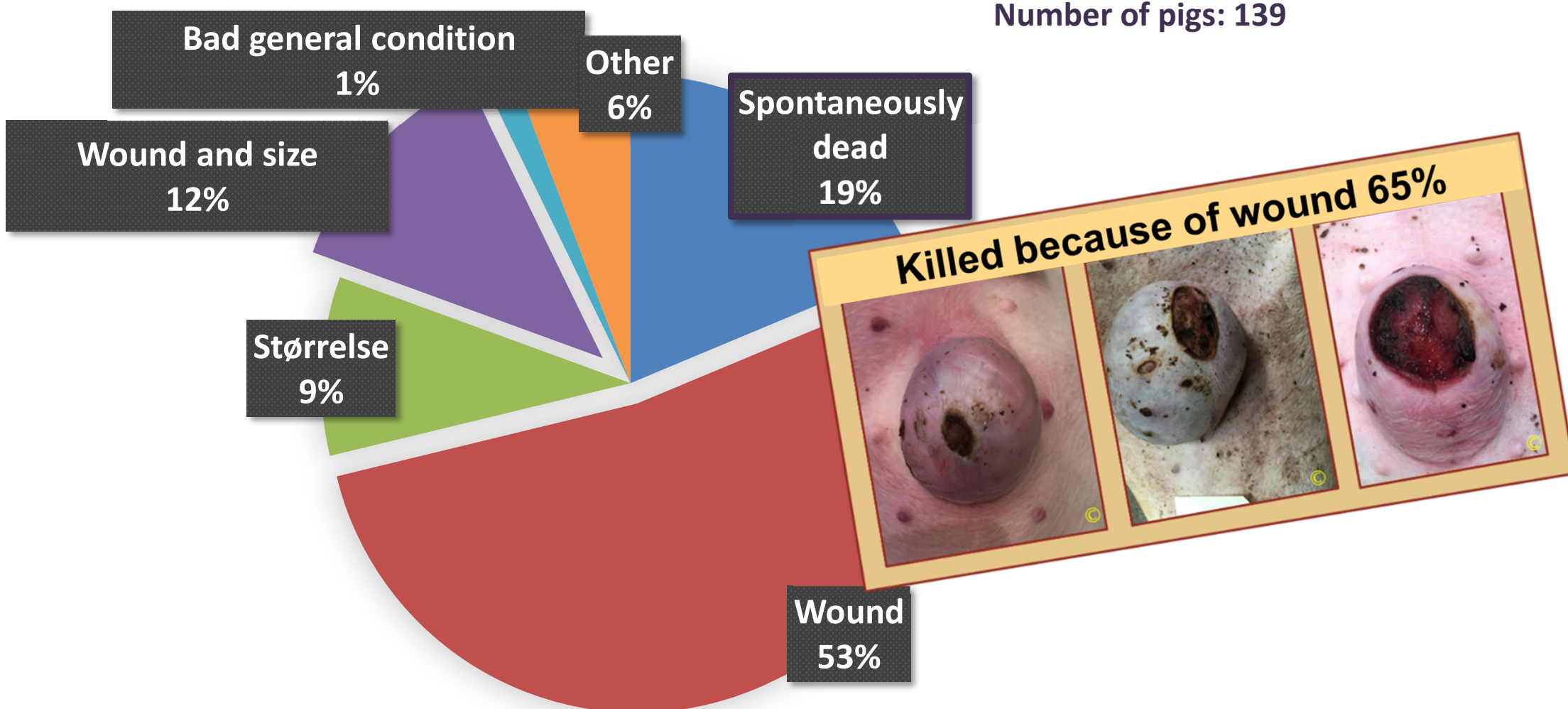
How many pigs died before slaughter?

Number of pigs: 242



What is the course of dead?

Number of pigs: 139





**Should I be
euthanized or
can I survive
until
slaughter????**

Umbilical outpouching

- Height and circumference Correlation

($R = 0,9$; $p\text{-value} = <0,001$)

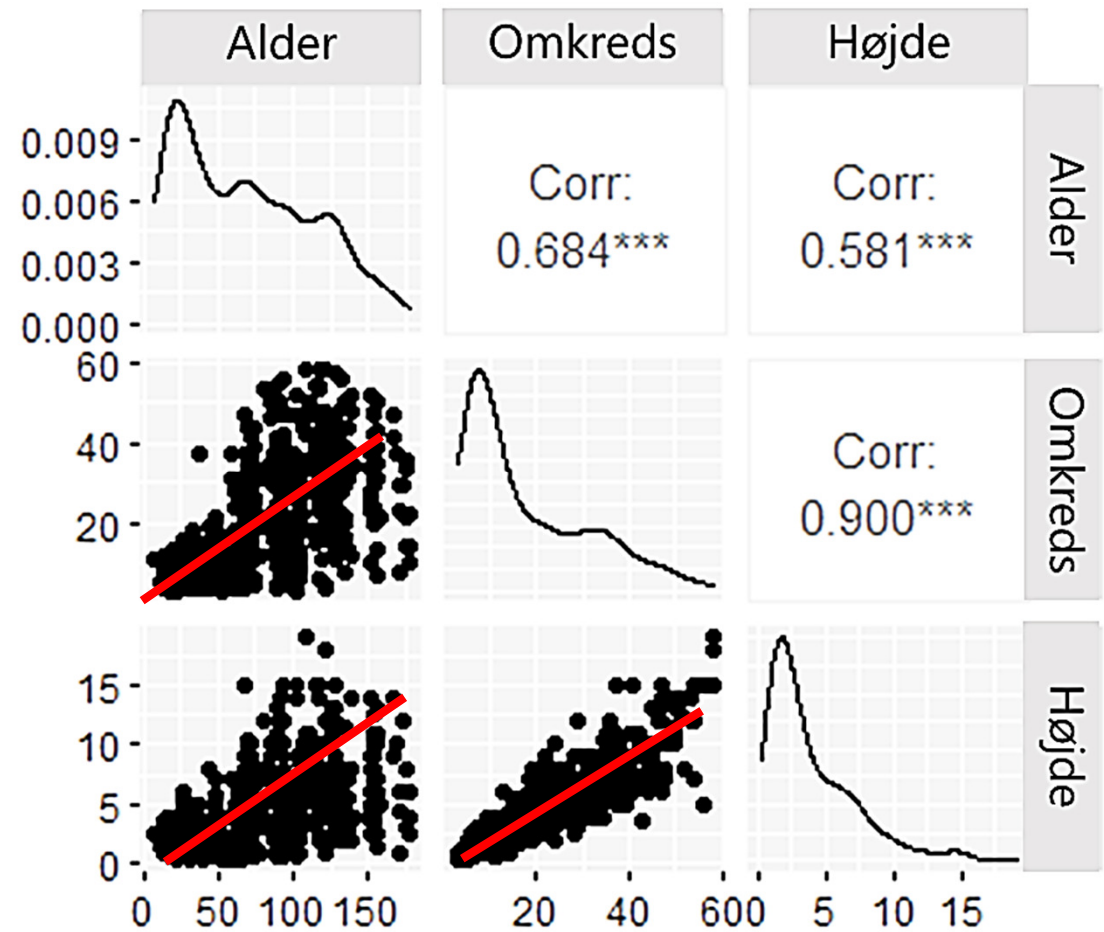
- Age and size of the UO

($R = 0,6$; $p\text{-value} <0,001$).

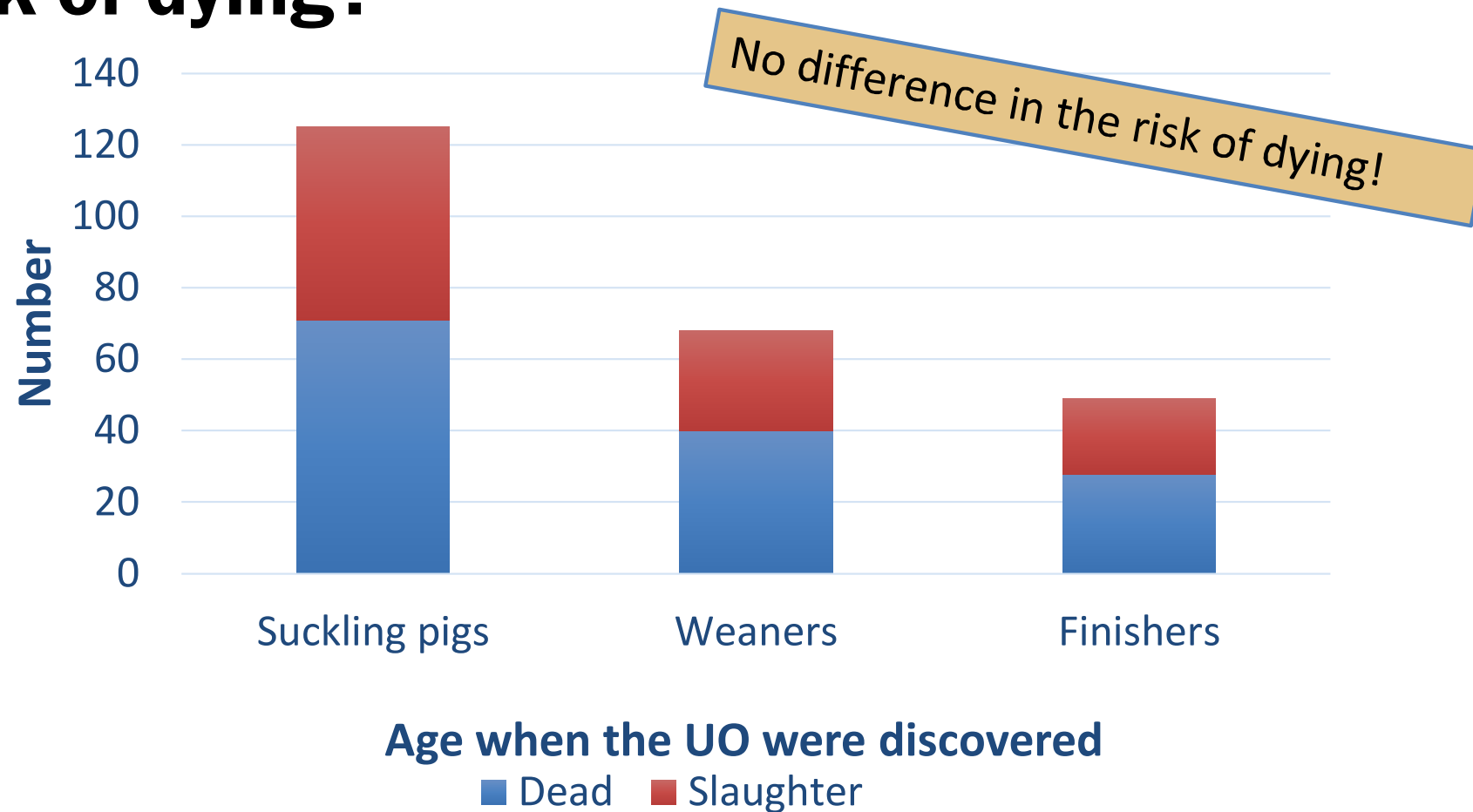
- Circumference (size) of the UO is correlated to the probability for slaughter

($P\text{-value} <0,001$)

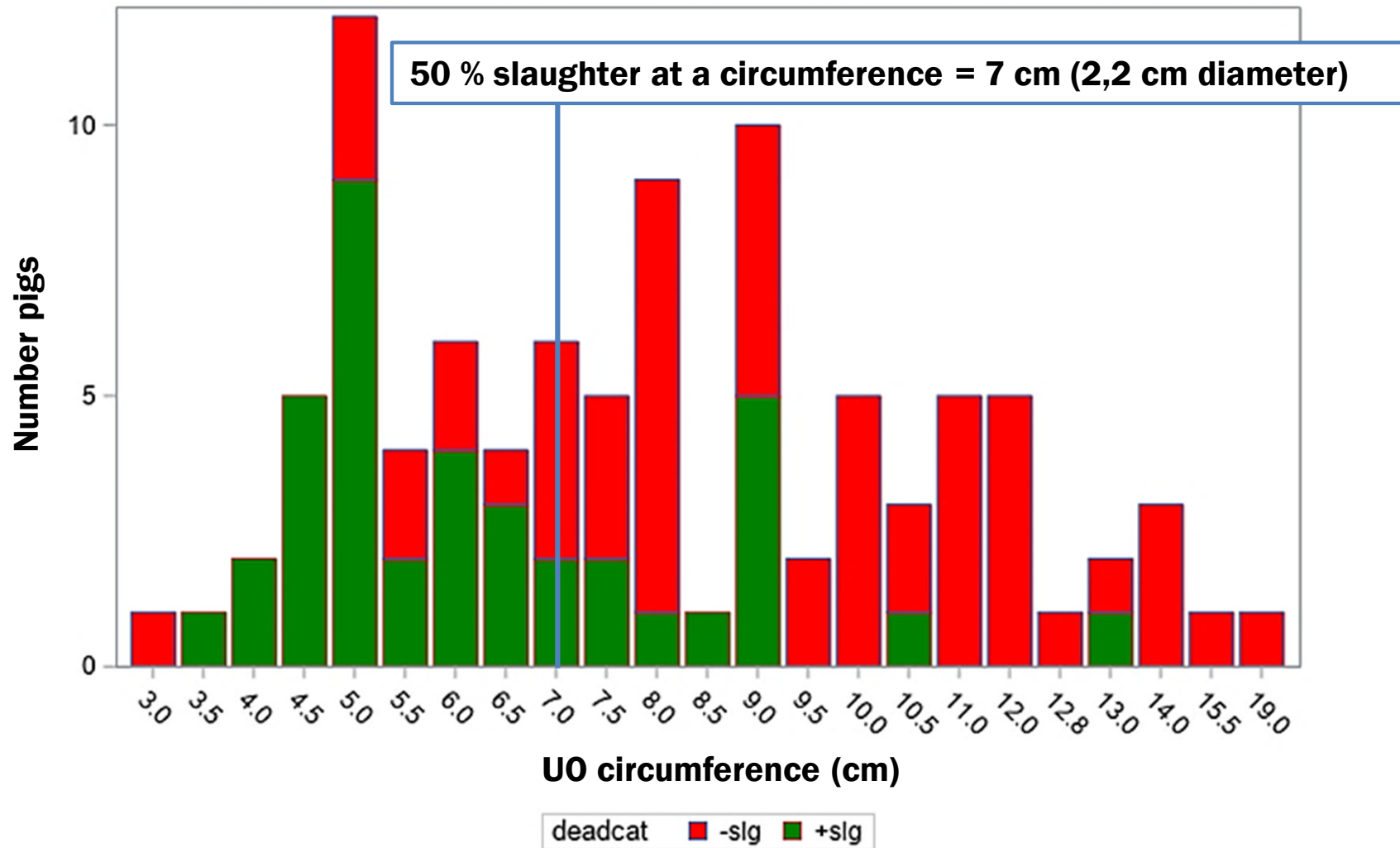
- Skincolor



Does pigs developing the UO early have a higher risk of dying?

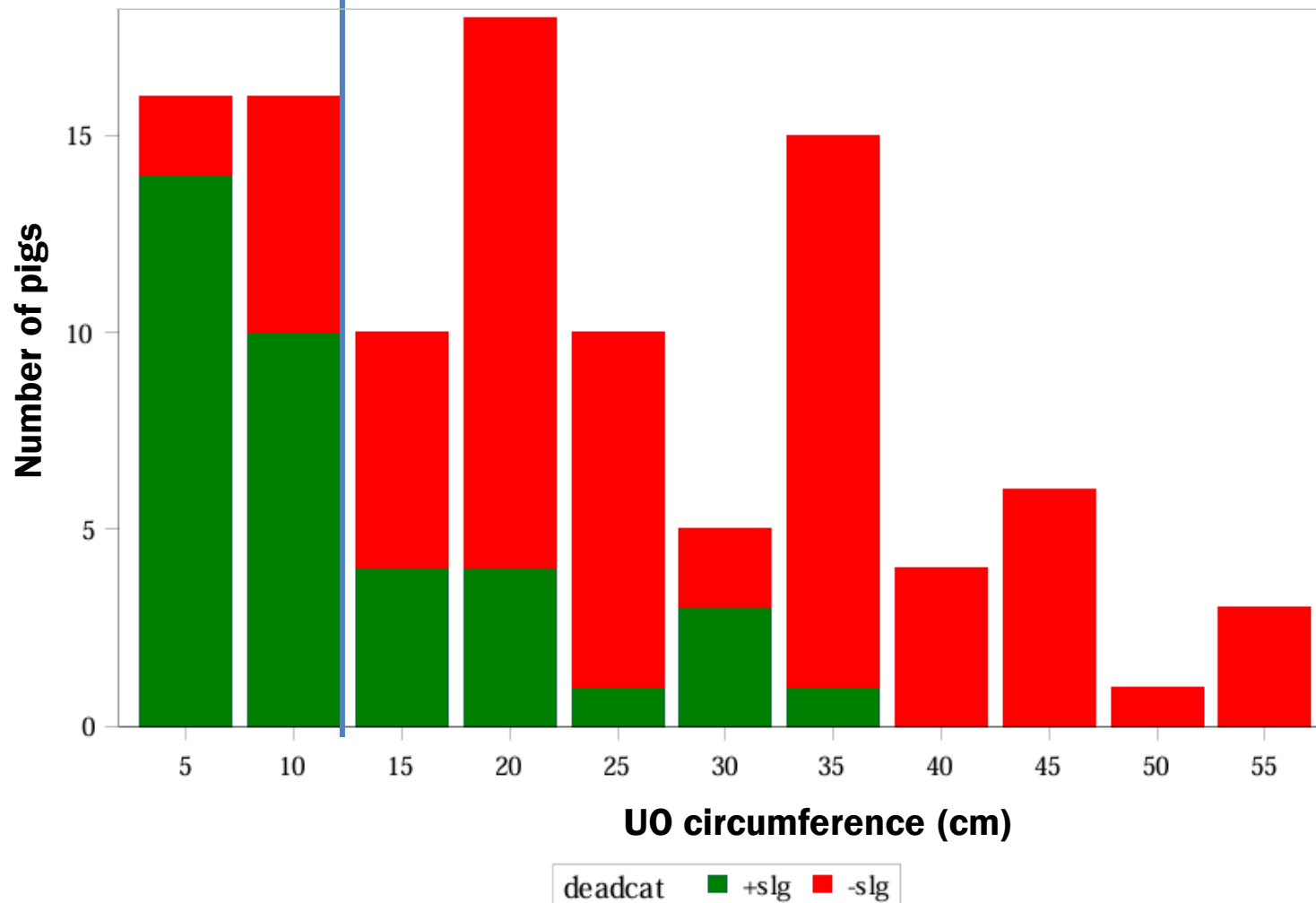


Weaners (7 kg) potential for slaughter



30 kg pigs potential for slaughter

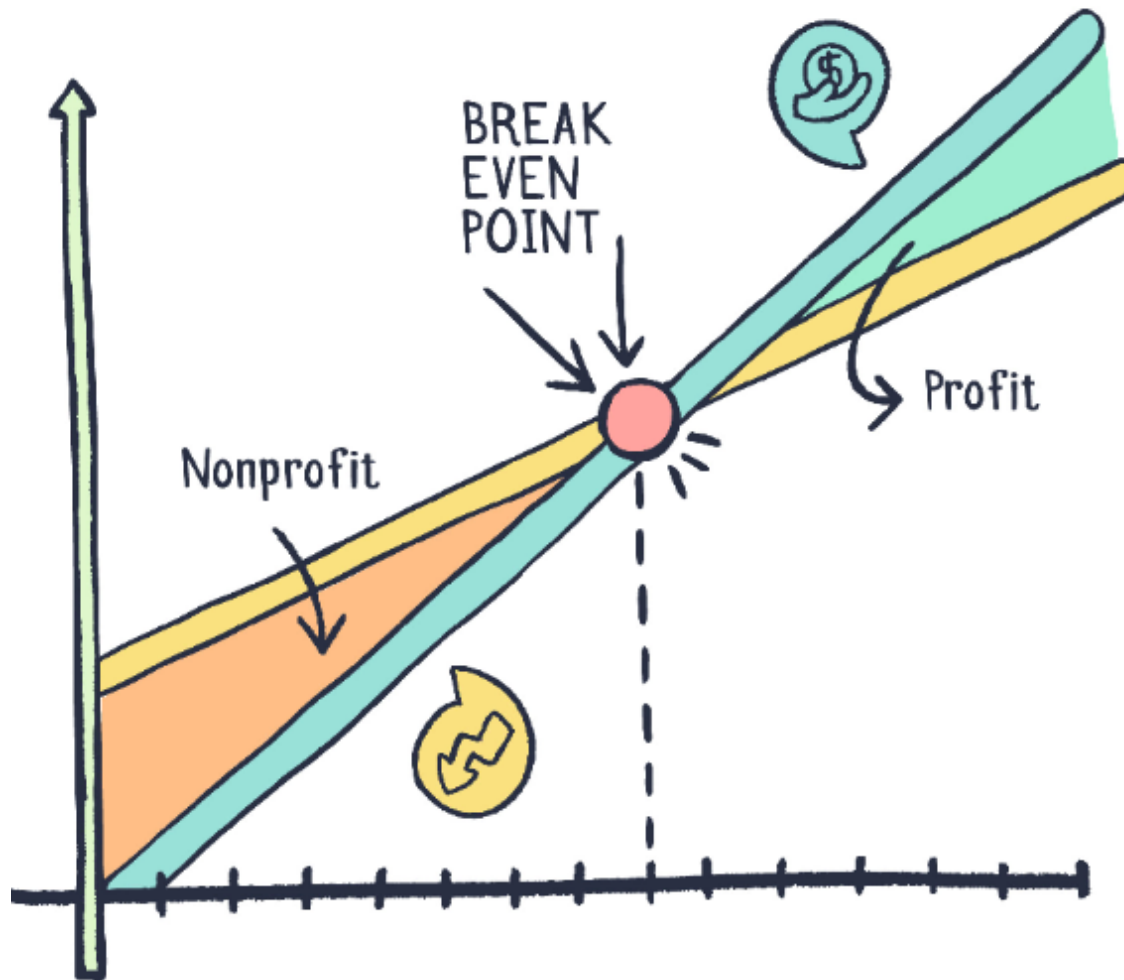
50 % slaughter at a circumference = 12 cm (3,8 cm i diameter)



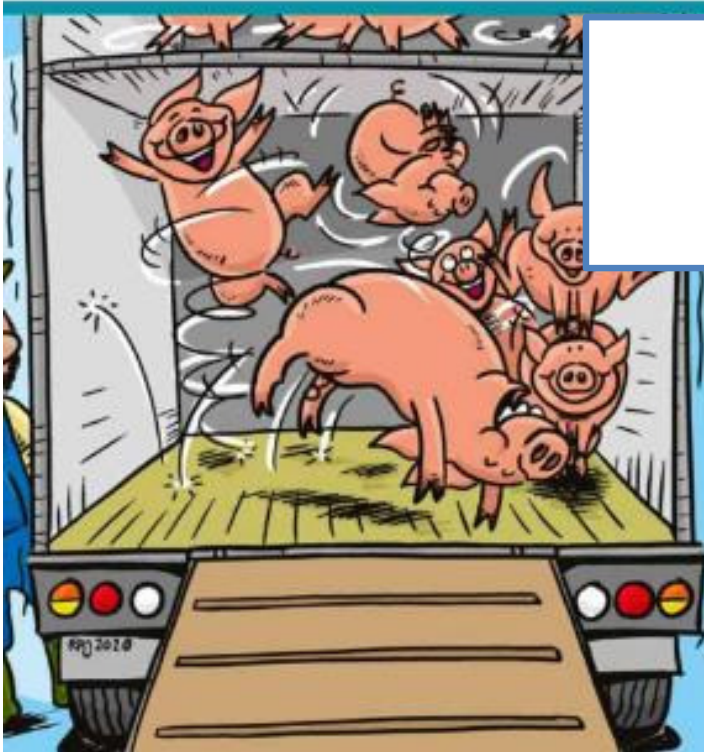
Pigs at 30 kg - probability for slaughter

UO Circumference (cm)	Probability for slaughter (%)	For every time you deliver an UO-pig for slughter a number of pigs have an exit before slaughter (die/euthanized)
1	72	0,4
5	65	0,5
10	55	0,8
15	45	1,2
20	38	1,6
25	29	2,5
30	23	3,4
35	14	6,1
40	6	15,7

Break-even point for pigs with umbilical outpouching



What is the potential – Contribution margin (DB)?

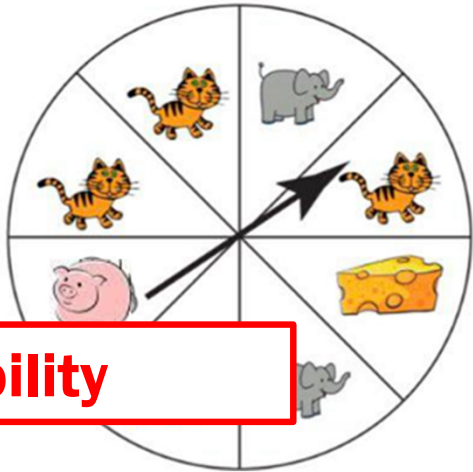


DB – slaughterpigs
Modified calculation, incl. pigs dying before slaughter.



If the DB is high and feedcost is low -> the potential for UO-pigs increase!

What is the potential – Contribution margin (DB)?



Probability

↑ Feedcost



↑ Housing



↑ Variable cost



Capacity loss ?

Billeder:

<https://images.app.goo.gl/tuVU3DBjNUyNUSky9>

<https://politiken.dk/debat/klummer/hoejbjerg/art5526185/Hvor-mange-skal-d%C3%B8-af-resistente-svinebakterier>

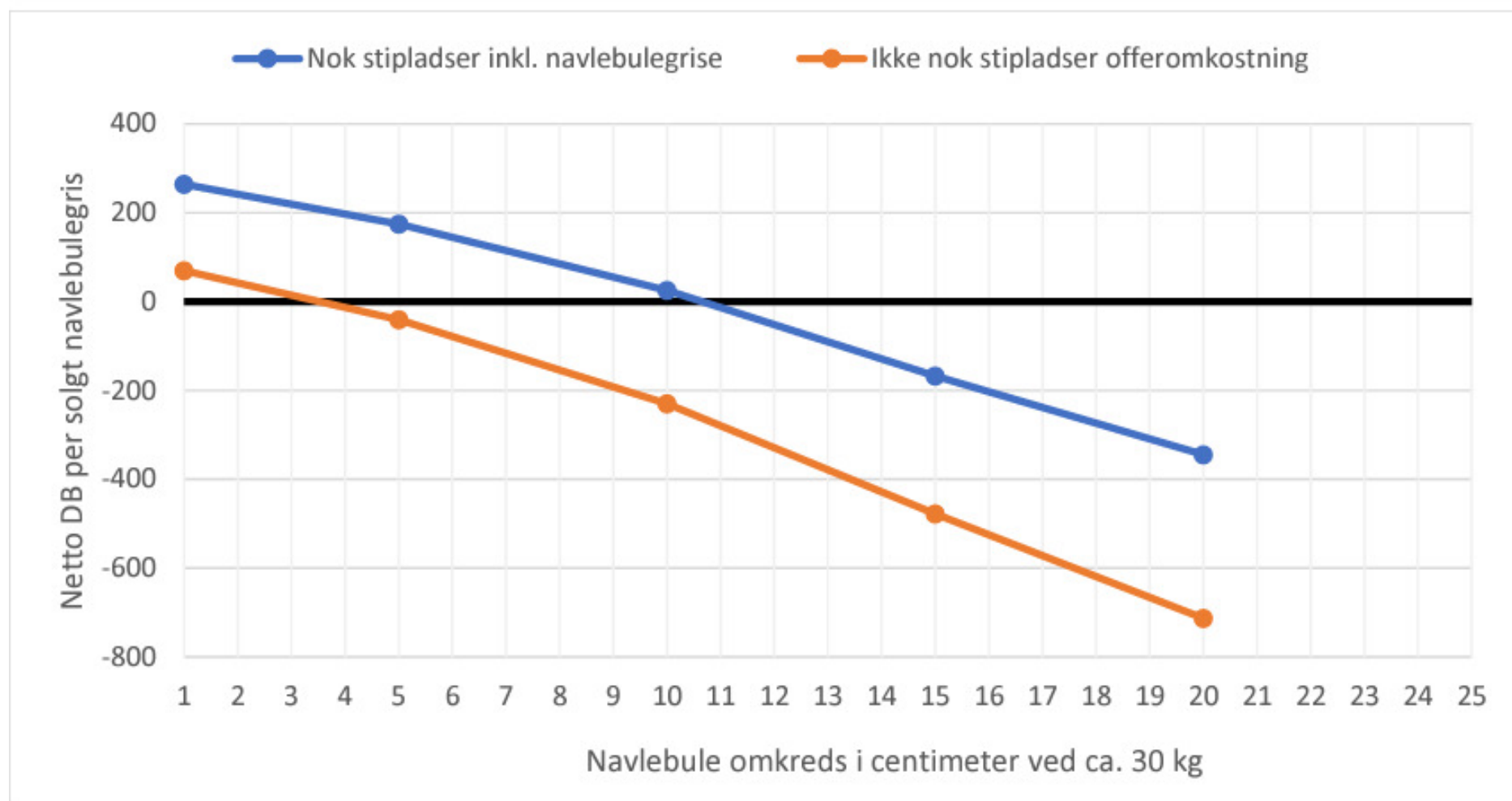
Rob Harrell Batgris 2 (Bog)

Gennemsnitlig produktionsøkonomi

- Pigs price 0 kr. (alternative: killing)
- Feed cost:
 - ca. 2,20 kr./FEsv weaners
 - Ca. 1,75 kr./ FEsv slaughterpigs
- Variable cost
 - Ca. 48 kr. fra 7 kg - slaughter + DAKA
 - Ca. 34 kr. fra 30 kg - slaughter + DAKA

Weaners should stay in production if UO < 5,6 cm in circumference
30 kgs pigs should stay in production if UO < 10,6 cm in circumference
ONLY if capacity!

Kapacity loss 30 kgs grise



What is your herd-strategy?

1. At your herd:

- Economy ?
- Housing ?
- Motivation ?

2. Separate pigs with UO

Only: Healthy pigs with small UO can stay in regular pens!

- Housing med straw/ soft bedding
- Sickpens -> wound, size, temperature, colors..
- Restrictive feeding

Pigs:

- In a bad condition
- Reduced growth
- Reduced mobility
- Sever ulcerations

EUTHANIZE!

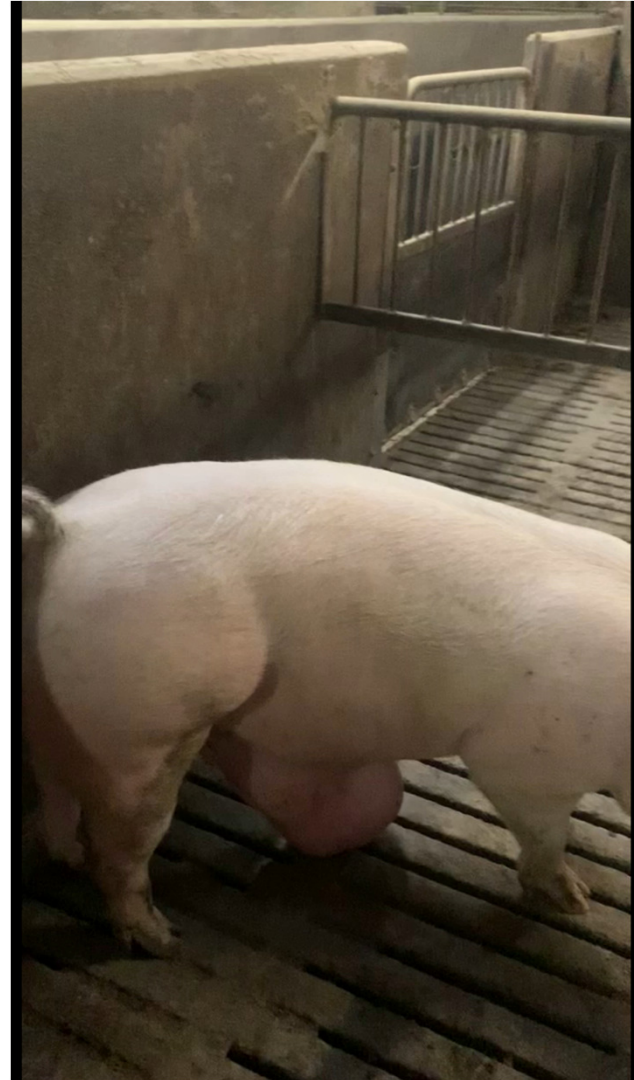
Billede: Mette Gade (LVK)



Small superficial scratches on the outpouching is acceptable i regular pens.

Frustrations?

Transport ????



Summary

- 4,2 % develop and umbilical outpouching (UO), approx. 1,3 mio. pigs in DK

IF YOU DO NOTHING!

Some UOs (15%) disappear spontaneously.

Approx. 50 % of UO-pigs die or are killed before slaughter.

Approx. 50 % of these pigs are > 85 days old at exit!

Massive rules -> risk of failing at control visit.

Herd strategy – how will we manage?

POOR PROGNOSIS
BUT....
Increases significantly by
correct handling!

Normal production economy:

Weaners should stay in production if UOs < 5,6 cm in circumference (< 3,3 cm)

30 kgs pigs should stay in production if UOs < 10,6 cm in circumference (< 4,3 cm)

ONLY IF STABLE KAPACITY ALLOWS! (otherwise bracket)

Summary

More information (in Danish):

- SEGES meddelelse 1297 (Thorup et al., 2024):
"Giv grise med en lille navlebule en chance"

Link: https://www.landbrugsinfo.dk/public/3/6/1/management_giv_grise_lille_navlebule_chance

Thank you !

Herd owners and employees

Danish Pig Levy Fund

UNIVERSITY OF
COPENHAGEN



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Páll Leifson
Søren Saxmose Nielsen



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Peter Heegaard
Henriette Vorsholt



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