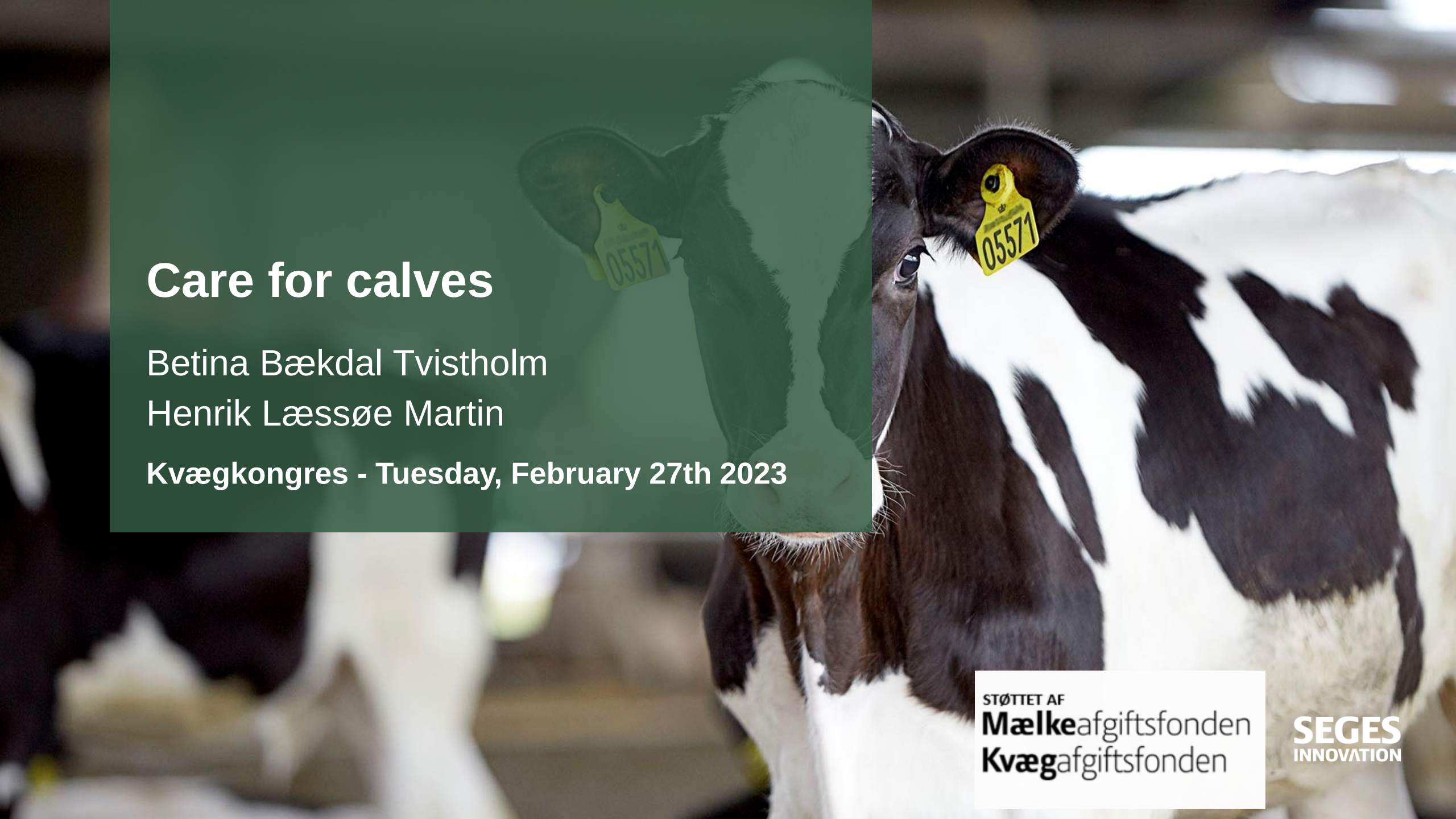


Care for calves

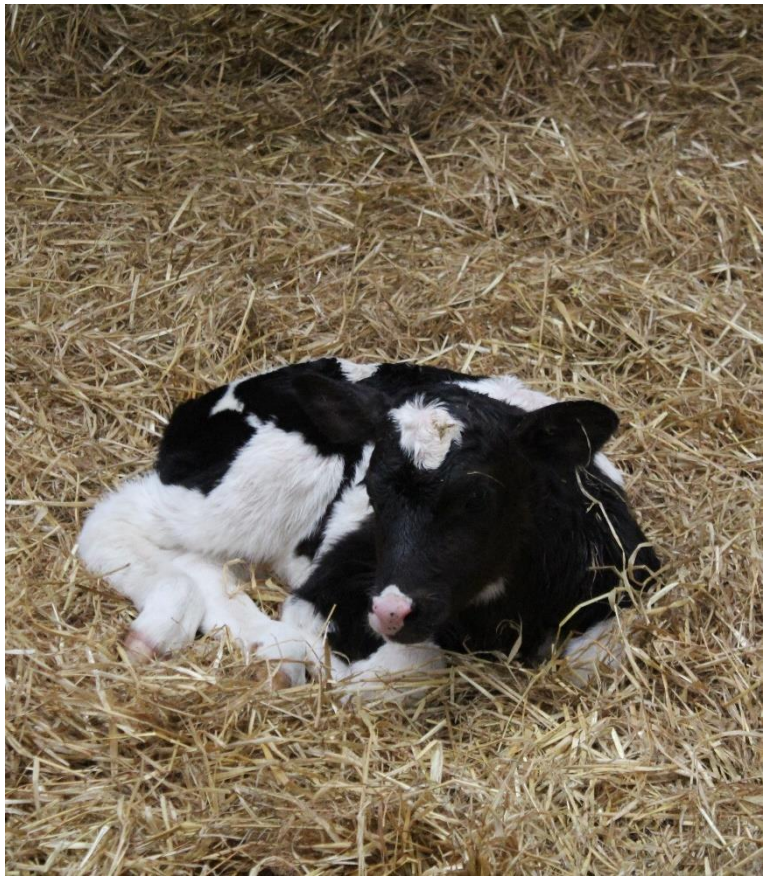
Betina Bækdal Tvistholm
Henrik Læssøe Martin

Kvægkongres - Tuesday, February 27th 2023

STØTTET AF
Mælkeafgiftsfonden
Kvægafgiftsfonden

SEGES INNOVATION

What it is all about…..



SEGES INNOVATION

To keep calves healthy

Colostrum

Calf starter

Disease prevention
treatment

Calving management

Penmate

Milk feeding

Enviroment

Hygiene

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Is everything okay in the calf barn

How can you see that the calves are allright?

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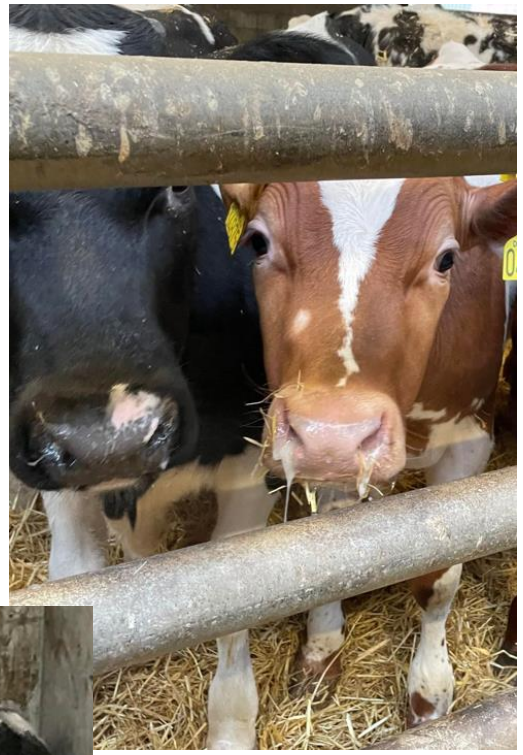
…or do we have some challenges



What do you see?

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Early signs of disease – how to spot diseases

Daily Routine

Scoring systems

Treatment protocol

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Challenges to face in calf rearing

- Mortality
- Morbidity
- Use of antibiotics
- Weight gain

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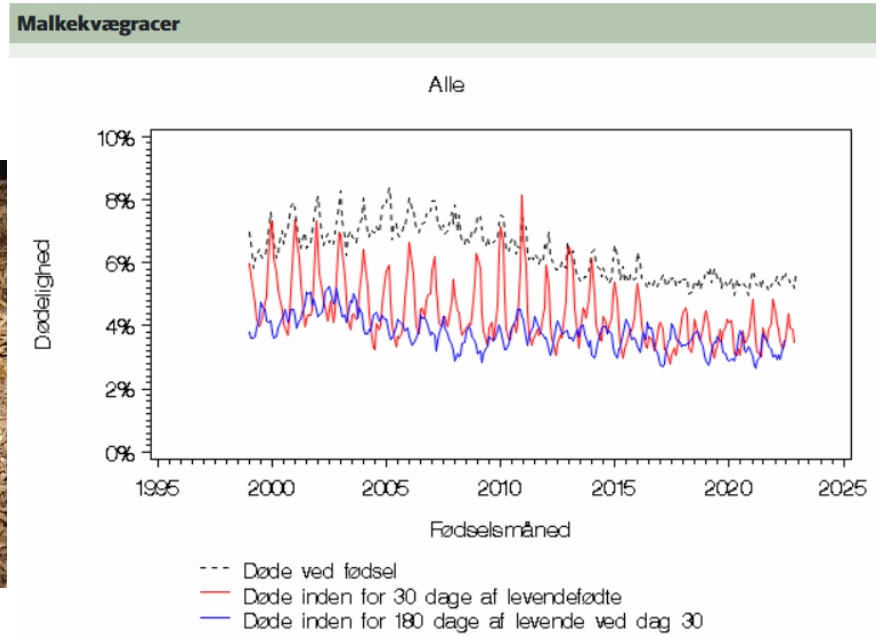
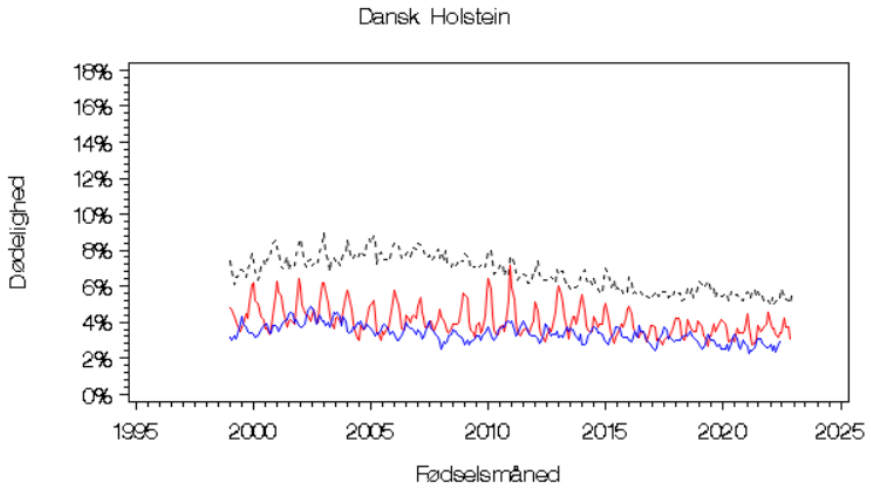
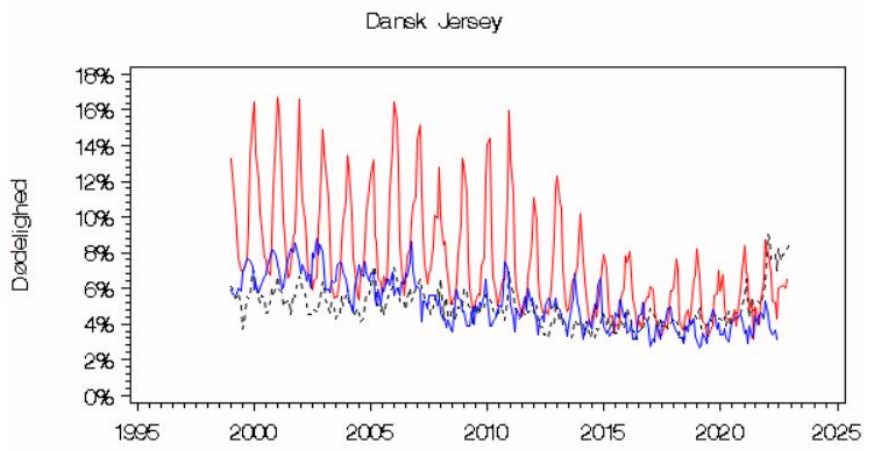
Mortality



What should we accept?





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Diseases in the Calf Barn

- Diarrhoea
- Navel infection
- Pneumonia
- Septicemia

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Diarrhoea

Can you spot the affected calves?

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Diarrhoea

Can you spot the affected calves?

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Diarrhoea

Do calves die from diarrhoea?

Dehydration

Hypothermia

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What can we do for calves with diarrhoea

- Keep on feeding milk
- Do not force milk feeding – no tube feeding
- Feed more frequently with smaller amount of milk
- Feed alternately with milk and electrolyte

Example of feeding protocol for calves with diarrhoea

Kl. 8 - 2 liters of milk
Kl. 10 - 2 liters of electrolyte
Kl. 12 - 2 liters of milk
Kl. 14 - 2 liters of electrolyte
Kl. 16 - 2 liters of milk
Kl. 18 - 2 liters of electrolyte

Prevent dehydration

Provide energi

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Diarrhoea

Prevent hypothermia

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What can we do for calves with diarrhoea

- Painkillers
- Antibiotics – only when fever

Keep the calf feel good

Prevent septicemia

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Do we have other good alternatives?

- Quick and sufficient colostrum
- Prolonged colostrum feeding
- Feed small amounts of colostrum to sick calves

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Navel infection

Prevenion

Treatment

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Respiratory disease

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Respiratory disease

Respiratory disease

- Treatment
  - Painkillers (NSAID)
  - Antibiotics

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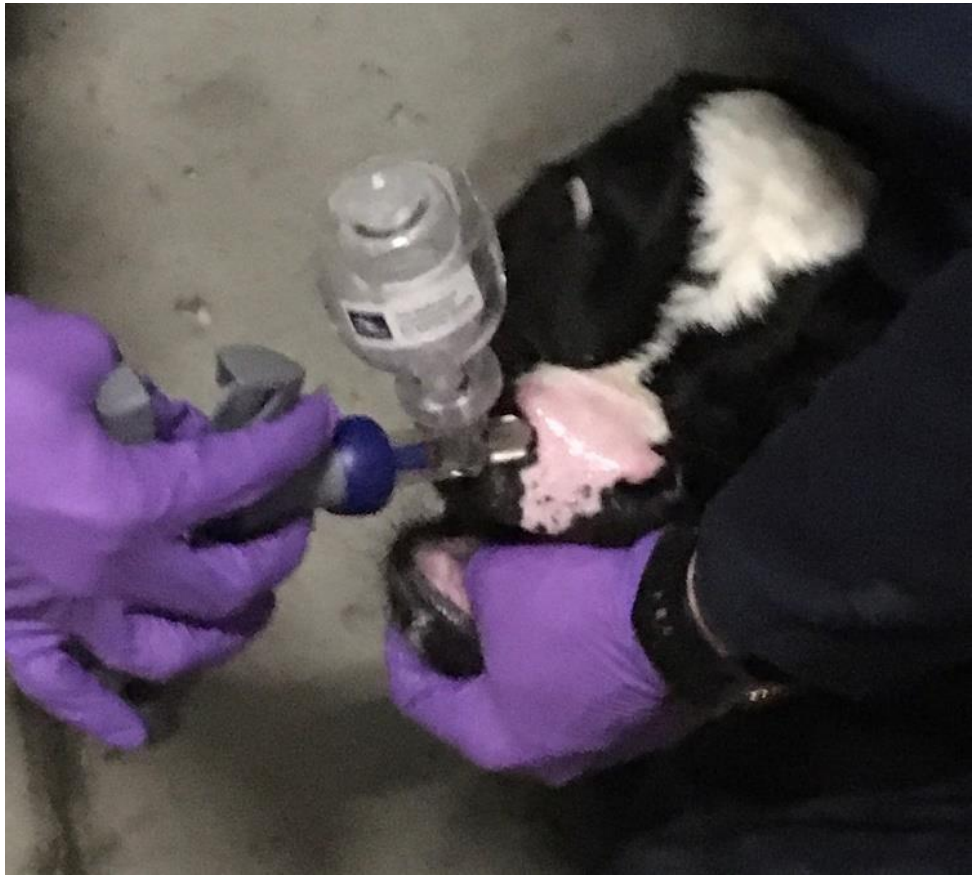
Respiratory disease

- Prevention
  - More space
  - Smaller groups
  - Better segregation
  - Immunity
  - Vaccines



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Use of antibiotics

NØGLETAL (ENHED)	OPNÅET	REFERENCE VÆRDI	OPNÅET VÆRDI I FORHOLD TIL SAMMENLIGNINGSGRUPPEN
^ Sundhed - Sygdomstilfælde			
ADD kalve og ungdyr u. 24 mdr. (12 mdr.)	6,18	4,62	1,19 Grns. 2,68 2,83 6,18
ADD kalve og ungdyr u. 24 mdr. (9 mdr.)	6,77	4,85	1,15 Grns. 2,74 2,90 6,77

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What about antibiotics – when should it be used

- Only when fever ≥ 39,3°C and the calf is sick
- Use injection – avoid oral treatment

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Disadvantages using antibiotics

Kill or disturb gut microflora

Why is this important to know

Gut microflora is an important part of the immune system

Gut microflora is essential to development of gut function and feed digestion

We can harm more than we help

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Weight gain

Birthweight is essential

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When to call the vet

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How can we save more calves

- Maximize immunity and minimize disease challenge
  - Good calving management
  - Colostrum management
  - Enough milk of good quality
  - Environment
  - Hygiene
  - Early detection of disease
  - Vaccination

What can we do to prevent disease?

Colostrum is the single most important prevention tool

Colostrum

- Quickly supply of first meal
- 10 % of birth weight – What does that mean?
- Good quality – What is good quality?
- Hygiene – bacterial contamination
- Monitoring the level of IgG

Can we be sure it is good enough following these guidelines of colostrum supply?

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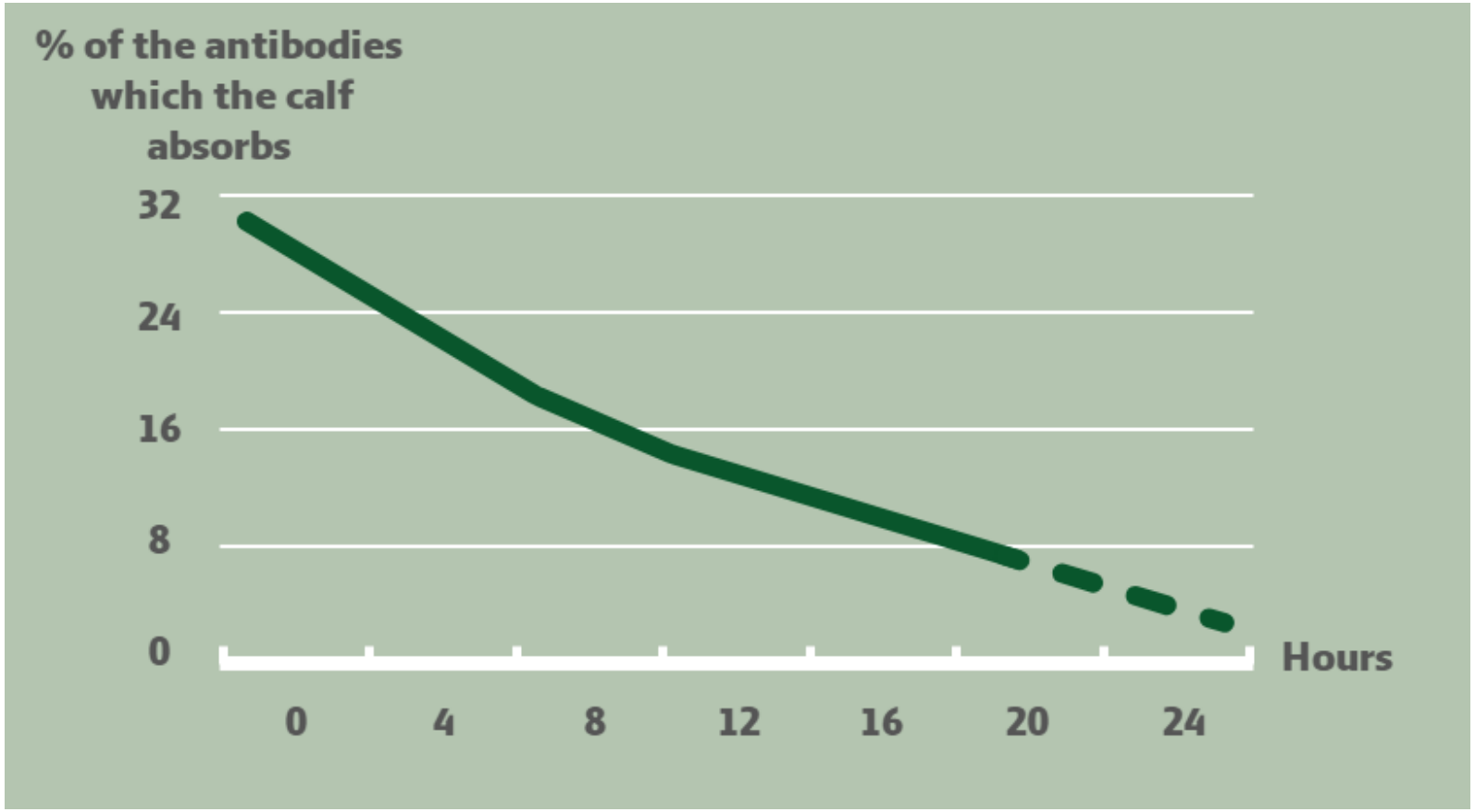
Quickly and why this is important



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Quantity

- Recommandations – 10 % of bodyweigh at first feeding (3-4 litres)

Quality - Check the content of antibodies (IgG)

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Hygiene

- Cow
- Equipment
- Storing (fresh, fridge, freezer)
- Heat-treating

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Monitoring of IgG

10-12 calves
1-7 days old

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Transfer of passive immunity

	Excellent	Good	Fair	Poor
Level of IgG	> 24.9 g/L	18.0 – 24.9 g/L	10.0 – 17.9 g/L	< 10.0 g/L
BRIX %	> 9,4	9,3 – 8,9	8,8 – 8,1	< 8,1
Serum Total protein (g/litre)	> 62	62 - 58	58 - 51	< 51
Proposed % of calves in each category	> 40 %	~30 %	~20 %	< 10 %

Lombard et al., J. Dairy SCi. 103, 2020

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Records of IgG measures in DMS

DMS IMMUNISERING, KALVE - seneste 12 måneder

Periode

10-10-2022 22-10-2022

Alder i dage

0 8

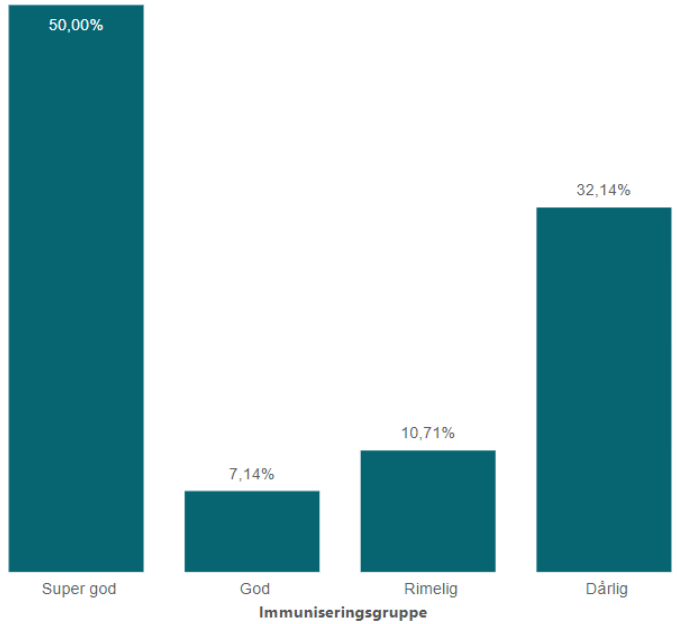
28
Antal dyr

Revurdering af råmælksrutiner er nødvendig for at sænke kalvedødeligheden

Ny viden om råmælkens betydningen bør give anledning til at genoverveje, om de aktuelle målsætninger og rutiner omkring råmælkshåndtering, kvalitetsvurdering af råmælken og fodring af de nyfødte kalve er gode nok, eller om de med fordel kan forbedres.

Læs mere her

Andel kalve grupperet efter immunisering



Super god	Mindst 9,4 Serum Brix% eller mindst 62 Serum totalprotein (g/L)
God	8,9 - 9,3 Serum Brix% eller 58 - 61 Serum totalprotein (g/L)
Rimelig	8,1 - 8,8 Serum Brix% eller 51 - 58 Serum totalprotein (g/L)
Dårlig	Under 8,1 Serum Brix% eller under 51Serum totalprotein (g/L)

Kalv	Værdi	Måling	Alder ved måling [dage]	Køn	Dato	Dyrlæge	Gruppe
[redacted]	08586 9,6	Serum Brix%	1	Tyrekalv	22-10-2022	[redacted]	✓ Super god
	08587 6,3	Serum Brix%	1	Tyrekalv	22-10-2022		Dårlig
	08584 9,4	Serum Brix%	1	Opdrætskvie	21-10-2022		✓ Super god
	08585 6,5	Serum Brix%	0	Opdrætskvie	21-10-2022		Dårlig
	08578 6,2	Serum Brix%	3	Opdrætskvie	20-10-2022		Dårlig
	08574 6,4	Serum Brix%	4	Tyrekalv	19-10-2022		Dårlig
	08575 7,4	Serum Brix%	3	Opdrætskvie	19-10-2022		Dårlig
	08576 13,1	Serum Brix%	3	Opdrætskvie	19-10-2022		✓ Super god
	08577 9,5	Serum Brix%	3	Tyrekalv	19-10-2022		✓ Super god
	08579 11,6	Serum Brix%	2	Opdrætskvie	19-10-2022		✓ Super god
	08580 8,4	Serum Brix%	2	Opdrætskvie	19-10-2022		Rimelig
	08581 6,6	Serum Brix%	2	Opdrætskvie	19-10-2022		Dårlig
	08571 8,5	Serum Brix%	5	Tyrekalv	15-10-2022		Rimelig
	08571 80,0	Serum totalprotein (g/L)	5	Tyrekalv	15-10-2022		✓ Super god
	08572 7,9	Serum Brix%	4	Tyrekalv	15-10-2022		Dårlig
	08573 10,9	Serum Brix%	4	Opdrætskvie	15-10-2022		✓ Super god
	08561 51,0	Serum totalprotein (g/L)	8	Opdrætskvie	12-10-2022		Rimelig
	08563 50,0	Serum totalprotein (g/L)	7	Tyrekalv	12-10-2022		Dårlig
	08564 80,0	Serum totalprotein (g/L)	7	Slagtekvie	12-10-2022		✓ Super god
	08567 61,0	Serum totalprotein (g/L)	6	Opdrætskvie	12-10-2022		God
	08569 90,0	Serum totalprotein (g/L)	5	Tyrekalv	12-10-2022		✓ Super god
	08570 70,0	Serum totalprotein (g/L)	2	Slagtekvie	12-10-2022		✓ Super god
	08560 58,0	Serum totalprotein (g/L)	8	Opdrætskvie	11-10-2022		God
	08562 62,0	Serum totalprotein (g/L)	7	Tyrekalv	11-10-2022		✓ Super god
	08565 88,0	Serum totalprotein (g/L)	6	Opdrætskvie	11-10-2022		✓ Super god
	08566 72,0	Serum totalprotein (g/L)	6	Opdrætskvie	11-10-2022		✓ Super god
	08568 44,0	Serum totalprotein (g/L)	5	Opdrætskvie	11-10-2022		Dårlig
	08559 92,0	Serum totalprotein (g/L)	8	Tyrekalv	10-10-2022		✓ Super god

Feed colostrum for more than one feeding

Figure 2. Transition state colostrum remains richer than standard milk.

	Unit	Colostrum Milking					Mature Milk
		1	2	3	4	5	
Dry Matter	%	24.5	19.0	16.0	15.5	15.3	12.2
Fat	%	6.4	5.6	4.6	5.0	5.0	3.9
Protein	%	13.3	8.5	6.2	5.4	4.8	3.2
Essential Amino Acids	Mmol/L	390	230	190	140	115	ND
Lactoferrin	g/L	1.84	0.86	0.46	0.36	ND	ND
Insulin	µg/L	65	35	16	8	7	1
Growth Hormone	µg/L	1.5	0.5	ND	ND	ND	ND
Insulin-like growth factor I	µg/L	310	195	105	62	49	ND

Source: Hammon et al 2000. ND = not detected.

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What can we do to prevent disease?

Management

- Calving assistance
- Support the calf from birth
- Stimulate respiration
- Navel dip
- Dry the calf
- Keep it warm

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What can we do to prevent disease?

Environment

- Cleaning
- Bedding
- Draining
- Group size
- Segregation

Biosecurity

- Mesures reducing the risk of introduction and spread of disease agents

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Hygiene in the calf barn

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Thanks for your attention

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