How to improve animal welfare and health by using relevant data.
- examples from practical usage

Webinar
Frameworks for animal welfare assessment

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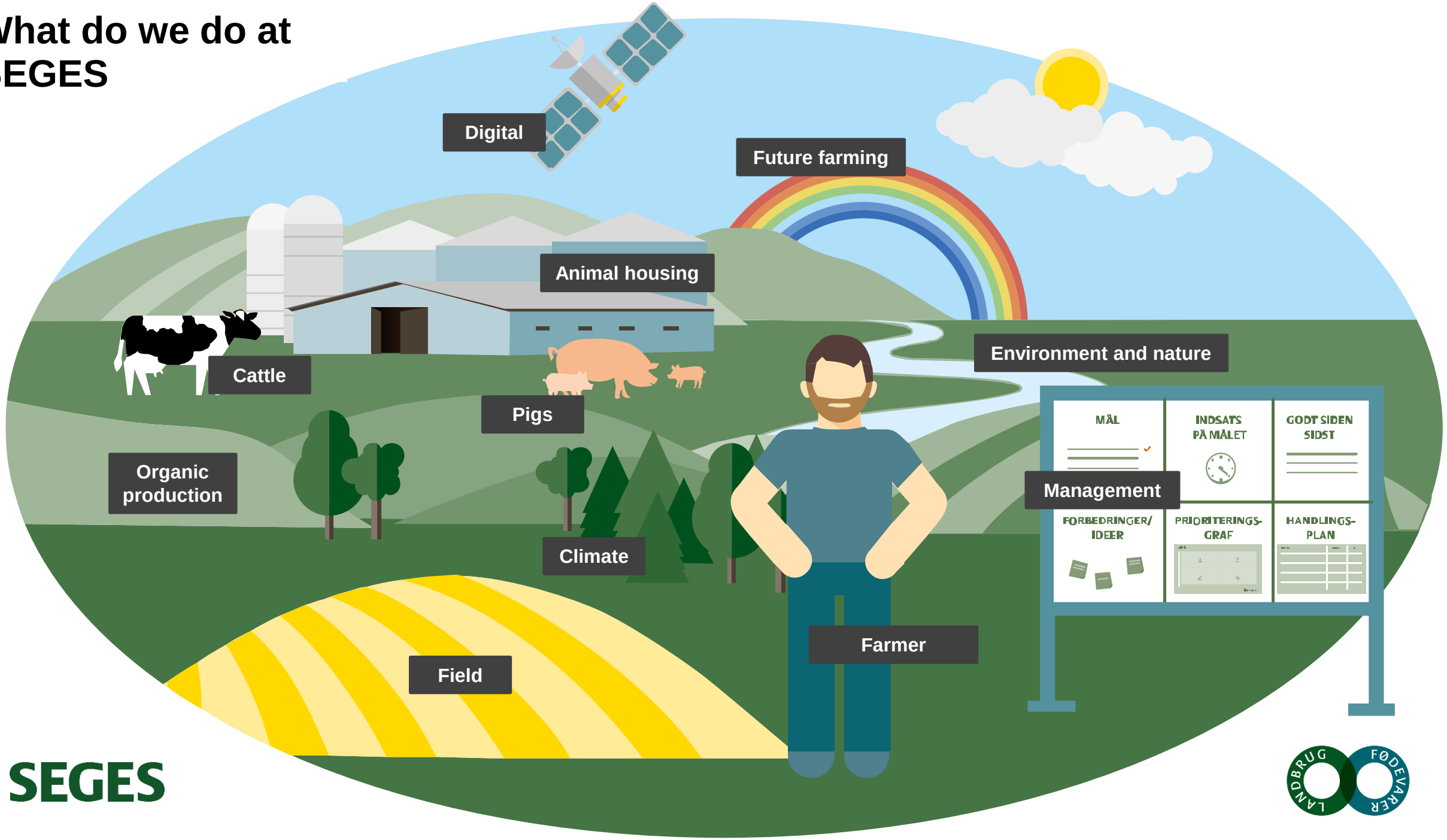
PPM Cattle:

Business responsible for:

- **Management system for**
  - **2700 dairy farmers**
  - **200 advisors**
  - **200 veterinarians**
- **Central cattle database including the mandatory movement data to ministry**
- **Exchange of cattle related data with stakeholders across the dairy business**

What do we do at SEGES



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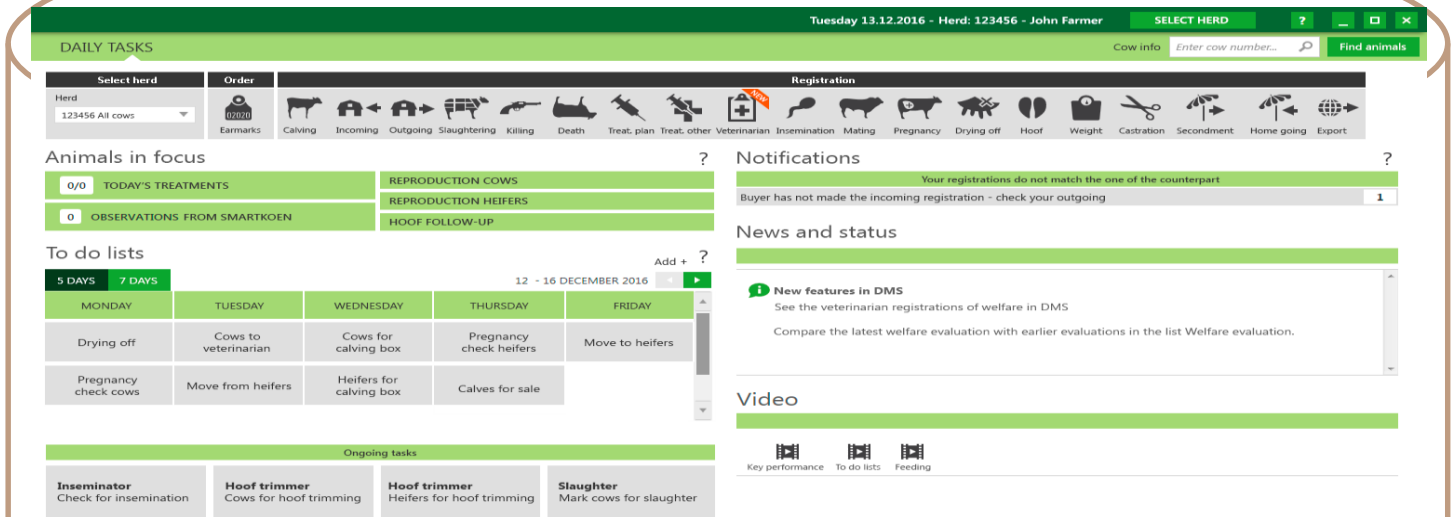
DMS (DAIRY MANAGEMENT SYSTEM)

Registration
Daily management
KPI's and Benchmark
Production analysis
Feeding management
Financial reporting
Budgeting

Users
- Farmer
- Employee
- Veterinarian
- Adviser
- Dairies



Accessible to all Danish Dairy farmers

Cattle database

Data Sources:
- Dairies
- Slaugterhouses
- Eurofins | Steins
- Veterinairians
- Eartag companies
- Milking equipment
- Destruction
- …

External databases

National Database (mandatory)

SEGES LIVESTOCK DIGITAL / DMS

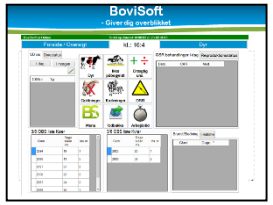
External data

E.g.

- Viking
- RYK
- Dairies
- Slaughterhouses
- Eurofins | Steins
- Veterinary practitioners
- Ear tag manufacturers
- Processing equipment - milk, feed, activity,

DMS

SmartKoen



BoviSoft

WebDyr
Webdyr Plus

Claw registration

SINGLE SIGN-ON

WEB SERVICE LAYER (DCF and DCF-O)

Data warehouse

Central Cattle Database

GLR/CHR
Owned by Danish Veterinary and Food Administration

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Data to improve animal welfare and health – DMS

- Health registration
  - Nutritional
  - Food and leg
  - Udder
  - Respiratory
- Mortality
  - Different age group
  - Lactation cycle
- Milk production – Dairy and Milk recording
  - Yield
  - Fat / Protein
  - Somatic cell count
- Registration of lesions at the Slaughterhouse
- Welfare registrations
  - Body Condition Score
  - Hair and skin
  - Lameness
  - Damages

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Data flow, health related

Veterinarian prepare for herd visit

- Reports from DMS
- Select areas for improvement.

Visit the herd

- Registrations of clinical observations and treatments

Data are processed in DMS

- **Vet. describes relevant herd diagnosis**
- **Farmer treat animal**
- **Treated diseases and amount of medicine are recorded in DMS**
- **DMS calculate usage and current stock.**

Follow up and benchmarking

- Farmer and Vet. Follow diseases in DMS
- Benchmarking
- Reports

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Data are used for
- Farmer
- Veterinarian
- Advisor
- Documentation for authorities

Several statistic on:
- Usage of medicine
- Health on herd level and on nation level

The daily Dashboard

Key Performance Indicators

Topic	Status	Key figure (unit)	Achieved	Alarm limit	Reporting period
Milk	✔	ECM delivered (kg/day)	5.901	Min 5.850	Latest measurement
	✔	Milk yield per lactating cows (kg ECM/day)	37,1	Min 35,1	Latest measurement
	●	Milk quality (numbers of deductions)	1		Last 7 days
Reproduction	✔	Inseminations of cows (numbers)	14	Min 4	Last 7 days
	✔	Not pregnancy examined cows (numbers)	0	Max 0	Last day
Health	✔	Disease treatment, cows (numbers)	5	Max 5	Last 7 days
	●	Dead animals (numbers)	1	Max 0	Last 7 days
Feeding	✔	Energy efficiency (%)	103	Min 93	Last feed control
	●	Milk minus feed cost (kr/kg ECM)	1,15	Min 1,20	Last feed control

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Disease treatments cows

Diseases – dynamic analysis

100000 Kvæg

Seneste registrering: 24-01-2019

Kategori
- ☐ Fordøjelses- og stofskiftelidelser
- ☐ Klov- og lemmelidelser
- ☐ Øvrige lidelser
- ☐ Reproduktionslidelser
- ☐ Yverlidelser

Sygdomsregistreringer
- ☐ Vælg alle
- ☐ Abort
- ☐ Asymmetrisk klov
- ☐ Børbetændelse
- ☐ Brunstinduktion
- ☐ Cyster
- ☐ Diarre

Dage fra kælvning
- ☐ 0 - 60
- ☐ 61 - 180
- ☐ > 180

Lakt. nr.
- ☐ 1. kalvs
- ☐ 2. kalvs
- ☐ Øvrige kalvs

Periode
- ☑ Seneste 12 måneder
- ☐ Forrige 12 måneder

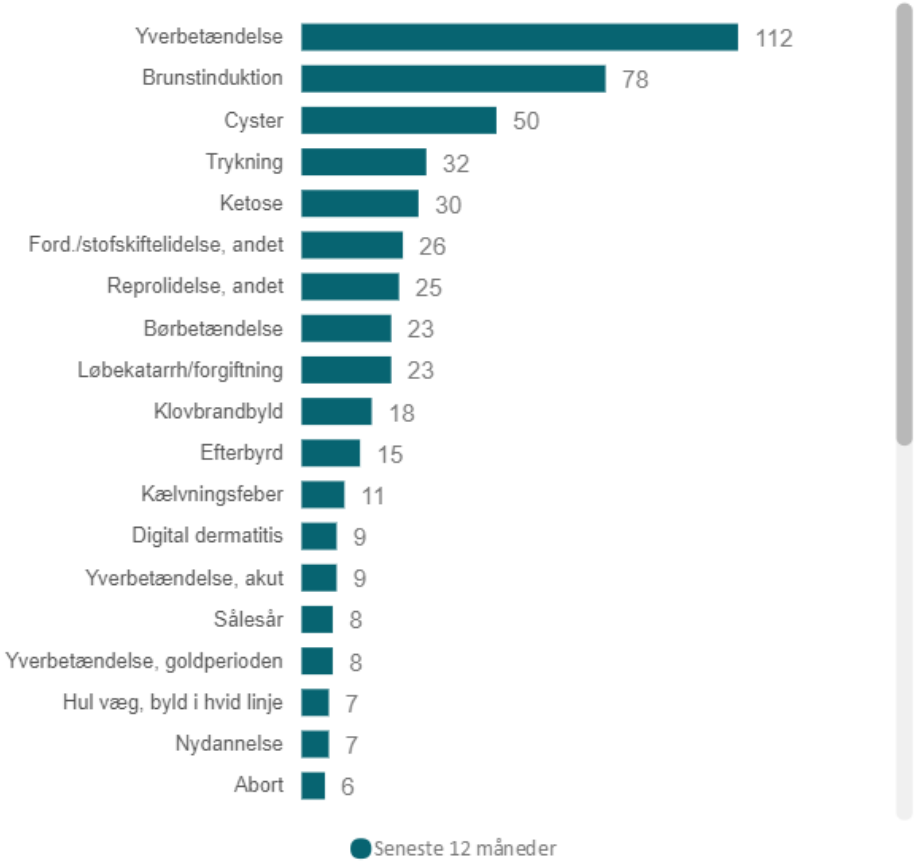
Vis genbehandlinger?
- ☑ Nej
- ☐ Ja

Hold
- ☐ 8 Goldhold holstein Dr...
- ☐ Afgoldnings hold 6 stk...
- ☐ Goldhold holstein - 52
- ☐ Goldhold jersey - 50
- ☐ kælvningsboks - 73

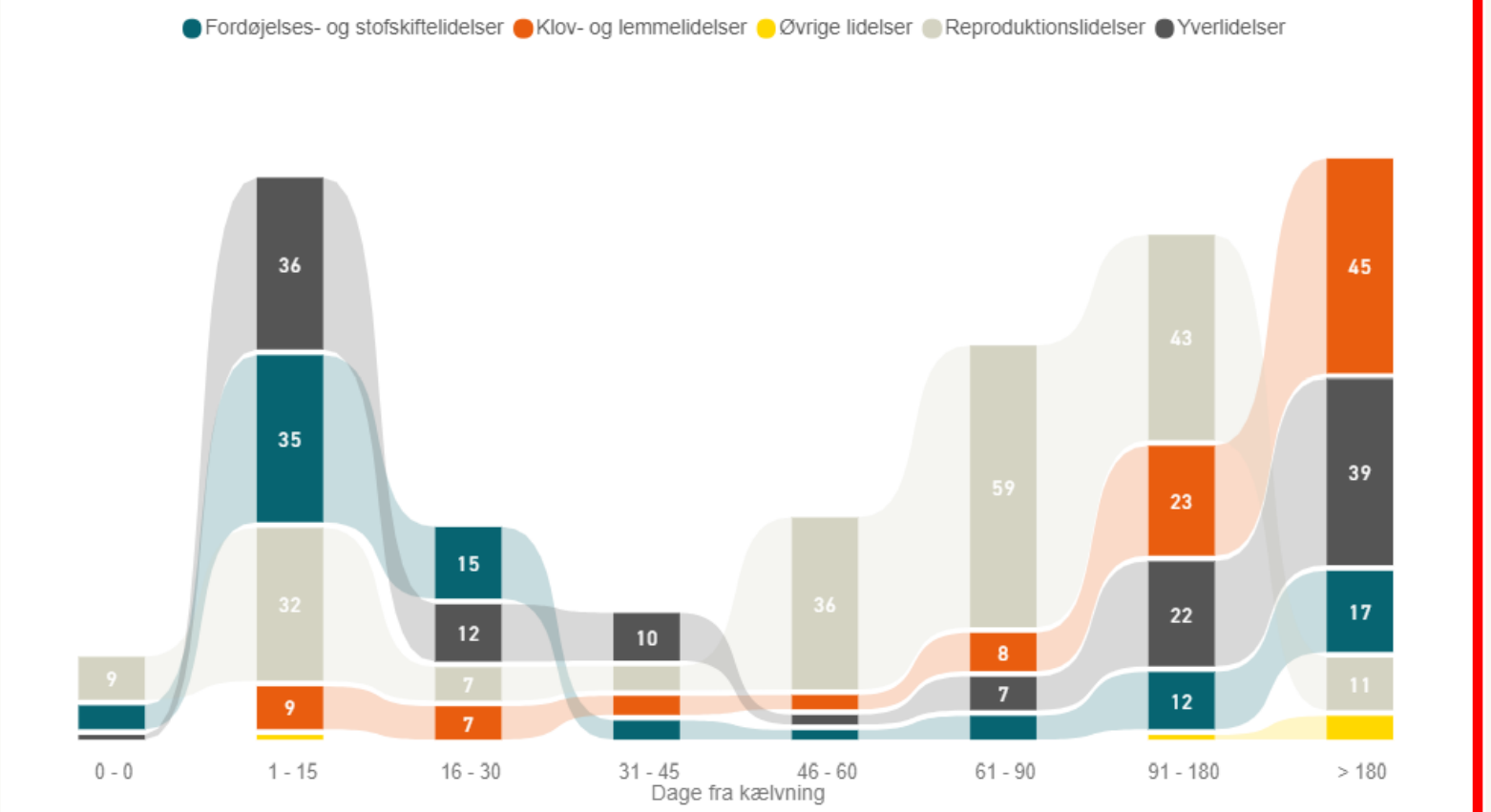
Antal sygdomsregistreringer	(Antal dyr)
532	218

Periodens dyr	Kælvninger	Døde
198	271	7

Antal sygdomsregistreringer



Antal sygdomsregistreringer fordelt på kælvningsintervaller



Benchmarking – more than 130 key figures

STATUS	Key figure	Achieved	REFERENCE VÆRDI	NEDRE ALARM	ØVRE ALARM	MÅL	Benchmarking group	Rank
	Basic information							
	Number of cows, avg 12 m	230,5	199,5			200,0	25% laveste 88,5 · Gns. 215,2 · 25% højeste 268,3 · 230,5	
	Milk recording							
	Yield, ECM per Cow/year	11.135	11.093			11.600	10.122 · Gns. 10.814 · 11.719 · 11.135	506 / 1190
	Somatic Cell Count (1000)	145	157				181 · Gns. 237 · 277 · 145	101 / 1190
	Health – disease incidents							
	Nutritional diseases	0,19	0,43				0,05 · Gns. 0,12 · 0,18 · 0,19	1100 / 1412
	Feed and leg diseases	0,39	0,66				0,01 · Gns. 0,14 · 0,15 · 0,39	1297 / 1412
	Reproduction diseases	0,19	0,41				0,05 · Gns. 0,14 · 0,19 · 0,19	1036 / 1412
	Udder diseases	0,34	0,49				0,09 · Gns. 0,23 · 0,32 · 0,34	1109 / 1412
	Other diseases	0,62	0,12				0,00 · 0,04 · Gns. 0,04 · 0,62	1394 / 1412
	Mortality							
	Dead cows %	6,1	4,5			3,0	3,1 · Gns. 5,6 · 7,0 · 6,1	910 / 1412

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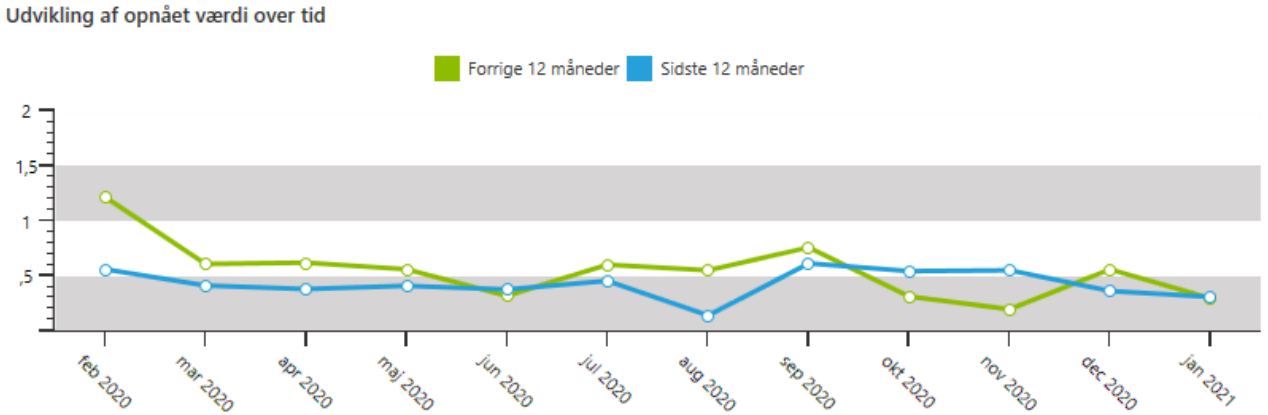
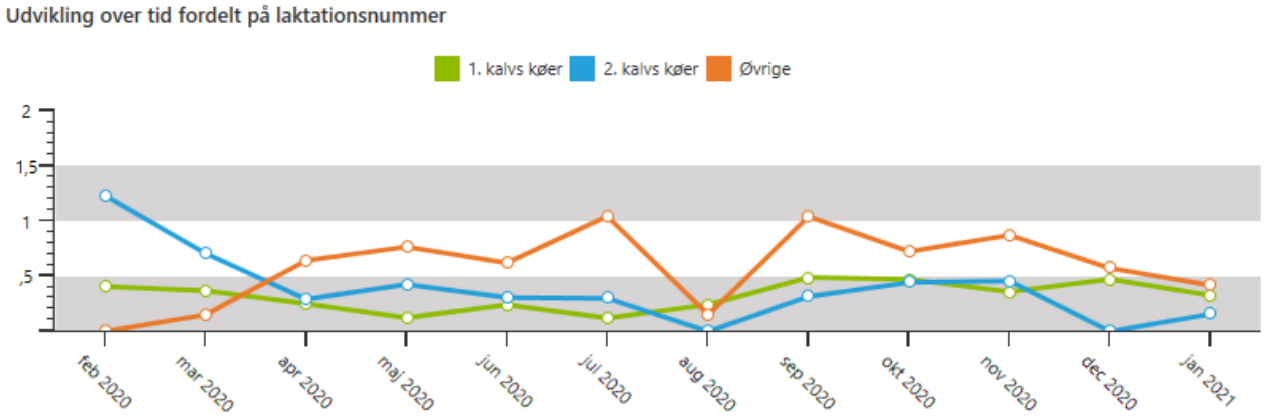
More insights

- Development in claw and leg diseases
- Under the key figure the user – farmer/vet/advisor – can follow the development
  - Last 12 month
  - 12 month before
  - Divided over lactations
- Evaluate and fine reasons and improvements

Klov- og lemmelidelser pr. årsko (Antal)





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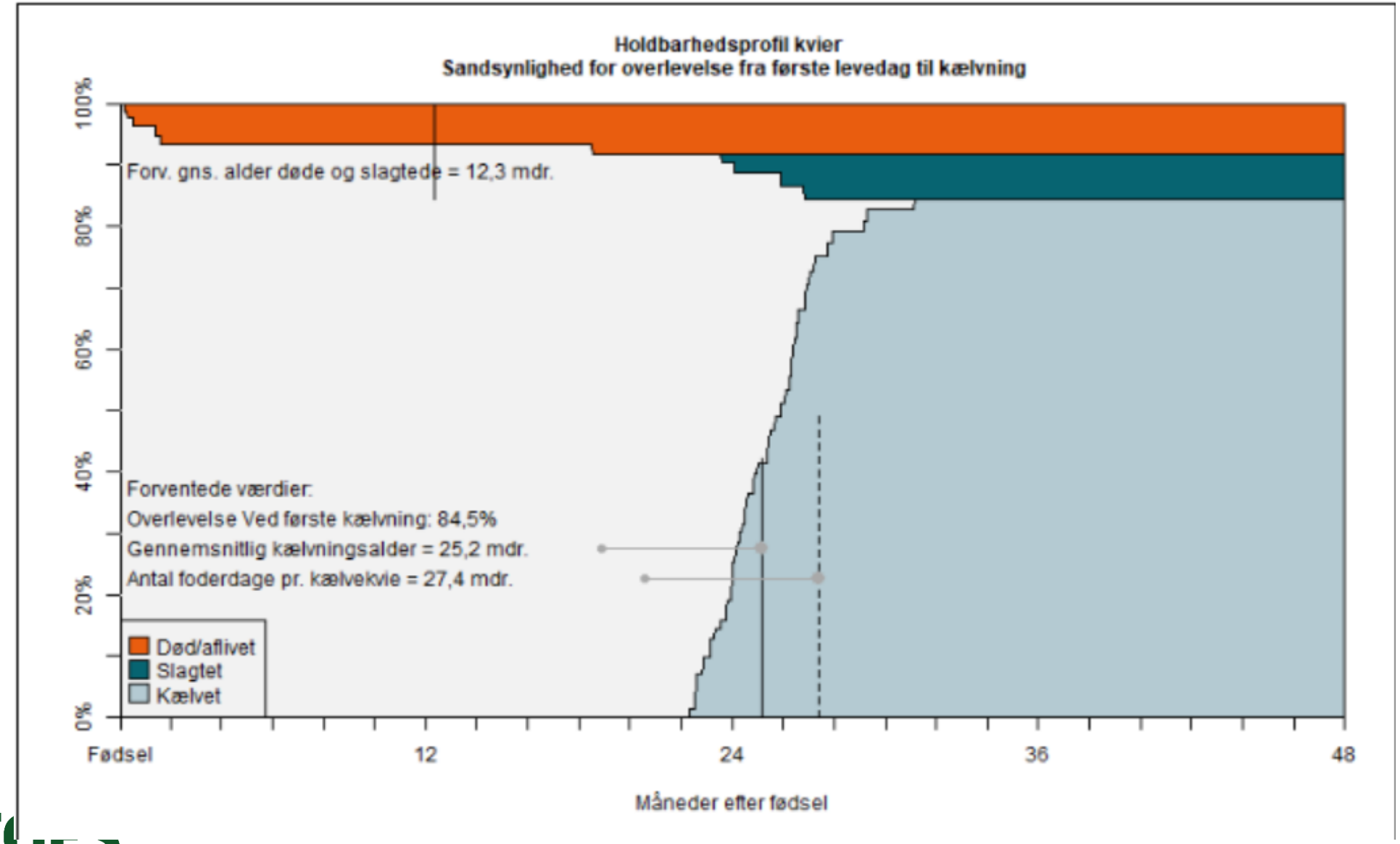
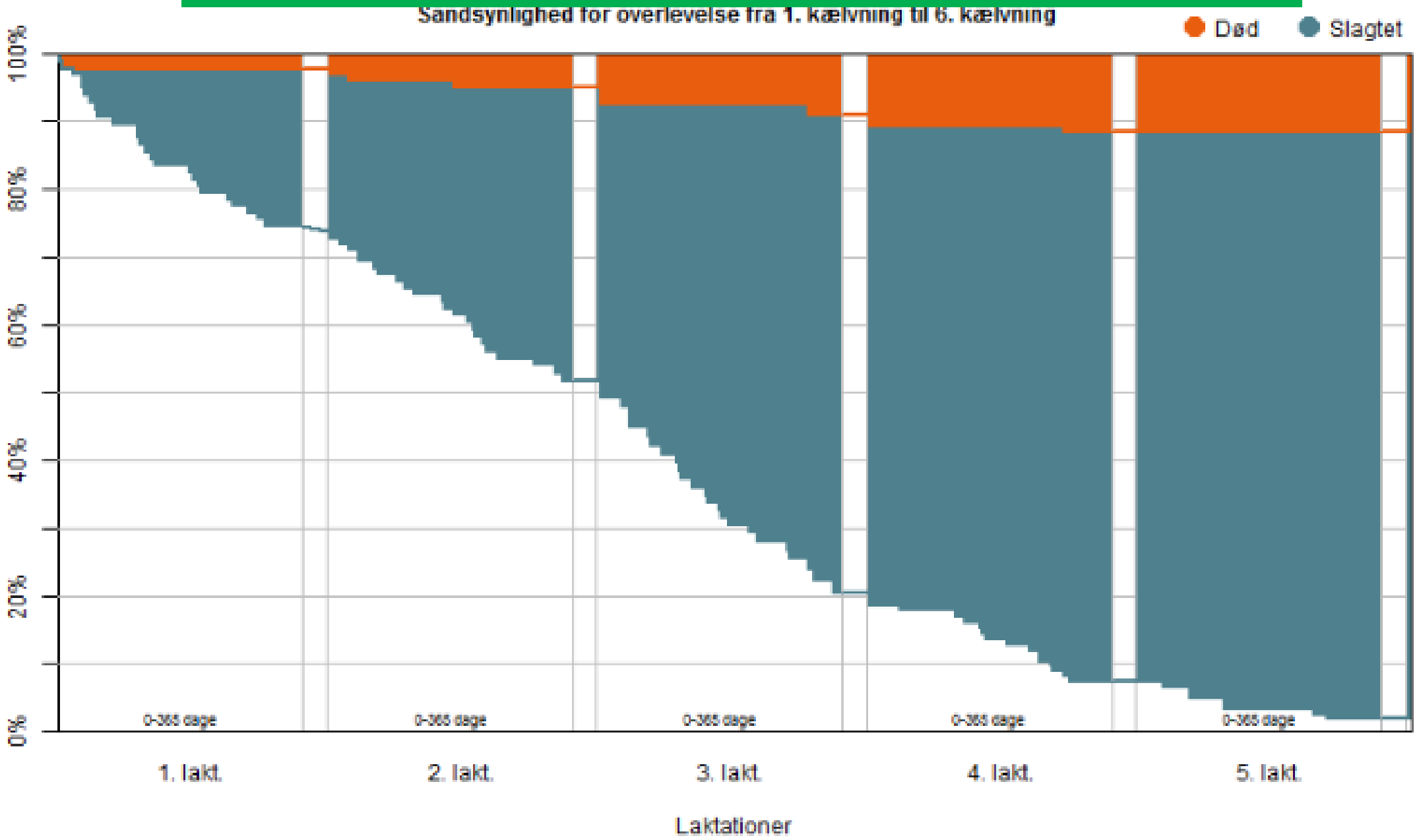
Performance incentive on heifers



Longlivity – when do the cow leave the herd



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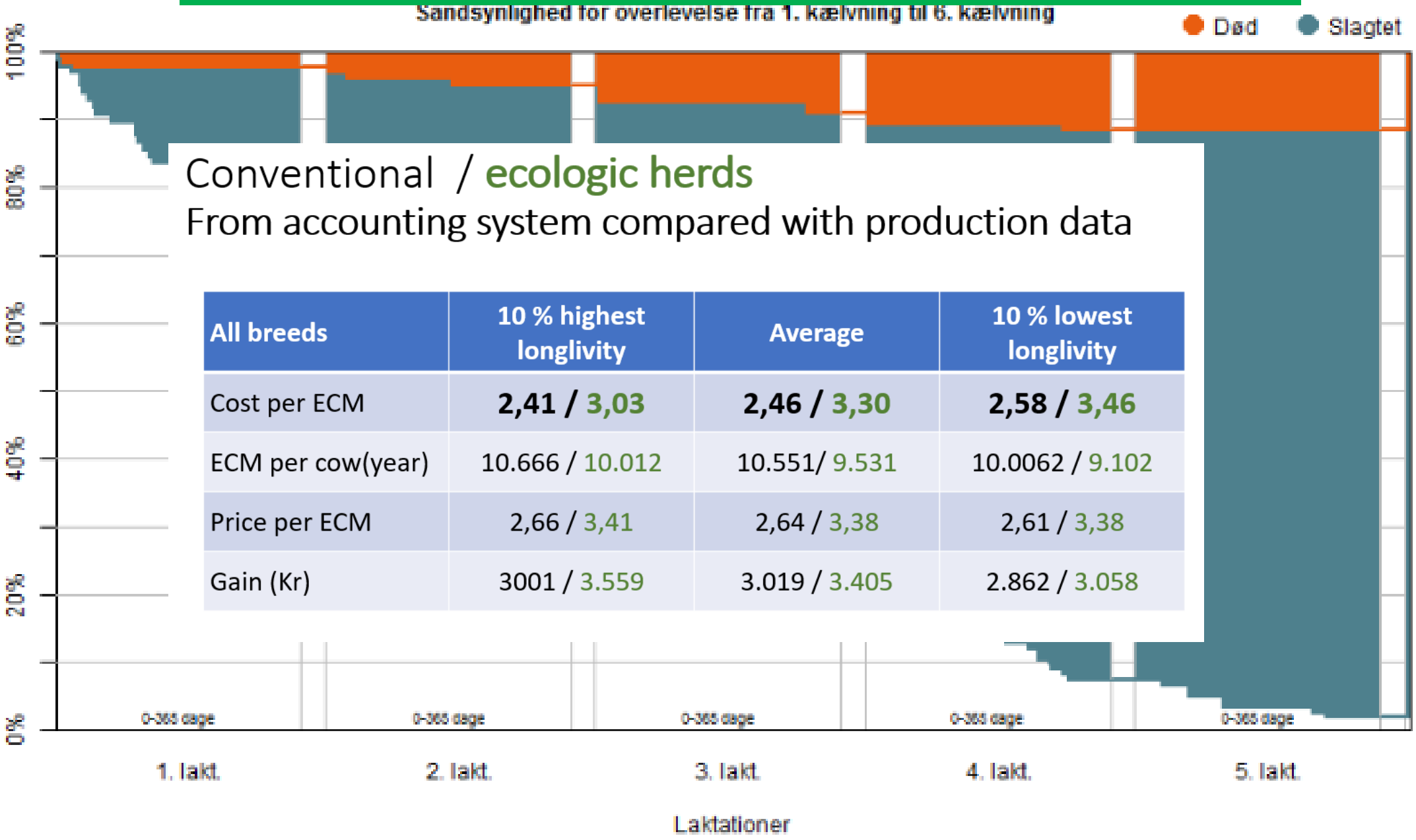

Conventional / ecologic herds

From accounting system compared with production data

All breeds	10 % highest longlivity	Average	10 % lowest longlivity
Cost per ECM	**2,41 / 3,03**	**2,46 / 3,30**	**2,58 / 3,46**
ECM per cow(year)	10.666 / 10.012	10.551/ 9.531	10.0062 / 9.102
Price per ECM	2,66 / 3,41	2,64 / 3,38	2,61 / 3,38
Gain (Kr)	3001 / 3.559	3.019 / 3.405	2.862 / 3.058

Thank you for your attention!

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