KNOWLEDGE CENTRE FOR AGRICULTURE

Key Point Indicators Check – a Benchmarking system

T5

Information Systems for Providing Farmers Information needed to increase Profitability

Cork 2012

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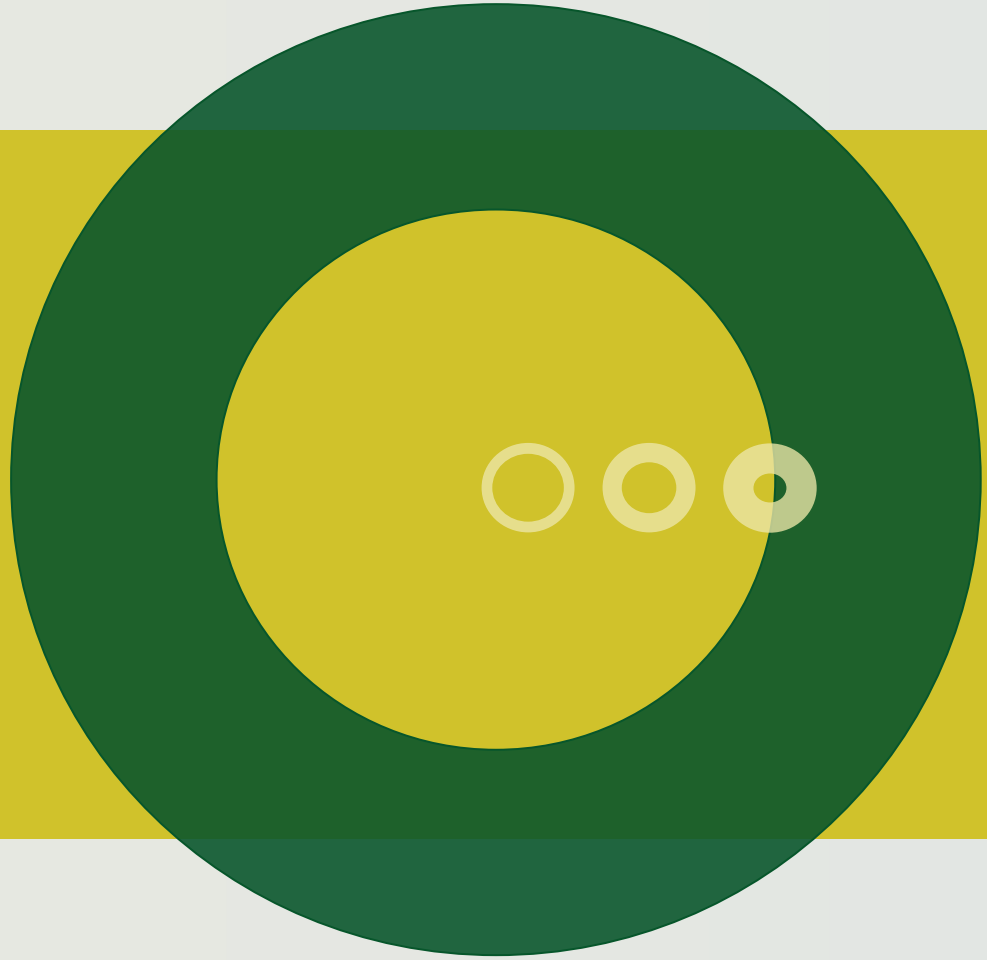


PARTNER IN DLBR

Why is Benchmarking interesting?

- How well do the best herds perform?
- What is the potential for my herd?
- Where is the potential for my herd?

Essential questions – which for many farmers are the main motivator to make changes in the management

Increasing needs (demands) arise from dairy farmers and their advisors

Benchmarking in dairy business in Denmark

- Long tradition for different kind of Benchmarking in reports from the Cattle Database
- But lack of flexibility and possibilities leads to a new developed Benchmarking system in 2001
- Benchmarking started up in 2001 with 25 key figures
- Developed over the years to 340 key figures today
- Very popular and used within all business areas in the dairy production by both
  - Farmers (20% at least 1 report in 2011)
  - Advisors (at least 1 report for 83 % of farms in 2011)

Data sources

The Danish Cattle Database contains data from a all variety of sources in the dairy business

- Mandatory recordings
- Voluntary recordings
- Milk recording
- Recordings from service suppliers (AI, vets, claw trimmers etc.)
- Laboratories
- Dairies
- Slaughter houses
- Etc.

Data is processed to valuable key figures

In the database only “raw” data is recorded and stored

- Data are corrected whenever new knowledge is achieved
- Data are combined in different key figures in the benchmarking system
- The key figures are recalculated once or twice per month
- The key figures are hereby ready for Benchmarking
- The key figures can’t be calculated on the fly due performance – not yet

The Benchmarking system

4 different types of Check types

- Benchmarking
- Quantile or percentile analysis
- Focus herds
- Benchmarking within a group of farmers – experience groups

20 standard methods

- Yield
- Breeding
- Economy
- Health
- Welfare
- Feeding

Example - Benchmarking

KNOWLEDGE CENTRE FOR AGRICULTURE
Cattle

Benchmarking

Statement

Herd number: xxxxxx

Breed: HF

Period: 01-05-2011 - 30-04-2012

Herds in control group

Criteria

Breed = HF

*Best determined ECM per cow

Control group (2.586)

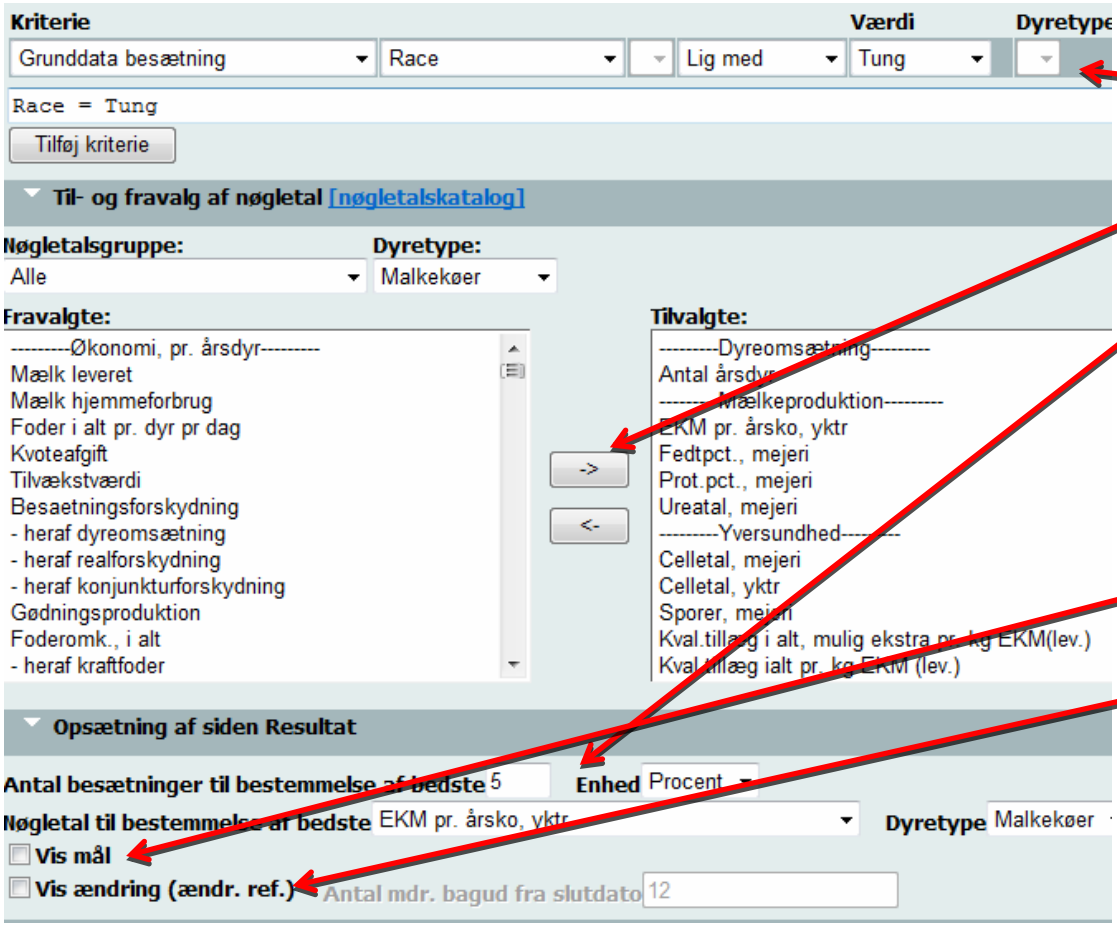
Dairy cows

Livestock turnover	Unit	Achieved	Avg. 5% best*	Avg. all
Number of animals per year	Pcs	133,3	181,9	85,0
Milk production				Avg. All
ECM per cow (milkreord.)	**Kg**	10.500	**11.494**	**9.197**
Percentage of fat, dairy	Per cent	4,18	4,04	4,21
Percentage of proteine, dairy	Per cent	3,36	3,35	3,44
Urea count, dairy		4,0	4,3	4,3
Udder health				Avg. All
Cell count, dairy	*1000	143	202	243
Cell count,milk recording	*1000	171	234	284
Spores, dairy	Pcs	121	191	551

Example - Benchmarking

Meat production	Unit	Achieved	Avg. 5% best*	Avg. all
Classification cows		2,3	2,5	2,5
Percentage of cows with obesity < 3	Per cent	68	49	50
Reproduction				Avg. All
Percentage pregnant of commenced	Per cent	63	58	54
Age 1st calving	Months	26,9	25,2	26,3
Spread, age 1st calving	Months	1,6	2,0	2,5
Health				Avg. All
Total diseases per animal per year	Pcs	1,95	1,36	1,05
Mastitis per yearcow	Pcs	0,62	0,37	0,34
Dead cows, percentage	Per cent	5,3	3,8	4,9
Stillborn calves, percentage	Per cent	6,3	6,4	5,7
Dead calves,1-180 days	Pcs	7	7	9
Dead calves, 1-14 days	Pcs	2	3	4
Fodder production				Avg. All
Silage, kg ts. per FU (digestibilty)	Index	103	106	100
Silage samples, kg ts. per FU	Pcs	1	6	5
Silage, NH3-count	Index	99	101	99
Silage samples, NH3-count	Pcs	1	6	5

Setting up Benchmarking



- Setting criteria
- Chose Key figures
- Setting for the best of comparison group
- Goals
- Reference period

Example – Benchmarking – reference period

KNOWLEDGE CENTRE FOR AGRICULTURE
Cattle

Benchmarking

Statement

Herds in control group

Herd number:	xxxxx	Criteria	
		Breed	=
Breed:	HF		
		Farm type	=
Period:	01-05-2011 - 30-04-2012		
Reference:	01-05-2010 - 30-04-2011		
		*Best determined	I

Dairy cows **Herd** **Control group (3.634)**

Livestock turnover	Unit	Goal	Achieved	Changed ref.	Avg. 5% best*	Avg. All
Number of animals per year	Number		133,3	5,9	182,2	145,9
Milk production						Avg. All
ECM per cw (milk recording)	**Kg**		10.500	**256**	**11.497**	**9.210**
Percentage of fat, dairy	Per cent		4,18	0,00	4,04	4,21
Percentage of proteine, dairy	Per cent		3,36	0,05	3,35	3,44
Urea count, dairy			4,0	-0,3	4,3	4,3

Example – Benchmarking – reference period

Udder health	Enhed	Goal	Achieved	Changed ref.	Avg. 5% best*	Avg. All
Cell count, dairy	*1000	200	143	-30	202	243
Cell count, milk recording	*1000		171	-71	235	284
Spores, dairy	Pcs		121	58	191	551
Meat production						Avg. All
Classification cows			2,3	-0,3	2,5	2,5
Percentage of cows with obesity < 3	Per cent		68	17	49	50
Reproduction						Avg. All
Percentage pregnant of commenced	Per cent		63	-1	58	54
Age 1st calving	Mdr.		26,9	-0,3	25,2	26,3
Spread, age 1st calving	Mdr.		1,6	-0,1	2,0	2,5
Health						Avg. All
Total diseases per animal per year	Pcs		1,95	0,60	1,36	1,05
Mastitis per yearcow	Pcs		0,62	-0,01	0,37	0,34
Dead cows, percentage.	Per cent		5,3	-0,2	3,8	5,1
Stillborn calves, percentage	Per cent		6,3	-0,7	6,4	6,3
Dead calves,1-180 days	Pcs		7	-6	7	9
Dead calves, 1-14 days	Pcs		2	-5	3	4
Fodder production						Avg. All
Silage, kg ts. per FU (digestibilty)	Index		103	2	106	101
Silage samples, kg ts. per FU	Pcs		1	0	6	5
Silage, NH3-count	Index		99	10	101	100
Silage samples, NH3-count	Pcs		1	0	6	5

Example – Benchmarking – high yield – low SCC

KNOWLEDGE CENTRE FOR AGRICULTURE
Cattle

Opgørelse

Statement

Herd number: XXXX

Breed: HF

Period: 01-05-2011 - 30-04-2012
Reference: 01-05-2010 - 30-04-2011

Benchmarking

Herd in comparison gr

Criteria:
Breed

ECM per cow

SCC Dairy

Herd | **Control group (91)**

Livestock turnover	Unit	Goal	Achieved	Changed ref.	Avg. 10 best	Avg all
Number of animals per year	Number		133,3	5,9	202,9	161,4
Milk production						Avg all
ECM per cw (milk recording)	**Kg**		10.500	**256**	**12.001**	**10.684**
Percentage of fat, dairy	Pct		4,18	0,00	4,04	4,10
Percentage of proteine, dairy	Pct		3,36	0,05	3,36	3,39
Urea count, dairy			4,0	-0,3	4,5	4,2

Benchmarking, setting the selection

Criteria for comparison group

- Free choice of criteria on whatever key figure; which and how many
- Breed, Yield, Cell count - whatever

Choosing the Key figures

- Free choice whatever key figure; which and how many

Selection of the best of the comparison group

- Number or percentage
- Setting the figure (min. 5 herds)

Other setting

- Reference period
- Goals

This is already done in the standard methods – but can be edited

Example – Quantile or percentage analysis

KNOWLEDGE CENTRE FOR AGRICULTURE
Cattle

Quantile Analysis

Statement

Herd number: XXXXX

Breed: HF

Period: 01-05-2011 - 30-04-2012

Herds in control group

Criteria
Breed =

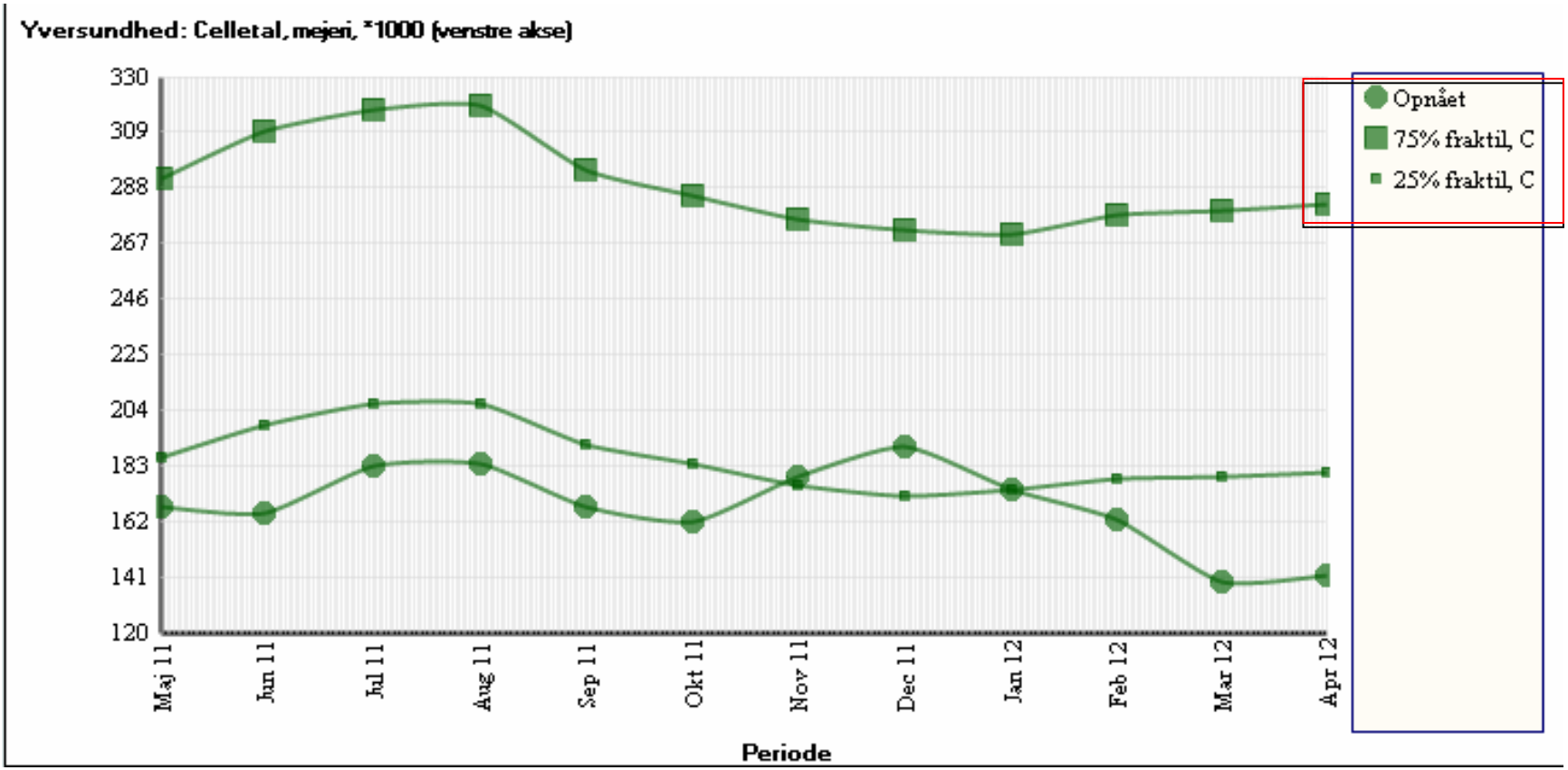
Farm type =

Dairy cows			**Herd**	**Control group (3.634)**	
Livestock turnover	Unit	Goal	Achieved	25% quantile	75% quantile
Number of animals per year	Pcs		133,30	71,7	185,4
Milk production					
ECM per cow, milk recording	Kg		10.500,00	8.524	9.974
Average ECM in 1st lact. in % of 3+ lact.	Per cent		82,50	78	86
Average ECM in 2nd lact. i % of 3+ lact.	Per cent		100,10	93	99
Udder health					
Cell count, dairy	*1000	200	142,81	193	286
Cell count, performance control (yktr)	*1000		170,81	221	333
% cows with low cell count	Per cent		61,70	44	64
% new cows with elevated cell count	Per cent		2,30	3	4
% cows with chronic elevated cell count	Per cent		5,90	9	18

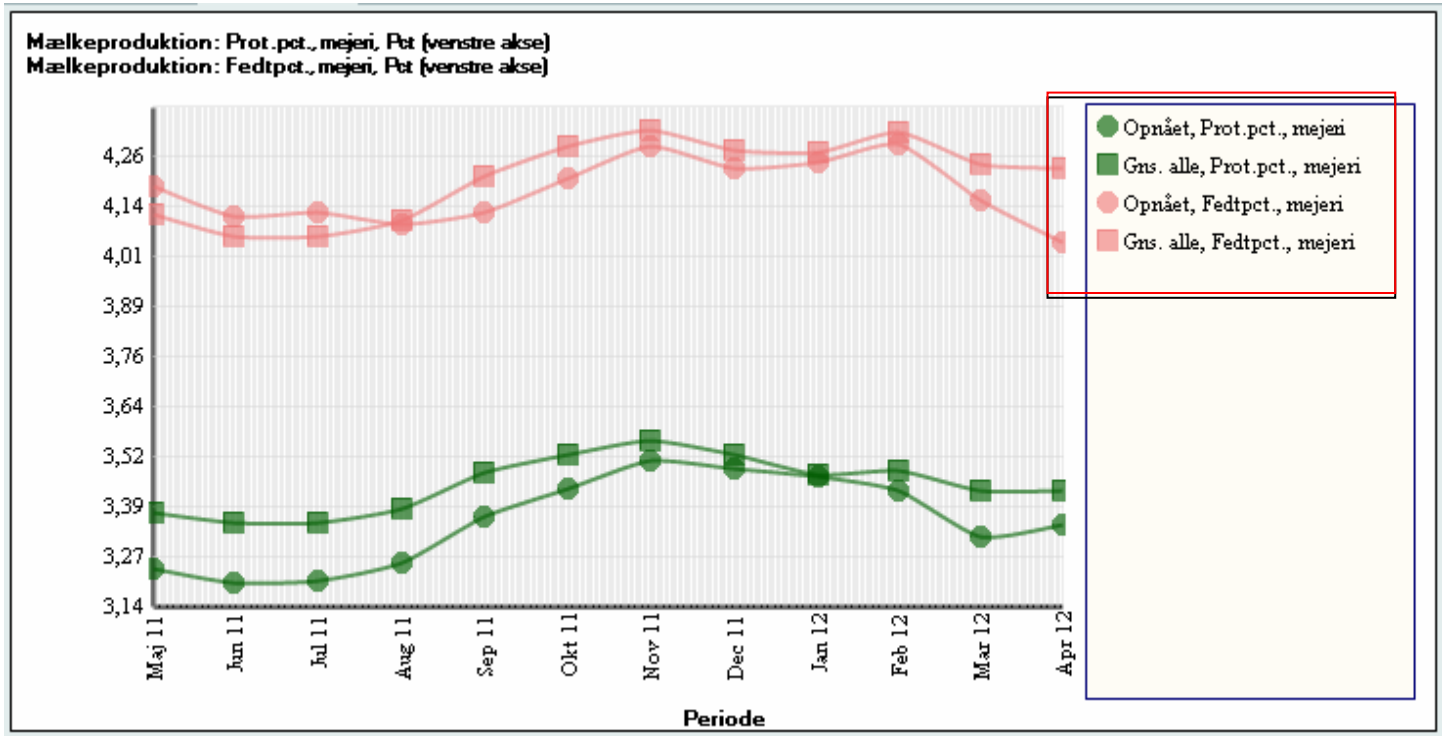
Example – Quantile or percentile analysis

Reproduction	Unit	Goal	Achieved	25% quantile	75% quantile
Conception rate, all	Per cent		41,00	30	44
Percentage pregnant of commenced	Per cent		63,00	48	67
Age 1st calving	Months		26,90	25,1	27,3
Spread, age 1st calving	Months		1,60	1,8	2,9
Insemination percentage, all	Per cent		47,00	32	53
Health					
Total diseases per animal per year	Pcs		1,95	0,57	1,38
Mastitis per yearcow	Pcs		0,62	0,17	0,46
Dead cows, percentage	Per cent		5,30	2,5	6,6
Stillborn calves, percentage	Per cent		6,30	4,0	8,2
Dead calves,1-180 days	Per cent		7,00	2	12
Dead calves , 1-14 days, pct.	Per cent		1,60	0,4	3,7
Dead calves , 14-60 days, pct.	Per cent				
Dead calves , 60-180 days, pct.	Per cent		1,67	0,0	2,9

Graph from Quantile analysis



Graph from Benchmarking analysis



- Fat
- Protein

Thank you for your attention

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