



Benchmarking in depth

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Benchmarking in depth

Agenda

- 1. Introduction**
- 2. Different aspects of benchmarking with dairy data**
- 3. Different ways to benchmark**
- 4. Caution with presenting benchmark results**
- 5. Interesting results (3 examples)**
- 6. Summary**



Benchmarking in Depth

Introduction:

Harm-Jan van der Beek

- Born on a dairy farm in The Netherlands.
 - My first own calf was named; Dora 60
 - Studied in Wageningen University
- Final project: First milking robot on television*
- In dairy software since 1984
 - CEO of UNIFORM-Agri since 1989
 - My first experience with benchmarking in 1971!



Benchmarking in Depth

Different aspects of benchmarking: The data!

- **Source of the data**
- **Reliability of the data** (is there validation?)
- **Statistic checks on the data**
- **Are KPI's calculated in the same way?** (don't compare apples with banana's)
- **Permission to use the data**
- **Is the data corrected for certain factors, or not?**



Benchmarking in Depth

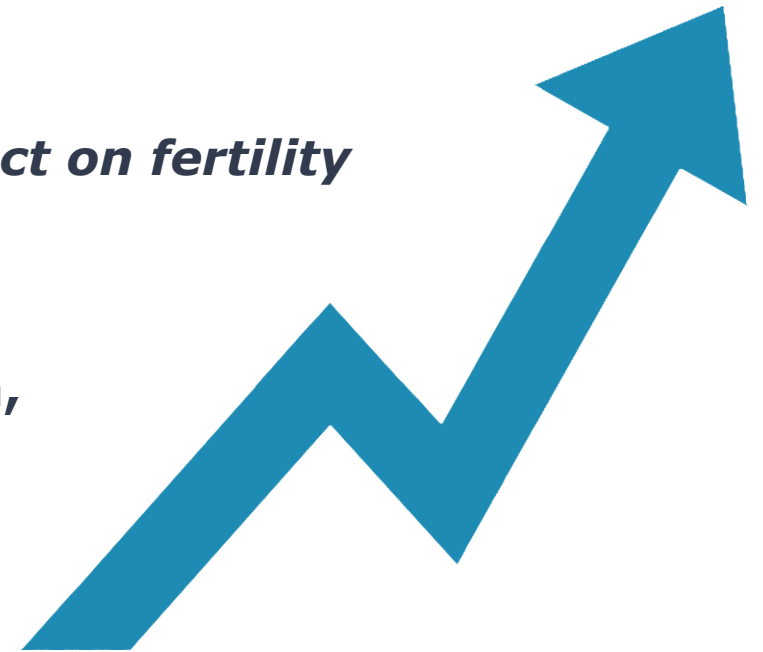
Internal and external circumstances that influence the data

- **External circumstances:** climate, local weather,
governmental regulations,
diseases like bluetongue.

Example: extreme hot period in summer will have effect on fertility

- **Internal circumstances:** new barn, another herdsman,
switch to automatic milking.

Example: better herdsman will give better results



In farm benchmarking you can discuss to correct for these circumstances or not.

Benchmarking in Depth

Different ways of benchmarking

- **Compare results from one farm with a group of farms (same time)**
Just to see where you are as a farmer against others (ranking options)
- **Compare results from one farm with itself in the past**
To see how a farm is developing/improving
- **Compare one farms development in time with a groups of farms(A en B)**
To see the development on one farm in relation to the group
- **Compare a group of farms with another group (same time)**
To see different levels per group (country, size, set-up etc.)
- **Compare a group of farms with another group over a period**
To see a trend per group changing in time (country, size, set-up etc.)
- **Compare a unique group of farms with another over a period.**
To see in an identical group of farms the trends in time (more reliable)

Benchmarking in Depth

Caution with presenting benchmark results

Respect for industry partners

So, we don't compare/analyze installations from partners

Example: comparing avg SCC between red, green and blue robots



Data from dairy farmers using UNIFORM all over the world.

➤ Australia

➤ Austria

➤ Belgium

➤ Brazil

➤ Canada

➤ Czech Republic

➤ Denmark

➤ France

➤ Germany

➤ Hungary

➤ Italy

➤ Luxemburg

➤ Portugal

➤ Romania

➤ Spain

➤ Sweden

➤ Netherlands

➤ Slovakia

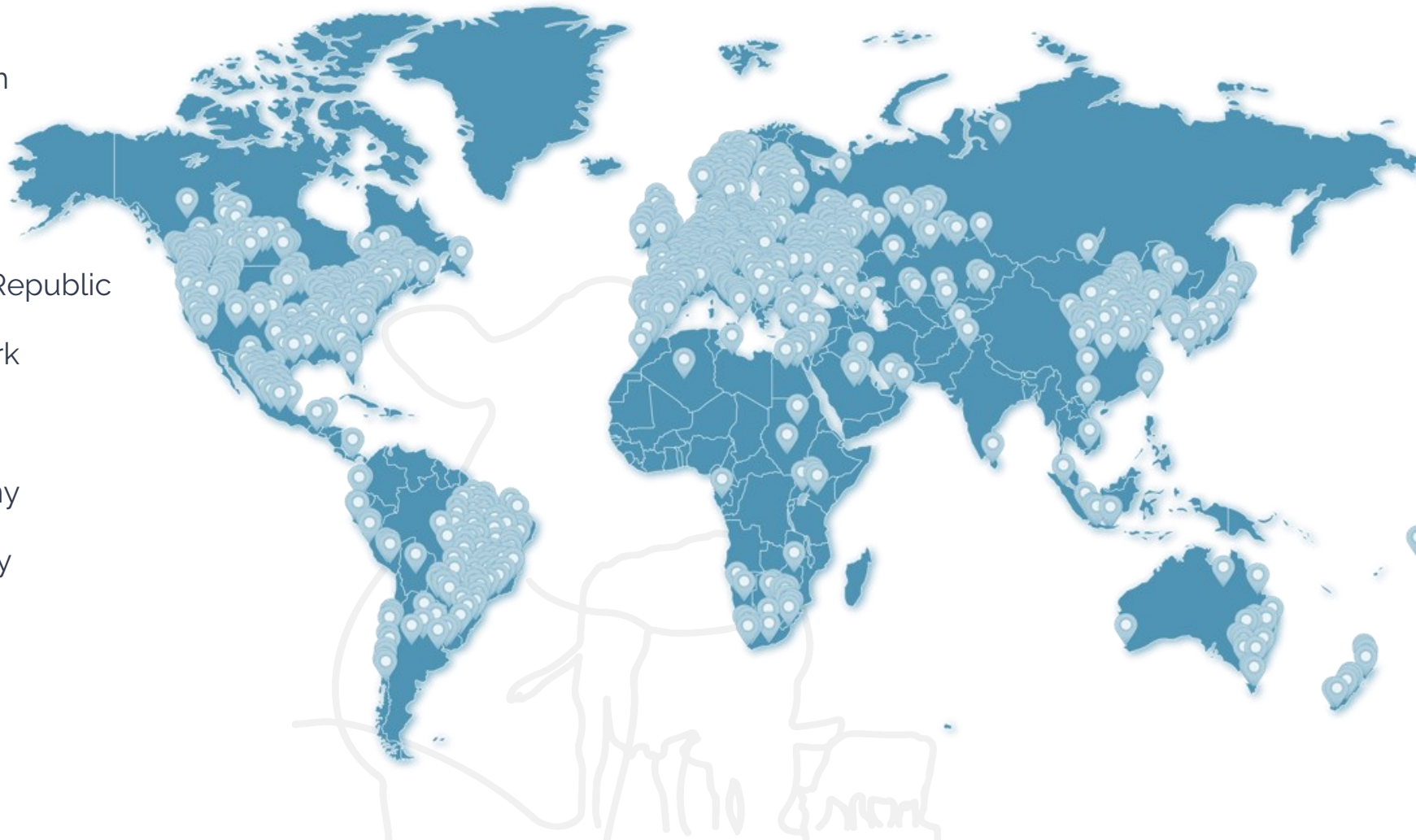
➤ Norway

➤ Ukraine

➤ United Kingdom

➤ United States

➤ All Latam Countries



Benchmarking in Depth

Interesting results

1^e example: Benchmark data from UNIFORM users from April 2024.

- Data from Dairy farms who have send their data in April 2024 from several countries.
- The data is collected with permission of the farmers to use anonymously.
- Countries: Brazil, UK, Netherlands, Belgium, Germany, Italy, Canada
- The reliability is high, because the data is collected for their own day to day management, with interfaces.

Some results we can see:

- Fertility: Denmark shows the best results and Brazil the worst

	Pregnancy rate	Avg age of 1st calving
Denmark	20	24,4
Brazil	14	28,7

Comparing the data from April 2024 for 7 different countries

Farm Comparison April 2024 between Countries								
Item	All	Brasil	UK	NL	Belgium	Germany	CANADA	Denmark
Month	apr-24	apr-24	apr-24	apr-24	apr-24	apr-24	apr-24	apr-24
Number of Farms	4688	83	1112	1470	405	325	338	123
General								
No. of calved animals	239	286	328	159	214	267	152	514
No. of young stock	183	302	302	80	158	195	122	328
Youngstock / 10 calved animals	12,1	10,4	9,4	8,8	7,60	43,1	7,2	6,8
Lactation Production								
No. of animals in closed lact.	218	267	305	147	196	239	136	494
Calving age in closed lact.	3,5	3,5	3,5	3,7	3,1	3,6	3,3	3,1
305 Days production	9.556	8.986	9.195	9.450	9.925	9.894	10.654	10.323
Days in milk	339	324	319	352	342	344	322	344
% fat	4,31	4,21	4,33	4,42	4,22	4,09	4,21	4,54
% protien	3,46	3,28	3,39	3,58	3,43	3,44	3,36	3,68
Kg fat and protein	783	633	706	832	808	799	816	916
Avg. Kg Milk	10.427	9.235	9.693	10.516	10.952	11.037	11.506	11.437
Fertility								
Avg. days to first heat	74	69	65	78	73	81	71	81
Avg. days to first insemination	84	70	74	92	82	92	77	82
Avg. no. of ins. for P+	2,03	2,22	2,01	1,98	2,10	2,01	2,17	1,97
% Insemination Rate	46,7	49,9	52,5	41,5	49,1	41,2	57,4	51,7
% Conception Rate	41,3	36,0	42,7	42,0	38,7	42,4	40,0	43,3
% Pregnancy Rate	16,5	14,0	19,9	15,2	15,0	15,6	18,2	20,0
Avg. age at first calving	26,1	28,7	26,4	25,3	25,5	27,0	25,4	24,4
Predicted Calving Interval	421	460	397	418	410	434	405	393
Health								
Avg. cell count	196	366	170	192	182	231	195	214
% cows > 250.00	15,0	28,7	12,5	15,5	14,8	16,4	14,6	14,2
% Dead born calves	4,8	4,1	4,4	6,0	5,2	4,8	5,5	0,9
% Dead calves in 14 days	1,6	1,9	1,0	1,9	2,4	1,6	0,8	2,1
% Mastitis cases	2,6	2,5	1,4	2,3	6,0	2,7	1,5	1,8
Milkproduction								
Avg. kg milk per day	30,2	30,1	29,5	29,4	31,4	30,7	33,5	31,7
Avg. % fat	4,37	3,98	4,38	4,48	4,22	4,09	4,28	4,57
Avg. % protein	3,51	3,54	3,40	3,58	3,52	3,45	3,46	3,70
0 - 60 days SPP	43,3	38,4	41,5	43,4	45,7	43,3	47,3	43,6
61 - 120 days SPP	44,8	41,9	43,4	44,4	47,5	45,1	48,5	46,4
121 - 200 days SPP	45,6	46,7	44,2	44,3	48,1	46,5	49,6	48,1
201 - 305 days SPP	46,9	47,9	45,7	44,7	48,8	48,7	51,1	50,9
Avg. SSP	45,3	43,9	43,8	44,3	47,8	46,4	49,3	47,9
Sustainability								
Lifeproduction efficiency	13,4	7,5	12,6	15,8	13,5	13,1	11,8	15,6
Production efficiency	22,2	14,7	21,6	24,4	23,2	22,9	21,0	26,9
Lifeproduction at departure	27.827	14.474	25.652	35.279	25.692	26.305	22.132	28.809

Source: UNIFORM users who send in their data for Benchmark

Comparing the data from April 2024 for 7 different countries

Fertility:

Farm Comparison April 2024 between Countries

Item	All	Brasil	UK	NL	Belgium	Germany	CANADA	Denmark
Month	apr-24	apr-24	apr-24	apr-24	apr-24	apr-24	apr-24	apr-24
Number of Farms	4688	83	1112	1470	405	325	338	123
Fertility								
Avg. days to first heat	74	69	65	78	73	81	71	81
Avg. days to first insemination	84	70	74	92	82	92	77	82
Avg. no. of ins. for P+	2,03	2,22	2,01	1,98	2,10	2,01	2,17	1,97
% Insemination Rate	46,7	49,9	52,5	41,5	49,1	41,2	57,4	51,7
% Conception Rate	41,3	36,0	42,7	42,0	38,7	42,4	40,0	43,3
% Pregnancy Rate	16,5	14,0	19,9	15,2	15,0	15,6	18,2	20,0
Avg. age at first calving	26,1	28,7	26,4	25,3	25,5	27,0	25,4	24,4
Predicted Calving Interval	421	460	397	418	410	434	405	393

Benchmarking in Depth

2nd Example: Benchmark data from UNIFORM users from April 2023 and April 2024.

- Same source of data!
- Data from an Identical group of farms who have sent their data in April 2024 and also in April 2023.

So, we can compare how they have developed in one year time in different countries.

Some results we can see:

- We see KPI's that indicate a certain level of sustainability are the best in the Netherlands.

	The Netherlands	All farms
Life production efficiency	15,7 → 15,8	13,2 → 13,4
Life production at departure	35.319 Kg	27.827 Kg

Compare the development of dairy farms in 1 year for 7 countries.

Farm Comparison April 2023 vs April 2024 per Country

Item	All		Brasil		UK		NL		Belgium		Germany		CANADA		Denmark	
	apr-23	apr-24	apr-23	apr-24	apr-23	apr-24	apr-23	apr-24	apr-23	apr-24	apr-23	apr-24	apr-23	apr-24	apr-23	apr-24
Number of Farms	4688	4688	83	83	1112	1112	1470	1470	405	405	325	325	338	338	123	123
General																
No. of calved animals	235	239	299	286	320	328	159	159	208	214	263	267	148	152	495	514
No. of young stock	173	183	289	302	283	302	76	80	150	158	183	195	111	122	309	328
Youngstock / 10 calved animals	8,3	12,1	9,6	10,4	9,0	9,4	5,7	8,8	7,4	7,60	11,5	43,1	6,8	7,2	6,6	6,8
Lactation Production																
No. of animals in closed lact.	212	218	247	267	297	305	145	147	192	196	234	239	132	136	477	494
Calving age in closed lact.	3,5	3,5	3,6	3,5	3,6	3,5	3,8	3,7	3,1	3,1	3,5	3,6	3,2	3,3	3,1	3,1
305 Days production	9.436	9.556	8.773	8.986	9.119	9.195	9.294	9.450	9.816	9.925	9.742	9.894	10.452	10.654	10.257	10.323
Days in milk	342	339	338	324	327	319	351	352	344	342	345	344	329	322	343	344
% fat	4,27	4,31	4,19	4,21	4,28	4,33	4,38	4,42	4,20	4,22	4,07	4,09	4,21	4,21	4,52	4,54
% protien	3,44	3,46	3,25	3,28	3,37	3,39	3,54	3,58	3,41	3,43	3,42	3,44	3,35	3,36	3,65	3,68
Kg fat and protein	776	783	640	633	712	706	809	832	800	808	783	799	817	816	902	916
Avg. Kg Milk	10.275	10.427	8.850	9.235	9.653	9.693	10.313	10.516	10.796	10.952	10.823	11.037	11.241	11.506	11.407	11.437
Fertility																
Avg. days to first heat	74	74	64	69	65	65	78	78	73	73	81	81	70	71	81	81
Avg. days to first insemination	83	84	68	70	73	74	90	92	82	82	90	92	77	77	82	82
Avg. no. of ins. for P+	2,05	2,03	2,22	2,22	2,07	2,01	1,98	1,98	2,12	2,10	2,04	2,01	2,17	2,17	1,94	1,97
% Insemination Rate	47,7	46,7	49,1	49,9	52,6	52,5	43,3	41,5	48,9	49,1	44,2	41,2	56,7	57,4	53,3	51,7
% Conception Rate	41,9	41,3	35,8	36,0	43,0	42,7	42,3	42,0	39,4	38,7	43,1	42,4	39,6	40,0	42,5	43,3
% Pregnancy Rate	17,5	16,5	15,8	14,0	20,3	19,9	15,7	15,2	16,3	15,0	16,7	15,6	21,0	18,2	20,3	20,0
Avg. age at first calving	26,0	26,1	29,0	28,7	26,4	26,4	25,3	25,3	25,4	25,5	27,0	27,0	25,1	25,4	24,4	24,4
Predicted Calving Interval	417	421	445	460	394	397	417	418	406	410	431	434	405	405	391	393
Health																
Avg. cell count	201	196	372	366	177	170	201	192	196	182	224	231	190	195	214	214
% cows > 250.00	15,4	15,0	26,4	28,7	12,9	12,5	16,2	15,5	15,9	14,8	16,4	16,4	14,4	14,6	14,7	14,2
% Dead born calves	8,1	4,8	5,2	4,1	8,1	4,4	9,7	6,0	9,6	5,2	7,5	4,8	9,3	5,5	2,7	0,9
% Dead calves in 14 days	3,1	1,6	2,4	1,9	2,2	1,0	3,7	1,9	4,5	2,4	2,4	1,6	2,2	0,8	3,7	2,1
% Mastitis cases	2,7	2,6	3,7	2,5	1,4	1,4	2,2	2,3	6,9	6,0	2,1	2,7	1,6	1,5	1,2	1,8
Milkproduction																
Avg. kg milk per day	29,9	30,2	30,2	30,1	29,4	29,5	29,1	29,4	30,7	31,4	30,2	30,7	33,4	33,5	31,6	31,7
Avg. % fat	4,34	4,37	4,32	3,98	4,28	4,38	4,47	4,48	4,27	4,22	4,06	4,09	4,19	4,28	4,50	4,57
Avg. % protein	3,51	3,51	3,46	3,54	3,42	3,40	3,59	3,58	3,49	3,52	3,43	3,45	3,41	3,46	3,68	3,70
0 - 60 days SPP	43,1	43,3	38,7	38,4	41,7	41,5	43,2	43,4	45,4	45,7	42,7	43,3	47,1	47,3	43,9	43,6
61 - 120 days SPP	44,5	44,8	42,3	41,9	43,4	43,4	44,1	44,4	46,6	47,5	44,6	45,1	48,8	48,5	46,3	46,4
121 - 200 days SPP	45,3	45,6	46,6	46,7	44,5	44,2	44,3	44,3	46,6	48,1	45,6	46,5	49,6	49,6	48,1	48,1
201 - 305 days SPP	46,2	46,9	48,1	47,9	45,5	45,7	44,3	44,7	47,1	48,8	47,3	48,7	51,0	51,1	50,5	50,9
Avg. SSP	44,9	45,3	44,1	43,9	43,8	43,8	44,1	44,3	46,5	47,8	45,5	46,4	49,3	49,3	47,8	47,9
Sustainability																
Lifeproduction efficiency	13,2	13,4	7,0	7,5	12,6	12,6	15,7	15,8	13,4	13,5	13,0	13,1	11,1	11,8	15,2	15,6
Production efficiency	22,0	22,2	14,2	14,7	21,6	21,6	24,3	24,4	23,0	23,2	22,7	22,9	20,0	21,0	26,6	26,9
Lifeproduction at departure	27.654	27.827	13.638	14.474	26.040	25.652	35.319	35.279	25.220	25.692	25.904	26.305	20.952	22.132	28.142	28.809

Source: UNIFORM users who send in their data for Benchmark

Development in sustainability in 7 countries from '23 to '24

Sustainability:

Farm Comparison April 2023 vs April 2024 per Country																
Item	All		Brasil		UK		NL		Belgium		Germany		CANADA		Denmark	
Month	apr-23	apr-24	apr-23	apr-24	apr-23	apr-24	apr-23	apr-24	apr-23	apr-24	apr-23	apr-24	apr-23	apr-24	apr-23	apr-24
Number of Farms	4688	4688	83	83	1112	1112	1470	1470	405	405	325	325	338	338	123	123
Sustainability																
Lifeproduction efficiency	13,2	13,4	7,0	7,5	12,6	12,6	15,7	15,8	13,4	13,5	13,0	13,1	11,1	11,8	15,2	15,6
Production efficiency	22,0	22,2	14,2	14,7	21,6	21,6	24,3	24,4	23,0	23,2	22,7	22,9	20,0	21,0	26,6	26,9
Lifeproduction at departure	27.654	27.827	13.638	14.474	26.040	25.652	35.319	35.279	25.220	25.692	25.904	26.305	20.952	22.132	28.142	28.809
<i>Source: UNIFORM users who send in their data for Benchmark</i>																



Benchmarking in Depth

3rd example: Benchmark data from UNIFORM users over 10 years internationally

- Same source of data!
- Data from an Identical group of farms who have sent their data in April 2024 and also in April 2014.

So, we can see long term development in Dairy in these countries.

Some results we can see:

- We see farm size per country is growing but young stock differs a lot:

	Cows	Young stock
The Netherlands	127 → 156	87 → 81!
Belgium	124 → 213	102 → 150

Unique overview with data from unique farms over 10 years for 4 countries

Farm Comparison April 2014 vs April 2024 per Country										
Item	All		UK		NL		Belgium		Germany	
Month	apr-14	apr-24	apr-14	apr-24	apr-14	apr-24	apr-14	apr-24	apr-14	apr-24
Number of Farms	1204	1204	60	60	850	850	148	148	24	24
General										
No. of calved animals	138	179	237	312	127	156	124	213	199	239
No. of young stock	100	114	241	351	87	81	102	150	152	172
Lactation Production										
No. of animals in closed lact.	107	161	152	300	105	143	97	191	123	208
Calving age in closed lact.	3,4	3,6	3,9	3,4	3,5	3,7	3,1	3,1	3,3	3,5
305 Days production	8.672	9.579	8.572	9.029	8.629	9.501	8.948	10.044	9.014	10.354
Days in milk	351	349	350	324	351	352	349	340	344	334
% fat	4,31	4,40	4,17	4,41	4,35	4,42	4,15	4,26	4,06	4,15
% protien	3,49	3,55	3,29	3,39	3,51	3,58	3,42	3,47	3,35	3,44
Kg fat and protein	744	831	703	722	746	837	745	824	726	841
Avg. Kg Milk	9.520	10.615	9.453	9.684	9.463	10.563	9.832	11.003	9.781	11.422
Fertility										
Avg. days to first heat	76	75	64	59	76	76	72	72	87	84
Avg. days to first insemination	88	90	76	70	89	92	82	82	91	92
Avg. no. of ins. for P+	2,01	1,99	2,12	2,06	1,99	1,96	2,08	2,11	1,88	2,07
Health										
Avg. cell count	189	192	183	176	180	195	187	170	241	229
% cows > 250.00	15,1	15,2	14,2	12,6	14,9	15,4	15,7	14,2	17,6	16,2
% Dead born calves	7,4	6,3	0,4	0,7	7,7	6,7	6,3	5,9	2,5	4,0
% Dead calves in 14 days	2,0	1,8			2,3	1,9	1,8	2,6	1,8	1,0
Milkproduction										
Avg. kg milk per day	27,1	29,8	28,8	28,1	26,9	29,6	27,8	31,7	27,2	31,7
Avg. % fat	4,32	4,47	4,18	4,74	4,34	4,47	4,10	4,17	4,05	4,88
Avg. % protein	3,48	3,58	3,35	3,55	3,49	3,58	3,43	3,52	3,35	3,65
0 - 60 days SPP	40,1	43,7	39,5	40,1	40,2	43,6	40,7	46,6	39,7	43,8
61 - 120 days SPP	41,4	44,9	41,6	41,7	41,1	44,7	43,1	48,2	42,2	44,9
121 - 200 days SPP	41,1	45,0	42,9	42,3	40,7	44,6	43,1	49,0	41,5	47,4
201 - 305 days SPP	40,3	45,6	42,1	42,9	39,8	45,0	42,3	49,7	41,6	50,4
Avg. SSP	40,7	45,0	42,1	42,1	40,4	44,6	42,3	48,5	41,5	47,8

Long term effect in 4 countries.

Herd size:

Farm Comparison April 2014 vs April 2024 per Country

Item	All		UK		NL		Belgium		Germany	
	apr-14	apr-24	apr-14	apr-24	apr-14	apr-24	apr-14	apr-24	apr-14	apr-24
Month										
Number of Farms	1204	1204	60	60	850	850	148	148	24	24
General										
No. of calved animals	138	179	237	312	127	156	124	213	199	239
No. of young stock	100	114	241	351	87	81	102	150	152	172

Benchmarking in Depth

Summary of benchmarking with dairy data

- **It starts with: Collecting data and checking the quality**
- **Be aware of the effect of internal and external circumstances**
- **It is valuable information to evaluate your position and development**
- **It can tell farmers, consultants and politicians about the effects of actions**



Thank you

