



Benchmarking

Verona 2007



A guided tour in part of the landscape of Danish milk recording

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Responsible development of milk recording field services



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Recording is the basis for:

- Herd Management
- Staff management
- Advisory service
- Veterinary services
- National health schemes
 - Johne's, Salmonella Dublin a.o.
- Budget and planning
- Production documentation
 - Finance institutes
 - Insurance
 - National Benchmarking
- Breeding

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Organisation

- Since 1895 organized as farmer owned and farmer ruled organisations
- Has always been independent from any authority
- Have since app. 1950 carried out breeding evaluation under first national legislation, later combined national/EU legislation
- Government money never played a big role, and finally disappeared 15 years ago
- In 2003 28 of 31 regional associations merged into 1

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Management

- 4 regions each responsible for a group of technicians and recorders
- Each technician responsible for all planning
 - Which herds on which dates
 - Farmers get the service they signed for
 - Day to day management and planning of recorders herds
 - Equipment, maintenance, instruction etc.
 - Appointments with lab trucks
 - Up and download of data
 - Verify data

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Milk recording

96 % of cows and herds in one association

- MR owned by Danish Cattle Federation
 - Database owned by DCF
 - Farmer owned and ruled
- Lab owned by Eurofins
- 43 technicians (full time)
- 65 full employed in MR total
- We organize MR for all herds in Denmark
- All our services 100% paid by dairy farmers

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Services

- Basic service is B-method (Non supervised)
- 11 recordings per year
- 6 recordings per year
- Rent out milk meters
- Rent out samplers for robots
- Recorders at disposal for those who need an extra hand (Paid by the hour)

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Recording

- 2 daily milking, 11 recordings (sampling at one)
- 2 daily milkings, 6 recordings (sampling by both)
- 3 daily milking, 6 or 11 recordings (sampling by all)
- Robotic herds
 - one sample per cow
 - one sample per milking

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Equipment

- We own the equipment (Apart from 300 installations of fixed in-place meters)
- It needs one decision to change system
- It needs one decision to change principle
- We develop continuously in cooperation with major delivers of equipment
 - Tru-Test (milk meters and software)
 - Lely (New sampling device)
 - Others (sampling from robotic systems, software, etc.)

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Equipment

- 3.600 Tru-Test Electronic Milk Meters
- 100 Lely Shuttles
- 40 DeLaval Autosamplers
- 1.000 Tru-Test HI and WB meters
- 200 Tru-Test Ezi-Scanners
- 50 portable laptop computers
- Vans

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Definitions

Technician:

Responsible for a group of farms, typical 110

Recorder:

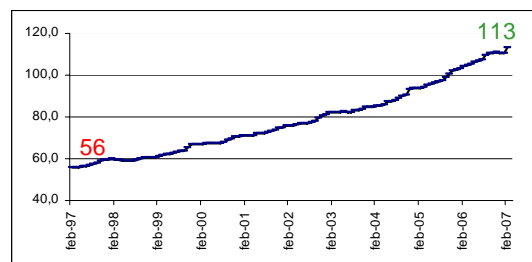
Servicing the farmer on recording day.

We employ 10 recorders (converted to full time)

Technicians have in average 10 recording days per month

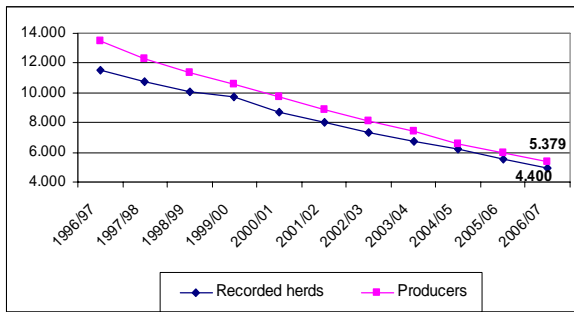
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Milk recording Av. herd size



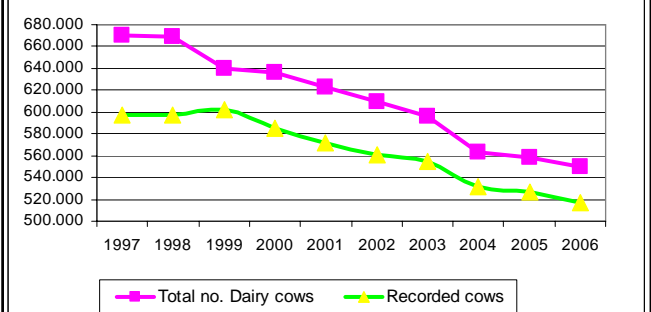
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Producers, 1996-2007



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Dairycows



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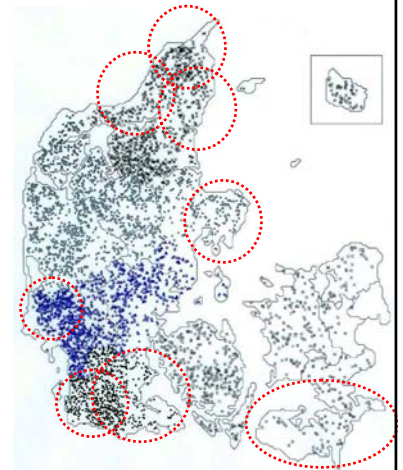
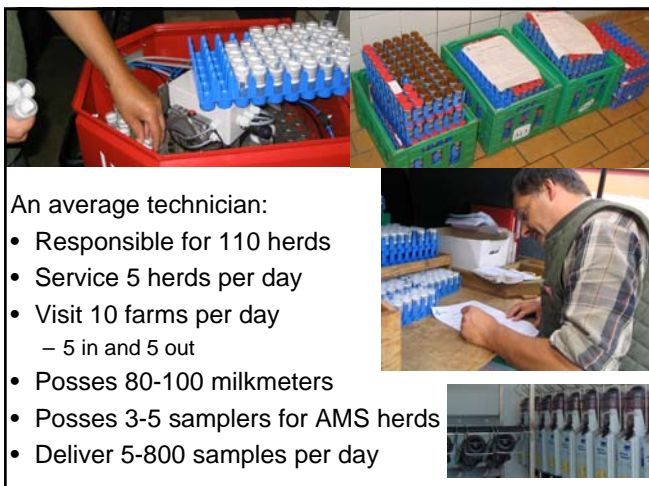
Number of recorded herds distributed by size, 1st Quarter 2007

Herds size	No. cows	No. herds	Av. herds size	% cows	% herds
to 50	29.935	884	33,9	5,7%	18,6%
51 to 100	98.833	1.339	73,8	18,9%	28,2%
101 to 200	289.511	2.075	139,5	55,5%	43,7%
201 to 300	69.300	294	235,7	13,3%	6,2%
301 to 400	19.624	58	338,3	3,8%	1,2%
401 to 500	4.844	11	440,4	0,9%	-
Over 500	6.776	10	677,6	1,3%	-
DK	518.823	4.671	111,1	100,0%	100%

Distribution of recorded herds

Distribution of recorded herds
(October 2006)

 Technician geographic area

An average technician:

- Responsible for 110 herds
- Service 5 herds per day
- Visit 10 farms per day
 - 5 in and 5 out
- Posses 80-100 milkmeters
- Posses 3-5 samplers for AMS herds
- Deliver 5-800 samples per day

Tru-Test DataHandler is our standard data carrier



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Milking equipment, types

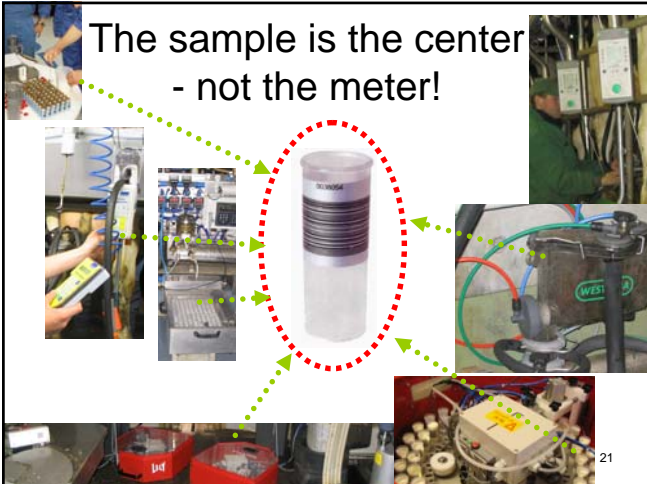
- 550 herds AMS/VMS
- 800 herds tie up barns (app.)
- 3200 parlours /rotaries (app.)
 - Of which app. 300 have fixed in place meters

Challenges 2000-2007

- AMS / VMS systems increasing
- Cows milked per hour increasing (up to 300)
- Manual sampling does not fit the decade
- Need for more detailed informations
- Need for automation in the lab
- Lab equipment gets more sophisticated
- Get more informations out of the sample

Safe sampling is the code word!

The sample is the center
- not the meter!



Analysis on DHI samples

Standards:

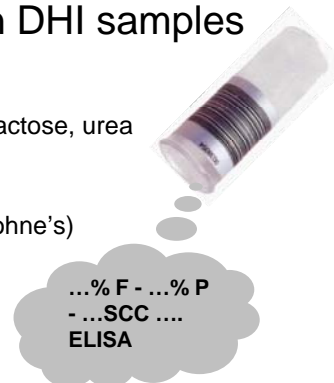
- Fat, protein, SCC, lactose, urea

Options:

- Paratuberkulose (Johne's)
- Salmonella Dublin

Future:

- ???
- ???



Portable electronic meters was the innovator



Barcoded vials was the goal



With EID and Electronic meters



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Receipt is printed....



...corrections are made

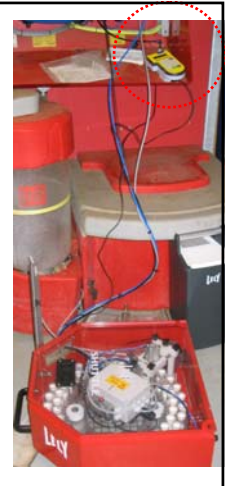
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Robotic systems No of milkings boxes increasing

- Average more than 2
- 4-6 quite common
- Max is 11 in one herd
- Sampling without automation is not possible
- The bigger the herd, the more need for precise and correct informations



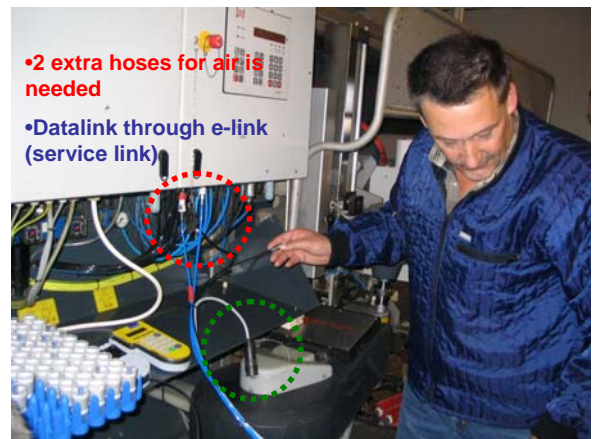
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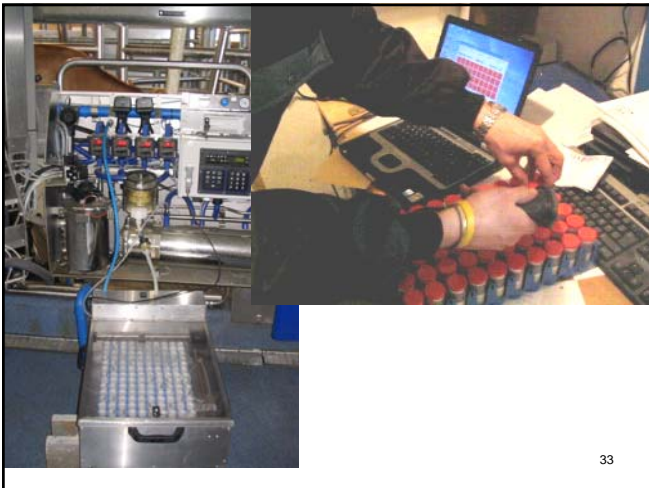
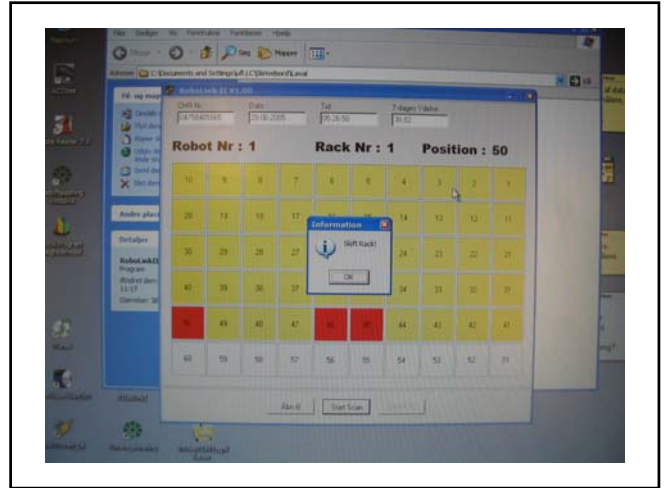


In service for the farmer



- 2 extra hoses for air is needed
- Datalink through e-link (service link)





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Transferred data, per milking
Fixed in-place meters

ID	Official ID	KG, milking 1	Bail no., milking 1	Milking time 1	Duration 1
87	056793-00087	11.9	18	06:37:11	5:18
507	069943-00507	6.3	9	06:09:42	5:56
517	069943-00517	15.3	18	06:08:41	10:12
570	077169-00570	11.7	23	05:07:54	4:21
619	043407-00619	8.5	3	05:19:31	7:32
644	018275-00644	16.6	3	06:06:16	7:40
653	069943-00653	10.5	37	05:33:12	4:08
655	069943-00655	9.6	6	06:38:51	4:30

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Challenges on recording day

- Read the data
- Keep right format on animal ID on farmers management system
- Keep farmers hands away from changing animal ID setup!!!
 - *"I just wanted to see what would happen if..."*
- Develop efficient software for field staff
- Update field staff

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Samples handled by ILAS robot...



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Moving-shaking-lid off-barcode reading...



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Analyzing...



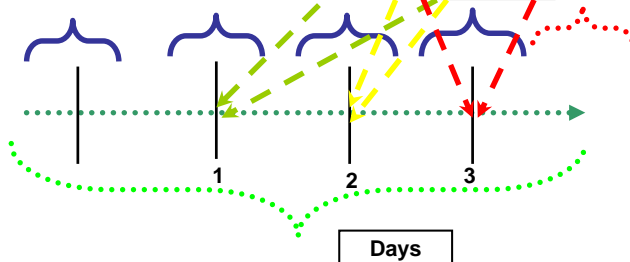
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Recording
Data to
database

Samples
to lab

Analyse
Verify data

Datapro-
cessing

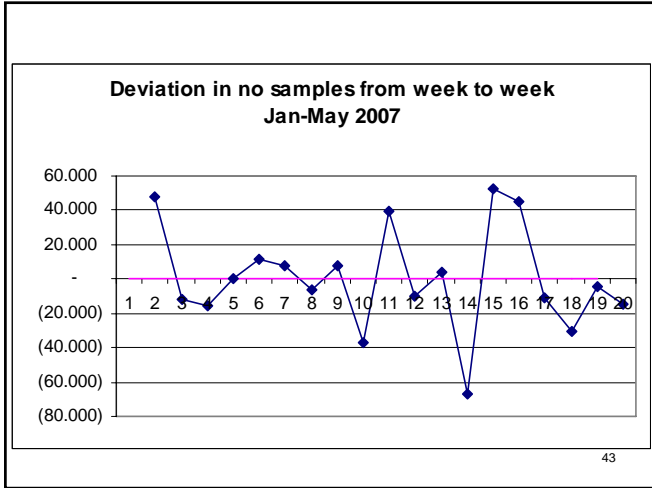


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Development 2007-8

- Veterinary analyses
 - Mastitis, Ueberis, Aureus,... (needs more details)
 - Mastitis, B. streptococcus (working, not implemented)
- Datacollecting
 - Minutes per milking for breeding values.
 - Flow profiles
 - Logistics
 - Efficient, safe and fast transportation

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- ### How to handle diff. no. of samples
- Adjust capacity on lab (from 4 o 5 robots)
 - Booking system to be implemented
 - Technicians to plan recordings up to 8 weeks ahead
 - Recording dates will be fixed
 - All farmers will be informed of recording dates min. 8 weeks ahead
 - If a farmer want to change less than 8 days before recording, we charge 75 €
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- ### Veterinary analysis - an example
- Para TB / Johne's disease is the indicator
 - Improve internal logistics (dirty/clean areas)
 - Do not feed milk to calves from infected cows
- Information's based on recording samples
- Only a safe sampling can justify veterinary information's
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Did we find the ultimate way?

NO!

There is still a lot to do!

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