

Operative background of the Hungarian farm monitoring system based on milk and TMR analyses



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Milk recording system in Hungary

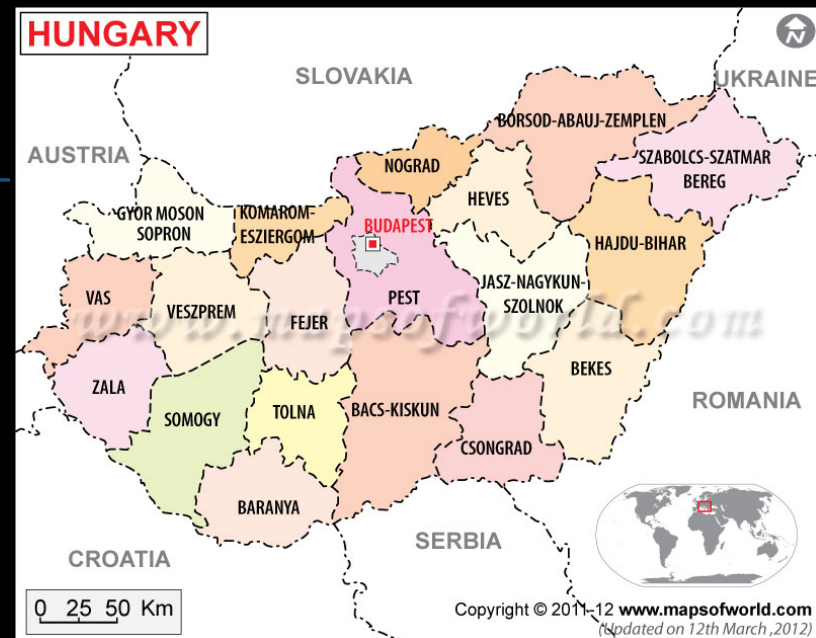
1. The unified and regular milk recording of dairy cattle:
since 1910 (105 years)

2. Hungarian Holstein Association:
Livestock Performance Testing Ltd (LPT Ltd)-
responsible laboratory

3. Appr. 178,000 dairy cows
(85% of the Hungarian population)
were recorded in 2014.

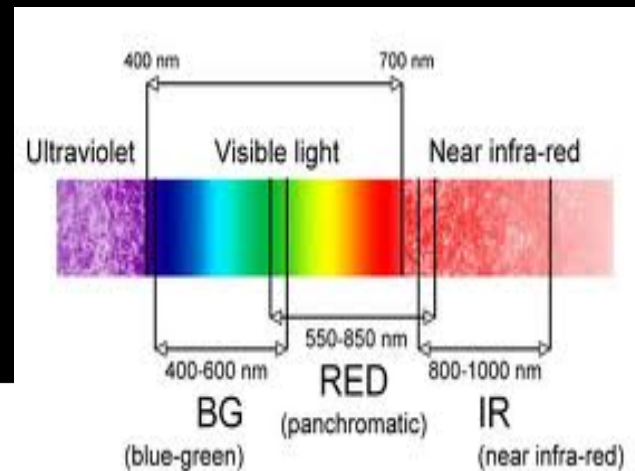
4. These cows were held in 461 farms

(av. dairy cows number per farm: 387 in 2014).



Introduction

1. The company established the Feed Laboratory in 2012. This is the first independent **NIR laboratory** in Hungary, which is specialized for forages. Our mission is to help farmers in Hungary and in Central Europe.



Introduction

1. At the beginning of 2014, with contribution of 130 farms, a countrywide monitoring system has started by the Milk Laboratory and the Feed Laboratory of LPT Ltd, based on TMR- and milk sample analyses.

2. By now:

- **250 farms** have contracts with LPT Ltd . (MILK)
 - 49,5% of the recorded dairy herd
- **130 farms** contracts with LPT Ltd. (MILK and TMR)
 - 28% of the recorded dairy herd



Introduction



The aim is to evaluate the actual nutritive value of the high milking dairy cow diet having potential effect

1. on milk production
2. on milk composition
3. on animal health
(SARA risk assessment - prognosis)

Material and methods

Sample taking and receiving by the Milk and Feed Laboratories

1.PLAN: shipping of sampling boxes to the farm by a monthly plan.

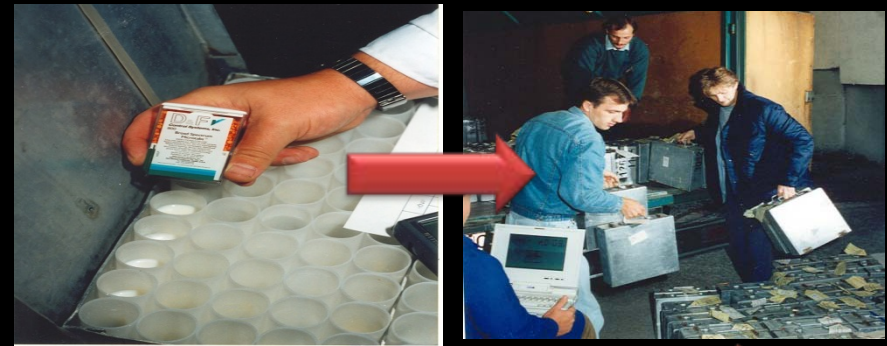
2.MILK SAMPLING: Sampling by official milk sampling technicians.

3.TMR SAMPLING: The TMR samples are taken and boxed by the farmers **12 hours** before the milk sampling.

4.SAMPLE DELIVERY TO THE LAB

AND RECEIVING BY THE LAB:

sampling boxes (both for milking and for the forage) are posted by the technicians to the lab.



Sample analyses by the Milk and Feed Laboratories

The arrived TMR samples are analyzed (by NIR-technology) in our Feed Laboratory for:

- Dry matter content,
- Crude protein,
- Crude fibre,
- Crude fat,
- Crude ash,
- Starch,
- Sugar,
- NDF, ADF, ADL,
- NFC, NSC,
- NEI, OMd, DOM, FOM,
- NDFd and dNDF,
- pH, nitrate.



Sample analyses by the Milk and Feed Laboratories

The milk samples are routinely analyzed in our
Milk Testing Laboratory (using FTIR method):

fat, protein, lactose

milk urea (FTIR), somatic cells (Flow Cytometry Method) are analyzed in the monitoring system automatically as well.



Parameter of measurement	Range of measurement	Unit
fat	1,5-5,8 g/100g	g/100 g
protein	2,0-5,0 g/100g	g/100 g
lactose	4,0-5,5 g/100g	g/100 g
somatic cells	100-900.000 cells/cm3	x103 db/cm3
urea	0,010-0,060	g/100 g

Material and methods

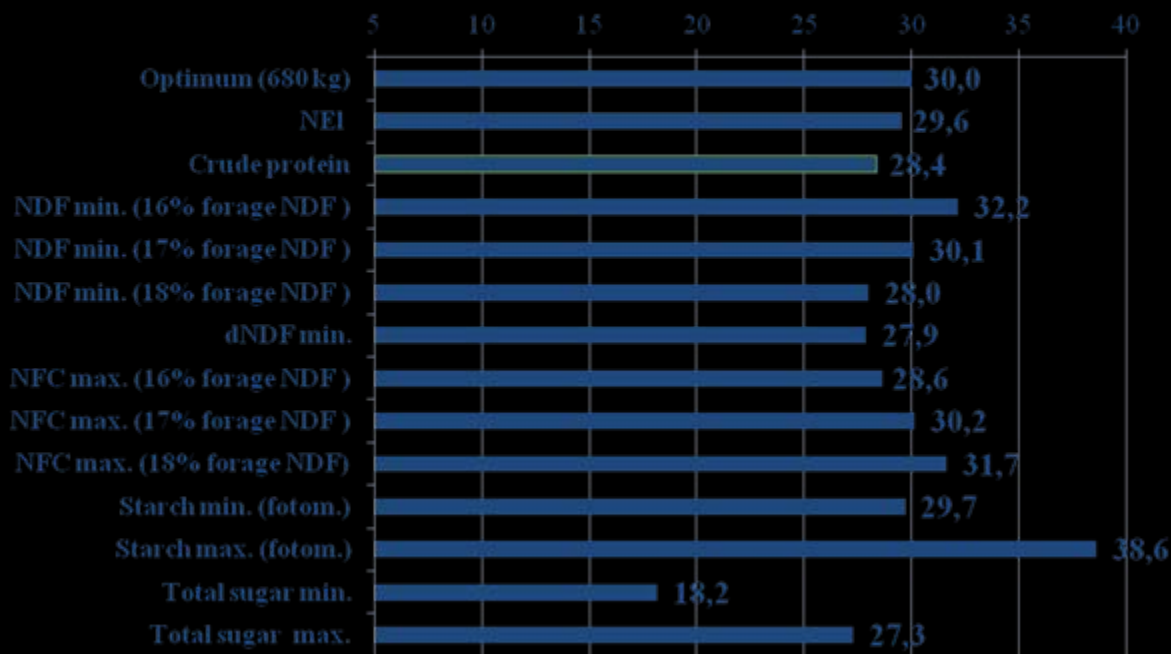
Opportunity to measure the minerals from the TMRs:

1. **M4 package:** Ca, P, K, Na, Mg, S, Cl, DCAD (can be calculated)
2. **M5 package:** M4 + Cu, Zn, Mn



MONTHLY TMR report (good sample)

Dry matter intake enough to meet the requirements
(kg/cow/day)



One of the best
farm in Hungary:
12.500kg
milk/305 days

April 2014.

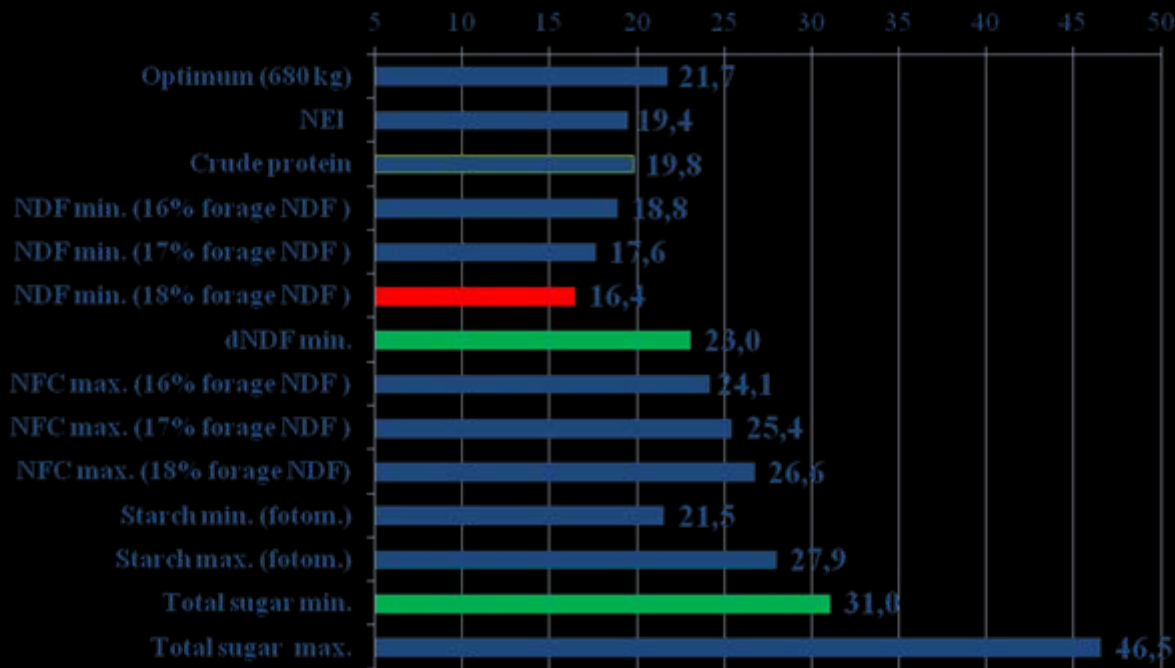
Crude protein	g/kg DM	176
Crude fiber	g/kg DM	153
Sugar	g/kg DM	66
Starch	g/kg DM	198
NDF	g/kg DM	289
ADF	g/kg DM	177
NFC	g/kg DM	398
dNDF	g/kg DM	172

TMR sampling: monthly, 12 hours before milk sampling
2014: 130 farms, 50.000 cows/month, 20.000 TMR data



MONTHLY TMR report (bad sample)

Dry matter intake enough to meet the requirements (kg/cow/day)



Crude protein	g/kg DM	164
Crude fiber	g/kg DM	181
Sugar	g/kg DM	28
Starch	g/kg DM	202
NDF	g/kg DM	358
ADF	g/kg DM	238
NFC	g/kg DM	342
dNDF	g/kg DM	151

- low milk fat (lignified fiber)
- high milk urea conc.
- ketosis risk (NDF)

TMR sampling: monthly, 12 hours before milk sampling



MONTHLY MILK REPORT

One of the best farm
in Hungary:
12.500kg milk/305
days

April 2014.

2014:
130 farms, 50.000
cows/month, 20.000
TMR data

Laktációs szakasz	Létszám és mintaszám		Napi termelési és beltartalmi adatok			2,5 % zsír alatt termelő egyedek aránya		Zsír fehérje arány < 1	Karbamidérték-kategóriákba sorolt egyedek				Karbamid átlag	Súlyozott karbamid átlag	Előző 6 havi súlyozott karbamid átlag
	Fejt tehén	Karba- mid	Tej átlag	Zsír s. átl.	Feh. s. átl.				1-14	15-25	26-31	31 felett			
nap	db	db	kg	%	%	db	%	%	db	db	db	db			

1. laktációs egyedek

1 – 40	36	36	39,9	3,72	3,10	1	2,8	11,1		20	11	5	25,7	26,0	25,0
41 – 100	70	70	46,2	3,13	3,01	6	8,6	40,0		8	40	22	29,6	29,6	29,3
101 – 199	130	130	42,5	3,63	3,34	4	3,1	26,9		21	70	39	29,1	29,1	30,5
200 – 305	109	109	37,8	3,76	3,48	1	0,9	23,9		15	66	28	29,0	29,0	30,6
305 felett	80	80	31,0	4,11	3,83	2	2,5	25,0		7	56	17	29,5	29,6	29,7
Átlag/Összes	425	425	39,5	3,64	3,36	14	3,3	26,6		71	243	111	28,9	29,0	29,6

2. laktációs egyedek

1 – 40	21	20	51,3	3,38	3,11	3	15,0	35,0		6	13	1	26,8	27,2	27,8
41 – 100	45	45	53,4	2,90	3,13	12	26,7	62,2		4	21	20	30,6	30,7	29,7
101 – 199	59	59	49,2	3,31	3,32	8	13,6	52,5		9	31	19	29,6	29,7	29,7
200 – 305	73	73	38,7	3,65	3,59	3	4,1	47,9		6	44	23	30,3	30,4	28,6
305 felett	42	42	33,1	3,98	3,75	0	0,0	31,0		8	28	6	28,4	28,6	26,6
Átlag/Összes	240	239	44,1	3,40	3,38	26	10,9	47,7		33	137	69	29,6	29,7	28,8

3. vagy annál több laktációs egyedek

1 – 40	26	26	51,7	3,63	3,18	1	3,8	26,9		8	16	2	26,8	27,0	25,5
41 – 100	49	49	56,8	3,20	3,14	2	4,1	46,9		10	32	7	28,0	28,2	28,2
101 – 199	85	85	47,4	3,39	3,32	13	15,3	47,1		7	51	27	29,6	29,6	28,2
200 – 305	81	81	38,4	3,69	3,52	4	4,9	29,6		13	58	10	28,7	28,8	28,2
305 felett	26	26	33,8	3,78	3,66	0	0,0	42,3		5	19	2	28,0	28,1	27,8
Átlag/Összes	267	267	45,5	3,48	3,34	20	7,5	39,3		43	176	48	28,6	28,7	27,8

Összes egyed

1 – 40	83	82	46,4	3,59	3,13	5	6,1	22,0		34	40	8	26,3	26,7	25,9
41 – 100	164	164	51,3	3,09	3,09	20	12,2	48,2		22	93	49	29,4	29,5	29,0
101 – 199	274	274	45,5	3,48	3,33	25	9,1	38,7		37	152	85	29,3	29,4	29,6
200 – 305	263	263	38,3	3,71	3,52	8	3,0	32,3		34	168	61	29,3	29,3	29,5
305 felett	148	148	32,1	4,01	3,77	2	1,4	29,7		20	103	25	28,9	29,0	28,3
Átlag/Összes	932	931	42,4	3,53	3,36	60	6,4	35,7		147	556	228	29,0	29,1	28,8

Kimutatás a tehenekről termelési csoportok szerint

Termelési csoportok	Létszám és mintaszám		Napi termelési és beltartalmi adatok			2,5 % zsír alatt termelő egyedek aránya		Zsír fehérje arány < 1	Karbamidérték-kategóriákba sorolt egyedek				Karbamid átlag	Súlyozott karbamid átlag	Előző 6 havi súlyozott karbamid átlag
	Fejt tehén	Karba- mid	Tej átlag	Zsír s. átl.	Feh. s. átl.				1-14	15-25	26-31	31 felett			
	db	db	kg	%	%	db	%	%	db	db	db	db			
01	48	47	45,5	3,62	3,19	2	4,3	27,7		15	30	2	26,8	26,9	26,4
02	31	31	38,1	3,72	3,20	0	0,0	12,9		17	11	3	25,4	25,4	25,8
03	65	65	42,3	3,56	3,45	4	6,2	36,9		6	36	23	30,6	30,6	26,7
04	67	67	38,0	3,81	3,65	0	0,0	37,3		7	48	12	29,5	29,5	28,7
05	59	59	30,1	4,18	3,84	0	0,0	18,6		1	45	13	29,8	29,9	28,0
06	56	56	27,7	4,03	3,86	0	0,0	35,7		10	42	4	28,2	28,3	27,7
07	22	22	42,4	3,86	3,47	1	4,5	22,7		9	12	1	26,4	26,4	27,1
09	64	64	57,8	2,90	3,12	13	20,3	71,9		5	37	22	29,7	29,6	28,4
10	68	68	51,6	3,29	3,18	11	16,2	39,7		11	36	21	29,0	29,2	28,5
11	70	70	50,5	3,32	3,35	9	12,9	51,4		3	43	24	30,3	30,3	28,9
12	78	78	45,7	3,15	3,01	7	9,0	39,7		11	42	25	29,5	29,6	29,4
13	77	77	43,0	3,58	3,28	3	3,9	28,6		18	42	17	28,4	28,4	30,3
14	76	76	42,4	3,68	3,40	2	2,6	21,1		7	41	28	29,8	29,9	30,9
15	79	79	37,4	3,81	3,51	1	1,3	25,3		13	44	22	28,9	28,9	31,0
16	72	72	39,3	3,64	3,50	7	9,7	44,4		14	47	11	28,3	28,4	29,8
Átlag/Összes	932	931	42,4	3,53	3,36	60	6,4	35,7		147	556	228	29,0	29,1	28,8



Farm reports based on analytical results prepared by advisors

TIMING: *IN TIME ON FARM*

1. Measured **data** are sent within **48 hours** on electronic way (pdf) to the farm,
2. **Report** with the **figure** is emailed within **72 hours** since sample receiving.
3. The **results of milk samples** are sent within **7 days** from the time of sampling, by e-mail, or by the post. + **MILK REPORT (10 DAYS)**



Farm advisory

- OUR MILK AND TMR REPORTS:
global view about herds'
performance level, management
efficiency and health status in
monthly reports .
- It is **useful practical tool** in their
hand for **decision making**.
- **Personal advisory on the farm by
our advisers are available, also.**



Well
done!



Thank you for your attention!

