



OptiMIR Workshop Tuesday 27th November 2012

Conference Room 1
Teagasc
Moorepark
Ireland



Program

Time	Activity / Speaker	Title of Presentation
10:30 – 11:00	Tea & Coffee on Arrival	
11:00 – 11:15	Brian Wickham (Chairperson, OptiMIR Steering Committee)	What is OptiMIR?
11:15 – 11:40	Sinead McParland - Teagasc	The ROBUSTMILK project.
11:40 – 12:05	Brendan Horan – Convenor of OptiMIR Expert Group	Priorities for Sustainable European Milk Producers.
12:05 – 12:25	Xavier Massart – OptiMIR Project Manager	Action 1 - Survey.
12:25 – 13:00	Donagh Berry – Leader of “Health” in OptiMIR Research & Development Action.	Milking the Milk!!
13:00 – 14:00	Lunch	
14:00 – 14:50	Open Discussion	
14:50 – 15:00	Conclusions	



Time	Activity / Speaker	Title of Presentation
10:30 – 11:00	Tea & Coffee on Arrival	
11:00 – 11:15	Brian Wickham (Chairperson, OptiMIR Steering Committee)	What is OptiMIR?
11:15 – 11:40	Sinead McParland – Teagasc	The ROBUSTMILK project.
11:40 – 12:05	Brendan Horan – Convenor of OptiMIR Expert Group	Priorities for Sustainable European Milk Producers.
12:05 – 12:25	Xavier Massart – OptiMIR Project Manager	Action 1 - Survey.
12:25 – 13:00	Donagh Berry – Leader of “Health” in OptiMIR Research & Development Action.	Milking the Milk!!
13:00 – 14:00	Lunch	
14:00 – 14:50	Open Discussion	
14:50 – 15:00	Conclusions	



What is OptiMIR?

Brian Wickham
Chairperson, OptiMIR Steering
Committee

www.optimir.eu

Objective:

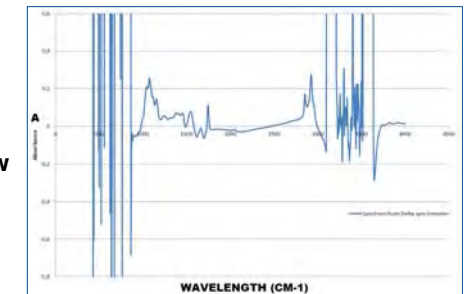
To extend the use of Milk Recording as a management tool for dairy farming with particular emphasis on:

- Sustainability &
- Profitability.

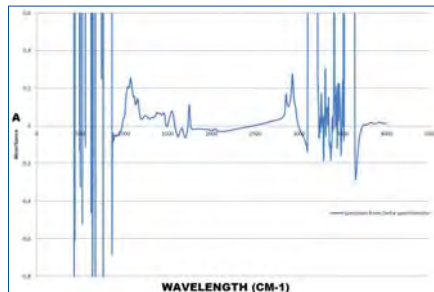
www.optimir.eu

**PRINCIPLE****Milk Recording****Mid Infrared Spectrometry**

Milk MIR spectrum
for each individual cow

**PRINCIPLE**

Mid-Infrared (MIR) spectrum of a milk sample of an individual cow at one specific time can provide information on the cows Fertility, Feeding, Health and Environmental impact.



- ➡ Pregnant ?
- ➡ Ready for AI ?
- ➡ Energy balance ?
- ➡ Protein utilisation ?
- ➡ S.A.R.A. ?
- ➡ Mastitis ?
- ➡ Methane ?

**How?**

By working collaboratively with other milk recording organisations and research partners.

By pooling our data and expertise.

By utilising Interreg funding and our own resources in a 50:50 partnership (€7.5 million).

Five year commitment (2011 to 2015).



PARTNERS



• **6 countries**



• **17 partners**

- 11 Milk Recording Organizations (MRO)
- 6 Research Centres or Universities
- 1 Laboratory

MROs	Country
AWE asbl	BE
Chambre régionale Agriculture Alsace	FR
ADECL62 (Pas-de-Calais)	FR
CLASEL (Sarthe & Mayenne)	FR
SCL25 (Doubs et territoire de Belfort)	FR
France Conseil Elevage	FR
LKV Baden-Württemberg	DE
LKV Nordrhein-Westfalen	DE
National Milk Recording	UK
Irish Cattle Breeding Federation	IR
CONVIS	LU

Laboratory	Country
Comité du Lait asbl	BE

Research Centres	Country
Institut de l'Elevage	FR
Gembloux Agro-Bio Tech (ULg)	BE
CRA-W (DVPA)	BE
TEAGASC	IR
Scottish Agricultural College	UK
Universität de Hohenheim	DE



PARTNERS



NORTH WEST EUROPE

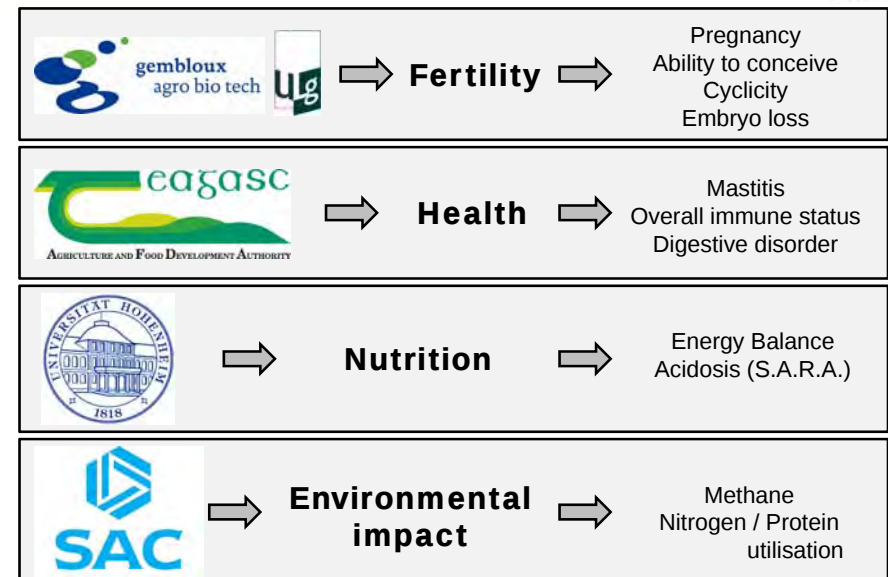


OptiMIR Actions

1. Survey of Stakeholders
2. Advisory Committee
3. Transnational Database
4. Statistical Information
5. Dairy Management Indicators
6. Tools for Use by Farmers & Advisors
7. Validation on Pilot Farms
8. Implementation
9. Roll-out



About Research Groups



Time	Activity / Speaker	Title of Presentation
10:30 – 11:00	Tea & Coffee on Arrival	
11:00 – 11:15	Brian Wickham (Chairperson, OptiMIR Steering Committee)	What is OptiMIR?
11:15 – 11:40	Sinead McParland - Teagasc	The ROBUSTMILK project.
11:40 – 12:05	Brendan Horan – Convenor of OptiMIR Expert Group	Priorities for Sustainable European Milk Producers.
12:05 – 12:25	Xavier Massart – OptiMIR Project Manager	Action 1 - Survey.
12:25 – 13:00	Donagh Berry – Leader of “Health” in OptiMIR Research & Development Action.	Milking the Milk!!
13:00 – 14:00	Lunch	
14:00 – 14:50	Open Discussion	
14:50 – 15:00	Conclusions	



The ROBUSTMILK project

Sinéad McParland

sinead.mcparland@teagasc.ie



The Irish Agriculture and Food Development Authority

RobustMilk

<http://www.robustmilk.eu>

“Develop genetic and phenotypic tools to breed healthier cows that produce healthier milk”

- Combined expertise of Ireland, Scotland, Belgium, The Netherlands & Sweden
- Pooled research data from these countries
- Irelands role?
 - Develop methods to predict milk quality and animal robustness routinely
- This presentation outlines relevant results to the OptiMIR project



The Irish Agriculture and Food Development Authority

Background

Milk is a nutritious, healthy product

Consumer demand shifting towards “lower fat” foods – dairy products under scrutiny

Lots of questions being asked

- Can we make milk “healthier”?
- In doing so – what effects for the cow?
- How do we know if milk being produced is healthier?
- How do we know how “healthy” our cows are?

One Answer - - - --Mid Infrared Spectrometry



The Irish Agriculture and Food Development Authority

What is mid-infrared spectrometry?

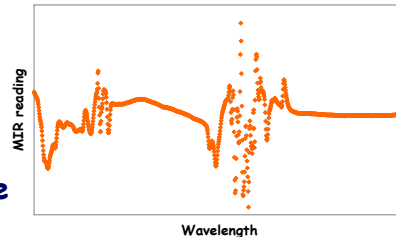
Method of choice to determine fat, protein, lactose
Bulk & individual samples

Milk recording procedure

- Milk sample taken
- Analysed by MIR machine
- Light shone through milk
- Absorbance light through the milk at different wavelengths = Spectrum

Can we use the spectrum for more?

- Eg. Milk fatty acid content & robustness



Why look at milk fatty acid content?

Saturated Fats

"bad fats"

Heart disease



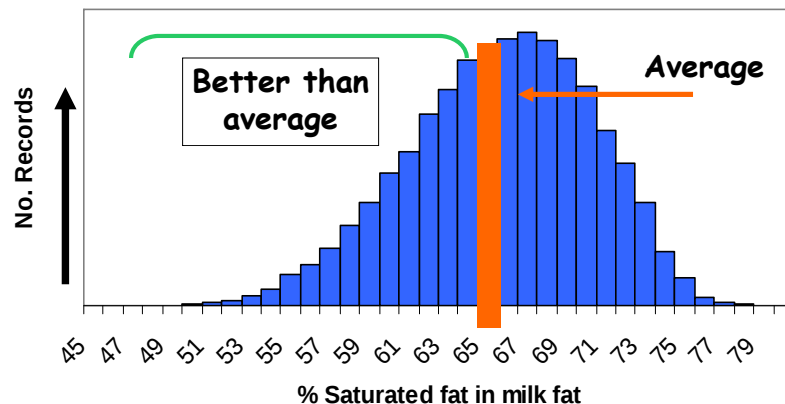
Unsaturated Fats

"good fats"

Cholesterol reducing

- Would be preferable to have less saturates
- Irish cows more favourable milk FA profile
 - Grass fed, increased unsaturated fats
- Can we prove this and improve competitiveness??
- Can we breed for improved milk fat composition??

Variation in Moorepark Curtins herd for % saturated fats in milk fat



Using Mid-Infrared Spectrometry to predict fat composition

Equations to predict fatty acids in the milk have been developed

- Spectrum generated by the MIR machine

Data from Ireland, Belgium and Scotland

- Several breeds
- Concentrate fed cows & grass fed cows

Variance explained - external validation

Fatty acid	ROBUSTMILK	Dutch	Ireland
	n=250	n=190	n=144
C4:0-C12:0	0.83 to 0.90	0.84 to 0.92	0.82 to 0.93
C14:0	0.91	0.94	0.92
C16:0	0.86	0.93	0.90
Saturated	0.98	0.99	0.98
Mono-unsat	0.96	0.92	0.90
Poly-unsat	0.83	0.48	0.69
Short chain	0.91	0.96	0.93
Medium chain	0.91	0.96	0.96
Long chain	0.91	0.87	0.91

Can we genetically select for milk fatty acids in the national herd?

- ✓ Is variation passed from parent to offspring?
- ✓ Is there variation in the national herd for the ratio of saturated to unsaturated fats?
- ✓ Is it economically important?
- ✓ Can we measure milk fatty acid production?



The Irish Agriculture and Food Development Authority

So we have all we need for breeding BUT . . .

We must ensure that selection for a "healthier milk profile" will not impact on . . .



- Other characteristics of the cow
 - Health and fertility



Other characteristics of the milk

- Milk processing ability
- Cheese making ability
- Stability

Breed quality project



The Irish Agriculture and Food Development Authority

Energy Balance - fertility indicator

- **Energy balance** = difference between energy ingested and energy used
 - Milk production, maintenance, live weight ...
- A known indicator of health & fertility
- Negative energy balance (output > intake)
 - mobilise body reserves to maintain production
 - How does this change the ratio of fats in milk?



The Irish Agriculture and Food Development Authority

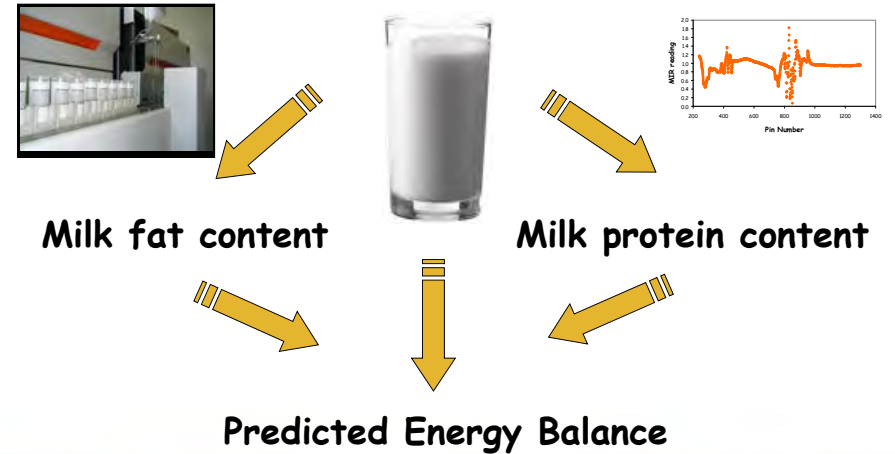
Energy Balance – fertility indicator

- But
 - Measurement not feasible on commercial herds
 - Little data available



- Indicators of energy balance proposed
 - Fat: protein ratio of milk

Example of energy balance prediction



Energy balance prediction equations

- Records of “true” energy balance from
 - Ireland (n=844)
 - Scotland (n=2,989)
- Accuracy of prediction of energy balance 0.69
- Accuracy of prediction of energy intake 0.80
- Accurate given inaccuracies of “true” energy balance

Lactoferrin – indicator of immunity

- Milk protein favourably associated with immunity
- Equations developed from 2,499 samples
 - Ireland (n=1658), Scotland (n=731) & Belgium (n=110)
- Accuracy of prediction = 0.77
- Slight improvement in mastitis detection when combined with information on SCC

The Breed Quality Project

- Commenced November 2012
- Teagasc, ICBF & UCD (& international collaborators)
- Can we use MIR for more milk quality measures
 - Protein profile
 - Micronutrients
 - Functional properties
 - Coagulation
 - Heat stability



The Irish Agriculture and Food Development Authority

Limitations to using the MIR

- Volume of predictand in the sample
- Accuracy of "gold standard" used to develop prediction equations
 - More accurate gold standard = more accurate equations



The Irish Agriculture and Food Development Authority

To Conclude

- RobustMilk provided equations to predict
 - Individual milk FA ✓
 - Groups of milk FA ✓
 - Lactoferrin
 - Energy status

Work ongoing to improve accuracy



**MIR useful to predict milk & animal characteristics
DURING ROUTINE MILK SAMPLING**



The Irish Agriculture and Food Development Authority

For more information. . . 

<http://www.robustmilk.eu>

Sinead.mcparland@teagasc.ie

Donagh.berry@teagasc.ie

This work was carried out as part of the RobustMilk project that is financially supported by the European Commission under the Seventh Research Framework Programme, Grant Agreement KBBE-211708



The Irish Agriculture and Food Development Authority

Time	Activity / Speaker	Title of Presentation
10:30 – 11:00	Tea & Coffee on Arrival	
11:00 – 11:15	Brian Wickham (Chairperson, OptiMIR Steering Committee)	What is OptiMIR?
11:15 – 11:40	Sinead McParland – Teagasc	The ROBUSTMILK project.
11:40 – 12:05	Brendan Horan – Convenor of OptiMIR Expert Group	Priorities for Sustainable European Milk Producers.
12:05 – 12:25	Xavier Massart – OptiMIR Project Manager	Action 1 - Survey.
12:25 – 13:00	Donagh Berry – Leader of “Health” in OptiMIR Research & Development Action.	Milking the Milk!!
13:00 – 14:00	Lunch	
14:00 – 14:50	Open Discussion	
14:50 – 15:00	Conclusions	



OptiMIR Expert Group Meeting 04/04/12

Priorities for Sustainable European Milk Producers



The Irish Agriculture and Food Development Authority

Objective

to direct and advise on the priority areas for investigation (within the areas of animal nutrition and the environment, animal fertility, animal health and product quality) and to review the project progress along with the results



The Irish Agriculture and Food Development Authority

The Expert Group

Full Name	Employer	Knowledge
Tom Beresford	Teagasc	Food Research
Donagh Berry*	Teagasc	Geneticist
Laure Brun-Laffleur	Institut de l'Elevage	Animal Nutrition
Philippe Faverdin	INRA	Animal Nutrition
Pierre Dardenne*	Centre wallon de Recherches agronomiques	MIR
Frédéric Dehareng*	Centre wallon de Recherches agronomiques	MIR
Richard Dewhurst	Teagasc	Bioscience
Koenraad Duhem	Centre National Interprofessionnel de l'Economie Laitière	Food sector
Nicolas Gengler*	Gembloux Agricultural University	Geneticist
Xavier Massart*	Centre wallon de Recherches agronomiques	Milk recording
John Newbold	Provimi Holding	Animal Nutrition
John O'Sullivan	Irish Dairy Farmer	Dairy Farming
Olga Trofimtseva	Verband der Deutschen Milchwirtschaft	Environment
Brian Wickham*	ICBF	Genetics

* OptiMIR partners



The Irish Agriculture and Food Development Authority

Expert Group Evaluation Process

- 1 Identify & agree priorities (based upon potential impact and profit

contribution) in the areas of:

Nutrition and the environment

Fertility

Health

Product Quality

- 2 Further explore the potential measurements within each of these agreed areas based on expert knowledge



The Irish Agriculture and Food Development Authority

Nutrition & Environment

Contribution	Profit	Impact
1 Protein/Nitrogen utilisation MUN/ Renal Clearance Rate	High	High
2 Energy Cost & Balance DM intake	High	Medium
3 Digestibility	High	Low
4 Methane	Low	Medium



The Irish Agriculture and Food Development Authority

Fertility

Contribution	Profit	Impact
1= Pregnancy Diagnosis	Medium	High
1= Loss of pregnancy	Medium	High
3 Ready to inseminate	Low	Medium



The Irish Agriculture and Food Development Authority

Health

Contribution	Profit	Impact
1= Mastitis	High	Medium
1= Digestive	Medium	High
3 Immune Status/Robustness	High	Low



The Irish Agriculture and Food Development Authority

Product Quality

Contribution	Profit	Impact
1 Terroir/ dietary inventory	High	High
2 Specificity/ Value add of milk Fatty acid composition – technofunctional characteristics Protein composition and profiles – cheeseability Minerals – P, K, Mg, Ca, Na	High	Low
3 Avoid negatives/ contaminants	High	Low



The Irish Agriculture and Food Development Authority

Time	Activity / Speaker	Title of Presentation
10:30 – 11:00	Tea & Coffee on Arrival	
11:00 – 11:15	Brian Wickham (Chairperson, OptiMIR Steering Committee)	What is OptiMIR?
11:15 – 11:40	Sinead McParland - Teagasc	The ROBUSTMILK project.
11:40 – 12:05	Brendan Horan – Convenor of OptiMIR Expert Group	Priorities for Sustainable European Milk Producers.
12:05 – 12:25	Xavier Massart – OptiMIR Project Manager	Action 1 - Survey.
12:25 – 13:00	Donagh Berry – Leader of “Health” in OptiMIR Research & Development Action.	Milking the Milk!!
13:00 – 14:00	Lunch	
14:00 – 14:50	Open Discussion	
14:50 – 15:00	Conclusions	



ACTION 1 - SURVEY

From January 2011 to September 2015

www.optimir.eu



WITH THE SUPPORT OF



Introduction

PERCEPTION AND OPINION

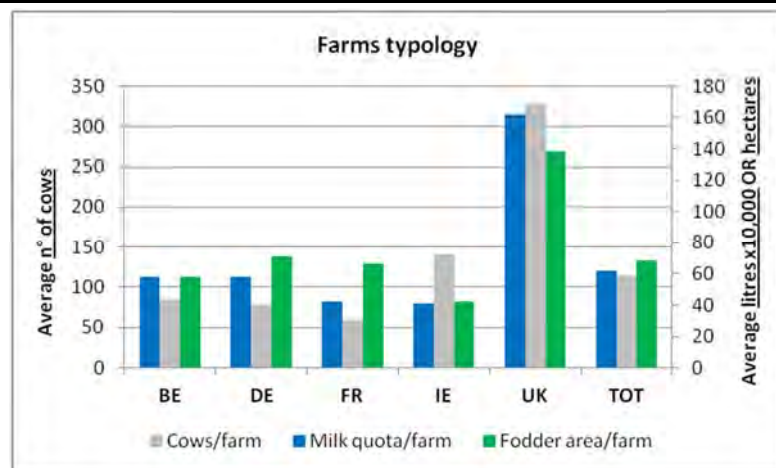
Objectives

1. Coping Strategies and Priorities for ensuring dairy farming profitability and sustainability.
2. Baseline on the utilisation and perception of computerized farming management tools (applications on local or through the web).

Scale

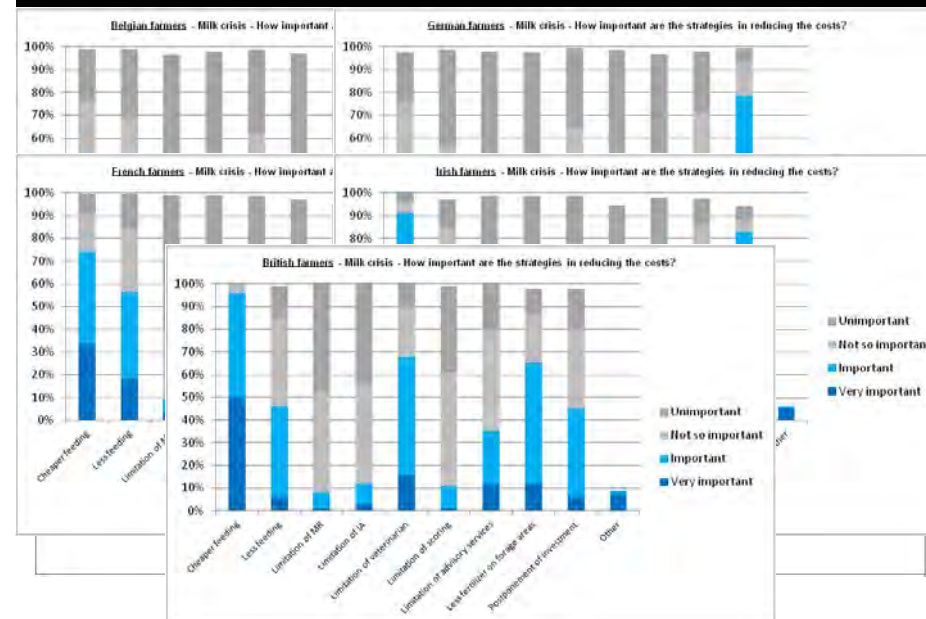
Country		Surveyed farmers	Average age of farmers	Surveyed consultants	Average age of consultants
Belgium	BE	203	45	27	47
Germany	DE	258	46	56	46
France	FR	193	43	53	40
Ireland	IE	200	45	50	41
United Kingdom	UK	100	46	0	N/A
TOTAL		954	45	186	42

Introduction

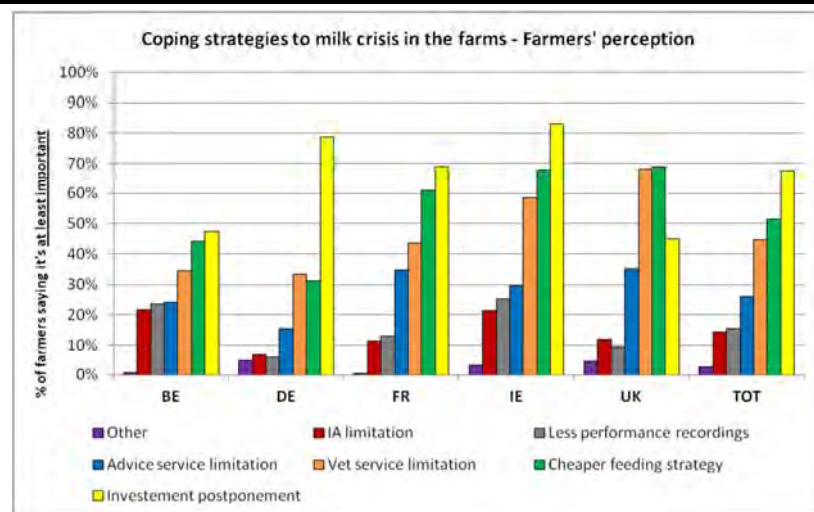


France, Germany and Belgium are quite similar. Ireland is different, with more cows to fill the quota, and with grasslands. UK has here bigger farm with less cow food self-sufficiency.

Coping strategies

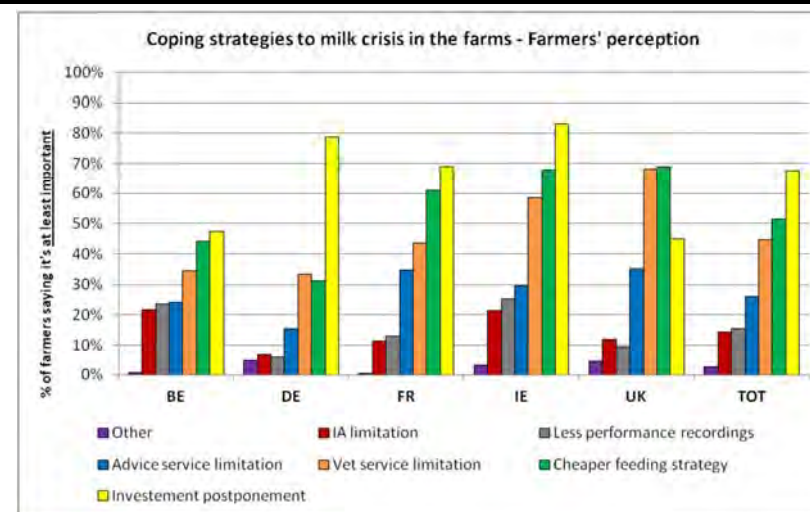


Coping strategies



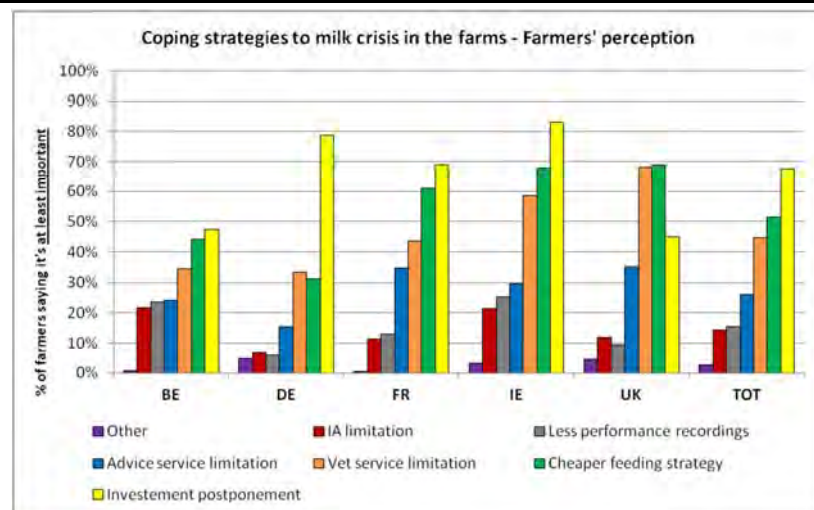
The postponement of investment is the most important strategy implemented in the farm when facing low selling prices of milk, except in UK. OptiMIR tools have therefore to be free or low cost to be adopted.

Coping strategies



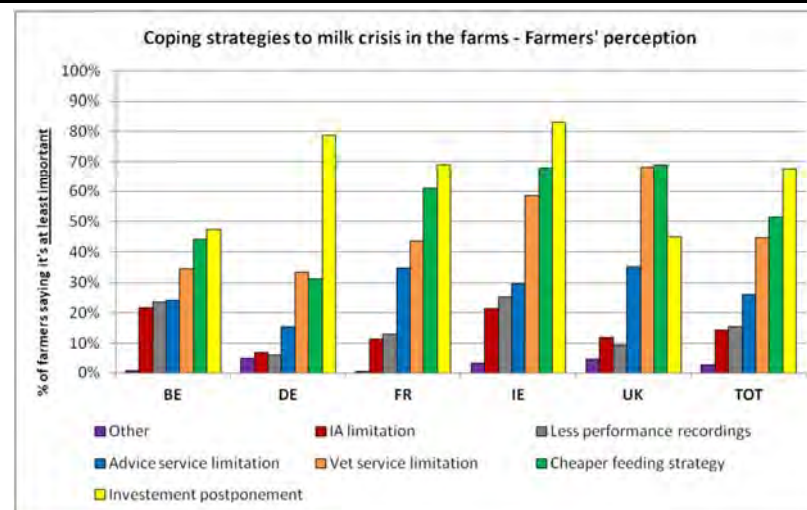
Limitation of the performance recordings is not an important coping strategy. Doors widely open for innovative management tools based on the Milk Recording service. Careful with Belgium and Ireland.

Coping strategies



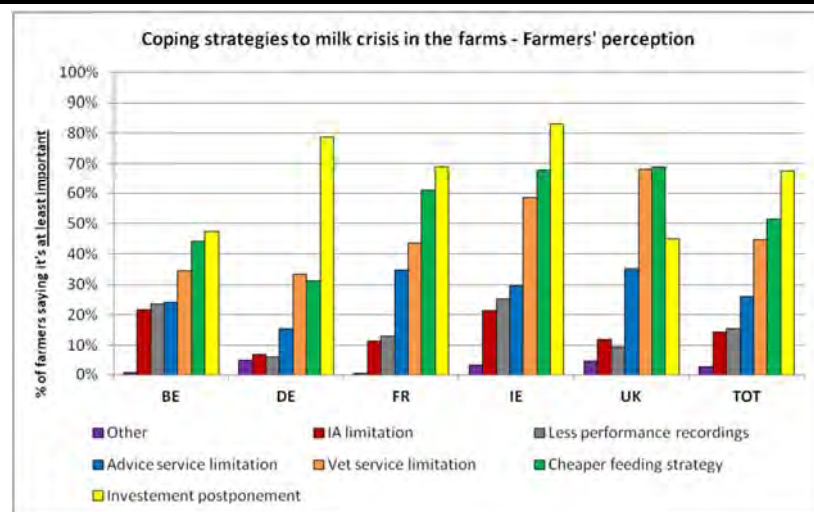
1 farmers out of 4 pointed the limitation of advice services → more important than ever to access easily, quickly to free or low costs information

Coping strategies



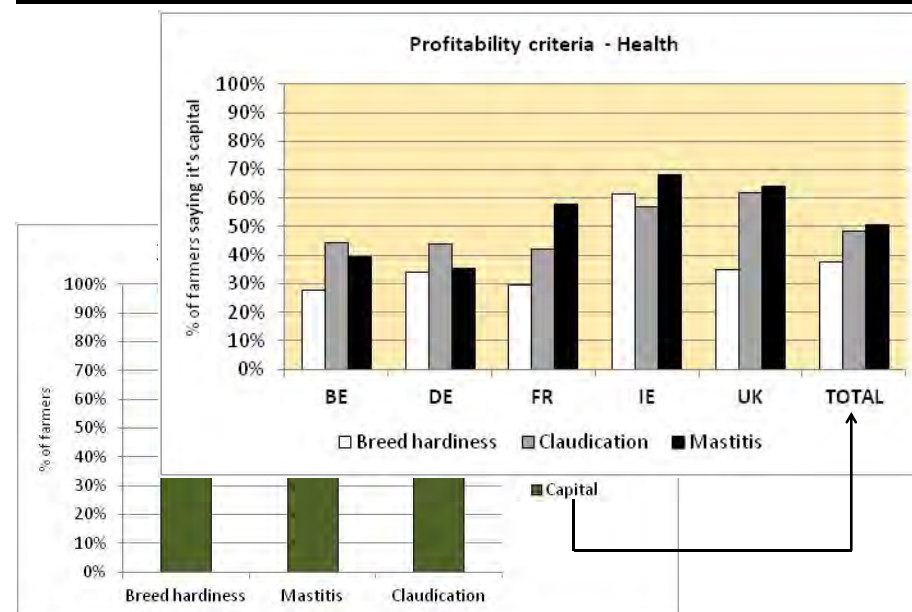
The decrease of feeding costs as the second highest topics in reducing the costs. OptiMIR has a big room for manoeuvre on animal nutrition (EB and protein utilization to rationalize the costs).

Coping strategies

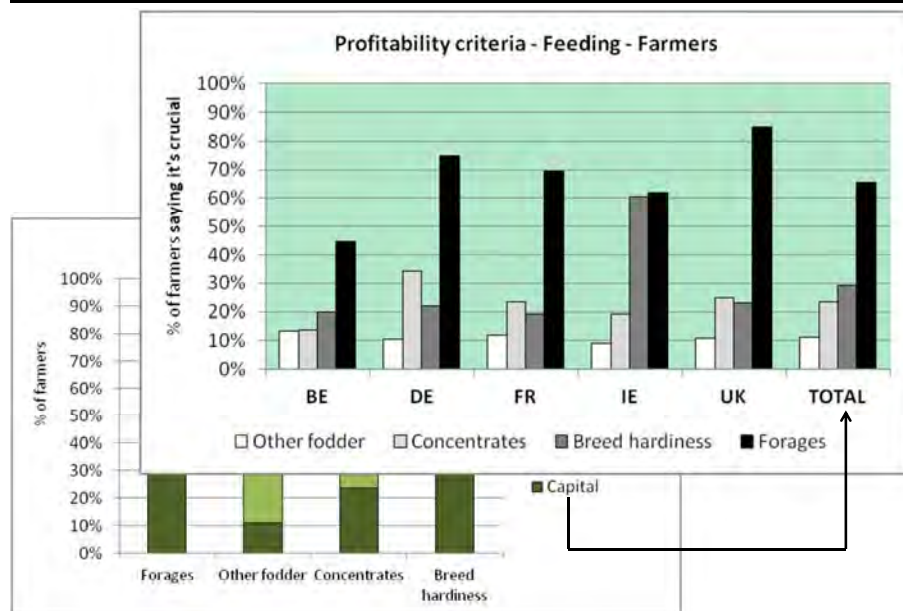


Limitation of veterinary service as the third highest topics in reducing the costs. Opportunity in the case e.g. of a pregnancy diagnosis but challenge e.g. in the case of a disease diagnosis requesting a prescription from the vet.

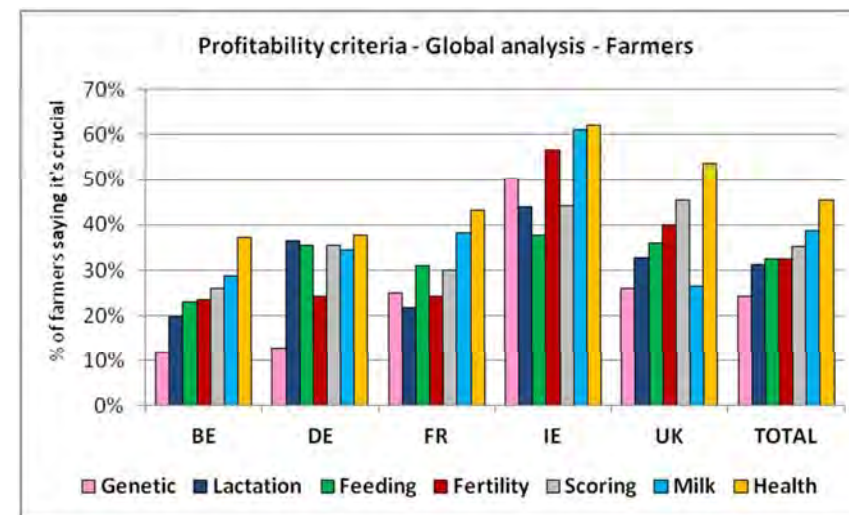
Priorities for sustainability



Priorities for sustainability



Priorities for sustainability

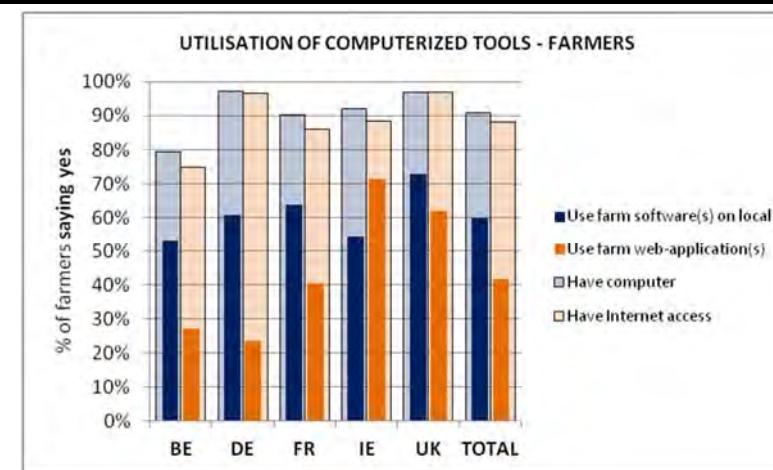


Priorities for sustainability

Profitability criteria highlighted by farmers and farm consultants

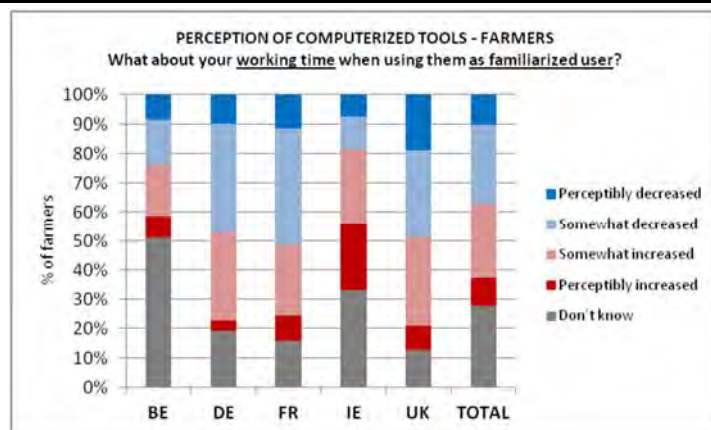
Priority	Category	Subpriority	Topics identified for OptiMIR
1	Health	1	Mastitis indicator
		2	Sub-Acute Ruminant Acidosis indicator
2	Milk	1	Feeding management to improve fat (and maybe protein) rate
			Methane indicator
3	Feeding	1	Energy Balance and Protein Utilization to optimize forages
		2	Energy Balance and Protein Utilization to rationalize concentrates
4	Fertility		Pregnancy diagnosis
		1	Ability to conceive indicator
			Cyclicity indicator
		2	Embryo loss indicator

Computerized tools



Future potential users of the OptiMIR tools are mainly familiarized with computerized tools. The implementation of OptiMIR tools and the familiarization by users should be the easiest in UK and Ireland.

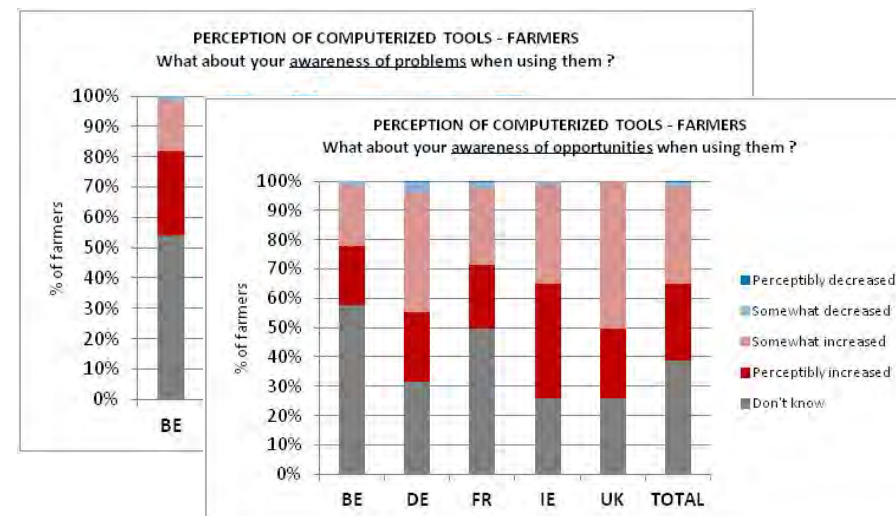
Perception of computerized tools



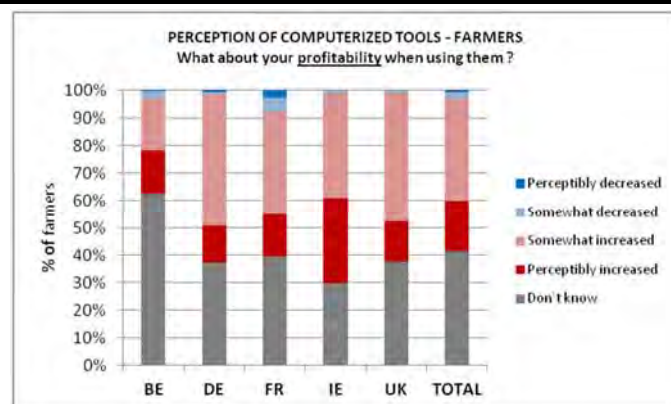
When got used with a computerized tool:

- Half of French, German and British think the overall working time will decrease
- Irish farmers mainly think exactly the opposite
- Belgian farmers especially don't know.
- It's here interesting to notice that Ireland shows the highest rate of computerized tools utilization while Belgium shows the lowest one.

Perception of computerized tools

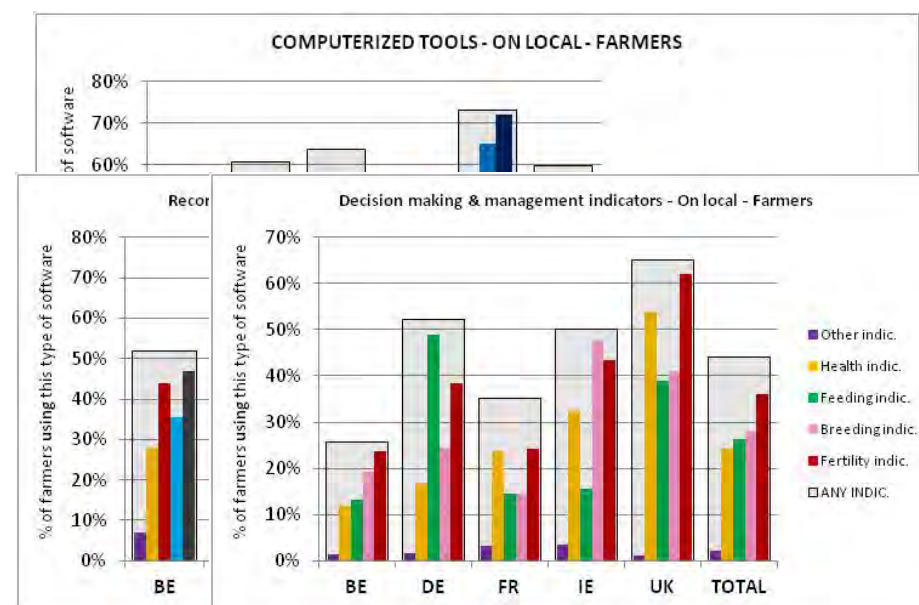


Perception of computerized tools

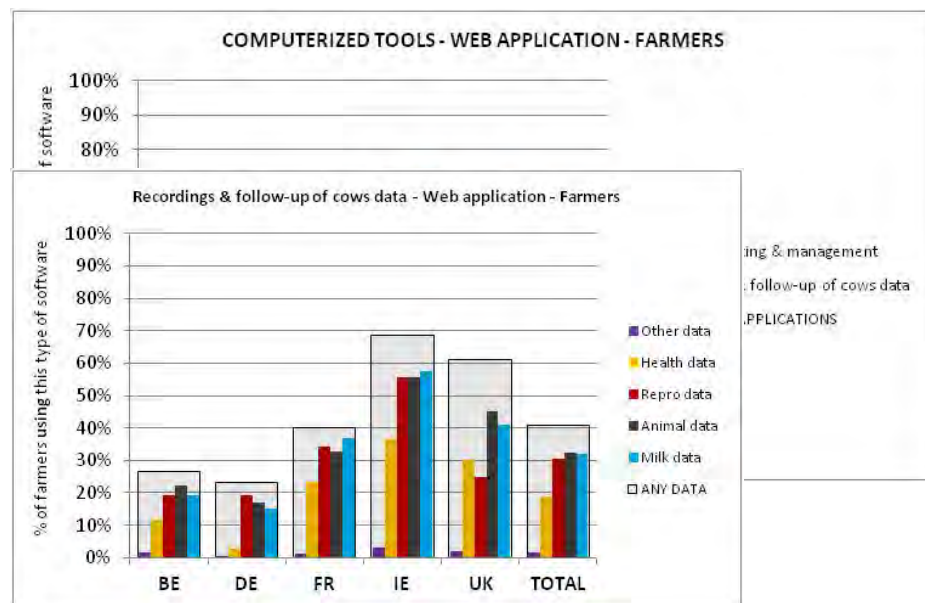


- Around 40% of farmers told they don't know if computerized tools can help them to increase the profitability and therefore to sustain their business: from 60% for Belgian farmers to 30% for Irish farmers.
- Good news for OptiMIR as the main part of farmers giving an answer told the profitability will increase. No need to convince them.

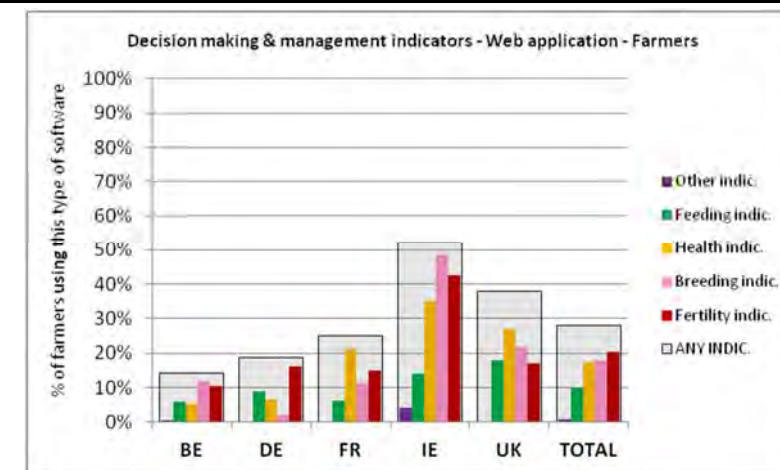
Utilization of computerized tools



Utilization of computerized tools



Utilization of computerized tools



- OptiMIR = Web-applications for decision making.
- <15% in BE and DE → challenge to convince the farmers to use web application.
- >50% and >35% in IE and UK → challenge to bring added value compared to what they already use.

Time	Activity / Speaker	Title of Presentation
10:30 – 11:00	Tea & Coffee on Arrival	
11:00 – 11:15	Brian Wickham (Chairperson, OptiMIR Steering Committee)	What is OptiMIR?
11:15 – 11:40	Sinead McParland - Teagasc	The ROBUSTMILK project.
11:40 – 12:05	Brendan Horan – Convenor of OptiMIR Expert Group	Priorities for Sustainable European Milk Producers.
12:05 – 12:25	Xavier Massart – OptiMIR Project Manager	Action 1 - Survey.
12:25 – 13:00	Donagh Berry – Leader of “Health” in OptiMIR Research & Development Action.	Milking the Milk!!
13:00 – 14:00	Lunch	
14:00 – 14:50	Open Discussion	
14:50 – 15:00	Conclusions	



Milking the milk!!!

Donagh Berry
Teagasc, Moorepark

OptiMIR Workshop, Moorepark, Nov 2012

<http://www.optimir.eu>



Principle

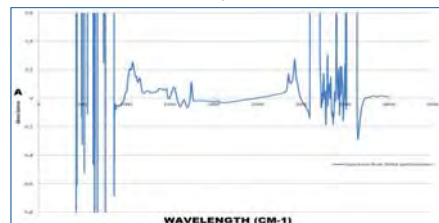


Milk Recording



~2 million cow samples
annually
+
routine bulk milk
samples!

Mid Infrared Spectrometry



Milk MIR spectrum
for each individual cow



Principle



Fat%, Protein%, Lactose%
Fat:Protein, Δ milk
composition



Choice of traits

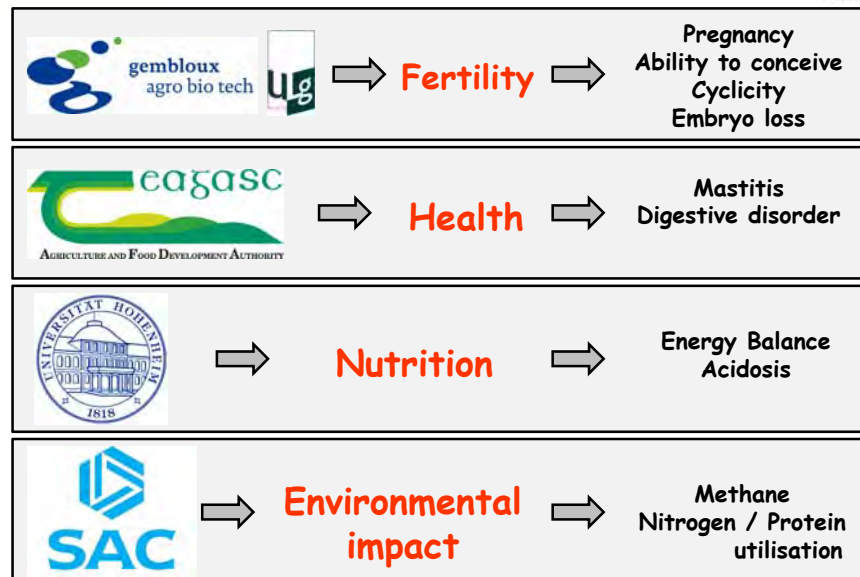


- Relative importance
 - Advice from expert group
- Potential feasibility to be predicted from MIR

1. Fertility
2. Nutrition
3. Health
4. Environment

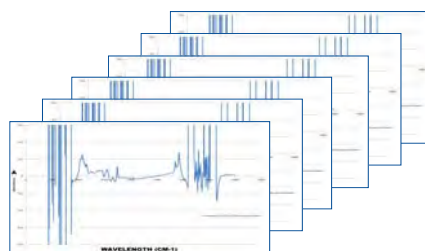


Responsibilities





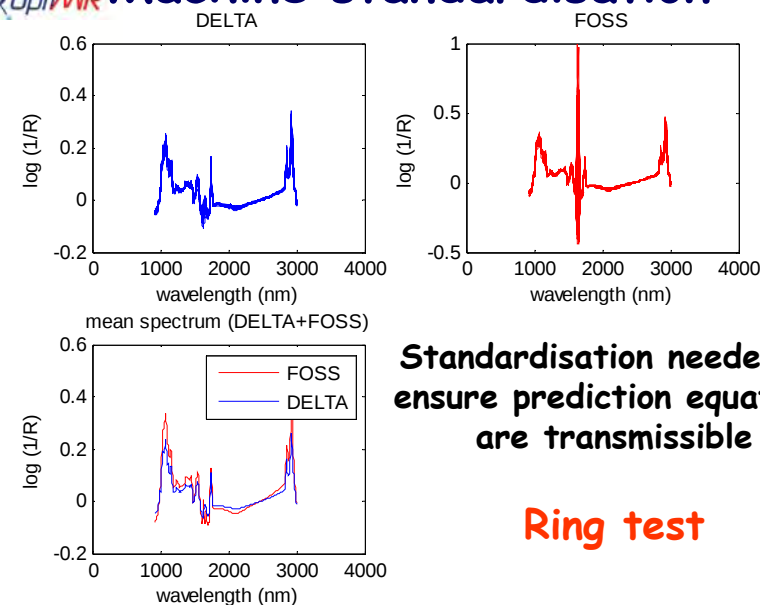
Research Approach



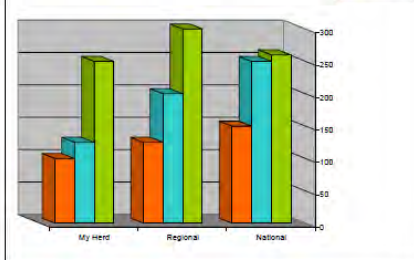
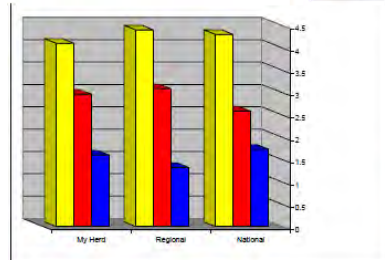
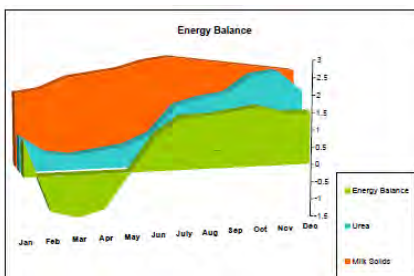
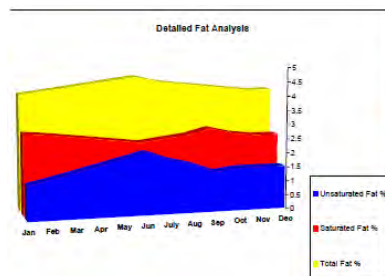
Robust (international) prediction equations



Machine standardisation



Implementation



Implementation



Decision Management Report

Shinagh Milk Services
Bandon
Co. Cork
Tel 023/8520218

Herd Owner: J. Smith
Herd No.: IE12345567
Print Date: 25/11/2010
Test Date: 20/11/2010
Scheme: A4

1. Animals for Culling

The following animals should be considered for culling:

Cow ID Cow name Sire ID	Calving Date Age Preg. Status	DIM Lact Tests	Last Test Day Lifetime 305 days predicted										Latest : Lifetime Average					Index	Reason	
			Last Test Day							Lifetime			305 days predicted							
			Milk kg	Total Fat %	Saturated %	Unsaturated %	Protein %	Cassein %	Lactose %	Urea mg/litre	SCC (000 cells/ml)	Energy Balance	EBI €	Fertility €						
IE123456789487	05-APR-10	233	14	4.56	0.64	3.54	0.51	0.52	0.13	3.82	0.53	4.78	0.67	4.12	0.58	200	1390	-1	75	Chronic Mastitis
Highfield Daisy	4y 2m	3	6300	4.56	287.28	3.31	289.75	0.8	50.4	9.82	241	4.78	301	4.12	260	400	1150	-4	32	
GMI	Not Pregnant	6	7200	4.56	328.32	3.45	248.4	0.92	66.24	3.82	275	4.78	344	4.12	297					
IE123456789241	02-Mar-10	300	21	4.56	0.56	3.82	0.6	0.92	0.15	3.82	0.6	4.78	1	4.12	0.87	400	1390	-1	81	Chronic Mastitis
Highfield Molly	4y 3m	3	6300	4.56	287.28	3.31	246.33	0.92	57.96	3.82	241	4.78	301	4.12	260	350	1150	-4	11	
Not Pregnant	6	7200	4.56	328.32	3.75	275	0.92	66.24	3.82	275	4.78	344	4.12	297						
IE123456789243	02-Mar-10	300	21	4.56	0.56	3.56	0.75	0.92	0.15	3.82	0.6	4.78	1	4.12	0.87	400	1390	-1	56	Low Fertility
Highfield Mo	4y 3m	3	6300	4.56	287.28	3.64	229.32	0.92	57.96	3.82	241	4.78	301	4.12	260	350	1150	-4	-13	
Not Pregnant	6	7200	4.56	328.32	3.95	284.4	0.92	66.24	3.82	275	4.78	344	4.12	297						

2. Animals that require additional dietary monitoring

The following animals require close monitoring of feed intake.

Cow ID Cow name Sire ID	Calving Date Age Group	DIM Lact Tests	Last Test Day Lifetime 305 days predicted										Latest : Lifetime Average					Index	Reason	
			Milk kg	Total Fat %	Saturated %	Unsaturated %	Protein %	Cassein %	Lactose %	Urea mg/l	SCC (000 cells/ml)	Energy Balance	EBI €	Fertility %						
IE123456789487	05-Sep-10	60	20	4.56	0.81	3.38	0.8	0.92	0.18	3.82	0.74	4.78	0.56	4.12	0.82	120	250	-3	72	Negative Energy Balance
Highfield Lily	4y 2m	3	6300	4.56	287.28	3.64	229.32	0.92	57.96	3.82	241	4.78	301	4.12	260	190	240	3	36	
GMI	Pregnant 30 days	6	7200	4.56	328.32	3.64	262.08	0.92	66.24	3.82	275	4.78	344	4.12	297					
IE123456789241	02-Oct-10	33	15	4.56	0.81	3.35	0.64	0.92	0.15	3.82	0.75	4.78	0.91	4.12	0.78	150	190	-2	101	Negative Energy Balance
Highfield Ruby	4y 3m	3	6300	4.56	287.28	3.64	229.32	0.92	57.96	3.82	241	4.78	301	4.12	260	200	4	12		
GMI	Not Pregnant	6	7200	4.56	328.32	3.64	262.08	0.92	66.24	3.82	275	4.78	344	4.12	297					
IE123456789243	02-Oct-10	33	23	4.56	1.08	3.56	0.82	0.92	0.21	3.82	0.88	4.78	1.1	4.12	0.95	90	200	-2	53	MUN below optimal level
Highfield Sally	4y 3m	3	6300	4.56	287.28	3.44	216.72	0.92	57.96	3.82	241	4.78	301	4.12	260	160	180	4	44	
GMI	Pregnant 30 days	6	7200	4.56	328.32	3.64	262.08	0.92	66.24	3.82	275	4.78	344	4.12	297					



Implementation



Detailed Milk Analysis Report

Shinagh Milk Services
Bandon
Co. Cork
Tel 023/8820218

Herd Owner J. Smith
Herd No. IE12345567
Print Date 25/11/2010
Test Date 20/11/2010
Scheme: A4

Cow ID	Calving Date	Days Last	Milk Kg	Total Fat %	Protein %	Casein %	Lactose %	Urea mg/litre	SCC ('000 cells/ml)	EBI €	Energy Balance	
Cow name	Age Group			Saturated Fat %	Unsaturated Fat %							
IE123456780487 Highfield Daisy GMI	05-APR-10 4y 2m Spring	233 3 6	14	65	4.56 35	3.82	3.06	4.78	160	250	100	-3
IE123456780488 Highfield Doris AHD	11-MAR-10 4y 7m Spring	258 3 7	11	67	5.33 33	4.15	3.32	4.73	180	270	108	+1
IE123456780489 Highfield Mabel RUU	11-FEB-10 3y 2m Spring	286 2 7	11	69	5.29 31	4.09	3.27	4.71	200	290	116	-2
IE123456780490 Highfield Cindy AHD	17-MAR-10 5y 2m Spring	252 4 7	9	66	4.99 34	4.58	3.66	4.71	170	260	104	+2
IE123456780491 Highfield Lulu GMI	02-FEB-10 4y 2m Spring	295 3 7	7	71	5.47 29	4.29	3.43	4.72	220	310	124	-3
IE123456780433 Highfield Nora RUU	18-FEB-10 4y 1m Spring	279 3 6	12	68	4.14 32	4.16	3.33	4.63	190	280	112	1
IE123456780484 Highfield Molly RMB	27-JAN-10 4y 2m Spring	301 2 7	13	73	5.06 27	3.42	2.74	4.68	240	330	132	-3
IE123456780455 Highfield Anna RMB	24-MAY-10 4y 2m Spring	184 3 7	14	69	4.32 31	3.7	2.96	4.72	200	290	116	+4
IE123456780445 Highfield Lily ESZ	18-FEB-10 4y 2m Spring	279 3 7	9	74	4.02 26	4.16	3.33	4.75	250	340	136	-3



Conclusions



- Milk sample is a huge potential source of biological information of the cow
 - By-products of rumen fermentation and precursors for milk production
- Fatty acid predictions already available
 - + fat, protein, lactose, casein, urea
- Ireland has a natural competitive advantage in many traits
 - ...need to prove this!

Time	Activity / Speaker	Title of Presentation
10:30 – 11:00	Tea & Coffee on Arrival	
11:00 – 11:15	Brian Wickham (Chairperson, OptiMIR Steering Committee)	What is OptiMIR?
11:15 – 11:40	Sinead McParland - Teagasc	The ROBUSTMILK project.
11:40 – 12:05	Brendan Horan – Convenor of OptiMIR Expert Group	Priorities for Sustainable European Milk Producers.
12:05 – 12:25	Xavier Massart – OptiMIR Project Manager	Action 1 - Survey.
12:25 – 13:00	Donagh Berry – Leader of “Health” in OptiMIR Research & Development Action.	Milking the Milk!!
13:00 – 14:00	Lunch	
14:00 – 14:50	Open Discussion	
14:50 – 15:00	Conclusions	

