Epidemiology of mastitis in 30 walloon dairy farms using a compilation of clinical and subclinical data in a new tool for Udder health assessment.

Théron L.[1], Reding E.[3], Detilleux J.[2], C. Bertozzi[3], Hanzen C.[1].

[1]Ruminant clinic - Service of Theriogenology and [2]Service of quantitative genetics. Veterinary medicine faculty, University of Liège - Liege,

[3]Service of Research and development. Walloon herd association - Ciney.

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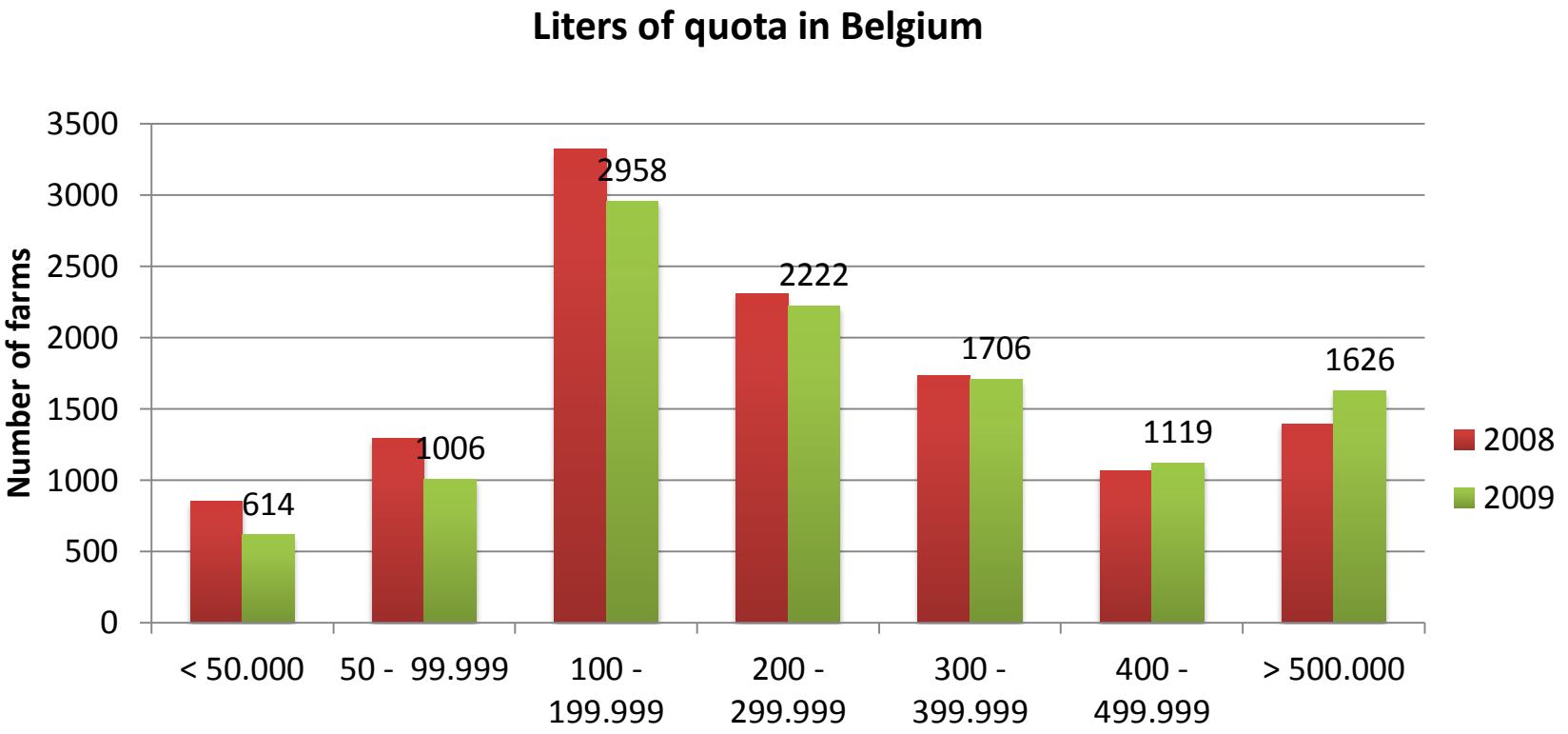
Quotas



Issu de : *Confédération Belge du lait - Rapport d'activité 2009*

Service de Thériogénologie

Département clinique des animaux de production - FMV- ULg

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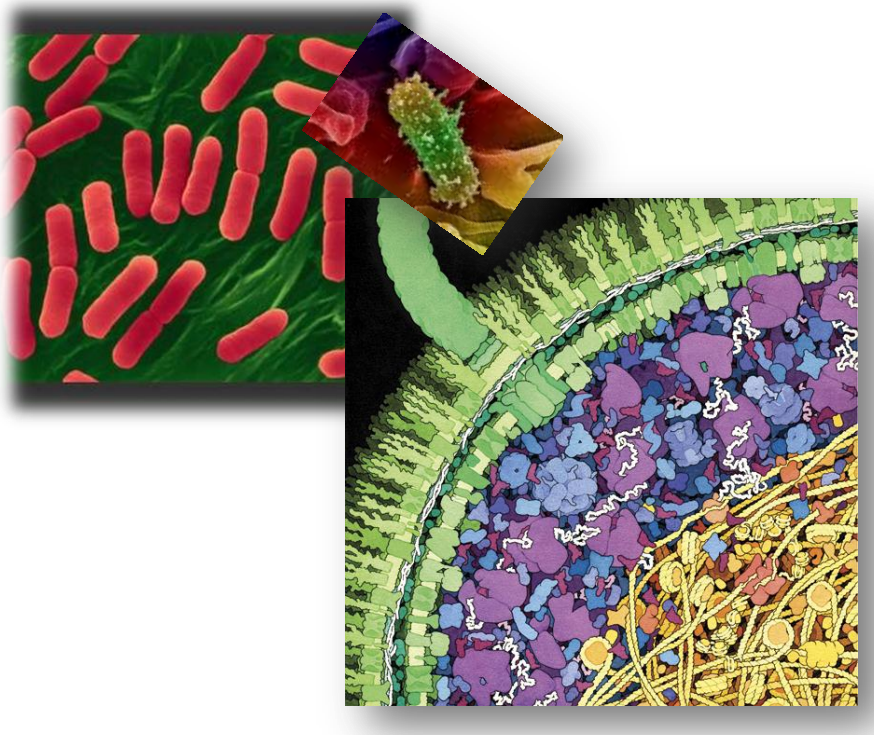


UDDER HEALTH, WELL KNOWN…
WELL IGNORED

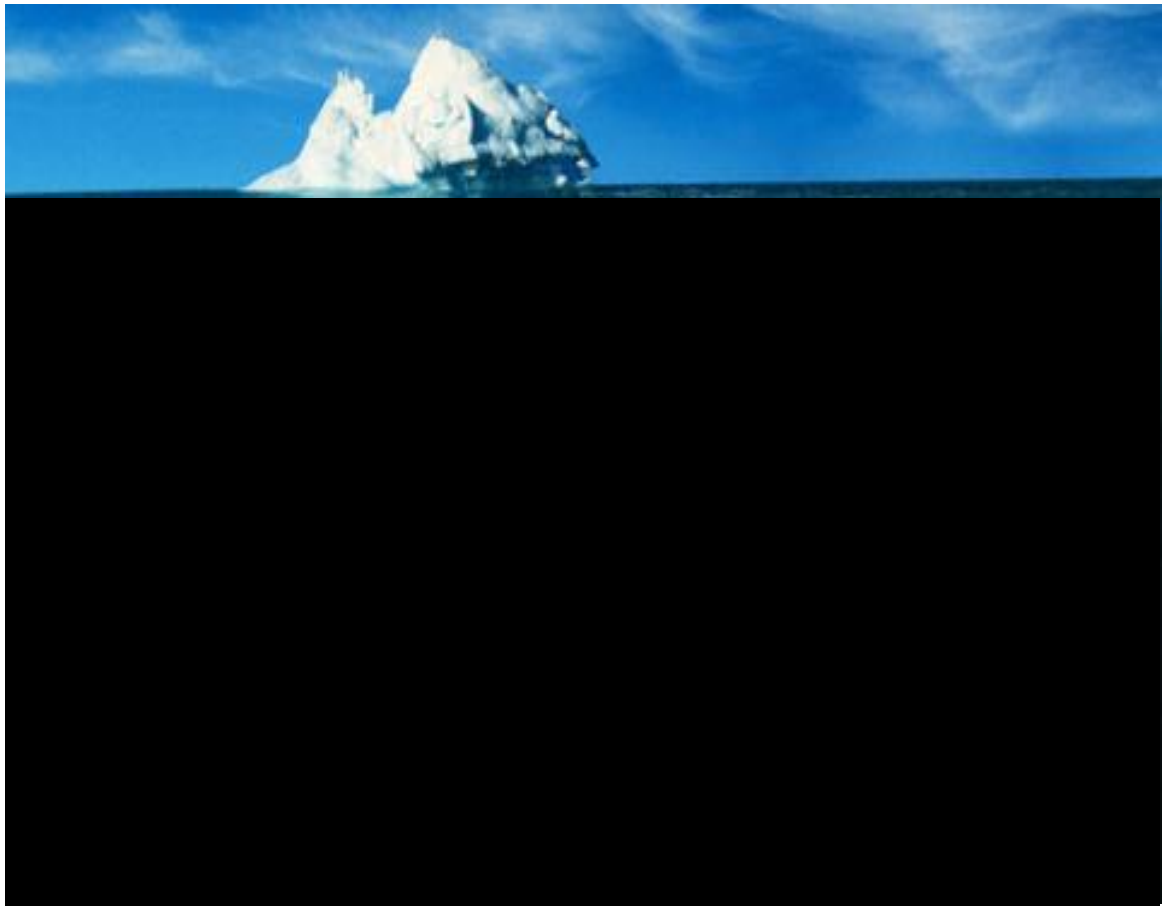
Udder health, Well known… Well ignored

- <u>25% of producers have DHI data</u>

- SCC Tank
  - 275.000

- SCC Herd
  - 288.000

- IMM Tubes (LC)
  - Wallonia 2007
    - 400.000
    - *Flanders 2007 (400.000)*



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HOW TO HELP?

Walloon estimated loss linked to udder health

44.000.000 €€€

Equivalent to a FMD episode every 10 years…

Tools for udder health?

- Research?
  - Production : progression
  - Cell counts : diminution
  - Mastitis : **???**

- Communication=Federate
  - **OSaM (Observatoire de la santé mammaire, BE)**
  - **M-Team (Ugent, BE)**
  - **UGCN (NL)**
  - **Canadian Research Network (CA)**

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Objectives

- Collaboration between University of Liege and the Walloon herd association
- « LAECEA » = Milk in walloon dialect

- **Federate** all type of **epidemiological information** on udder health that could improve it's **prevention and management** for both **farmers and their vets**

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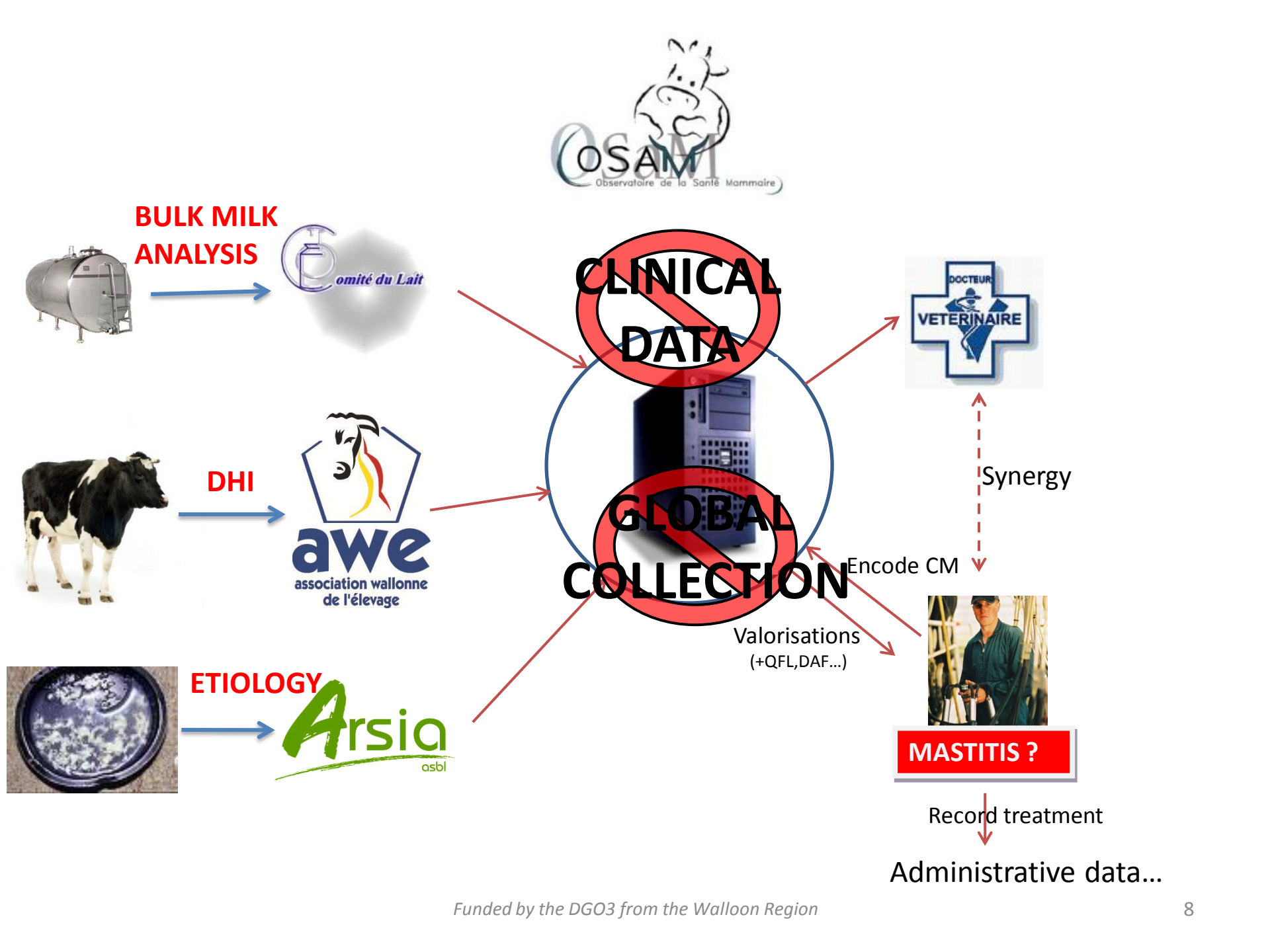

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Material

- 30 volontary dairy farms (2200 cows)
- Building a new web-based interface in MyAWEnet
- Calculating economic losses
- Development of an **Udder health File** (UHF)

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Methods

- Definitions
  - Subclinical mastitis (SCM)= Primiparous >150.000 cells/ml
  - Multiparous> 250.000 cells/ml
  - Clinical mastitis (CM): **3 grades** (MILK / QUARTER / GENERAL SIGNS)
  - Period : From last DHI till next

- Generating indexes
  - Herd prevalence rate (HPR) : Clinical + Subclinical mastitis / Cows at risk
  - Incidence rate : New cases (CM+SCM)/ Healthy Cows at risk
  - Dry-off cure rate (DOCR) : Infected cows healthy at first control
  - New infection rate at first control (NICF) : Healthy cows at dry-off infected at first control

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Methods

- Economic losses assessment(Admitted)
  - Clinical cases according to SEVERITY (2,5%/month)
  - Subclinical cases according to SCC (0,4L/cow/day)
  - Death according to AMORTIZATION (None)
  - Culling according to AMORTIZATION + CULL-COW PRICES (None)
  - Quarter loss according to COMPENSATION (None)
  - Quality through BULK MILK PENALTY (None)

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Results

Dossier de Santé Mammaire : page récapitulative

Pour tout renseignement contactez-nous :

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Exploitation :
Période d'analyse : du : 21/01/2011 au: 17/02/2011

1. Pertes économiques relatives aux mammites pour le troupeau = 144 vaches au C.L.

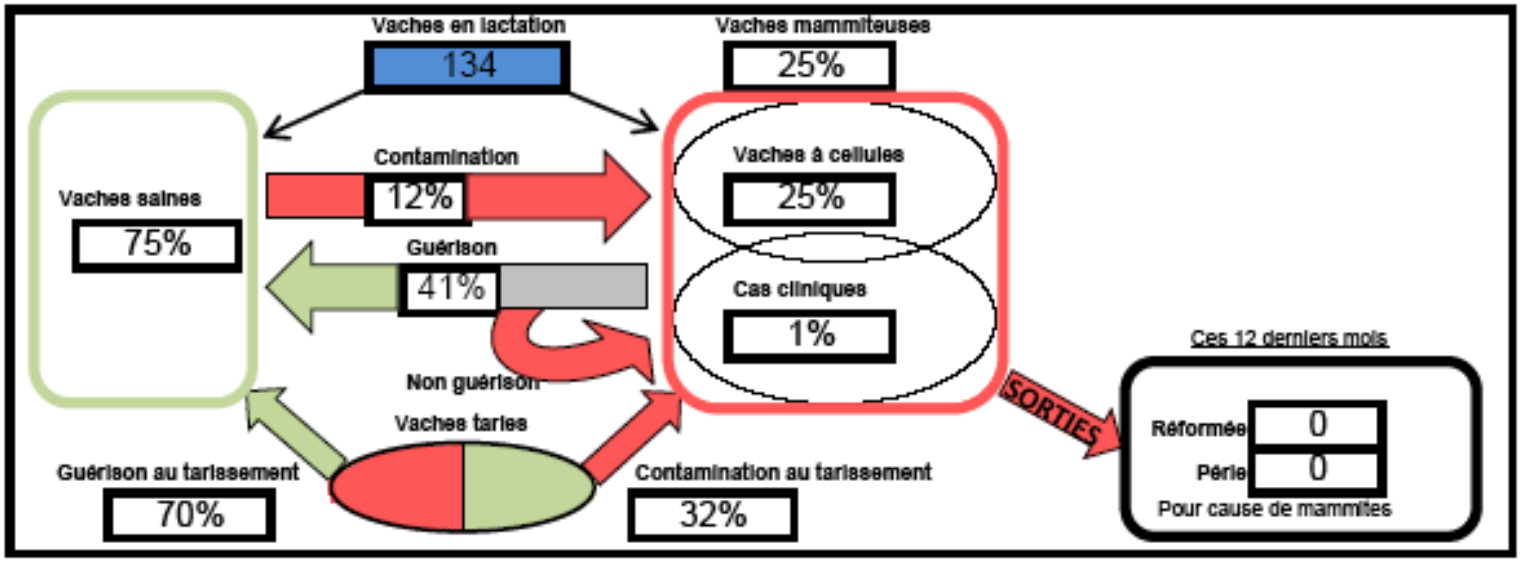
Pertes totales = 1301 €/période

Pertes tolérables = 813 €/période

0 Pertes évitables= € 488 4064

NB : période d'analyse = 28 jours

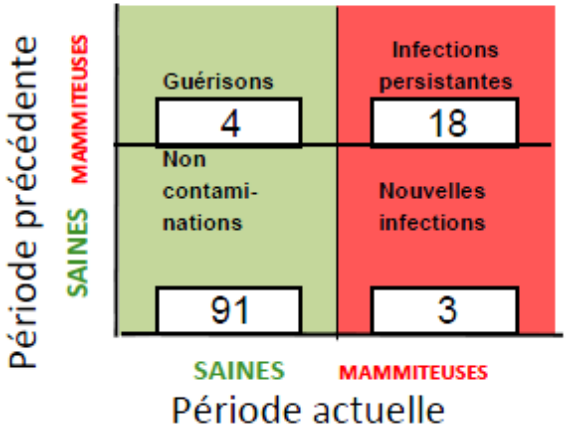
2. Vue synthétique



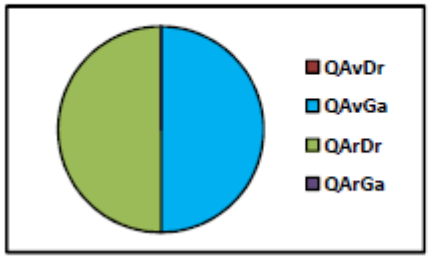
3. Répartitions par numéro de lactation

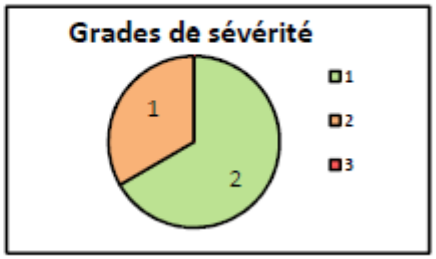
Lactation	Effectifs	Mammiteuses	%
1	47	7	15%
2	22	1	5%
3	24	5	21%
4	12	3	25%
>4	19	8	42%

4. Evolution récente des animaux

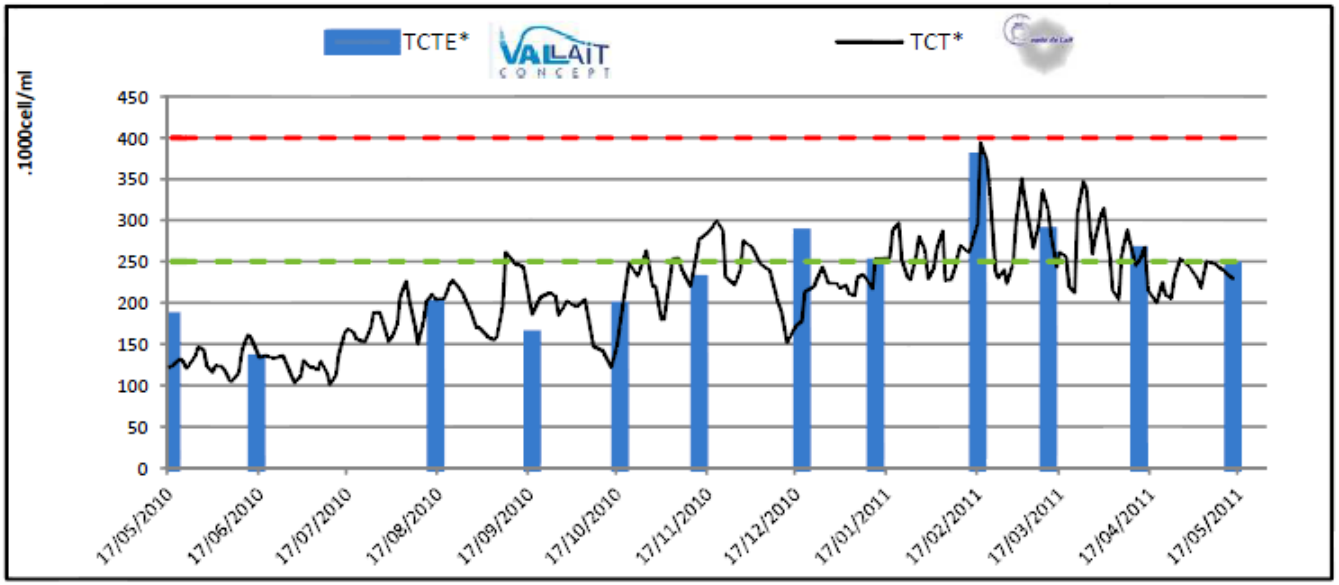


5. Description des cas cliniques

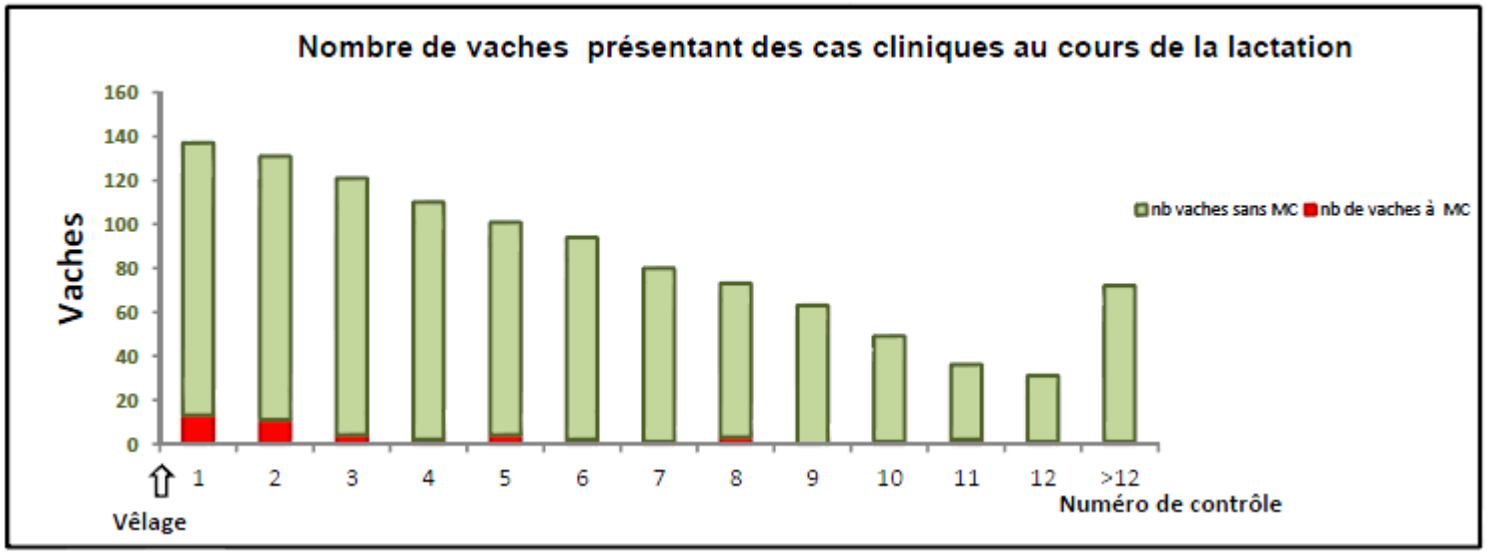




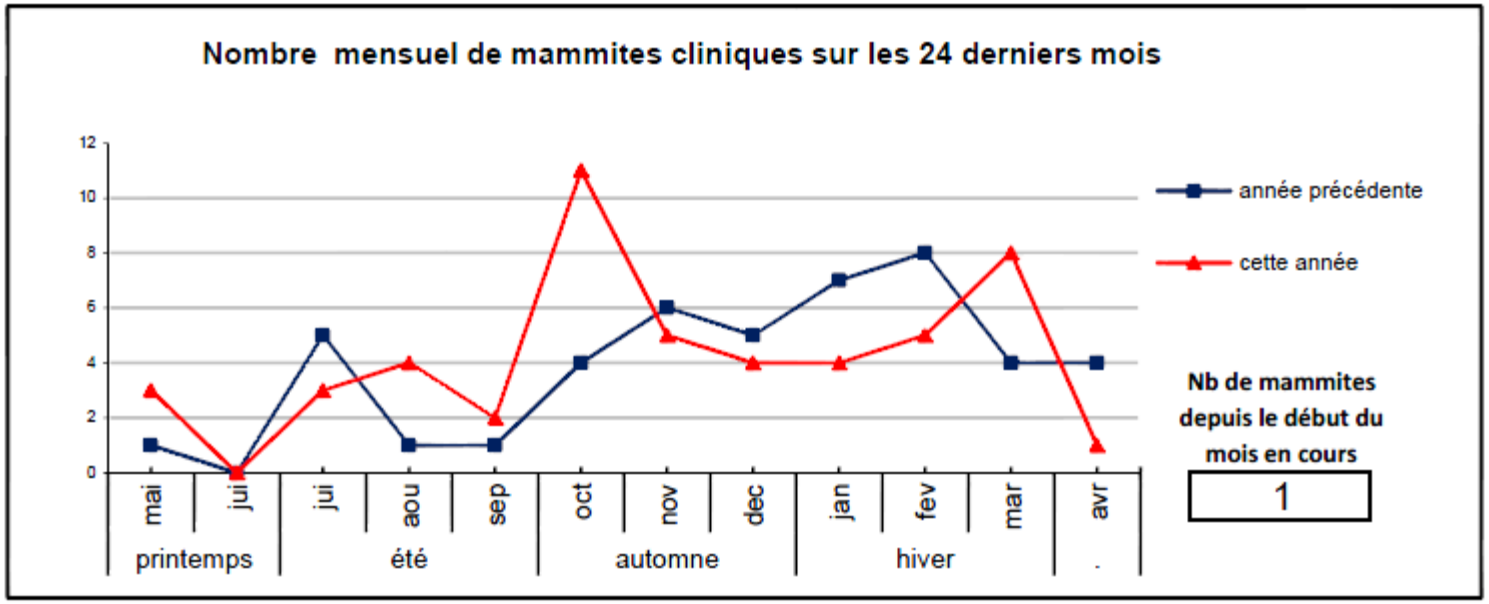
7. Santé mammaire et qualité de la détection des mammites



8. Moment d'appartion des mammites cliniques au cours de la lactation



9. Répartition des mammites cliniques au cours de l'année (effet saison)



Results

- Since April 2011
  - 722 mastitis (2305 recovered from software history)
  - 79% by the web-interface

Université de Liège

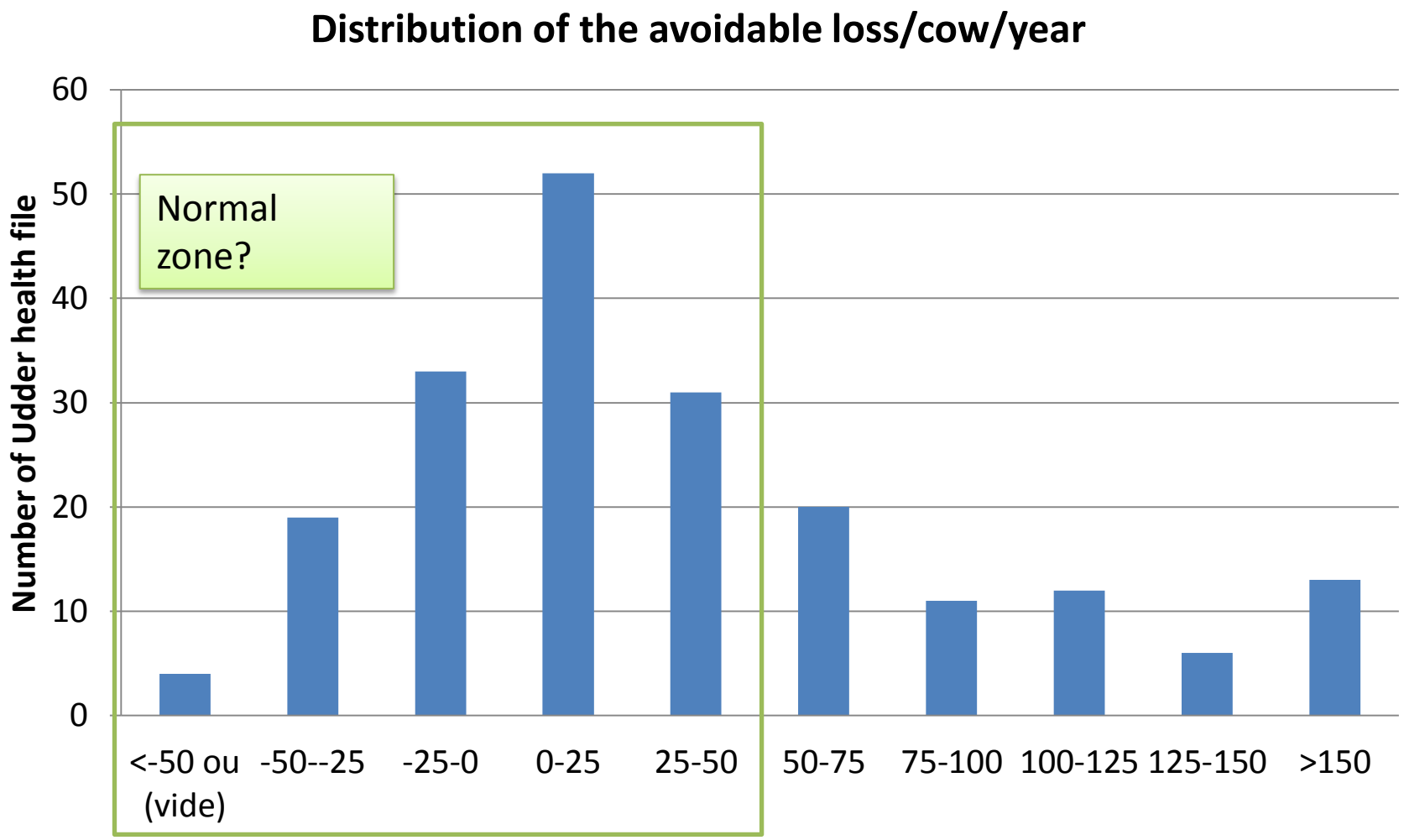
awe association wallonne de l'élevage

Results 22/08/2011

- Y = Mean avoidable loss
- Tolerable loss : 71€/cow/year

Variable	Mean	*Std Error*	P25	P75
Cow-Day-at-risk	77,6	*36*	53	83
Herd prevalence rate	**33%**	*11%*	25%	42%
New infection rate	17%	*10%*	9%	22%
Cure rate	32%	*15%*	39%	22%
Dry off cure rate	**65%**	*14%*	75%	57%
New infection at first control	**23%**	*11%*	15%	29%
Avoidable loss/cow/Year	+44,7€	*86€*	-0,8€	64€
Composite Herd SCC (cell/ml)	**331**	*146*	233	420

Analysis



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Linear regression

- Y= Avoidable loss
  - DOCR : R^2=0.20; β=-131; p<0.0001

- Y= New infection rate
  - Primiparous prevalence R^2=0.36; β= 0.33; p<0.0001

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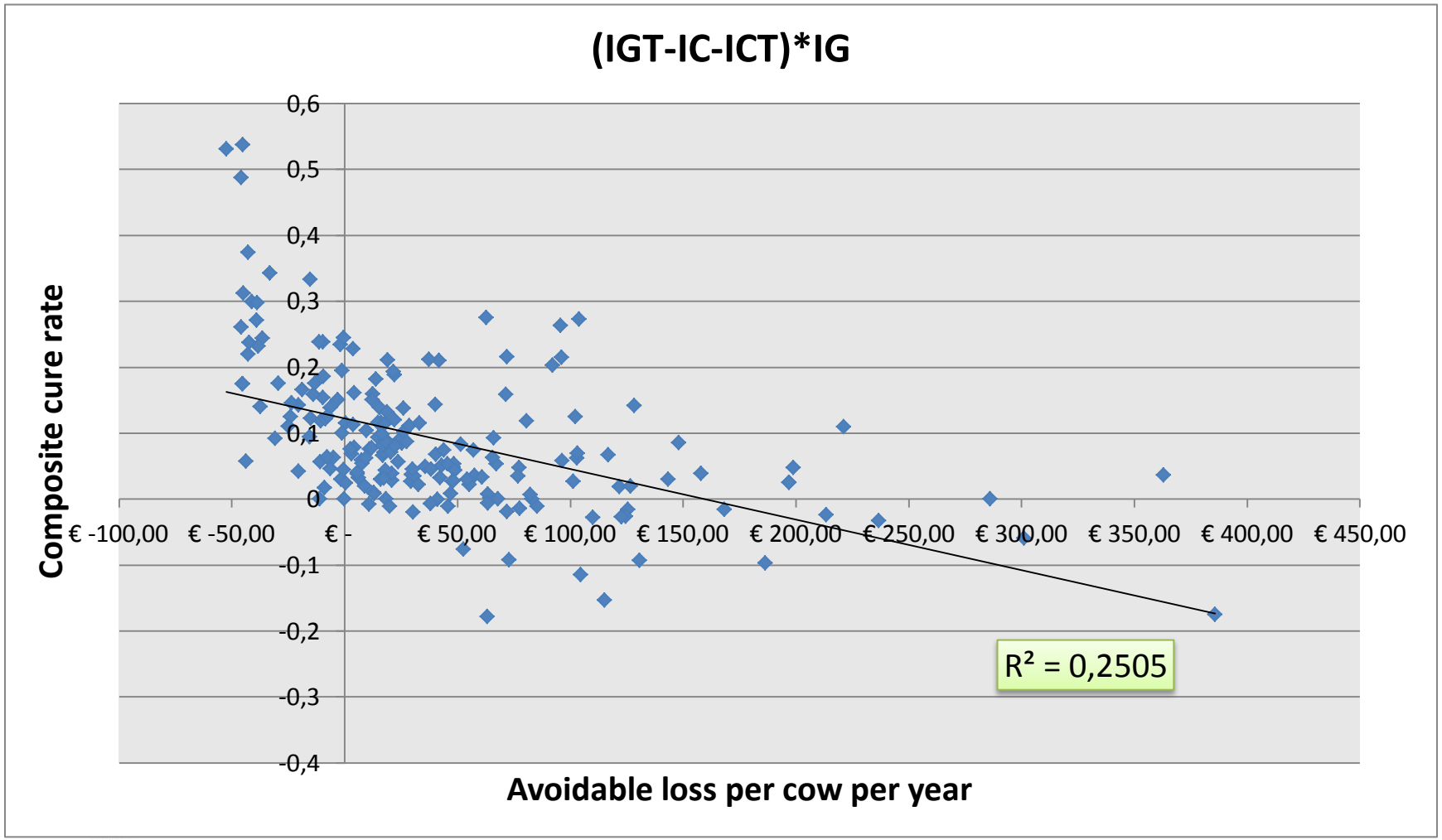
Composite Cure rate



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Hell, so many figures, what if…

« PRAESTAT CAUTELA QUAM MEDELA »

Take home message

1. Clinical and subclinical data could be seen as **2 components** of a same pathology
2. Partial budget approach gives **realistic figures**
3. Best explanation of ECONOMIC LOSS variance is **Dry off cure rate**
4. Means that most COSTS **could be anticipated**
5. Incidence is mainly linked with **Primiparous infection rate**

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"If you think adventure is dangerous, try routine. It is lethal."

Paulo Coelho