

Welcome and Introduction
Chris Warkup, SABRE Coordinator
Genesis Faraday, UK

SABRE
CUTTING EDGE GENOMICS FOR SUSTAINABLE ANIMAL BREEDING

3rd SABRE Conference

Welfare and Quality Genomics

10 – 11 September 2008
Foulum, University of Aarhus

Chris Warkup, SABRE Coordinator

Food Quality and Safety This publication represents the views of the Authors, not the EC. The EC is not liable for any use that may be made of the information.

SABRE
CUTTING EDGE GENOMICS FOR SUSTAINABLE ANIMAL BREEDING

House Keeping Rules

Fire exit

NO SMOKING

IT IS AGAINST THE LAW TO SMOKE IN THESE PREMISES

Food Quality and Safety

SABRE
CUTTING EDGE GENOMICS FOR SUSTAINABLE ANIMAL BREEDING

SABRE Conferences

- 2006 Launch Conference, Edinburgh
- 2007 Genomics for Animal Health, in collaboration with EADGENE, Utrecht
- 2008 Welfare and Quality, Foulum
- 2009 [in collaboration with EAAP, 24-27 August, Barcelona]

Food Quality and Safety

SABRE
CUTTING EDGE GENOMICS FOR SUSTAINABLE ANIMAL BREEDING

Looking back to 2004 - Project Rationale

New Genomic Tools

- Genome sequence
- SNP panels
- Affordable high-throughput genotyping
- Expression arrays
- Improved bioinformatics

Breeding for Sustainability Goals

- Food Quality
- Economic Sustainability
- Food Safety
- Environmental Sustainability
- Animal Well-being
- Biodiversity

Food Quality and Safety

SABRE
CUTTING EDGE GENOMICS FOR SUSTAINABLE ANIMAL BREEDING

High-Level Objectives

To provide the fundamental knowledge of the genomics and epigenetics of animal health, food safety and food quality traits of livestock species, together with the necessary selection technologies, such that breeders can re-focus animal breeding and production towards more sustainable, environmentally friendly, low input systems that deliver safe and high quality foods.

Food Quality and Safety

SABRE
CUTTING EDGE GENOMICS FOR SUSTAINABLE ANIMAL BREEDING

33 Partners from 14 Countries

Participants:

1. Genesis Faraday Partnership
2. Institut National de la Recherche Agronomique
3. ASG-Lelystad
4. Roslin Institute
5. Aarhus University
6. Wageningen University
7. Argentina Ltd
8. Corstoba University
9. Parco Tecnologico Padano
10. Agricultural Research Organization, The Volcani Center
11. MTT Agrifood Research Finland
12. Genus plc
13. University of Bern
14. CNRS-UFR
15. Research Institute for the Biology of Farm Animals, FBN-Dummerstorf
16. Norwegian University of Life Sciences
17. University of Bonn
18. Institut De Recerca I Tecnologia Agroalimentaries
19. Leibniz Tierärztliche Hochschule Hannover
20. University of Copenhagen
21. University of Gwangju
22. University of Munich
23. Cargill Ltd
24. Sanger Institute
25. Institute for Pig Genetics
26. Biobest Ltd
27. Scottish Agricultural College
28. Institute for Animal Health
29. University of Medical Sciences Poznan
30. Jiangxi Agricultural University
31. Zhejiang University
32. China Agricultural University
33. Universidade Federal De Viçosa

Food Quality and Safety

Welcome and Introduction
Chris Warkup, SABRE Coordinator
Genesis Faraday, Uk

The Big Picture

- 4-year project
- 33 partners from 14 countries
- €13.9m grant
Total value > €23m
- 205 person years of effort
- Main Species:
Cattle
Pigs
Poultry

Period 2 Reporting

- Deliverable Reports ✓
- Annual Reports
- Independent Advisory Board
- Draft Management Report
- Budget
- Periodic Management Report
- Audit Certificates

Today we are in month 30 of 48

15 out of 15

Deliverables

Deliverables month 1-24

Status	Count
Completed	65
Delayed	5
Abandoned	2

Finance (EC contribution)

SABRE Finance (Total €13,899,793)

- Spent M1-24: € 6,853,961
 - 49.3% of total budget
 - €420,801 behind scheduled budget
- Budget M25-42: € 5,156,347
 - Total spent by M42: €12,010,308
 - Total spent by M42: 86.9% of total budget (in 87.5% of the time)

Summary from the Year-2 Project Review

“During its first two years of duration, the SABRE project has made remarkable progress despite its complexity and very large consortium size. Due to the complexity, however, a few deviations from the original project plan have been necessary. Project deviations reported in the starting year were generally addressed appropriately and where changes were made they were logical and scientifically sound. A few minor concerns still exist in relation to WPs 1, 2, 4, 5 and 7. The project to this point is significantly underspent and appropriate attention to this issue seems to be given by project management.”

So What has Changed in 2.5 Years?

- Organisational changes

Welcome and Introduction
Chris Warkup, SABRE Coordinator
Genesis Faraday, Uk

SABRE
CUTTING EDGE GENOMICS FOR SUSTAINABLE ANIMAL BREEDING

Work Package Leaders (OMG)

WP1: Chris Haley
WP2: Jean-Paul Renard
WP3: Martien Groenen
WP4: Annemarie Rebel
WP5: Mogens Lund → Peter Sorensen
WP6: Tette v.d. Lende → Bonne Beerda → Henri Woelders
WP7: Ian Dunn
WP8: Pierre Mormede
WP9: Christian Bendixen (AU) → Barbara Harlizius (IPG)
WP10: Theo Meuwissen
WP11: Cecilia Oram → Carol Didcock
WP12: Toine Roozen
WP13: Chris Warkup

Ethics and Welfare Advisor: Bryan Jones
 Gender Action Plan: Elisabetta Giuffra
 EADGENE Liaison: Mari Smits
 Secretariat: Emma Lewis → Kezia Howes

SABRE
CUTTING EDGE GENOMICS FOR SUSTAINABLE ANIMAL BREEDING

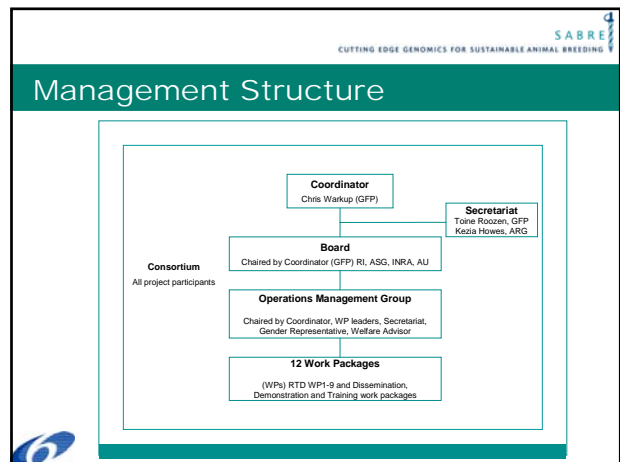
So What has Changed in 2.5 Years?

- Organisational changes
- Scientific Developments
 - Higher throughputs and lower costs
 - We are delivering more than planned for the same money
- Beginning to deliver results
 - 9 identified exploitable results
 - Pig genome sequence SSC 7 and 14
 - 7k pig SNP array and contributions to 50k array
 - New tools (MIXBLUP, eQTL analyses and GridQTL)

SABRE
CUTTING EDGE GENOMICS FOR SUSTAINABLE ANIMAL BREEDING

At This Conference:

- Invited speakers
- SABRE participants
- Mobility award recipients
 - Funds still available:
 - 10 integration awards
 - 4 New Member State
 - 4 INCO
 - 2 Early stage researchers
- Genome complexity
- Epigenetics (WP2)
- Ethics of animal breeding
- Behaviour traits and quality (WP8)
- Robustness
- Mastitis (WP5)
- Fertility (WP6)
- Zoonoses (WP4)
- Boar taint (WP9)
- Eggshell quality (WP7)
- E. coli susceptibility (WP10)
- Practical implementation



SABRE
CUTTING EDGE GENOMICS FOR SUSTAINABLE ANIMAL BREEDING

Reallocation of funds

Rank	WP	Application Title	Score	Request	Total funds
1	1A5	Marker-assisted breeding value estimation for mastitis resistance in Finnish Ayrshire cattle	62.9	€ 48,500	€ 48,500
2	9	Selective genotyping of purebred population for boar taint	62.1	€ 70,000	€ 118,500
3	7	Application of validated SNPs to egg shell quality QTL	59.1	€ 70,000	€ 188,500
4	3A9	Identification of SNPs in "Boar taint" mapping populations	58.3	€ 50,000	€ 238,500
5	4	Shotgun sequencing of BAC-clones around porcine muscle 4	57.4	€ 60,000	€ 298,500
6	8	Identification of QTLs involved in fearfulness-related trait in poultry	54.4	€ 15,700	€ 314,200
7	6	Toward a systematic phylogenetic and phylogenomic study of evolution of genes involved in reproduction	52.6	€ 8,000	€ 322,200
8	8A1	Mapping eQTL for adrenal function in pigs	52.0	€ 53,000	€ 375,200
9	6	Fine localisation and detection of genes involved in folliculogenesis regulation in cattle	50.9	€ 24,000	€ 399,200
10	8	Estimation of genetic relationships between aggression (lesion score) and meat quality	50.9	€ 61,267	€ 460,467
11	5A6	Analysis of the Israeli Holstein sire population by the 50K Illumina SNP chip	50.6	€ 100,000	€ 560,467
12	4	QTL detection through the SNP microarray genotyping of Sheep families from rams heterozygous for Salmonella susceptibility	49.9	€ 25,000	€ 585,467
13	5	Strengthen the evaluation of animals' clinical responsiveness to the experimental E. coli Mastitis infection	48.2	€ 150,473	€ 735,940
14	4	Whole Genome SNP Scan on R+R- divergent poultry lines for residual feed efficiency	47.6	€ 27,500	€ 763,440
15	6	Identification and expression profiling of bovine microRNAs in embryos and endometrium biopsies in relation to pregnancy success after transfer	47.6	€ 105,000	€ 868,440
16	4A3	Bioinformatics analysis of sequence divergence of avian innate immune genes	46.6	€ 289,604	€ 1,158,044
17	1	Additional supports for Jiangxi Agricultural university	34.1	€ 100,000	€ 1,258,044

SABRE
CUTTING EDGE GENOMICS FOR SUSTAINABLE ANIMAL BREEDING

Acknowledgments

- Core partners
- WP Leaders
- All Consortium members
- GFP team
- Argentix
- DG Research for funding

Welcome and Introduction
Chris Warkup, SABRE Coordinator
Genesis Faraday, Uk

CUTTING EDGE GENOMICS FOR SUSTAINABLE ANIMAL BREEDING

SABRE

Thank You for Your Attention



info@sabre-eu.eu
www.sabre-eu.eu

