

# Eradication program of *Staphylococcus aureus* genotype B in dairy cows in Canton Ticino (Switzerland)

Ressourcenprojekt, Art, 77 – 77b, LwG



**Lorenzo Sesso**

**Olten, 14.11.2019**

## EUROPE



**25,000**

**people die each year**

as a result of hospital infections caused by

**5 key  
resistant  
bacteria**



[www.gov.uk](http://www.gov.uk)

Strategie Antibiotikaresistenzen



**StAR**

## Kosten-Nutzen-Analyse einer Intervention zur Verbesserung der Eutergesundheit in Schweizer Milchviehbetrieben

D. Heiniger<sup>1</sup>, B. H. P. van den Borne<sup>2</sup>, I. Lechner<sup>2</sup>, A. Tschopp<sup>2</sup>, D. Strabel<sup>3</sup>, A. Steiner<sup>1</sup>, H. Meier<sup>4</sup>

<sup>1</sup>Wiederkäuerklinik und <sup>2</sup>Veterinary Public Health Institut der Universität Bern, <sup>3</sup>Rindergesundheitsdienst, AGRIDEA Lindau, <sup>4</sup>AGRIDEA Lindau

Auf nationaler Ebene wurden die Mastitis-Kosten im Jahr 2010 auf CHF 129.4 Millionen/Jahr geschätzt.



H.U. Graber



Research in Veterinary Science

Volume 85, Issue 3, December 2008, Pages 439-448



## Bovine *Staphylococcus aureus*: Association of virulence genes, genotypes and clinical outcome

C. Fournier<sup>a</sup>, P. Kuhnert<sup>b</sup>, J. Frey<sup>b</sup>, R. Miserez<sup>c</sup>, M. Kirchhofer<sup>a</sup>, T. Kaufmann<sup>a</sup>, A. Steiner<sup>a</sup>, H.U. Graber<sup>a</sup>  



J. Dairy Sci. 94:128–137

doi:10.3168/jds.2010-3251

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## Mastitis diagnostics: Quantitative PCR for *Staphylococcus aureus* genotype B in bulk tank milk

R. Boss,\* J. Naskova,† A. Steiner,\* and H. U. Graber\*<sup>1</sup>

\*Clinic for Ruminants, Department of Clinical Veterinary Medicine, Vetsuisse-Faculty, University of Berne, 3001 Switzerland

†Agroscope Liebefeld-Posieux Research Station ALP, 3003 Berne, Switzerland



Journal of Dairy Science

Volume 97, Issue 3, March 2014, Pages 1305-1312



## Enterotoxin-producing *Staphylococcus aureus* genotype B as a major contaminant in Swiss raw milk cheese

J. Hummerjohann \*  , J. Naskova \*, A. Baumgartner †, H.U. Graber \*



Journal of Dairy Science

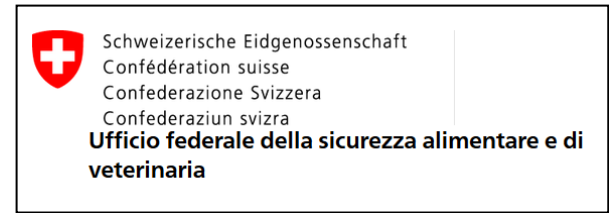
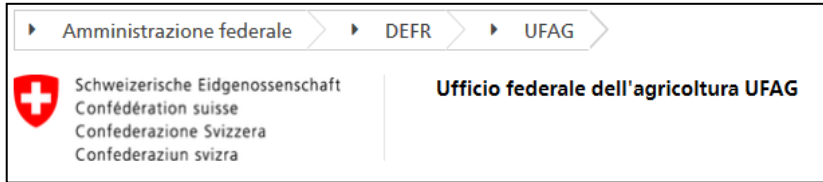
Volume 98, Issue 5, May 2015, Pages 2944-2948



## Outbreak of staphylococcal food poisoning among children and staff at a Swiss boarding school due to soft cheese made from raw milk

Sophia Johler \*  , Delphine Weder †, Claude Bridy †, Marie-Claude Huguenin †, Luce Robert †, Jörg Hummerjohann ‡, Roger Stephan \*





Agroscope, H.U. Graber,  
BLW, I. Strahm, Y. Lötcher

M. Reist, J. Schmid



wikipedia

2016  
The journey begins



<https://www.pcprofessionale.it>



<https://www.cronaca.news>

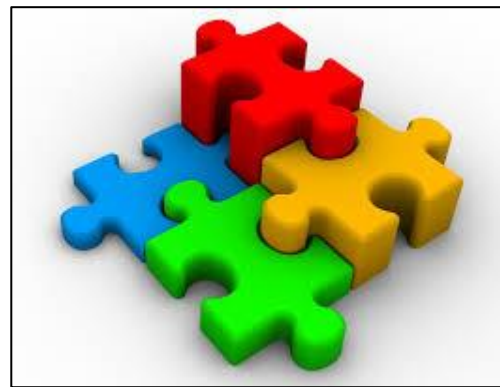
# Requirements



Money



Farmers



Technical solutions



# Involvement of farmers



- Voluntary basis, minimum of 75%;
- **Correct information on the problem;**
- Understanding of the fears of the farmers;
- **Acceptance of the staff by farmers;**
- Promise of achievable goals;
- **Personalized communication:**
- Compensation for slaughtered cows.

# Technical solutions



J. Dairy Sci. 101:6897–6914  
<https://doi.org/10.3168/jds.2017-13937>

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## Sanitation of *Staphylococcus aureus* genotype B-positive dairy herds: A field study

C. Sartori,\*† R. Boss,\*‡ M. Bodmer,§ A. Leuenberger,\* I. Ivanovic,\* and H. U. Graber\*<sup>1</sup>

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†ETH Zurich, Institute of Agricultural Sciences (IAS), Animal Physiology Group, 8092 Zurich, Switzerland

‡Federal Food Safety and Veterinary Office, 3003 Berne, Switzerland

§Vetsuisse Faculty, Department of Clinical Veterinary Medicine, Clinic for Ruminants, University of Berne, 3012 Berne, Switzerland

Eradication protocol



Data management - BLV

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ALPVORSCHRIFTEN KANTON TESSIN 2018

Mitteilung des Veterinäramts des Kantons Tessin

Bellinzona, den 9. Februar 2018

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70 Alps – 1100 cows from  
other CH cantons

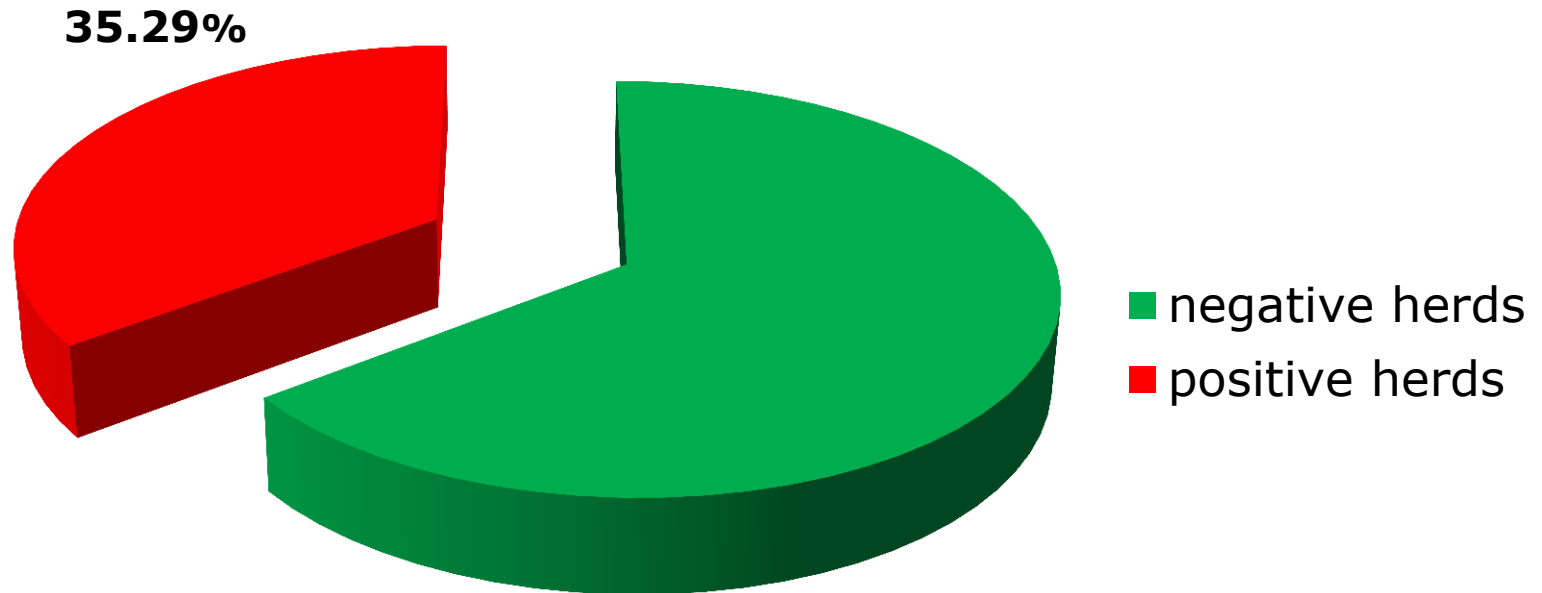
## Epidemiological study 2016

### SAGB DAIRY COWS **POPULATION** **PREVALENCE** - CANTON TICINO



## **Epidemiological study 2016**

# **SAGB HERD PREVALENCE CANTON TICINO**



## Epidemiological study 2016

### SAGB **WITHIN HERD** PREVALENCE- CANTON TICINO





**December  
2017**

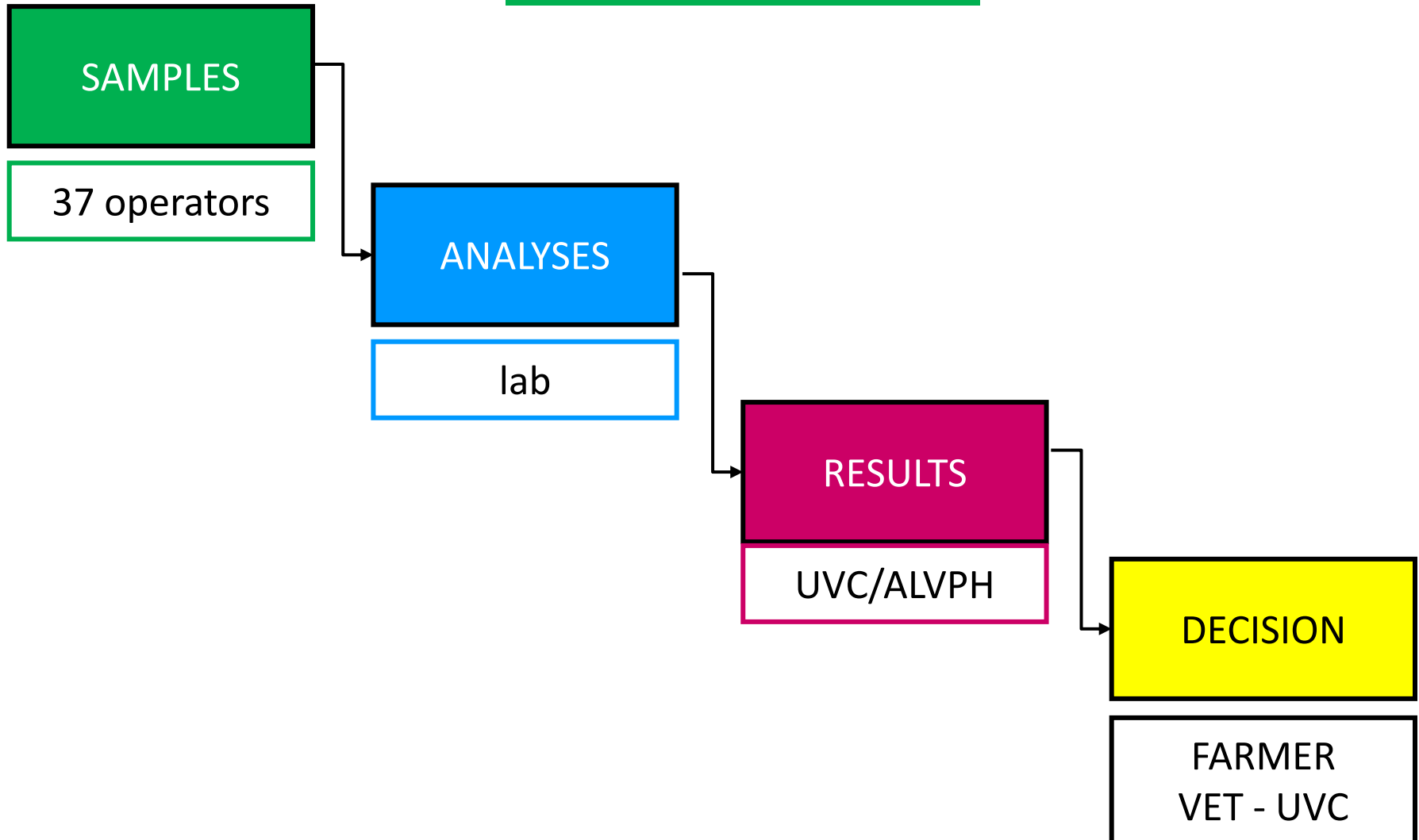


## SAGB eradication project

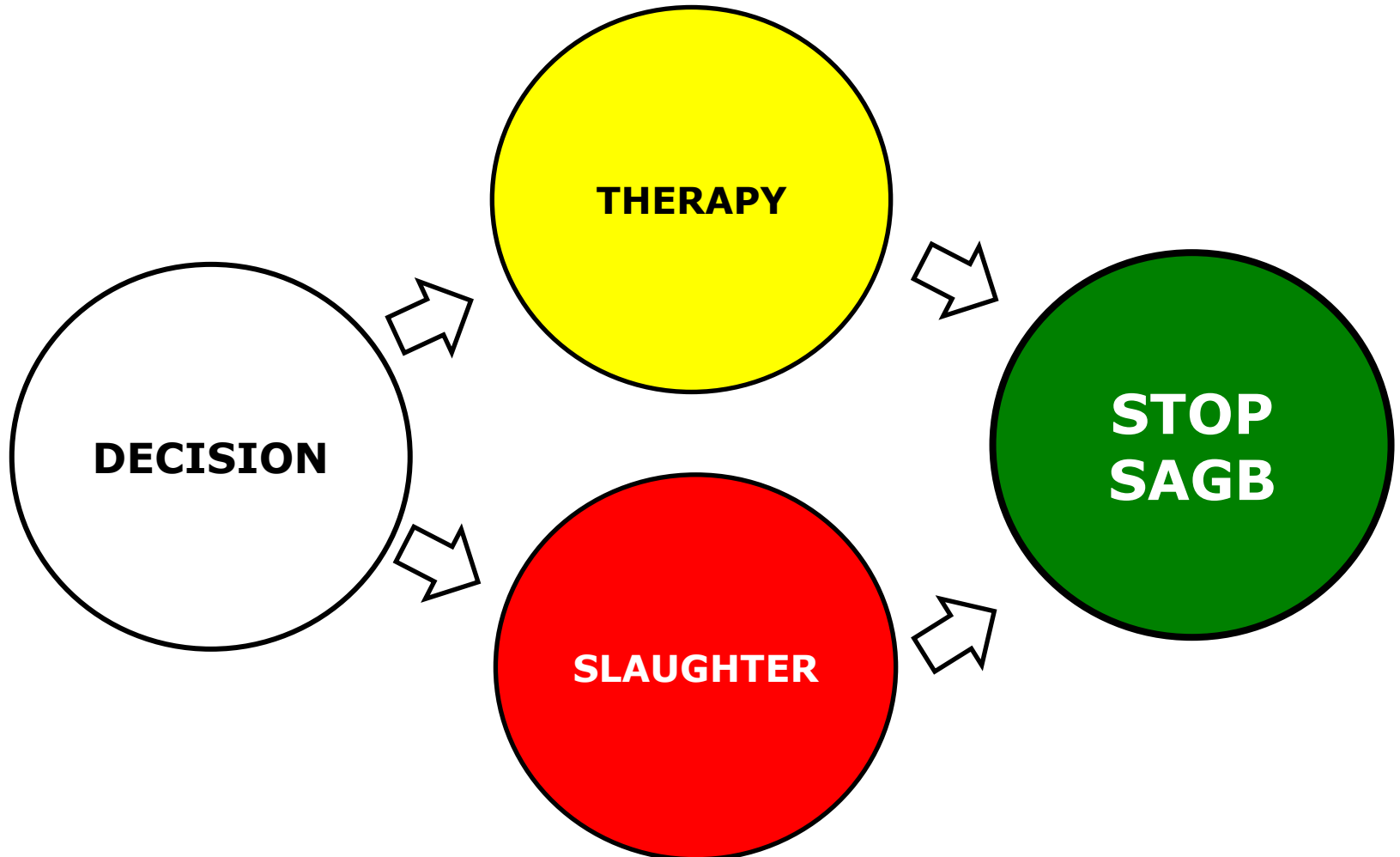


December  
2017

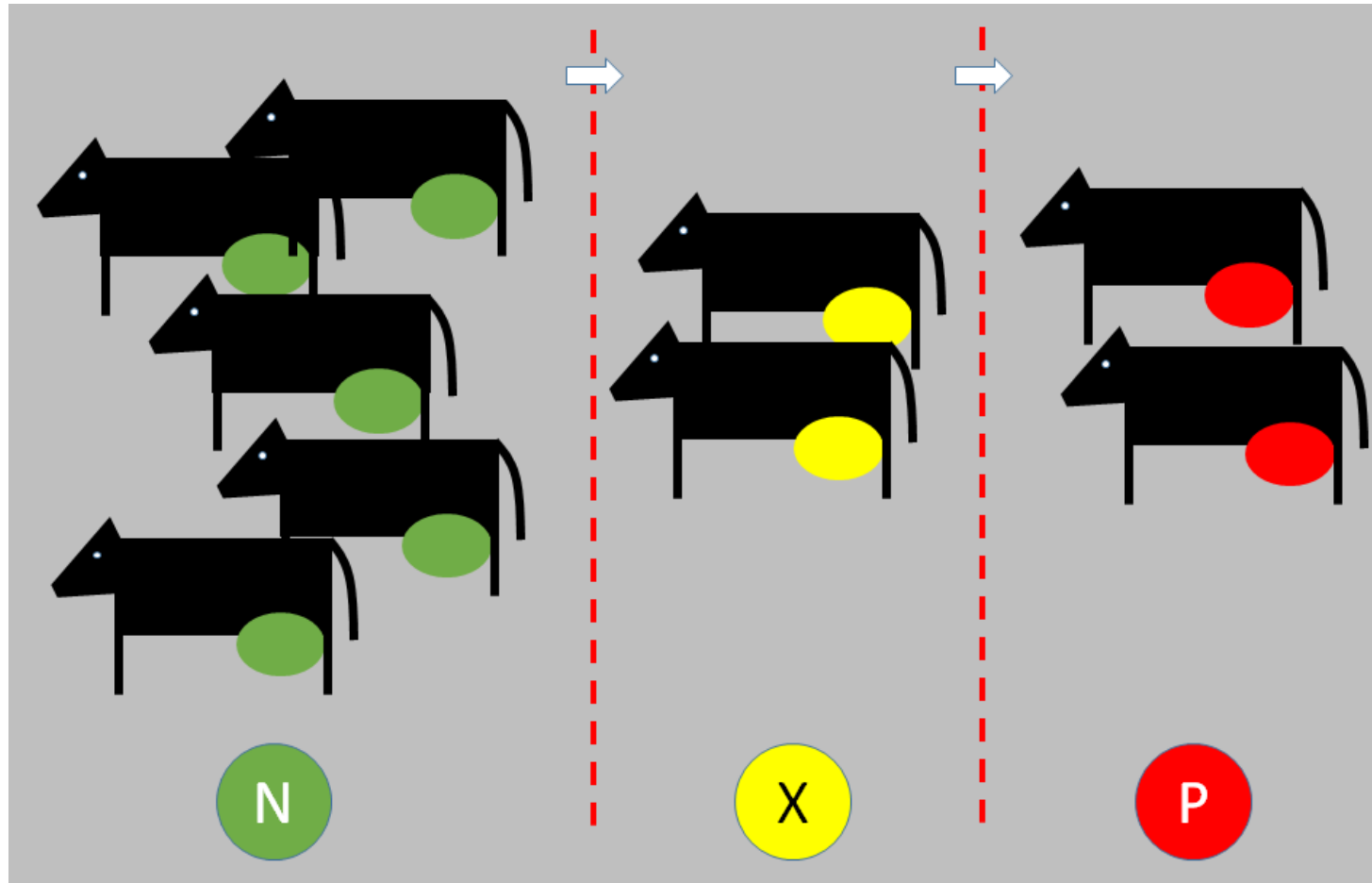
MEASURES



**MEASURES**



MEASURES



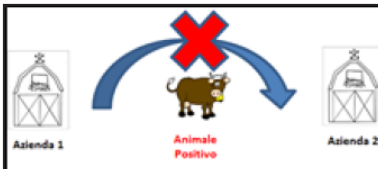
## MEASURES

UFFICIO DEL VETERINARIO CANTONALE -PROGETTO RISANAMENTO MASTITI DA SAGB

### Gestione dei capi SAGB-positivi



**1** Identificazione chiara degli animali positivi allo SAGB



**2** Divieto di movimentazione degli animali positivi allo SAGB

Animali negativi N	Animali mai testati o sospetti X	Animali positivi P
Primi...		...ultimi

**3** Ordine di mungitura N-X-P



**4** Guanti monouso, un paio per ogni seduta di mungitura



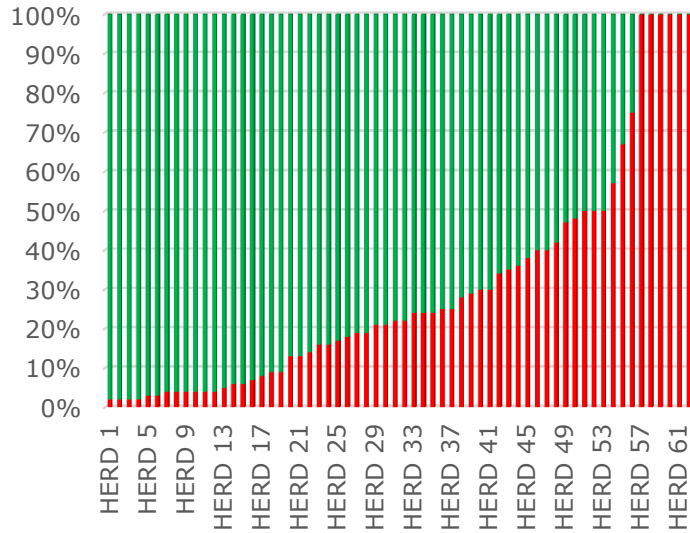
**5** Pulizia della mammella con materiale monouso



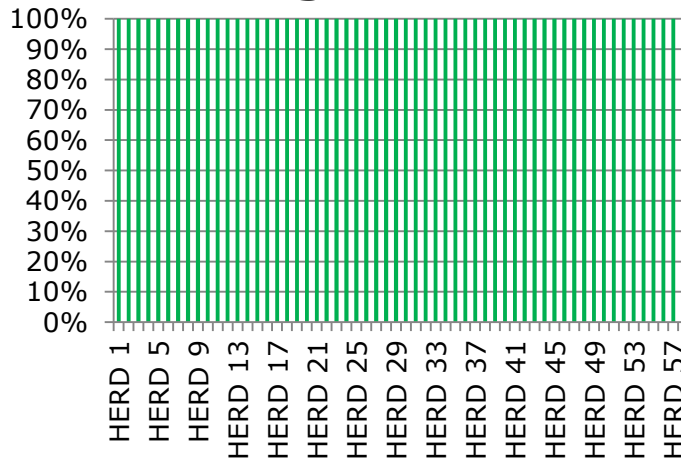
**6** Post-dipping con prodotto autorizzato a base di iodio



December 2017



August 2019



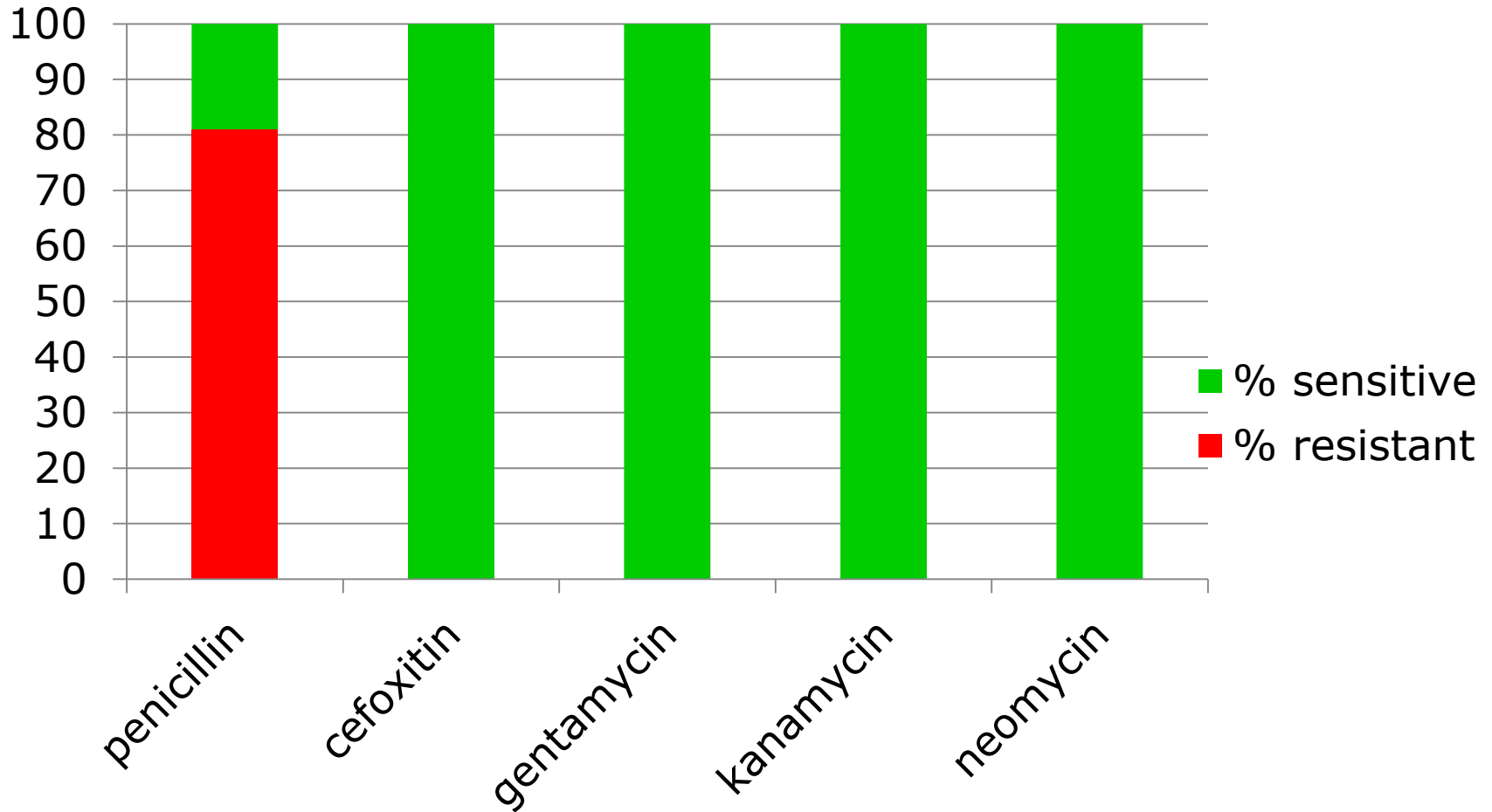
# Epidemiological situation

	DECEMBER 2017	AUGUST 2019
Population prevalence	9.9% (343 Cows)	0%
Herd prevalence	36.9% (62 Herds)	0%

**Therapy cure rate 91%**

**Only 61 slaughtered cows**

## SAGB Resistance Pattern (Eucast, 2016)



## FINAL CONSIDERATIONS



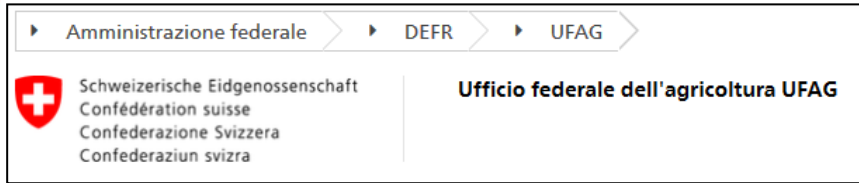
- Common shared goal;
- Cooperation among the federal offices (BLV, BLW) and the project financiers, veterinarians, farmers.....;
- Appropriate technical solutions;
- Pragmatic project management;
- Pressureless management strategy of farmers;
- Field operations with farmers;
- Great operational flexibility of the team.

PERSPECTIVES



SAGB eradication feasible

# ACKNOWLEDGEMENTS



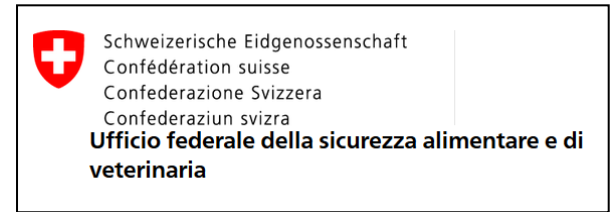
H.U. Graber, Agroscope

BLW, I. Strahm, S. Vogëli,  
(Y. Löttscher)

swissmilk S. Hagenbuch



N. Croce



(M. Reist, J. Schmid), L.  
Perler, U. Zimmerli



M. Rust



*u<sup>b</sup>*

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