A METHOD TO SIGNIFICANTLY REDUCE THE USE OF INTRAMAMMARY ANTIBIOTICS AT DRYING OFF

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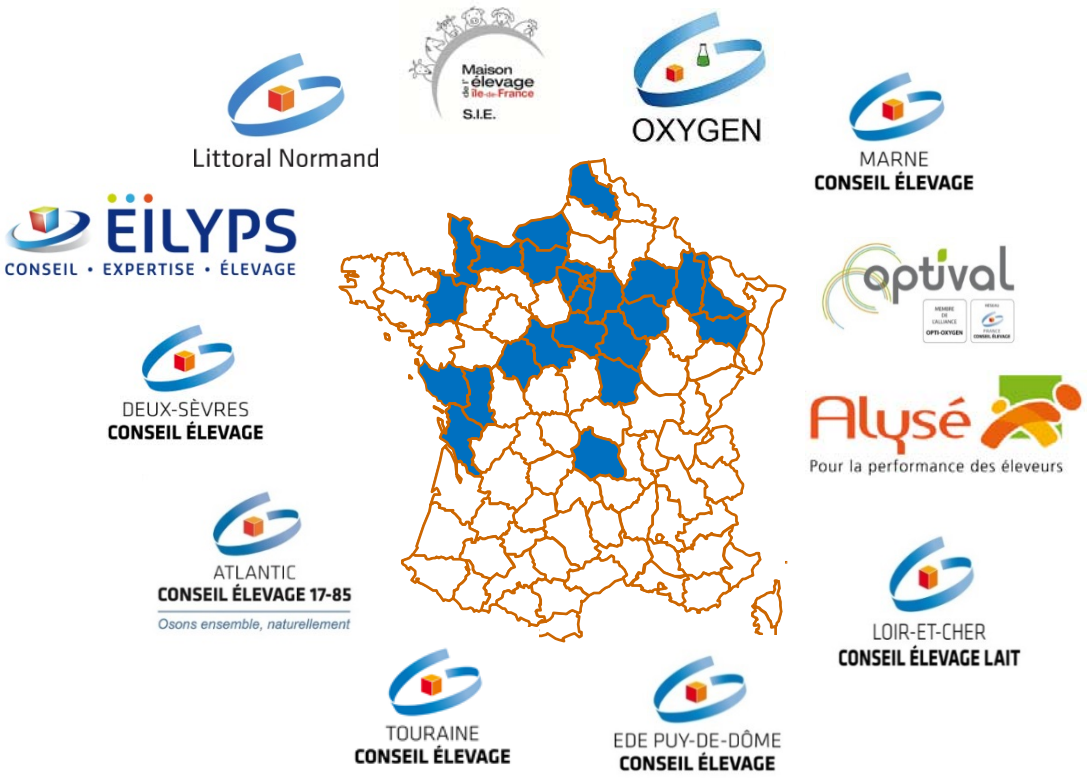
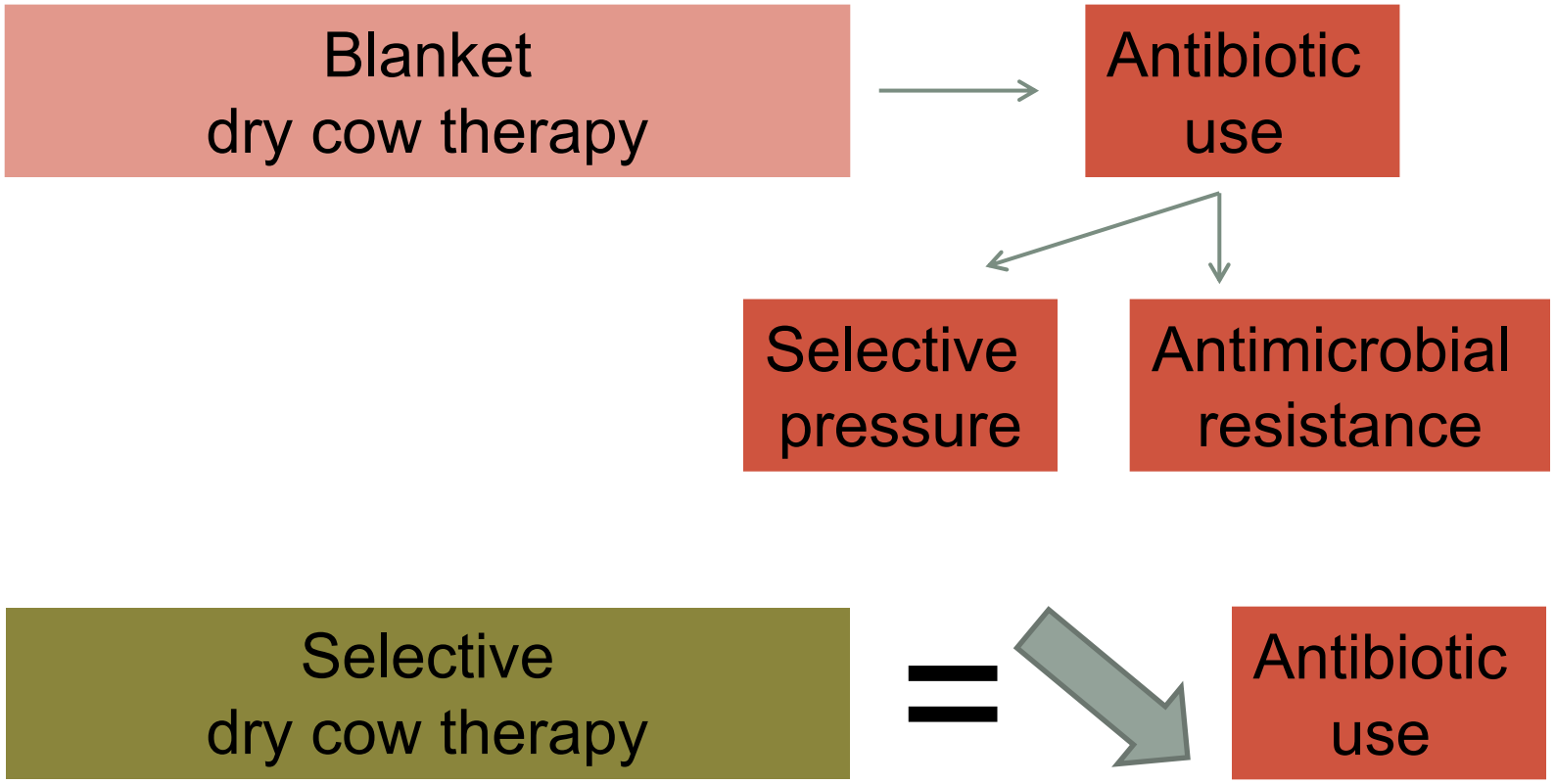
BIOTECK-LAIT



- A French organisation for animal recording

BACKGROUND


Blanket
dry cow therapy
Antibiotic
use
Selective
pressure
Antimicrobial
resistance
Selective
dry cow therapy
=
Antibiotic
use

BACKGROUND

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE

MINISTÈRE
DE L'AGRICULTURE
DE L'AGROALIMENTAIRE
ET DE LA FORÊT

ÉCOANTIBIO

RÉDUIRE L'UTILISATION DES ANTIBIOTIQUES VÉTÉRINAIRES

REDUCING ANTIBIOTIC USE IN VETERINARY MEDICINE

Quantitative Objectives
by 25% in 5 years
2017

MILK AMYLOID A (MAA)

- Marker of clinical and subclinical bovine mastitis

Eckersall et al., 2006
Gerardi et al., 2009
Molenaar et al., 2009
Safi et al., 2009
Kováč et al., 2011
Pyörälä et al., 2011

- Expressed in the bovine mammary gland

Eckersall et al., 2006
Molenaar et al., 2009

MILK AMYLOID A (MAA)

- Early and large increase of MAA in milk from infected quarters

Pedersen et al., 2003
Jacobsen et al., 2005

- Increased concentration in milk from cows with mastitis caused by pathogens Gram+ or Gram-

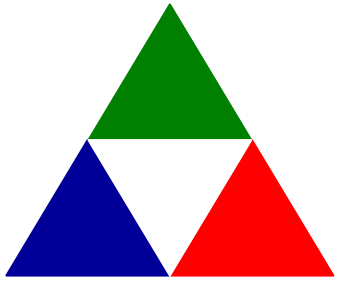
Pyörälä et al., 2011
Szczubiał et al., 2012

MILK AMYLOID A (MAA)

- Decline in concentration observed with resolution of the infection

Jacobsen et al., 2005

- An ELISA test commercially available



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OUR PREVIOUS MAA FIELD OBSERVATIONS

- 2013-2014
- 528 cows from 8 herds followed during 6 months
- MAA an efficient tool to monitor the mammary gland health status

OUR PREVIOUS MAA FIELD OBSERVATIONS

- 2013-2014
- No effect of an extra-mammary pathology on MAA concentration
- Assessment of efficiency of an intramammary antibiotic treatment and monitoring mammary gland recovery

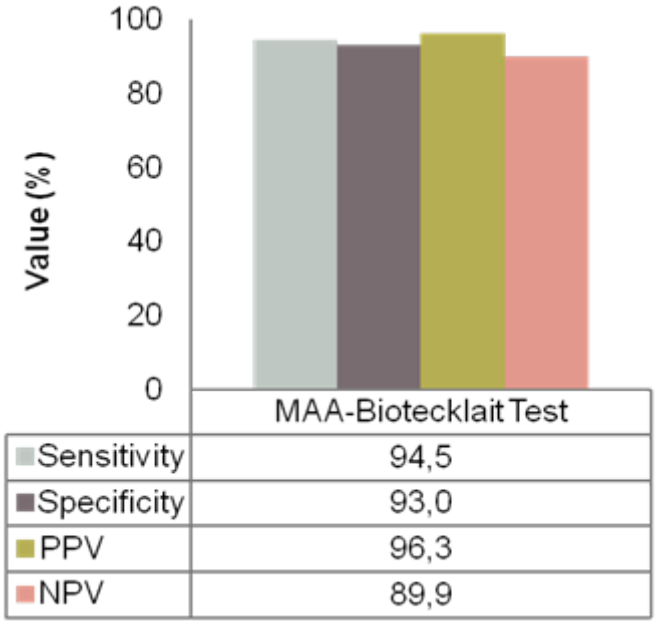
MAA TRIAL AT DRYING OFF (2014-2015)

- Quarter milk samples from112 cows
- 6 low bulk tank SCC dairy herds
- MAA and SCC analyses prior to drying off and after calving
- Bacterial culture as gold standard

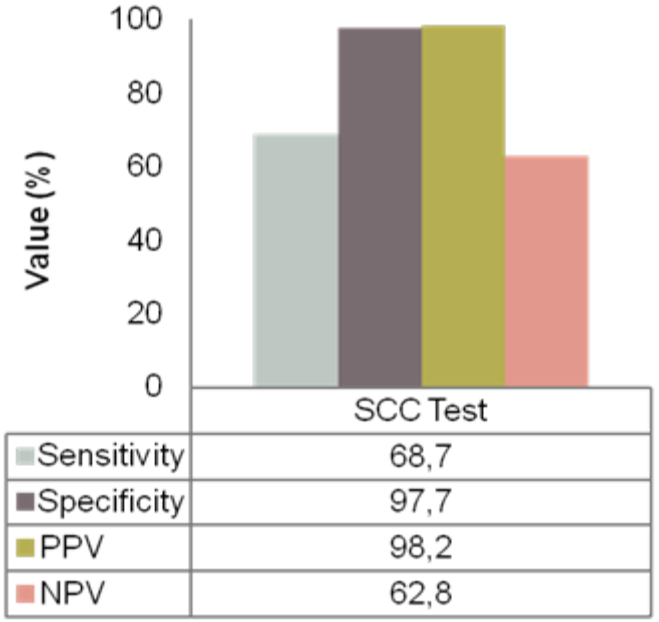
MAA TRIAL AT DRYING OFF (2014-2015)

- Selective dry cow therapy at quarter level based on MAA results (1 µg/mL) _ Teat sealant
- Algorithm development based on MAA and SCC results
- Test characteristics calculation and predictive values estimate

RESULTS



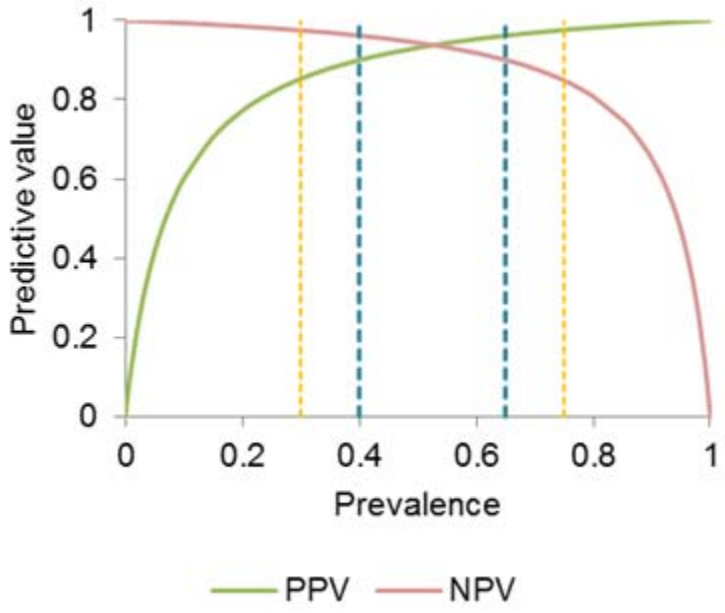
	MAA-Biotecklait Test
Sensitivity	94,5
Specificity	93,0
PPV	96,3
NPV	89,9



	SCC Test
Sensitivity	68,7
Specificity	97,7
PPV	98,2
NPV	62,8

A threshold of 100,000 cells/mL for primiparous cows or of 150,000 cells/mL for multiparous cows for SCC test was used

RESULTS



Predictive values of the MAA-Biotecklait method for a prevalence of an infected quarter ranging from 0 to 100%

RESULTS

- 29% reduction in the use of intramammary antibiotic therapy at drying off
- No clinical mastitis recorded one month after calving for quarters with a negative MAA-Biotecklait test
- Success in the treatment and prevention of IMI over the dry period for quarters with a negative MAA-Biotecklait test

CONCLUSION

- MAA-Biotecklait method allows selective dry cow therapy at quarter level with confidence

- MAA-Biotecklait method enables dairy farmers to significantly reduce the use of antibiotics at drying off

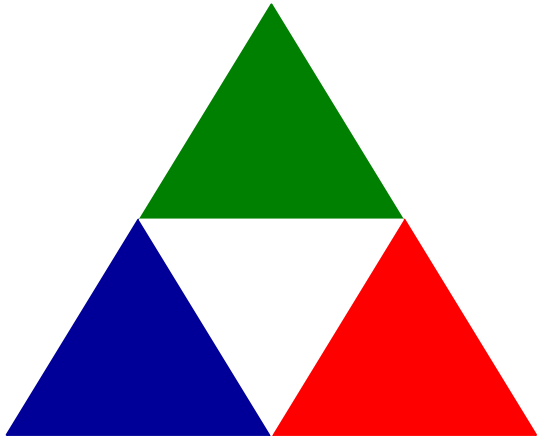
SERVICE AT DRYING OFF FOR DAIRY FARMERS

- Launch in France planned in September 2015
- Cost-effective assay use
- Simple high throughput laboratory assay
- MAA assay and Biotecklait algorithm access available worldwide from Tridelta

GRANT

- French National Center for Interprofessional Dairy Industries

ACKNOWLEDGEMENT



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Thank you for your attention

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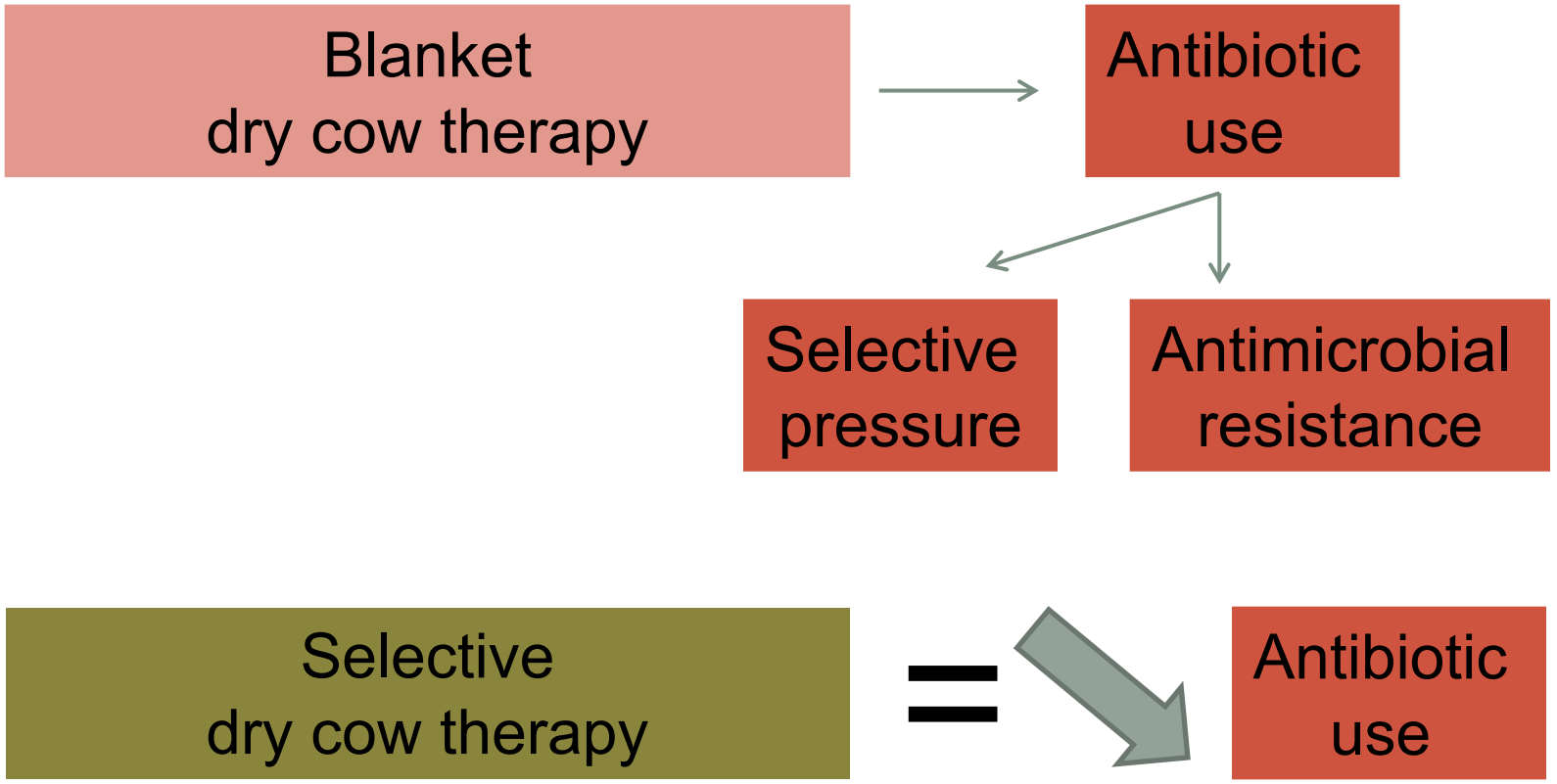
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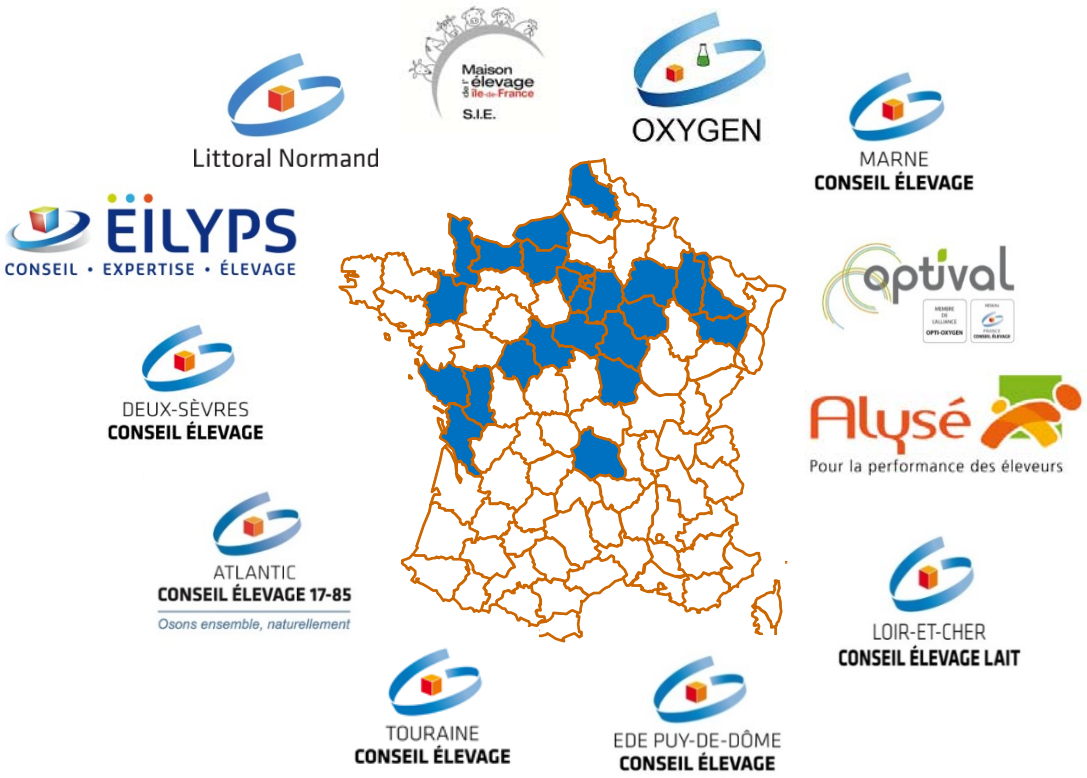

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