DIFFERENTIAL SOMATIC CELL COUNT – A NEW BIOMARKER FOR MASTITIS SCREENING

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CLINICAL MASTITIS

2% of cows (per month)
10-60% of cows in a herd affected
DEVELOPMENT OF UDDER HEALTH

e.g. Sampimon et al., 2005
ECONOMICAL LOSSES

$35 billion annually
1. Lymphocytes

2. Polymorphonuclear neutrophils (PMN)

3. Macrophages

Sordillo and Nickerson, 1988; Nickerson, 1989; Paape et al., 2002; Oviedo-Boyso et al., 2007
MASTITIS CASCADE

- SCC
- Time
- PMN
- Macrophages
THE NEW FOSSOMATIC 7 DC

SCC and DSCC
(600 samples/hour)
THE FOSS DSCC METHOD

New chemistry

Incubation unit

New measuring unit

Patented technology
THE FOSS DSCC METHOD

Analysis of SCC

SSC information used supportively for determination of SCC

Analysis of DSCC

macrophages

DSCC (%)

PMN + lymphocytes
ACCURACY OF THE DSCC METHOD

Analysis of DSCC

FL 2

DSCC (%)

FL 1

94% macrophages

83% PMN + lymphocytes
SCC REFERENCE

FOSS DSCC method

SCC ($\times 1,000$ cells/ml), Fossomatic FC

$\text{SCC} (\times 1,000 \text{ cells/ml}), \text{FOSS DSCC method}$

$n = 640$

$r = 0.9937$
New business opportunities
IMPROVED BACTERIOLOGICAL EXAMINATION

- Targeted selection
- Better interpretation
USE OF ANTIBIOTICS AT DRY OFF

- Improved decision tool
3-year projects in

Microbiological testing

Development of guidelines
A MESSAGE TO TAKE HOME

- First high-throughput analyser for DSCC
- DSCC (%) = PMN + lymphocytes
- More information on actual inflammatory status
- New possibilities to further tackle mastitis

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