ICAR certified
Milk Meter Calibration Software from DeLaval

– *experience from practice*

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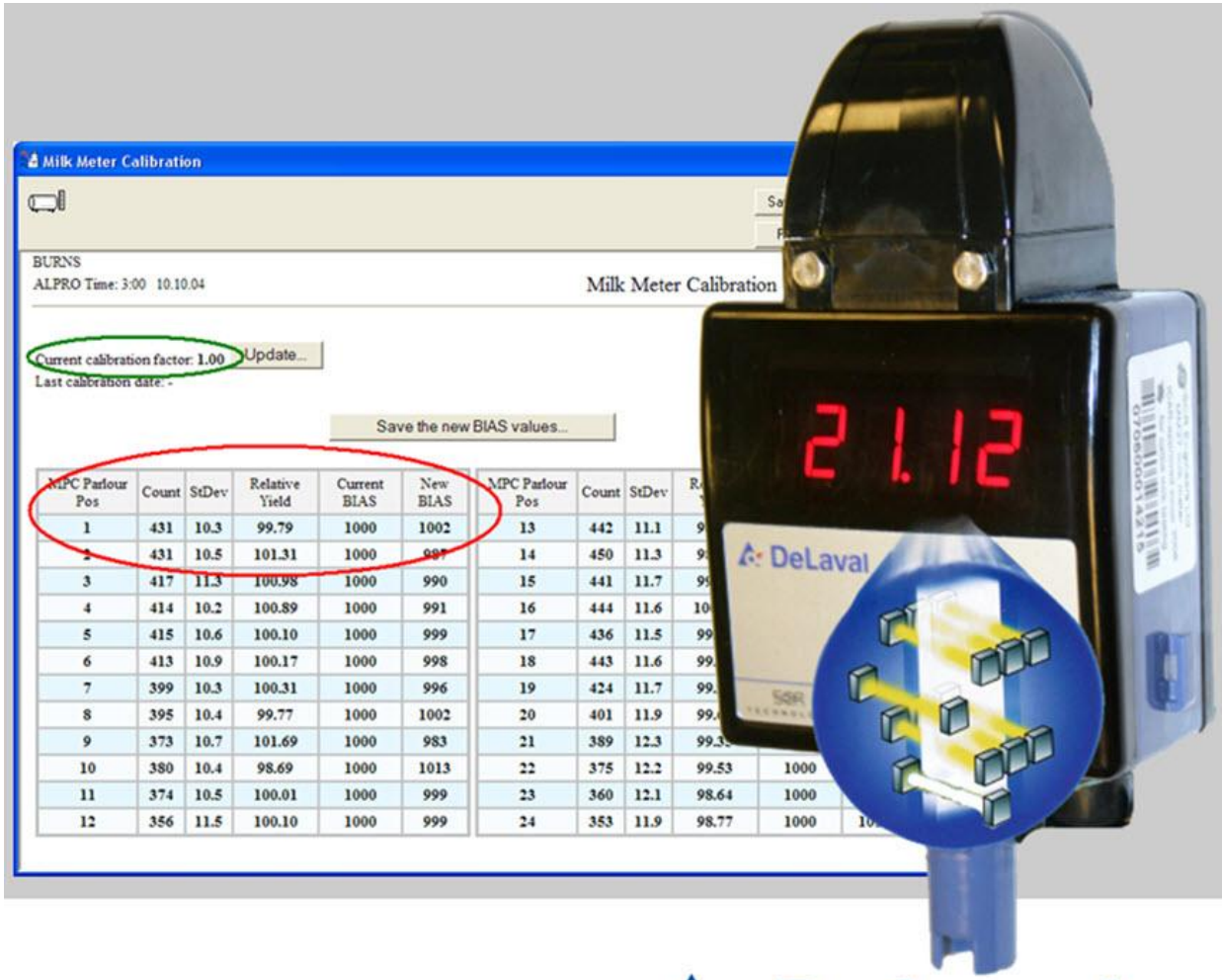
MM27 and the
Calibration window in Alpro System

Quote DE:

‘Perfect combination of labour saving calibration and milk meter accuracy.’



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Milk Meter Calibration Software from DeLaval
Topics

Introduction

- What it does
- How it works
- How it’s done

Survey

- Benefits
- Calibration results
- What experienced people think about it
- SE, DE, NL, FR

Milk Meter Calibration Software
What it does

ICAR guidelines for certified milk meters require:

- Initial Calibration
- Installation test
- Routine check

The Calibration Software is approved for use in all of these activities!

Certified by ICAR in Dec 2013! [listed on ICAR web page]

Milk Meter Calibration Software
How it works – in principle

A. *Compares statistics* in the Herd Management system

- milk weights from identified cows to expected yield over a number of milking sessions - levels MM to each other
- system data of total milk to the bulk tank reciept – compares MM to external reference

B. *Calculates calibration* from collected data

- BIAS for every individual milk meter MM25/MM27

Milk Meter Calibration Software

How it's done – use the calibration window in ALPRO

Current calibration factor: **1.00**
Last calibration date: **08/22/14**

Update...

1

Calibration factor 0.98 – 1.02 OK?

Save the new BIAS values...

2

BIAS +/- 3% OK?

MPC Parlour Pos	Count	StDev	Relative Yield	Current BIAS	New BIAS
1	300	12.6	99.05	1000	1009
2	300	11.2	102.06	1000	979
3	300	11.4	101.60	1000	984
4	300	7.7	92.96	1000	1075
5	300	9.7	91.51	1000	1092
6	300	12.0	101.15	1000	988
7	300	11.0	97.56	1000	1025
8	300	12.6	100.82	1000	991
9	300	11.4	102.04	1000	980
10	300	12.6	98.96	1000	1010
11	300	12.3	99.53	1000	1004

MPC Parlour Pos	Count	StDev	Relative Yield	Current BIAS	New BIAS
17	300	12.1	100.54	1000	994
18	300	12.7	100.73	1000	992
19	300	10.9	97.37	1000	1027
20	300	12.2	101.83	1000	982
21	300	12.8	101.79	1000	982
22	300	11.8	101.20	1000	988
23	300	11.7	101.19	1000	988
24	300	11.6	100.29	1000	997
25	300	11.4	100.63	1000	993
26	300	11.6	102.08	1000	979
27	300	12.3	100.38	1000	996

Calibration factor is related to total milk in the bulk tank; Count is number of milkings in the statistical calulation; StDev is standard deviation of Relative Yield; Relative Yield is Average of Yield/Expected Yield (should be 98.00 to102.00) ; BIAS is the calibration value for the milk meter

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Send new BIAS to the milk meter

Milk Meter Calibration Software

Milking in buckets not required

– can still be used as a complement

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Important points for success

- Farmer need to keep track of the tank milk prior to calibration
- BIAS in the milk meters must be double checked to be the same as in the Calibration software!
- Good identification fulfills statistic demands faster

Milk Meter Calibration Software
Survey, April 2015

- 8 Experts responded
- 2 Systematic benefits assessed
- 6 Example farms
- 80 – 1100 Milking cows

- 16 – 60 Milk meters per installation
- MidiLine (swing over)
- Parallel parlour
- Rotaries

Special case:

- AMR (Automatic Milking Rotary)

Milk Meter Calibration Software
Labor savings

- From man days to man hours - significant!
- NL, saving of 4-8 bucket milkings per milk meter and one visit to the farm
- FR, saving of 6 bucket milkings for every milk meter except six of the milk meters in the parlour
- SE, e.g. for a double 12 parlour the labor cost over a five year period including initial calibration, installation test and routine checks is calculated to be reduced with over 90%
- DE, for a 60 places rotary the labor saving for initial calibration and installation test was four man days.

Milk Meter Calibration Software
Farm profitability

- Parlour is not filled up with workers disturbing the milking routine
- All: Less stress for cows (Animal Welfare)
- NL: Overall the cost for the farmer of initial calibration and installation test could be reduced
- NL: Better milk out and more total milk during calibration
- DE: For rotaries reduced capacity and downtime was improved with the new method and less waste milk during calibration
- DE: Better overview for the farmer of the performance of the milk meters making it possible to faster detection of a deviating milk meter

Milk Meter Calibration Software
Work-facilitating and safety

- NL, FR: bad ergonomics of carrying buckets with milk weighing 15-25 kg to the scale and tank
- NL: it is not even allowed with manual lifting above 23 kg
- SE: The menu in the software was easy to use
- SE: Safer - as bucket milking is reduced or eliminated

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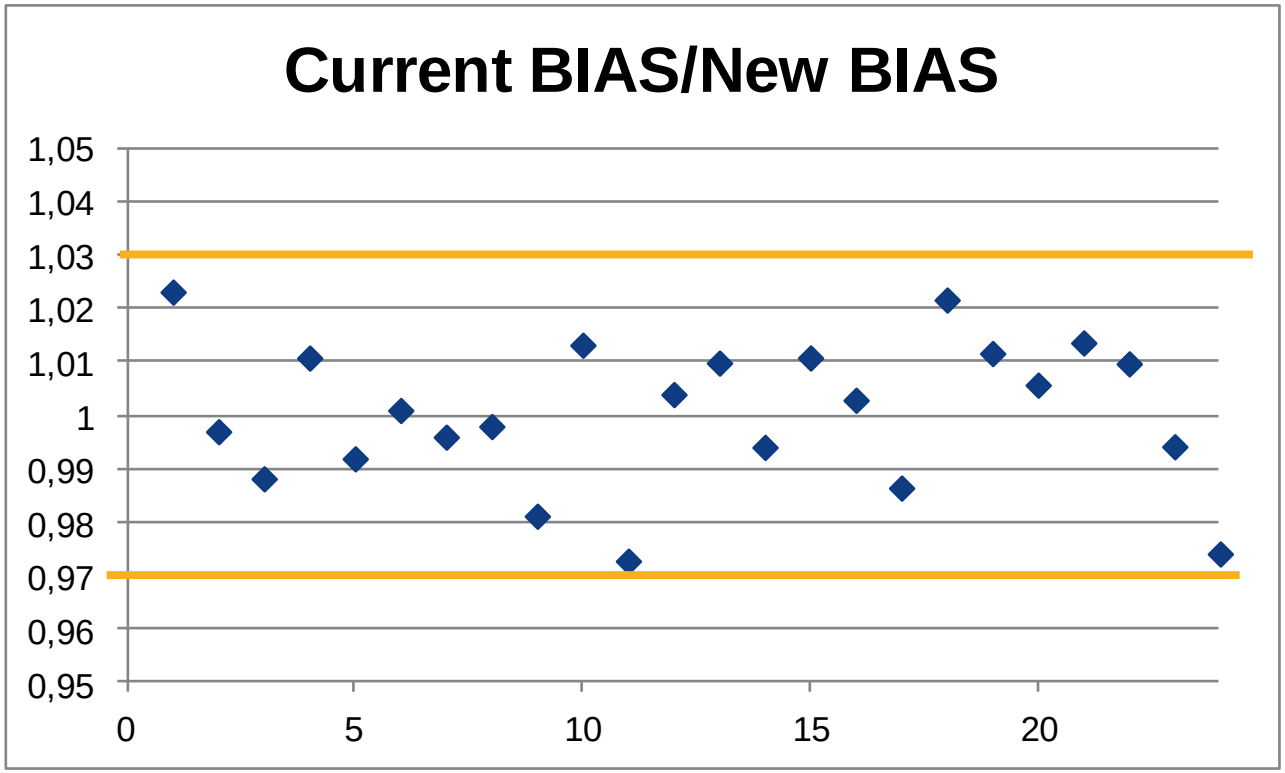
Environment, energy and resource need

FR and NL:

- Shorter milking session, gives shorter vacuum pump running time - energy saving
- Less buckets to clean - hot water and detergent saving
- Less people and fewer visits - less transportation

Milk Meter Calibration Software
Routine test

- Once a year – not so much experience yet!
- SE: 24 place parallel parlour
- All milk meters were within limits +/- 3%



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Conclusion

- Software instead of time consuming bucket milking
- Efficient and accuracy data continuously available for monitoring
- Initial calibration, installation test and routine check
- Many benefits shown by this study
- Potential to revolutionize the organization of milk recording

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- Thank You for listening!

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