

DNA
DIAGNOSTIC



Evaluation of a new qPCR test to specify reasons for total bacterial count in bulk tank milk.

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Thanks for good collaboration to:



Snorri Sigurdsson
SEGES



Lene Trier Olesen
ARLA

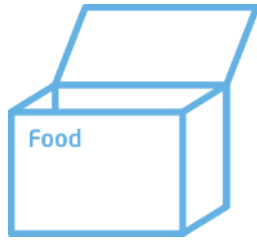


Anders Pedersen
DNA Diagnostic



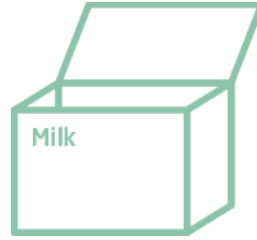
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What we do



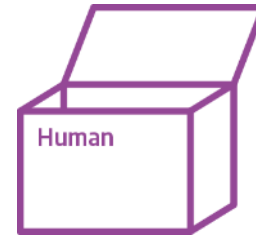
Salmonella Velox

PCR test kits for Salmonella screening in raw meat, poultry, fish, and seafood



Mastit 4

PCR test kits for mastitis bacteria screening in milk



HemaVision

IVD test kits for screening of chromosome translocations associated with leukemia

New !! TBC 4

PCR test kits for screening of total bacterial count in milk

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Mastit 4 and TBC 4

PCR test for mastitis bacteria and
total bacterial count problems in milk



Target	Cat. No.*	M4A	M4B	M4C	M4D	M4E	M4F	TBC 4	M4BD	M4BDF	M4BDFT
Staphylococcus aureus		+	+	+		+			+	+	+
Streptococcus agalactiae		+	+	+		+			+	+	+
Streptococcus dysgalactiae		+			+				+	+	+
Streptococcus uberis		+	+						+	+	+
Mycoplasma bovis			+	+		+			+	+	+
Mycoplasma species				+	+				+	+	+
β-Lactamase gene (blaZ gene)					+				+	+	+
Coagulase Negative Staphylococcus					+				+	+	+
Prototheca						+	+			+	+
E.coli							+			+	+
Klebsiella							+			+	+
Enterococcus and Lactococcus lactis							+			+	+
Pseudomonas								+			+
Streptococcie								+			+
Enterobacteriaceae/Enterococcus								+			+
Bacillus/Clostridia								+			+

Mastit 4 – qPCR test

Bulk tank testing

Screening for contagious pathogens

Selection of herds for selective dry cow therapy

DHI samples

Fresh cow testing – No contagious pathogens (Mycoplasma/ Staph a. / Strep B)

High cell count cows - Prevalence of contagious mastitis.

Selective dry cow therapy.

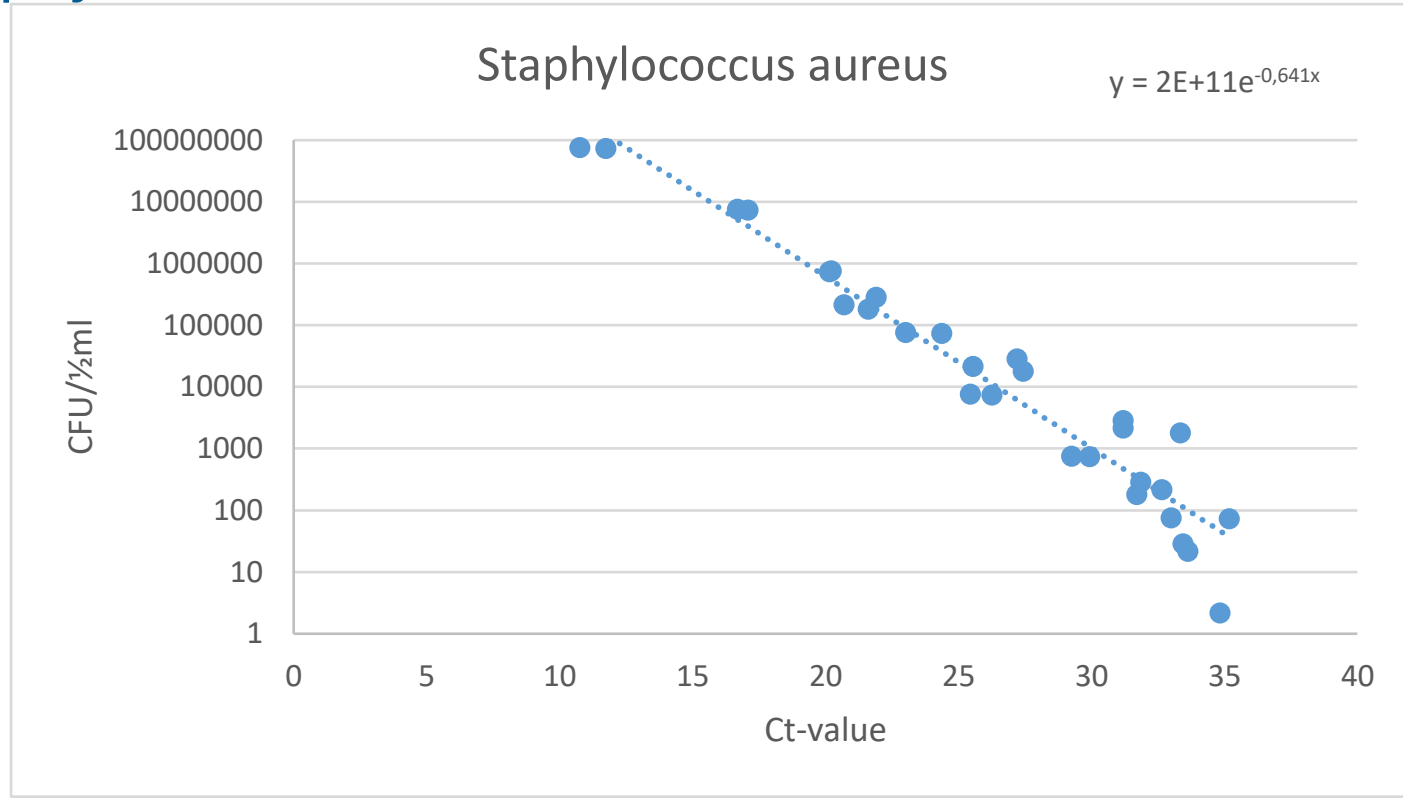
Therapy - Wrong time in relation to pathogen – environmental.

Quarter samples aseptically

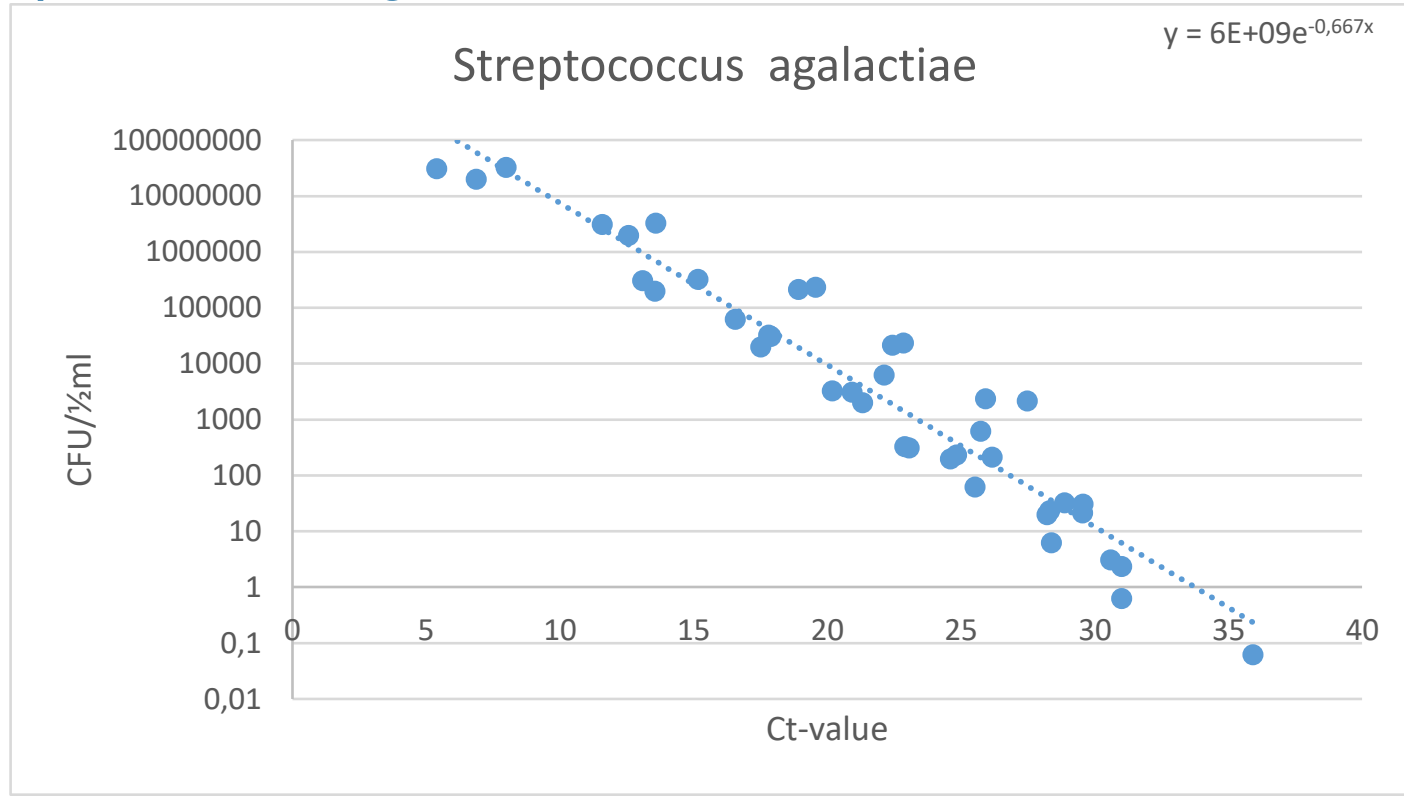
Contagious pathogens - eradication program all herd tested and follow up

Therapy of infection

Correlation curve for Mastit 4 – Ct value and CFU Staphylococcus aureus – 5 isolates



Correlation curve for Mastit 4 – Ct value and CFU *Streptococcus agalactiae* – 6 isolates



New qPCR test for high TBC counts

– TBC 4

What is the
cause
for high **Total
Bacterial
Count** in Bulk
Tank Milk?

TBC 4

will give you the answer...

- **Bad cooling?**
[*Pseudomonas*]
- **Bad environment?**
[*Enterobacteriaceae/Enterococcus*]
- **Mastitis cows?**
[*Streptococcus*]
- **Bad silage handling?**
[*Bacillus and Clostridia*]

TBC 4

PCR test for the most common
bacteria causing Total Bacterial
Count in Bulk Tank milk

Fast. Accurate.
Cost effective

High TBC counts – TBC 4 indicate answer to the problem

Pseudomonas.

Streptococcie.

Enterobacteriaceae/Enterococcus.

Bacillus/Clostridia.

Streptococcie.



Pseudomonas.



Enterobacteriaceae/Enterococcus.



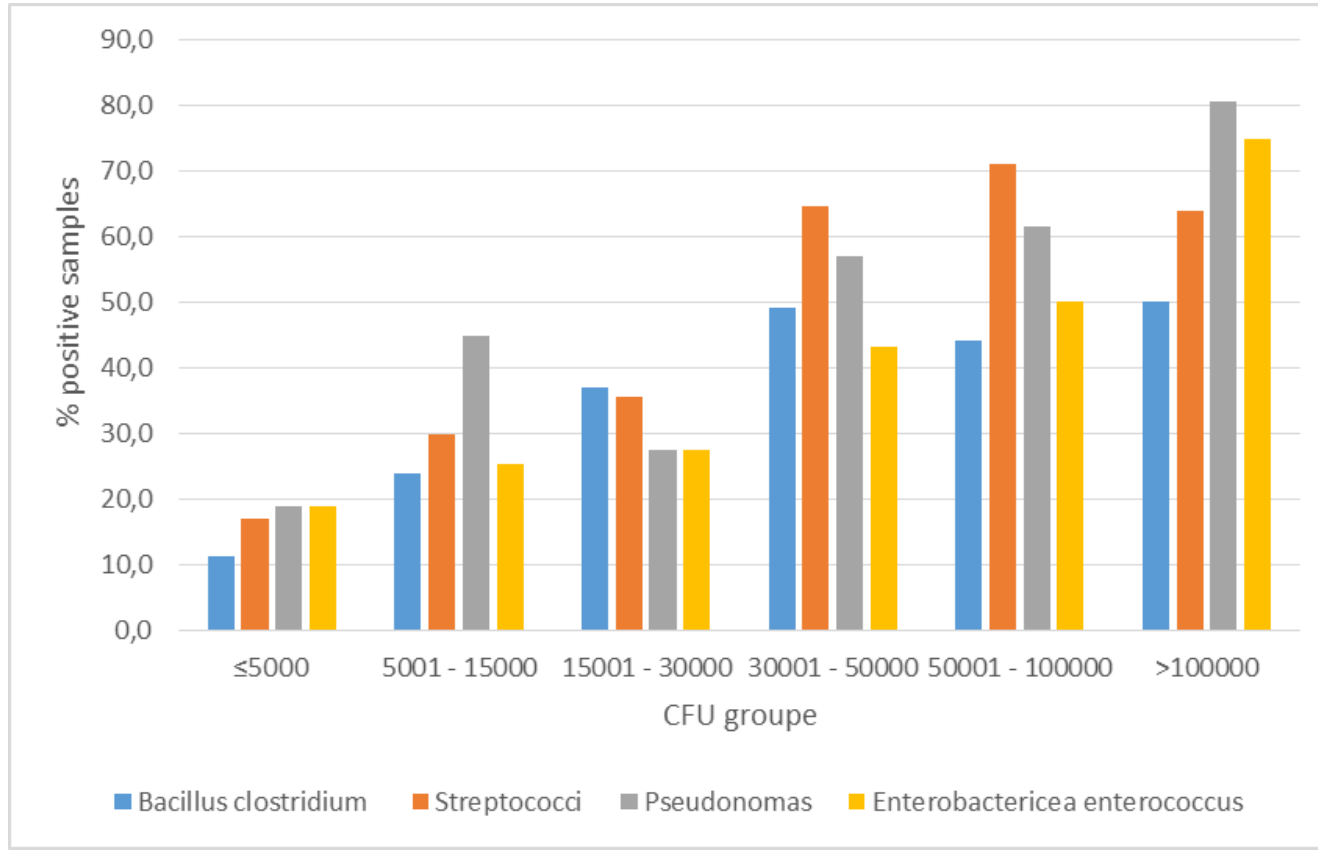
Bacillus/Clostridia.



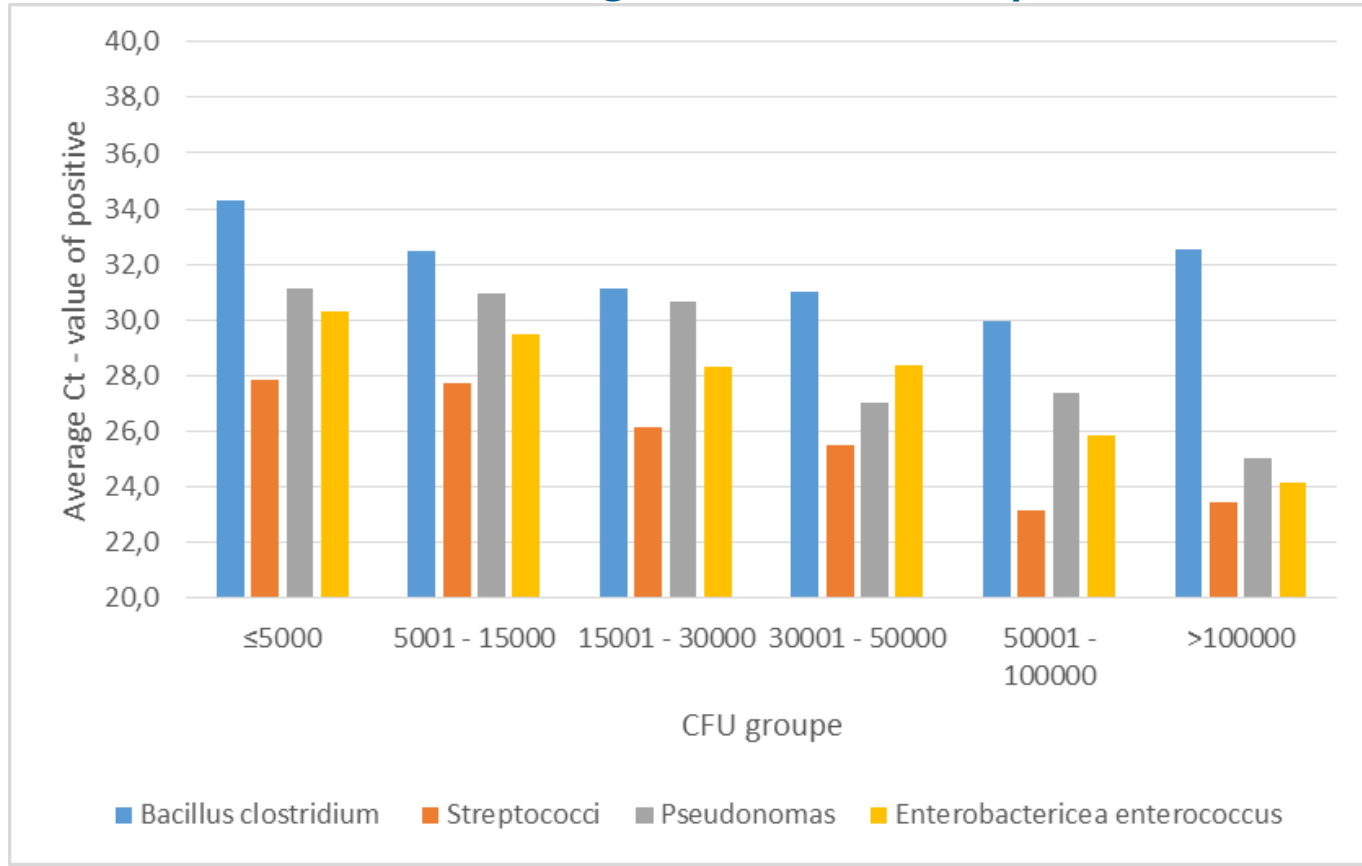
TBC 4 – Validation of test in different CFU groupings

CFU	N	Bacillus/ Clostridia	Streptococci	Pseudomonas	Enterobacteriaceae/Enteroc
≤ 5000	53	6	9	10	10
5001 - 15000	67	16	20	30	17
15001 – 30000	73	27	26	20	20
30001 – 50000	65	32	42	37	28
50001 – 100000	52	23	37	32	26
> 100000	36	18	23	29	27
Total	346	122	157	158	128

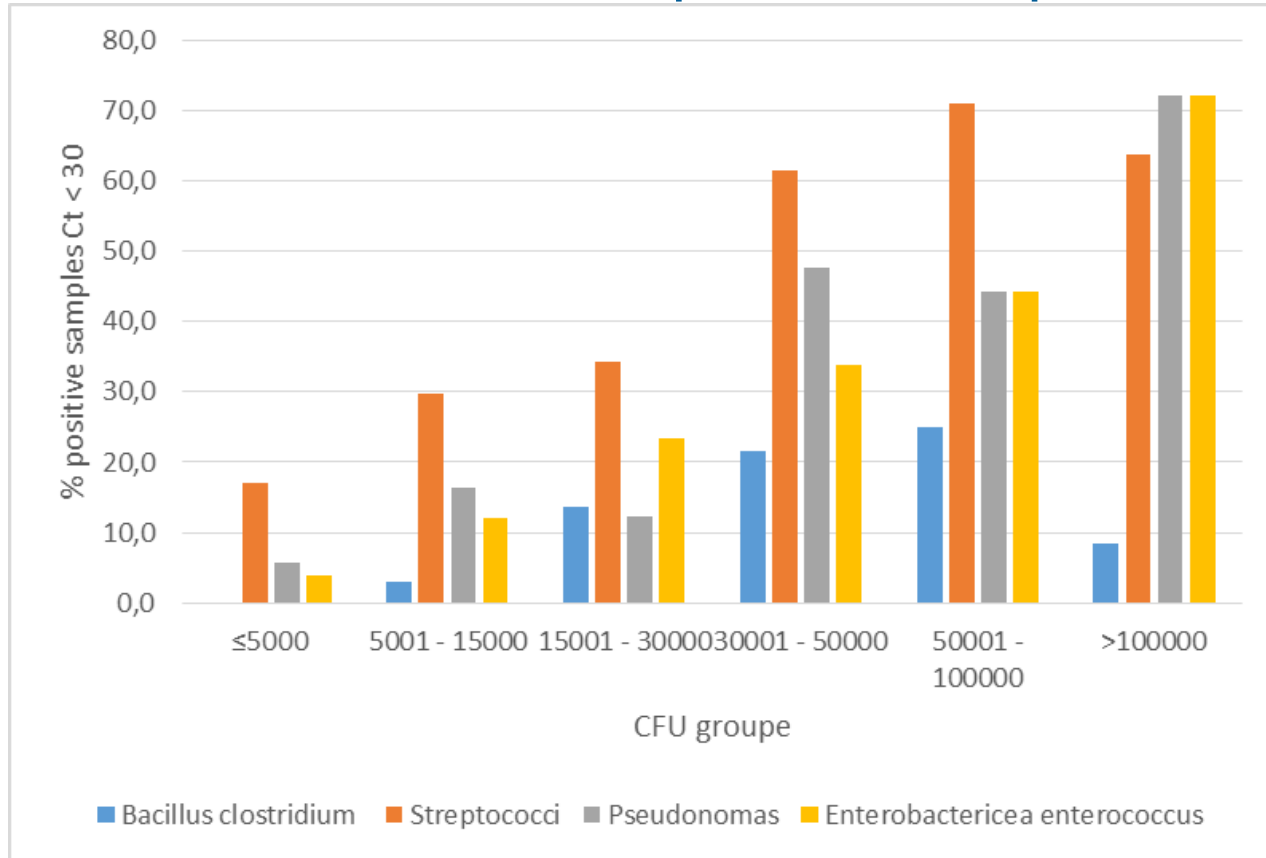
TBC 4 Evaluation - Percent positive samples



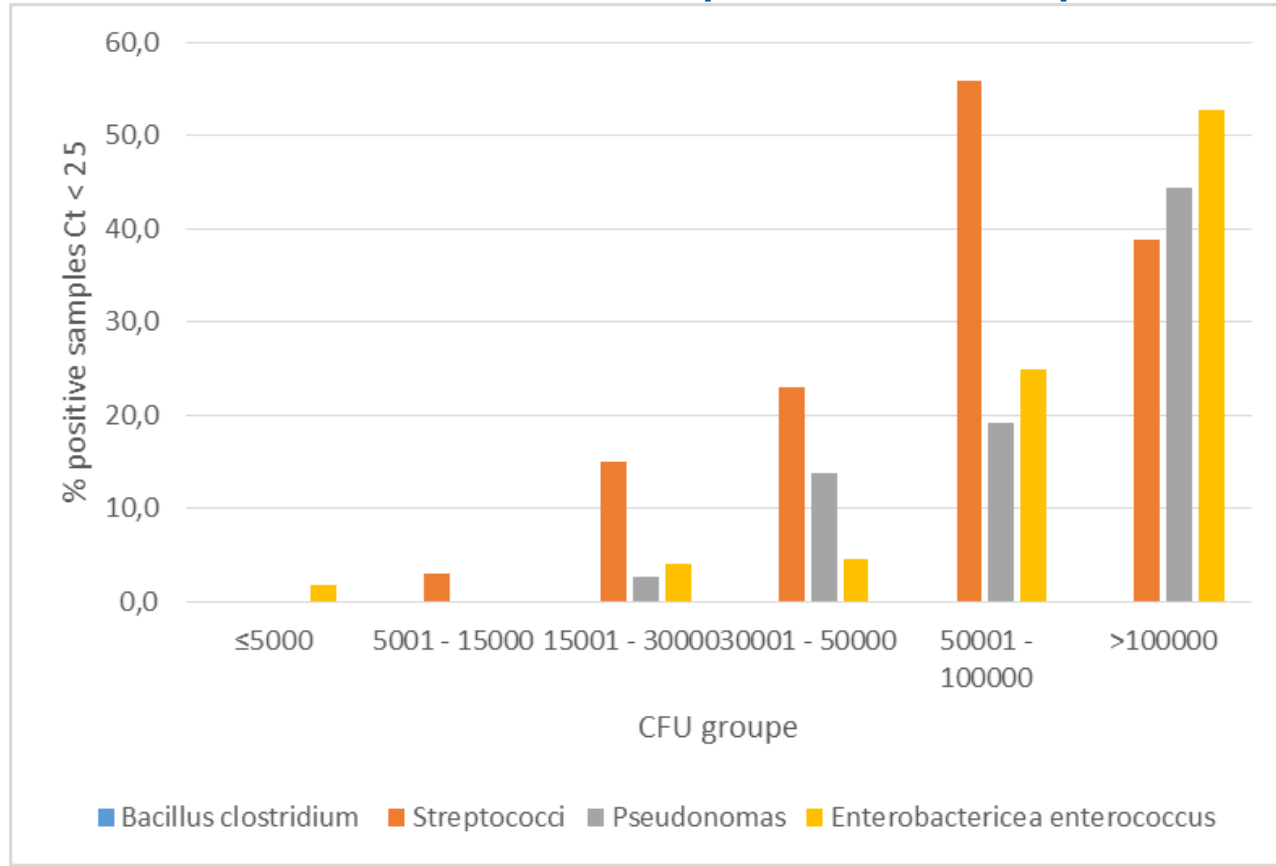
TBC 4 Evaluation – Average Ct value of positive samples



TBC 4 Evaluation – Percent positive samples < Ct 30



TBC 4 Evaluation – Percent positive samples < Ct 25



How can DHI labs use DNA Diagnostic test

Add value to the SCC and TBC test results.

Increase productivity for farmer

High SCC ?



Mastitis 4

high total bacterial count ?



TBC 4

Now the farmer/advisor knows what to do for prevention



Why choose DNA Diagnostic

- \\ Many years of experience
- \\ Professional partner
- \\ Personal customer contact
- \\ Safe and fast delivery
- \\ Cost efficient products
- \\ Development orientation

Intepretation of M4 kits and filter

M4 Kit	Filter	CY5	ROX	HEX	FAM	ATTO
M4A		uberis	agalactiae	aureus	dysgalactiae	IAC
M4B		uberis	agalactiae	aureus	M. bovis	IAC
M4C		M. sp	agalactiae	aureus	M. bovis	IAC
M4D		M. sp	β -lactamase	CNS	dysgalactiae	IAC
M4E		Prototheca	agalactiae	aureus	M. bovis	IAC
M4F		Prototheca	Klebsiella	Enterococcus + Lactococcus lactis ssp. lactis	E-coli	IAC