

STARTCHECK® HIPRA'S DIAGNOSTIC TOOL FOR THE DETECTION AND QUANTIFICATION OF PATHOGENIC BACTERIA (S. AUREUS, E.COLI, CNS AND COLIFORMS) IN BOVINE MILK SAMPLES FROM DAIRY FARMS IN SOUTH AFRICA.

Lelyveld¹, G. van; Valls², L.; Zalduendo², D.

¹ HIPRA SOUTHERN AFRICA, Pretoria, South Africa. ²HIPRA, Amer (Girona) Spain.

Corresponding author: grant.lelyveld@hipra.com

2016-0036
P04-004-210

INTRODUCTIONS

STARTCHECK® is a reliable diagnostic tool that uses a new methodology to collect milk samples and detect the major mastitis causative agents. STARTCHECK® can be used to complement Somatic Cell Count (SCC) and Bacterial culture to monitor mastitis at a herd level¹. STARTCHECK® has been used worldwide since 2009 and milk samples from 44 different countries have been analysed. The aim of this study is to show the results obtained in South African dairy farms.

METHOD AND MATERIAL

A total of 301 Bulk Tank Milk (BTM) and Mastitis Pool samples were collected from different dairy farms in Southern Africa, between January 2012 and February 2015. The samples were taken according to the STARTCHECK® instructions [Impregnating the designated areas (BTM and Mastitis Pool) on the FTA card with 250ul of the respective milk sample]³.and sent by ordinary airmail to DIAGNOS (HIPRA) in Amer, Girona, Spain. (Fig. 1)



Figure 1. STARTCHECK® kit (Instructions, FTA card, pipette, plastic bag with desiccant and envelope).

The samples were processed and tested using the Real-Time Multiplex PCR assay as previously described³, to detect the presence of *Staphylococcus aureus*, *Escherichia coli*, *Coagulase Negative Staphylococci* (CNS) and Coliform bacteria. The results were determined as positive or negative based on Cycle threshold (Ct) values, with Ct values below 37 being considered as positive.

RESULTS

A total of 288 samples (94,7%) were positive for at least one bacteria. Results for each specific pathogen are showed in figures 2 -5.

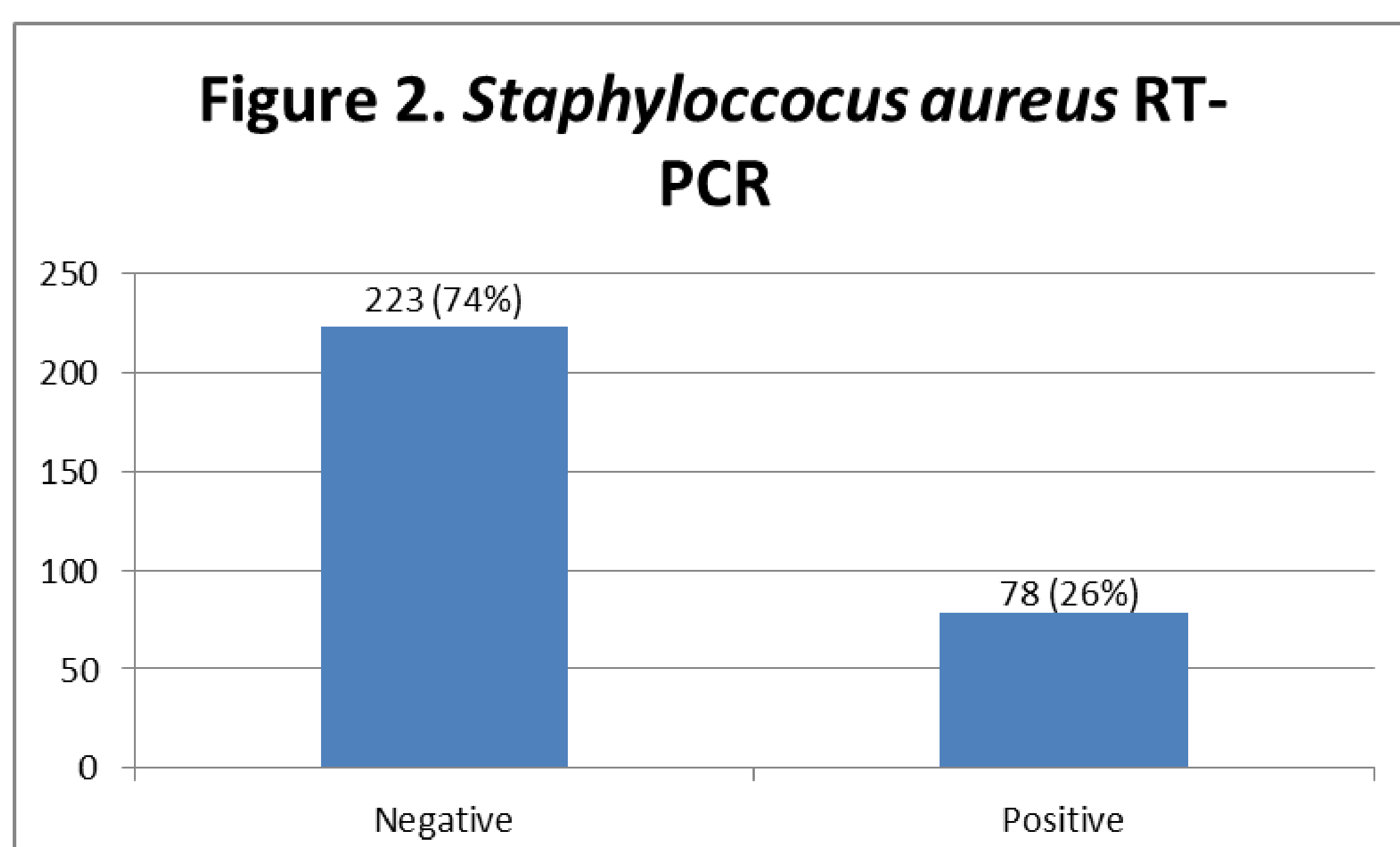


Figure 2. Number and percentage (%) of samples with positive or negative PCR results to *Staphylococcus aureus*.

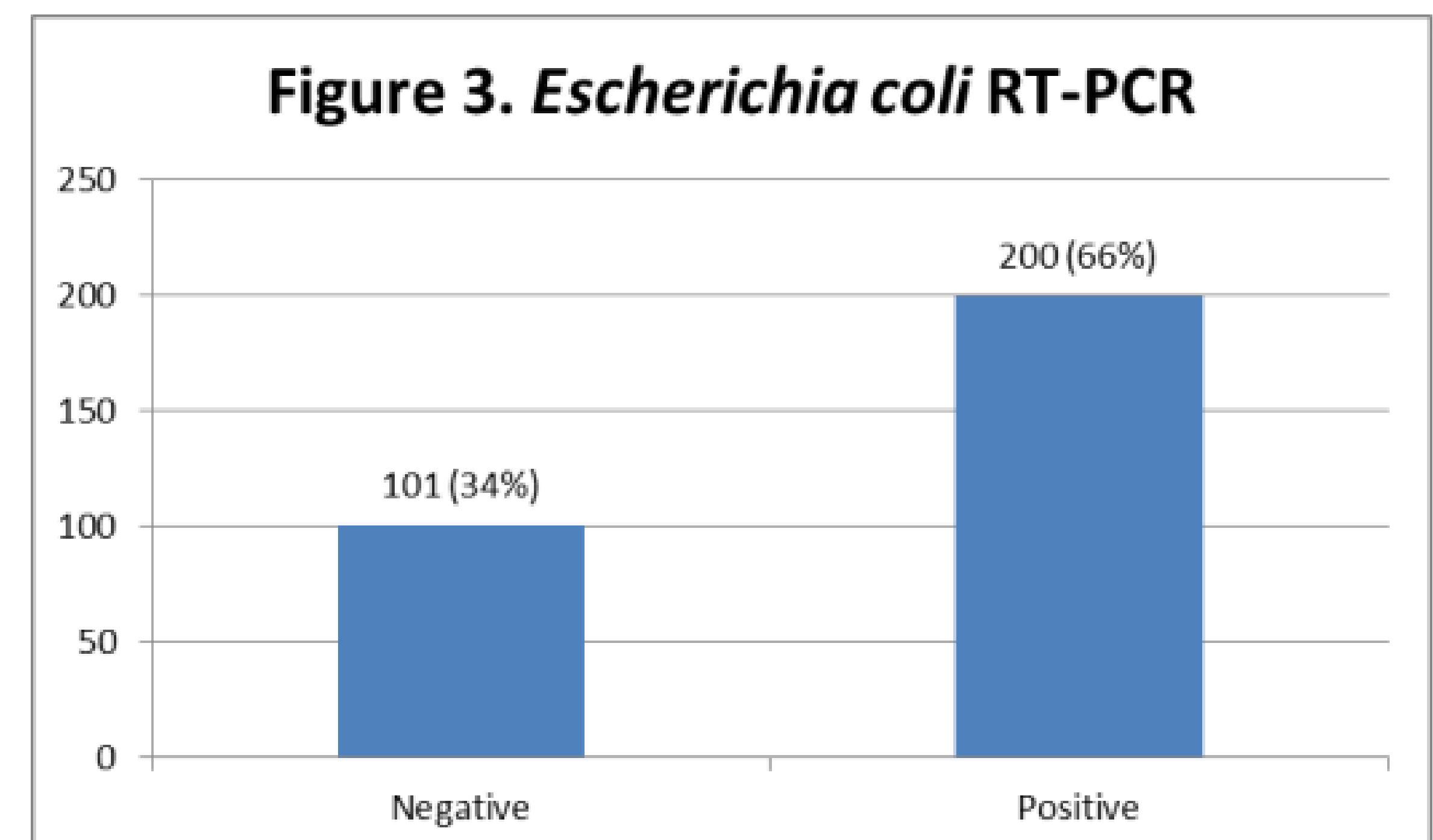


Figure 3. Number and percentage (%) of samples with positive or negative PCR results to *Escherichia coli*.

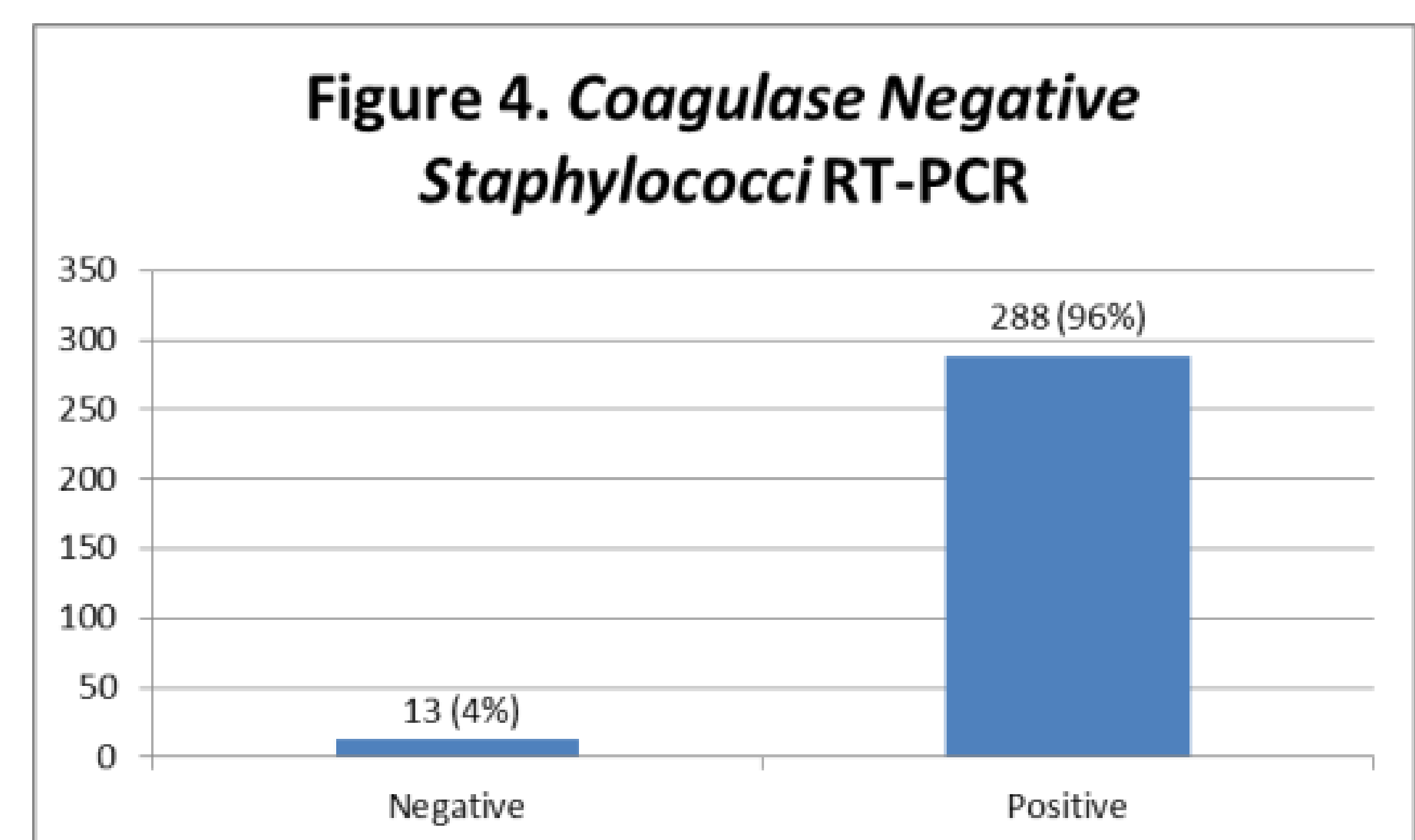


Figure 4. Number and percentage (%) of samples with positive or negative PCR results to *Coagulase Negative Staphylococci* (CNS).

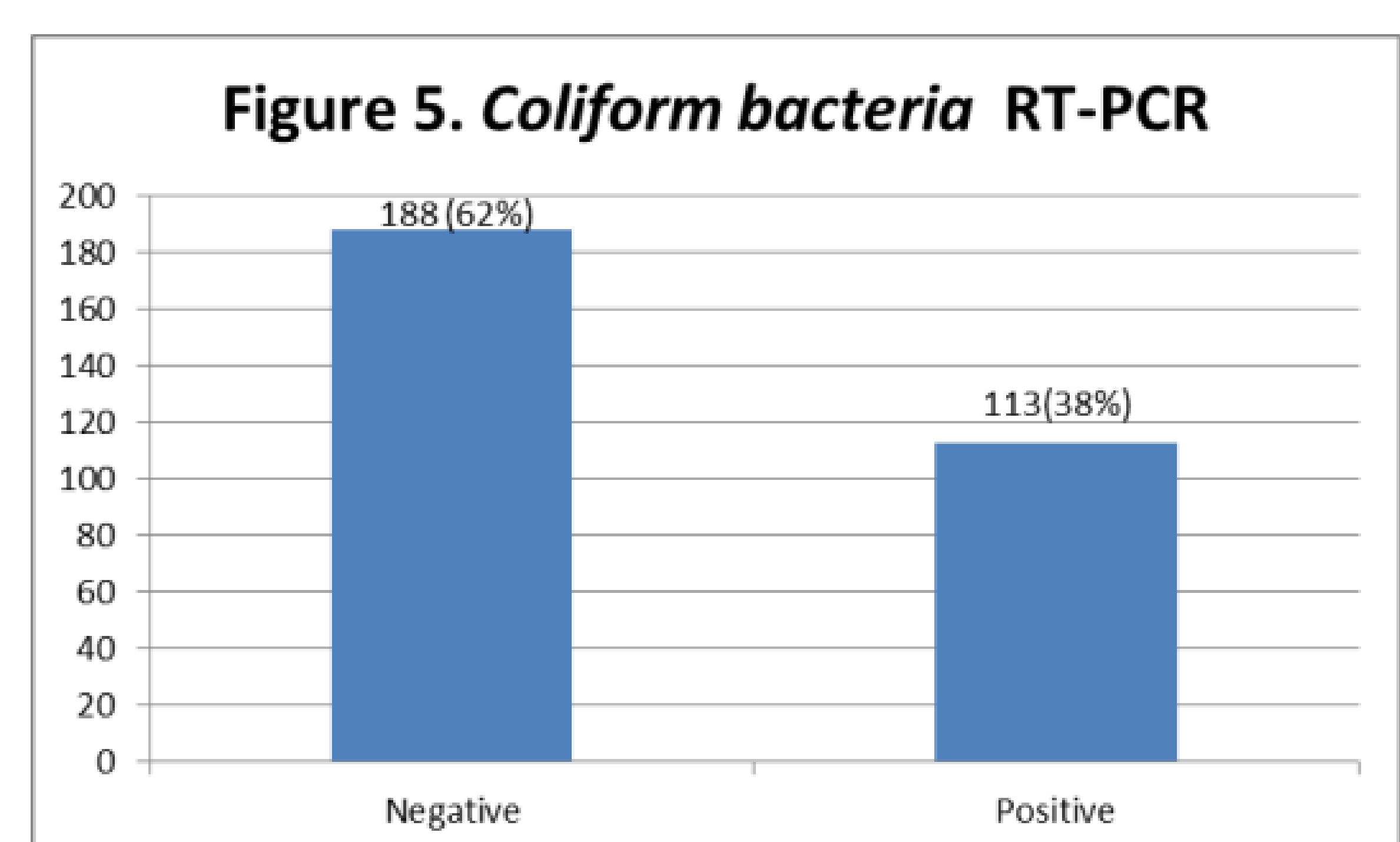


Figure 5. Number and percentage (%) of samples with positive or negative PCR results to *Coliform bacteria*.

CONCLUSIONS

STARTCHECK® is a good diagnostic tool to identify pathogenic bacteria present in milk samples. The high specificity and sensitivity circumvents limitations experienced with bacteriology ⁽¹⁾. Compared with worldwide data, it should be noted that the presence of *Staph. aureus* in South African samples (26%) is higher than samples obtained from other countries (6-10%).Acknowledgements: The authors thank the diagnostic lab of HIPRA, DIAGNOS, that took care of the analysis needed.