Evaluation of the EnviroLogix® DNAble® *Salmonella* DNA Detection Kit: Comparative Analysis against Culture Method

DATA SUMMARY

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ABSTRACT

OBJECTIVE: To compare the performance of the DNAble® *Salmonella* DNA Detection Kit to culture (MSRV method) for the detection of *Salmonella* in vaccinated and non-vaccinated broilers.

METHODS: Ceca samples collected post necroscopy from 51 broilers were evaluated for the presence of *Salmonella* using the DNAble® methodology and culture. The DNAble *Salmonella* DNA Detection Kit utilizes an isothermal nucleic amplification technology enabling rapid amplification of a specific DNA target. After collection and processing, the samples are added to reaction buffer. The reaction buffer containing the sample is then transferred to the lyophilized master mix. Results are obtained in 15 minutes using the DNAble Reader.

Testing was performed at a poultry producer in the United States. Samples were initially placed in BPW and then were then evenly divided for comparison of DNAble to culture.

RESULTS: The DNAble performance compared favorably with culture showing a 98% correlation between DNAble and culture.

METHODS

Forty (40) chickens were vaccinated and subsequently challenged with *Salmonella* at day three of age. Eleven (11) chickens were non- vaccinated and not challenged with *Salmonella*.

On day forty-two (42), ceca were collected post necroscopy from the vaccinated and non-vaccinated broilers. The site analyzed these samples in their laboratory using the MSRV culture method and the DNAble assay.

RESULTS

The performance of the DNAble Salmonella DNA Detection Kit was compared to culture. Overall assay performance was a sensitivity, specificity and overall accuracy of 96.4%, 100% and 98.0% respectively (see **Table 1**).

Table 1 DNAble vs. Culture

	Results
%Sensitivity	96.4% (27/28)
%Specificity	100% (23/23)
%Accuracy	98.0% (50/51)

CONCLUSION

The DNAble® kit described in this study provides rapid, sensitive, specific and accurate detection of *Salmonella* comparable to existing methods. The reader is simple to use, is portable and requires a minimal footprint. Sample preparation time is minimal. Results are available 40 minutes after an overnight enrichment making turnaround time considerably more rapid than traditional culture.