A new method for the detection of SE in shell egg pools by Real-time PCR was developed. The workflow was designed to be simple, rapid, and more cost effective than the standard FDA BAM culture method. The method detected all SE strains tested (N=37), and demonstrated no detection of non-SE strains (N=42) results not shown). The Real-time PCR method was found to be equivalent to the FDA BAM reference method based on chi-square statistical analysis.

**SUMMARY**

- **NEW FA:** Requires commercial egg producers to screen for presence of Salmonella Enteritidis in shell eggs. The TaqMan® Salmonella Enteritidis Real-time PCR Method provides results in approximately 27 hours after start of enrichment.
- **NEW BMI:** Allows for complete automation on the MagMix® Express 96 Magnetic Particle Processor. The Sample Preparation workflow is outlined in Figure 1.
- **NEW REAL- time PCR:** Real-time was developed in the 7500 Fast instrument using standard conditions (95°C for 10 min; 40 cycles at 95°C for 15 seconds and 60°C for 15 seconds). The PCR reaction setup is outlined in Figure 1.
- **Statistical Analysis:**

**RESULTS**

The TaqMan® SE Real-time PCR method shows excellent correlation with the FDA BAM method for detection of SE in shell egg samples. The Cq values in the low to mid 20’s is an indication of excellent enrichment. The bulk egg sample was spiled with SE at a target concentration of 0.2 to 2 cfu/100 g in order to achieve fractional positive samples.

**CONCLUSIONS**

- **New FA:** Requires commercial egg producers to screen for presence of Salmonella Enteritidis in shell eggs.
- **A TaqMan® Real-time PCR assay was developed to be specific for Salmonella Enteritidis.**
- **A simple and automated sample preparation protocol was created for preparing shell eggs.**
- **The TaqMan® Real-time PCR workflow shows equivalence in performance to the FDA BAM protocol for detection of SE in shell eggs.**
- **The TaqMan® Real-time PCR method provides next-day results.**

**REFERENCES**


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