Research Notes

Arm & Hammer Animal and Food Production

AviBrom effectively reduced *Campylobacter* in broiler carcasses as part of a multi-hurdle food safety approach.

STUDY OVERVIEW

A study[1] was conducted to determine the antimicrobial efficacy of AviBrom™ alone and in combination with a PAA dip in reducing *Campylobacter* loads and prevalence in whole bird rinses. Broiler carcasses were processed in a commercial facility as part of normal daily operations, with AviBrom (350 ppm) applied in the IOBW [in place of peracetic acid (PAA)] for two processing lines and all other interventions utilized as standard.

Campylobacter was enumerated from whole bird rinse samples collected for four sampling sites:

- Pre-IOBW (Control)
- Post-IOBW with AviBrom (350 ppm)
- Post-PAA dip (800 ppm)
- Post-chill (PAA 200 ppm)

Samples were collected over a two-day period for a total of 28 samples per site, with collection occurring in processing order for seven different time points throughout the day (two replicates per time per site). USDA FSIS carcass rinsate procedure was used for sample collection and *Campylobacter* analysis was performed using FSIS laboratory method MLG 41.04.

Prevalence results were analyzed using Chi-square tests for equal proportions and enumeration results were modeled with a censored regression to compare averages across sampling locations.

RESULTS

AviBrom in the IOBW reduced *Campylobacter* positives from 82.1% to 50% and loads by 0.78 Log_{10} cfu/mL. As part of a multi-hurdle, multi-technology approach, significant decreases in *Campylobacter* prevalence and load from Pre-IOBW to Post-Chill were observed.

FIGURE 1: *Campylobacter* prevalence across sampling sites.

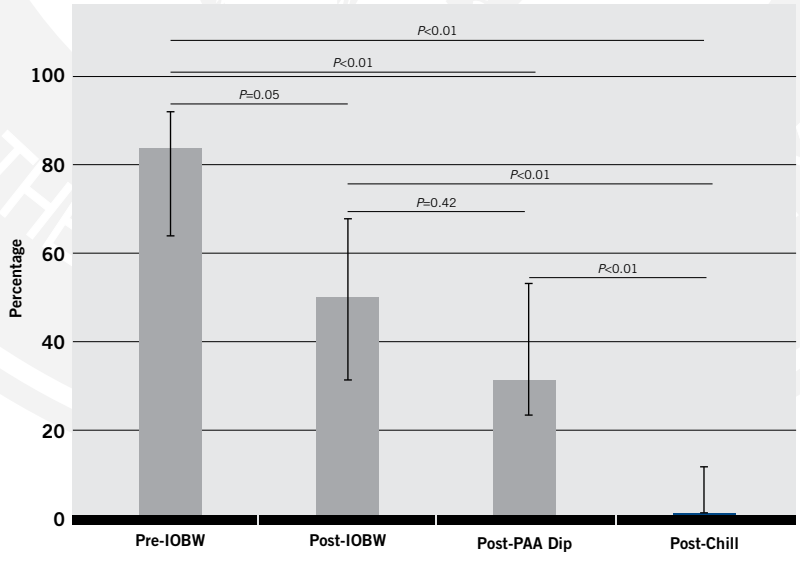

TABLE 1	Estimated differences in average Log_{10} *Campylobacter* by sample site		
Comparison	**Estimated Difference**	**Std Error**	***P*-Value**
Pre-IOBW – Post-IOBW	0.78	0.23	**0.006**
Pre-IOBW – Post-PAA Dip	1.33	0.24	**<0.001**
Post-IOBW – Post-PAA	0.55	0.24	**0.105**

Reduction estimates are based on results from day 1 of study only due to low prevalence observed Pre-IOBW on day 2 and all post-chill results were below the limit

CONCLUSION

- In this study, AviBrom™ in the IOBW at 350 ppm reduced *Campylobacter* load and prevalence.
- AviBrom, when used as part of a multi-hurdle, multi-technology food safety approach, can support *Campylobacter* reduction when applied in the IOBW.

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1 AviBrom Validation in IOBW. ARM & HAMMER, 2020. Study report and data on file.