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Campylobacter contamination of carcasses during the slaughter of broilers in Ecuador.

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Introduction

Campylobacter spp. are found in poultry and represent an important cause of gastrointestinal infections worldwide. The public health risk is closely related to the number of *Campylobacter* present in broiler meat. Contamination of broiler meat occurs mainly during the slaughtering process. In contrast to developed countries dynamics of *Campylobacter* contamination of broiler carcasses during slaughter in developing countries are rarely reported.

Objectives

The aim of this study was to provide quantitative data about *Campylobacter* contamination of carcases during slaughter of broilers in Ecuador.

Methods

Two broiler slaughterhouses were selected to collect samples. Characteristics of each slaughterhouse are summarized in Table 1. Ten *Campylobacter* positive flocks slaughtered in two slaughterhouses (5 flocks each) using manual evisceration were sampled. From each flock 5 samples of breast skin were aseptically collected after plucking (P), after evisceration (E), before chilling (after final washing) (B) and after immersion chilling (A). *Campylobacter* counting was performed using Rapid *Campylobacter* Agar. Data was analyzed using ANOVA with a significance level of 5%.

Results

Obtained results indicated that during the whole slaughter process *Campylobacter* counts differed considerably for flock to flock in both slaughterhouses. In both slaughterhouses evisceration and final washing step did not lead to a significant change in *Campylobacter* load ($p>0.05$) compared to the load after plucking. However immersion chilling caused a significant decrease in the *Campylobacter* counts on carcasses in both slaughterhouses ($p<0.05$) (Figures 1, 2, 3, 4).

Table 1. Selected slaughterhouses' characteristics

	Slaughterhose A	Slaughterhose B
Line speed (carcases per hour)	3000	3000
Stunning	Electrical	Electrical
Scalding water temperatura mean	56,9°C	52,9°C
Scalding time	180 seconds	150 seconds
Plucking time	18 seconds	25 seconds
Final inside-outside washer	Present	Present
Chilling tanks	3	2
Temperature in chilling tanks	Tank1: 21,6°C Tank 2: 16,85°C Tank 3: 7,75°C	Tank 1: 25,13°C Tank 2: 2,08°C

Figure 1. Mean *Campylobacter* spp. counts (Log_{10} cfu/g) in every sampled batch and in all tested batches throughout the slaughter line at slaughterhose A

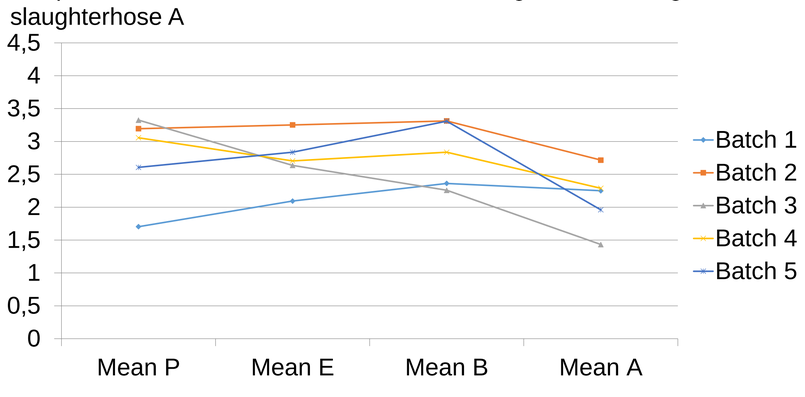
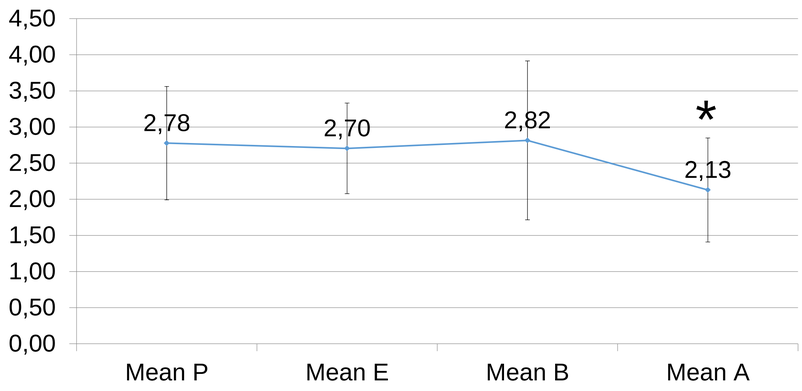


Figure 2. Average *Campylobacter* spp. counts (Log_{10} cfu/g ± SD) on carcasses breast skin throughout the slaughter line at slaughterhose A



* Significant difference ($p<0.05$)

Figure 3. *Campylobacter* spp. counts (Log_{10} cfu/g) in every sampled batch throughout the slaughter line at slaughterhose B

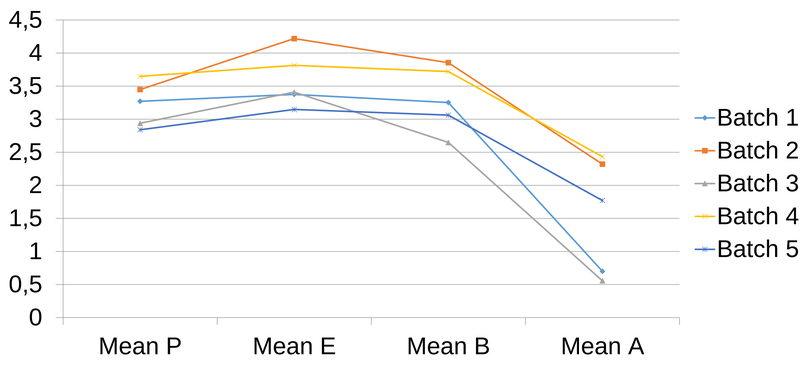
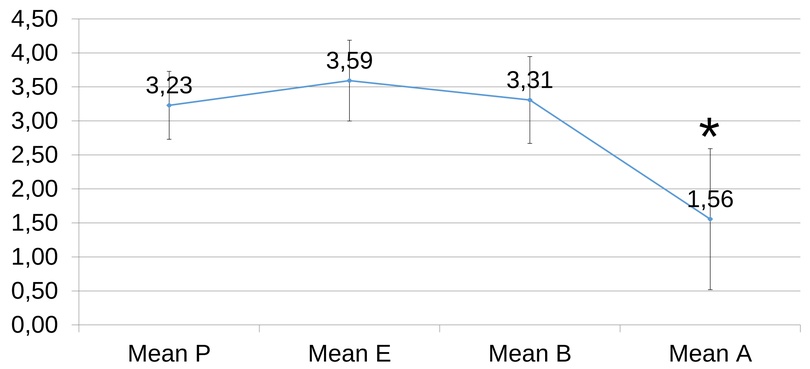


Figure 4. Average *Campylobacter* spp. counts (Log_{10} cfu/g ± SD) on carcasses breast skin throughout the slaughter line at slaughterhose 1CT



* Significant difference ($p<0.05$)

Conclusions

Campylobacter counts after plucking were not influenced by manual evisceration and final washing. In contrast immersion chilling of carcasses reduced considerably the counts on carcasses leading in most case to a contamination of the breast skin of least than 1000cfu/g, probably due to the addition of chlorine (1)

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References

1.

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