Efficacy of Salmonella Control Points in Slaughter Processing of Hazard Analysis and Critical Control Point (HACCP) Certified Pig Slaughter House

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Introduction

Salmonella was recognized as one of the etiological agent causing foodborne diseases. Salmonella poisoning from food sources has been linked to raw meats i.e., poultry, beef and pork. As pork is one of the most-commonly consumed meats worldwide. Costs associated with consumption of Salmonella contaminated pork and pork products are tremendous and leading to public health concerned (1, 2).

According to increase of consumer concerns on food safety associated with pork and pork products, the usage of HACCP system in slaughter house to prevent, reduce or eliminate hazards in pork products is increasing. Therefore, the aim of this study was to determine the efficiency of salmonella control points within HACCP certified pig slaughter.

Materials and Methods

The study was carried out in 3 HACCP certified and 1 non HACCP certified pig slaughter house. Seventy eight samples of skin swab from pigs/carcasses and 6 samples of water in slaughtering processes from each pig slaughter house were collected. Salmonella isolation, enumeration and typing from all samples were done using ISO 6579: 2002 method (ISO 2002).

Results and Discussion

In HACCP certified pig slaughter house, 50% of skin swabs samples at the point of after stunning process were salmonella positive. The prevalent serovar at non HACCP certified pig slaughter house were S. Weltevreden and S. Anatum. Salmonella were also detected in 22% of the sample in non HACCP certified pig slaughter house at the point of after final washing process (Table 1). At after washing point, S. Paratyphi B, S. Paratyphi B + S. Weltevreden and S. Enterica were identified. Salmonella were not detected in all of water samples. From this study, it can be concluded that HACCP schemes in the pig slaughter can be used to reduce Salmonella contamination.

Table 1 Incidence and numbers of Salmonella on pigs/carcasses at different stages of non HACCP certified pig slaughter house

<table>
<thead>
<tr>
<th>Process stage</th>
<th>% positive</th>
<th>MPN</th>
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<tbody>
<tr>
<td>After stunning</td>
<td>50.0</td>
<td>85.51</td>
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<tr>
<td>After washing</td>
<td>22.2</td>
<td>5.22</td>
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References