

Thesis title	Microbiological Quality of Pig Carcass at Dorn Du Slaughterhouse in Vientiane Municipality Lao PDR.
Author	Mr. Phouth Inthavong
Degree	Master of Science (Veterinary Public Health)
Thesis Advisory Committee	Assoc. Prof. Dr. Lertrak Srikitjakarn Chairperson (CMU) Prof. Dr. Reinhard Fries Chairperson (FU-Berlin) Miss Chuleeporn Saksangawong Member(CMU)

ABSTRACT

The purpose of this study was to determine and evaluate the microbiological quality of pig carcasses and to assess the hygienic status of “Dorn Du” slaughterhouse in Vientiane Capital of Lao People Democratic Republic (Lao PDR). Furthermore, associations between some potential risk factors for microbiological contamination were determined. Potential risk factors were gathered using a questionnaire survey at farm level and at the slaughterhouse level. The design of the study was a cross-sectional survey.

Between November 2004 and April 2005, 62 pig carcasses were randomly selected at the “Dorn Du” slaughterhouse. Two-pooled swab samples (Swab1 and Swab 2) and 25 g tissues of mesenteric lymph node from each carcass were collected. Swab samples were taken from 4 sites (from back, jowl (or cheek), hind limb medial (ham), and belly. Swab1 was taken immediately after dehairing and Swab2 was taken after splitting and washing the carcasses. The swab samples were enumerated for aerobic and *Enterobacteriaceae* bacteria. The lymph nodes were cultured for *Salmonella* only.

Swab1 had a mean aerobic bacterial count of $4.70 \log_{10}\text{cfu}/\text{cm}^2$ and a range of 4.4 to $4.9 \log_{10}\text{cfu}/\text{cm}^2$, whereas Swab2 had a mean aerobic bacterial count of $4.85 \log_{10}\text{cfu}/\text{cm}^2$ and a range of 4.5 to $5.31 \log_{10}\text{cfu}/\text{cm}^2$. These two means were significantly ($p=0.0001$) different. The means of *Enterobacteriaceae* counts were 2.81

$\log_{10}\text{cfu}/\text{cm}^2$ with a range of 2.1 to 3.3 $\log_{10}\text{cfu}/\text{cm}^2$ for Swab1, and 2.98 $\log_{10}\text{cfu}/\text{cm}^2$ with a range of 2.3 to 3.1 $\log_{10}\text{cfu}/\text{cm}^2$ for Swab2. These two means were also significantly ($p=0.0001$) different.

The proportion of *Salmonella* isolated from Swab1 was 46.8% and from Swab2 66.1%, and mesenteric lymph nodes 53.2%. Eight different *Salmonella* serotypes were identified. The most frequent (29.1 %) serotype was *Salmonella* Rissen, followed by *S. Anatum* (26.2%), *S. Derby* (19.4%), and *S. Elisabethville* (8.7%). The other serotypes identified were *S. Amsterdam* (7.8%), *S. Typhimurium* (3.9%), *S. Agona* (2.9%), and *S. Enteritidis* (1.9 %).

From the results of this study, it can be concluded that the pig carcasses were contaminated with high levels of aerobic bacteria and *Enterobacteriaceae*, as well as contaminated with pathogenic bacteria like *Salmonella*. Based on the findings of this study, improvements of hygienic practices in the slaughterhouse are recommended.

