Assessment of *E. coli* and *Salmonella* in Chinese Cabbage Supply Chain in Cambodia

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Abstract: Contaminations of *E.coli* and *Salmonella* on vegetables are the major cause of bacterial foodborne diarrhea in humans worldwide. Fresh vegetables normally carry natural non-pathogenic epiphytic microorganisms, but during growth, harvest, transportation and further handling the produce can be contaminated with foodborne pathogens from animals and human sources. In most cases, these products are consumed raw or lightly cooked, so that their microbial content may represent a risk factor for the consumers' health, which is a food safety concern. This study aimed to identify and compare the number of *E.coli* and *Salmonella* in Chinese Cabbage Supply Chain. Three replicates of samples were collected from farms, wholesalers, and retailers following by three supply chain actors/processes. By this three supply chains actor, 9 samples at farms, 9 samples at wholesalers, and 9 samples at retailers had collected for experiment. *E.coli* was confirmed by inoculating into sterile EC medium then streaking on Eosin Methylene Blue EMB agar and identified by Triple Sugar Iron (TSI) and Lysine Indole Mobility (LIM) agars. Furthermore, *Salmonella* was confirmed by inoculating in to sterile Brilliant Green Lactose Bile (BGLB) medium tube then streaking on selective Deoxycholate Hydrogen sulfide Lactose (DHL) agar and identified by TSI and LIM agars. The results showed that the contamination of *E.coli* was found in average of 11.9×10^2 CFU/g (or 3.1 log CFU/g) in farms, 27.33×10^2 CFU/g (or 3.4 log CFU/g) in the wholesaler, and 9.64×10^2 CFU/g (or 2.3 log CFU/g) in retailer. For the number of *Salmonella*, it was found in average of 11.73×10^2 CFU/g (or 3.1 log CFU/g) in farm, 15.33×10^2 CFU/g (or 3.2 log CFU/g) in wholesaler, and also 10.27×10^2 (log = 3.0119) CFU/g in retailer. *E.coli* and *Salmonella* were found in highly number in the wholesaler comparing to the other two actors in supply chain which may be cause of poor hygiene conditions in their practice. Therefore, improving practice in this chain should be strongly taken into consideration before the produces continue supplying to the retailer as well as to the consumer.

Key words: *E. coli*, *Salmonella*, Chinese cabbage, cambodia, supply chain.