

Issaree Sayraumyart 2012: Quality and Safety of Chicken Eggs for Human Consumption A Survey from Farm to Market. Master of Science (Food Safety), Major Field: Food Safety, Department of Animal Science. Thesis Advisor: Ms. Sukanya Rattanatabtimtong, Ph.D. 100 pages.

The objective of this research was to investigate the quality and safety of chicken eggs for human consumption surveyed from farm to market. This research was divided into two studies. In the first study, the quality and bacterial contamination of eggs collected from layer farms, egg grading and collecting centers, distribution centers and markets were determined. The production scale and operation pattern of egg grading and collecting center were considered as two major criteria for the selection of six egg production routes in this study. In each egg production route, the same set of eggs was tracked from farm to market. Eggs were randomly sampled from 3 layer farms, 6 egg grading and collecting centers, 2 distribution centers and 6 retail markets in the central and eastern area of Thailand. The egg samples were analyzed for quality and bacterial contamination. The results showed that the values of egg albumen height and haugh unit respectively decreased from farm to market in all egg production routes. In contrast, the albumen pH increased from farm to market. The higher ratio of bacterial contamination was detected in egg shell samples compared with egg content samples. The results of this study indicate that the eggs collected from farm have the best quality. However, the internal egg quality continuously declines from farm to market. In the second study, the quality and bacterial contamination of eggs collected from retail markets (local fresh markets and supermarkets) were analyzed and compared. The chicken eggs were randomly sampled from 7 local fresh markets and 8 supermarkets. The results showed that the values of specific gravity, albumen height, and haugh unit of eggs from local fresh market were higher than those of eggs from supermarket. The contamination of *Salmonella* spp. and *E. coli* was detected in eggs from both local fresh markets and supermarkets.

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Student's signature

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Thesis Advisor's signature