

## Occurrence And Management Of Coliform Bacteria On Tomatoes

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**Abstract :** Tomato is a crucial food crop significantly contributes to global food and nutrition security. However, postharvest losses severely limit its role. Therefore, it is necessary to develop sustainable strategies to minimize these losses and improve the shelf-life of tomato fruits. One of the major concerns is bacterial infections, particularly by faecal coliform bacteria, which can cause food poisoning and illnesses like diarrhoea and dysentery. This study seeks to identify the presence of coliform bacteria on tomato fruits in fields and markets in Muea, Buea Municipality. The study also evaluated different management strategies to reduce the bacterial incidence and load on tomato fruits. A total of 200 fruits were sampled for both the coliform survey and shelf-life analysis. Ten farmers and traders provided samples, including asymptomatic and symptomatic tomato fruits. The samples designated for shelf-life analysis were treated with Aquatab, warm water, lemon, and onion. The results indicated that out of the 80 symptomatic samples collected, 12.5% contained faecal and total coliform species. Among the ten farms sampled, 14% were infected with coliform bacteria, with the highest infestation rate of 60% recorded in field 4. Furthermore, 15% of the asymptomatic tomato fruits were found to be infected by coliform bacteria. Regarding the management strategies, Aquatabs exhibited the highest efficacy in reducing the incidence of coliform bacteria on tomato fruits, followed by onion and lemon extracts. Although hot water treatment effectively removed bacteria from the fruits, damaging the cell wall negatively affected their shelf-life. Overall, this study emphasizes the severity of coliform bacterial pathogens in the Muea area, particularly their occurrence on asymptomatic tomatoes, which poses a significant concern for plant quarantine services. It also demonstrates potential options for mitigating this bacterial challenge.

**Keywords :** tomato, shelf-life analysis, food and nutrition security, coliform bacteria

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