9. Microbiological quality of kachumbari, a raw vegetable salad popularly served alongside roast meat in Kenya

Mbae, Kenneth M1; Ndewiga, Mercy K1, and. Kiruki, Fredrick G 2

1 Department of Food Science, Meru University of Science and Technology.
2 Faculty of Agriculture & Environmental Studies Chuka University,
Corresponding author email: kmbae@must.ac.ke

Subtheme: Food Safety, Security & Agribusiness

Abstract

Raw salads are regularly implicated in foodborne disease outbreaks globally. Consumption of kachumbari, a raw vegetable salad alongside roast meat is widespread in Kenya. This study aimed to evaluate the bacteriological quality of kachumbari samples (n=39) collected from a cross-section of roasted meat eateries in Kenya. United Kingdom’s Health Protection Agency guidelines were used to infer the safety of the salads due to the lack of local criteria for microbiological safety of ready-to-eat fresh produce placed in the market. Based on Escherichia coli counts, 14 (35.9%) of the samples were of satisfactory microbial quality (<20 CFU/g), 7 (17.9%) in the borderline (20 - ≤10² CFU/g) and 18 (46.2%) unsatisfactory (>10² CFU/g). All samples examined for Staphylococci had counts falling within the borderline range (20-≤10⁴ CFU/g). Collectively, 3 (7.7%) of the sampled salads were classified as potentially harmful to health and/or unfit for human consumption due to the presumptive presence of Campylobacter spp. 2 (5.1%) and E.coli O157 1 (2.6%). Salmonella was not detected in any of the samples. The presence of hygiene indicator microorganisms and pathogens demonstrates that kachumbari salads present a public health risk.

Keywords: Kachumbari, hygiene indicators, foodborne pathogens, raw vegetable salad