Antimicrobial resistance profile of Salmonella present in organic farming in Selangor, Malaysia

ABSTRACT

Presence of Salmonella in organic farming may lead to contamination in fresh produce. This study was designed to detect Salmonella contamination in organic vegetable farm situated in Serdang and to evaluate the antibiotic susceptibility profiles of the isolates. A total of 460 samples of brinjal, cucumber, ladies' fingers and soil were collected and examined for the presence of Salmonella. The obtained isolates were identified and confirmed by biochemical characterization and serotyping. Antibiotic sensitivity profiles of the isolates were determined by using agar disk diffusion method. Salmonella spp. was detected in brinjal (1.7%, n=2), cucumber (1.7%, n=2), ladies' fingers (2.5%, n=3) and soil (5.0%, n=5) samples. The prevalent serovars were Salmonella enterica ser. Senftenberg, S. enterica ser. Weltevreden and S. enterica ser. Corvallis. All strains were resistance to penicillin and vancomycin, with multiple antibiotic resistance (MAR) index between 0.21 and 0.36, demonstrated here as multi-drug resistant (MDR) Salmonella. The result highlighted that organic vegetables constituted potential sources of Salmonella, informing continuous monitoring and tightened surveillance are necessary to ensure food safety.