

## **Detection and quantification of vibrio parahaemolyticus in vegetables and environmental samples at farm level**

### **ABSTRACT**

The purpose of this study was to detect and quantify total and pathogenic *Vibrio parahaemolyticus* from vegetables and environmental samples at the farm level in Cameron Highlands, Pahang, Malaysia. Most Probable Number (MPN) – Polymerase Chain Reaction (PCR) method was used to detect *toxR*, *tdh* and *trh* genes and to quantify their concentration in samples. Samples obtained were cabbage (20), carrot (10), cucumber (10), lettuce (31), tomato (18), manure (10), soil (12), surface swab (21) and water (14), with a total of 146 samples. Sampling locations involved were three vegetable farms, two packing houses and one loading bay. Based on the results, overall, 13.7% of samples were present with *V. parahaemolyticus toxR* (maximum concentration 1100 MPN/g), with the highest detection in cabbage (6%). *Vibrio parahaemolyticus tdh* was detected in 1.4% samples (maximum concentration 7.3 MPN/g), and *V. parahaemolyticus trh* could not be detected in any samples. No *tdh* and *trh* genes could be detected from the recovered isolates. This finding highlighted that vegetables and environmental samples could potentially be contaminated with *V. parahaemolyticus* which poses risk to consumers. This study could be useful in future food safety risk communication and management programmes.