

NOROVIRUSES IN OYSTERS FROM LOCAL MARKETS AND OYSTER FARMS IN SOUTHERN THAILAND

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Abstract. One hundred and eighteen oyster samples collected from local markets and oyster farms in southern Thailand were examined for noroviruses (NoVs) and bacterial indicators of fecal contamination (fecal coliforms and *Escherichia coli*). Using a virus concentration procedure followed by RT-nested PCR, NoVs were detected in 38% of the samples. Oysters collected from oyster farms were found with NoVs at a higher detection rate (25/53 samples) than oysters from local markets (20/65 samples). Of the 45 NoV-positive oyster samples, 67% belonged to NoV genogroup I (GI), 15% to GII, and 18% to both GI and GII. DNA sequencing showed that 2 NoVs belonged to NoV GI-2 genotype. Fecal coliforms in NoV-positive oyster samples were in the range of <3.0 to 1.5×10^4 most probable number (MPN)/g and 33% of NoV-positive oyster samples contained fecal coliforms within the standard acceptable level of raw shellfish (<20 MPN/g). *E. coli* was found in the range of <3.0 to 1.5×10^4 MPN/g and 9% of NoV-positive oyster samples were within acceptable levels of *E. coli* contamination (<3 MPN/g). These findings indicate that NoV contamination in oysters obtained from both markets and oyster farms might pose a potential risk of acute gastroenteritis associated with raw oyster consumption. Examination for both fecal bacterial indicators and enteric viruses should be conducted for microbiological food safety of shellfish.

Keywords: norovirus, oyster, RT-nested PCR, fecal coliforms, *Escherichia coli*

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