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A survey on selfreported handling practices and food safety knowledge of workers at the major produce market in Qatar

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Food handling practices (FHP) is one of the most important stage where microbes can be introduced into produce through the infected food handlers or by cross-contamination. The fresh produce market in Doha, Qatar is the major market from which most of the food businesses, restaurants, super markets, and consumers obtain their fresh produce. Produce is handled by workers with no or minimum knowledge on safe produce handling practices. This study was carried out to assess the food safety knowledge and self-reported handling practices applied by produce handlers working at this major produce market in Qatar. About 120 produce handlers were surveyed using a systematic questionnaire (No. QU-IRB 509-E/15) to determine their food safety knowledge and attitudes during handling of fresh produce in January 2016. In addition, hand-swab samples and work uniform photos were collected. A standard microbial count were applied on the collected swabs to determine the hands' hygiene levels of the workers. The identification of microorganisms isolated from their hand swabs was carried out using MALDI-TOFF. The survey results revealed that the hygiene practices and food safety knowledge among produce handlers working at this produce market are insufficient. It was determined that none of the handlers received any food safety training on safe produce handling practices before joining the work at the market. Most of the workers' age was below 50 yrs (82.5%), about 37% of them was between 31 and 40 years old. Regarding educational level; 57.5% of them had middle school degree or below. More than 60 % of them claimed to wash their hands 4-5 times per duty time. The microbial hand-swabbing analyses demonstrated the presence of *Enterococcus faecium*, *Klebsiella pneumoniae*, *Staphylococcus* spp., and *Bacillus circulans*.

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Overall, these results are significant because they highlight the need to promote additional efforts that might assist in developing necessary intervention strategies to improve the conditions at this major market and prevent future foodborne illness outbreaks linked to produce sold in Qatar.