

Extent of Fruit and Vegetable Waste at Wholesaler Stage of the Food Supply Chain in Western Australia

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Abstract : The growing problem of food waste is causing unacceptable economic, environmental and social impacts across the globe. In Australia, food waste is estimated at about AU\$8 billion per year; however, information on the extent of wastage at different stages of the food value chain from farm to fork is very limited. This study aims to identify causes for and extent of food waste at wholesaler stage of the food value chain in the state of Western Australia. It also explores approaches applied to reduce and utilize food waste by the wholesalers. The study was carried out at Perth city market in Caning Vale, the main wholesale distribution centre for fruits and vegetables in Western Australia. A survey questionnaire was prepared and shared with 51 wholesalers and their responses to 10 targeted questions on quantity of produce (fruits and vegetables) delivery received and further supplied, reasons for waste generation and innovations applied or being considered to reduce and utilize food waste. Data were computed using the Statistical Package for the Social Sciences (SPSS version 21). Among the wholesalers 52% were primary wholesalers (buy produce directly from growers) and 48% were secondary wholesalers (buy produce in bulk from major wholesalers and supply to the local retail market, caterers, and customers with specific requirements). Average fruit and vegetable waste was 180 Kilogram per week per primary wholesaler and 30 Kilogram per secondary wholesaler. Based on this survey, the fruit and vegetable waste at wholesaler stage was estimated at about 286 tonnes per year. The secondary wholesalers distributed pre-ordered commodities, which minimized the potential to cause waste. Non-parametric test (Mann Whitney test) was carried out to assess contributions of wholesalers to waste generation. Over 56% of secondary wholesalers generally had nothing to bin as waste. Pearson's correlation coefficient analysis showed positive correlation ($r = 0.425$; $P=0.01$) between the quantity of produce received and waste generated. Low market demand was the predominant reason identified by the wholesalers for waste generation. About a third of the wholesalers suggested that high cosmetic standards for fruits and vegetables - appearance, shape, and size - should be relaxed to reduce waste. Donation of unutilized fruits and vegetables to charity was overwhelmingly (95%) considered as one of the best options for utilization of discarded produce. The extent of waste at other stages of fruit and vegetable supply chain is currently being studied.

Keywords : food waste, fruits and vegetables, supply chain, waste generation

Conference Title : ICABFS 2016 : International Conference on Agricultural Biotechnology and Food Security

Conference Location : Singapore, Singapore

Conference Dates : January 07-08, 2016