Title Apply post-harvest practices to improve the value of fruit supply chain in Vietnam

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Abstract

Viet Nam traditional supply chains are long as twice as many participants compared to developed countries. There are very little cool chain practices and famers original estimate of fruit damage 2%-5%. The survey results of mango supply chain showed that farmer estimates of damaged fruit at the wholesale market from 25 to 40% and average 31% of fruit suffer from sap burn and fruit rots. Fruit affected by sap burn ranged from 16% to 50% across 5 markets in Can Tho city. The mango fruit being sold in northern Vietnam affected by Anthracnose was 34%, sap burn 52%, abrasion marks 21%, and pressure marks 30%, fruit fly 1% and fruit rots (stem end and other rots) 3%.

New supply chains were developed by research team with Metro Cash & Carry and various high value retailers in Ho Chi Minh City for mango and pomelo by assisting in developing good agricultural practices (GAP) and quality assurance systems. As a result, keeping mango fruit cool along the supply chain in the condition of high humidity and high temperature in Southern Vietnam significantly reduces fruit weight loss by 35% to 61% and extended shelf life by at least 4 days more. A combination of new fibreboard packaging following hot water dip treatment and plastic crate packaging plus hot water dip treatment and cooling the fruit along the supply chain significantly reduced disease infestation by 55% to 93%. Implementation of GAP, mango growers with high levels of management practices and high input levels obtain a profit of VND 15,105,000 per 1000m^2, 2.1 times greater than growers with mid level management practices and mid level inputs and 3.7 times greater than grower with low level management practices and inputs. Bagged fruit were sprayed once with pesticides (before bagging), while non-bagged fruit were sprayed a further seven times. This bagging method provided to consumers a chemical free, safe product. An 87% reduction pesticides costs was achieved using fruit bagging. A 10% to 20% increase in fruit quality achieved using fruit bags across all fruit grades. Moreover, pomelo growers with high levels of management practices and high input levels obtain a profit of VND 3,576,000 per 1000m^2, 2.4 times greater than growers with mid level management practices and mid level inputs and 3.9 times greater than grower with low level management practices and inputs.