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Information Sheet – Hidden damage on papaya fruit

Physical damage to papaya fruit at the green stage will not show up until the fruit ripens. Physical damage can occur from the time of harvest through to final packing and at all of the steps in between.

Causes of physical damage

Physical damage on the farm usually occurs as a result of the harvesting implement, dropping into crates, over-filling of crates and excess movement of fruit during transport.



Similar effects can occur as a result of poor handling during washing, grading and transportation. These actions will result in latex staining, punctures, scars and bruises. During ripening, bruised areas will develop into dark soft regions which become affected by secondary diseases such as Anthracnose and Phytophthora.

Most physical damage occurs when staff are trying to work to fast. Because the damage is not immediately seen staff are often not aware that they are doing anything wrong.



Bruising and scratching damage from improper handling on the farm.



Stem end damage from dropping fruit into the bins.

Steps to reduce physical damage while handling papaya

1. Always practice good harvesting techniques and do not rush.
2. Stems should be removed in the field to prevent puncturing or scratching of other fruit in the crate.
3. Foam or newspaper should be placed in the base of field crates and crates should contain only one layer of fruit.
4. Fruit should never be dropped or thrown into crates or bins.
5. Vehicles used to transport the fruit should be driven slowly and with care.

Damage by disease infection is a leading cause of post harvest losses in papaya. Like physical damage, the affects are often not seen until the fruit begins to ripen. Therefore fruit can be shipped looking nice and clean but arrive infected with disease.

Anthracnose (Colletotrichum gloeosporoides L.) disease is one of the most common post harvest diseases of papaya in Fiji. The disease is present on unripe papayas but is latent (not visible). As the fruit starts to ripen, circular spots (lesions) begin to appear and gradually enlarge and may become sunken into the fruit.



Phytophthora stem-end rot (Phytophthora nicotianae var. parasitica) is another major post harvest problem affecting Fiji papaya. Phytophthora is characterised by circular spots (lesions) which develop with grey and white 'fungus' growing on the surface. Infection of phytophthora is particularly apparent around the stem end.



Steps to reduce post-harvest diseases of papaya

1. Good site selection (avoid humid conditions)
2. Good farm management practices (good hygiene, monitoring and chemical control as necessary)
3. Control by various pre and post-harvest chemical treatments
4. Careful handling to minimize physical damage.
5. Keep fruit in a cool place with a low relative humidity.

Low Temperature

Storage of unripe papaya below temperatures of 10°C will result in chilling injury. The symptoms of chilling injury are surface pitting, discolouration of the skin and the flesh, incomplete ripening, poor flavour and increased susceptibility to disease incidence. Ripe papayas will store successfully at lower temperatures.

High Temperature

Exposure of papayas to temperatures above 30°C for extended periods of time (several days) results in heat injury (uneven ripening, blotchy ripening, poor colour, abnormal softening, surface pitting, accelerated decay).