

EFFECT OF SOME POSTHARVEST HANDLING PRACTICES ON STEM-END ROT OF AVOCADO (*Percia americana*) CAUSED BY *Diplodia natalensis*

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Post harvest losses in avocado is high mainly due to postharvest diseases. Stem-end rot caused by a fungus *Diplodia natalensis*, is the most common disease among them. The rot (brown lesions) starts at the stem-end and develops as the fruit ripens. Contributing factors appear to be storage of immature fruits and use of inadequately ventilated containers for packing. Causal organism is a wound parasite which infects mature fruits under tropical conditions.

Wounding of fruits can occur if harvesting is done with less care; and even when carefully harvested, removal of button part of the stalk attached to the fruit which is a common practice, invariably causes mechanical injury at the stem end. No control measures have been reported for this disease. Hence, some postharvest handling practices to control this disease were studied.

Avocado fruits (CV. St. Anne) harvested with fruit stalk were subjected to the following

treatments: few fruits were kept with stalk attached to the fruit by clipping off stalk, leaving the button part. In rest of the fruits, button parts were removed by pushing and lifting as normally practised. One third of the fruits with stalks removed were dipped in Benlate solution (500 ppm.) for 3 minutes. Another one third of the fruits were dipped in warm water (52°C for 5 min.), while the rest were kept as control without any treatment.

There was very little or no disease incidence in fruits with stalk and in benlate treated fruits. However, there was significant increase in disease incidence in untreated stalk detached fruits and hot water treated fruits. Benlate is a fungicide which controls the causal fungus at the wound; hence there were little or no incidence of stem-end rot. However, results showed that hot water treatment increased tissue injury of the stem-end injured avocado fruits and thereby predisposed them to infection by the pathogen.

From these results it is clear that the stem-end rot incidence is low in fruits with stalk or those treated with Benlate. Since Benlate is an expensive chemical and is systemic, it is more appropriate to harvest the fruits with the fruit stalk leaving the button

part attached to the fruit to minimize stem-end rot infection. However, fruits with detached pedicel during harvesting and handling operations, could be treated with Benlate (500 ppm.) to minimize stem-end rot infection.

Gliricidia sepium - A RAT KILLER

Gliricidia sepium is a fast growing leguminous tree widespread in the tropics. It has many names as it does uses: "mother of cacao" because its branches shade cacao plantations, "quick-stand" because it is easily propagated from cuttings and "*Imperata* destroyer" for its herbicidal properties. But the name that should mean most to small farmers is "rat-killer".

Leaves of *Gliricidia sepium* contain a substance called coumarin which, under the effects of bacteria produced in fermentation, is converted into the anticoagulant diacoumarol. Tests have shown that while the toxin that the *Gliricidia* produces does not act rapidly, repeated doses lead to fatal haemorrhaging within few days.

In many countries farmers use the leaves and bark of *Gliricidia* for rat control. In Honduras, farmers prepare poison by boiling 2 large pieces of bark with about 10 kg. of wheat. They toss this wheat into the fields, where rats and mice that feed on it die within days. Mexican farmers grind the barks or leaves, then mix it with damp wheat or spread on banana slices. In Panama, farmers grind the leaves, mix them with cereals and leave the concoction to ferment in the hot humid weather, because this activates conversion of coumarin into diacoumarol.

Noting that no one has yet provided a precise formulation for the poison, and that the documentation is lacking on many farmers' experiments, US scientists working in Central America are collecting information on the methods of preparing the poison, the ingredients used to make the bait attractive and on whether the preparation can be stored and marketed.

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