V. DETECTION OF POST-HARVEST PATHOGENS

Introduction

Post-harvest pathogens are saprophytes[3] and infect fruit and vegetables through natural and artificial openings (wounds). As they grow they break down the cells of the fruits or vegetables, causing them to become limp or water-soaked. This creates the opportunity for other saprophytes to invade and grow on the nutritious plant sap/juices.

The isolation of a specific post-harvest pathogen from very rotten fruit is challenging, given the possibility of isolating a number of other saprophytes in the process. The surface of the produce should be disinfected prior to attempting to isolate any organisms. If, however, the produce is beyond recognition, the disinfectant will negatively impact on post-harvest pathogens in the fruit or vegetable.

Purpose

The purpose of this task is to isolate post harvest pathogens from fruit.

Materials

Materials for the task should comprise:

- Malt extract agar in Petri dishes;
- A scalpel;
- Ethanol;
- A burner; and
- Decaying fruit

1. Detection of yeasts and moulds

- Mark the bottom of the plate with the sample to be investigated and the date of the experiment
- Sterilise the scalpel by dipping it in ethanol before setting it alight with a match
- Cut a small square from the edge of the fungal growth on the fruit and place it on the surface of a malt extract agar plate; if the fruit is too rotten, press the surface of the malt extract agar plate against the aerial fungal growth on the fruit
- Incubate for two to three days at room temperature

2. Detection of fungi

- Mark the bottom of the plate to be investigated with the term '*Penicillium*'
- Press the fungal-infected surface of a *Penicillium*-infected citrus fruit on to the surface of a malt extract agar plate
- Cover the plate and incubate for 48-72 hours at room temperature

Question and discussion issues

- Describe the colonies observed on each plate

[3] A micro-organism, plant or fungus that lives on decaying matter.