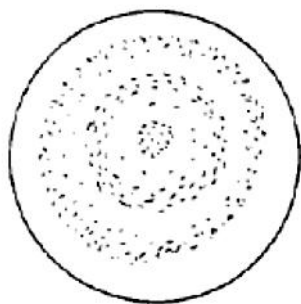


Investigating Koch's Postulates

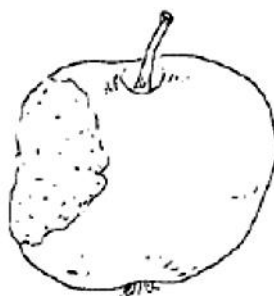
Read these instructions carefully before you start.



1. Examine the fungal colony on the agar plate. Describe its appearance.

Note

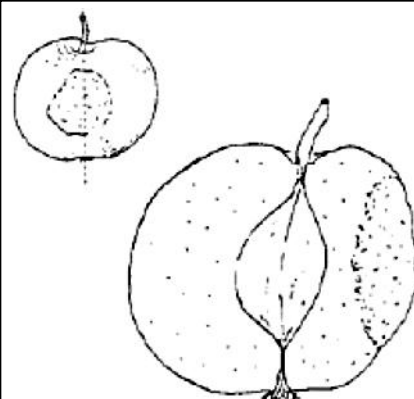
- colour, appearance, diameter of colonies



2. Examine the infected apple (externally). Compare with the control. Apple 1 has been inoculated with *Penicillium*. Apple 2 is the control (see 2)

Note

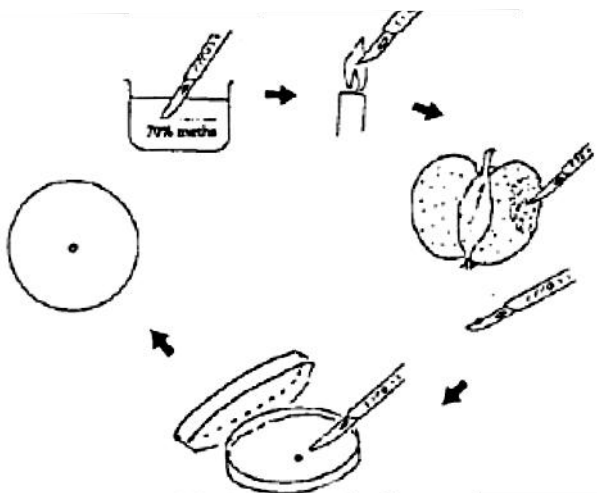
- colour, shape, texture, size of infection



3. Examine the infected apple (internally). Compare with the control. Cut the infected and the control apples in half, through the inoculation point. Describe the type of rot you see.

Note

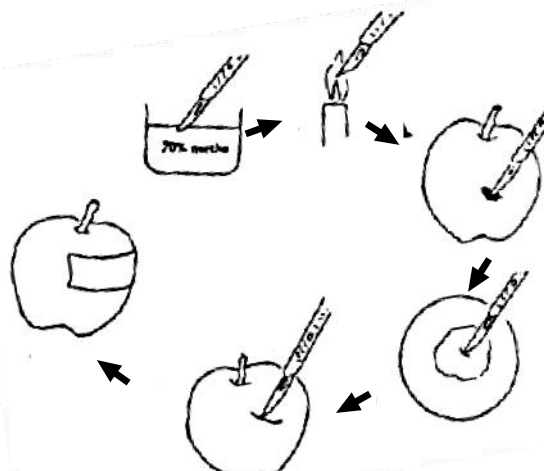
- colour, texture, size of infection



4. Isolate the organism from the infected material (apple 1) and transfer to culture on a plate. Flame and cool the blade of a scalpel. Cut out a small piece (5 mm x 5 mm) of infected tissue from the cut surface of the infected apple.

Place this in the centre of a clean malt agar plate. Replace lid, seal with tape and label.

Repeat for apple 2 (control).
Incubate plates, the right way up, at 25 °C for 7 days.



5. After 7 days you should have one or more fungal colonies on your plate. Infect a new apple using the culture on the plate (from step 4)

Flame scalpel (or forceps) and cool.

Make a wound in a fresh apple (apple 3) and insert a small piece of fungal colony from the agar plate. Cover wound with micropore tape. Label. Incubate at room temperature for 7 days.

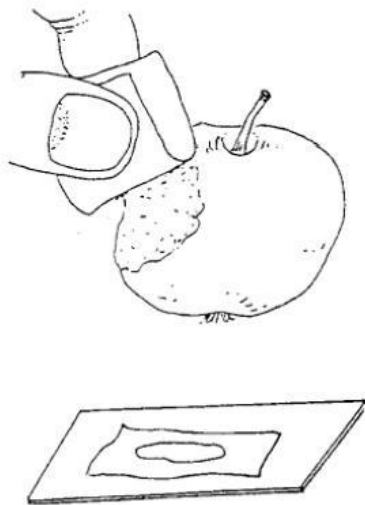
Record your observations for steps 1, 2 and 3 in a table.

6. Repeat step 5 using the fungal colony (if any) from the control apple. Examine each day for 7 days.

Record your results in a table as before. Are your observations the same as you recorded earlier?

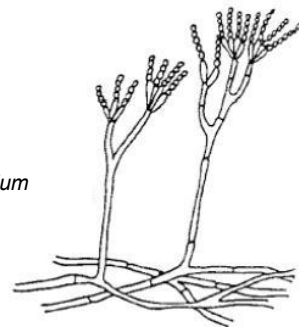
Now check through to see if you have demonstrated Koch's Postulates. If your answers to numbers (iv) and (v) are 'yes', then you have isolated the organism which is causing the disease.

Stage 2 - Examining the fungus under the microscope



1. Cut a piece of sellotape. Hold both ends in one hand so the sellotape forms a loop with the sticky side outwards.
2. Lightly touch the sellotape against the surface of the infected tissue, or onto a fungal colony on a plate.
3. Stick the sellotape on the slide. Do not press it in the middle.
4. Observe under low power and then under high power.

Penicillium



5. Note the conidiophores with the conidia