**HN9W 75 - Laboratory Science: Working in a Laboratory**

**Outcome 1** – Carry out a risk assessment for a specific procedure in a scientific laboratory.

1. Identify the main hazards present
2. Identify the associated significant risks to health and safety
3. Suggest appropriate ways to minimise risk

You must give learners a case study that specifies a procedure for a given area of a scientific laboratory and provide them with a template for a risk assessment. Learners must carry out a risk assessment for the procedure.

**Learners must:**

* Identify the main hazards present in the specific procedure, which must include use of electrical equipment, use of flammable materials, use of chemicals.
* Identify one significant risk associated with each identified hazard.
* Identify one way to minimise each identified risk.

**Suggested case study with a microbiological theme**

In this classroom laboratory, you will investigate the effect of tea-tree oil on the growth of *Saccharomyces cerevisiae.* Your task is to write a risk assessment for this protocol:

1. Identify the main hazards present
2. Identify the associated significant risks of each hazard to health and safety
3. Suggest appropriate ways to minimise risk each hazard.

**Title**: Effect of tea-tree oil on the growth of *Saccharomyces cerevisiae.*

**Aim**: To investigate the effect of tea-tree oil on the growth of *Saccharomyces cerevisiae*.

**Procedure**:

1. Prepare 3 universal containers of sterile YGB media.
2. To each of the YGB media containers, add 200µl of sterile saline solution, 200 µl of tree-tree oil or 200 µl of iodine solution.
3. Using aseptic technique, transfer a single colony of *S. cerevisiae* from YGA to each of the YGB media containers.
4. Incubate the cultures for ~24 hours at 30°C.
5. Using aseptic technique and sterile equipment, carry out a 10-6 log dilution of each of the cultures.
6. Transfer 100 µl of each culture to a sterile YGA plate. Incubate the agar plates for 24 hours at 30°C.
7. Count the number of colony-forming units on each plate. Determine the number of colonies in 1cm3 of culture.

Template suggested below.

Risk Assessment

Title of activity: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date of risk assessment: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date of review: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Outline of the experiment protocol:

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| Hazards | Significant risks to health and safety | Ways to minimise the risks (control measures) |
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