Risk Assessment Form (3)

Must be completed before experimentation.

Student's Name(s) Rachel Hanan, Jennifer Katz

Title of Project Genetic and phenotypic comparison of four Arabidopsis thaliana strains when exposed to heavy metals, for future applications in agriculture

To be completed by the Student Researcher(s) in collaboration with Designated Supervisor/Qualified Scientist: (All questions must be answered; additional page(s) may be attached.)

1. List all hazardous chemicals, activities, or devices that will be used; identify microorganisms exempt from pre-approval (see Potentially Hazardous Biological Agent rules).

Chemicals: Nickel (II) Sulfate, Chromium (III) Sulfate, Copper (II) Sulfate
Activities: Metal salts above used to make solution of varying concentrations.

2. Identify and assess the risks involved in this project.

Nickel (II) Sulfate is a known carcinogen by inhalation of dust. Also $Ni_2(SO_4)_3$ is a severe body irritant and moderately toxic by ingestion.
Chromium (III) Sulfate is a body tissue irritant (moderate)
Copper (II) Sulfate is a skin and eye irritant.

3. Describe the safety precautions and procedures that will be used to reduce the risks.

All solutions of metal salts were mixed under an active fume hood by instructor/supervisor (myself). Students wore mask/goggles/aprons while dispensing solutions and exposure time was minimized. Solution dispensed dropwise using disposable pipettes.

4. Describe the disposal procedures that will be used (when applicable).

Waste solutions are stored outside the lab in chemically resistant containers before collection/disposal. Wastes are collected by Eastern Environmental Solutions Inc* annually or as deemed necessary. (*Licensed - OSHA/EPA/DEC)

5. List the source(s) of safety information.

The aforementioned metal salt solutions are classified by the EPA as toxicity characteristic hazardous wastes based on the RCRA and require licensed waste disposal (Source: Flinn - Chemical Waste Disposal Procedures 2019)

To be completed and signed by the Designated Supervisor (or Qualified Scientist, when applicable):
I agree with the risk assessment and safety precautions and procedures described above. I certify that I have reviewed the Research Plan/Project Summary and will provide direct supervision.

Gerard Wykes — Designated Supervisor's Printed Name

Signature

09/01/19 — Date of Review (mm/dd/yy)

Chair, Science Department, NSHAHS — Position & Institution

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NSTA - Safety in the Science Classroom / OSHA Compliance Wksp
NSTA National Conf - Boston 2016 — Experience/Training as relates to the student's area of research