Incorporation of the GEMs item: *The dose makes the poison: Measuring ecotoxicity using a lettuce seed assay* submitted by Irv Levy into the General Chemistry curriculum.

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Summary: Warning! In this experiment methanol is least toxic to the lettuce seeds. It is important to remind the audience that this is not directly transferable to human health, since methanol is the most toxic of the three alcohols in humans.

Students prepare a series of Petri dish incubators to determine the effect of solvent type and concentration on the germination of lettuce seeds. Groups of students are assigned different alcohol solvents, with each group creating a series of incubators with different concentrations of the assigned solvent. After an incubation period, the seeds are analyzed for germination rates and root growth.

This experiment provides quantitative data to initiate discussions about solvent choice in the context of green chemistry. This can be a good introductory experiment in the general chemistry sequence, as success rates and toxicity to plants and humans can be contrasted, and students can be introduced to safety literature through this activity. Additionally, students can select additional solvents for experimental design, and practice collecting and displaying data in graphical and tabular format.