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September 2021

Killing One Plant With Two Stones: Unsuccessful Mitigation of Pollution and Nutritional Deficiencies

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Citation of this paper:

Demand, Marnie J., "Killing One Plant With Two Stones: Unsuccessful Mitigation of Pollution and Nutritional Deficiencies" (2021). *Inspiring Minds – Showcasing Western’s Graduate Research, Scholarship and Creative Activity*. 150.

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Killing one plant with two stones: Unsuccessful mitigation of pollution and nutritional deficiencies

Land scarcity has led polluted areas to be used for agriculture. One source of contamination is mining, including refinement and disposal of waste rock. Unwanted and toxic metals, including cadmium, can be present in ores alongside desirable metals. When crops are grown in polluted soil, cadmium can enter the food supply. Another food-related concern is nutrient deficiency. Deficiency in selenium is estimated to affect 500 million to 1 billion people worldwide. To prevent human illness, selenium can be applied to crops. Selenium also causes structural changes in plants that may reduce the uptake of cadmium. I investigated this possibility in several plant species. Unfortunately, my results indicate that selenium increased the uptake of cadmium by some crop plants. Thus, application of selenium to crops could increase the health risk to consumers in regions where cadmium levels in the soil are elevated.