



YELLOWKNIFE GARDEN METALS STUDY

SUMMARY OF 2020 RESULTS

WHAT IS THE YELLOWKNIFE GARDEN METALS STUDY?

The Yellowknife Garden Metals Study (YKGMS) was developed to **measure levels of arsenic and other mining-associated metals (lead, antimony) in soil and produce from gardens in Yellowknife, Ndilo and Dettah**. This study builds on research from 2001 by the Environmental Sciences Group at the Royal Military College that showed that Yellowknife garden produce was safe to eat despite having levels of arsenic that were higher than the Canadian average.

SAMPLE COLLECTION



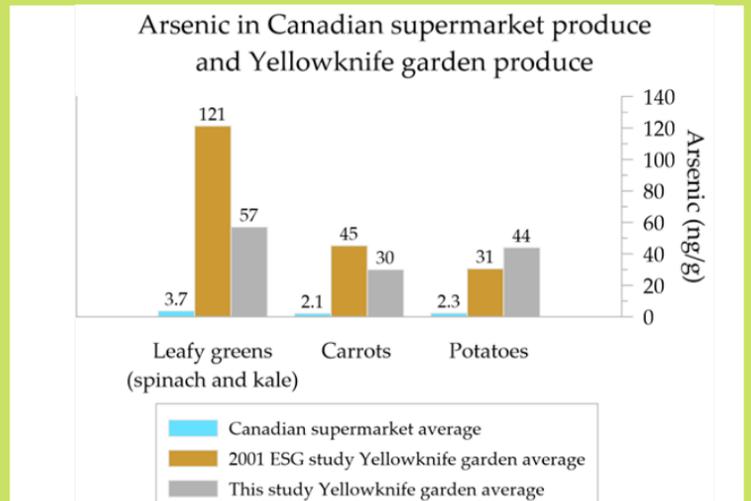
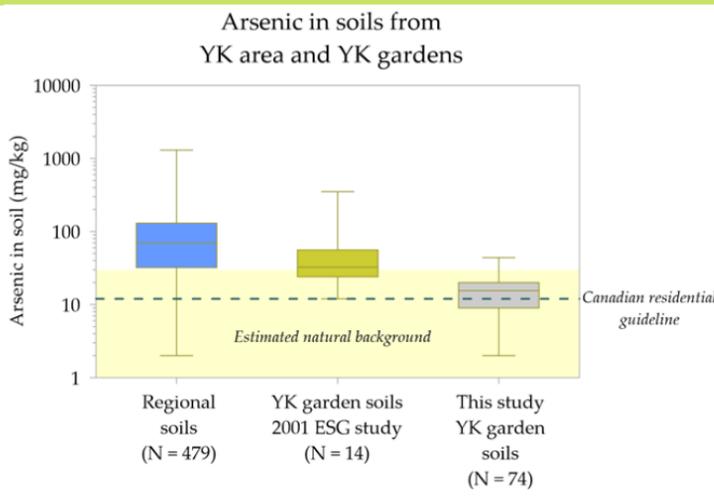
In Fall 2020, the YKGMS team collected soil and produce (including carrots, potatoes, and leafy greens) from **47 gardens** in Yellowknife, Ndilo and Dettah.

SAMPLE ANALYSIS



The samples were sent to labs at Royal Military College and Queens University (in Ontario). Soil and produce were analyzed for metals including arsenic, antimony and lead.

WHAT DID WE LEARN?



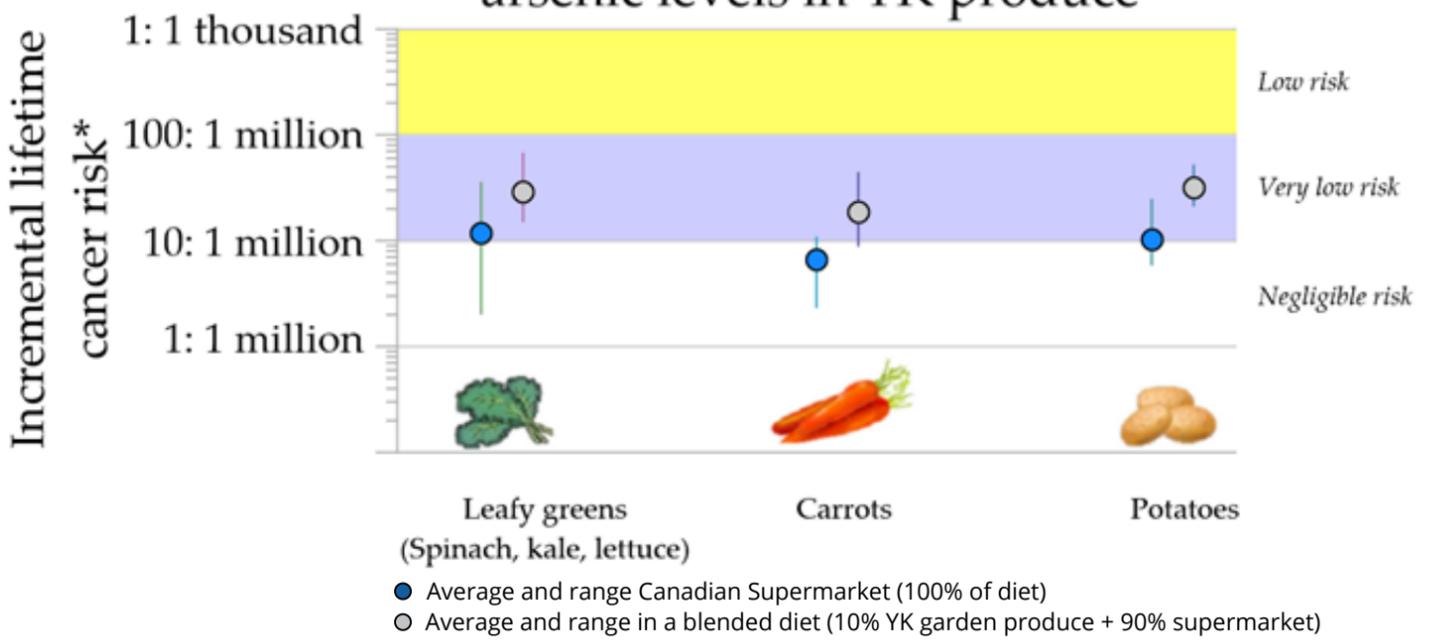
GARDEN SOILS

- Levels of antimony and lead in garden soils were **below** Canadian residential guidelines
- Levels of arsenic in soil were often **above** Canadian residential guidelines but were consistently **lower** than levels in undisturbed soil around Yellowknife and surrounding area.

GARDEN PRODUCE

- Levels of arsenic in produce (potatoes, carrots and leafy greens) grown in Yellowknife were **higher** than produce from supermarkets across Canada
- Levels of arsenic in produce in 2020 were **similar** to arsenic levels in the previous 2001 study.

Preliminary risk assessment for arsenic levels in YK produce



*Incremental lifetime cancer risk refers to the additional risk associated with undertaking an activity, above the risk from background conditions

IS IT SAFE TO EAT FOOD FROM MY GARDEN?

YES! Even though arsenic levels were *higher* in Yellowknife produce than a survey from Canadian supermarkets, the cancer risk associated with eating Yellowknife grown produce is very low*. The risk is comparable to radiation risk from one 3hr return flight per year for 60 years. The ongoing Health Effects Monitoring Program (HEMP, <http://www.ykhemp.ca/>) study that looked at arsenic levels in the Yellowknife population (through urine and toenail analysis) shows that **arsenic levels in the Yellowknife population are not higher compared to rest of Canada**. These complementary studies help to build our understanding of human exposure to arsenic in the Yellowknife area.

*As determined through a preliminary human health risk assessment based on a lifetime consumption (80 years) of 2 - 5 servings of garden produce per day (depending on age group), and assuming that 10% of the produce comes from a Yellowknife garden

WHAT'S NEXT?

- Additional samples collected in August and September 2021, analysis in Fall 2021.
- Final results will be shared with participants once project is complete (2022)

FOR MORE INFORMATION

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<https://nwtresearch.com/yellowknife-garden-metals-study>



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