DEPARTMENT OF NATIONAL HEALTH AND WELFARE

INTRADEPARTMENTAL CORRESPONDENCE

TO: Dr. Kingsley Kay
Industrial Health Laboratory

OUR FILE NO.

REF. YOUR FILE NO. DATED

FROM:

DATE: December 12/51

SUBJECT: Food Samples from Yellowknife

In accordance with arrangements for the analyses of the samples obtained at Yellowknife, I enclose herewith, the report of the work carried out by Mr. Bartlet of the Food Section of our Laboratory.

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LIP/bb
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Food Samples from Yellowknife

Introduction

Samples of milk, turnips, beets, potatoes, cabbage and carrots were obtained from the Division of Industrial Health in a survey on the arsenic contamination in the Yellowknife area.

Treatment of Samples

1. Milk.- The sample of milk arrived in Ottawa in good condition in two quart sealers. One sample of 50 ml. was taken from each sealer for acid digestion.

2. Cabbage.- The outer leaves were slightly discoloured and had several dark spots. A representative sample of 20 g. was taken for acid digestion. The inner leaves were chopped in fairly small pieces 100 g. of which were mixed in a Waring Blendor with 100 ml. of water. A 40 g. portion of the resulting slurry representing 20 g. of cabbage was taken for acid digestion.

3. Turnips, Beets, Potatoes, Carrots.- The vegetables were washed without scrubbing to remove only the loosely adhering soil. Several of the vegetables were quartered and then chopped into small pieces. A 100 g. sample of these pieces were mixed in a Waring Blendor with 100 ml. of water. Forty grams of the resulting slurry were taken for acid digestion.

The organic matter of the samples was destroyed with nitric, sulphuric and perchloric acids and the resulting solution dilute to 100 ml. Aliquots representing 4 g. of vegetable or 10 ml. of milk were taken for determination of arsenic by the bromide distillation method of Magnuson and Watson (1). Each sample was run in duplicate.

Results

The results are given in Table I. With the exception of the outer cabbage leaves all samples contained less than 1 p.p.m. arsenic.

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TABLE I. Arsenic Content of Milk and Vegetables.

Sample No.	Material	As p.p.m.
86	Milk 1	0.1
	2	0.1
87	Carrots	0.5
88	Cabbage outer leaves	2.5
	" inner leaves	0.2
89	Beets	0.5
90	Turnips	0.5
91	Potatoes	0.3

Conclusions

With the possible exception of the outer leaves of the cabbage which would probably be discarded, the amount of arsenic in the milk and vegetables examined would not constitute a health hazard.

J.C. Bartlet.

References

(1) Magnuson, H.J. and Watson, E.B., Ind. Eng. Chem., Anal. Ed., 16 339 (1944).