NUTRIENT TESTING LABORATORIES

This factsheet aims to support farmers in identifying analytical laboratories that provide agricultural testing services for producers in British Columbia, in particular for nutrient management. Knowing your soil fertility, crop/tissue quality, manure or compost composition, and soil health enhances your fertilization program. Your farm may be required to have soil fertility results (soil test phosphorus and post-harvest nitrate) at least once every 3 years to be compliant with **the Code of Practice for Agricultural Environmental Management**.

It is recommended to reach out to your preferred laboratory in advance for soil handling, storage and shipping conditions, and minimum sample quantities required for analysis. Most laboratories often supply free sampling bags, labels, and analysis request submission forms.

The following are common types of sample analyses offered by different laboratories.

- Soil fertility
- Crop or tissue quality
- Manure or compost nutrients
- Water quality
- Soil health/soil biology

Note: This list is not meant to be exhaustive and does not endorse any laboratory. Laboratories may offer additional services not listed in this factsheet. If other services are required, contact the laboratories directly.

LABORATORIES IN BRITISH COLUMBIA

MB Laboratories Ltd.
4-2062 W Henry Ave, Sidney, BC, V8L 5Y1
Phone: 250-656-1334
Email: info@mblabs.com
Website: mblabs.com
- Service offered: S, C, M, W, & SH[†]
- Provide service to interpret soil test result

BC Environmental Lab
2071-A Malaview Ave, Sidney, BC, V8L 5X6
Email: BCEL@gov.bc.ca
- Service offered: S, C, M, W, & SH

Frind Lab Services
3725 Boucherie Rd, West Kelowna, BC, V4T 0A8
Phone: 778-754-8051
Email: lab@frindwinery.com
Website: www.frindwinery.com
- Service offered: S, C, & W

Bureau Veritas Canada Inc.
4606 Canada Way, Burnaby, BC, V5G 1K5
Phone: 604-734-7276
Email: customersolutionswest@bureauveritas.com
Website: www.bvna.com/environmental-laboratories
- Service offered: S, C, M, W, & SH

Pacific Soil Analysis Inc.
5-11720 Voyageur Way, Richmond BC, V6X 3G9
Phone: 604 273-8226
Email: cedora19@telus.net
- Service offered: S & C

Element
19575 55 A Ave #104, Surrey, BC, V3S 8P8
Phone: 604-514-3322
Email: Info.vancouver@element.com
Website: www.element.com
- Service offered: S, C, M W, & SH

LABORATORIES OUTSIDE BRITISH COLUMBIA

Down to Earth Labs
3510 6 Ave North, Lethbridge, AB, T1H 5C3
Phone: 403-328-1133
Email: info@downtoearthlabs.com
Website: www.downtoearthlabs.com
- Service offered: S, C, M, & W
- Provide service to interpret soil test result

Brookside Laboratories, Inc.
200 White Mountain Dr. New Bremen, OH, 45869
Phone: 419-977-2766
Email: info@blinc.com
Website: www.blinc.com
- Service offered: S, C, M, W, & SH

ALS Laboratory Group
819 58th Street East, Saskatoon, SK, S7K 6X5
Phone: 306-668-8370
Website: www.alsglobal.com
- Service offered: S, W, & SH

A&L Canada Laboratories Inc.
2136 Jetstream Rd London, ON, N5V 3P5
Phone: 519-457-2575
Email: aginfo@alcanada.com
Website: www.alcanada.com
- Service offered: S, C, M, W, & SH
- Provide recommendations on soil test reports

AGAT Laboratories Ltd.
2910-12th Street NE, Calgary, AB, T2E 7P7
Phone 403-735-2005
Email: info@agatlabs.com
Website: www.agatlabs.com
- Service offered: S, C*, M, W, & SH

[†] *S, soil fertility; C, crop/tissue analysis, M, manure/compost; W, water quality; SH, soil health/soil biology.*
** Analysis performed in another location.*

KNOW YOUR SOIL TEST METHODS

Different laboratories use different methods to determine soil nutrient concentrations. Soil test values for a soil sample may vary from one laboratory method to another. Soil nitrogen methods are an exception; the choice of the laboratory method should have a minimal effect on nitrogen soil test values.

In conventional soil fertility testing, several factors are considered in selecting the appropriate method. A main factor is the **extractant** (the chemical solution added to a given soil to remove what should reflect the 'available' portion of a nutrient from that soil). For each laboratory that provides soil testing services, the default extractants and their chemical compositions used for soil phosphorus and potassium are listed in Table 1 and Table 2, respectively. When no specific method has been requested, these extractants will likely be used.

Knowing the extractant for your soil test will help with interpreting soil test values. The **Kelowna extractant** is recommended for measuring available phosphorus and potassium in BC soils. You can use our conversion worksheet to **convert soil phosphorus and potassium test results to 'Kelowna-equivalent' results**.

Table 1. Default methods (extractants) for available soil phosphorus and potassium tests of nutrient testing laboratories. Laboratories may offer additional methods upon request.

Laboratory	Phosphorus extractant	Potassium extractant
AGAT Laboratories Ltd	Modified Bray P1	Ammonium acetate
Pacific Soil Analysis Inc.	Bray P1	Ammonium acetate
MB Laboratories Ltd.	Modified Kelowna 94[†]	Modified Kelowna 94
Ministry of Environment Analytical Chemistry Services Laboratory (NRL)	Bray P1, Kelowna & Mehlich 3	Ammonium acetate, Kelowna & Mehlich 3
ALS Laboratory Group	Modified Kelowna 94 & Olsen P (bicarbonate)	Modified Kelowna 94
Brookside Laboratories, Inc.	Bray P1, Mehlich 3, Modified Kelowna 94 & Olsen P (bicarbonate)	Ammonium acetate, Mehlich 3, H3-A
Down to Earth Labs	Modified Kelowna 94	Ammonium acetate
Bureau Veritas Canada Inc.	Modified Kelowna 94	Modified Kelowna 94
Frind Lab Services	Bray P1 & Olsen P (bicarbonate)	Ammonium acetate
A&L Canada Laboratories Inc.	Bray P1 & Olsen P (bicarbonate)	Ammonium acetate

[†] *The Modified Kelowna 94 and Modified Kelowna 95 are based on the propositions of Qian et al. (1994) and Ashworth & Mrazek (1995), respectively.*

Table 2: Chemical Composition of common soil test phosphorus and potassium extractants.

Extractant	Chemical Composition
Ammonium acetate	1.0 M CH_3COONH_4 at pH 7.0
Bray P1	0.03 M NH_4F+ 0.025 M HCl
Modified Bray P1	0.03 M NH_4F+ 0.03 M H_2SO_4
Mehlich 3	0.015 M NH_4F + 0.2 M CH_3COOH + 0.013 M HNO_3 + 0.25 M NH_4NO_3 + 0.001 M EDTA
Kelowna	0.015 M NH_4F + 0.25 M CH_3COOH
Modified Kelowna 94	0.015 M NH_4F + 0.025 M CH_3COOH + 0.25 M CH_3COONH_4
Olsen P (bicarbonate)	0.5 M $NaHCO_3$ at pH 8.5

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