

# PRODUCT TESTING | UPDATE

## OVERVIEW, PROCESS & RESOURCES

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SPRING, 2022









# NSLC PRODUCT TESTING | OVERVIEW

**Objective:** To ensure Nova Scotians are buying safe and quality products, adhering to federal regulations

**Goal:** NSLC partnership with ALAB to develop a product testing program and execute product tests

**Strategy:** In FY22 the NSLC commenced the phased implementation of a product testing program

**Tactics:** All product listed by the NSLC (domestic and imported) will be subject to product testing requirements

 <p><b>Product:</b></p> <ul style="list-style-type: none"><li>• New and existing NSLC listings part of testing program</li></ul>	 <p><b>Farmgate:</b></p> <ul style="list-style-type: none"><li>• Will be assessed in future</li><li>• Not in immediate scope</li></ul>	 <p><b>Costs:</b></p> <ul style="list-style-type: none"><li>• NSLC currently paying for cost of tests that are executed by ALAB</li></ul>	 <p><b>Phasing:</b></p> <ul style="list-style-type: none"><li>• Rotational sample approach</li><li>• Lab capacity</li><li>• Budget considerations</li></ul>	 <p><b>Existing Cert:</b></p> <ul style="list-style-type: none"><li>• Certificates of Analysis from accredited labs will be accepted</li><li>• Suppliers may submit existing certificates</li></ul>	 <p><b>Timeline:</b></p> <ul style="list-style-type: none"><li>• Full integration into NSLC listing process to be effective for FY24 product listings</li></ul>
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# ABOUT ALAB

# ALAB BACKGROUND

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- Acadia Laboratory for Agri-food and Beverage
- Analytical tests for food & beverage sector
- ALAB formally established in 2017
- Full-time technician hired in 2018
- Housed on campus in the David Huestis Innovation Pavilion
  - 815 sq.ft. state-of-the-art lab
  - 2 offices / meeting space
  - Access to other labs, infrastructure and partners

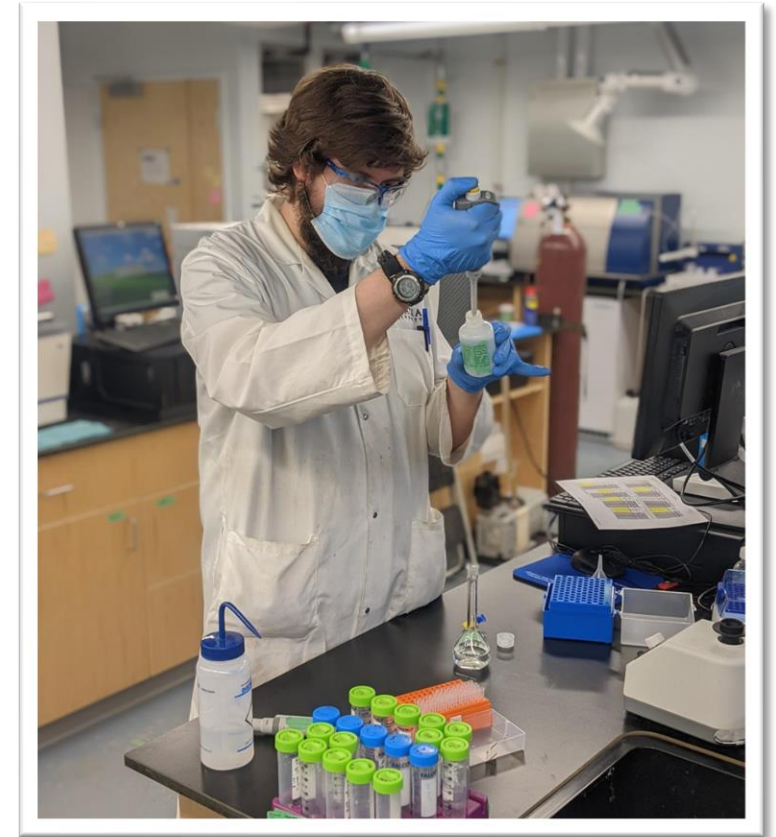
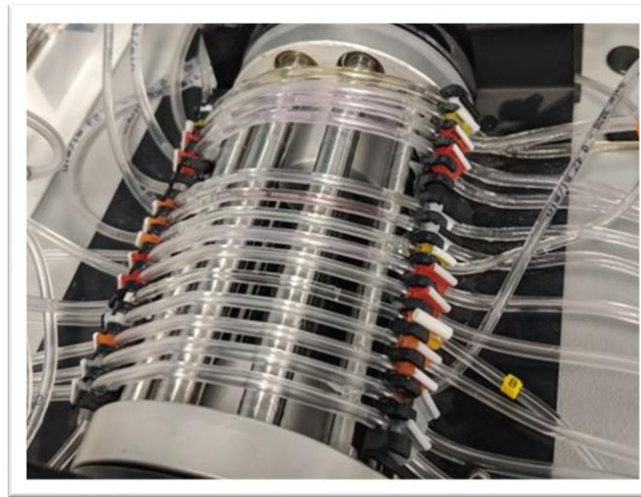
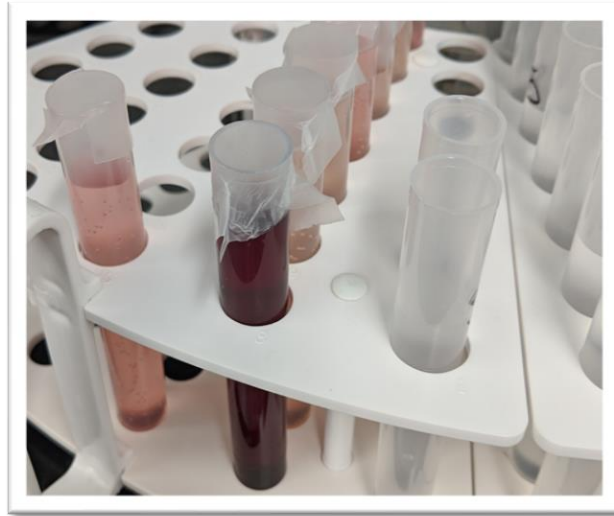


ALAB Video

# ALAB'S QUALITY ASSURANCE

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- ISO/ICE 17025 Accreditation received in February 2022
- Dedicated full time staff
- Fast response times
- Participation in monitored proficiency testing (ISO requirement)
- Intra-laboratory comparison testing (LCBO)



# ALAB'S SERVICES

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Product testing for all beverage alcohol products of raw and finished products

- Helps to ensure that your product is stable and protected
- Helps to ensure that your product is free of contaminants that are regulated by Health Canada
- Provides information for consumer interest (calories & carbohydrates, caffeine levels)
- Raw product analysis: Must, Grapes and Hops

Alcohol by Volume (ABV) - \$25/test

- Supports your production process with quick and inexpensive ABV analysis
- Ensures your accurate product labelling
- Usually same day turn around (except cream liqueurs)



# ALAB'S SERVICES

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Information on the following services can be found on ALAB's website <https://alab.acadiau.ca/home.html>

- List of all available analyses
- Sample submission forms with detailed instructions:
- Package deals for analyses are available
- We can work with you to develop new methods of analysis upon consultation



# ABOUT PERENNIA



# PERENNIA BACKGROUND

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- Perennia offers specialized development and consulting services to the agricultural, seafood, cannabis, and food and beverage processing sectors in Atlantic Canada.
- Our highly skilled and collaborative team focuses on superior customer service, proactive solutions and innovative approaches to meet client needs.
- Our mission is to support growth, transformation and economic development in Nova Scotia's agriculture, seafood, cannabis and food and beverage sectors.



[\(559\) Perennia Video - YouTube](#)



# SERVICES OFFERED BY PERENNIA

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## Quality and Food Safety

- Gap assessments and audit preparation
  - Identifying potential gaps in written programs
  - Correcting identified non-compliances
- Food safety program development and coaching
  - Regulatory
  - Third-party certifications
- Recall and traceability guidance
  - Traceability program development (one step back, one step forward)
  - Recall program development and implementation
- Training
  - Custom in-house training
  - Public
  - Virtual / e-Learning



# SERVICES OFFERED BY PERENNIA

## Product Development

- Formula development
  - Prototype development
  - Review existing formulations for food safety and scale up
- Ingredient sourcing
- Packaging options
- Process development
  - Develop processes that can be scaled up
  - Review existing processes for troubleshooting
- Scale up assistance
- Nutrition Facts table development and label guidance
- Shelf-life studies

## Mobile Services

- Mobile Bottling Service
- Crossflow Filtration



# SERVICES OFFERED BY PERENNIA

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## Winemaking Services

**Main goal:** Increase wine quality and meet current and emerging market demands

- Enological winery review
  - Overall examination of enological practices applied in the winery
- Sparkling winemaking assistance
  - Finding the most suitable sparkling winemaking method
  - Analysis of the current method to overcome any obstacle or to change the style
- Troubleshooting for winemaking
  - Defining the problem, solutions to overcome the problem and prevention
  - Bench trials for recommended products
- Blending assistance
  - Organoleptic evaluation of the wines and creation of the possible blend recipes
- Virtual consultation
  - Phone/online call consultations for wineries outside of Nova Scotia



# PRODUCT TESTING PROCESS

# PRODUCT TESTING PROCESS



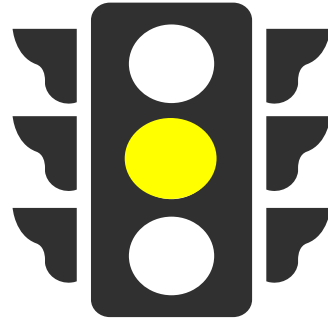
1. NSLC selects products to be tested based on a set of criteria (assortment grade, inventory)
2. Selected products are shipped from NSLC DC to ALAB by end of week
3. ALAB tests products the following week and records results
4. ALAB creates COAs declaring product either adheres to testing parameters or has minor or major variances
5. ALAB sends COA to NSLC
6. NSLC sends COA to producer and advises on next steps if variance is identified
7. Product removed from testing rotation

# NSLC PRODUCT TESTING | VARIANCE ACTION



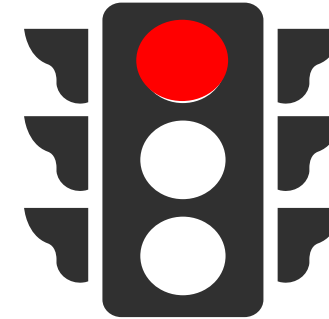
## Level 1 – No Variance (Green Light)

- There are no issues with the product and the COA will be shared with the producer via e-mail
- Action: NSLC shares COA with supplier



## Level 2 – Minor Variance (Yellow Light)

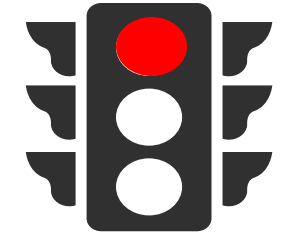
- There are variance levels that may trigger a conversation with the supplier, and in extreme cases de-listing due to flavour profile
- Action: NSLC to review the procedures, triage and take appropriate next steps with supplier



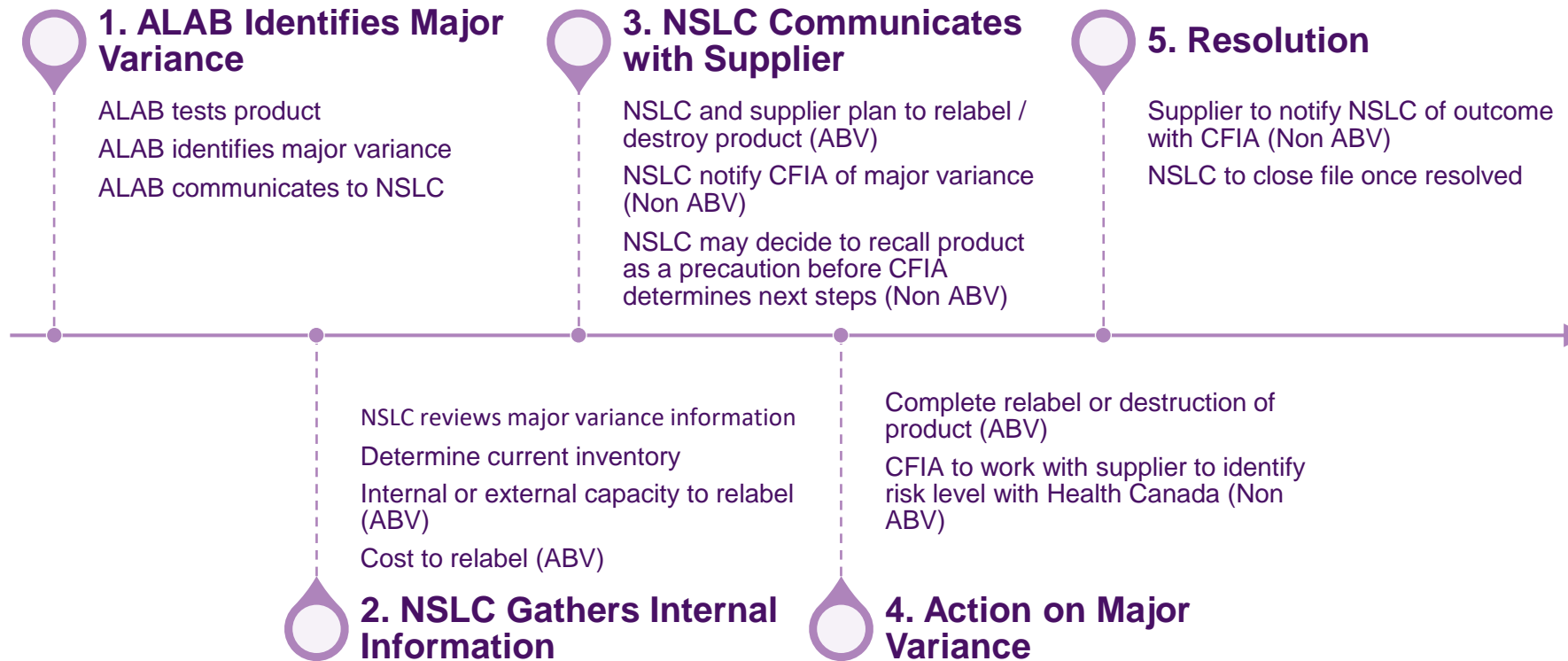
## Level 3 – Major Variance (Red Light)

- There are variance levels over Health Canada limits that require a conversation with supplier and notification to Canadian Food Inspection Agency
- No Health Canada limits exist for ABV so an ABV Major Variance has been established by the NSLC for customer safety
- Action: NSLC to review procedures and take appropriate next steps with supplier and/or CFIA

# MAJOR VARIANCE PROCESS



Level 3 – Major Variance  
(Red Light)





# CERTIFICATE OF ANALYSIS

HOW TO READ

# ALAB CERTIFICATE OF ANALYSIS (COA)

What is a certificate of analysis (COA)?

- A COA is a document certifying that a product has undergone specific testing with detailed results
- Document to record product specifications for consistent results



## Certificate of Analysis

COA ID  
NSLC2021041219

1. Product Name

**Client Name** Nova Scotia Liquor Corporation  
**Client Address** 93 Chain Lake Drive  
 Bayers Lake Business Park  
 Halifax, NS B3S 1A3

**Client Sample Name**  
**ALAB Sample Identifier** NSLC2021041219

7. Lot/Batch Code (Required)  
 Lot/Batch Code No Lot

8. Certificate ID Number

Parameter:	Result	Units	LOQ	Method Code
Alcohol	11.8	% Alc./vol	0.5	M018
Total SO <sub>2</sub>	74.2	mg/L	10	M006
Free SO <sub>2</sub>	33.8	mg/L	2.5	M006
VA	0.47	g/L Acetic Acid	0.1	M004
Total Reducing sugar	12.8	g/L Sucrose	1	M003
Sorbic Acid	129.1	mg/L	15	M007
Ethyl Carbamate	8.5	µg/L	5	M012
Arsenic	< 10	µg/L	10	M014
Cadmium	< 2	µg/L	2	M014
Cobalt	< 2	µg/L	2	M014
Copper	91	µg/L	20	M014
Lead	< 20	µg/L	20	M014

2. Parameter Name

3. Parameter Test Result Value

4. Unit of Measure

6. Limit of Quantitation

5. Test Method Used



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NSLC2021041219

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Parameter:	Result	Units	LOQ	Method Code
Alcohol	11.8	% Alc./vol	0.5	M018
Total SO <sub>2</sub>	74.2	mg/L	10	M006
Free SO <sub>2</sub>	33.8	mg/L	2.5	M006
VA	0.47	g/L Acetic Acid	0.1	M004
Total Reducing sugar	12.8	g/L Sucrose	1	M003
Sorbic Acid	129.1	mg/L	15	M007
Ethyl Carbamate	8.5	µg/L	5	M012
Arsenic	< 10	µg/L	10	M014
Cadmium	< 2	µg/L	2	M014
Cobalt	< 2	µg/L	2	M014
Copper	91	µg/L	20	M014
Lead	< 20	µg/L	20	M014

Where can COAs be found?

- After each product is tested, COAs will be emailed directly to the supplier, and will be stored in our internal database
- Results will be recorded via NSLC's internal product testing dashboard
- Individualized overview of your results will be available upon request

# PRODUCT TESTING RESOURCES

# PRODUCT TESTING RESOURCES | FACT SHEETS

## What are Fact Sheets?

- A resource prepared by Perennia, ALAB and the NSLC that details specifics about the testing parameters
- Includes parameter specific factors to consider when producing product
- Helps to interpret the parameters that are tested and found on your certificate of analysis

## Where can they be found?

- Fact Sheets for each beverage category are available on the myNSLC.com Trade Site: <https://www.mynslc.com/Trade-MyNSLC>

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**FACT SHEET**  
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To ensure labels are not false or misleading, the following ABV tolerances have been established by the NSLC for different product types:

Product Type	ABV Allowance		
	Adherence	Minor Variance	Major Variance
Beer	≤ 4.0% ABV	± 0.4% to ± 0.5%	Greater than ± 0.6%
	4.1 – 5.5% ABV	± 0.6% to ± 1.0%	Greater than ± 1.1%
	Less than ± 1.0%	± 1.1% to ± 1.5%	Greater than ± 1.6%
	Less than ± 0.3%	± 0.4% to ± 0.5%	Greater than ± 0.6%
	Less than ± 0.5%	± 0.6% to ± 1.0%	Greater than ± 1.1%
	Less than ± 1.0%	± 1.1% to ± 1.5%	Greater than ± 1.6%
	Less than ± 0.3%	± 0.4% to ± 0.5%	Greater than ± 0.6%
	Less than ± 0.5%	± 0.6% to ± 1.0%	Greater than ± 1.1%
	Less than ± 1.0%	± 1.1% to ± 1.5%	Greater than ± 1.6%
	Less than ± 0.3%	± 0.4% to ± 1.9%	Greater than ± 2.0%
	Less than ± 1.5%	± 1.6% to ± 2.9%	Greater than ± 3.0%
	Less than ± 1.0%	± 1.1% to ± 1.9%	Greater than ± 2.0%
	Less than ± 0.5%	± 0.6% to ± 1.4%	Greater than ± 1.5%

**FACTSHEET ALCOHOL BY VOLUME**

**FACT SHEET**  
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The alcohol by volume must be shown on the principal display panel in both English and French. The French translation is "X% d'alcool par volume". When abbreviated, the above statements are fully bilingual.

Both the Food and Drug Act and the Safe Food for Canadians Act prohibit manufacturers to label a product in a manner that is false, misleading, or deceptive or is likely to create the wrong impression regarding the product's character, quality, value, quantity, composition, merit, safety or origin or the manufacturing or preparation method. The ABV declared on the label must accurately reflect the ABV of the product. If a beer product has 4.7% alc/vol declared on the label, however the measured ABV is 5.5% alc/vol, this is an unacceptable discrepancy. Labelling products in a false or misleading manner is a violation of the Food and Drug Act and the Safe Food for Canadians Act.

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thanol including eep process runs to control

➤ Agricultural products added throughout production can influence the alcohol level in finished product.

➤ Some food additives may have an impact on microbial growth and fermentation and therefore influence alcohol levels.

➤ The aging process can influence the alcohol level. If aging takes place in a barrel, a certain volume of the product may evaporate depending on the relative humidity of the environment which may cause an increase or decrease in the alcohol level.

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# PRODUCT TESTING RESOURCES | LIMIT TABLES

## What are parameter Limit Tables?

- A resource prepared by Perennia, ALAB and the NSLC that outlines acceptable limits for each parameter that is tested
- Each column represents an internal triage level with corresponding actions:
  - Adherence, Minor Variance, Major Variance and Health Canada Limit
- Help to understand the results of your COA
- There is a document for each product category

## Where can they be found?

- Parameter Guidelines and corresponding Limit Tables for each beverage category are available on the myNSLC.com Trade Site: <https://www.mynslc.com/Trade-MyNSLC>



## PRODUCT TESTING PARAMETER GUIDELINES — BEER

### PURPOSE

The following table outlines acceptable limits for each parameter the NSLC test for. Each column represents an internal triage level with corresponding actions. This table is meant to help you understand the results of your Certificate of Analysis (COA).

- **Green** (adherence) indicates your product fell below Health Canada regulated and NSLC limits and no further action is required.
- **Yellow** (minor variance) indicates your product is approaching Health Canada regulated limits and has exceeded NSLC limits. Products that fall into the yellow category will receive follow-up communications and may be triaged for further assessment including retesting or a sensory review.
- **Red** (major variance) indicates your product has exceeded a Health Canada regulated limit. Products in this category will receive a follow-up call and notification to the Canadian Food Inspection Agency (CFIA). The CFIA will work with you directly to assess risk and advise on next steps, if required.

### PARAMETER LIMITS

BEER ELEMENT TESTED	ADHERENCE	MINOR VARIANCE	MAJOR VARIANCE	HEALTH CANADA LIMIT
ABV Allowance - products under 4.0% ABV	Less than $\pm 0.3\%$	$\pm 0.4\%$ to $\pm 0.5\%$	Greater than $\pm 0.6\%$	N/A
ABV Allowance - products 4.1 - 5.5% ABV	Less than $\pm 0.5\%$	$\pm 0.6\%$ to $\pm 1.0\%$	Greater than $\pm 1.1\%$	N/A
ABV Allowance - products over 5.6% ABV	Less than $\pm 1.0\%$	$\pm 1.1\%$ to $\pm 1.5\%$	Greater than $\pm 1.6\%$	N/A
Sugar	Less than 40 g/L	N/A	Greater than 40 g/L	Limit 4% (40 g/L)
Ethyl Carbamate - products under 8.5% ABV	Less than 15 $\mu\text{g/L}$	Greater than 15 $\mu\text{g/L}$	Greater than 150 $\mu\text{g/L}$	Limit 150 $\mu\text{g/kg}$ *(150 $\mu\text{g/L}$ )
Ethyl Carbamate - products over 8.5% ABV	Less than 30 $\mu\text{g/L}$	Greater than 30 $\mu\text{g/L}$	Greater than 150 $\mu\text{g/L}$	Limit 150 $\mu\text{g/kg}$ *(150 $\mu\text{g/L}$ )
Arsenic	Less than 100 $\mu\text{g/L}$	N/A	Greater than 100 $\mu\text{g/L}$	Limit 100 $\mu\text{g/L}$
Cadmium	Less than 20 $\mu\text{g/L}$	N/A	Greater than 20 $\mu\text{g/L}$	Limit 20 $\mu\text{g/L}$
Cobalt	Less than 20 $\mu\text{g/L}$	N/A	Greater than 20 $\mu\text{g/L}$	Limit 20 $\mu\text{g/L}$
Lead	Less than 200 $\mu\text{g/L}$	N/A	Greater than 200 $\mu\text{g/L}$	Limit 200 $\mu\text{g/L}$
Pesticides	Coming in 2022	Coming in 2022	Coming in 2022	Coming in 2022
Glossary of Terms ABV - alcohol by volume g/L - grams per litre $\mu\text{g/kg}$ - micrograms per kilogram $\mu\text{g/L}$ - micrograms per litre *Conversion factor = micrograms per litre divided by the density ( $\text{g/cm}^3$ ) of the product				

### FOR MORE INFORMATION

If you have further questions regarding the established limits, product testing, or your COA results, please direct them to [ProductTesting@MyNSLC.com](mailto:ProductTesting@MyNSLC.com).

# PRODUCT TESTING RESOURCES | NSLC STANDARD ANALYSIS PARAMETER TABLE

ALAB	Wine & Cider	Beer	Spirits (Standard as defined in Food & Drug Regulations)	Non-Standard Products <sup>1</sup>
Alcohol (ABV)	•	•	•	•
Free SO <sub>2</sub>	•			•
Total SO <sub>2</sub>	•			•
Sugar	•	•	•	•
Sorbic acid	•			•
Volatile acidity	•			
Metals - arsenic, cadmium, cobalt, copper, lead	•	•	•	•
Ethyl carbamate	•	•	•	•
Methanol <sup>3</sup>			•	•
Synthetic dyes				•
Pesticides <sup>2</sup>	•	•		•

1. Beverages with no standard in Division 2 of the Canadian Food & Drug Regulations (incl. ready-to-drink spirits and wine/beer-based coolers)
2. To come later in 2022 – Will also require for beer and wine-based coolers. Pesticides testing is not explicitly mandated by the Food and Drug Act but is required by the LCBO.
3. Products made with distilled alcohol

# NSLC STANDARD ANALYSIS PARAMETERS | ALCOHOL BY VOLUME



What is alcohol by volume (ABV)?

- A standard measure of the alcohol content in alcoholic beverages
- Food and Drug Regulations require all alcoholic beverages containing 1.1% or more ABV to declare the percentage by volume of alcohol contained in the product on the label

Why is ABV tested?

- To ensure that the ABV declared on the label is what the product contains

What are the factors influencing ABV?

- Ingredients and formula
- Process controls
- Environment





# NSLC STANDARD ANALYSIS PARAMETERS | METHANOL



What is methanol?

- Chemical naturally formed during fermentation when pectin in fruits is broken down
- Used in many different industrial applications

Why is methanol tested?

- Exposure to high concentrations of methanol can result in methanol poisoning and cause short- and long-term health effects such as damage to or death of the optic nerve

What are the factors influencing methanol levels?

- Raw materials
- During processing (e.g., pH and temperature at different process steps, distillation method)
- Economically motivated adulteration



# NSLC STANDARD ANALYSIS PARAMETERS | HEAVY METALS



What are heavy metals?

- Naturally occurring elements found throughout the earth's crust
- Human activities have caused them to become distributed throughout the air, water, and soil
- Arsenic, Cadmium, Cobalt, Copper, Lead

Why are they tested?

- Most are classified as carcinogenic or possibly carcinogenic agents by the International Agency for Research on Cancer

What are the sources of heavy metals?

- Raw materials (e.g., fruits, vegetables, grains, additives, water)
- During processing (e.g., water, equipment)



# NSLC STANDARD ANALYSIS PARAMETERS | PESTICIDES



What are pesticides?

- Pest control products including herbicides, insecticides, fungicides, rodenticides, etc. that are made from synthetic or naturally occurring ingredients
- Regulated by Health Canada

Why are they tested?

- Hazardous to human health and can have both short- and long-term health effects that most often affect the nervous system

What are the sources of pesticides?

- Raw materials
- Water source



# NSLC STANDARD ANALYSIS PARAMETERS | SUGAR



What is sugar?

- Residual sugar is tested
- Residual sugars are what remains in the product post-fermentation

Why is sugar tested?

- Main reason for sugar limits is based on the standard of identity for the products
- Beer – help distinguish beer from malt-based beverages
- Vodka/Dry Gin – ensure standard of identity
- Icewine – ensures only natural sugars are present and the quality profile of the product

How can we control sugar levels?

- Formulations
- Efficient fermentation
- If adding to permitted products, ensure levels are not exceeding limits



# NSLC STANDARD ANALYSIS PARAMETERS | ETHYL CARBAMATE



What is ethyl carbamate?

- Chemical that forms during fermentation
- Reaction of urea and ethanol
- Malolactic fermentation

Why is ethyl carbamate tested?

- Classified as “probably carcinogenic to humans”
- Health Canada has stated it may pose a health risk

What are the factors influencing ethyl carbamate levels?

- Excessive fertilization with urea and nitrogen on grape crops
- Long cooling time during fermentation process
- High temperature and light exposure during storage
- Type of yeast being used in fermentation
- Carrying out malolactic fermentation in winemaking and cidermaking
- Old, aged wine tend to show higher levels as ethyl carbamate forms slowly during aging
- Copper distillation equipment
- Source of ingredients being used

# NSLC STANDARD ANALYSIS PARAMETERS | SYNTHETIC COLOURS (DYES)



What are synthetic colours (dyes)?

- Any organic food colour, other than caramel, that is produced by chemical synthesis and that has no counterpart in nature
- Only permitted in liqueurs and unstandardized beverages (RTDs)

Why are synthetic colours tested?

- Consumer health concerns based on how they are sourced and produced

How can we control synthetic colour levels?

- Ensure they are used properly to prevent exceeding the limits
- Use natural options instead if colour is wanted for a product
- To avoid in products which they are not allowed, review all ingredients to ensure none are present



# NSLC STANDARD ANALYSIS PARAMETERS | FREE AND TOTAL SO<sub>2</sub>



What is free and total SO<sub>2</sub>?

- A widely used food preservative
- Two of the main purposes: antiseptic and antioxidant
  - Free SO<sub>2</sub>
  - Total SO<sub>2</sub>

Why are they tested?

- During production:
  - Irritation of the eyes, mucous membranes, skin, and respiratory tract
  - Bronchospasm, pulmonary edema, pneumonitis, and acute airway obstruction
- Issues for people who suffer from chronic pulmonary diseases, such as asthma

How can we control free and total SO<sub>2</sub> levels?

- Establish proper cleaning and sanitation protocols in the production area
- Determine the necessary amount
- Read the technical data sheet provided by the manufacturer
- Keep track of all the additions



# NSLC STANDARD ANALYSIS PARAMETERS | SORBIC ACID



What is sorbic acid?

- An antimicrobial agent mainly used in potassium sorbate form
- Prevent fermentation in bottles by inhibiting the yeasts

Why is sorbic acid tested?

Upon inappropriate usage:

- Side effects such as possible allergies and skin rashes

How can we control sorbic acid levels?

- Determine the necessary amount
- Read the technical data sheet provided by the manufacturer
- Follow the direction of use and recommendations of dosage
- Keep track of all the additions





# NSLC STANDARD ANALYSIS PARAMETERS | VOLATILE ACIDITY



What is volatile acidity (VA)?

- A critical parameter for the quality of wine and cider
- Almost entirely consists of acetic acid

What causes volatile acidity?

- Raw fruits (damaged or microbial spoilage)
- Yeast and bacteria activity during fermentations
- Bacterial spoilage
- Barrel aging

How can we control volatile acidity levels?

- Cleaning and sanitation protocols
- Fermentation management
- Minimize the oxygen exposure
- Secure microbial stability of the products



# HOW TO READ YOUR COA

# HOW TO READ YOUR COA

Results in **Green** = Adherence  
 Results in **Yellow** = Minor Variance  
 Results in **Red** = Major Variance

## Minor Variance Examples:

**Alcohol** > 1.1% from stated label value

**Volatile Acidity** > 1.3 g/L VA in a table wine

Date Printed: 2022-03-30



COA ID  
 NSLC2022033001

## Certificate of Analysis

**Client Name** Nova Scotia Liquor Corporation  
**Client Address** 93 Chain Lake Drive  
 Bayers Lake Business Park  
 Halifax, NS B3S 1A3

**Client Sample Name** ALAB Chateau Plonk (11.5% ABV on Label)  
**ALAB Sample Identifier** NSLC2022033001 **Lot/Batch Code** ALAB 03/30/2022

Parameter:	Result	Units	LOQ	Method Code	Completion Date
Alcohol	12.7	% Alc./vol	0.5	M018	30-Mar-22
Total SO <sub>2</sub>	257.0	mg/L	10	M005	30-Mar-22
Free SO <sub>2</sub>	85.0	mg/L	2.5	M005	30-Mar-22
Volatile Acidity	2.00	g/L Acetic Acid	0.1	M004	30-Mar-22
Total Reducing sugar	46.7	g/L Sucrose	1	M003	30-Mar-22
Sorbic Acid	157.0	mg/L	15	M007	30-Mar-22
Ethyl Carbamate	45.0	µg/L	5	M012	1-Apr-22
Arsenic	117	µg/L	10	M014	31-Mar-22
Cadmium	< 2	µg/L	2	M014	31-Mar-22
Cobalt	< 2	µg/L	2	M014	31-Mar-22
Copper	1050.0	µg/L	20	M014	31-Mar-22
Lead	< 20	µg/L	20	M014	31-Mar-22

# HOW TO READ YOUR COA

Results in **Green** = Adherence  
 Results in **Yellow** = Minor Variance  
 Results in **Red** = Major Variance

## Major Variance Examples:

**Free SO<sub>2</sub>** > 70mg/L

**Ethyl Carbamate** > 30 ug/L

**Arsenic** > 100 ug/L

**Copper** > 1000 ug/L

Date Printed: 2022-03-30



COA ID  
 NSLC2022033001

## Certificate of Analysis

**Client Name** Nova Scotia Liquor Corporation  
**Client Address** 93 Chain Lake Drive  
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 Halifax, NS B3S 1A3

**Client Sample Name** ALAB Chateau Plonk (11.5% ABV on Label)  
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Parameter:	Result	Units	LOQ	Method Code	Completion Date
Alcohol	12.7	% Alc./vol	0.5	M018	30-Mar-22
Total SO <sub>2</sub>	257.0	mg/L	10	M005	30-Mar-22
Free SO <sub>2</sub>	85.0	mg/L	2.5	M005	30-Mar-22
Volatile Acidity	2.00	g/L Acetic Acid	0.1	M004	30-Mar-22
Total Reducing sugar	46.7	g/L Sucrose	1	M003	30-Mar-22
Sorbic Acid	157.0	mg/L	15	M007	30-Mar-22
Ethyl Carbamate	45.0	µg/L	5	M012	1-Apr-22
Arsenic	117	µg/L	10	M014	31-Mar-22
Cadmium	< 2	µg/L	2	M014	31-Mar-22
Cobalt	< 2	µg/L	2	M014	31-Mar-22
Copper	1050.0	µg/L	20	M014	31-Mar-22
Lead	< 20	µg/L	20	M014	31-Mar-22

# PRODUCT TESTING | RESOURCE SUMMARY



## The NSLC

- NEW Product Quality Assurance Coordinator [Emilie Labossiere](#)
- Certificates of Analysis – *Individualized results available upon request*
- Trade Site- Policy, Training Document, Fact Sheets, Limit Tables
- <https://www.mynslc.com/Trade-MyNSLC>

Questions about NSLC's Product Testing Program can be directed to Emilie Labossiere at [Product.Testing@mynslc.com](mailto:Product.Testing@mynslc.com)



## Perennia NS

- Support with major variances: assessments and troubleshooting
- Additional quality and food safety resources
- Coaching on QA program development and implementation
- Resources- Fact sheets, publications, videos and webinars
- <https://www.perennia.ca/>

Questions about Perennia's resources can be directed to [innovation@perennia.ca](mailto:innovation@perennia.ca)



## Acadia Laboratory for Agri-food and Beverage

- Product testing for all beverage alcohol products
- Grapes and hops analysis
- ABV only testing available \$25
- <https://alab.acadiau.ca/home.html>

Questions about ALAB's resources can be directed to [alab@acadiau.ca](mailto:alab@acadiau.ca)

**THANK YOU**