

CDL's Way

Sugaring Guide - Fourth edition | 2024



**Welcome to
Maple Nectar
Among Natural
Sweeteners!**



Meet Sabrina Bouwman

16



CDL Technology Center
now 100% automated

14



CDL
SUGARING
EQUIPMENT





We've already reached the fourth issue of CDL's Way! What a great opportunity to keep you informed on the latest developments in our industry.

On February 20, 2024, the CDL team completed the acquisition of a company that specializes in processing maple products. This was an important step for us to advance our maple nectar project internationally and keep the CDL Corporate Group involved in every step from tree to table. We strongly believe that close collaboration between maple syrup producers and processors will benefit our industry in the long term. With this new acquisition, we are determined to work as hard in this area as we always have on our equipment.

The coming months will see the expansion of several sugar bushes and the addition of several new maple syrup producers in North America. CDL is also preparing to add a number of innovative new technologies again this year, with the aim of making maple syrup producers' jobs easier and allowing more producers to make the switch to renewable energy and remote equipment management.

I hope you will enjoy reading this latest edition of our magazine. Our intention is to offer content that will be useful to you as a maple syrup producer and will help you make the right technology choices.

Martin Chabot
Co-owner and
General Manager of CDL USA



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CDL Corporate Group acquires Prestige Maple Products inc.	3
Another successful sugaring season with HeRO concentrator	4
Maintaining your RO and managing its membranes properly	6
A unique jug labeling process in the maple syrup industry	8
Maple Nectar: an Ingredient Soon to Take its Place in the World of Natural Sweeteners!	9
Backwoods Maple Syrup	10
4.0: The technological revolution in maple sugaring	12
CDL Technology Center now 100% automated	14
Meet Sabrina Bouwman	16
The contribution of Jesse Randall in the transformation of the American Midwest Maple Syrup Tradition	18
Behind the scenes of the Maple Syrup Industry and its Impact on North American Legislation	19
Meet Our New Generation of Maple Producers!	20
Preparing the future generation of passionate maple producers!	21
How do I get organic, carbon neutral and HACCP certifications?	22
Annual Ontario Summer Tour – Update	24
A New Tool for Accurate Brix Measurement	25
Things to Keep in Mind when Managing your Sugar Bush	26
Mastering Maple Syrup Filtration with a Filter Press	28
The Créneau d'excellence Acéricole: Driving the Growth of the Maple Industry	30
Forging Bellechasse region Identity through Maple Sugaring Heritage	31



By Vallier Chabot
Co-owner and
General Manager of CDL

CDL CORPORATE GROUP ACQUIRES PRESTIGE MAPLE PRODUCTS INC.

CDL Corporate Group has recently acquired Prestige Maple Products Inc., a family-owned company specializing in the production and distribution of processed and packaged maple products. This acquisition, leveraging the complementary synergies of both companies, will enable Prestige Maple Products to ensure its growth and continue its development through product diversification in both domestic and international markets.

Prestige Maple Products is located in St-Eusèbe in the Bas-St-Laurent region. Its strategic location, quality services to maple producers, processed products to consumers, its team and its specialized infrastructures in maple product processing are the reasons why Prestige Maple Products was a desired partner for CDL. Mr. Patrick Lavoie, founder of Prestige Maple Products and former owner, explains: "CDL is a family-owned company like ours, well-known in the maple industry. The association of these two companies with common family values was therefore quite natural!"

GROWING THE MAPLE MARKET POTENTIAL

The change in leadership will span several months, if not years. "I will remain active and will oversee syrup procurement at Prestige Maple Products. My passion and motivation lie in connecting with producers. Therefore, it was important for me to continue to take on this role and participate in building the next generation for this function," ensures Patrick Lavoie. He adds: "The excellent business relationship with our partner maple producers is also a key element in developing innovative maple products."

Through this acquisition, Prestige Maple Products will soon be able to develop new distinct and complementary



Vallier Chabot, Carl Cyr, Julie Ouellet, Cynthia Dubé et Patrick Lavoie

products to maple syrup sourced from maple production. Through this acquisition, the two entities, which will remain distinct in their daily management, will continue to grow and improve the maple industry. Mr. Vallier Chabot, from CDL Corporate Group, explains: "We believe that the new opportunities envisioned will be a great opportunity for all maple producers, and ultimately, it will grow the global potential of the maple market."

The new synergies soon to be implemented between these two companies, aiming for integration from the tree to the consumers, will therefore be an advantage for the development of the entire North American maple industry.

ABOUT PRESTIGE MAPLE PRODUCTS INC.

Founded in 1995 by the Lavoie family, the company began with the acquisition of a 2,000 taps maple grove in Témiscouata, Quebec. In 1998, the family created Sirop de l'Est for the distribution and export of bulk maple products. In 2014, new infrastructure was put in place to enhance production capacity. In January 2017, the Prestige Maple Products Inc. division was created for the production and distribution of processed and packaged maple products.



The infrastructures of Prestige Maple Products Inc.



ANOTHER SUCCESSFUL SUGARING SEASON WITH HERO CONCENTRATORS

In the demanding world of maple syrup production, where each sugaring season brings its own set of challenges, technological advancements are invaluable allies for producers.

This year, we had the privilege of gathering testimonials from three of our customers about their experience with HeRO concentrators during the 2024 sugaring season. Before delving into their inspiring stories, we want to express our gratitude to these customers for their participation in this article, as well as to all our other customers for their continued trust in CDL for acquiring their equipment. HeRO concentrators offer advanced features, including full automation, multiple available configurations being modular, and the ability to concentrate from 1.5 to 30 Brix, even at the end of the season, with flow rates ranging from 720 to 7200 GPH. Let's discover how these features transformed our customers' sugaring season and helped optimize their operations.

AUTOMATE CONCENTRATION IN YOUR SHACK AND PUMP STATIONS!

- Stainless steel pressure pumps (turbines)
- Positive recirculation system that allows operation for several hours without decreasing efficiency. This unique system helps prolong the lifespan of membranes
- Post: Maintenance-free submersible motor reliable for over 15 years
- Low-pressure protection now controlled by differential pressure, facilitating management of filtration unit changes
- High-pressure protection
- High-temperature protection

NEW FEATURES FOR 2024

- Concentrate detection reading upon arrival in the tank
- Open drain valve protection on the concentrate tank
- Customized wash configuration
- Starting a tank wash cycle during concentration
- Intelligent management of maple water if 2 concentrate tanks
- Concentration end at lower flow rate with turbine management
- Shutdown protection based on pressure control opening



MORE THAN 37 CONFIGURATIONS

AVAILABLE TO SUIT YOUR BUSINESS AND AMBITIONS!

FOR FLOW RATES OF 720 TO 7200 GPH AND MAXIMUM CONCENTRATION IN ONE PASS ACCORDING TO THE DESIRED BRIX OF 15, 20, 25, OR 30 BRIX! AVAILABLE IN MANUAL OR INTELLIGENT/AUTOMATED.

VALLEE FARM - FRANKLIN, VERMONT

“No more washing and cleaning late at night!”

At the Vallee Farm, a family maple syrup producer in Franklin County, Vermont, each year brings new advancement in technology and operational best practices. One of the improvements of the past two years is the replacement of manual RO by the new CDL Intelligent HeRO automated system.

Jack Vallee told us about his experience with this automated equipment. “We now have three HeROs, one at our sugarhouse and two at pumping stations. Even though there are still performance adjustments to make with our machines, the automation allows us to focus on all the other important aspects of sugaring. We really appreciate not having to drive back to the sugarhouse at 2AM to start a rinse cycle! No more debating of ‘I’ve got the RO tonight.’ That alone almost justifies the added expense of automation.”



ÉRABLIÈRE DAVID DOSTIE - ESTRIE, QUÉBEC

“Remote control is the key!”

David Dostie now operates some 140,000 taps, including 115,000 on public land, mainly in the Eastern Townships - in Notre-Dame-des-Bois, Saint-Robert-Bellarmin and Scotstown, but also in the Laurentians, in Quebec.

According to David, the greatest benefit of his HeRO intelligent concentrator is the fact that he can control it remotely. “Even if you’re in the woods, you can set a wash!”

The owner of the maple grove finds the intelligent HeRO reliable and of good quality. “What’s more, when you call for service, they can help you remotely! How convenient! I’d definitely recommend it.”

ADAM MAPLE - LANARK, ONTARIO

“The HeRO concentrator works on its own!”

This spring, Jeremy Adam and his wife Zoe, maple syrup producers in McDonald’s Corners in Lanark County, Ontario, operated 25,000 taps and experienced the benefits of the HeRO concentrator for the third year. The transition from a manual process to the benefits of an intelligent HeRO concentrator has gone smoothly. Initially, that switch was made to simplify their lives.

“Even though, like most maple syrup producers, we know how to do PEP tests, the fact that they run themselves after a wash is very handy,” but that’s not the only advantage Jeremy finds. “I can keep track of everything on my phone. So, we can leave the camp, go check the pipelines and finish tapping, leaving the work to be done on its own, no need to babysit! This saves time to perform other tasks. We’re very satisfied with this aspect.”





MAINTAINING YOUR RO AND MANAGING ITS MEMBRANES PROPERLY

It's crucial to carefully maintain your RO and properly manage its membranes to keep your equipment running at its best. Doing so not only extends the life of the equipment, but also helps to keep it clean, sterile, and in good working order. Keeping the RO in good condition also gives it better yield and is more cost efficient in the long term.

CHOOSING AND MAINTAINING PRE-FILTERING CARTRIDGES

Properly choosing and maintaining your pre-filtering cartridges for your RO is a key step in the concentration process. For all types of ROs, we recommend CDL's 5-micron cartridges, which are excellent at filtering undesirable particles. It's important to replace the cartridges regularly to make sure the pre-filter continues to work properly. It's also a good idea to have a specific pre-filtering cartridge for membrane washing to prevent the soap from cross contaminating the sap. There are pre-filtering cartridges for all types of ROs, from the 97/8" model for the Nano RO to the 20" for the Fendouse and HeRO! For higher capacity ROs like the HeRO, multi cartridges (with five 20" cartridges) are a good choice.

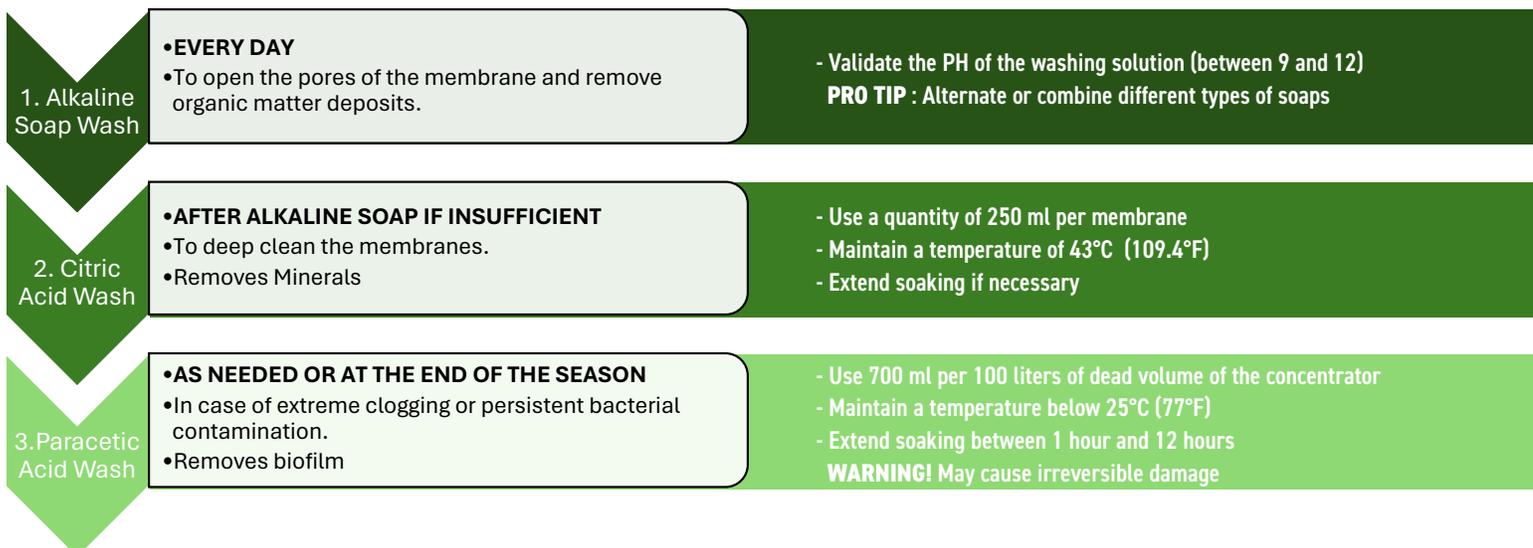
MEMBRANE MODELS AND PRECAUTIONS

CDL offers different membrane sizes for each of its ROs, including 4" membranes for the Nano and Hobby ROs, 8" membranes for the Fendouse and HeRO, without forgetting the 16" membranes. Before using a new membrane, it's important to soak it for at least 24 hours.

Doing so helps maximize its efficiency when you start concentrating. Always pay close attention to the moisture level of the membranes and keep them from frosting over to ensure they remain structurally sound. It's also critical to never leave a membrane soaking in sugar water when the RO isn't in use. This will quickly and significantly damage the membranes. As soon as concentration is complete, the RO needs to be desugared and rinsed.

THE IMPORTANCE OF REGULAR MAINTENANCE

Several factors influence membrane performance. The operating pressure, sap temperature, ionic strength (sugar concentration), membrane porosity, membrane condition, sap quality, bacterial load, pH, recirculation system efficiency, and pre-filtration quality all have an impact! That's why regular membrane maintenance is essential to keeping your system running properly all season long. Washing prevents bacterial growth, prevents the membrane pores from clogging, and even extends the membranes' lifespan.



WASHING INSTRUCTIONS FOR TOP PERFORMANCE

You will need to wash your membranes with different substances, like alkaline soap, citric acid, and peracetic acid (at the end of the season) to make sure they keep performing properly.

1. ALKALINE SOAP WASH

The first step in a membrane wash should always be an alkaline soap wash. Available as a liquid or powder, with conventional and organic options, alkaline soap opens the membrane pores and removes biofilm and organic matter deposits. Membrane manufacturers recommend daily washes to prevent potential damage from excessive dirt. For best results, you can combine or alternate different types of soap, depending on the type of clogging. The solution should be the same colour at the start and end of the soap wash; otherwise, the membrane will need to be drained, rinsed briefly, and washed again. The easiest way to determine how much soap to use is to check the pH of the wash tank. Depending on the membrane, the pH of the solution should be between 9 and 12.

2. CITRIC ACID WASH

When washing with alkaline soap isn't enough, citric acid is the second step. Citric acid washing should only be carried out after maximizing the effectiveness of alkaline washes, as indicated by a clear solution in the wash tank during the last wash. You need 250 ml of citric acid per membrane for this step, and the washing temperature has to reach 43 °C for maximum efficiency. Membranes can be soaked in citric acid for a few days, but it's recommended to circulate the liquid occasionally (by starting the RO for a few minutes and leaving them to soak) for greater efficiency. Since citric acid closes the membrane pores, the acid wash should be followed by a rinse, then an alkaline wash and a final rinse. This is necessary to preserve the integrity of the membranes and maintain their performance.

3. PERACETIC ACID WASH

If alkaline soap and citric acid aren't enough, you can also use peracetic acid. It's a sterilizing treatment that's typically used at the end of the season, but it's a good idea to use it regularly to prevent bacteria from growing on the membrane. Peracetic acid also kills bacteria, and is used when soap and acid are no longer working and the membranes aren't performing at their best. For this wash, you need to add 700 ml per 100 litres (1 oz per gallon) of the RO's dead volume. The solution must not exceed 25 °C. Membranes should be soaked in the solution for 1 to 12 hours, depending on how clogged they are. It's vital

to follow the instructions carefully, because peracetic acid can cause irreversible damage if used incorrectly.

CLEANING AND STORING MEMBRANES AT THE END OF THE SEASON

At the end of the season, it's important to give the membranes a final wash with soap followed by a thorough rinse. Completely drain the RO and posts, then store the membrane in a canister with a sodium metabisulfite solution, which prevents bacterial growth. It's a good idea to check the condition of the membrane periodically and replace the preservative solution every six months. You can also store the membranes in a citric acid solution right in the RO posts. For users of the Nano RO, an even simpler solution is available: once you've finished your last wash, let the membranes drain, then put them in an airtight bag and freeze them.

Keep an eye on your RO all season long. If you notice any unusual noises or abnormalities, don't wait until the next season to check it! Proactive maintenance and repair are crucial to keeping your production running smoothly.



8" membrane in front of a post cart



By **Eric Labrecque**
Sales Manager - Packaging Division at CDL

MEMBRANE WASHING SERVICE

Did you know that CDL offers professional membrane washing services for 4", 8", and 16" membranes? The first step is a visual inspection of the membrane, as well as conducting an initial PEP (Performance Evaluation Protocol). The initial PEP helps assess the membrane's performance upon arrival. Analyzing this data is crucial as it provides insights into membrane usage and maintenance during the season. If the initial PEP results are low, it may indicate a need to review maintenance processes during the season. Following the initial PEP, we proceed with the CDL washing protocol, which includes alkaline soap, citric acid, and peracetic acid washes, combined with rinsing and soaking. These elements are used optimally to maximize washing efficiency, final performance, and ultimately, the membrane's lifespan. Once the CDL washing protocol is completed, a final PEP is conducted. The membrane is then stored in a storage tank with a sodium metabisulfite solution to protect it until the next season.

When you come to retrieve your membrane, our team will provide you with a simplified performance report. This report includes the initial and final PEP results, performance percentage (a comparison to a new membrane of the same type), and the minerals that the membrane allows to pass through. Additionally, the report indicates whether the membrane meets compliance standards (if it allows too many minerals to pass through, indicating sugar passage). With the assistance of our experts if needed, this report enables adjustments to be made to membrane usage and cleaning during the season. Choosing CDL's membrane washing service ensures maximized performance and lifespan for your membranes! Inquire at your regional branch for more information!

A UNIQUE JUG LABELING PROCESS IN THE MAPLE SYRUP INDUSTRY



Since fall 2023, CDL has been producing its new jugs in all Canadian and American sizes to serve maple syrup producers across North America.

Since the fall of 2023, CDL has been producing jugs printed using a new printing process called IML (in-mold labelling). It's the only one of its kind in the maple sugaring industry. The process is patented, and CDL's two production lines operate entirely in Quebec using it!

As you've seen over the years, CDL is constantly looking for ways to improve its products. It's quite a challenge, because there needs to be a delicate balance between innovation and stability. As a proud and innovative company, when CDL has the opportunity to manage manufacturing, it does not hesitate to dive in!

Here at CDL, we are also problem solvers. Developing innovative solutions lets us address customers' concerns and meet their needs more and more efficiently while still keeping prices as low as possible.

It's for exactly this reason that CDL switched from the old glued label jugs to attractive polymer jugs, which are made using the IML technique to decorate the injection-molded items. With IML, the decorative label is applied in the mold before the plastic is injected. That means it's "baked in" to the jug itself, making for a more durable and resistant label.

In addition to the durability, IML printing looks better and allows for customization while maintaining production efficiency.

Since IML labels are integrated into the molding process, they offer stronger adhesion and are more resistant to scratches, moisture, and wear and tear. They are easier to clean, too. Maple syrup consumers and CDL customers both benefit from products that last longer and look good the whole time.



By Marika Chabot
Maple Nectar Project Manager and
3rd generation of the CDL Chabot Family

MAPLE NECTAR: AN INGREDIENT SOON TO TAKE ITS PLACE IN THE WORLD OF NATURAL SWEETENERS!

Maple Nectar was officially recognized as an innovative maple product by the Québec Maple Syrup Producers (QMSP) and the Maple Industry Council (MIC) in 2022, demonstrating industry support for it. This recognition was solidified by the recent inclusion of Maple Nectar in the Maple Sap Marketing Convention as a new sweetening agent from maple production, aimed at standardizing its purchase and sale. Maple Nectar is now standardized under the term "High Brix Maple Concentrate," although we continue to internally refer to it as Maple Nectar.

This integration into the convention confirmed to us that the maple industry has a keen interest in marketing new products. Our multidisciplinary team's technological challenge was to create the necessary equipment to produce a concentrate of up to 66 °Brix. With our goal now achieved, we are working to make this unique equipment and technology quickly accessible to maple producers across North America.

In 2023, the Acer Center confirmed through its research that CDL's technology and process preserve the nutritional integrity of the sap throughout the concentration and transformation process up to the desired Brix level. Further studies conducted by an external research group aimed to characterize High Brix Maple Concentrate (Maple Nectar) and understand the impact of each process step on the final product. These studies showed that High Brix Maple Concentrate is a natural source of energy, minerals (calcium, magnesium, manganese, potassium), and vitamins (riboflavin and thiamine). Additionally, it is a source of polyphenols and antioxidants, as well as organic acids and phytohormones. Maple Nectar is also an additional source of electrolytes.

Maple Nectar was showcased at FOOD EX JAPAN 2024, a major food fair held in Tokyo last March. Interest and curiosity for this new maple-based sweetening agent were high. Visitors were particularly interested in its taste, very clear color, and eco-friendly fabrication process.

Around ten potential customers from various food sectors will test High Brix Maple Concentrate (Maple Nectar) as an ingredient to replace their current sweetening agent in the coming months.

In our view, this complementary product to maple syrup is undoubtedly promising for the entire maple industry with its numerous opportunities as a sweetening agent for the food industry. Here is a profile of an American company that has embraced this new sweetening agent.

SAP! BEVERAGES

Sap! products are sparkling plant-based beverages made from 100% pure maple and birch sap. Chas Smith, co-founder and CEO of Sap! Beverages, and his team immediately believed in this innovative product that truly resonated with them. Since then, High Brix Maple Concentrate has been integrated into their canned beverages sold in Vermont.



High Brix Maple Concentrate
(Maple Nectar)



BACKWOODS MAPLE SYRUP

Arriving at Backwoods Maple Syrup gives the impression of approaching a traditional sugarhouse. The lines of tubing wind through the forest, steam rises from the stacks, and a large "OPEN" flag greets visitors at the entrance. Upon stepping inside, the initial reaction is one of amazement. The sight of the shiny evaporator and the inviting seating area overlooking it immediately captivates. The air is filled with the delightful aroma of maple syrup, adding to enchanting atmosphere. Interview with Paul Partridge, co-owner



Front of the Sugar shack

Inside the 4000 square foot sugar shack, meticulous attention to detail is evident, with dedicated rooms for each stage of the maple syrup making process. The sap room features a CDL Fenduse RO and stainless steel saddle tank, alongside essential holding, and cooler tanks. On the opposite end of the building, the bottling rooms boasts a CDL water jacketed bottling unit, in floor heating and ample space for labelling bottles. The cash desk is adorned with bottles of maple syrup, as well as selection of branded clothing and hats. Adjacent to the cash desk, a cozy seating area invites

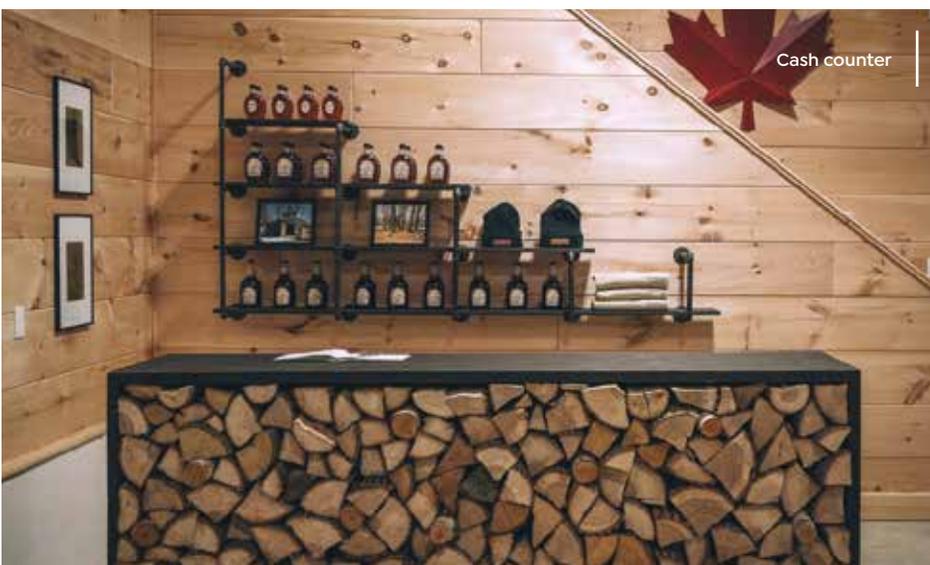
customers to relax and savour a cup of coffee or a sample of some maple syrup.

Tell me how you got into making maple syrup?

When I was a kid, my dad back in the 70's tapped trees on our family farm. Once my dad stopped making syrup, I started to make it myself. We boiled on a barrel over an open fire. Back then we filtered with tea towels. The syrup was for our own family. I stopped when I got married.

How did Backwood's Maple Syrup come to be?

My son Tyler and Corey Vandergeest the other co-owner of Backwoods Maple Syrup back in 2006, hung 40 buckets. The wood they were using was not getting hot enough, so the kids called me for help with some firewood, so I went up and cut some firewood and spent the whole weekend there and we never slept that whole time. The sap ran like crazy. The buckets were filling up several times a day. We made around 15 gallons of syrup that weekend. We boiled on an open fire with 2 cement walls and a pan. The following season, we moved into a shack, and we have blossomed from there. We put in 150 buckets and every year since then, we got a little bigger. Little known to them in 2006, the second day making maple syrup, Backwoods' Maple Syrup was born. The pipe dream soon began of having all the sap come to us.



Cash counter

How many taps do you have?

We are just over 6000 taps, with 1000 taps on CDL 3/16" line and the rest on high vacuum. Always a dream of ours and to have a nice shack with the sap coming to us without having to go out and collect it. We recently bought this 126 acres we are on now across the road from our old shack where the 3/16" line is.

What was the deciding factor to deal with CDL?

CDL is close by, and this is one of the biggest things as it is very handy for us, and Bill Hubbert was obviously a big portion of this too. Any dealings we had with CDL prior to our growth, they always helped us with our hobby issues. CDL couriered a pressure pump to us the next day when ours went down. There was no reason not to deal with CDL. They always looked after us in the past. Today, the people that work there are awesome. I really enjoy going in there.

How do you monitor your maple operation with regards to vacuum, tanks and leaks etc.?

We have monitoring on every mainline, so we can see where the leaks are. We have 34 sensors in the bush. The CDL Monitoring is on our phones. We have the app, which is amazing, so we know where there is a leak. We have red squirrels that like to chew the lines, so we always know where there is an issue right away. The monitoring shows a yellow mark on the app, this shows us that the vacuum is low. We know exactly where to walk. We have everything we need from the app. We have height sensors on the tanks and that is part of the app

too. We turn our vacuum pumps on and off with the app. The only thing that is not on our monitoring is the transfer pump. We can add a sensor to the transfer pump. We are talking about adding a camera to our pump house. We pump sap 1 km so having the monitoring is very important as it alerts us right away of any issues.

Can you tell me a little bit about your evaporator?

We have a propane CDL Deluxe 3.5'x13' that we run 14% concentrate and in an 8 hour day we can pull 3 barrels off. If the sap is running hard, we can do everything we want from a Friday to Sunday. We also boil through the week when we have enough sap. We had the jump on everybody this season as we were ready for an early run. We did not miss a drop of sap. We will not go away from our current set up on propane. It is too easy and economical for us. With the use of our RO, we would not change a thing. We used to spend time cutting wood, hauling it in and spent many extra hours in labour. If we decide we are done boiling for the night, we hit a button, and everything shuts down in 12 to 15 minutes. We shut off the valves, an alarm sounds and everything shuts off.

Paul and Corey maintain a 50-50 partnership in Backwoods Maple Syrup, but with the full involvement of their families, it becomes 100-100 collaboration. Corey, Paul, along with Paul's sons, Tyler and Trevor, possess the skills to operate the evaporator efficiently. From tapping trees to troubleshooting, boiling sap, bottling, and attending trade shows, they all, including Paul's wife Karen, share the workload and responsibilities involved in running their maple business. Abby, Corey's wife, takes charge of the managing the social media presence, website and online orders. The presence of Corey and Abby's children along with Tyler's children, at the sugar shack is integral to the completeness of the operation.

*Read the full interview online
to cdlinc.ca/interview*



Deluxe evaporator



By **Tommy Chabot**
Marketing Coordinator

4.0: THE TECHNOLOGICAL REVOLUTION IN MAPLE SUGARING

In the ever-changing landscape of maple sugaring, the advent of 4.0 technology is proving to be an essential catalyst to take the industry to new heights of productivity, efficiency, and profitability. At CDL, we are proud to present our 4.0 vision for maple sugaring and our CDL Intelligence system, designed with the unique needs of maple syrup producers in mind.

WHAT IS 4.0 IN MAPLE SUGARING?

CDL's 4.0 vision is more than just a technological evolution: it's a true revolution in the way we organize, manage, and optimize our sugar bushes. Imagine being able to control your business remotely, in real time, from your smartphone or computer! With 4.0, you can do just that. This ability to control your sugar bush remotely offers unparalleled convenience.

CDL's 4.0 vision isn't just limited to remote control, either. It's also a solution of choice that lets you monitor your sugar bush, prioritize your actions, collect and measure data, and make informed decisions based on that data. Real-time alerts keep you constantly informed about the status of your sugar bush, letting you react quickly to changes and optimize your operations.

AN ANSWER TO THE LABOR SHORTAGE

At a time when skilled labor is becoming increasingly scarce in our industry, 4.0 has the potential to be the ideal solution. By automating tasks that used to require a human touch, 4.0 reduces dependence on specialized workers while keeping performance as good as ever.

CDL'S 4.0 VISION

At CDL, we firmly believe that 4.0 is the key to profitability for maple syrup producers. In fact, the Business Development Bank of Canada (BDC) stated in one of its articles that the productivity gains from Industry 4.0 may become so significant that companies without it will not be able to achieve the same level of profitability. Our vision is simple: to make 4.0 accessible to all kinds of maple syrup producers, whether they're passionate hobbyists, full-time workers, seasoned professionals, or even investors. For example, 4.0 technology can let full-time workers continue working while running their business more efficiently and maybe even expand, without necessarily needing to work longer hours during sugaring season. With today's technologies, it's possible to make your equipment work for you and still go boil with your family on weekends.

For us, 4.0 is much more than just a technological innovation. It's an opportunity to radically transform the way you work by eliminating tasks that don't add value and fine-tuning every aspect of your operations. Our mission is to equip you with the tools you need to boost your profitability, lower your production costs, and offer your customers a superior product.

CUT DOWN ON NON-VALUE-ADDED ACTIVITIES WITH CDL INTELLIGENCE

Non-value-added activities, or waste, are often described as anything that adds costs without creating value for the customer. They represent a significant proportion of operations in any industry. Unlike value-added activities, which do contribute to improving the final product, non-value-added activities generate costs without helping improve the final product. This waste often takes the form of waiting or supervision on site (wasted time), transportation (avoidable travel), or lost production. As a rule of thumb, regardless of the type of industry, only 10% of all actions or tasks are truly value-added; the remaining 90% add no value to the final product.

Let's take the example of one of the key stages in the maple syrup production process: harvesting the sap at the pumping station.

In this example, the value-added action is the harvesting of the sap. As for the non-value-added actions, there are plenty. Just think of all the trips to start or stop vacuum pumps, manage valves, clean extractors or tanks, check that equipment is working properly or deal with mechanical issues caused by freezing or overheating...

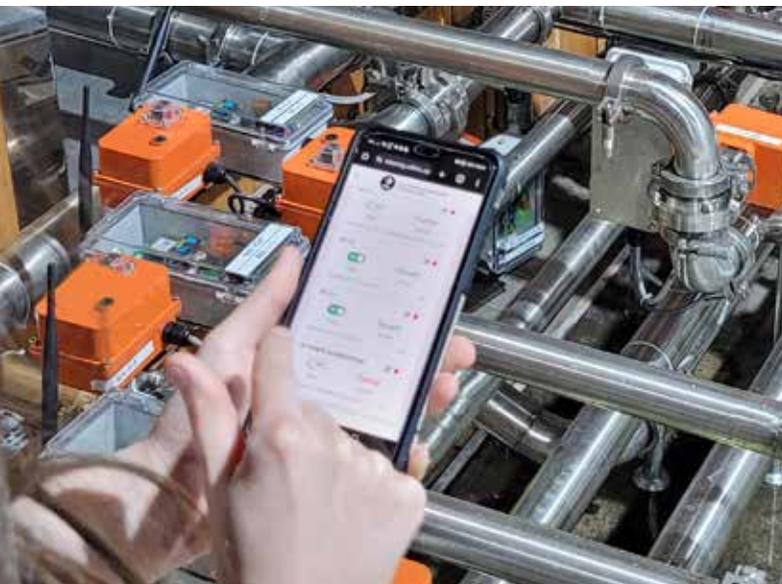
All that can be avoided with 4.0 equipment. That leaves you more time for value-added tasks.

The CDL Intelligence system is the solution to bypass the enormous time, travel, production, and monetary wastes associated with these actions. It reduces or even eliminates non-value-added actions for maple sugaring, because they can all be done at the press of a button or even automated. All you need is a smartphone or computer. An action that used to take 30 minutes can now take a second with 4.0 technology.

TOWARDS A MORE EFFICIENT FUTURE

In conclusion, 4.0 marks the beginning of a new era for maple syrup production. Thanks to innovative technologies like CDL Intelligence, maple syrup producers can take their performance and profitability to new heights. At CDL, we're proud to play a leading role in this technological revolution, and we're committed to developing ever more advanced solutions to meet the changing needs of our industry.

Join us on this adventure towards a smarter, more efficient, and more sustainable future for maple sugaring. The possibilities are endless with 4.0, and at CDL, we're determined to accompany you every step of the way on this journey towards innovation.



HORIZONTAL 2 SPEEDS EXTRACTORS



INTERIOR VIEW

WITH 2 SPEEDS SUBMERSIBLE PUMP

Allows greater flexibility and speed of pump outs following different sap flows. This avoids losses and overflows linked to unpredictable bursts of sap in the event of freeze-thaw cycle or excessive sap runs.

Ask your sales representative!



CDL TECHNOLOGY CENTER NOW 100% AUTOMATED

The beginning of 2024 marked the realization of a large-scale project at CDL, a project the company had been dreaming of for several years: the creation of a 100% automated boiling room. With the recent introduction of Master-E evaporators and heRO concentrators, CDL was closer than ever to achieving this vision, this goal.

For nearly a decade, CDL has had a defined vision for the 4.0 project in maple production. It was not only about automating each step of the maple syrup production process but also ensuring that each of these steps was interconnected, creating perfect synergy throughout the entire process. The vision for this 100% automated boiling room project was to bring together some of CDL's most advanced equipment

in a single location to represent a self-sufficient maple grove of 40,000 taps, all within the most compact environment possible. The ultimate goal: to produce maple syrup, from tree to barrel, without any human intervention!

The project began in the fall of 2023. After agreeing on a common goal, it was time to put this project on paper, to create process diagrams, and to identify the equipment that would become the centerpiece of the maple grove. Once the room plan was established, work began with the demolition of existing infrastructure, pouring concrete bases for the silos, relocating drains, and so on. The equipment was installed, and electrical and plumbing

work commenced to connect each piece of equipment. At this point, the project took shape, and the crucial programming stage could begin.

The CDL Technology Center is equipped with five distinct silos, three outdoors and two indoors, for storing maple water, concentrate, filtrate, and ultrafiltered water. An ultrafiltration unit is included in the line, just before the automated heRO concentrator and its five-membrane cart. The 30 Brix concentrate obtained is stored in a refrigerated tank before being transferred to the Master-E evaporator. The syrup is then stored in a heating tank. The process concludes with a 15-inch syrup press and barrels.

LEGEND

- 1 Vertical Silos
- 2 Ultrafiltration unit
- 3 HeRO concentrator
- 4 Insulated tank
- 5 Master-E evaporator
- 6 15" filter press



The equipment is physically placed so that each successive step follows one another. The idea was to create a continuous flow, allowing water to travel a shorter distance and equipment to occupy as little space as possible in the room. Plumbing runs along the walls and enters the equipment side without impeding operations. The production line is balanced, floor space is maximized, storage is optimized, and the flow is continuous!

One of the main motivations behind this project is to train CDL employees on the technologies we offer to the maple industry. The Technology Center will also serve as a testing center to put equipment and prototypes to the test in real conditions, allowing for equipment improvements, aiding in the development of new products, and sparking new ideas! It will enable sales and customer service to understand and better serve maple syrup producers. It will also allow the production team to operate this equipment to experience the importance of superior quality manufacturing. In

addition to its educational purposes, the Technology Center is a sales tool and an exceptional proof of concept to introduce the 4.0 concept to the maple industry. Finally, it will serve as a testing ground for Maple Nectar production.

The design and construction of the Technology Center have been, and will be, beneficial in many ways for the CDL team, even before its completion. Indeed, the departments involved have developed various expertise during the implementation of this project, whether in maple syrup production or equipment use, CDL Intelligence system or equipment automation, heRO concentrators or Master-E evaporators, or the maple industry in general. The CDL Technology Center is a place for knowledge transfer and sharing that promotes innovation, practice improvement, and growth for both the CDL team and the entire maple industry.

INSULATED TANKS

With their high-quality stainless steel construction, our new double-wall insulated tanks are ideal for keeping your maple syrup warm. Some customers have used them this season with their 100% electric and automated Master-E evaporator to store a larger quantity of syrup before continuous filtration and/or barrel filling.

Our tanks also allow maple producers with evaporators that produce large volumes of syrup per hour to store significant volumes at 185 °F for several hours before or after filtration to ensure proper packaging temperature and compliance with standards.

We recently tested one of these insulated tanks with a refrigeration unit at our Technology Center to keep the concentrate cold; the results are conclusive! Stay tuned for details at our upcoming Open House events!





MEET SABRINA BOUWMAN

Sabrina Bouwman, an inspiring young businesswoman, is a true example of entrepreneurial success, juggling multiple activities with confidence. I went to chat with this fascinating woman at her property on 7e Rang in the Municipality of Lochaber, in the Outaouais region, to hear her story.



Sabrina is the owner and only employee of Bergerie Bouwman Érablière. She has 60 head of sheep and 2,300 maple taps on 300 acres of land and forest that she's acquired gradually over the past few years. She also has a small animal transport company and a horse boarding facility, and her little farm raises a few cows, pigs, and chickens. She also has an on-site boutique where she sells products from her farm, as well as products handmade by none other than herself! Her ability to lead and thrive in a variety of fields is a testament not only to her boundless energy, but also to her business sense and results-driven strategic intelligence. That said, Sabrina is very humble—when she reads this, she'll probably have a hard time believing we're describing her. Well, we most certainly are! After all, recognition most often comes from the outside, not the inside. You just need to accept it.

Sabrina has always had a connection to agriculture, ever since she was a little girl. Her grandfather had a dairy farm, and even though that chapter ended when Sabrina was very little, it was clear that agriculture ran in the family. Her parents also owned a butchery and slaughterhouse, so she had first-hand experience of the other end of the agricultural chain: food processing and sales.

Before starting her own business, Sabrina tried her hand at cattle farming in Alberta, working for three years on a farm that calved 1,000 cows a year. Upon her return, she worked in her parents' butchery and slaughterhouse, but her entrepreneurial spirit soon took over. She decided to run her own business and bought her current property in Lochaber, which she has now been operating and expanding for four years. To pay for this purchase, she held a number of jobs, including volunteer firefighter, waitress, driver for her own transport company, slaughterhouse worker, and evening milker on a dairy farm! It has to be said: such determination is impressive.

“When I first bought my farm, I had 75 acres and 10 sheep. The sugar bush had 200 taps and a small evaporator, but I quickly decided I wanted more taps. So, with a good friend who lives down the road, we set off into the woods after Googling instructions on how to tap. We added 200 taps, but it turns out the evaporator was way too small! We had to boil day and night for 3 weeks to get through all our sap! It's a good thing I had help when I started! I had neighbours give me hay for my animals to welcome me to the area, and other neighbours—dairy farmers—were always there to lend a hand, like when I was



Intense-O-Fire 2 evaporator



Sabrina in front of her HeRO Intelligent concentrator

REASSURED BY CDL'S PRESENCE

Sabrina has been doing business with CDL since the very beginning, and she appreciates how the representatives supporting her have shown her ways to save time and money. For her, the CDL Intelligence system, which she manages from her phone, is a marvel of efficiency!

"I can go out for a whole day without worrying because I keep an eye on everything from my cell phone! It's also very reassuring to know that you can talk to an expert who can help you remotely. I plan to gradually adopt an intelligent system for my operations from A to Z, which is why I was the first to equip myself with an intelligent concentrator in the Outatouais region. This year, my goal is to get 10,000 taps. Next year, I'll be focusing more on my sheep. I plan to modernize and expand, because I want to increase my flock to 100 heads."

"This year, when I did my tapping at the end of January, I was told that it was far too early, but I don't regret it! I didn't want to lose a drop of maple sap, and I didn't! Good entrepreneurs are said to trust their instincts."

Sabrina embodies a unique combination of strength and leadership, which makes her not only impressive professionally, but also admirable as a person. CDL is very proud to have a customer like Sabrina Bouwman.

boiling sap around the clock." While she's made her own way thanks to her impressive initiative, she makes a point of saying that she cherishes the support of those around her. They've often given her the strength to persevere and see her projects through. Whether it's her dad with his knowledge and quiet strength, her mother-in-law, her friends, or neighbours, she's very grateful for the support she's received. She's also very proud of what she's accomplished on her own: her sugar shack, for example, which she built with her own hands. Sure, her contractor dad gave her some sound advice, but she did all the hands-on work!

In very little time, she bought all of a neighbour's land, which allowed her to increase her number of taps considerably. Since she didn't get a quota the first year she applied, she turned her disappointment into an opportunity by buying all her processing equipment! She has also set up a mobile boutique to promote her meats and maple products at local markets.

Despite her packed schedule, she's involved with her local agricultural producers' union, and will occasionally organize evening get-togethers so fellow farmers can get out and socialize. Sabrina's driven by her passion, certainly, but also by her big heart.

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By Jerad Sutton
CDL Ohio Sales Representative

THE CONTRIBUTION OF JESSE RANDALL IN THE TRANSFORMATION OF THE AMERICAN MIDWEST MAPLE SYRUP TRADITION

The United States Midwest, traversing the Dakotas to Ohio, has a rich history in the maple industry that spans generations. The Midwest accounts for about 2,524,212 taps and has around 3,722 maple producers.

In 2022, twenty-seven states responded to the Census of Agriculture, with Wisconsin ranking number four and Michigan ranking number six in total taps. Midwest maple gained an asset in research, education, and innovation when Jesse Randall was named the director of Michigan State University (MSU) AgBioResearch's Forest Biomass Innovation Center.

Jesse Randall, a native of Western New York, is a multi-generational sugarmaker who grew up learning the science of maple. As a young adult he conducted several research projects at the family sugarbush. He attended Cornell University and, as a freshman, helped to reestablish the sweet tree program and planted several plantations of sweet maples from cuttings. After graduating from Cornell with a degree in Natural Resources, Randall attended Michigan State University and received his Ph.D. in forestry. Randall then took a position at Iowa State as an Associate Professor in the forestry department and continued his research. In 2016, his team secured an ACER grant for the Midwest, providing substantial funding for maple research.



Jesse Randall and his team
with a Deluxe evaporator

In 2018, Jesse took his current position at MSU, where his vision was to think outside the box and create innovative partnerships in the research community. In the early years, Jesse and his team produced syrup from 300 taps on mostly homemade equipment. Jesse has a spark when you talk with him about anything maple related; he has a way of communicating at any level to make you understand what most could not. Jesse's favorite part of maple is talking with producers about current research and issues they may have. He loves taking the problems presented by producers and developing new research programs based on real feedback.

Innovation and sugar maker education were a top priority at MSU in 2019. They launched a web-based version of the Maple Manual in a series of videos that can be updated in real-time, no more waiting years for the next edition to print. You can find this all-things maple how-to manual at:

www.canr.msu.edu/fbic/maple-manual-video-series/

In 2023, (MSU) AgBioResearch's Forest Biomass Innovation Center completed the construction of a new 4500 square foot Maple Research facility. This facility features a 3 1/2' X14' CDL Maple Deluxe Evaporator. You can follow Yooper Forestry on Facebook to see all thing maple during the season; they are often live.

Randall currently has six active research projects, one of which focuses on sanitation and sugarbush sensor technology. The research measures microbial growth from the taphole to the tank. One of Jesse's focuses is improving the span of maple and how we can use off flavored syrup to produce a variety of goods. Jesse understands the importance research will be to the next generation of sugarmakers, having three daughters to carry on the Randall sugarmaking tradition.

I'm excited to see where his research will take maple in the future, if you ever find yourself in the Midwest stop by Escanaba, Michigan and take the opportunity to see the research and innovation center.



Special collaboration of Jean Lamontagne
Executive Director, IMSI
(International Maple Syrup Institute)

BEHIND THE SCENES OF THE MAPLE SYRUP INDUSTRY AND ITS IMPACT ON NORTH AMERICAN LEGISLATION

Jean Lamontagne has been passionate about agribusiness for nearly 30 years. He has worked as an executive for multinational food manufacturing and distribution companies in Canada and the UK, and has been Executive Director of the IMSI for the past three years.

The IMSI was founded in 1974. It's the only association representing all the key players in the maple syrup industry in Canada and the United States, and that is its great strength. The industry sometimes needs someone to step in and represent it to governments and regulators like the FDA, USDA, and CFIA, and speaking with one strong voice makes a difference when it comes to matters like influencing legislation.

IMSI's member base includes thousands of maple syrup producers and their associations; maple product processors and distributors; maple equipment manufacturers; and maple science, technology, communication, and education institutions. This impressive membership benefits the entire industry in both Canada and the United States.

Proactively keeping an eye on the North American political and regulatory environment might not exactly be glamorous, but it's essential if the maple syrup industry is to remain competitive. Likewise, protecting the authenticity and integrity of pure maple syrup and ensuring adherence to the standard of identity are critical. The institute also supports quality initiatives for the continued production of maple syrup and maple food products that meet established and regulated quality standards.

Confidence in product quality is what consumers want, so we need to offer them a consistent and coherent system. Standardized grades, labelling, and quality help address consumers' concerns and meet their needs, and that's important.

The IMSI is very "agile", with just two salaried employees. We form committees made up of the best experts for the specific issue or challenge at hand. It's very effective.

The Board of Directors, made up of representatives of all industry bodies, meets five times a year. The next Annual General Meeting will be held on June 5 and 6 in Stowe, Vermont.

For more information, please contact Jean Lamontagne at maplesyrupinstituteimsi@gmail.com



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*3200 US gal.
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- **Robust construction in brushed grade 304 stainless steel.**
- **Domed ends and reinforced structure enhance overall tank strength.**
- **Available in five sizes:**
 - 550 US gal.
 - 1,100 US gal.
 - 2,200 US gal.
 - 3,200 US gal.
 - 4,100 US gal.



MEET OUR NEW GENERATION OF MAPLE PRODUCERS!

No matter how big or small your ambitions are, CDL's representatives can help you evaluate your projects, provide technical advice, and install equipment and tubing. They offer quality support for every part of your maple sugaring operation. Discover more about two companies that took advantage from wise advice!

OLIVIER RUEL'S PASSION

Olivier got hooked on maple sugaring when he was looking after his family's 500-tap sugar bush after school. Since 2009, he has been gradually taking over Ferme Jovanel in Saint-Charles-de-Bellechasse. He's proud of his role as a dairy farmer and maple syrup producer. "When you're passionate

about something, it doesn't really matter how many hours you work, you're just happy to be doing what you're doing." While the dairy farm has also operated a sugar bush for many years, Olivier only got his start as an owner in 2020, when he began with 2,000 taps. In 2024, he'll be running 5,000, thanks to the help of partner Marilyne Beaupré and their

three children. He has no intention of stopping there, either, if he finds new opportunities to increase his maple syrup production in his region. "I love the idea of harvesting things right from nature."

Successful projects often come from good teamwork and collaboration. Like all enthusiasts, Olivier is constantly looking for ways to improve performance for his dairy farm and his sugar bush alike. That's one of the reasons he's so quick to praise CDL. "My equipment comes from CDL. It's convenient, they're nearby and always ready to give me good advice. At the moment, I'm still working with the equipment I bought in 2020, but I intend to automate production in a couple of years."

"IN 2018, I STARTED WITH THREE TAPS!"

William Morneau
St-Charles-de-Bellechasse, Qc

When your most beloved childhood memories are of sitting in your grandpa's lap, surrounded by the steam of boiling maple sap, it's safe to say maple sugaring is in your blood.

William Morneau wants his little boys (aged 12, 5, and 3) to have those lasting memories as well, so he now brings them with him into the woods. Although William teaches at a professional training center, his maple syrup hobby is growing by the year.



Olivier Ruel with his partner Marilyne Beaupré and their three children



There's no denying it, William started with almost nothing. When he produced syrup for the first time in 2018, he only had three taps! Very resourcefully, he had self made all of his own equipment. "You get the tools to produce a little more, you set your sights high, and finally, you get the equipment that really lets you live your dream," he explains. Once he had the bug... Well. Fast forward to 2024, and William has 375 taps. However, he is very pleased to have received a positive response for an additional 1774 taps already evaluated by the forestry group's engineer. He has until spring 2026 to deliver syrup to the Federation from these taps, located on two leased lots.

"Equipment is always a major investment, so you really don't want to make any mistakes! That's why I appreciate the CDL representatives so much. They treat your project like it's their own, even when it's small. They don't just want to sell, they want you to succeed! Even when they're at their busiest during sugaring season, they'll still take the time to answer my questions. And I like to understand how things work, so I really appreciate good explanations that help me make the right choices. All my equipment comes from CDL, from the tubing to the measuring tools and the filter press."

PREPARING THE NEXT GENERATION OF PASSIONATE MAPLE PRODUCERS!

At the end of last January, we had the opportunity to welcome students from the maple production program at the Saint-Anselme Agricultural Training Center (CFA). They visited our factory in Ste-Claire and learned about the latest additions to our 2024 catalog. A group of passionate individuals who promise to be the future committed maple industry leaders!

From the start, we asked them about their native region and their background in maple production; most of them had immediate or extended family members who had passed down this contagious passion to them. Many would undertake internships in the following weeks during the 2024 season.

Next, we toured our factory in Ste-Claire, which specializes, among other things, in the production of extractors, concentrators, filter presses, silos, and most recently, the 100% electric and automated Master-E evaporators. It was a great opportunity for them to see how we manufacture these products. During the presentation of the new products in the conference room, the students asked relevant questions related to their experiences or classroom learning.

The new cohort for fall 2024 will now have access to a dedicated maple production room right in the CFA premises. This is a fantastic way to have the latest technologies at their fingertips and to quickly put into practice the concepts learned in class. We are proud to have contributed to this wonderful facility by lending equipment, and we look forward to continuing to host visits to our facilities for each new cohort!



"As a teacher in the maple production program, aiming to make the training increasingly interesting and, above all, as close as possible to the constantly evolving reality of the maple industry, I felt that we were lacking a lot of practical materials in the training.

That's why I proposed to Mr. André Labrecque, director of the Saint-Anselme Agricultural Training Center, to form a partnership with various manufacturers and suppliers of maple equipment in the region.

The response was immediate from CDL as well as other manufacturers. This alliance allowed us to obtain diversified and state-of-the-art equipment from them to enhance and make the training more realistic.

The Saint-Anselme Agricultural Training Center warmly thanks CDL Maple Sugaring Equipment for their generous contribution to the training of our future maple producers."

Patrice Goupil Teacher at the Saint-Anselme Agricultural Training Center



HOW DO I GET ORGANIC, CARBON NEUTRAL AND HACCP CERTIFICATIONS?

The maple syrup industry is constantly evolving, and producers are looking for ways to improve their practices while meeting rising consumer expectations. In this article, we will explore Ecocert Canada's crucial role in organic and carbon neutral certification for maple syrup.

Ecocert Canada: Ensuring Sustainable Practices

Ecocert Group Canada is a globally recognized certification body. Its mission is to promote sustainable agricultural and industrial practices by evaluating and certifying products, systems and services.

For maple syrup production, which is very important in North America, Ecocert Canada, a subsidiary of the Ecocert group, offers certifications that are essential for the development of markets on the continent: organic, carbon neutral and HACCP certification.

Organic certification

Organic certification ensures that maple syrup is produced in accordance with rigorous organic standards. This means:

- Chemical-free and GMO-free: organic growers do not use synthetic pesticides, herbicides or fertilizers;
- Respect for biodiversity: local fauna and flora are preserved;
- Total traceability: from the producer to the consumer's table, every step is verified.

It is important to know that the certification process takes a little over a year. It begins with an inspection visit to assess the sugar bush's practices and determine the work that needs to be done. This is followed by a second inspection to verify compliance with

the requirements of the program. To ensure that this compliance is maintained over time, annual visits by the certifier are also carried out.

Organic certification requires the use of cleaning products that are permitted for facilities involved in organic production such as ponds, evaporator and concentrator. The use of cleaning products that respect the environment and comply with the requirements of organic certification in maple syrup production is essential. The preservation of the natural elements surrounding the operation and in the immediate vicinity of the facilities are also considered in the certification process.

The practices valued by the certification are based on recognized scientific data and research and aim to ensure the sustainability of the farm. The tapped maples will be selected based on their size, maturity, the number of taps already made on each of them, as well as the depth of these maples. As for biodiversity, we must ensure that it contains a variety of species called "companions" that contribute to the balance of the sugar bush and the maintenance of rich and productive soils. The target quantity of companion gasoline in the sugar bush is set at a minimum of 15% by organic regulations.

Maple syrup producers must be able to attest to the traceability of the product, from its production to the consumer's table. This exercise requires the collection and

processing of a large amount of data. It is an operation that becomes more complex depending on the range of processed products that result from production. Even if the exercise may seem demanding, it requires the producer to ensure a continuous quality of production management and to guarantee the integrity of the products to customers.

Carbon neutral certification

Carbon neutral certification goes beyond organic certification. In the field of maple syrup production, this certification can only be obtained by a company that is already certified organic and also requires an evaporator that does not run on fossil fuels. Certifying the effort to reduce greenhouse gas emissions is a complementary action that reinforces a producer's sustainable commitment. Here are the key points of this commitment:

- Net zero carbon emissions: producers offset their emissions by investing in greenhouse gas reduction projects;
- Environmental protection: certification encourages sustainable practices to minimize the impact on climate change;
- Transparency for consumers: Products labelled "Certified by Ecocert Group" are clearly labelled.

Benefits for producers and marketing

Incorporating sustainable practices into a business is critical to its long-term success. When a company chooses to have its sustainable practices certified by an independent third party, it enjoys several significant benefits:

Credibility and trust:

Certification by an independent third party boosts the company's credibility. Consumers and business partners trust a company that actively engages in responsible practices. This credibility can open up new business opportunities and boost the company's reputation.

Transparency and traceability:

Ensures that the company adheres to strict standards. Processes and products are evaluated in an unbiased manner, which provides full transparency. This gives customers peace of mind that the company is following sustainable practices.

Process Improvement:

Encourages the company to continuously evaluate and improve its practices. It drives innovation, operational efficiency, and cost reduction.

Risk Reduction:

Helps reduce risks related to greenwashing, regulatory compliance, safety, and quality. Certified companies are better prepared to face future challenges and adapt to environmental and social changes.

Access to international markets:

Many companies require suppliers to be certified to ensure the sustainability of their supply chain. Certification facilitates access to these international markets and strengthens the company's competitiveness.

HACCP certification - A complementary offer

Your company's HACCP (Hazard Analysis Critical Control Point) system is a system that identifies, assesses, and controls food safety hazards. It is considered essential in the management and control of food hazards.

Companies interested in having their HACCP system certified must demonstrate compliance with the requirements outlined in the Canadian Food Inspection Agency's (CFIA) Food Safety Enhancement Program (FSEP).

For the North American maple syrup industry, the adoption of HACCP certification can offer several benefits.

-It can lead to a reduction in losses caused by product recalls through better internal control of risk situations;

-It can increase employee accountability for food safety;

-It can boost consumer and buyer confidence;

-It can increase employee's knowledge of food manufacturing;

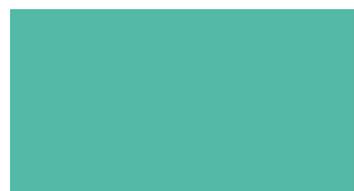
-It can help maple syrup producers meet the many laws and regulations that govern the sale, marketing, inspection, grading, quality and safety of maple syrup;

-It can also help ensure the authenticity of production methods and the superior quality of products.

Conclusion

The Ecocert Group, through Ecocert Canada, plays a vital role in promoting responsible maple syrup production. Organic, carbon neutral and food safety certifications are assets for producers and strengthen the quality of North American maple syrup in the face of increasing competition and requirements in global markets.

To find out more about the Ecocert Group's certifications, visit our official website www.ecocert.com. Together, let's build a sustainable future for our precious maple!





ANNUAL ONTARIO SUMMER TOUR – UPDATE

Each year in Ontario, an annual convention-style trade show brings together leaders and experts from the Ontario Maple Syrup Industry to discuss best practices and emerging topics in maple industry development. Typically, the agenda includes two days of tours to a diverse range of sugar camps and one day of technical presentations, tours to local sugar bushes, technical sessions, vendor exhibits, and social events. It's a convivial event pertinent for everyone, from small producers, long-time producers, to backyard producers.

RECAP OF THE SUMMER TOUR 2023

CDL Sugaring Equipment took part in the 2023 OMSPA Summer Tour and Conference held in Perth, Ontario, hosted by the Lanark and District Maple Producers Association from July 19th to the 22nd of 2023. As the primary sponsor, CDL supported the event, which featured visits to several sugar camps and technical sessions, followed by a banquet dinner. The Friday's event covered a range of topics from woodlot enhancement to operational strategies, marketing tactics, and ongoing education. Peter Sevelka, CDL Sales Representative and I, delivered a presentation on our hot selling Nano RO. The event, attended by over 300 individuals, welcomed both OMSPA members and non-members, with CDL showcasing its exhibit tailored to the needs of producers.

During the 2023 OMSPA Summer Tour, attendees had the privilege of visiting three outstanding maple enterprises. Adam Maple, owned by Jeremy & Zoe Adam, impressed with their



Ontario CDL Team at
Summer Tour 2023

18,500-tap operation, Gunnebrooke Farm, managed by John and Joyce Gunnewiek and family, showcased their sustainable production methods with their 3600 taps. Lastly, Wheelers Pancake House, run by the Wheeler family, amazed visitors with their 40,000 tap maple operation. These visits provided invaluable insights into the innovative practices shaping the maple industry.

UPCOMING SUMMER TOUR 2024

The upcoming 2024 Summer Tour and Conference themed, "Sweet Innovations," is scheduled for July 17th to the 20th in North Bay, Ontario. Andy Straughan, President of the Algonquin District of OMSPA aims to foster networking opportunities among producers, equipment dealers, and speakers at this summer's event. CDL Sugaring Equipment will, once

again exhibit at this event, hosted by volunteers of the Algonquin District of OMSPA.

For more details on the 2024 Summer Tour, visit:

www.omspasummertour.ca/

**ANYONE ENGAGED
IN THE MAPLE SECTOR
SHOULD ATTEND THESE
TYPES OF EVENTS!**





Special collaboration of Jack Bauer
Ph.D., Technology Transfer Coordinator
of the ACER Center

A NEW TOOL FOR ACCURATE BRIX MEASUREMENT



GUNNEBROOKE FARM
Elgin, Ontario
3600 taps
CHINOOK wood evaporator



ADAM MAPLE
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18 500 taps
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WHEELERS PANCAKE HOUSE
Lanark Highlands, Ontario
40 000 taps
R7 steam evaporator and
SIROCCO pellets evaporator

Densimeters and hydrometers are very popular instruments for estimating Brix levels in the maple syrup industry. That's why the ACER Center has developed a standard solution to check their accuracy. Ensuring that production aids are working and used properly is critical for producing quality maple syrup. For Brix measurement, to maximize profitability and ensure the syrup is between 66 and 67 °Brix, you need to have accurate, suitable instruments.

The ACER Center's standard solution is 66 ± 0.2 °Brix at 20 °C. This means that at a temperature of 20 °C, the value given by a densimeter, or hydrometer immersed in the solution has to be between 65.8 and 66.02 °Brix. If the measurement does not fall within this range, it means the instrument is off. It may be defective and need replacing. That's one of the reasons why it's so critical to check densimeters and hydrometers at the start of each season. It's also recommended to check them whenever there's even the slightest concern, like if there's been an impact or the instrument gives an unexpected reading.

PRACTICAL TIPS

Densimeters and hydrometers are fragile. To keep them working longer, it's best to prevent impacts and always store them vertically. Since these instruments measure density, they absolutely need to be kept clean (free of sugar or mineral deposits) and dry so they can read the syrup properly. Also, when they're immersed, the instruments need time to stabilize (at least 30 seconds for densimeters and 2 minutes for hydrometers) before a reading can be taken.

IMPORTANT REMINDER

Densimeters and hydrometers provide an estimate of the Brix levels of maple syrup, but do not allow for precise measurement. They're great for quick checks during the production process, but it's essential to always measure the Brix levels with a refractometer before the syrup is packaged. A well-calibrated refractometer, used properly, is the only instrument that can accurately measure degrees Brix.

For more information and advice on these instruments, we invite you to take the "Utilisation et calibration des instruments de mesure utilisés en acériculture" online course from the ACER Center or the "Êtes-vous sur votre Brix" online course from AGRICarières. Note that both courses are only available in French. The solution for checking densimeters and hydrometers, as well as the reference solution for refractometer calibration, is available from your equipment supplier.

To find out more about how to use the solution, watch the explanatory video by scanning the QR code.





THINGS TO KEEP IN MIND WHEN MANAGING YOUR SUGAR BUSH

How can you tell which maples have the best yield? Producers are using fewer buckets in their sugar bushes, so they've started to lose touch with the amount of sap one tree can produce. However, even without buckets, there are plenty of ways to estimate yield.

The first and probably most reliable clue is diameter. Sap yield and Brix levels tend to increase significantly with diameter. For example, the most recent studies available say that a maple tree that's 32 in. in diameter at chest height (4 ft from the ground) will yield around 21 gallons of sap per season, while a 12 in. tree at the same height will yield only 7 gallons. The Brix level of the sap also generally increases with diameter, but to a much lesser extent; you can expect an average 0.1°Brix increase for every 4 in. increase in diameter.

Diameter isn't the only indicator of yield, though. Growth in recent years, total height, and crown size also factor into the equation. The important thing to remember here is that it has been proven that the productivity of maple trees increases with their growth and size. This means that in your sugar bush, some maples will yield ½ pound of syrup per tap, while others will yield more than 10.



WHICH MAPLES ARE MOST LIKELY TO DIE DURING THE NEXT TUBING ROTATION?

It was long thought that cankers and decay fungi were the biggest signs that a tree was likely to die in the short term. However, recent research has shown that crown dieback is by far the best indicator of impending tree death. More precisely, the likelihood of mortality appears to increase when a tree's dieback is over 15% greater than the average dieback of the other trees. After crown dieback, the best indicators are cankers, then decay fungi, then defects (mechanical injuries, cracks) accompanied by rot.

But what is "dieback," anyway? Crown dieback is characterized by the progressive death of twigs, starting from their tips. It can be caused by many different things, including unsuitable location, natural causes (drought, disease, insect infestation), or injury. Fortunately, once you know the main cause of the dieback, it can slowly be reversed. For instance, if the trees are dying because the soil is low in calcium, applying the right amount of lime can not only halt the dieback, but also increase the crown size.

WHEN IS THE BEST TIME TO CLEAN A MAPLE TREE?

Maples aged 50 and under grow better when their crowns are cleaned. After the age of 50, the reaction is generally weaker. That said, cleaning a maple too early and too intensively will encourage forks and large branches to appear early. Those forks and branches are prone to breakage, especially during icy spells, which can provide an entry point for cankers and decay fungi. When developing a maple grove, you want to try to clear stems between 2 in. and 12 in. in diameter. Of course, you only want to do this on healthy trees whose crowns won't die back.

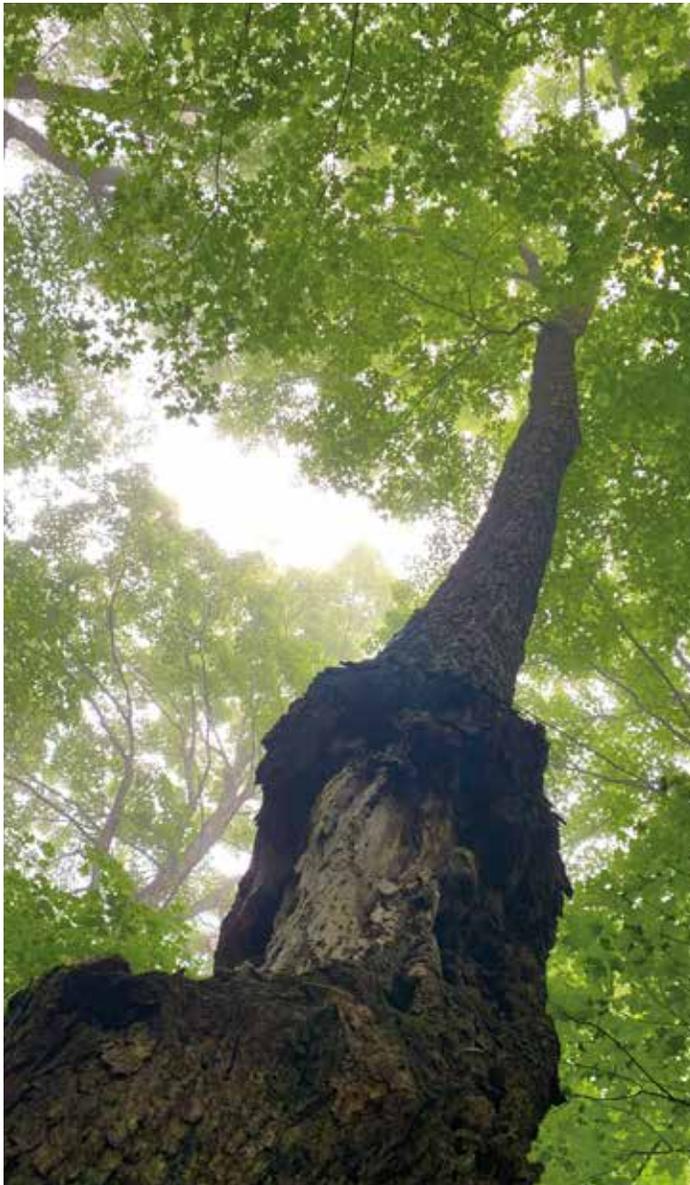
HOW MUCH SHOULD I CLEAR TO ENCOURAGE REGENERATION?

Now that you know which stems to clean and which to cut, roughly how much of the bush should you clear to support the growth of the remaining stems and encourage regeneration? In terms of wood volume, it appears to be best to clear between 10 and 25% of the bush per 15- to 25-year period, depending on forest growth. This can be done all at once during tubing rotations, or gradually over the years. It's best to avoid creating gaps whose diameter is greater than the height of the dominant trees (50 ft to 80 ft). Larger openings in the canopy

will encourage competitive and even invasive species, to the detriment of the maples and other desirable companion species. At the same time, keeping too many trees will limit growth.

WHICH SPECIES SHOULD I FAVOUR?

It's generally agreed that it is preferable to favour sugar maple over red maple, and maples over other tree species in sugar bushes. What you need to know is that each tree species is adapted to specific climatic and edaphic (soil) conditions. For example, sugar maple thrives in rich (especially calcium-rich), well-drained soils. Red maple thrives in rich, well-drained soils as well, but also in wetter, poorer soils. A tree that grows outside its ideal environment will have poor growth and be more sensitive to disturbances like drought, insect infestations, or late frost.



The more diverse the sugar bush, the more resilient it will be to disturbances. That said, some companion species are better suited to sugar bushes than others. More specifically, yellow birch, basswood, hickory, oak, ash, black cherry, and chokecherry are good hardwood species to keep in your sugar bush. As for softwoods, spruce, pine, eastern hemlock, eastern white cedar, and tamarack are good companions for maples.

There are currently no studies indicating how many companion species should be kept in a sugar bush. However, it's recommended that at least 15% of the site consist of companion species. On wet or very dry sites, it's better to keep more, since they tend to be better suited to the conditions than maples.

In conclusion, by keeping an eye on diameter and crown health, and by controlling the surrounding species, maple producers can identify the most productive trees, maximize their yield, and keep their sugar bushes healthy in the long run.

ABOUT THE APBB:

Founded in 1962, the Association des propriétaires de boisés de la Beauce (APBB) plays a leading role in the commercialization of wood from private forests. It represents 11,000 forest owners spread across 62 municipalities in 7 RCMs, and offers them training and information, as well as a wide range of consulting services in forest and sugar bush management. The Association is affiliated with the Fédération des producteurs forestiers du Québec (UPA).

In 2022, the APBB launched the Guide d'aménagement des érablières, written by two experts from its sugar bush department: Michaël Cliche, F.Eng. and Anne Boutin, F.Eng. The French-language guide is a compendium of up-to-date, easy-to-understand scientific information for maple producers. The APBB is also a member of the Créneau Acéricole and supported the creation of the PPAQ's La Station acéricole podcast, to which it occasionally contributes.

Visit www.apbb.ca for more content.



MASTERING MAPLE SYRUP FILTRATION WITH A FILTER PRESS

Filtering maple syrup is a critical step in the production process. It removes impurities such as nitre and unwanted particles such as wood flakes, plant debris, and sugar or mineral precipitates. This results in a clear, pure maple syrup, and is one of the keys to a top-quality end product.

Of all the filtration methods, pressure filtration with plate filter presses is known for its effectiveness and versatility, being suitable for production at nearly any scale. However, filter presses can be tricky to use. In this article, we'll guide you through the process, from cleaning your filter press to selecting the right model for your needs.

CLEANING THE PARTS

Once you acquire your filter press, the first thing you should do is clean all the parts. When equipment is manufactured, traces of oil or polish and packaging debris can be left behind. To clean, prepare a solution of hot, soapy water with one cup of vinegar per gallon (or 1 tbsp of acetic acid per gallon). Thoroughly hand clean every part that's going to come into contact with the syrup. Rinse thoroughly with clean water until all of the wash water containing chemicals or soap has been completely removed. Dry with a soft, clean cloth to remove any residual traces.

ASSEMBLING THE PRESS

It's important to pay close attention when you're assembling the filter press. Depending on your press model, you may want to put it on a vertical position for assembly. With the back plate attached to the press, insert a moistened filter paper, then an empty plate, another filter paper and a full plate, then alternate empty and full plates, inserting filter papers between each one. Make sure to align the notches on the plates and wet the filters with drinking water before assembly for the best filtration. Tighten the plates together using the provided nuts or jack.

ADDING DIATOMACEOUS EARTH

Diatomaceous earth, also known as filter powder, is essential for good filtration. It's a fine, light, natural powder that's used as a filtering agent in the maple syrup filtration process. Its main role is to absorb impurities in the syrup by trapping them on its surface as the syrup passes through the filter.

You can add a precoat of diatomaceous earth to the filters before pressing the syrup. To do so, mix 4 cups of filter powder in 3 ½ gallons of hot water. Start the pump and run the mixture through the press, making sure the water runs clear by putting the water outlet over the drain. This stage wets the filters, warms up the press, and gives the filters a first coat of diatomaceous earth for optimum filtration right from the start. After this step, add the filter powder to the filter tank—usually 1 cup per 5 gallons of syrup. You may need to add more or less depending on the quality of the syrup. And with that, you're ready to start filtering your syrup!

Caution: Always handle diatomaceous earth with a mask and gloves. Store in a dry, odour-free location, preferably in a tightly sealed container.

FILTRING WITH A PLATE PRESS

For the best filtration, use syrup straight from the evaporator that's been heated to Californian standards (180°F). Make sure the syrup enters the filter press gradually. This allows the press to fill and distribute the powder evenly so the filters don't clog early. The pumps on presses often pump more syrup than the presses themselves can handle. For that reason, the presses come with a bypass valve that



lets you control the amount of syrup flowing through the press and return the excess back to the tank. That way you can start filtration slowly by opening the valve, then adjust the flow gradually as the syrup enters and the powder is distributed inside the press. Doing this is crucial to avoid premature filter clogging.

If the pressure rises, preventing the syrup from flowing, you can add filter powder to ease the process. Continue filtering until all the syrup has been filtered or the pressure reaches 80 psi. If the pressure gets too high, stop the pump, disassemble and clean the press, then replace the filter papers to ensure continuous, effective filtration.

QUALITY AND DESUGARING

When the syrup comes out of the press, make sure to check that it's running clear. Generally, a single pass is enough, but you can always run the syrup through again if needed. Once all the syrup has been filtered, switch off the pump. Remove the syrup outlet hose from the syrup barrel or tank and put it in a desugaring tank. You can also direct the outlet hose into your evaporator's water pan to make sure you collect all the sugar. Once installed, fill the filter tank with hot filtrate and start the press pump to push the remaining syrup out of the press until the filtrate emerges. Your plate press is now desugared.

CLEANING THE PLATES

Disassemble the press and throw out the used filters. Clean all plates thoroughly with hot water, but be careful to avoid spraying the pump's electric motor. Cleaning the plates ensures that the parts are all free from residue and ready for reuse. Once you're finished cleaning, reassemble the press to make sure that your equipment is ready for the next stage of maple syrup production.

By following these tips and techniques, you'll be able to get the most out of your plate press and produce superior syrup. At CDL, we offer everything from 7" to 20" presses, all tailored to your needs and the filtration requirements for the industry.

For more information on gravity, vacuum, and pressure filtration, visit our YouTube channel!

THE NEW NANO RO MAX: VICTIM OF ITS SUCCESS!

Following the success of our smallest Nano RO concentrators, we launched a new unit in 2023 capable of concentrating a larger capacity of maple water (54 GPH) to a higher Brix (up to 8 Brix). With its dedicated recirculation pump and its ease of operation similar to its predecessor, the new Nano RO Max quickly won over customers. All units put into circulation were snapped up in the blink of an eye. Let's look back on this first season!

CARL CAMPITELLI - ELSIE'S CREEK MAPLE SYRUP (Coldwater, Ontario)

1000 taps

"What convinced me to purchase the new Nano RO Max was all the good stories I heard about the smallest CDL Nano RO."

"This Nano RO Max was the right investment for me. Good cost value! It saved on boil time. This unit also has flexibility, you use it when you want to. This year we yielded more sap than last year but comparatively, my boils were less time consuming, and I used less wood. It kept pace with my evaporation rate. It did not alter the flavour of my syrup which is important to me. I was very happy with my investment, in fact, I will be placing an order for another one!"

DOUG WILSON (North Lancaster, Ontario)

130 taps and plans for expansion

"Five years ago, I embarked on my maple syrup making journey crafting my own personal use RO unit for my needs. My homemade RO was much slower and finicky. I knew the potential that the CDL Nano RO Max had when I saw it at the CDL booth at Algonquin College at the Lanark Summer Tour in 2023."



Doug described the CDL Nano RO Max as a "life changer," he highlighted its impact on his routine and got to bed at a normal hour. Purchasing this unit proved to be a significant and beneficial decision.



THE CRÉNEAU D'EXCELLENCE ACÉRICOLE: DRIVING THE GROWTH OF THE MAPLE INDUSTRY

As a proud community member in the Bas-Saint-Laurent, Gaspé Peninsula, and Chaudière-Appalaches regions, soon to be joined by Estrie, the Créneau d'excellence Acéricole (maple syrup niche of excellence) has played a major role in the growth and development of the maple industry. Through its innovative, collaborative approach, this flagship initiative is looking to energize the maple syrup industry with four main goals: improving product quality and distinctiveness, supporting the industry through labor shortages and knowledge development, driving innovation, and developing the industry responsibly.

NETWORKING AND COORDINATION

By cultivating a spirit of cooperation and collaboration between industry partners, the Créneau Acéricole fosters cohesion and synergy, which are critical to everyone's success. This approach encourages not only the sharing of knowledge and best practices, but also the implementation of joint projects that address common challenges.

SUPPORT FOR RESEARCH, INNOVATION, AND EXPORT PROJECTS

"Having invested over \$7.2M in the industry since 2020, the Créneau d'excellence Acéricole continues to show its unwavering commitment to supporting capacity-building initiatives. Whether it's through financing or support for implementation, we are at the forefront when it comes to encouraging research, innovation, training, and export projects. These key initiatives are crucial to keeping the industry at the cutting edge and making sure it remains competitive on the global market," says General Manager Marie-Myriam Dumais Synnott.

The Créneau Acéricole is proving to be an indispensable driver of development for the maple syrup industry. By supporting its partners, financing capacity-building projects, and promoting a sustainable approach, it's paving the way for a stronger, more innovative, and more united maple industry. By joining

time-tested traditional knowledge with the latest innovations, the Créneau is helping this emblematic Canadian industry not only succeed, but make its mark.

THE CRÉNEAU ACÉRICOLE ANNUAL MEETING

The Créneau Acéricole's annual event will return on November 5, 2024, in Rivière-du-Loup, and it promises to be a crucial day for the future of maple sugaring. This year, we'll be using a hybrid formula so that everyone can take part, wherever they are," explains Dumais Synnott.

The event will place a strong focus on training in the industry. It's a unique opportunity to explore the latest projects, meet key training players, and discuss the innovations that are shaping the maple syrup industry. It's also a great chance for local players to meet, share ideas, and strengthen bonds within our community. To learn more and register, visit the Créneau Acéricole website (in French).

creneauacericole.com





Special collaboration of Réjean Bilodeau
Author, maple sugaring researcher, and
promoter of the Bellechasse identity

Photo credit : Radio-Canada

FORGING BELLECHASSE REGION IDENTITY THROUGH MAPLE SUGARING HERITAGE

Readers who have followed my work closely since my first volume in 2016, which marked the quest for a true Bellechasse identity, will appreciate how the project has evolved over the past five volumes. This is especially reflected in the changing themes of each biennial publication. As readers have come with me on this journey to forge a true recognized identity for the region as the cradle of maple syrup production—an identity that was solidified in 2017, some 300 years after the region's beginnings in 1716—they have also surely seen how telling the story of Bellechasse's maple syrup history has been the primary means to that end. By telling the story of the twenty or so Bellechassois who built our history between 1716 and 2016 (including the Chabot family, which is now known throughout all of North America and even in Western Europe), we can even better promote that identity to the rest of the world.

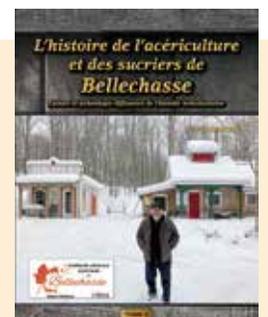
CDL was the first to proudly display our identity logo at the entrance to their Saint-Lazare-de-Bellechasse head office. They also generously offered, unprompted, to help promote the sale of my books by holding a book launch at their Open House. That made them the only leading manufacturer of maple syrup equipment to work that way in our region, supporting the growth of our now-recognized identity. CDL has also done the same for each subsequent volume, to the delight of readers with a taste for local and global maple syrup stories! And of course, let's not forget that over 120,000 copies of our logo have been printed, distributed, and publicized by CDL in their annual sales catalogues, their CDL's Way maple sugaring magazine, and their Open House invitations year after year to continue spreading this identity so dearly acquired for all of us over the years.

Renowned historian, ethnologist, and writer Matthew M. Thomas, who took the time to visit Bellechasse in the summer of 2023, quickly understood and declared that I had succeeded brilliantly in conveying Bellechasse's place in maple history and the importance it must have had in defining Bellechasse's identity and pride. Today, I continue to hopefully count on the unique support of the Chabot family, and particularly their technological knowledge in the maple syrup industry, so that we can work together to further solidify this growing identity. This collaboration will hopefully be continued with the proactive committee formed in November 2023 in the "MRC" of Bellechasse—an unprecedented collaboration that will consider many new projects thanks to the famous Bellechasse identity logo.

Thank you to CDL and the Chabot family!

Launch of Réjean Bilodeau's fifth volume

Join us for the launch of
Réjean Bilodeau's fifth volume on
Saturday, May 18 at 2:00 p.m.,
as part of our Open House in
St-Lazare-de-Bellechasse.



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