Sugaring Guide - First issue | Spring 2021

CDL

CDL Intelligence

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Making our customers' everyday lives easier!



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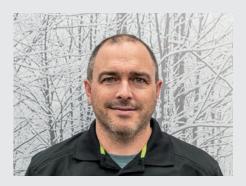
Portrait of an inspiring female maple producer





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The CDL team is very proud to present to you today the first edition of its new maple sugaring magazine. It's a project we've been wanting to do for several years, and our 30th anniversary is the perfect opportunity to finally launch it.

This magazine will be a good complement to our annual catalogue, and will aim to keep you better informed by offering you articles as well as expert and customer testimonials on new CDL technologies and trends in maple syrup production. The magazine will also be a way to communicate with you on a more regular basis and to keep you informed about the improvement of all our regional and corporate services.

We hope you will enjoy it. We are working very hard to make it a valueadded tool for all maple syrup and sap producers.

I hope to see you soon. In the meantime, enjoy your reading!

Martin Chabot Co-owner and general manager of CDL USA

Marter Chika



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Special collaboration By Réjean Bilodeau Author-researcher in maple syrup production

STORIES OF MAPLE SYRUP MAKER FAMILIES THE CHABOTS, MASTER MAPLE SYRUP PRODUCERS FOR 140 YEARS AND 5 GENERATIONS!



Pierre Chabot (1st generation)



Alphée Chabot (2nd generation)



Adrien Chabot (3rd generation)

Their names are Pierre, Alphée, Adrien, the ancestors who passed on their passion and know-how to the co-founders of CDL, three brothers with complementary skills: Jean-Marie, Christian and Yvan Chabot. This fourth generation then gave way to the sons of Jean-Marie, Vallier, Martin and Marc-André Chabot, now co-owners of CDL Sugaring Equipment. With the Chabots, we can therefore say that maple syrup production has been running in their veins for 140 years and 5 generations!

Born in 1858 in Saint-Lazare-de-Bellechasse, Quebec, Pierre went to Saint-Magloire in 1879 with his wife, Aurélie Bilodeau, to open a settlement there. In 1880, he tapped a hundred maple trees there, enough to satisfy his family and sell at the general store 7 gallons of blond syrup and 20 loaves of sugar according to the method inherited from his father, Marcel Chabot. It was in 1886 that the couple returned to Saint-Lazare-de-Bellechasse to live on Rang 6.

Alphée Chabot, born in Saint-Lazare-de-Bellechasse in 1896, moved to the United States to work in Somersworth, New Hampshire, and obviously became bilingual



From left to right: Yvan, Jean-Marie and Christian Chabot (4th generation)

there. Back in Quebec in 1930, he bought his father's land to exploit the maple grove there. Alphée becomes the first scientific sugar maker in the region when he boiled his metal spouts to destroy bacteria before tapping to promote the yield of his sugar bush! It was he who awakened the minds of Jean-Marie, Yvan and Christian, his grandsons, to take an interest in maple production.

Born in 1920, Adrien is a born entrepreneur! From the age of 16, he started a fox farm. He married in 1944 Jeannette Henry; their marriage gives rise to 12 children all born in Saint-Lazare-de-Bellechasse. In 1973, Adrien gave himself, heart and soul to help his son Jean-Marie run his first sugar bush. Jean-Marie is also supported by the help of his stepfather, Mr. Eugène Fradette.

It was in 1991 that the three Chabot brothers, Jean-Marie, Christian and Yvan, joined forces to create CDL. The expertise of the three shareholders complement each other perfectly to ensure a strong start for the company.

In 2002, Jean-Marie's sons, Vallier, Martin and Marc-André, joined in as co-owners of CDL, replacing their uncles. Always passionate about maple syrup production, Jean-Marie, Christian and Yvan still operate their respective sugar bushes with great pleasure every spring. The first co-founder of CDL, Christian owns two sugar bushes with his wife Lucie, on Île d'Orléans and in Saint-Lazare-de-Bellechasse. Yvan operates a large sugar bush in Saint-Fabien-de-Panet with his wife Francine.

In 2014, Jean-Marie was recognized as the world master of maple syrup entrepreneurship and he was awarded this prestigious trophy from the I.M.A.C. awarded unanimously by all its members. 4

Vallier, Martin and Marc-André complement each other wonderfully in the management of CDL and each occupy strategic roles for the company. Their sister, Sophie, has a doctorate in neuroscience and immunology, and as she says: "Sugar follows me everywhere! "

The three brothers and their father are also maple syrup producers and owners of a 70,000 tap sugar bush in Armagh, Quebec. The family sugar bush has been an experimentation site for new CDL products for nearly 50 years.





From left to right: Martin, Marthe Fradette, Jean-Marie, Sophie, Marc-André and Vallier Chabot. (5th génération)

Thank you to Réjean Bilodeau, author and researcher in maple syrup production, for this special collaboration. He is behind three books dedicated to the history of maple syrup production in Bellechasse, Quebec. He is currently writing his 4th volume to be published in May 2022.



BEGINNER BOTTLING KIT -PROPANE MODEL

6600802

- > 1x 16" x 16" sugar pan cover
- > 1x 16" x 16" sugar pan
- > 1x 16" x 16" filter holder
- > 1x R-65 propane burner
- 1x 16" x 16" water jacketed tank with ½" ss drain valve (included)
- > 1x propane burner support
- Coffee type valve (new)

Assembly required

Buy the electric option to complete your set!

NEW

NOW AVAILABLE : HEATING ELEMENT

Characteristics of the electric option

- > Works on 120 V
- Adjustable thermostat from 0 to 250 °F

Made to keep the syrup at an adequate temperature for efficient bottling.

Possibility to buy only the electric version. Ask your sales representative or your local CDL store!





 Superior quality, CDL fabrication in brushed stainless steel

- Reinforced urethane insulated base with anchor points
- Sloped bottom for complete drainage

Available sizes: 8 foot diameter: Height of 7.5', 10', 12.5', 15', 20' and 25' 12 foot diameter: Height of 10', 15', 20' and 25'



CUSTOMER TESTIMONIAL

TERRY L. PATTERSON

Owner of Patterson Farm Westfield, Pennsylvania, United States

83 000 taps

"We use almost exclusively CDL equipment and have been doing so for goodness grace as long as I can remember. My dad before me - a lot of you may know Richard - he sold CDL equipment before the new superstore was built and at his passing, Terri and I came on board here to keep this going. The CDL new equipment we used this year are the silos. We have three 17,000 gallon stainless steel silos for sap and water storage. As well, good relations, good connections here, we get what we need and it's top-notch equipment."



By Holly DeMartinis Purchasing Manager – CDL USA

APRIL LEMAY:

AN INSPIRING FEMALE MAPLE PRODUCER!

At the beginning of last April, I had the chance to interview a very inspiring maple producer and a successful woman-owned business: April Lemay. Hope you enjoy this interview and learn more about her company, April's Maple, her values, her professional background and her daily life. Happy reading!

Holly: Describe your business to us a little bit?

April: Sure! April's Maple is located in Canaan, Vermont. We have about 13 500 trees tapped on a little over 800 acres of land. We are unique geographically because we sit right on the Canadian border near the New Hampshire border, so we are located right on the Vermont border. At April's Maple, we have three different lines of businesses that we focus on. Most of our business is focused on once we make our maple syrup putting it into the marketplace in a retail fashion so that could be in our retail store. I am my biggest retail customer, selling to other locations that retail our maple syrup and our maple products. We pride ourselves on a diverse product line that is really grounded in quality but hopefully a little bit different so maybe the packaging lures you in and then the uniqueness of the product and that the quality of the product brings you back for more and to try different things. We are focused on that retail side of the business. We also have a maple cafe where we use our maple products to do a maple-inspired menu, so that when people do make their way up to this very remote part of the world. We try and give everybody a maple experience when they come up here. The cafe is to help people to understand how you can use maple, how good it is, what it tastes like and how you might want to use it at home. Then, I also do have a smaller part of my business where we wholesale syrup.

Holly: Great! Can you tell us a little bit about your professional background?

April: I actually grew up in Canaan, a very small town as I said on the Canada - New Hampshire border. I graduated with a class of 20 kids here in Canaan and after I went to college. I joined a large professional services firm and traveled around the world kind of ended my career there after 17 years, with a team of a few hundred people focused on consulting services for financial institutions. So not necessarily, if you think about maple syrup and you think about this financial institutions and financial markets where the parallels are. I mean, a lot of it actually kind of plays off each other when I was in. when I was running a practice: we focused on quality, we focused on people,



we sold services and skills and here I have the opportunity to sell maple things that we create and a lot of things are still in play. The customer experience is still in play that's I think why one of the reasons we are highly regarded is because we provide a good customer experience. You know, financial management is very important part of what we do, so I used to run a practice within a large professional services firm where we sold services and now we make and sell maple syrup.

Holly: Where did your passion for maple culture come from?

April: My fondest memories growing up are on Easter trekking into the woods to my grandfather's piece of land, everybody go and grab buckets and to carry them to the evaporator. I mean to me, maple syrup is about history, it is about tradition, it is about family and I don't know how you can't love all that. That is where I guess that started from. If I think about kind of my grandfather's sugar bush actually was on this piece of land that I purchased. I had my corporate job for 17 years, I was talking to my mom one day and she was mentioning that she was thinking about her and her five sisters had taken over caring for the 800 acres of land for my grandparents after they passed away. She was saying how it would be great if somebody would buy it and you know do something that is sustainable something that kind of honors what my grandparents stood for. I had been considering a change at the time, not where I am today, not like there goes one job into a whole new environment but an investment property or some change right. Whenever I referred to home, I was always referring to my parents' home back in Canaan. It's when this idea of purchasing the land and starting this came up, I felt like it was the right direction for me to go because it felt like coming home which I had never really left, I guess so.

Holly: How did you start your maple syrup business? Let's go from when you made the transition from your previous job into your new adventure of April's Maple and maybe how you came up with the name.

April: I actually hired someone to help me think through the name because I knew that was important. They came back with April's Maple and a couple of other things that I knew were not right. April, it is a double meaning, right. April in Vermont is the sugaring month, it happens to be my first name. It is more than me. It is the April and April's Maple but there's the whole April Maple Family that makes this happen, so it is its own kind of identity versus I look at a bottle and say: "Oh, there's my name", that's me. So, I was very hesitant because it sounded very egotistical to put my name on it. However, it is the sugaring month, it's got a nice short snappy name, and it starts with an A, which is first in the alphabet. There were a lot of reasons it just kind of worked out and maybe, it is my name. It is what why it was meant to be because I was not born in April, so really it was a name and maybe you know that name had some reason to do with how I ended up kind of where I am.

How did I start April's Maple? I was very fortunate I was able to keep my corporate job and they were very understanding for about a year and a half when I started April's Maple. A lot of people said to me when I did this plan I went and I planned the footprint of the building I had one expansion but I planned a pretty decent sized footprint, you know, bought an evaporator that could boil off twenty thousand trees was thinking okay well I am going to tap everything you know you could. I did 9000 trees in 2013 and then added the rest the following year.

I decided that I would work my day job to have income and my parents were my first two employees. They still work here with me and my husband and my parents are here all the time. As well it started, as a "just let me do this" and maybe I'll keep my job and maybe April's Maple is - I'm not sure what April's Maple is yet - and then we started making syrup and I started having success with my branding and my logo and I really started to appreciate and enjoy being a part of this business. We did not have the cafe then we were smaller, we made only a few products but this is where I'd spend every vacation day I had and every weekend was up here, so I was commuting between Boston and here for a year. Then, I talked to my employer and I said: "I think I might need to leave what I am doing. I think I have found my passion!" They said: "Well, that is great, but do you know your passion can sustain you? We will give you a one-year leave of absence and you can figure it out." I mean what a great thing to offer somebody right. I am very lucky. The firm I was with had given me the opportunity to be a leader in a similar to sugar in a male-dominated industry. They saw a potential in me that I was not sure existed right and they nurtured it and they helped me to figure out what I could do if I set my mind to it. I could lead, I could create and it turned out that they taught me to lead and create. took those skills and led and created April's Maple.

Visit our website, section Interviews and articles, to read the complete interview.

By Steve O'Farrell Research project manager and development



BACK TO THE FIRST SEASON OF OUR NEW NANO RO!

nar



Osmosis Systems for the enthusiastic hobby maple producers. These small units are economical and simple to use. Highly efficient and consume very little electric

Just before the last season, CDL had introduced two new Reverse

power or a small power generator. The technology allows energy and evaporation time savings making maple syrup home production most enjoyable, as evidenced by Mr. Andrew Simms-Jacques, who bought it!

power and are operated on 110 volts

Two models are available: the first one is equipped with 2 X 600 gpd membranes (81008) and the second one includes 3 X 600 gpd membranes with recirculation pump (81013R).

Two membrane models offered are without a recirculation pump and is dedicated to hobby activity up to 75 trees. This tiny unit will remove from sap 6 to 8 gallons per hour of water allowing concentration between 4 to 5 Brix.

Larger capacity 3 membrane model is equipped with a special circulation pump that increases performance and allows higher process capacity capacity. This Nano RO will remove 10 to 13 gallons per hour from sap, taking sugar concentration up to 5 or 6 Brix with a better-sustained performance through the entire duration of the process.

Notice to interested parties! The Nano RO's can also be used for birch sap concentration.

These unique little machines are now offered for early bird purchase and will be ready for shipment early fall 2021. The product has known great success in its first year, to assure availability, CDL recommends early pre-delivery purchases in all our local stores, with our CDL sales representatives or on our online store.

81008



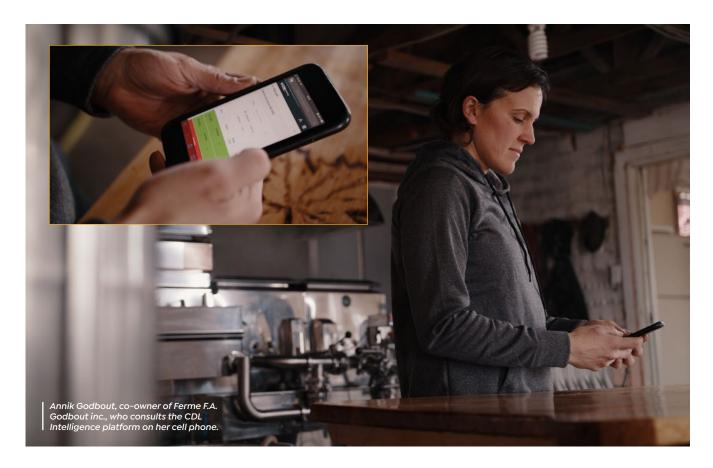
CUSTOMER TESTIMONIAL

ANDREW SIMMS-JACQUES

70 taps, Saint-Malachie, Quebec

"Artisanal maple syrup production must remain a pleasurable activity. This is exactly what the 3 membrane Nano RO has done for me this year. Thanks to the well-detailed instruction manual and the good advice from the CDL team. I quickly became familiar with this equipment and noticed the amazing efficiency of this reverse osmosis. As per my estimate, with this past season of large volume of low sugar sap, my Nano RO has cut nearly in half the time required to produce our maple syrup. I did not have to boil all day long and late evenings.

This affordable equipment allowed me to save additional expenses such as the purchase of a larger evaporator and the need to consume more firewood. As a bonus, it contributes to the better enjoyment of sharing precious time with my family. I strongly recommend it."



CDL INTELLIGENCE: MAKING OUR CUSTOMERS' EVERYDAY LIVES EASIER!

CDL Monitoring has been taken to another level recently. It's become CDL Intelligence, because it's now a complete sugar bush management system. Our vision was to create a system that supports you every day, like a second brain, helping you automate repetitive daily tasks so you no longer need to think about them. We also wanted it to be like a second pair of eyes, making it easier to manage your sugar bush and your facilities by providing real-time access to essential data. Finally, we needed to develop a system that could be customized for every possible configuration and type of equipment for small, medium, and large producers alike. In short, we needed all the information to be centralized.



By Marc-André Chabot Co-owner of CDL and Vice President of Research and Development



Since our customers' computer skills vary greatly, we simplified our platform so that all generations could navigate it easily and feel comfortable quickly. The new platform is also available on smartphones, tablets, and computers.

We are very happy with this achievement and proud to share testimonials from two customers who use CDL Intelligence to make their daily lives easier.

FERME F.A. GODBOUT INC.

Located in Saint-Gervais in Bellechasse, Quebec, Ferme F.A. Godbout Inc. is co-owned by Annik Godbout and her husband Guillaume Blais. The farm, which specializes in field crops and maple syrup production, expanded from 3,000 to 5,000 taps a few years ago. Annik is the 8th generation of Godbouts to live on this land, but the first woman in her family to manage it. She is also a mother of three (Jérémi, 7; Éricka, 11; and Xavier, 15) and has "a pretty busy life!" as she says with a smile.

When it became impossible for her to manage the labour needs alone, Annik decided to add the CDL Intelligence system to her sugar bush. Thanks to the vacuum sensors in the bush, managing leaks has become a lot easier for her. "With 13 mainlines to monitor. CDL Intelligence saves me a lot of time. I don't need to walk through the bush every day-only when it's needed, based on the data I receive on my phone. For me, that means extra time with my family, but also extra time for managing other parts of my business." The system has also helped improve her yield. For example, if a tree branch falls and breaks the tubing on a windy day, she can immediately use CDL Intelligence to locate the leak. That means she can quickly reach maximum yield, reducing the losses she would have had if the break had gone undetected for a day or more.

Annik has other equipment connected to the CDL Intelligence

system as well, including the extractor, the vacuum pump controller, and the tank level sensors. "From my phone, I can look at every part of my system to check on my tubing or my tank levels. I check on them several times a day-it's all at my fingertips. It's so easy and fun to manage. With the colour coding, I can see right away what the problem is." This high-tech factor also appeals to the company's next generation, Xavier, who is already helping out in his spare time and between his high school studies. Annik is very proud to be able to train the next generation. Above all, she's thrilled that her father François is still active in the company and passing on his wisdom: "It's so nice to see my guys working together! I'm incredibly lucky to have all three of them with me."

CDL Intelligence has brought Annik a level of efficiency that pays dividends not only for her company, but for her life. The same is true for our second customer.

ÉRABLIÈRE M.M.P.S. CÔTÉ INC.

Michel, Mario, Patrick, and Sylvain Côté are co-owners of Érablière M.M.P.S. Côté Inc. Their passion for maple sugaring comes from their father Aimé and their uncle Sauveur, with whom they would go around and collect the sap from buckets in the bush as kids. Patrick explains how the idea of starting a business came about: "In 1997, Mario told me that he wanted to buy a woodlot for our retirement. I told him that we should learn from Dad's experience and buy a sugar bush instead so we could enjoy it now. We had our dad with us for six years to teach us the basics of maple sugaring. Just before he



Maple sugaring still requires staffing, and that staff needs to be managed. These remain considerable challenges. However, as both customers can attest, our CDL Intelligence system helps smooth their day-to-day operations while optimizing their profitability.

passed, he told us that we were ready to grow."

Year after year, the Côtés improved their first 4,000-tap sugar bush in Saint-Charles-de-Bellechasse. They started by buying neighbouring properties, then in 2005 they bought Alain Métivier's sugar bush (a former IPL sugar bush) in Saint-Lazare-de-Bellechasse, and in 2009 they bought Lucie and Christian Chabot's sugar bushes in Notre-Dame-Auxiliatrice-de-Buckland, Saint-Nazaire, Honfleur, and Saint-Lazare-de-Bellechasse. Today, they are very proud of all their sugar bushes, totalling 65,000 taps. They operate two sugar shacks. The main sugar shack is the cutting-edge Saint-Lazarede-Bellechasse facility, where CDL Intelligence is involved in every step of the process, from harvesting to bottling. In fact, the only thing that isn't fully automated is the boiling itself. That's left to Michel, the "boiling expert." The Côté brothers have recently added automated pan washers to their daily routine to make that important step easier. Even in the middle of sugaring season, the shack is easily managed by just two employees. Work in the bush (tapping, leak repair, and tap removal) is subcontracted to a team that can access the data from the vacuum sensors in the trees. The Côté brothers bring their families to the second sugar shack in Saint-Charles every weekend. both to have fun and to teach their children the basics of the trade. iust as their father did before them.

For the Côté brothers, CDL Intelligence allows them to have a work-family-maple sugaring balance that "changes everything." Mario elaborates: "Of the four owners, three of us have other full-time jobs. It would be impossible for us to do this without that technology. It lets us have a balanced life and keep operating and growing. And above all, it keeps us stav passionate without working ourselves to death. Ever since we bought the intelligent reverse osmosis system five years ago, it's been night and day in terms

of work." Sylvain adds: "Now, with our 65,000 taps, we rarely leave the sugar bush after 7 p.m. We monitor our equipment in our living rooms, at home, with our kids. Intelligence and automation make work easier and eliminate the risk of human error during busy periods when fatigue typically sets in. This last season was the best example of that." Of course, maple sap is still transported between sites by truck, but the Côté brothers have even found a way to make that easier: they manage the trucks by establishing precise filling times and selecting valves.

Maple sugaring still requires staffing, and that staff needs to be managed. These remain considerable challenges. However, as both customers can attest, our CDL Intelligence system helps smooth their day-to-day operations while optimizing their profitability.





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By Serge Tanguay Sales Manager, Canada



LARGE-SCALE PROJECT FULLY EQUIPPED BY CDL: **THE STORY OF BLACK BIRD IN ONTARIO**

Picture a stunning valley in Ontario, where the Harmony River flows and 60,000 acres of forest stretch as far as the eye can see! Some 2,500 acres of that forest, in Harmony Bay, 40 kilometres north of Sault Ste. Marie, was chosen as the birthplace of Black Bird Management Ltd.'s maple sugaring division.



Since 1990, the Black Bird Management Ltd. team has been managing this expansive forest through selective logging. The owners and management team were looking to diversify their operations, and after analyzing several options, they decided that maple syrup production was the most in line with their activities.

It all began in 2017. That year, they attended several conferences and conventions to perfect their knowledge and, above all, find the best maple sugaring equipment manufacturer with whom to begin a lasting business relationship and quickly bring their project to life. CDL Maple Sugaring Equipment seemed like the perfect choice. Patrick Rosebrook, CEO of Black Bird, explained, "After talking to other large-scale maple syrup producers, we concluded that CDL had the knowledge to help us carry out our project, the ability to supply us with the equipment we needed, and the contact



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with other industrial maple syrup producers who could inspire us."

Planning began in 2018. CDL worked full-time with the Black Bird team to design the tubing network: a 95% underground air/water system, made possible by gravity and the unique topography of the site. CDL also helped supplying the equipment needed to produce maple syrup inside the Black Bird building, which was scheduled for construction the following year. In early summer 2019, while the ground was being broken on the new building, 80,000 taps were being installed in the bush thanks to CDL's training.

CDL also collaborated to the interior design of the 20,000-square-foot building as well as the equipment setup. Ensuring that certain tools were customized. Samuel Beaulé, Carl Plante's successor as CDL project manager, mentioned, "To meet unique needs like Black Bird's, our research and development team had to build the largest evaporator ever made by CDL, twice over!"

CDL also offered on-site training to Clyde Bridge, manager of the maple sugaring division at Black Bird, at my own industrial sugar bush in Gaspé. That training helped him learn the basics of the job, which came in handy since he manages most of the daily work during the syrup season. Patrick pointed out, "We were novices. Even though we had experience in forestry, we really didn't have any in maple sugaring." Patrick and Clyde work in tandem to manage the operations of the 10-employee team: Patrick deals with forest management and Clyde with the maple sugaring division.

After a successful first syrup season in 2020, the team is adding some 20,000 taps to total over 100,000 taps, an important milestone for the project's profitability.

Since the project will continue to unfold in three phases over the next few years, all installations in the bush will now be managed independently by the Black Bird team. However, Samuel and the CDL team will be just a phone call away to help them acquire equipment for the next phases and provide technical support during the season. Samuel explained, "We've developed a great business relationship, but also a friendship.

When you talk to someone often, like we do with the experts at CDL, it's easy to become close.





The three of us are producers-we experience similar things in our daily lives." Patrick added, "When you talk to someone often, like we do with the experts at CDL, it's easy to become close. We could even call in the middle of the night, and we know someone would answer!"

With his 15 years of experience at CDL, Samuel remains the first point of contact for Patrick and Clyde, and refers them to his colleagues if need be. Samuel says, "I know who to redirect them to internally to help them get what they need as quickly as possible. I can't take all the credit, though, for the Black Bird team's satisfaction. It's really a team effort!"

Patrick explained, "Without the support of CDL, this project would have been almost impossible. It was very important to have CDL on our side from the beginning. For people with little experience, we're really happy about our first For people with little experience, we're really happy about our first two good seasons. We owe it all to the quality of CDL's products and service.

two good seasons. We owe it all to the quality of CDL's products and service."

We hope that this success story will inspire you to rely on the support of CDL, no matter the size of your project. Contact our team of sales representatives for personalized service!





BLACK BIRD PROJECT IN NUMBERS

- Total project: 250,000 taps
- 1 single pump station with 18 vacuum pumps and 8 variable speed extractors
- Intelligent reverse osmosis system that can concentrate 18,000 GPH from 2 to 30 Brix in a single pass
- Two Master evaporators, the largest propane evaporators manufactured by CDL (each evaporator can boil 18 barrels per hour at 30 Brix and is equipped with automated washing)
- 20-inch presses with calibration tanks and stainless steel plumbing



By Luc Lagacé Ph. D. Team Leader, Research and Development, Maple Products and Processes at the Centre ACER

RESEARCH ON THE EFFECT OF TUBING COLOUR ON MAPLE SAP HARVESTING

COLLABORATION BETWEEN CDL MAPLE SUGARING EQUIPMENT AND THE CENTRE ACER

DESCRIPTION OF THE PROJECT

Preliminary results from the Centre ACER and other research groups suggest that the colour of the materials used to collect maple sap could affect the volumes of sap collected and, consequently, sugar bush productivity. To date, studies have focused mainly on spout colour, but very little information has been collected on the effects of tubing colour. In all cases, dark colours are associated with greater absorption of the sun's radiation and therefore increase the materials' temperature. This increase in temperature for dark materials could explain certain differences in the performance of sap collection systems—in this case, on the volumes of sap collected. Currently, sap collection tubing, especially lateral tubing (5/16"), is available in different colours (or tints) ranging from blue to green, and sometimes even purple or translucent.

The proposed research project therefore aims to analyze and compare the performance of collection systems equipped with blue and ash grey tubing (shadow grey). Research is being done at the Centre ACER sugar bush in Saint-Norbert-d'Arthabaska, in the Centre-du-Québec region. This sugar bush is characterized by its low slope and its sugar maples



with a relatively high average diameter at breast height (DBH). The experimental design consists essentially of comparing different coloured tubing systems (blue and grey), tapped the same way and run parallel to one another while keeping a minimum distance between each tap. This will allow for good comparison of both tubing colours while minimizing other effects on the flow. The systems are also equipped with temperature (outdoor and surface) and vacuum sensors as well as calibrated water meters to obtain accurate performance data. Along with system monitoring, a sampling plan has been developed to determine the impact on sap quality by measuring the microbial load on the surfaces of the systems and the sap during the season, as well as to evaluate the degradation of sugars in the sap collected from these two types of tubing. The results of this research will make it possible to evaluate and compare the performances obtained from tubing of different colours and perhaps to explain, at least in part, the root cause of the differences measured and thus provide relevant information on the effect of tubing colour in order to better guide maple syrup producers in their choice of materials.

At the time of writing, the results were still being analyzed. Keep an eye out for my second article on the project in the next issue of CDL's Way.



By Vallier Chabot Co-owner and general manager of CDL

A NEW SWEETENER COMING SOON: NECTAR!

Since 2016, our research and development team has been working on an innovative new project that will allow CDL to reach new markets and make even greater use of maple products.

Many food processing companies are interested in a natural maple concentrate or sweetener that has a stable flavour, is highly nutritious and can be stored for a long time at room temperature. We began exploring this idea when consumers and companies in Europe and North America started showing real interest in natural beverages like maple and birch sap. Today, we are proud to be able to explain our approach and the many opportunities offered by this new process.



SAP AND MICROORGANISMS

As you probably know, raw sap is nearly sterile when it is extracted from the tree. However, it can later be contaminated in the taps, in the collection system or during storage. Currently, sap and concentrate have a very short shelf life, but refrigerated storage and transportation remain expensive and impractical on a commercial scale. The sap composition makes it a good host for microorganisms, so we needed to develop a stabilization process that would allow the sap to be stored at room temperature for long periods while keeping it as close to raw as possible. And above all, we needed to do it without chemicals, since the sap is largely desirable because it's natural.

A BRIEF LOOK AT THE PROCESS

Our process consists of preserving the sap as a concentrate or rather a concentrated product called nectar. That nectar has a final Brix of over 60. It is not altered, denatured or overheated, which gives it the best nutritional value possible. Instead, it is concentrated through mechanical filtration and gentle heating. Note that while the sap is heated, it is never cooked or boiled above 100 °C (212 °F).

First, the sap is sent through an ultrafiltration unit, which stabilizes it by eliminating any yeast and microorganisms that could alter it as it is being concentrated. Then it goes through a reverse osmosis process to increase the Brix and simplify the next step, which involves evaporating the water (without cooking the sap)



This new, unique, 100% natural sweetener is ideal for the food processing industry, since maple nectar retains all the nutrients and properties of maple sap.

to keep the natural sap's original properties. At this point, the sap has reached 60 to 70 degrees Brix, depending on the needs. It has become a stable product-maple nectar-that can be stored at room temperature.

The process can be fully automated, which means a quick return on investment with very low energy demand. It is also simple enough that any large or mid-sized maple syrup producer can use it. Finally, it lowers production costs and creates an interesting maple swettener.

THE SWEETENER OF CHOICE FOR FOOD PROCESSING

This new, unique, 100% natural sweetener is ideal for the food processing industry, since maple nectar retains all the nutrients and properties of maple sap. What's more: it has almost unlimited potential in food processing. Nectar can easily replace the liquid sugars used by many large food and food processing companies.

It can be kept in a warehouse, making it easier to use, store, and commercialize for food processing companies.

STAY TUNED!

We will soon be making some maple nectar units available exclusively to our customers. A technology showcase project is also underway to allow maple syrup producers who are interested in the process to visit and learn more about this promising CDL innovation for the maple syrup industry.

By Martin Chabot

Co-owner and general manager of CDL USA and head of international business development – CDL Sap Division



CDL'S SAP DIVISION BLOOMS ON EUROPEAN SOIL

CDL has been diversifying for several years now by adapting its equipment to harvest sap for birches and other trees. This has led to great potential in Europe, where birch sap (also called "birch water") has been a popular drink since the 12th century.

The growth of CDL and its European sap division began with one man, David Clément.

DAVID CLÉMENT: FROM CUSTOMER TO CDL SALES REPRESENTATIVE

Flash back to the spring of 2010, in the French Pyrenees. David Clément was harvesting his first batch of birch sap in small cans, trekking through the mountains with his trusty quad. Every year, he extended his season a little more; he spent one month, then two months, then three doing the "birch run," as he called it. He started looking online for ways to improve his yield and performance, which is how he came across the "Canadian method" of harvesting maple sap. He got in touch with CDL to learn more and started running tubing. In 2013-2014, he began getting set up with CDL products. Martin Chabot, manager of the sap division, recalls: "The





business relationship grew season after season. It became a true partnership, so we quickly agreed with David that he could become our first CDL sales representative in Europe." David adds: "CDL always has something new to offer, and the French Pyrenees region, where my company is located, is a great testing ground for their products.

It's also a great location to develop

the sap division in Europe."

After seeing a report that birch sap was being harvested at the Château de Chambord, David Clément reached out to the site's director of hunting and forestry, Etienne Guillaumat, to recommend installation techniques. At the time, the birch sap was being harvested by hand using small cans hung on each tree, the way David Clément had been doing a few years earlier. Shortly after their phone call in March 2020, the two men planned a meeting in May at the Château de Chambord, which was completely closed to visitors at the time due to the pandemic.

"We quickly agreed that CDL's equipment was the best solution for them—it was much simpler for their installers. So we got everything lined up quite fast and started installing in late fall and early winter of that year, just before Christmas," David recalls. The Chambord team, David Clément, and CDL's experts all worked together to develop an installation plan for the tubing. The goal was to make the network as efficient as possible for harvesting and allow for easy repairs during the season. Another issue to consider: the harvesting area had to be protected so it wouldn't interfere with the estate's large animal population and its other activities, like hunting. The pumping station was completed in January 2021, allowing the Château de Chambord team to begin its first harvest with CDL tubing and equipment the following spring.

BIRCH SAP FROM CHAMBORD: A MAJOR ENHANCEMENT PROJECT

Harvesting and marketing birch sap was seen as an ideal way to diversify sources of revenue for the château, a French-Renaissancestyle building that has belonged to the French state since 1930. The château grounds, which form a 5,440-hectare park, are home to a large number of birch trees, making this big project even more appealing to the Chambord team.

What's more, it aligns directly with the goals of the château's hunting and forestry department, namely to conserve the natural heritage of the Château de Chambord estate. Etienne Guillaumat, the department's head, explains: "Our team was very excited about this birch sap project. It's a way to protect and support trees like birch, which tend to be overlooked by foresters even though they're pioneer species that grow much



more easily than more popular species like oak. We quickly chose CDL, a world leader in maple sap harvesting, to install Chambord's first pumping station because birch sap is harvested much the same way as maple sap."

This innovative way of promoting the Sologne region—and Chambord in particular—with a natural, authentic and very healthy drink has proven highly popular. It's sought after by gourmet restaurateurs from across France and visitors can purchase their own birch sap bottles within the château's walls. After having harvested 13,000 litres of birch sap during the 2021 season, the Chambord team is now working on creating birch-sap-based products, including a line of cosmetics.



APICULTEURS DEPUIS 1920 FAMILLE MICHAUD, OFFICIAL DISTRIBUTOR OF CDL PRODUCTS

Another exciting breakthrough for CDL's European expansion: Famille Michaud Apiculteurs is now the official distributor of CDL products and equipment. This world-renowned family business, headed by a fourth generation of entrepreneurs, is recognized as the European leader of natural sweeteners thanks to its strong technological background and more than 100 years of experience. Its history aligns fully with CDL's values, making it an ideal partner for the development of our sap division.

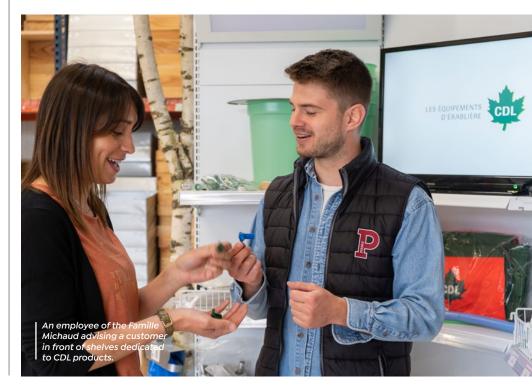
So where does CDL go from here? For one, it intends to continue expanding into Eastern Europe, particularly Russia. CDL has recently added a sales representative for the region, so it's off to a great start!



ABOUT THE CHÂTEAU DE CHAMBORD, A JEWEL OF THE RENAISSANCE

The immense, majestic Château de Chambord sits within 5,440 hectares of wooded estate. It was built over 500 years ago by King Francis I, who financed Jacques Cartier's expeditions to America. "In some ways, history has come full circle now that the Quebecers have returned, bringing CDL equipment to the Château de Chambord," remarks David Clément.

The Château de Chambord is recognized worldwide as a lasting symbol of the French Renaissance. It has been on UNESCO's World Heritage List since 1981.





By Steve O'Farrell Research project manager and development

NEUTRALIZATION OF PH FROM MAPLE SYRUP OPERATION WASH WATERS

At CDL another new product is offered for the neutralization of pH of wash waters in maple syrup production. In order to allow its customers to comply with the new standard of the Ministry of Sustainable Development, Environment and Fight Against Climate Change in the Quebec Province, in Canada. The Regulatory scheme applying to activities on the basis of their environmental impact was filed in September 2020 and entered into force on December 31st of that same year.

CDL'S SOLUTION

This new equipment is dedicated to the neutralization of the pH of wash waters. How does it work? This equipment must be installed at the exit of your reverse osmosis.

It discharges by injection and controlled dosage of sodium hydroxide or

citric acid in liquid form. Two pH probes monitor the neutralization process. Wastewater is directed to a neutralization tank before being discharged once neutralized into the environment.

Once installed, the device operates autonomously with little human intervention. It can also be linked to different equipment emitting alkaline or acidic wash water and compatible control and monitoring systems like CDL Intelligence. Some optional accessories are also available on request as a recirculation pump or neutralization tank.

We hope that this simplified system will stand out from the competition. The first deliveries are scheduled for fall 2021. For more information, contact your local CDL store or your CDL sales representative.

THE REGULATORY SCHEME APPLYING TO ACTIVITIES ON THE BASIS OF THEIR ENVIRONMENTAL IMPACT, IN SHORT

Here's what was announced briefly:

- For sugarbushes 75,000 taps and more: A ministerial authorization must be requested;
- For sugarbushes with 20,000 to 75,000 taps: A declaration of conformity must be completed;
- For sugarbushes with 20,000 taps and less: Exempt.

However, the following minimum conditions of the Ministry of Sustainable Development, Environment and Fight Against Climate Change must be respected:

- Wastewater must not be discharged on the coast, on a shore or in a wetland;
- The water must respect a pH between 6 and 9.5.

Consult the Ministry directly for all details and authorizations. Also find out about the available grants offered by the Ministry.

https://www.environnement.gouv.qc.ca/lqe/autorisations/reafie/





CDL HIGH VACUUM SAP LIFTER KIT

THE SOLUTION TO SOLVE REVERSE SLOPE PROBLEMS.

This equipment is used to lift sap from one pipe to another sloping down to a pump station. The system can lift sap up to 20 or 33 feet of elevation depending on model.

- Access the inside through a small or a large door in the front.
- > Continuous heating with a safe propane pilot to prevent freezing (propane tank not supplied).
- > Mainlines entry completely reversible.

Four available models:

12V solar model From 200 to 700 taps* Max 20 feet of elevation 73800012V1P

230V electric model with 1 pump From 300 to 1000 taps* Max 20 feet of elevation 7380002301P

230V electric model with 2 pumps From 600 to 2000 taps* Max 20 feet of elevation 7380002302P

230V electric model with two 280GHP pumps in series From 275 to 875 taps* Max 33 feet of elevation 7380002302P

* May vary depending on vacuum level and on feet elevation.

CUSTOMER TESTIMONIAL MICHEL LECLERC

2300 taps

Saint-Georges-de-Beauce, Quebec, Canada

"Before, I used sap ladders. I would tell maple syrup producers who are tired of playing with this equipment to switch without hesitation to the CDL High Vacuum Sap Lifter Kit. I was skeptical at first, but after watching videos on YouTube and talking with my sales representative, I finally made the purchase before the last season. I am completely satisfied! It's great to see that its vacuum is the same at the lifter kit as it is at the pumping station! We can't ask for better than that! "

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By Serge Tanguay Sales Manager, Canada

REMOTELY CONTROL YOUR CURRENT RO FOR A LOW COST!

You have a reverse osmosis concentrator and want to add features to it allowing you to remotely manage certain key stages in the concentration process? It is now possible to add an affordable module with different options to control your current system at your fingertips, no matter which model you have or which company it's from. A novelty easy to install now available at CDL!

Here's what we can help you do:

- Start/stop the system
- Operate tank valves (sap and filtrate)
- Direct concentrate and filtrate to tanks or other locations
- Manage pressure and concentrate flow
- Read input pressure and turbine high/low pressure
- Read filtrate or concentrate
 flow rate
- Read incoming and outgoing Brix
- Read temperature

The best part? It's a small investment and simple to use!

This solution is perfect for customers who don't have an intelligent RO system yet. It's even available for mini ROs! Contact our team to upgrade your current equipment and make your life easier!





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By Lionel Turmel Sales Assistant **and Jonathan Côté** Marketing Project Manager -Product and Customer Service





HOBBYISTS: TIPS FOR CHOOSING YOUR CDL WOOD-FIRED EVAPORATOR!

At CDL, our experts are here to guide all types of maple syrup producers, from the smallest to the largest, from the beginner to the most experienced. To help new hobbyist maple syrup enthusiasts who want to produce maple syrup for fun, here are some details to get you started in your thinking about buying a small CDL evaporator. Please feel free to contact your local CDL sales representative or store for personalized advice. Our team is here to help you!

Before you start shopping, here are the questions to ask yourself:

How many **taps** do I have, but more importantly, how many do I want to have in a few years? Project yourself five years into the future if you want to increase your number of taps in the next few years.

How much **boiling time** do I have? How many liters / gallons should I boil? Most importantly, will I be boiling each day as I go, or if I am going to accumulate sap to boil more. This notion is important in determining the size of the evaporator you need; if you boil as you go, an evaporator with a smaller capacity will work fine for you. If you choose to boil a few days a week instead, you will need equipment with greater evaporation capacity or you can purchase a small reverse osmosis concentrator, like our Nano RO. The same logic applies to your maple sap tank.

How much **space** do I have? Think about the dimensions of your boiling point and the good circulation around the appliance, to make your daily life easier.

And finally, what is my **budget**?

Let's do a little practical case to better understand. Consider a customer who has 200 taps with a 2 gallon (10 liter) bucket.

Scenario A: If you are collecting each day and the buckets are half full, then you have 100 gallons to boil. If you take a Hobby 18 "x 48" evaporator with flue pan (6700102WP), you will evaporate between 10 and 12 gallons per hour. So for 100 gallons you will need to boil for 8-10 hours.

Scenario B: If you are collecting only on weekends and the buckets

are full, you have 200 gallons to boil. You will need to double your boiling time with the same Hobby evaporator.

Therefore two solutions available for you if you want to optimize and above all reduce your boiling time.

- You buy a more efficient evaporator if your budget allows it.
- 2- You keep your evaporator and purchase a reverse osmosis concentrator like the Nano RO to remove 13 gallons of water per hour of operation, thus halving your boiling time at a fraction of the cost.

WASHING AT THE END OF THE SEASON

To wash the evaporator at the end of the season, simply soak the pans with a product such as Sani-Clean or acetic acid 99% glacial according to the recommended dosage depending on the size of the evaporator, rinse well and store pannes in a dry place. All of our evaporators are engineered with premium argon welded stainless steel, fully compliant with the California Standard for Lead. The pan connections are also made of stainless steel, which ensures that the evaporator will pass through the generations. They are powerful and robust evaporators, designed with the same precision as the larger ones.



	HOBBY PRO	EVAP-O-GRILL	HOBBY EVAPORATOR	PROFESSIONAL EVAPORATOR
Ideal for the number of taps	25	50	200	500
Performance Gal/h	5 gal/h	7 gal/h	Up to 15 gal/h (for 18"x60" model)	Up to 32 gal/h (for 2'x8' model)
Dimensions and models available*	16" x 32" Base: 670090200 Flat bottom pan: 670090215 or 3-way pan: 670090214	2' × 3': 670090	18"x48" with 2-way flat pan: 6700102WD 18" x 48" with 18" x 36" flue pan and 18" x 12" syrup pan: 6700102WP 18"x 60": 67001	20"×84": 6700103 24"×72": 6700302 2'×8': 6700502
Additional Information	Assembly required	Reversible	Reversible	Reversible

* Insulation and bricks not included. More options are available.

By Lionel Turmel Sales Assistant **and Jonathan Côté** Product Marketing Project Manager -Customer Service







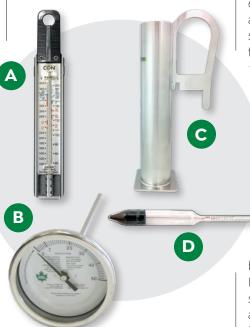
HOBBYISTS: HERE'S THE EASIEST WAY TO MAKE YOUR OWN MAPLE SYRUP!

We've collected a few simple ways to successfully make your own maple syrup using a few essential tools you can get at CDL.

HOW DO YOU CHECK YOUR SYRUP'S PRECISE BOILING TEMPERATURE?

First you need a syrup thermometer, like our candy thermometer (71750426 - see image A) or our dial thermometer (72920003 see image B). You'll need to calibrate it by determining your water's boiling point. That might seem basic, but atmospheric pressure can change this so-called absolute temperature. That's why we suggest doing the following to identify the exact boiling point for your own system and location.

Place the thermometer (A) or stem (B) in boiling water for at least one minute. The water should boil between 211 °F and 213 °F depending on the atmospheric pressure. Let's say your water boils at 212 °F. With the candy thermometer, your syrup would be ready at 7 °F more, so at 219 °F. With the dial thermometer, when the water boils, you set the needle to zero; when the needle reads 7 °F above the boiling point, the syrup is ready.



HOW DO YOU CHECK THE DENSITY OF YOUR SYRUP?

Pouring the syrup at the right temperature doesn't necessarily mean it will have the right density. That's why you should always check it. To do that, you'll need a cup like our model 678489 (see image C) and a hydrometer like our model 66841 (see picture D). You're looking for a density between 66.00 and 66.20 Brix. Pour syrup into the cup and put the hydrometer into the syrup, then wait a few minutes to let the hydrometer adjust to the syrup temperature. The hydrometer floats on the syrup; when the red line is even with the surface, it means your syrup is the right thickness. If the line is above the surface of the syrup, it means the syrup is too thick. Conversely, if you can't see the line, your syrup isn't thick enough. Syrup that's too thick will leave a white crystalline sugar deposit in your containers because it has a higher sugar level. If your syrup is too thick and you're still boiling, make the next pour a little lighter (for example 0.5 °F lower), and mix your new pour with your first. If your syrup is too thin, do the opposite.

These are far from the only measuring instruments available! Ask your CDL representative or store for more information.

CORPORATE STORES

The CDL experience translates into personalized service at each stage of your maple sap processing. Just like a family, our maple experts make suggestions and guide you so that the quality of your harvest meets your expectations and those of your consumers here and abroad.

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