

## What is it?

Mappleau (pronounced “mah-ploh”) is a maple-derived liqueur made from distilled maple wine and sweetened with pure maple syrup. Its manufacturing process and its namesake are inspired by Pommeau, a barrel-aged French liqueur made from fresh apple cider and apple brandy (hard cider that has been distilled). There are a few different production methods that achieve different flavor profiles. For oak-influence, the distilled maple wine, i.e., maple brandy, can be back sweetened with barrel-aged maple syrup, and/or the sweet Mappleau can be aged in various types of barrels (e.g., new oak, bourbon, wine, brandy, etc.). Alternatively, unoaked syrup can be used for back sweetening for a lighter flavor profile, and the Mappleau can be aged in a neutral vessel (e.g., stainless steel).



*Serving Mappleau at the Arnot Forest. Photo by Ailis Clyne.*

## A new product in a growing market

The global distilling market profit was \$5.4 billion in 2020, of which US distilleries made up \$3.4 billion (almost 63%). In the US, the state of New York houses the largest concentration of distilleries with an estimated 7.6%. New York also houses the second largest number of craft distilleries with 145 operations in 2020 (Wood 2021). The global distillates industry is expected to grow 2.7% in revenue between 2020 and 2025 (Wood 2022), with 3.7% growth in the US.

While distilling technology has not changed dramatically, there has been a rise in craft distilling. Small batch operations that produce distillates using local materials tend to command a higher price for their products and appeal to premium consumers. Mappleau is produced in small batches that reflect the complexity of distinct local maple syrups.

The New York State Liquor Authority offers a farm distillery license that encourages craft distilling by reducing barriers to entry (e.g., license fees), and requires the use of NYS grown agricultural products. It currently requires that 75% of the ingredients used to manufacture products under that license be grown in NY. By using NYS grown maple syrup, producers can meet the requirements for this license when producing Mappleau.

## Buddy Syrup and Mappleau

“Buddy” is the industry term for a specific bitter and sour flavor defect that arises in maple syrup during late-season production. The compounds that cause buddy syrup increase in concentration and flavor intensity as the season continues. Mildly buddy syrup can have malty, fruity, and chocolatey flavors, while intensely buddy syrup can have sulfuric flavors like those found in fermented cabbage and some aged cheeses. Maple trees begin to produce the compounds responsible for buddy syrup when their leaf buds swell and “break” in the spring, but the date of onset is not possible to accurately predict. Furthermore, these compounds are not detected until after the sap is boiled.

Buddy flavor disqualifies the affected maple syrup from being sold as Grade A; instead it must be sold at a lower value as Processing Grade. Since Mappleau undergoes fermentation, distillation, and back sweetening, the negative flavors related to buddy syrup are not perceived in the final product. Bulk prices for Processing Grade are about half that of Grade A maple syrup, so using buddy syrup as a raw ingredient for a premium product can be a more profitable avenue of sale for producers.

## Flavor Characteristics

Mappleau retains the best qualities of maple syrup with the added warmth we come to expect of a digestif. Aromas of light caramel and red apple skins with a slight earthy note are prominent, although these can vary depending on the syrup. The first sip unveils the flavor characteristics of the syrup used for back sweetening. A Dark syrup can impart a medium caramel taste whereas a Very Dark syrup can bring out those flavors (i.e. aroma and taste) commonly associated with a pancake breakfast. The sweet taste profile is followed by the slight warming effect of the alcohol. Acidic or bitter notes are not expected.

### Mappleau Facts

<b>Alcohol by volume</b>	15-20%
<b>Sugar</b>	15-20 °Brix
<b>Serving temperature</b>	50-70 °F
<b>Occasion</b>	Digestif, dessert pairing, or stand-alone
<b>Glassware</b>	Tulip or snifter
<b>Aroma characteristics</b>	Light caramel, fruity (red apple skins, banana), earthy, woody (when barrel-aged)
<b>Taste characteristics</b>	Maple, medium caramel

## Production Process

The manufacturing process of Mappleau begins with producing a maple wine. Maple syrup is diluted with water to 25 °Brix and a yeast nutrient like Fermaid O™ is added together with distiller's yeast (*Saccharomyces cerevisiae*). The nutrient requirements for yeasts can vary, but for Mappleau a nutrient solution containing 150 mg/L yeast assimilable nitrogen (YAN) can be added at the beginning of fermentation, and an additional 150 mgN/L after approximately 4 to 5 days or when the solution reaches 17 °Brix (1/3 of the fermentation). This is equivalent to two additions of 0.48 g/L of Fermaid O™. Ferment the wine at 70 °F for approximately 14 days or until the residual sugar level, measured as °Brix or specific gravity, has stabilized. At this point, the wine is ready to be distilled.



*A column still at the Cornell Teaching Winery.  
Photo by Catherine Belisle, Ph.D.*

Distillation can take place in a pot still or a column still. If using a pot still, two passes will be required to create a clean, concentrated spirit. On a column still, one or two plates can be used, and close attention should be given to the temperature of the still, column, and condenser. On both methods, the product should be separated into cuts to later be assessed by the distiller. A cut refers to the collection of distillates as they are released from the distillation pot or column. Each cut varies in alcohol content and flavor profile.

Once the spirit is distilled, the distiller will taste each cut to separate it into three groups: heads, hearts, and tails. The heads are the first distillates collected and contain low boiling point alcohols that are undesirable in the final product. The hearts are distilled next and are the main product of the distillation, they contain the largest

percentage of ethanol. As the percentage of ethanol in the distillate dwindles, the tails start to show. Tails contain heavier compounds that can lend fatty and yeasty off-flavors to the distillate. When tasting the cuts, it is recommended to dilute the initial cuts to approximately 50% alcohol by volume (ABV) (100-proof). This will reduce the burning sensation and improve perception of the product.

With heads and tails discarded, the distillation is complete and the Mappleau can be mixed. A 12oz (approximately 375mL) solution with 15 °Brix and 15% ABV is desired.

*For volume calculations necessary to prepare the final product, please see the companion document: "Mappleau Recipe & Instructions".*

## Sweetening and Aging

During development, higher consumer preference was given to back sweetening with Very Dark and barrel-aged syrups. Very Dark syrups have robust flavor and dried fruit notes that add character to Mappleau. Bourbon barrel-aged maple syrup adds vanilla and coconut notes normally associated with aged whiskey that complement the maple character. Adding new oak chips can impart an intense wood aroma that can overpower the subtle maple flavor. This can be reduced by blending with a neutral Mappleau.

## Remarks

While maple spirits can be costly to produce, Mappleau can be produced with Processing Grade maple syrup without impacting the flavor of the final product. This can bring a new income alternative to maple syrup producers and distillers who want to showcase the character of maple through an expansion of product offerings.

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## Citations

Wood, Grace. 2021. "Distilleries in the US." IBISWorld. Updated October, 29 2021. <https://www.ibisworld.com/united-states/market-research-reports/distilleries-industry/>.

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