

Martinique Rhum Agricole - The Art and Science

To research the art and science of making **Martinique Rhum Agricole**, we made a research trip to Martinique in April 2006 and visited the distilleries.



Whenever we want to research a topic, we find that the best way to obtain information is to travel to the source and speak with the experts. We spoke with many Martinique rum experts, including Mr. Edward Hamilton, of Caribbean Spirits, Inc, known as the Ambassador of Rum, Mr. Gilles Trouillot, whom we named "Le Professeur du Rhum" (The Professor of Rum), Mrs. Claudine Neisson Vernant, whom we named "La Reine du Rhum" (Queen of Rum), Mr. Grégory Vernant, Master Distiller of Neisson, and Mr. Jules-Michel Fayed of St. James Distillery, whom Mr. Trouillot calls "Mr. Rhum." We also conducted the most imperative and integral part of our research, tasting the products.

The history of making rum in Martinique is very interesting, and owes a debt in a way to Christopher Columbus, who introduced sugar cane to the Caribbean in 1493, and as they say, the rest is history. The first lesson that we learned is what distinguishes Martinique rum (rhum is the French spelling for rum), is that Martinique, (along with Guadalupe and French Ghana), is one of the few places that makes rum from the juice of the crushed sugar cane, without any of the sugar removed. Only 3% of rum manufacturing is produced using sugar cane juice; the rest is made using molasses or concentrated syrup, which gives the rum a different aroma, flavor and in some cases, color.

The second lesson that we learned is that Martinique, a department of France, applies the same strict guidelines to making rum that the French apply to their winemaking. When the French government awards producers with the coveted A.O.C (Appellation d'Origine Contrôlée) designation for the label, the rum is called rhum agricole, (agricultural rum). In order to receive the A.O.C designation, the sugar cane must be harvested, processed, fermented, and distilled in Martinique according to strict government guidelines. If it doesn't have AOC on the label, then it is not rhum agricole. Martinique received the A.O.C. designation for their rhum agricole in November 1996, making their rhum agricole the only A.O.C. designated rum in the world.

Traveling throughout the island of Martinique, and visiting the many distilleries, we watched how the sugar cane was selected, cut either by hand or by machine, observed the complete process of making Martinique rhum agricole, and then sampled the rum, which was a vital and most rewarding part of our research. No wonder we enjoy doing research!

The types of sugar cane used to make A.O.C. Martinique Rhum Agricole

According to Mr. Grégory Vernant, only 12 kinds of sugar cane are used to make A.O.C. Martinique rhum agricole: Cristalline (a noble cane, Oficinarum) and the hybrid canes, B51.129, B59.94, B63.118, B64.277 (red cane), B69.566 (blue cane), B73.419, B75.368, B76.56, B80.08, R570 (Réunion) and B82.0333 (a new cane).

What the numbers mean

The first letter designates where the sugar cane originated, Example: R = Réunion, B = Barbados. The first two numbers indicate when the cane hybrid was created and the other numbers refer to the number of attempts that were made to create the hybrid. Example: B51.129 indicates that the cane was from Barbados and was created in 1951 after 129 attempts.

How and when the cane is cut



Martinique harvests their sugar cane only once per year, between February and July when there is the most sunshine and little rainfall, as sugar cane needs a lot of sunshine in order to produce sugar. In Guadalupe, they can harvest and produce rum at any time of the year, but in Martinique the cane is harvested only once for rhum agricole. The cane is either hand-cut or machine-cut depending on the size of the fields and the steepness of the slopes. Sugar cane may be cut "green" (non-burned) or the fields may be burned before they are harvested to rid the area of rodents and snakes and to burn the dry leaves of the sugar cane before the cane is hand-cut. When the cane is machine-cut, it is not necessary to pre-burn the cane.

What happens after the cane is cut? The science part of making rhum agricole.



The cut cane is delivered to the distillery where it undergoes a series of steps, beginning with weighing the cane. When a truck arrives, the cane is weighed, and the name of the truck and the delivery person is recorded along with the name and origin of the cane.

Random samples of the cane are selected from an opening in the side of the truck, and an analysis of the cane is made using a Brix scale to determine the level of sugar, the bonus or rebate, the acidity in the juice, as well as to determine the quality of the cane. Depending on the sugar level, the distillery will accept or reject the cane. It is important to note that these tests will further establish if the sugar cane has the correct PH level (which should be higher than 4.7) in order to comply with Martinique A.O.C. standards. The selected cane sample also undergoes a laboratory analysis to determine the level of the sugar, which should be 14% or higher. If the sugar level is less, they do not accept the cane.



This is very rare though, as the cane is pre-selected before the harvest from a designated A.O.C. area. Next, they analyze the acidity of the juice. The juice needs to have the correct amount of acidity, because if the acidity is either too low or too high, when they add yeast to the fermentation process, the yeast will not work. Chemical analysis continues throughout the rum-making process to ensure that the rum meets all of the A.O.C. standards including meeting the standard color designated for the rum.

Rub-a-dub-dub, washing the sugar cane

It should be noted that manufacturing rum and washing the cane requires a substantial amount of water, which is why distilleries are located close to a river. While machine-cut cane is cut, cleaned, and washed by the machine, hand-harvested sugar cane must be washed at the distillery before processing.

Getting down to the art and business of making rum agricole and the essential terms



Analysis of the sugar cane complete, the stems of the sugar cane are first shredded to release the juice captured in the fiber in a process called "defibering." The next step is "crushing" the cane, where the cane passes through several crushing mills to extract the juice. Water passes over the crushed cane during this process to ensure the extraction of all of the juice from the cane. The remaining crushed fiber, without any juice is termed "bagasse," and is a combustible that the distilleries burn in the furnaces.



The "bagasse" produces all of the energy (heat) necessary for the production of rum and runs the steam turbines that operate the mill, by transforming the steam (300 - 350° C (572 - 662° F) into electricity. The mills operate in the morning, and when they close at the end of the day, they store the "bagasse" for the next day.



The extracted sugar cane juice is called the "vesou." The sugar cane juice and water mixture is filtered 3

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times, and then the "vesou" is placed in steel tanks with yeast added for fermentation. During the fermentation process, the mixture is kept constantly moving. After anywhere between 17-36 hours, depending on the distillery, the "wine" reaches a level of 4-5% alcohol, and it is ready for the distillation stage.

The "wine" is placed at the top of the continuous column where it undergoes an 8-hour process where it is heated to evaporate and condense it. The "wine" boils through each distillation plate of the continuous column from the heat at the base of the column, and as it passes through each plate, it loses alcohol. When it reaches the bottom of the column, the "wine" has no alcohol, and this waste is called the "vinasse" (wine without alcohol.) This end product, which has potassium in it, will have other elements added to it, and will be used as a fertilizer for bananas and sugar cane. Okay, so where did the alcohol go?

When the heating process reaches 75° C (167° F) the steam is sent towards condensers where it is cooled to room temperature to form "rhum de coulage" (unrefined rum). At this stage, the master distiller will taste and test the alcohol, and add water to adjust the alcohol level. During one of our distillery tours, we had the opportunity to sample "rhum de coulage," from the distiller's tube. We both agreed that the finished product is worth waiting for!

Stainless SteelCopper Distillation Tower

Almost there, the storing and aging of the rum



After the distillation process, the rum is stored in either stainless steel tanks or oak barrels before being bottled. Since Martinique does not have their own oak, they import oak barrels from the United States and France. The barrels are checked everyday during the aging process, by looking at the meter on the outside of the barrels to check color and other important details. An interesting note is that each year 8% of the rum in the barrels goes to the "angels' share" (evaporation), and the distillers need to fill the top of the barrels with extra rum.

The duration of storing and barrel aging



White rum rests in stainless steel tanks for a minimum of 3 months before bottling. Rums that are to be aged will be stored in oak barrels. Amber rum is aged for 18 months, and is the most exported rum to the United States, Europe, and Africa. Vieux Rum (old rum) receives a minimum of 3 years of barrel aging. Rums that are "aged, old or dark" are designated as "élevés sous bois" (aged in wood barrels). Hors' d'age (out of age) rums are a blend of rums that are a minimum of 7 years old. Like wine producers, a rum distiller may select to make vintage rum when the conditions are optimum. Example: 1929 was an exceptional year, concerning the climate as well as the sugar cane, and distillers produced 1929 vintage rum (see tasting notes).

Other factors to consider

Rums will vary in aroma and taste from distiller to distiller due to a variety of conditions that must be considered. It is important to note the type of cane used, the terroir where the cane was grown; the southern part of Martinique has more sun and less rain and the cane tastes different from cane grown in the north near St. Pierre, where the volcanic soil elicits a different taste. Another factor is whether the cane was cut green or burned before cutting. The type of water used, how long was the fermentation process, and the type of yeast used, are also important factors. The type of continuous column used (stainless steel or copper), and how the rum was aged (what types of barrels were used, the age of the barrels), also directly influence the product.

How the rums are consumed

Everyone has their own preference when it comes to individual brands of rum, white rum vs. amber vs. aged vs. vintage, etc., but the Martinicans (people of Martinique) also select their rum with consideration as to how they will drink the rum, and also prefer to drink different rums at various times of the day.

White rum is usually drunk in fruit juice cocktails or in a traditional Martinique Ti-Punch, (a Creole word which means Petite or Little Punch), made with rum, sugar cane syrup, a squeeze of a small piece of lime

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and stirred, and is usually served as an aperitif before dinner, or at any time as a little "pick-me-up." Ti-Punch made with sugar cane syrup is a "wet" Ti-Punch; made with sugar it is called a "dry" Ti-Punch. Using sugar cane syrup vs. sugar in a Ti-Punch will not only affect the taste, but will also affect the aromas.

Amber rum is used in cocktails and in cooking.

Rhum Vieux (old rum) or dark rum is like a cognac, is a digestive and is served after dinner. However, Vieux-Punch (the same as Ti-Punch, only made with Vieux Rhum replacing the white rum) is also very popular.

Coeur de Chauffe, is an eau-de-vie, and may be drunk both during and after a meal.

The best part - the tasting results of sampling the rums

After visiting many of the distilleries in Martinique, having long rum conversations with the master distillers and other rum experts, and conducting our own prolonged rum tasting research, we would like to share our tasting results.

White rum characteristics: White rum is clear and exhibits floral notes of fresh sugar cane, orange flower and honey, has fruity characteristics of citrus and tropical fruit, vegetal notes of tea, dried leaves, spice notes of pepper and anise, and even woody notes.

Amber rum characteristics: Amber rum has a light amber color, has fresh cane and floral notes, with caramel and butterscotch flavors on the palate.

Rhum Vieux (Old Rhum) characteristics: Rhum Vieux has a rich, deep amber color, exhibits roasted notes of coffee, mocha, cocoa and chocolate, has spice notes of vanilla, cinnamon and nutmeg, fruit notes of figs, dates, prunes, and also woody notes. Rhum Vieux is a perfect complement to enjoy with cigars.

Hors' d'Age characteristics: Hors' d'Age has a deeper toffee color, an essence of vanilla and chocolate, has an elegant finish and is a perfect complement for a chocolate dessert, bananas flambé, fruit dessert, and even works well with cheese such as a Stilton.

Coeur de Chauffe characteristics: This is a clear alcohol, is an eau-de-vie, and tastes much like calvados.

Creole Shrubbe characteristics: Shrubbe is a light amber color rum liqueur made by infusing rum with orange peels, and is traditionally served at the holidays. It has a delightful, sweet orange flavor married with rum, and is a nice companion to chocolate desserts.

Vintage characteristics: As noted above, 1929 was an exceptional vintage year for rum. After a wonderful gastronomic lunch at La Belle Époque in Fort de France, Martinique, the charming owner, Madame Martine Diacono, gave us each a glass of 1929 Vintage rum from J. Bally. This superb rum was 45° (90 proof), had a deep toffee color, had heady aromas and flavors of toffee and butterscotch on the palate, and a smooth and lingering finish that Edward deemed, "as long as some fish tales." 1929 was truly a spectacular year that produced spectacular rum, and we savored every drop in our glasses, and then basked in the perfumes emanating from the empty glasses.

If you enjoy drinking rum, a trip to Martinique should definitely be on your travel wish list, where you can conduct your own research at the (9) distilleries, as well as sample 100 different rums that are made in Martinique.

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