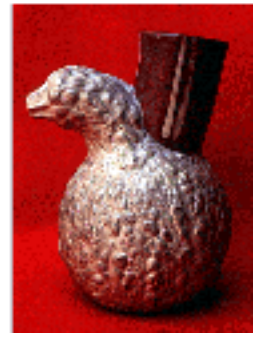




## Ethnobotanical Leaflets



# Blue Agave and Its Importance in the Tequila Industry

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Tequila, North America's first distilled spirit and first production alcohol, is known to most North Americans as a fiery beverage consumed during week long vacations in Mexico or by inebriated college students. Vast over-commercialization and misinformation concerning the product obscures the economic importance of the Blue agave (*Agave tequilana* Weber) the tequila-making industry, and their place in Mexican history. There are 136 known species of agave, but only one is used to produce tequila (2,p.4).

During their exploration of the New World in the late 1400's and early 1500's, Spanish conquistadors discovered a fermented beverage called pulque that was produced by the Nahuatl. The Nahuatl are the original inhabitants of the area of western Mexico who primarily used pulque in religious ceremonies and for medicinal purposes in their culture. The primary ingredient in the fermentation process of pulque was the agave. As the early Spaniards ran out of brandy, they searched for a source of fermentable sugar for distilling. They experimented with the agave, which was abundant in the volcanic soils in the Sierra Madre region surrounding Guadalajara. The species that produced the most full-bodied taste was the *Agave tequilana* Weber, the blue agave or agave azul (1, p.1).

In 1600, the first tequila factory was established by the "father of tequila," Don Pedro Sanchez de Tagle, Marquis of Altamira. Don Pedro also was the first to begin cultivation of the blue agave for distilling (2, p.2) and in 1636, Governor Don Juan Canseco y Quiñones authorized the distillation and manufacture of mescal, in order to facilitate tax collection on production. However, Spanish rule suppressed tequila production and in 1785, the production of all native distilled spirits was banned. In 1792, the ban was lifted but tequila production did not flourish again until Mexican independence in 1821. In the early to mid 1800's, many tequila distillers began large-scale production. Some businesses eventually failed but two of the largest are still in business today. The first licensed manufacturer was Jose Antonio Cuervo who began cultivation in 1758. His Casa Cuervo proved very profitable. By the mid-1800's, his families fields had more than 3 million agave plants. Cuervo was also the first distiller to put tequila into bottles. Today Cuervo is the largest manufacturer of tequila, with a huge export market. In 1873, another major distiller, Don Cenobio Sauza, acquired La Antigua, a company founded in the early 1820's. In 1888 Sauza changed the name to La Preservancia and the business is still in operation today under that name.

One legend says it was Don Cenobio who determined the blue agave was the best maguey for making tequila, in the 1870s, and the rest of the distillers followed his lead. Sauza today owns about 300 agave plantations and is the second largest tequila manufacturer (3,p.2).

Throughout the twentieth century, tequila has continually grown in popularity. Modern manufacturing methods became available in the 1920's and prohibition increased demand for tequila just as the demand for Canadian whiskey increased at that time (1,p.6). Following World War II, the availability of distilled spirits from Europe had fallen which also increased tequila's popularity. The late 1940's saw the first modern efforts to regulate the industry, which culminated in the establishment of the Norma Oficial Mexicana (NOM) in the 1970's. The NOM is the official "tequila law." It states that legal tequila can only be produced in an area within roughly two hundred kilometers of Guadalajara. The NOM also states that legal tequila must be at least 51% blue agave. Premium tequilas are usually 100% blue agave and are proudly labeled so (1,p.6).

Today, over 90,000 acres of blue agave are under cultivation in postereros, or pastures, in the tequila-growing region of Mexico with the greatest concentration near the town of Tequila. More than 52%, almost 82 million liters, of all tequila is produced in the city of Tequila. The second-largest producing area is Arandas, with over 10% of production, followed by Guadalajara at 6.9%. The state of Tamaulipas makes about 43,000 liters and Guanajuato 177,000 liters. Employment in the tequila industry has risen steadily since 1984, when 17,130 people were employed. Most of these, 14,800, were farmers and farm hands. Only 80 technicians were employed then, which grew slowly to 113 by 1997. Today about 38,000 workers are employed in the industry, 33,000 of them farmers and field workers (3, p.3).

Agave fields are planted from *mecuates*, small offshoots growing from the base of adult plants, but they can also be grown from seed. The offshoots are usually started in a nursery for a year and then transplanted to the fields. Usually 1,500-2,000 *mecuates* are planted to each acre and each plant requires 7-10 years to reach mature. When fully grown, the plant will reach a height of 5 to 6 feet. At this stage in the wild, agave begins to grow the central flower-bearing stalk, which can grow to as much as 3 meters in height. Flowers are pollinated naturally by long-nosed bats (*Leptonycteris nivalis*), and then the plant dies. Under cultivation, however, just before the stalk emerges, *jimadores*, the field workers who harvest the agave, remove the elongated, sharp pointed leaves with long-handled knives called *coas*, leaving the central core of the plant exposed. This core is called a *pina* and resembles a pinecone. The *pina* is allowed to continue growing, becoming riper and much larger. Harvested *pinas* can weigh from 50 to 150 pounds, and 500-pound *pinas* have been reported, but they are rare. The *pinas* are taken to the *fabrica* where traditional distillers split the *pinas* in half with axes and stack them in ovens called *hornos*. There they are steamed for approximately 72 hours. After cooling another 24 hours, the *pina* is soft, fibrous and caramel-colored with a taste resembling that of honey-dipped yams. Larger distillers may shorten the steaming process by using pressure cookers. This process is much more rapid and takes only about 8 to 12 hours (3,p.3).

The *pinas* are then crushed by steel rollers or by a *tahona*, a large wheel of volcanic rock slowly drawn

round and round by a mule or horse. Large distillers use a mechanical crusher, which resembles a wood chipper. The *pinas* are then minced and strained to remove the *agua miel*. This extricated juice constitutes the basis of all tequila.

After *agua miel* is strained, it is mixed with water and placed in large vats where fermentation is started by the yeasts found in the agave. Some agaves have as many as 40 different wild yeasts present. Some manufacturers use cane or brown sugar cones (*piloncillo*) to speed fermentation to be able to use immature and fewer plants. This type of tequila can be sold in bulk for shipping out of the country, and can be bottled anywhere, including other countries where the regulations regarding agave content are not necessarily maintained. These tequilas are called *mixto*. After fermenting for 3 to 6 days, the liquid is filtered and placed in large copper or stainless steel stills called *alambiques*. The distillation process is carried out twice with the final distillate reaching 100 to 120 proof. This clear white tequila is then diluted with distilled water to bring it to the proper proof range of 76 to 90 proof. All tequila is white when it comes out of the still. When the tequila drips from the cooling coils of the *alambique*, it is correctly called silver or *plata*, but is more commonly called white or *blanco*. Most *platas* are immediately bottled, however, some producers allow the tequila to settle and finish for a few weeks in the tanks before bottling. Some add coloring or herbs, which give a pale golden color and then age for one or two more months. These tequilas are often called *joven*, or gold (3, p.3).

Depending on the aging technique, the tequila takes on a different flavor. The first level of aging is termed *reposado* or rested. *Reposado* tequila remains in wood barrels for three to twelve months. Each company has its own preference for the type of barrel used in aging. Some of the most common are made from French oak or white oak. Each type produces the different flavors that distinguish one brand from the next.

The next level of aging is the *anejo* tequilas. *Anejo*, which means "vintage", can only appear on bottles that contain tequila aged a minimum of one year. This process produces a smoother tasting "sipping tequila." However, tequila ages rapidly and fine varieties are rarely found beyond the 5-6 year range. These tequilas are often called "*muy anejo*."

Much confusion and many myths exist concerning tequila production. Regardless of the imagery of modern movies and television, true tequila does not contain a worm. Some mescals do, but that worm is neither hallucinogenic nor necessary (4,p.2). Also untrue is the belief that tequila is made from a cactus. Agave is a succulent and is more closely related to amaryllis and lilies. With tequila sales increasing over 1500% from 1975 to 1995 (1,p.6), it is easy to see how new marketing ploys and advertising can lead to clutter surrounding the truth about tequila and agave. In actuality, blue agave is the single-most important crop in western Mexico due to its major role in the tequila industry. This industry provides thousands of Mexicans with a livelihood with a history that can be traced for over 300 years and allows the workers to proudly display a product that is purely and truly Mexican.

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