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Beer & Wine Making

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History

Aside from water, **beer** is thought to be the world's oldest beverage. Some anthropologists believe that **beer** consumption dates from the Neolithic era of the Stone Age (circa 9000 BCE), when prehistoric people stumbled upon damp, fermented grains, which they ingested and enjoyed enough to figure out the brewing process.

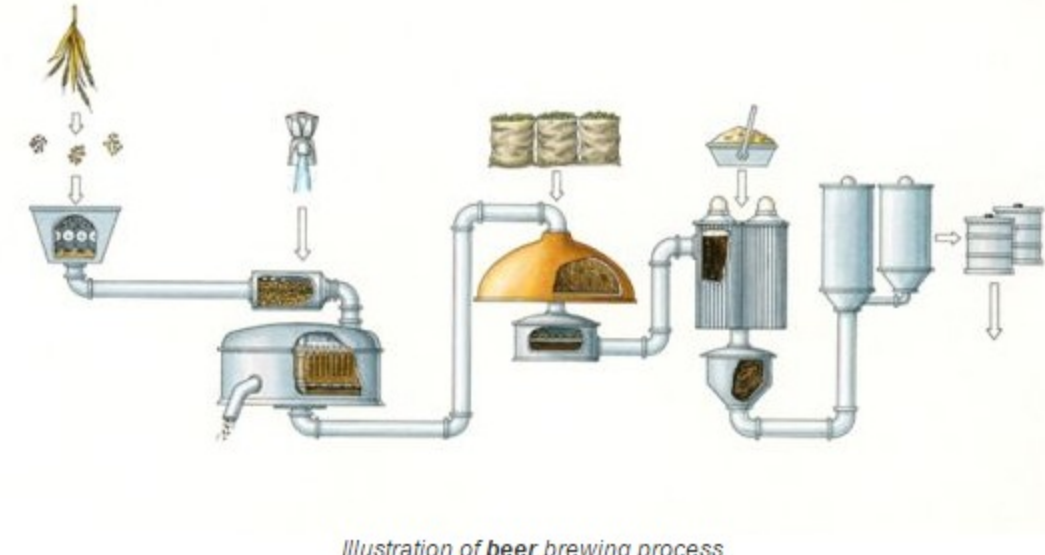


Illustration of beer brewing process.

88021617 - Copyright Getty Images

The earliest farmers' first crops were grains. For a grain to ferment, all that is required is moisture and yeast, both of which occur naturally and are likely to be in close proximity to grain crops. As people began to better understand the brewing process, it became more sophisticated.

By the third millennium BCE, **beer** had become an important part of human culture. The "Epic of Gilgamesh," one of the first known works of literature, describes **beer** as symbol of sophistication and intelligence. The master brewers in ancient Mesopotamia were mostly women, a fact that was reflected in the ancient Sumerians' belief in Ninkasi, the goddess of brewing. Archaeologists have discovered what could be considered the first drinking song, the "Hymn to Ninkasi," which doubled as a brewing recipe.

Early civilizations believed that the intoxicating effect of **beer** was the work of gods, and drunkenness was thought to be holy. The Babylonians, who succeeded the Sumerians, had as many as twenty different **beer** recipes. Ancient Egyptians improved on the brewing process, using bread dough and dates to make a better-tasting **beer**. The preservative power of bottling **beer** was discovered in the sixteenth century in England. Christopher Columbus introduced European **beer** to America, and soon observed the people who lived there making a maize-based brewed beverage that was similar to English **beer**.

The history of **wine** is a bit foggy, but it is believed that the first intentionally made **wine** dates from around 6000 BCE, coincident with the emergence of pottery. As people figured out how to mold and fire clay into pots and jars, they discovered that the porous surface of the substance was perfect for storing and producing **wine**.

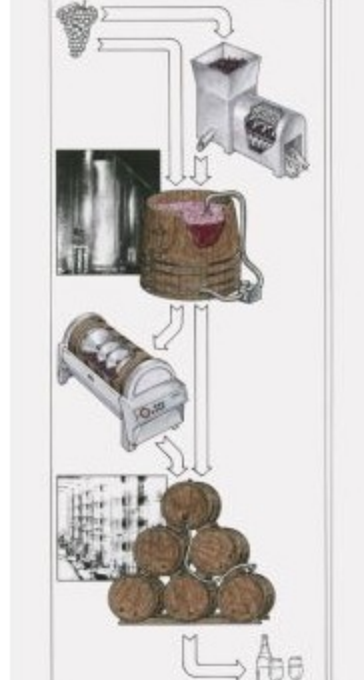


Illustration showing wine making process from fresh grapes to bottle.

88008943 - Copyright Getty Images

Wine most likely originated in the Middle East, and is mentioned as an important beverage in the Old Testament of the Bible. Romans brought **wine** into Western Europe, and eventually, **wine** was being produced on all inhabited continents.

Almost all of the **wine** made in the world comes from a single species of grape, *Vitis vinifera*, from which more than 4,000 distinct varieties have been developed. Other species, including *V. labrusca* and *V. rotundifolia*, are occasionally used, but their sugar content tends to be too low to achieve the necessary alcohol content.

Many factors affect the quality and characteristics of **wines**, including climate, soil type, and topography. Specific growing techniques used by growers or vineyards can also influence **wine** quality.

Both beverages have evolved and developed over time, but the simple, physical process required for **making** both **beer** and **wine** has remained essentially the same since prehistoric people first observed it.



A glass of red wine.

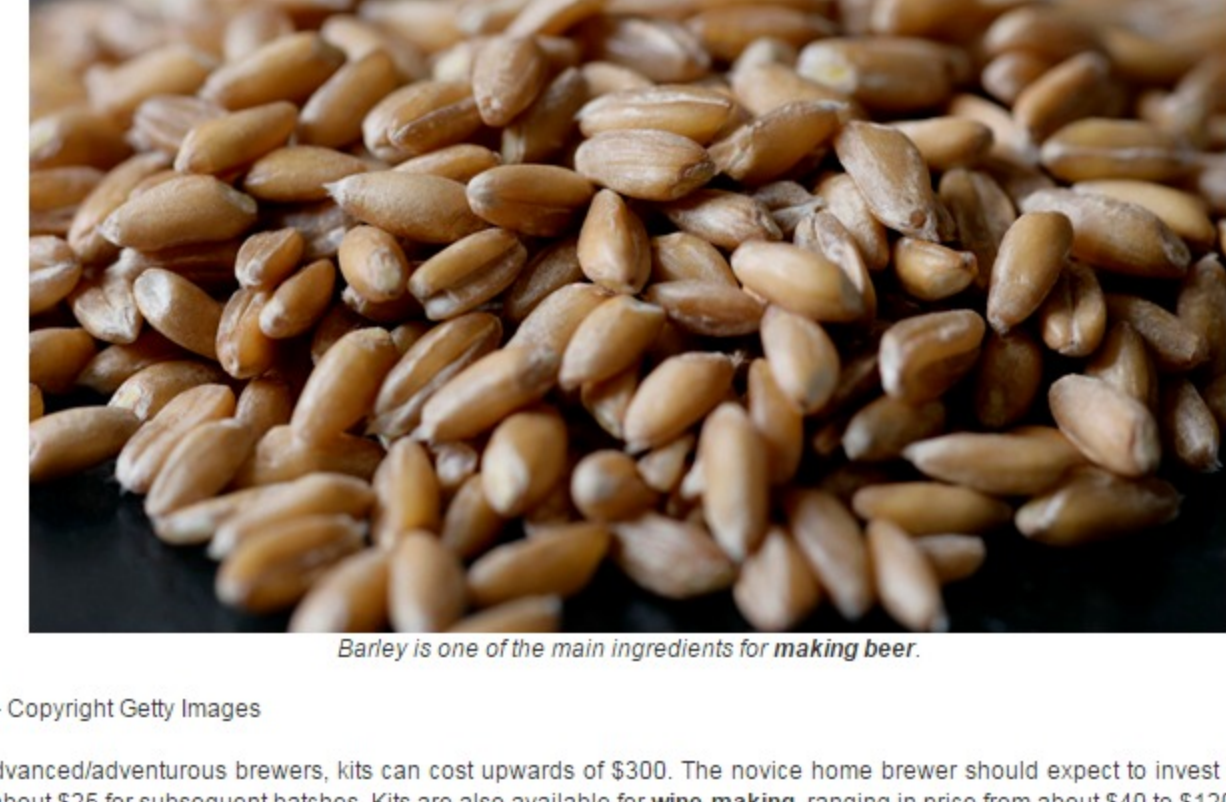
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How to Get Started

It goes without saying that the **making** of alcohol is a hobby that should only be undertaken by persons of legal drinking age. Many of the necessary materials and equipment can be used for both processes, but each has its specific requirements. For the beginner, it is probably better to stick with one or the other, even though, compared with **making** distilled liquor, the **beer-** and **wine-making** process is relatively easy.

Investment

A home brewery requires a lot of equipment not found in a standard kitchen. Fortunately, there are kits available online and in many craft stores and that make the process much easier. The least expensive of these kits costs about \$30, and includes all of the basic necessities for **making beer**, including the hops, barley, and yeast.



Barley is one of the main ingredients for making beer.

56660719 - Copyright Getty Images

For more advanced/adventurous brewers, kits can cost upwards of \$300. The novice home brewer should expect to invest \$100 for a first batch, and about \$25 for subsequent batches. Kits are also available for **wine-making**, ranging in price from about \$40 to \$120.

Materials

For those who would prefer to buy the necessary equipment separately, several items are required for brewing **beer**, many of which can also be used in **wine making**. Much of the equipment can be found in hardware stores or laboratory supply stores.

Essential brewing supplies include a 4-5 gallon stainless steel or enamel pot for boiling the malt sugar and hops. Lobster pots are ideal for this purpose; they are large, sturdy, and fit nicely on a standard kitchen stove.

A 6½-gallon plastic bucket may be used as a primary fermenter. A second bucket can be used as a secondary fermenter, but most suppliers suggest a 5-gallon glass or food-grade plastic carboy. Glass carboys are easier to clean, **making** it easier to use a single one for both **wine** and **beer**, but they are also heavier and much more fragile than plastic. The bottle from a commercial water cooler would work perfectly for this, but those considering brewing seriously should probably invest in a glass carboy.

Bottling supplies include refillable **beer** bottles, bottle caps, and capper. Commercial **beer** bottles may be used, provided they are not twist-off. They should be rinsed in hot water before use. A bottle brush and cleanser should also be used. Part of the original appeal of **beer making** was that the alcohol killed harmful bacteria that would otherwise grow in the water supply. Because of this happy arrangement, it is nearly impossible for anything harmful to grow in homebrewed **beer**. Nevertheless, if bacteria or natural yeasts are present in any equipment, the process will not be controlled, and the results will be unpredictable, and probably not very appetizing.

Other beer-making supplies include

- Airlock (for the opening on the carboy)
- Stoppers
- Racking tube and siphon hose
- Hydrometer for testing gravity
- Long-handled, non-wooden spoon that will fit in the opening of the carboy and reach the bottom

Wine-making supplies are similar to those used in brewing **beer**. An 8-gallon plastic bucket, with a lid, marked at the 6-gallon point, should be used for fermentation. Avoid using the same bucket for **beer** and **wine**, as the taste and fermentation will be affected. A 2-gallon carboy is also needed.

Other supplies include a long, narrow tube or jar to hold the **wine** while its gravity is checked. Hydrometers generally come in tubes, which may be used for this step of the process. A **wine** thief is a pipette used to remove the developing **wine** from the carboy. The **wine** may be poured from the carboy into the other containers or bottles, but using a **wine** thief will make this process much easier and less messy.

Additional supplies for wine making

- Airlock and bung (rubber stopper with a hole in it) for the carboy
- Hydrometer
- Dairy thermometer
- A long piece (at least 5 feet) of food-grade plastic tubing
- Long-handled spoon
- Bottles and corks

Beer has only four basic ingredients (water, yeast, hops, and grain) which can be altered, substituted, or augmented for different types or flavors of **beer**. **Wine**, at its simplest, can be made with nothing more than fruit juice, water, and yeast.

Techniques

There are two basic types of **beer**: lager and ale. Generally, ale is sweet, fruity, and full-bodied, while lager has a crisp, clean, often bitter taste. The difference between the two is determined by the type of yeast used, and the amount of time spent fermenting. There are also three types of grain ingredients: grain extract, partial mashes, and all-grain.

Extracts are the easiest type to work with and have the smallest margin of error, so beginners should perfect this method before moving on to the more complicated, labor-intensive techniques. Extracts may be either powder or syrup, and need to be fully dissolved in boiling water before adding the other ingredients.

There are also two main types of **wine**: red and white. The difference in color is caused by the grape skins, which are used in the fermentation of red **wine**, but not white **wine**. Different varieties of grape are used for the different **wines**, and a **wine's** name usually comes from the type of grape used.



White wine. By Evan Swigart from Chicago, USA (White Wine) [CC BY 2.0], via Wikimedia Commons

Without several acres of prime cropland in a temperate climate, it is difficult to grow grapes specifically for **wine making**. Fortunately, many vineyards sell concentrate from their grapes. Unpasteurized grape juice from the supermarket will also work, but it is relatively expensive and will not yield a specific variety of **wine**. Other kinds of fruits, such as plums and elderberries, can also be used. There are also several **wine**-based drinks, such as brandy and sangria, which can be made with finished **wine**.

Trends

Since the 1980s and 1990s, there has been a resurgence of microbreweries, particularly in the United States, to the point where microbrews are among the most famous **beers** in the country. This trend has resulted in more nuance and individuality in commercial **beers**, and grew directly out of the popularity of homebrewing during the 1970s.

Today, so-called hybrid **wines** are becoming more popular among commercial and amateur winemakers. The process involves using more than one type of grape or grape juice to create a unique flavor not possible with just one kind of grape.

Much of the fun of **making** both **beer** and **wine** is experimentation with ingredients and processes. **Making** a perfect facsimile of a Napa Valley pinot noir or a Red Hook lager is admirable, but the true satisfaction of homebrewing comes from concocting something that is unique.

Time

Brewing and **wine-making** both involve a lot of waiting. Depending on the type of **beer**, the turnover time from grain to glass can be between four and twelve weeks. Lagers take about twice as long as ales.



Beer flight at The United Manzanita Brewing Company, Santee, California. By Nehrams2020 (Own work) [CC BY-SA 3.0], via Wikimedia Commons

Wine making is much simpler, but takes much longer to complete. The yeast has to sit in the juice for about two days before it begins the fermentation process, then for another ten to fourteen days until the proper specific gravity is attained. Once fermentation is halted (by adding ascorbic acid or potassium sorbate), the **wine** needs to sit for another two weeks before being bottled. The filled bottles should be kept upright for three days, and then on their side for at least a month if **making** white **wine**, and at least a year if **making** red **wine**.

Beer and Wine Making for Fun vs. Profit

Making beer or wine can be a rewarding and exciting hobby. **Beer** and **wine making** are both hobbies that are meant to be shared; serving up the first batch of homebrew to friends and family is a uniquely gratifying experience.

Unfortunately, since homebrews are not regulated or taxed by the government, selling them is illegal; this makes starting a homebrewing business more difficult than simply printing up a homemade label and building a website. Most microbreweries are started by homebrewers looking to expand their hobby, but there are many matters, beyond legal concerns, that need to be considered when starting a brewery or a vineyard. As more and more hobbyists turn their craft into businesses, the market has become more competitive. The same hurdles involved in starting any business, including market research, real estate, and staffing, are augmented by the specifics of **beer** or **wine making**.

Learning More

Organizations

Fermenters International Trade Association -<<http://fermentersinternational.org/about.html>>

American Homebrewers Association -<<http://www.homebrewersassociation.org/>>

Books

The American **Wine** Society Presents the Complete Handbook of Winemaking. Ann Arbor: G.W. Kent, Inc., 1993.

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Papazian, Charlie. Microbrewed Adventures. New York: HarperCollins Publishers, 2005.

Snyder, Stephen. The Brewmaster's Bible. New York: HarperCollins Publishers, 1997.

Tibbets, Stacy and Jim Parker. Basic Homebrewing. Mechanicsburg: Stackpole Books, 2006.

Fun Facts

- The term "honeymoon" is believed to come from an ancient Babylonian tradition. After a wedding, the bride's father would give the groom all the money that he could drink. This month of drinking the fermented honey beverage was to be known as the "honey moon," because of the Babylonians' lunar calendar.
- William Shakespeare's father was a vintner in Elizabethan England. A conner's job was to test the purity of ales by sitting in a puddle of the brew; impure or sugary **beer** would make the conner's leather pants sticky.
- Louis Pasteur originally developed the pasteurization sterilizing process for use in **beer** production.
- During the fourth, fifteenth, and sixteenth centuries, Europe's lack of reliable, clean drinking water made **wine**, with its antiseptic properties, the beverage of choice morning, noon, and night.

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