How To Make Vinegar

Vinegar is easy to make, from a variety of products. And you can make your own mother of vinegar too, although you don't actually need it. All you have to do is add already-made vinegar to apple cider, in a proportion of 1:4. However, to make mother of vinegar, expose a mixture of one-half vinegar and one-half cider to a temperature of 80 degrees for a few days. The thin scum that forms on the surface is mother of vinegar.

Vinegar can be made from apples (cider vinegar), grapes (wine vinegar), berries, other fruits, or even from a 10 percent sugar solution. Most homesteaders who make vinegar make cider vinegar.

The strength of the finished product is in direct proportion to the amount of sugar in the original solution. For this reason sweet apples usually make stronger vinegar than tart ones. Not always, though: Some sour apples actually have a high proportion of sugar which is masked by a high fruit acid content.

Use only fresh uncooked cider or grape juice without any preservatives. Preservatives will prevent it from turning to vinegar. Fill a one gallon glass jug to the neck.

The jug will need an airlock. If you don't have one for wine making or don't care to purchase one in a wine making supply store, make a stopper from a dry corn cob. Insert a piece of grape vine, sumac, or some similar material with a large pith, lengthwise through a piece of the cob that will fit into the jug's neck. Punch or burn out the pith with a hot wire. Fit one end of a piece of rubber or plastic tubing over the grape or sumac, and put the other end in a jar of water.

With this setup, as the juice ferments the carbon dioxide passes through the tube and bubbles up through the water, but no oxygen can reach the juice. The first fermentation will take four to six weeks at room temperature. It's not necessary to add yeast to start this process, because the wild yeasts which are always present will do the job. The gray foam that forms on the top is excess yeast, which is harmless.

When the bubbling stops, the sugar has all changed to alcohol: you have made hard cider! To make vinegar, you need a second fermentation that will convert the alcohol into acetic acid.

Unlike the first fermentation, which occurs through the liquid, the second takes place only on the surface. It is caused by an entirely different organism. It requires oxygen, and the larger the surface area in relation to the volume, the faster the vinegar will be produced. To have more surface area, divide your brew between two jugs, so the liquid will be below the narrow neck portion.

This is when you add the mother.

Actually, wild spores floating in the air will act as a starter, so the only reason for using a mother is to get things going faster. Put a bit on a piece of dry corn cob and float it on the liquid. Tie cloth over the openings of the jugs to admit oxygen but to keep out dust and bugs.

The time the second fermentation takes depends in part on the spores present. All strains work best at a temperature of 70-80 degrees. They become dormant at low temperatures, but high temperatures will kill them.

The time required also depends on the surface-to-volume ratio, but ordinarily, you can figure on anywhere from three to nine months.

This homemade vinegar is much stronger than store-bought. Dilute it with water to taste before using it. But naturally there are many other ways of doing it.

Here are a few of them.

Sweet apple cider

Use fully ripened apples, free of decay and bad spots. Wash thoroughly and grind or crush, then place in cider press or juice press and extract the juice.

Place juice in an open kettle (stainless steel or enamel) and boil until volume is reduced by one-half, skimming often.

Pour at once into bottles or stone jugs and cork.

Apple cider vinegar

Let sweet cider stand in an open jug 4-6 weeks and it will turn to vinegar.

Put cores and peelings (left over when apples are used for other purposes) into a stone crock or wide mouth jar. Cover with cold water and set in a warm place, adding fresh peelings now and then. Keep the jar covered. The scum (mother) that forms on top will gradually thicken.

When the vinegar tastes strong enough to suit you, strain it through several thicknesses of cheesecloth.

Parings of peaches or pears, grape skins and cherries can be used this way too.

Crush cut-up apples in a crock or tub. You can include windfalls and bruised fruit.

Cover with warm water, then cover the top of the tub with several thicknesses of cheesecloth, tied into place.

Keep this in a warm place 4-6 months. When it tastes strong enough, strain, bottle and cork.

You can speed up the process by adding a lump of unbaked bread dough, or two ounces of brown sugar or molasses, or one package or cake of yeast dissolved in warm water, to each gallon of liquid.

If you make wine, it's easy (sometimes all too easy!) to make vinegar. When the wine is made, just let it stand, covered but exposed to the air. Exposed to summer sun it will take about two weeks; in winter it will take a month or more.

White wine vinegar

Mash two pounds of raisins. Add to a gallon of soft water in an uncorked two gallon jug. (Old recipes called for rain water, but today. . . Hey, come to think of it, some rain water is as acid as weak vinegar already! So why are we going through all this?)

Let it stand in a warm place and in about two months it will be white wine vinegar.

If you think it's fun to be frugal, pour off the vinegar through a cheesecloth strainer, leaving the raisins and sediment in the jug. Add half a pound of raisins and a gallon of water and start over again.

Raspberry vinegar
Pour three pints of water over 11/2 pints of fresh raspberries. Let stand for 24 hours.

Strain off the liquid, discard the berry pulp, clean the jar, put in another 1 - 1/2 pints of fresh raspberries, and pour the liquid over them. The next day, do it again.

On day four, strain the clear liquor through several layers of cheesecloth, add one pound of sugar, stir until dissolved, and let stand uncovered until it turns to vinegar. This takes about three months.

Honey vinegar
Pour one gallon of boiling water over 4-1/2 pounds of honey in a clean crock. Stir to dissolve.

Make a paste of one cake or package of yeast and a small amount of warm water. Spread this on a slice of toast, and float the toast on the liquid. Cover with cloth and let stand 16 days.

Skim it, strain it, and let it stand another 4-6 weeks until it tastes like vinegar. Then bottle.

Clover vinegar
In a crock pour one quart of molasses and nine quarts of boiling water. Let stand until lukewarm. Add two quarts of clover blossoms and a cake or package of yeast. Let stand two weeks, then strain and bottle.

Dandelion vinegar
Dissolve two cups of honey in three quarts of hot water. Cool and add one quart of opened dandelion blossoms and one cake or package of yeast dissolved in hot water. Cover with cheesecloth, but stir once a day for 10 days. Strain and bottle.

Gourmet vinegars

Fancy vinegars in fancy stores bring fancy prices, but naturally, these can be made on the homestead for a pittance. After you've made your vinegar from one of the recipes above, spice up a small bottle or two of it with one of these ideas:

Herb vinegars: Use one cup of herbs for each pint of cider vinegar. Tarragon vinegar is common in stores, but you can use almost anything from your herb garden: basil, dill, mint. . . even finely chopped chives or celery leaves. Place in clear glass jars, cover, and let stand in the sun (like making sun tea) for two weeks or until flavor is as strong as you want it. Shake the bottles once or twice a day.

Horseradish vinegar: Mix 1-1/2 ounces grated horseradish, 1/2 ounce minced shallot, and 1/2 ounce paprika. Add to one pint of vinegar. Let stand 7-10 days. Strain and bottle.

Chili vinegar: Finely chop 25 chili peppers and pour over them one pint of vinegar. Let stand 10-14 days. Strain and bottle.

Garlic vinegar: Put one ounce of finely chopped garlic in a bottle. Pour one pint of strong vinegar over it. Let stand 10-14 days, shaking frequently. Strain and bottle.

Mint vinegar: Fill a wide mouth jar with clean peppermint. Fill the jar with vinegar. Cover tightly and let set 2-3 weeks. Pour the vinegar into another bottle and keep well corked.

Tarragon vinegar: Gather the tarragon just before it blossoms. Strip it from the larger stalks and bruise it, to release the flavor and aroma. Fill a jar or bottle with the herb, and cover it with vinegar. Let stand for two months. Strain and bottle.

Meat flavoring vinegar: Mix two chopped onions, three chopped red pepper pods, two tablespoons brown sugar, one tablespoon celery seed, one tablespoon ground mustard, one teaspoon turmeric, one teaspoon black pepper and one teaspoon salt. Put into a quart bottle and fill the bottle with cider vinegar. A tablespoon of this mixed in a stew or gravy will impart a fine flavor and rich color.

You can test the strength (acidity) of your homemade vinegar with a wine acid testing kit, with slight modification.

Follow the directions that come with the kit, but of course using your vinegar instead of wine. Then take the number you come up with and multiply it by 0.8. That's the acetic acid strength of the vinegar.

Vinegar is a lot more acid than wine, so this uses a testing kit up fast. To make it last longer, dilute the vinegar at a ratio of one part vinegar to nine parts water. (Use the measuring devices that come with the testing kit.) Follow the directions to test the mixture. But then, multiple the result by 8, (not 0.8, as before).

Diluting vinegar: To dilute tested homemade vinegar to the four or five percent vinegar commonly sold in stores, use this formula. If you want 5% vinegar, measure the strength of what you have made, subtract five, divide the result by five, then add that fraction of a gallon of water to each gallon of the homemade vinegar.

If you want 4% vinegar, subtract four, divide by four and proceed as above. Homemade vinegar is not recommended for making pickles because of the uncertain acid content, it can discolor pickles, and it may look cloudier than store bought vinegar.

Fermentation should start within a day or two. "Apple cider is very dependable about fermenting and rarely needs help, as anyone who likes hard cider knows. Other fruit juices or mixtures may not ferment so easily. If their sugar content is low, adding sugar or molasses will help. Sometimes the wild yeasts in the air are not the right kind or strong enough, and adding a little yeast will help."

"If the liquid still refuses to ferment there is no use going on with it."

For canning, a too-weak vinegar can result in spoilage, and even botulism. It should be five percent (or five grain).

Don't want to spend money on a wine testing kit? That's okay: there's a "simple" way to test acidity without one-"simple," in the homestead context of course, meaning it's a lot of work but all it requires is a few small glasses and jars, an eyedropper, a little baking soda, a small amount of store-bought vinegar and a head of red cabbage.

Then all you do is titrate your vinegar. Titration is the process of determining the strength of a solution in terms of the smallest amount of a reagent of known concentration required to bring about a given effect in reaction with a known volume of the test solution. . . but don't worry, you don't have to know all about that to do it.

Here's how it works:

Titration

In one small jar put a solution of baking soda in water. The amount doesn't matter, but it should be enough so that a little undissolved soda settles to the bottom of the jar after you mix it well.

In the other jar, put some water left from cooking red cabbage. You want a strong purple: steam a head of cabbage in just a small amount of water.

Next put a few ounces of water in the two glasses. The amount doesn't matter, but make certain you have the same amount in both.

Use the eyedropper to put enough drops of the purple liquid into the water in the glasses to give the water a definite color. Again, be careful to put the same amount in each glass.

Rinse the eyedropper in water, then in the five grain store-bought vinegar. Then put seven drops of the store bought vinegar into one of the glasses of colored water which, if you want to be scientific, you can label" standard" or "control."

Rinse the eyedropper in water again, then in your homemade vinegar, and add seven drops to the other glass. . . which you can label "test."

Now rinse the eyedropper in water again, then in the baking soda solution. Put 20 drops of the baking soda solution in the "standard" glass. Stir it with a glass rod or plastic spoon.

The water will turn blue. The exact shade depends on the pH of your water. Then add baking soda solution, one drop at a time-don't forget to keep track of the drops-to the test glass. Stir after adding each drop.

Do this until the color of the water in the test glass exactly matches the color of the water in the standard glass.

If you add a drop too much, no problem. Just don't count that one. When the colors match, the acid content of your homemade vinegar is equal to the number of drops of baking soda solution you put in the test glass divided by four.

Example: if you used 28 drops of solution, the acidity is 28 divided by 4, or 7%.

But your recipe calls for, or more likely assumes, 5%. So what now? Water it down. To make it 5%, subtract 5 from whatever your homemade vinegar tested: in our example, 7-5=2. Multiply that times the amount of vinegar (in ounces) you're going to dilute. Let's say you have one quart, or 32 ounces. 32 x 2 = 64. Divide that by 5, and you get 12.8. Add 12.8 ounces of water to dilute 32 ounces of 7% vinegar to 5% acidity.