

## A Short Overview of Distilling -Plus 2 Bonus Recipes-

### Legalities of Distilling

- According to federal rules, stills of any size are legal to own if not being used, nor intended to be used, to produce alcohol. In other words, if a still is only being used to filter water or make essential oils, and these actions do not involve the distillation of alcohol, a still of any size is legal to own.
- Distillation equipment can be legally used to produce fuel alcohol if the owner possesses a federal fuel alcohol permit. The permit is free, is easy to obtain, and is available here: <http://www.ttb.gov/forms/f511074.pdf>.
- State law also applies to ownership and operation of distillation equipment. These rules vary by state. Make sure to check rules in your state before acquiring or operating distillation equipment.

### What is Distilling?

- Distillation does not produce alcohol - it only concentrates alcohol that is already present in the wash.
- Distillation takes advantage of evaporation and condensation and, in the case of making alcohol, the different boiling temperatures between alcohol and water.
- Ethanol boils at a lower temperature than water. Pure ethanol boils at 172 degrees, while water does not boil until 212 degrees, when boiled at sea level.
- Ethanol boils off first, turning into vapor, which separates itself from the higher-boiling alcohols in the mash.
- The process of distillation is a fairly simple when making fuel alcohol. A mash is made, distilled, then re-distilled until the proof of the alcohol is high enough to be burnt in an alcohol stove, small engine, etc.
- The process that commercial distillers use to create spirits is slightly more complicated.
- Commercial distillers make "Cuts" in order to collect only the best tasting alcohol for their product. They discard or re-use the rest.
- When producing spirits for drinking, there are 4 phases of production: Foreshots, Heads, Hearts, and Tails, in that order. Again, professional distillers make "cuts"

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between these stages and either discard (in the case of foreshots), save for later (in the case of heads and tails) or keep to drink (in the case of hearts).

- Experienced distillers stop running their still when the proof of the collected product as dropped somewhere between 10 and 20.

## Normal Distilling Day

- First and foremost, make sure you have the proper permits before distilling alcohol.
- Next, of course, to distill you'll need a batch of fermented wash. Use one of the recipes provided in this guide.
- Set aside enough time to do the run.
- Check the weather to make sure it is going to be favorable.
- Make sure the still is clean and ready to run.
- It will take longer to heat 20 gallons that it will take to heat 10 gallons using the same heat source.
- Set aside 12 hours to run a 10-gallon batch (if doing a spirit run, set aside 5 hours for a stripping run)
- Transfer the wash from the carboy into the still with an autosiphon.
- Once the wash has been transferred into the still, crank up the power on the heat source.
- While the still is warming, insert the copper scrubbers into the column of the still. (Unless you are doing a stripping run.)
- Make sure the scrubbers are clean and gently shove them into the column.
- After the column is packed, insert the column into the boiler.

### ***Bonus Recipe #1: Fuel Alcohol***

#### *Ingredients:*

8 Pounds Sugar  
1 Pound Of Raisins  
4 Gallons Water  
2 Packets Champagne Yeast

#### *Procedure:*

Add 4 gallons of water, 8 pounds of sugar, and 1 pound of raisins to the pot. Heat to 100 degrees to dissolve the sugar. Cool to 70 degrees. Aerate by dumping back and forth between 2 bucks. Transfer liquid to fermenter and add yeast. Cap with an air-lock. Allow to ferment for 2 weeks, maintaining an ambient temperature of 70 degrees.

### ***Simple Flour Paste Recipe***

#### *Ingredients:*

1 cup rye flour  
1/2 cup water

#### *Procedure:*

Add the flour paste ingredients to a bowl and mix well by hand. Aim for the consistency of cookie dough.

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- Once the wash temp in the boiler is around 110 degrees, apply the flour paste to seal the connections on the still.
- Connect the cooling lines to the condenser when the boiler is at 130 degrees.
- Once the still is close to producing, get the collection jars ready.
- Once the still starts producing it is time to start focusing on the vapor temperature. Use a distilling logbook to keep track of fermentation notes, as well as notes during the distillation day. Once the still starts producing product, write down the temperature and the proof of the shine coming out of the still.
- The more notes/information from a run, the better equipped you will be to try and reproduce a great run. Write down the starting proof, the temperature of the boiler and the vapor column, and write down the proof and temperature of the cuts.
- When making whiskey, an easy way to learn how to make proper cuts is to use small, 8-ounce mason jars. Dump the foreshots, then start collecting in 8oz jars. Number each jar starting with "1," and finishing with higher numbers. This is a great way to collect in the beginning. You can go back after the run is finished and taste each part of the run. Taste the heads, the hearts and the tails.
- When first learning, use small collection jars when making cuts. At the end of the run, refer back to the notes (and add even more notes to those you've already written.) This will help you better understand the run. Write down which jars taste the best and what jars of hearts have been mixed together. These notes will be helpful on future runs, because you will be able to refer back to what worked and what didn't, and compare those notes to what you are working on in the future.
- Continue to crank the heat up on the still until you are close to producing. At this time, make sure to hook up your cooling system to the still.
- Make sure the parrot and/or collection jar are under the output of the still.

## ***Bonus Recipe #2: "Honeyshine"***

### ***Ingredients:***

1 Gallon of Honey  
4 Gallons of Water  
5 Tsp. Yeast Nutrient  
2 Packets Bread Yeast

### ***Procedure:***

Add 4 gallons of water and 1 pound of honey to a pot. Heat liquid to 160 degrees to dissolve the honey and "soft pasteurize" the mash. Cool to 70 degrees using an immersion chiller. Aerate by dumping back and forth between 2 bucks. Transfer liquid to fermenter and add yeast. Cap with an air-lock. Allow to ferment for 2 weeks, maintaining an ambient temperature of 70 degrees.

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- Once the still starts producing, turn the heat down until there are between 8 and 12 drips per second.
- Dump the foreshots, then start collecting the heads.
- Number each jar, starting with "1" and moving up. Continue to raise the heat on the still during the course of the run.
- Once the tails are at 20 proof turn off the still, as it is no longer worthwhile to collect.

## **Cleaning and Storing**

- Once the still stops, clean the still and packing material. *It is very important to clean your still at the end of a day of distilling.*
- Clean everything once the final cut for the tails has been made.
- First a note of precaution: The still and the liquid inside the still are going to be very HOT, so make sure to wear proper protection. Use a pair of oven gloves to protect against the hot still and liquid.
- Note these directions are assuming the use of a copper column still. If using a thumper, the steps will be slightly different.
- Carefully loosen the flour paste seal on the column by gently rocking it back and forth.
- Once the seal is broken, remove the column from the still.
- Remove any packing material inside the column by gently tapping it out of the column.
- Put the packing materials into a bowl of white vinegar. Let them sit in the white vinegar for 10 minutes, and then rinse well with clean water.
- Scrub the column with a carboy brush, and rinse with clean water.
- Once the column is clean and dry, place it in safe dry spot for storage.
- Next, remove the leftover wash from the still.
- If it is a larger still, empty it from the drain valve.
- If it is a smaller still without a drain, then put on the oven gloves and dump the leftover wash onto an area of the yard that is not out of site and not cared for.
- Once the still is empty of wash, fill the still with 1/2 gallon of clean water and scrub the still with your still scrubbing brush.
- Dump the water out and then rinse it one more time with clean water.
- Dry it well, and store in a safe, dry location.