Water Distiller Checklist:

(What you need for successful distilling)

☐ Test Jar

☐ Proof & Trail Hydrometer

☐ Distillers Activated Carbon

☐ Liquor Quik Super Yeast (makes 5 gallons of mash 20%)

☐ Liquor Quik Flavor Over 25 Flavors to choose from

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The Water Distiller

The Water Distiller is a high quality, countertop distiller based on a very popular water distillation unit. The boiling vessel and cooling chamber are made of stainless steel. No cooling water is required, as the unit is fan cooled, making the distillation process virtually as simple as making coffee! For those in countries where alcohol distillation is legal, the unit can produce up to 60% product with virtually no off-tastes or smells on a single run. A second run can actually improve this to nearly 90%!

Just as with many countertop water distillers, activated carbon filtration can take place inline, on the way to the collection container, completing the entire distillation and filtration processes in a single step.

The Process

It is almost as simple as adding 4L of liquid to the boiling chamber, plugging the unit it, and collecting your distillate.

Water Distillation

Remove the top of the unit, add 4L of water to the boiling chamber and replace the top of the unit. Plug in the water distiller. Place an activated carbon pouch in the plastic carbon holder and place this on top of the collection bottle. Place the collection container below the outlet of the distiller to collect your distilled water.

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Alcohol Distillation

Remove the top of the unit, add 4L of fermented mash to the boiling chamber and replace the top of the unit. Plug in the water distiller. Place your activated carbon filter in the white cup (to activate carbon simply put pouch in hot/boiling water for 2-3min repeat step after every 4l batch - pouch is good for 4-5 batches). Place the bottom end of your carbon filter into your collection container (remember if you're doing a second distillation for 90% you must collect with a glass container). Warming up the vessel will take approximately 45min. - 1 hour, and approximately 45 min to distill the mash. Your collection will vary depending on the strength of your mash.

Guide Lines:

12% mash X 4L = 480ml @ 60%
15% mash X 4L = 600ml @ 60%
18% mash X 4L = 720ml @ 60%
20% mash X 4L = 800ml @ 60%
(A Proof and Trail hydrometer can be used to obtain these measurements)

Before starting to collect your precious liquid, remember to discard the "head" (1st 10ml coming out of the distiller). Using the guide lines above, stopping your distiller at the levels indicated will give you the best results, called the "heart ". Extending the levels will lead you into the "tails" of your alcohol which will produce smells and off tastes. You can also re-distill the product to obtain extremely clean spirit at nearly 90%. The final distillate is very clean, and can be used directly as vodka, or used as a base for essences in order to create virtually any liquor or liqueur imaginable.
The water distiller can also be used to distill essential oils, whisky, rum, grappa, and fruit schnapps.

Activated Carbon Filtration and the MegaHome

While water filtration with the water distiller is very straightforward, alcohol distillation requires a little bit more preparation. Primarily, this is with regard to the handling and setup of your activated carbon filtration. While the spirit produced on a first run is not as pure as that from a reflux distiller, the extended contact time with the activated carbon produces a very comparable final product. In order to do so, however, it is important to use very high grade activated carbon, and to prepare it properly. Due to the nature of the distillate produced, the carbon snake (ask for it at Brewers Direct) can be used as an added measure which will greatly improve the final product.

Methanol, the Head, and the MegaHome

Distillation is a process of separating liquids with different boiling points. Distillation does not actually make anything- nothing is formed that is not already part of the liquid in the boiling chamber. For example, methanol, which can be poisonous in larger amounts, cannot be formed during distillation; it is formed when cellulose is fermented. While there is over 1% methanol in whisky, when sugar is fermented with a high quality Turbo Yeast, so little methanol is formed that it is nearly impossible to measure. A fermentation of sugar, water, and Turbo Yeast will typically produce 1 ppm (one millionth) in the mash. This is much less than found in ordinary orange juice, and about one hundred thousandth of that found in whisky and cognac!

While this extremely low amount of methanol means that it is not necessary to try to remove it from your distillate, other byproducts, such as acetone, ethyl acetate and similar aromatics, are formed during fermentation in larger amounts. These are commonly known as 'the head', because they typically boil off at the very start of distillation. While they do not have to be removed, as they are extracted by the activated carbon purification, the carbon will generally last longer if 'the head' is discarded. From a typical distillation, only 5-10ml (1-2 teaspoons) needs to be discarded. This is easily done by allowing the first 1-2 teaspoons of distillate to run into a collection container, then moving your distillate hose to run into your activated carbon filter.

Health and Safety

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The three major concerns of people who might be interested in setting up a distiller at home are 1) the question of legality, 2) the possibility of getting poisoned, specifically of going blind, and 3) the danger of blowing oneself up. These are serious concerns and people take them very seriously. We have dealt with the legal question elsewhere so here we will concentrate on health matters.

Poisoning oneself. One of the classic fears that spring to most peoples' minds when the subject of amateur distillation comes up is that of going blind, or even dying, but this is a myth. Blindness, in this context, is caused by drinking methyl alcohol (i.e. wood alcohol). Anyone who ever went blind from drinking illicit liquor did so by drinking concoctions that were heavily adulterated with store-bought wood alcohol. There's a tendency for people to think that any mention of illicit liquor is referring to a product of illicit distillation. Many such illicit liquors are concocted by mixing ingredients from someone's garage or basement and are not produced by fermentation or distillation.

Although a trace amount of methyl alcohol is produced by fermentation, it does not occur at a concentration capable of poisoning an individual. In fact, such trace amounts of methyl alcohol are removed from spirits by distillation, but remain in undistilled beverages like beer and wine. The truth is, there is very, very little methyl alcohol produced by fermentation, so it poses no threat to consumers of beer or wine where it remains in solution, or to consumers of distilled spirits where it has been removed. And, in the event of poor distillation practices where it may not be completely removed, it still poses no more threat than it does in beer or wine where it's not removed at all.

Some people have asked if the distillation process could inadvertently result in the concentrating of methyl alcohol, and possibly other volatile congeners, to a level capable of poisoning an individual.

The answer is, not a chance. This could not inadvertently occur. While it is possible to concentrate any one of the volatile congeners of a fermented

substrate, it would definitely require the still operator to: have a thorough understanding of the distillation process; deliberately set out to concentrate the specific congener (e.g. methyl alcohol); and process an enormous amount of fermented substrate to obtain a large enough volume of the volatile congener to be poisonous.

Furthermore, if an unscrupulous operator did set out to do this, in order for a person to fall victim to the poison they would have to, ignoring the pungent smell and the sickening taste, drink the poisonous substance. At this point, such an operator would have to ask themselves why they're going to all this trouble to isolate poisons from a fermented substance when they could just go out and buy a bottle of methyl alcohol cheaply and easily at a hardware store.

Headaches & hangovers. The concern about going blind from drinking amateur-distilled spirits is a myth, but the concern of producing a spirit that causes incredibly bad hangovers is quite real. Fermented substrates contain a family of congeners called "fusel alcohols" (they used to be called "fusel oils" but they're not oils they're higher alcohols). These fusel alcohols are what cause the bad hangovers, and improper distillation practices will result in a spirit with an excess of them present. Most commercially produced whiskies, rums, and brandies contain a small amount of fusel alcohols as part of their flavor profile. However, fusel alcohols are easily avoided, particularly when using the sophisticated high-separation still design featured in this book.

Explosions. Although a boiler is used for distilling beer to spirits, there is no pressure in it. The boiler is completely open to the atmosphere at all times so pressure build-up is impossible. It is no more dangerous, therefore, than a tea kettle.

Legal Questions

In a few countries, e.g. Italy, Russia, Ukraine, it has always been legal for amateurs to distil spirits at home for their own consumption. The freedom to do so is part of their tradition and culture. And recently (1996) New Zealand decided that it, too, would relax its former restriction on home distillation, and has found that it has not lead to widespread unemployment, people are not going blind, and there has been no attempt to sell home-made spirits without a license. For readers in such countries these books are simply manuals describing in detail how to make high-quality distilled spirits instead of the moonshine characteristic of homemade pot stills.

Readers in countries other than the above may, however, be apprehensive about buying a book which deals with such a controversial subject. There is no need for concern --- copies of the book have been sent to the Canadian Customs and Revenue Agency (CCRA) in Canada and to the Bureau of Alcohol, Tobacco & Firearms (BATF) in the United States, asking for comment. Both authorities replied that it is not illegal to write, sell or buy a book which deals with amateur distillation, but for the time being it is illegal to put it into practice without a license.

The recent advent of micro-distilleries in North America indicates that the slowly growing awareness of distillation is changing the outmoded application of the laws in Canada and the United States. Furthermore, there is a growing lobby to change the legislation to legalize home distilling in the United States, in the same manner that it's presently legal to make wine and beer at home.

Collecting Essential Oils Using a Table Top Distiller

Step 1. Add 1500ml of water in the distiller and place a 4 inch tall cup in the 1500ml of water.

Step 2. Then place the basket on top of the cup (water should not be touching the bottom of the basket). Add the herb in the basket (make sure you do not put an overflowing amount in the basket).

Step 3. Place top of distiller on the main body and plug in the unit. Place a collection jar under the nozzle.

Step 4. Approx 15-20min after plugging in the distiller you will see Flora water (hydrosol) and Essential oil coming out of the nozzle. Times will vary depending on altitude and purity of water.

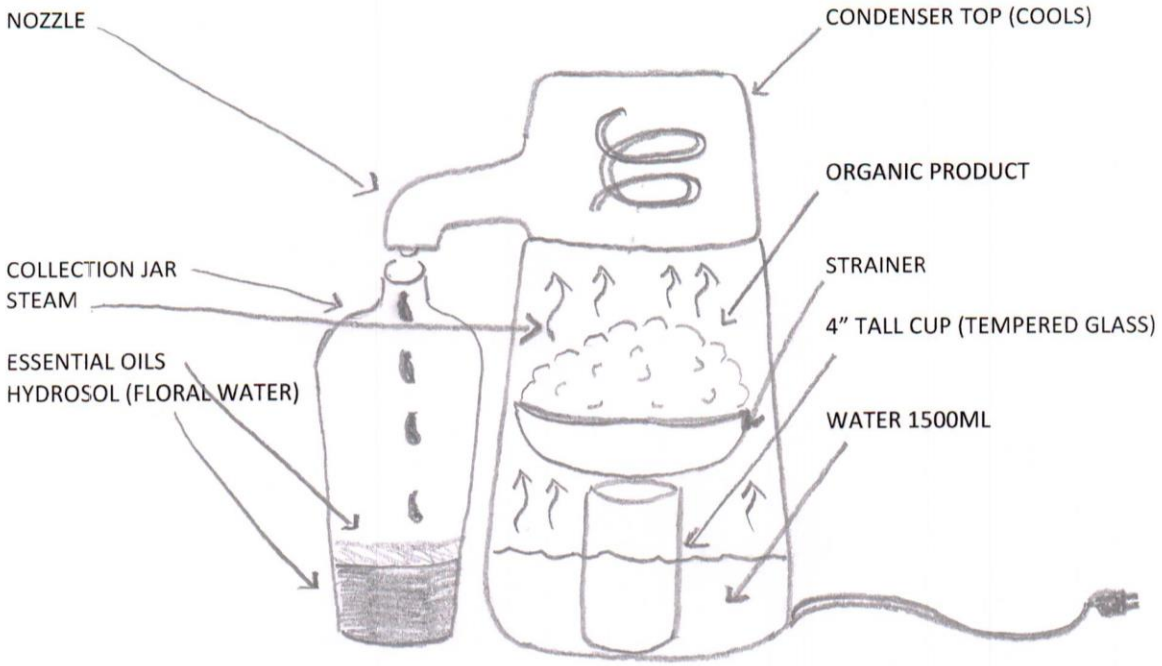
Step 5. Let unit run for 30-45min. Congratulations! You have collected all the essential oil from your product. Unplug unit and let cool before opening the top from distiller as it is pressurised and full of steam. (Danger: Use oven gloves and do not place face close to unit when removing top or you will be burned).

Step 6. A separating funnel will be needed to separate the oils from the flora water. Process will take Approx 5min. Enjoy!

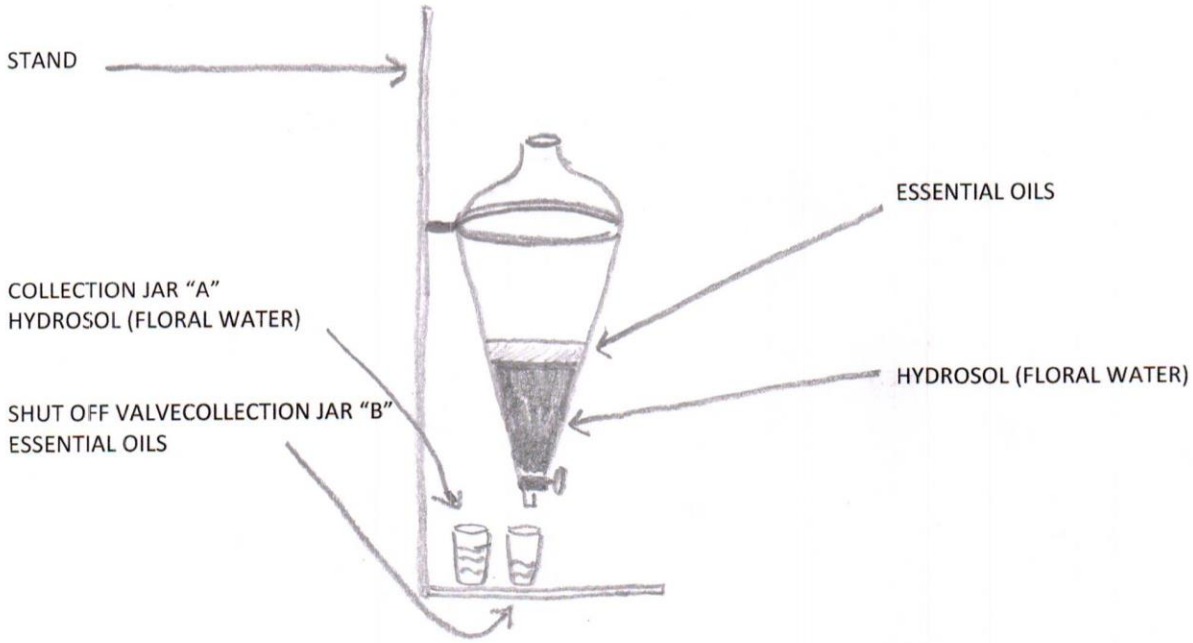
Note: When using the distiller to attain your essential oil, you can use 1500ml of alcohol or wash base instead of water. This will give the essential oils that you collect a longer shelf life.

BREWERSDIRECT INC

Table Top Distiller



Separating Funnel



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