



INSTRUCTIONS

BREWING A BEER TAKES 12 STEPS

1. Crushing your malt
2. Doughing in and mashing
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4. Boiling the wort
5. Whirlpooling
6. Cooling the wort
7. Measure the density
8. Adding the yeast
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10. Lagering / Maturation of the beer
11. Bottling
12. Finally ... tasting!



BEFORE YOU START:

Good beer is brewed with clean equipment! All equipment must thoroughly be cleaned and sanitized. An infection affects the taste and can render the beer undrinkable.

Step 1 CRUSHING YOUR MALT

A malt mill is used in brewing to crush the malt, not to mill it to a powder. The idea is to break the grains, keeping the husks as intact as possible. The husks will serve as a filter bed after the mash is completed. Please make sure the gap of your malt mill is properly set.

Step 2 DOUGHING IN AND MASHING

Fill your brew kettle with water and heat it up to about 2°C above the strike temperature indicated in your brew sheet. Then, while stirring, add the crushed malt and keep on stirring to completely humidify the grains. The water / malt mixture you now get is called the mash. Control the temperature of the mash using a thermometer, make sure you hit the first temperature of the mash schedule in your brewing sheet.

Malt contains starch which needs to be converted to fermentable and non-fermentable sugars. This saccharification process is called mashing. During the fermentation phase the fermentable sugars will be converted by the yeast into alcohol while the non-fermentable sugars will give your beer body.

Gently stir the mash to distribute the heat evenly, to avoid excess oxygen intake and to avoid scorching at the bottom of your kettle.

When the first temperature is reached you need to keep it as constant as possible for the time indicated in the mash schedule. Then heat up the mash until the next temperature is reached and keep it there as instructed in the schedule. Gently heat the mash to increase the temperature by about 1°C per minute. Keep stirring while heating to avoid scorching.

When the final resting time has passed, move on to step 3.

Step 3 FILTERING AND SPARGING

Ultimately we only need the sugar solution – this is called the wort - so we must separate the solid parts from the rest of the mash. The most efficient way to do this is by using a lauter tun equipped with a tap and a perforated filter plate. Heat up about 10 to 12 liters of water to 78°C. Transfer the mash into the lauter tun and let it settle for a couple of minutes. Then add a few liters of the heated water, try not to disturb the filter bed.

Then thoroughly clean your brewing kettle, place it under the tap of the filter bucket and slightly open the tap. To avoid oxidation, fit a silicon hose to the tap. The first wort you collect can be a bit cloudy and/or contain some particles. Pour it back over the grainbed and you will see that the collected wort becomes clearer and no longer has particles in it.

Now collect the wort in your kettle and little by little, pour the rest of the warm water on the malt and allow further sparging until you have approximately 24 litres of wort in the kettle (20 litres for 16 liter recipes). This way, we have taken a large part of the sugars from the malt.

The remaining pulp in the filter bucket are the spent grains, this are mainly the husks and some proteins. Remove the spent grains and clean the filter bucket so that it's ready for your next brew session.

Step 4 **BOILING THE WORT**

By boiling the wort, it becomes fully sterile and an important chemical process (the isomerisation of the alpha acids of the hops) will take place and the proteins will settle.

Heat the wort to boiling point. Make sure that when boiling point is reached, the wort does not boil over. Add hops, Ultramoss® and, where required, herbs at the indicated times (see brewing sheet). The hops are packed in numbered bags. The bags are inside the aluminum bag. Add the hop pellets to the boiling wort as instructed in the brew sheet. Sometimes there is a second vacuum bag of hops labeled "dry hop", you can leave this bag closed and use it as indicated in the brewing sheet.

If herbs are included in your recipe, these will be inside a separate bag and must be added to the boiling wort as indicated in the brew sheet.

After the hops have been added, the wort will foam less because of the hop oils.

Step 5 **WHIRLPOOLING**

At the end of the boil, turn off the heat. Then using your paddle firmly stir the wort to create a whirlpool. The whirlpool is instrumental in settling hop residue and proteins in a nice cone in the center of the bottom of your brewkettle.

Step 6 **COOLING THE WORT**

The wort is very sensitive to infections at temperatures between 40°C and 15°C. This is why we need to cool down the wort as soon as possible. Make sure all of your equipment is clean and sanitized (use Puro-Oxi®) and use a plate heat exchanger or immersion wort chiller (spiral).

Step 7 **MEASURE THE DENSITY**

At 20°C you can measure the density for the first time: fill the measuring glass with wort. Carefully place the hydrometer in the measuring glass making sure it's free floating and read off the density (for beer this normally lies between approximately 1050 and 1100, but can sometimes differ slightly). Write this figure down together with the date of measuring. This is your initial density.

Step 8 **ADDING THE YEAST**

Transfer the wort from the brew kettle to the fermenter. Run a piece of silicone tube to the tap of the brew kettle and open the tap to let the wort flow into the fermenter. The yeast included in the brew kit does not require additional oxygenation.

Before adding the yeast sanitize your hands, the yeast package and your scissors. Cut open the package and sprinkle the yeast on top of the wort. Make sure to sanitize the inside of the lid of the fermenter before placing it back on. Finally place the airlock and fill it up to about halfway with water. Within a few hours – to a day (depending on the yeast strain) – you will notice activity in the airlock as a sign that fermentation has started.

Step 9 **CHECKING THE FINAL DENSITY**

Keep a close eye on the fermentation. Make sure that the ambient temperature does not drop too much at night. After approximately 7-10 days of fermentation, measure the density, and depending on the type of beer (for strong beers approximately 1010-1020, for light beers 1005-1010) you can lager the beer or start bottling.

Do not pour back the sample in your fermenter.

If you multiply the difference between the original and final density by 0,135, you have calculated how much alcohol your beer contains.

Step 10 **LAGERING / MATURATION OF THE BEER**

It is recommended to lager your beer. The beer is transferred to another barrel for this purpose, and it is stored in a cool place. This is how excessive yeast in the beer is removed. Due to the cooler temperature, a larger amount of CO₂ is dissolved in the beer, but, more importantly, a number of undesirable flavouring substances are removed, such as for instance diacetyl. The foam stability of the beer also improves and it will become clearer. This maturation takes about 10 days.

The maturation phase is also an excellent time to add dry hops or wood (chips or cubes), for recipes where this is required it will be indicated on the brewing sheet.

Step 11 **BOTTLING**

Clean and sanitize your beer bottles. It's a lot of work but absolutely necessary! Use Puro Oxi!

In order to get only a minimal yeast depot in your bottles, first transfer the beer to a bottling bucket. Then add the the required amount of priming sugar to each bottle. Rule of thumb here is 7g per liter of beer, but this may differ for your recipe, consult the brewing sheet for the correct amount to add. It is important to add the precise amount of sugar to each bottle. This can easily be done by dissolving the total amount of priming sugar in the beer and then bottling it.

If you use the Arsegan brew bucket for bottling, you can simply add the priming sugar to the bucket. Take a sample of the beer in a sanitized measuring jar. Add the total amount of sugar (= required sugar per liter x number of liters in the bucket) to this and dissolve. Then stir it – with a sanitized stirring paddle through the beer in the bucket.

Tip: Use our special bottle filler to fill your bottles fast and efficiently.

After filling the bottles, close them with a crown cap or flip top closure, then store them at room temperature (20-23°C) such that the bottle conditioning can take place. Label or mark the bottles and move them to a cool place after 10 days so the beer can mature.

It also possible use 5 liter party kegs or 19 liter soda kegs, these require less sugar for refermentation. If you would like to use these please just add 3-4 g of sugar per liter.

Step 12 **FINALLY ... TASTING!**

Finally, after about 4 weeks your beer can be tasted. Poor gently as not to disturb the yeast depot on the bottom of the bottle top recent the unnecessary clouding of the beer (with the exception of white beers). Cheers!

Congratulations and cheers!

By brewing more and more often, you will see that you can get started with recipes and make improvements. Therefore, make continuous notes during the brewing and fermentation process. Also evaluate the beer afterwards and learn from what went well or not so well. The possibilities are endless and the fun is always the same.

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