



HOMEBREW ACADEMY

HOMEBREW HACKS 25 Tips & Gadgets

Simplify Your Brewing and Improve Your BEER



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A note from **Billy Broas**, Author of 25 Homebrew Hacks



Hey there, my fellow homebrewer!

I'm obsessed with brewing. Maybe you are too.

A constant tinkerer, I'm always looking for a better way of doing things. We homebrewers are usually our own harshest critics.

Even when our beer gets rave reviews we're always thinking of ways to improve it for next time.

Over my decade of beer making I've discovered a truckload of tips, tricks, and gadgets that make my life easier and my beer better.

I'm sharing some of my favorites with you here in this eBook.

It's my sincere hope that you'll take at least a few of these hacks and test them out in your own brewing. I think you'll be thrilled with the results.

Thanks for making The Homebrew Academy one of your stops on the quest for homebrew knowledge.

Cheers,

Billy B



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RE-USE STAR SAN

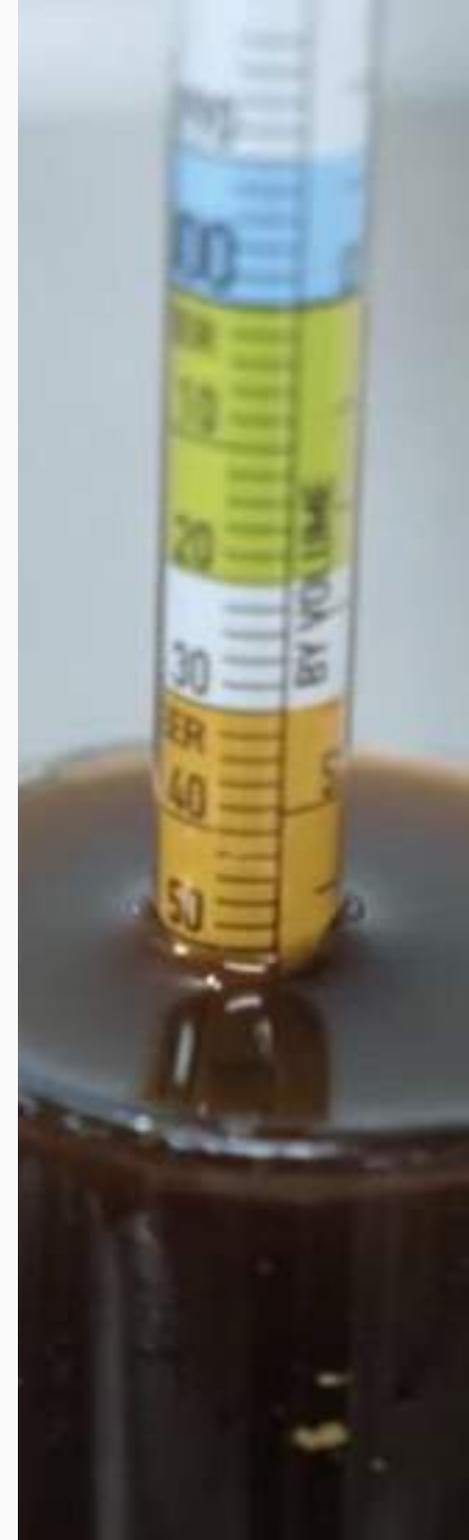
The Issue

Star San sanitizer is one of my favorite brewing items. Yes - I'm in love with the foam. I'm not in love with the price though.

However once I discovered it could be re-used, it went from being one of my top expenses to one of the cheapest.

The Hack

Star San works as long as the pH is below 3.0. Instead of dumping out your next batch, save it for next time. I buy one of those plastic 2.5 gallon water jugs and simply drop in 1/2 oz of Star San. Then give it a shake. Use distilled water to make it last even longer. You can get months out of one batch!





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2 LATE EXTRACT ADDITION

The Issue

If you're an extract brewer doing partial boils you may have noticed your beers coming out darker than you'd like. This is especially true if you're brewing a very light colored beer like a wheat or kolsch.

That's because of the concentrated boil. The extract takes on a darker color when it's boiled in a small volume of water.

The Hack

Add a portion of your extract later in the boil. The times and amounts vary depending on who you're talking to, but a good rule of thumb is to split your malt extract additions in half.

Add half at the beginning of the boil and the other half with 15 minute left in the boil.





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3 BOTTLE OVER THE DISHWASHER

The Issue

Let's face it - bottling gets messy. Every time you remove the bottle filler from the neck of the bottle you inevitably get a few drips.

And those drips add up.

The Hack

Attach your bottle filler to the spigot on the bottling bucket with a 2-inch piece of tubing. Then put the bottling bucket over the open dishwasher.

Any drips or spills will land on the open dishwasher door, making for super simple cleanup when your day is done.





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USE THE FASTRACK TO MANAGE YOUR BOTTLES

The Issue

There aren't many great ways to store bottles.

Bottles are bulky, you need a lot of them, and you also want them to stay clean while in storage.

The Hack

After trying MANY different ways to store bottles, including the beer bottle tree, the FastRack is what I ultimately settled on. I don't think I'll ever leave it either. The FastRack gives you the ability store bottles upside down and stack them on multiple racks, so it's very compact.

Check out my video review of the FastRack [right here](#).





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5 BUILD A STIR PLATE TO EXPLODE YEAST GROWTH

The Issue

If you've ever used a yeast pitching rate calculator you've seen the difference a stir plate makes.

Simply put - use a stir plate for your starter and you'll grow a ton more yeast. But stir plates are really expensive, often \$80 or more.

The Hack

Make your own stir plate! Using a cigar box, a computer fan, a magnet, and some wiring components, you can build it for dirt cheap. You can find most of the components for free. Try a smoke shop for the cigar box and a computer recycling store for the fan and magnet (you can take the magnet from an old hard drive).

My build clocked in at a cool \$10.





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6 SAVE MONEY BY BUYING GRAINS IN BULK

The Issue

If you're a brewing machine your grain costs will really start to add up.

The Hack

You could cut the cost up the 50% if you buy in bulk. How do you do this? Check to see who the malt distributor is in your area. Your local breweries are getting their malt from somewhere. If you get a large group of homebrewers together they may allow you to put in an order. If that doesn't work, check with your local craft breweries. If you have a good relationship with them they'll probably be willing to add another bag or two to their next order for you.



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MASH EFFICIENCY VS. LAUTER EFFICIENCY

The Issue

Your mash efficiency is low - what next?
Do you tweak the grain crush? Do you
adjust the mash pH?

It can take multiple brews to find the
root of the problem and fix it...

The Hack

You can narrow down the issue by
determining whether it's related to the
mash efficiency or the lauter efficiency.
I learned this from a brilliant home
brewer on the HomebrewTalk forums
named Kai.

You can read his post [here](#) about how to
calculate your mash and lauter
efficiencies.





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8 TOO MUCH SPECIALTY GRAINS? USE MULTIPLE BAGS.

The Issue

When you're steeping a large amount of grains you often wind up with something the size a bowling ball in your grain bag. The problem is that the grains on the inside of that ball don't always get completely saturated with water. Your original gravity might not be as high as planned and the color might not be as dark.

The Hack

This seems obvious now but it took me a while to figure out. Split your grains into separate grain bags if you have a bunch.

There's no harm in using multiple bags and you'll maximum extraction.





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9 COOL DOWN YOUR FERMENTER WITH A SWAMP COOLER

The Issue

Controlling fermentation temperatures is one of the keys to great beer.

But like most things worth doing, it isn't easy.

The Hack

If you're not ready for a dedicated fridge or chest freezer you can improvise by using what we call a swamp cooler. It's essentially a large container that you fill with water and frozen water bottles. You rotate the bottles in and out as they melt.

I use one of those large plastic tubs that you put kegs in at parties.





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EVEN BETTER – USE THE COOL BREWING BAG

The Issue

The swamp cooler is better than doing nothing but it's still a hassle to constantly rotate water bottles in and out.

The Hack

If you're still not ready for the chest freezer but want something better than the swamp cooler, [check out the Cool Brewing Bag.](#)

You still use frozen water bottles, but it's insulated so you rotate them much less frequently. It works really well and is simple - something I respect in an invention.





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EASY SANITIZING WITH A WALLPAPER TRAY

The Issue

You make a bucket full of sanitizer, you put in your auto-siphon, but damn! Half the auto-siphon is sticking out of the sanitizer!

Certain pieces of brewing gear are tricky to sanitize because of their shape - racking canes, sample takers, and spoons for example.

The Hack

A wallpaper tray is the perfect solution to sanitizing these longer items. Just put 1/4" of sanitizer in the tray and lay your gear down in it. Grab each end and give it a light "sloshing" to get the insides of things like racking canes. Wallpaper trays are one of those dirt cheap pieces of gear that can make your life much easier.





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QUICK & DIRTY GRAVITY CALCULATION

The Issue

It's the beginning of the boil. You took your gravity reading and noticed that your mash efficiency was lower than planned.

What's your original gravity going to be? Hopefully it's not too far off from the target...

The Hack

There is actually a really simple formula to figure this out that not a lot of people use. Think about it this way - there is a set amount of sugar in your kettle. The water will evaporate, but the sugar isn't going anyways (unless you spill for some reason).

With that in mind, the formula looks like this:

Original Gravity = (Pre-Boil Gravity x Pre-Boil Volume) / Post-Boil Volume.

The gravity numbers are expressed in gravity units. So a 1.050 means 50 gravity units.

As an example, say you have a pre-boil volume of 7 gallons, a post-boil volume of 6 gallons after boiling for 1 hour, and your pre-boil gravity is 1.060. Your gravity at the end of the boil will be $(60 \times 7) / 6 = 70$, or a specific gravity of 1.070.

Easy!





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PRE-HEAT YOUR MASH TUN

The Issue

One thing in brewing software that I see constantly confusing homebrewers is the input box for specific heat. Some software has a similar field called thermal mAss. What these fields are used for is calculating the strike water temperature for dough in. The formula needs to take into account the heat lost to heating up the mash tun itself.

To illustrate with an extreme example, imagine you had a mash tun that was 5 feet thick and its temperature was 0 degrees. You can see how that would affect the temperature of the strike water you're adding.

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The Hack

I like to bypass these calculations altogether because they're confusing and you need very accurate inputs to get an accurate output. The solution is simple - preheat your mash tun. Take your target strike temperature and add 10-15 degrees to it. So if you want your strike temperature to be at 162F, add your water at 175F. Then simply wait until the water temperature drops to 162F.

It won't take long. Then add your grains. Since you're preheating your mash tun you can set those specific heat values to zero since they are no longer being factored in.





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ALWAYS KEEP SOME OF THIS UNDER YOUR KITCHEN SINK

The Issue

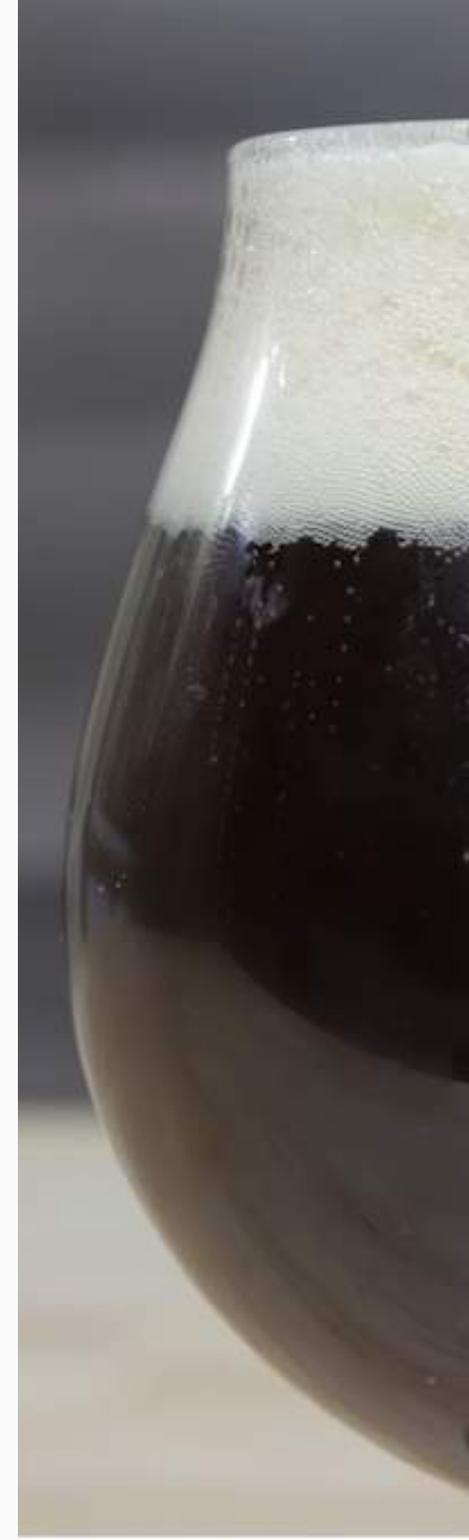
You try to save up as many empty beer bottles as possible.

Sometimes you're not so great about cleaning them before you stick them in storage. When bottling time comes around, there are a bunch of them covered with gunk on the inside that you wouldn't dare use (I hope) for your precious beer.

The Hack

A while back I got into the habit of washing my bottles right after use. A big help in developing this habit was keeping a pail of OxiClean under my kitchen sink. As soon as I finish a bottle I rinsed it with hot water, scooped a tiny amount of OxiClean into it, shook it up with OxiClean and hot water, then rinsed it again.

I (of course) still sanitize when it comes to bottling, but my bottles are always spotless at that point, making bottling day much easier.





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PREVENT YOUR DRY HOP BAGS FROM FLOATING TO THE TOP

The Issue

When you dry hop in a bag it likes to float to the top.

The hops will still contribute flavor and aroma but for maximum effect it's best to have them completely submerged in the beer.

What to do?

The Hack

Put the hops into a hop bag and then add a sanitized stainless steel washer to weigh it down. Depending on the amount of hops you're using you may need to add a few washers. Marbles work too.

The hop bag will stay on the bottom of the fermenter and you'll get all the goodies out of the hops.





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IMMEDIATE CARBONATION WITH CARBONATOR CAPS

The Issue

You really want to bring your homebrew to the party tonight but you just kegged the beer and it isn't carbonated yet.

The Hack

Use a carbonator cap. It's a plastic cap that screws on to a plastic 2-liter soda bottles and has a fitting to connect a gas quick disconnect.

Fill the bottle with beer, attach the CO₂ disconnect to the cap, and turn on the gas. You'll carb up your beer in minutes and it'll be ready to take with you.





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DRAIN THE WORT SLOWLY

The Issue

For the longest time I had trouble getting all of the wort out of my mash tun and into my boil kettle.

After I scooped out the grains there was a good gallon or so of wort sitting at the bottom. What was happening?

The Hack

It turned out I was draining my mash tun too quickly. When you have the valve wide open towards the end of the draining process it's easy to suck in air and kill your siphon, leaving precious wort behind.

To remedy this, when you get down to a couple gallons left in the mash tun go ahead and close the valve almost all the way shut. You just want a slow and steady stream flowing. If you're using a pump, you should have a valve on the outlet side of the pump where you can do this. You'll drain the maximum amount of wort this way.





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USE THIS COMMON BAKING- AISLE ITEM TO CLEAR YOUR BEER

The Issue

Crystal clear beer just looks better. You may have brewed a fantastic tasting beer but the chill haze isn't doing it any favors.

You did everything right but you can't get rid of that damn haze.

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The Hack

When all else fails, try using gelatin. I use it in almost every brew now. Buy the unflavored kind that sell at the grocery store (Knox is the common brand).

Here's how you use it:

Boil 8 oz. of water and then let it cool down to 150F. Sprinkle half a pack of gelatin on top and wait 30 minutes for it to "bloom" as they call it. Add the water + gelatin mixture to your keg before racking your beer on top.

This works much better if your beer has been crash cooled prior to transferring it. You can use this technique for bottling as well. Just add the gelatin with the priming sugar.





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LEARN INGREDIENTS WITH SMASH BREWING

The Issue

You love homebrewing and want to get better at recognizing ingredients and flavors. What does Munich malt *really* taste like?

How do I distinguish centennial hops from cascade hops?

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The Hack

SMAsh brewing is one of the best ways to learn ingredients. It stands for Single Malt Single Hop. As the name implies, brew a beer with a single malt and a single hop variety. For example you might make a beer with only Pilsner malt and Citra hops. I recommend using the more common varieties since those are ones you'll come across more often in homebrews and commercial beers. The great thing about SMAsh brewing is that you really don't sacrifice flavor. I've had some delicious SMAsh beers.





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WAGE WAR AGAINST OXIDATION WITH A CO₂ BLOW GUN

The Issue

Oxidation is a real bummer. It can take an otherwise great beer and turn it stale in a matter of days.

You take the necessary precautions, but there are times that exposure to oxygen is unavoidable. Or is it?

The Hack

You can use a CO₂ blow gun to purge your secondary before transferring. I've found a few other uses for it too, like purging the headspace of a fermenter before and after taking a hydrometer sample.

[Click here](#) to watch my video tutorial on how to create a CO₂ blow gun.





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REVERSE OSMOSIS WATER FOR EXTRACT

The Issue

When malt extract is manufactured it's created using water that has minerals in it. When you use it for brewing, you likely mix it with water that also has minerals in it.

If your water has a high amount of minerals it could result in a very mineraly tasting beer.

The Hack

Use reverse osmosis or distilled water for your extract brewing. With all-grain you would need to add in extra salts, but since there are already minerals in the extract the brewer doesn't need to add anything extra.

Give it a shot even if you don't have especially hard water. You may enjoy a flavor improvement.





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BUILD A MOTORIZED MASH PADDLE FOR \$5

The Issue

Dough balls are the enemy. When you add your grains to the strike water these little bastards pop up left and right.

You need to hunt them down and smash them or risk losing valuable sugars.

The Hack

Use a "Dough Ball Destroyer." I came across a paint stirrer at Home Depot that hooks up to a drill. It looked like the perfect mash stirrer. I gave it a shot and voila!

It stirred my mash in 1/10th the usual time and there wasn't a single doughball when I was through with it.





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SET UP YOUR GEAR THE NIGHT BEFORE

The Issue

Brew days are long. When I finally timed the different steps I was shocked by how long it took me to get set up.

That includes milling the grain, bringing my kettles up from the basement to my brew area, washing them out, figuring out my water volumes, salt additions, etc.

The Hack

Set up the night before. Do as much as you can to hit the ground running when it comes time to brew. By splitting up your brew day you'll give have a lot more energy and spend more of brew day actually brewing.

You don't want to be exhausted by the time you actually get to doughing in.





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USE THIS AUTO MECHANIC'S TOOL ON YOUR GRAIN MILL

The Issue

The gap between the rollers in your grain mill is important. Really important. You don't want it too large or too small.

The problem is that a tiny fraction of an inch can make a big difference in the size of the grain crush. But how do you measure that small a distance?

The Hack

Buy a feeler gauge. It's used in the automotive industry to measure the distance between parts.

You can find it at most automotive parts stores for under \$10.





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MASH SMALL BATCHES IN YOUR OVEN

The Issue

Some people (myself included) really enjoy experimenting with 1 gallon batches. It's a great way to test out new ideas without risking an entire 5 gallons. The problem is that when mashing 1 gallon batches it's difficult to maintain the mash temperature.

When you have 20 lbs. of grain in the mash tun it's easy to maintain the heat, but with just a few pounds the temperature drops quickly.

The Hack

Mash in your oven. Most pots that you'll use for mashing 1 gallon batches will fit in your kitchen oven. Take the top rack out and move the bottom rack to the lowest position. Pre-heat the oven to as close as you can get it to your mash temperature, 170F in the case of my oven. Turn the oven off right before you put your pot (mash tun) into it. It will hold the temperature with 1-2 degrees.



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I hope you enjoyed these hacks!

Billy Broas

Homebrew Academy Founder

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