

A View of Various Vessels

Fermenters

One of the first set of questions beginning home brewers have is:

"What should I ferment my beer in?"

"What are the different types of fermenters available?"

"Is one fermenter better than the other?"

"What does a fermenter cost?"

Selecting a primary fermentation vessel that will convert your wort into beer and act as a place for your yeast to go to work in is not always a trivial task. There are many options ranging from the very inexpensive plastic bucket all the way up to the primo stainless steel conical tanks.

What you ferment in is and should be determined mostly by what your budget can afford and the space you have to ferment in.

Disclaimer...

There are a lot of ways to skin a cat.

"I've done _____ for the past _____
and haven't had any problems."

What works best for you within
your limits?

Common Fermenter Materials

- High-Density Polyethylene (HDPE)
- Polyethylene terephthalate (PET)
- Glass
- Stainless Steel
- Wood



Common Fermenter Shapes

- Bucket / Cylindrical
- Barrel / Drum
- Bottle
- Demijohn
- Conical
- Other



Selection Concerns

- Cost
- Durability
- Cleaning & Sanitation
- Handling & Safety
- Gas Permeability (Oxygen)
- Light Transmission
- Accessibility (dry-hopping, fruit, oak, samples)
- Racking / Transfer / Yeast Harvesting

Material Characteristics

Material	Cost	Durability	Handling/Safety	Sanitation	Gas Perm.	Light Trans.
HDPE <i>Buckets Drums</i>	\$15- 25	Moderate	Light / Very Safe	Softer material can be prone to scratches & cracks	Moderate to high	Low/Moderate (opaque to translucent)
PET <i>Better Bottles</i>	\$25- 40	Moderate	Light / Very Safe	Harder than HDPE, but can scratch or crack	Moderate	High (usually clear)
Glass <i>Carboys Demijohns</i>	From \$35	High / Fragile	Heavy, Slippery, Fragile / Dangerous	Smooth, hard surface resists scratches, pits	Very Low (seal)	High (usually clear)
Stainless <i>Conicals Kegs & Hybrids</i>	From \$350	High	Heavy / Safe	Can scratch or pit Can use HEAT	Very Low (seal)	None
Wood <i>Barrels</i>	From \$200	High	Heavy / Safe	Sani-what? Harbors bacteria	Moderate to high (size/fill)	None

Physical & Other Characteristics

Shape	Yeast Harvest / Reuse	Access	Racking / Transfer
Bucket/Cylinder	Pretty easy post-fermentation, and not impossible during fermentation	Very easy – wide opening for additions, sampling, cleaning	Very easy, but higher potential for O ₂ exposure
Bottle/Carboy Demijohn	Can be tricky, typically done post-fermentation	Small opening can present challenges, but can be addressed with methods or tools	Very easy, potential O ₂ exposure, lifting to elevate for rack/siphon could be dangerous
Barrel/Drum	Most Difficult due to limited access	Difficult due to small openings – unless drum “head” can be removed.	Could be difficult if large and not elevated. May require a pump.
Conical	Designed to be done during fermentation low/no O ₂ risk	Very easy – top is usually removable	Easy to rack if elevated or not large. Some can be “pushed” with CO ₂ .

Buckets - Plastic



Pros

- Inexpensive
- Plenty of headspace (7.9 gal)
- Lightweight / Easy to handle
- Easy to clean – large opening
- Easy to add items / observe
- Unbreakable - safe
- Reusable

Cons

- Soft material can scratch or crack to harbor bacteria
- Gas permeable – concern for long-term fermenting or aging
- Need to be replaced eventually
- Lids don't always seal well

Carboys – Plastic



Pros

- Low/Moderate cost
- Easy to add items / observe
- Lower O₂ exposure than buckets – better airlock seal
- Lightweight
- Unbreakable - safe
- Reusable

Cons

- PET material can scratch or crack to harbor bacteria
- Gas permeable – concern for long-term fermenting or aging
- Need to be replaced eventually
- Cleaning can be tricky due to small opening
- Limited headspace (6 gal)

Carboys / Demijohns Glass



Pros

- Low/Moderate cost
- Easy to add items / observe
- Lower O₂ exposure than buckets – impermeable glass and better airlock seal
- Good for secondary / aging

Cons

- Fragile/Breakable – can be very dangerous – be careful!
- Cleaning can be tricky due to small opening
- ***New – “Big Mouth Bubbler”***

Conical Fermenters

Pros

- Can drop yeast for harvesting
- Unitank – primary & secondary in same vessel
- Low O₂ exposure – good lid seal (*if stainless*)
- Unbreakable – safe
- Plenty of headspace
- Can “push rack” with CO₂

Cons

- Expensive
- Big / awkward
- Cleaning can be time consuming – lots of parts
- Plastic conicals (usually HDPE) have similar cons to buckets



Sanke Kegs

Pros

- Size
- Durability
- Stainless
- Can sanitize with heat
- Can “push rack” with CO₂

Cons

- Can be tough to clean, and to verify clean
- Heavy
- Size
- Expensive
- Difficult to harvest yeast
- Difficult to add items / observe



Soda Kegs

Pros

- Durability
- Stainless
- Can “push rack” with CO₂
- Easy to clean / sanitize
- Multi-taskers

Cons

- Size – too small for a 5-gal batch (*can get 10-gal kegs*)
- Expensive
- Difficult to harvest yeast



Hybrids

Pros

- Can be optimized to brewer's methods, space, preferences
- Can "marry" advantages of material / shape / function
- Can balance cost with features

Cons

- Can be expensive – especially if "off-the-shelf" (e.g., Sabco)
- May require / include special parts or fittings
- Cleaning / sanitizing can be time consuming

So what do some of our
SNOB members ferment in?

SNOB member John Majetic's equipment gives the term Go Big or Go Home meaning. At almost 110 gallons, these repurposed dairy vessels are damn impressive.

Crawl in to clean it

Move it with a fork lift



Todd, Tim and others use these wide-mouth 13-gallon plastic fermenters for some of their brew days. Easy to clean and modify, inexpensive.



Tim and friend Greg use two similar but 30-gallon plastic fermenters for their 40-gallon brew day.

Mark originally fermented in modified plastic pails equipped with an easy to clean valve that was used to transfer to secondary or keg.





Mark switched to custom built stainless fermenters, basically modified 8-gallon kettles. Drilled lid to add airlock/blowoff and a camlock port welded in to allow yeast pitching and transfer between vessels. A silicon gasket, ratchet strap and modified dog food bowl round out the modifications. These are easy to clean and for me, to move and double as mash tuns.



Jim Gress uses these hybrid stainless fermenters. They are 8-gallon modified "milk-can" distilling kettles from Brewhaus.com that have been fitted with a Sanke Fermenter Conversion Kit from Brewershardware.com that features integrated thermowell, stainless racking cane and blow-off port. These can be pressurized to "push-rack" with CO₂. The kettles are also available in a 15-gallon size.

?

and

Do we want more presentations on brewing equipment? Brew sculptures, mash tuns, yeast propagation, boil kettles?