

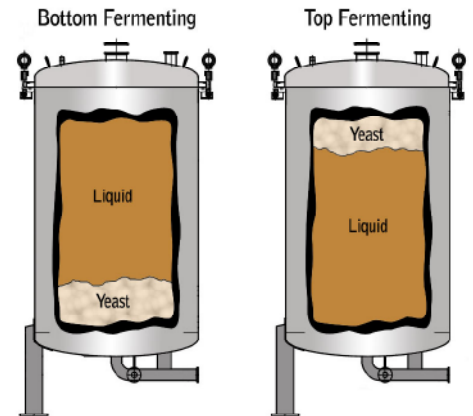


B. UNITED EDUCATIONAL CLASS CHEAT SHEET

Top vs Bottom Fermentation

Top Fermentation (also known as warm-fermentation) is when *ale yeasts* (top-fermenting yeasts) **RISE to the SURFACE** during fermentation, creating a very thick, rich yeast head. Fermentation by ale yeasts occurs at relatively warmer temperatures (59° to 60° F), sometimes even higher temperatures.

Beers Tasted: Schneider Weisse Original, Nuova Mattina, Organic Wiesen Edel-Weisse, Verdi Imperial Stout, Aventinus, Aventius Barrique, L'Ultima Luna



Bottom Fermentation (also known as cool-fermentation) is when lager yeast with less surface foam tends to **SETTLE to the BOTTOM** of the fermenter as fermentation nears completion. This occurs at cooler temperatures such as 40° to 50°F.

Beers Tasted: Via Emilia

DICTIONARY:

Fermentation is the process by which yeast converts the glucose in the wort to **ethyl alcohol and carbon dioxide** gas -- giving the beer both its alcohol content and its carbonation.

Wort is the sweet liquid that comes from mashing grains. It is unfermented beer.

Mashing is the process of combining a mix of milled grain (malted barley or other grains) and water, and heating this mixture.

Filtered vs Unfiltered Beer

Filtered Beer has almost all of its *remaining yeast, sugar, proteins, and tannis* **REMOVED** to achieve a brilliant, clear beer before filling into bottles/kegs/cask.

Unfiltered Beer is *filled directly* into kegs/bottles **WITHOUT** removing any yeast, proteins, hops (to a degree), or tannis.

Almost all B. United International Products are unfiltered because we believe that provides you with the best flavor and complexity.

Differences between **Filtered** and **Unfiltered** beer:

- **Color** compounds are lost during filtration, which results in a very clear filtered beer vs a hazy and cloudy unfiltered beer.



- **Flavor** is significantly decreased in filtered beer because many of the flavor components are filtered out. There are up to 2,000 aroma and flavor compounds in beer. The world's best brewmasters want to capture every single one!
- Filtered beer requires **forced carbonation** which results in larger gas bubbles, poor head, and a slightly carbonic acid burn in the mouth and throat.
- Unfiltered beer is **naturally carbonated** by yeast activity and results in finer CO₂ gas bubbles, smooth foam laced head, and a velvety feel in the mouth.

Bottle or Cask vs Non-Bottle (Brewery) Conditioning

Bottle or Cask Conditioned Beer is when secondary fermentation and maturation occurs **directly in the bottle or cask**, creating another layer of aromas and flavors.

When you see sediment in your bottle conditioned beer that is ok! Those sediments provide better flavor, color, and nutrients (Yeast is high in Vitamin B).

How does this occur?

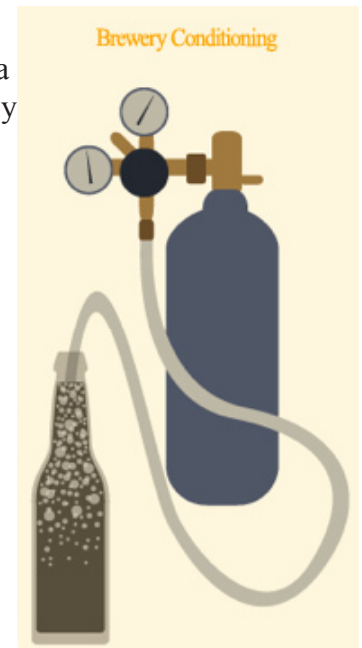
Bottle conditioned beer has a little bit of extra yeast or extra sugar to restart the yeast which produces more alcohol and CO₂. Since the beer is bottled and capped before this is happened, the CO₂ produced by the yeast has nowhere to go and dissolves into the beer thus naturally carbonating it.



Active yeast remains in the bottle-conditioned beer and thus continues to develop and age ever so slightly over time. This makes bottle conditioned beer perfect for maturing as it will continue to age, similar to fine wine.

Non-Bottle or Brewery Conditioned Beer on the other hand has almost all yeast **removed** before it is bottled, ensuring the beer will not change much thus providing a higher level of consistency but much less flavor complexity than its yeasty cousin. By removing the yeast the beer is much less resistant to oxidation. This gives non-bottle conditioned beer a much shorter shelf life than its yeasty cousin.

This is why **non-bottle conditioned** filtered beer needs expiration date. All beers tasted today are bottle conditioned.



Sources:

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