

ISABEL AGEA's HONEST BEER GUIDE FOR 2019 IFLA ILDS FEINSCHMECKERS



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16th IFLA ILDS Conference
9–11 October 2019
National Library of Technology
Prague, Czech Republic

**BEYOND THE
PAYWALL**



resource sharing in a disruptive ecosystem

Hello! Let me introduce myself: my name is Isabel and I will be your guide to the amazing world of beer! As you may know, the Czech Republic is well known for its beer... and of course, beer consumption. You may not believe it, but the Czech Republic has the highest beer consumption in the world *per capita*. Something not really surprising, knowing that beer is cheaper than water here!

But beer hasn't always been the way we know it nowadays. It is believed that by 9,000 BC, beer was already being produced. It is known that *Homo sapiens* had developed bread by that time, when they started harvesting grain. Because beer production is similar to bread production, it is believed that humans also produced beer. However, no proof has (yet) been found from that time.



The first evidence regarding beer production dates from the time of King Hammurabi. On his famous 4,000 BC code, there were two facts regarding beer that amused me. The first one is the first law that protected bar customers from owners since they used to rob them when they got drunk with beer (big **wow** to that!). Amazing, right? The first customer protection law came because of beer!!! The second fact is, of course, the recipe.



Just 500 years later, around 3,500 BC in Egypt, they had a goddess dedicated to beer, Ninkasi. Ever since I know her, I believe in something. Goddess Ninkasi was represented in Egyptian hieroglyphs drinking beer. However, beer was not like it is nowadays; then it was like a porridge, so the goddess is depicted drinking it standing up with a long straw. You may be thinking why? Well, alcohol is present in the liquid part; the rest was just cereal and the goddess used the straw to filter “happiness” from the beer, you know what I mean!



Around 3,000 BC, beer arrived in Europe. Let's use our imaginations, imagine that you barely have anything to eat; if you are lucky, you get one meal per day. Now imagine that there are barely doctors and that a simple cold can kill you. Finally, imagine that by drinking water you can die quickly. With this not-so-fantastic context, people realized that when drinking beer, they barely got sick compared to when they drank water. Also, since beer wasn't a liquid, they used it as both a meal and a drink. It was a win-win situation: they had something to eat and fewer chances of getting sick! So, **beer for everyone**, no questions asked. What nobody thought was "why"; the answer is as simple as boiling: during the process of beer production, there are several steps where everything is warmed up or boiled. By boiling a liquid, you sterilize it to some extent. If they had boiled water prior consumption, they would have avoided most of infections, but they preferred to drink beer instead. Who can blame them?



Now a big jump in history. By the ninth century, monks controlled the production of beer and other enjoyable products. If you ever asked yourself why, just think: who had the time, the fields, the money, and the knowledge? Yes, just monks. They had so much time that they even started to experiment. In such experiments, a monk discovered that by adding hops to beer there were two unexpected changes he liked. The first one was bitterness and the second one was that beer took longer to get spoiled. The last one marked the start of beer commercialization around Europe! In case you didn't know, hops belongs to the same family as *cannabis*! I wonder why monks liked experimenting with it?



Later, in 1516, in the region of Bavaria, Germany, the King William IV, a very wise man, declared **the beer purity law**. With this law it was mandatory to use barley, hops, and water to produce beer. He pretended to provide a way to standardize production of beer across Europe, but he had hidden interests: he owned the hops monopoly!!! So, by his law, everyone who wanted to produce beer had to buy hops from him. Such a businessman, the king, huh?



Finally, we arrive at the part of history where the Czech Republic plays a very important role in the production of the first lager, **Pilsner Urquell**. In 1842, in the city of Plzeň nowadays the Czech Republic; in 1842, Austro-Hungarian Empire), a couple of friends decided to innovate in terms of production of beer. They introduced for the first time in the history of beer the decanting technique which **separated liquids from solids**. They stopped “drinking” porridge and started to drink a liquid. In addition, they decided to produce beer underground to conserve the low temperature and with that, they obtained a low fermentation beer (without even noticing, because they weren’t aware of what yeast was). But it wasn’t just about the innovations, but was about the ingredients as well. Plzeň is geographically in the perfect position for using Bohemia’s water (the same as you can drink in Prague; well known for its quality), plus it’s home to Moravian barley and the best hops in the world, Saaz (just grown in the north of Austria). With those two production innovations and a selection of high quality ingredients, they obtained such a beautiful golden beer. It is not strange that it arrived in the capital really quick and, once in Vienna, people wanted to observe it before drinking it. So, another business came into the game: producing glass jars for beer. For the first time in the history of beer, they could observe what they were going to drink!! All of that thanks to Pilsner Urquell.



Shortly after, the amazing microbiologist Louis Pasteur told the world about yeast and how it worked. With that knowledge, beer companies finally understood why there was alcohol! It came late, but better late than never. Also, Louis Pasteur introduced pasteurization, a technique that preserved liquids for longer periods of time. Beer could be finally commercialized worldwide! Awesome!



Now that you know how and why beer is the way it is nowadays, it's time to be a beer master with a quick guide to beer production! Are you in? First, let me tell you about The Fantastic Four, and I am not talking about any Marvel production... My personal "Fantastic Four": cereal, water, hops, and yeast! They are also needed to save the world, in a different way.

Let's start with **the first fantastic, cereal**. Most beers in the world are made using barley, but it can be anything: barely, wheat, rye, quinoa, rice... But generally we talk about malt instead of cereal, so people tend to think that malt is another type of cereal. Big mistake.

Malt is made from raw grains by adding warm water to the grains and creating similar conditions as if it were spring. The grains start to sprout, and in the process of germination, all the enzymes that convert starches to fermentable sugars "wake up," and some starches already become sugars. The process of germination is stopped by drying the grains (historically done with smoke; starting in the nineteenth century in an oven). The finished product is a pale malt the same color as raw malt but sweeter, softer, and full of flavor. If the goal is to obtain a dark beer, we need a darker malt; the pale malt is put back in the oven and it is toasted to

darker colors. By toasting the grains, we get different flavors, like caramel, chocolate, and coffee. Once we have malt with the color we want to, we need to crush it. To sum it up: malt gives beer flavour, color, sugars, and body.

Let's continue the process with **the second fantastic, water**. Keep in mind that the mineral content of water is important for the flavors and also the color. Higher mineral content will intensify certain characteristics and also darker tones of color in the beer. Soft water (like in Plzeň) will help beer be lighter in colour. We mix the water with the crushed malt and we will obtain a mixture with the texture of porridge. During this mixture, the water starts to capture all the flavour, color, and sugars that the malt has. After that, the mixture is separated (a process first introduced by Pilsner Urquell, as you know now) and we will keep the liquid. But what happens with the solid part? What happens with the rest of the malt? Well, generally, big beer companies have deals with farms, so the animals can enjoy it. If you produce beer at home, you can prepare bread with the solid rest or even fertilizer!

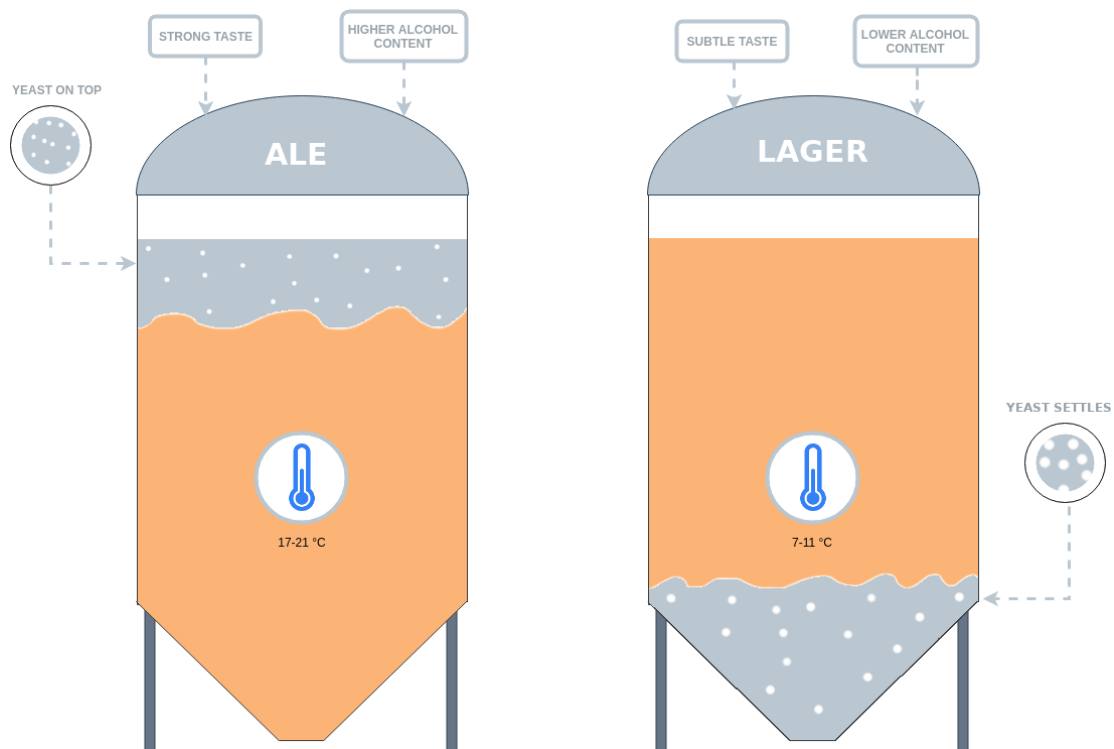
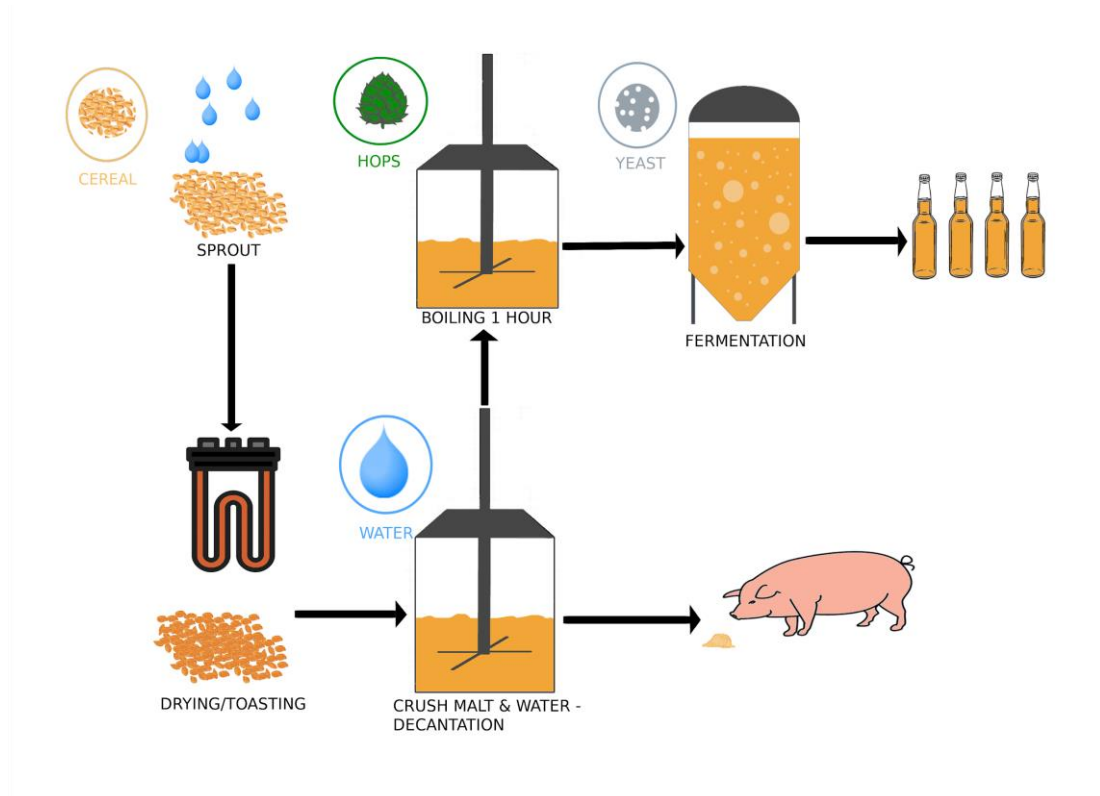
Let's move on with **the third fantastic, hops**. You already know what hops brings to beer, but in case you are still interested, you can learn how. For that, you need to know that many different varieties of hops are grown around the world and are cultivated to have different characters. The hops release bitterness in beer and also have a lot of aroma. Some kinds are more aromatic and some others are really bitter and not aromatic. That is why we need so many varieties of hops, depending on the one or ones chosen, a beer will be completely different! Hops are added to a liquid we have, with all the sugars, and this is boiled for one hour, more or less. Comparing to your countries, you may notice that Czech lagers are not as aromatic as the beers you are used to. This is because the hops used for Czech lagers are just not as aromatic as those used for some ales or for American lagers. But what are lagers? And ales? And pilsners? That all depends on the yeast, our next fantastic.

Finally, **the last fantastic, yeast**. As you may know, yeast creates alcohol in beer, but also adds certain flavors and character to a beer. Every brewery protects their strain of yeast and cultivates it so every beer tastes the same. Generally, all beers in the world can be divided into two categories: ales and lagers, depending on what kind of yeast they use. Let me clarify here that talking about lager is the same as talking about pilsner. It is called either "lager" (a German word) because of the place where Pilsner Urquell was produced underground, or "pilsner" because of the city (Plzeň). Knowing that, the difference between ales and lagers relies on the yeast. Different yeasts need different conditions to work (i.e., to convert sugars in alcohol and gas) and have different shapes. The yeast used for lagers (also called "low fermentation") needs a temperature between 7-11 Celsius to work and is bigger in terms of shape; so big that the gas produced during the fermentation process cannot raise the yeast up on the fermentation tank. In contrast, the yeast used for ales (also called high fermentation) needs a temperature between 17-21 Celsius to work and is smaller, so the gas produced during the fermentation process raises the yeast up on the fermentation tank. If we could see how the fermentation tanks work, we would be able to see the "bubbles" (the gas) at the bottom of the tank (in lagers) and at the top (in ales). This is why they are called "low" and "high" fermentation methods, because of the temperature and because of the part of the tank where the magic occurs. Amazing, right?

So, yeast is added to the liquid, it converts sugars into alcohol (after about one week for ales and two weeks for lagers). After that, the beer is filtered and pasteurised. But that last step is not mandatory in this country! All the beers that you can get from the tap in the Czech

Republic are unpasteurised and we do our work so the beer doesn't need a long shelf life!
Also, some breweries offer unfiltered beers (thicker, but totally worth a try).

Here you have two schemas summarizing beer production and the difference between ales and lagers.



Now that you are such an expert in beer, let me tell you some stories related to beer:

Czech Republic toast tutorial:

Czechs do kind of a performance for toasting. Some of them don't even know why, it is just a tradition nowadays... but everything has an explanation! Are you ready to toast like a Czech? Follow these simple steps:

1. Look straight in the eye of the person you are toasting with. The legend says that if you toast without looking into each other's eyes, **seven years of bad sex** will follow you! Better to toast like an owl, just in case.
2. Be careful not to cross arms with anyone else while toasting. The legend says that at least one of the persons involved in the crossing will **get married** in less than one year! For some Czechs, this step is more important than the previous one.
3. Say "Na zdraví," which means "to your health."
4. Knock on the table with the glass before you drink. This is because of history rather than legend. During Communist times, people couldn't talk bad about the government, so when they met to drink, if everyone at the table knocked on the table with their glasses, this meant that they were against the government and they could talk about it. If just one single person didn't knock, everyone would continue talking about other topics. We also knock on the table in Spain before we drink, but we say "El que no apoya no folla" because it rhymes but means "If you don't knock on the table, you won't fuck." As you can see, not related at all.
5. **DRINK!**

If you are lost, you can follow this easy image:





The origins of the toast:

During the Middle Ages, the most common method of killing enemies or business competitors was through poison. This was so extended that they started to jostle each other's beer mugs, expecting that part of their drink would splash into the others, and vice versa. That way, if your competitor was trying to kill you, they would die as well. And of course, if you were trying to kill your competitor, you would also die. We currently toast because we are among friends; however, the origins are quite dark.

The King of the Beer legend:

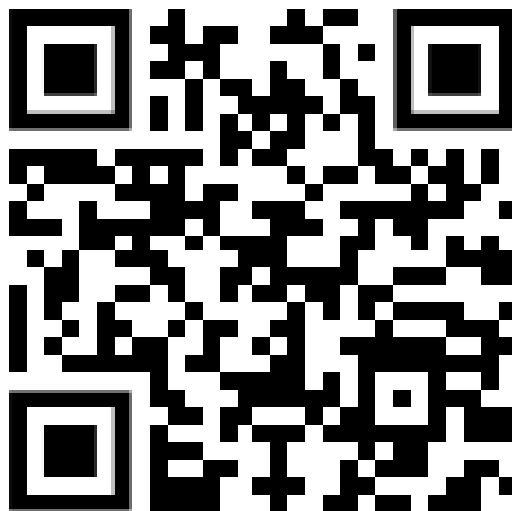
Gambrinus, an attractive young glassmaker apprentice, fell in love with Flandrine, his employer's daughter. But when he declared his love to the young woman, she rejected him. Wounded by love, Gambrinus decided to take his own life and went to the forest. But just before executing such a sad decision, the devil appeared to him in person and made a pact with him: in exchange for his soul, the devil would give him a gift that could help him win Flandrine's love. And if this gift didn't work, the devil would give him a remedy to forget his beloved forever. The legend continues telling that, by the art of diabolical magic, Gambrinus became an excellent musician and dancer. But his gifts were useless and Flandrine rejected

him again. So, the devil showed Gambrinus how to make a strange and bitter drink that would cure him from the evil of love. That drink was beer, the only remedy that would heal the wounds of love of the young apprentice glassmaker. Gambrinus began brewing and drinking beer and, as he drank and drank, the memory of his beloved was diluted in his memory. And so, thanks to the devil, Gambrinus got the title of “King of Beer”, forever and ever.

IPA: The Indian Pale Ale story:

At the time India was under British control, they wanted to send beer for their army to India. Of course, they had clear priorities on what the army needed. When they sent beer for the first time (imagine how long it took to get from the UK to India), it eventually arrived, but once they opened the barrels, they realized the beer was spoiled, undrinkable. Second chance: they already knew one of the characteristics hops gives beer is prolonged life (“Let’s try adding more hops before closing the barrel.”) What do you think happened? Magic! This did the trick: when the barrels arrived in India, the beer was not spoiled, but it was soooo bitter... and nobody cared about it, because they had beer!! When these people went back to the UK and they ordered beer in a tavern, they thought the beer there was water. They were so used to bitter beers that general beers in the UK tasted like nothing to them. As everything in life, if someone is willing to pay for it, someone will provide the service, so some taverns started to serve extra bitter beer for the people that came back from India. That is why its name is Indian Pale Ale, high fermentation pale beer from India... kind of.

Don’t you think is time to get into action? I have a proposal for you: I am going to give you the names and some details about some Czech beers (not just lagers) and let’s find out if you get to try them and rate them.



Logo	Name	ABV	Type	Observation	Rate 0-5
	Pilsner Urquell	4.4%	Pale Lager		
	Master Dark	7%	Dark Lager		
	Staropramen unfiltered	5%	Unfiltered Pale Lager		
	Staropramen mix	~4.5%	Semi-dark Lager		
	Kozel	4%	Pale Lager		
	Kozel Dark	3.8%	Dark Lager		
	Budweiser Budvar	4%	Pale Lager		
	Budweiser Budvar Dark	4.7%	Dark Lager		
	Matuska Apollo	5.5%	Pale Ale		
	Matuska Tropical	7%	IPA		
	Clock Twist	6.2%	American Red IPA		
	Clock Exorcist	5.8%	Foreign Extra Stout		
	Černá Hora	4.2%	Pale Lager		

About the Authors



Isabel Agea, a Spanish girl exploring the world since 1993. Isabel completed a BS in Biotechnology in an attempt to understand the molecular mechanisms of life, an MS in Bioinformatics after falling in love with it, and nowadays is a PhD student in the field of Drug Design at the University of Chemistry and Technology in the amazing city of Prague. Isabel is passionate about science, puzzles, travelling, sports, and beer.



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