

Czech Lagers: History, brewing, judging

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Czech Brewing & Beer History

- **The Czech Republic consumes more beer per capita than any other country in the world.**
The Czech Republic drinks on average about 161 liters of beer per person each year.
- **Czech beer has been brewed since 993 AD (at least).**
Brewing in this early period has largely been associated with monasteries. Although beer was likely made in this region prior to 993 AD, written documentation indicates that Benedictine monks brewed beer in the Břevnov Monastery. While this was the first mention of the brewing process, it is believed that hops were grown in the region for the purposes of beer production as early as the first century.
- **In Prague, beer can be cheaper than bottled water.**
Beer prices get as low as 14 koruna a pint (that's \$0.80 or 0.54 euros), whereas water costs about 35 koruna for a .33 litre bottle.

More Czech Beer History

- **There are 307 breweries in the Czech Republic.**

There are 43 industrial breweries and 264 microbreweries.

- **Traditional bars serve only one brand of beer.**

Check to see which sign hangs outside a pub before entering, as you may only drink that brand of beer for the night. Since some traditional bars have just one kind of beer on draught, servers will often bring rounds to your table without asking. Some traditional pubs will offer a bit of variety, though, with one 10-degree beer (light, low alcohol), one 12-degree beer (slightly higher in alcohol) and one higher density dark beer on tap.

- **The tram in Prague has a beer car.**

The Prvni Pivni Tramway, or "First Beer Tram", at the end of the No. 11 line is a tram themed pub in the last station. They generally offer eight taps and 10 to 15 bottled beers.

3A Czech Pale Lager

- **Overall Impression:** A lighter-bodied, rich, refreshing, hoppy, bitter pale Czech lager having the familiar flavors of the stronger Czech Premium Pale Lager (Pilsner-type) beer but in a lower alcohol, lighter-bodied style.
- **Aroma:** Light to moderate bready-rich malt, light to moderate spicy or herbal hop bouquet; balance between malt and hops may vary. Faint hint of caramel is acceptable. Light diacetyl and light, fruity hop-derived esters acceptable, but need not be present. No sulfur.
- **Appearance:** Light gold to deep gold. Brilliant to very clear, long - lasting creamy white head.
- **Flavor:** Medium-low to medium bready-rich malt flavor with a rounded, hoppy finish. Low to medium-high spicy or herbal hop flavor. Bitterness prominent. Flavorful and refreshing. Diacetyl or fruity esters are acceptable at low levels.

3A Czech Pale Lager

- **Mouthfeel:** Medium-light to medium body. Moderate carbonation.
- **Comments:** The Czech name of the style is *světlé výčepní pivo*.
- **Characteristic Ingredients:** Soft water with low sulfate and carbonate content, Saaz type hops, Czech Pilsner malt, Czech lager yeast. Low ion water provides a distinctively soft, rounded hop profile despite high hopping rates.
- **Vital Statistics:**
 - OG: 1.028 – 1.044
 - IBUs: 20 – 35 FG: 1.008 – 1.014
 - SRM: 3 – 6 ABV: 3.0 – 4.1%
- **Commercial Examples:** Březňák Světlé výčepní pivo, Notch Session Pils, Pivovar Kout na Šumavě Koutská 10°, Únětické pivo 10° e most consumed type of beer in the Czech Republic at present

3B Czech Premium Lager

- **Overall Impression:** Rich, characterful, pale Czech lager, with considerable malt and hop character and a long, rounded finish.
- **Aroma:** Medium to medium-high bready-rich malt and medium-low to medium-high spicy, floral, or herbal hop bouquet; balance between the malt and hops may vary, the interplay is rich and complex. Light diacetyl, or very low fruity hop-derived esters are acceptable.
- **Appearance:** Gold to deep gold. Brilliant to very clear. Dense, long-lasting, creamy white head.

3B Czech Premium Lager

- **Flavor:** Rich, complex, bready maltiness combined with a pronounced yet soft and rounded bitterness and floral & spicy hop flavor. Malt and hop flavors are medium to medium high, the malt may contain a slight impression of caramel. Bitterness is prominent. The long finish can be balanced towards hops or malt but is never aggressively tilted either way. Light to moderate diacetyl and low hop-derived esters are acceptable.
- **Mouthfeel:** Medium body. Moderate to low carbonation.
- **Characteristic Ingredients:** Soft water, Saaz type hops, Czech malt, Czech lager yeast. Low ion water provides a distinctively soft, rounded hop profile despite high hopping rates.

3B Czech Premium Lager

- **Commercial Examples:** Bernard Sváteční ležák, Gambrinus Premium, Kout na Šumavě Koutská 12°, Pilsner Urquell, Pivovar Jihlava Ježek 11°, Primátor Premium, Únětická 12°



3C Czech Amber Lager

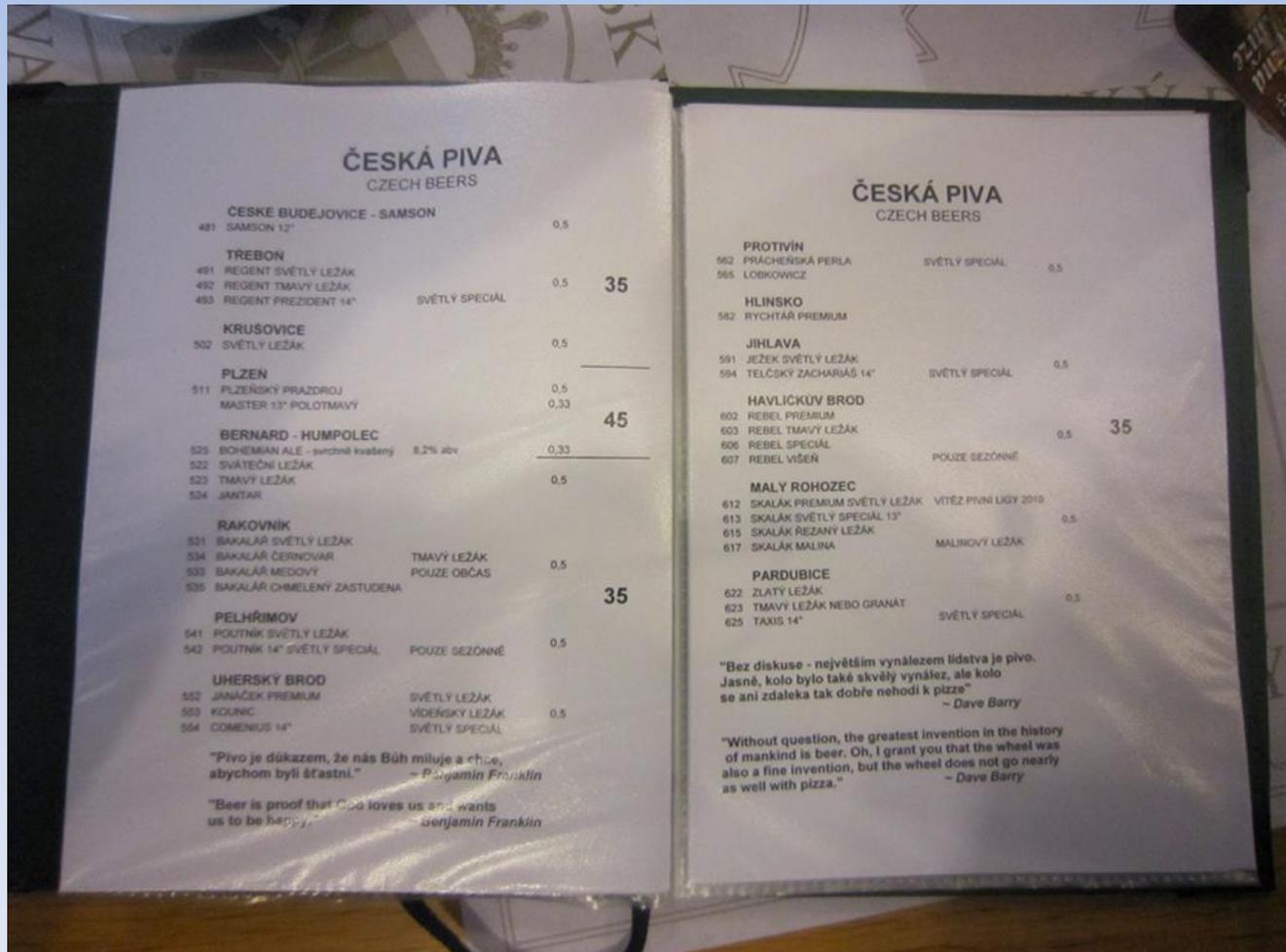
- **Overall Impression:** Malt-driven amber Czech lager with hop character that can vary from low to quite significant. The malt flavors can vary quite a bit, leading to different interpretations ranging from drier, bready, and slightly biscuity to sweeter and somewhat caramelly.
- **Aroma:** Moderate intensity, rich malt aroma that can be either bready and Maillard product-dominant or slightly caramelly and candy-like. Spicy, floral or herbal hop character may be moderate to none.
- **Appearance:** Deep amber to copper. Clear to bright clarity. Large, off-white, persistent head.
- **Flavor:** Complex malt flavor is dominant (medium to medium-high), though its nature may vary from dry and Maillard product-dominant to caramelly and almost sweet. Some examples have a candy-like to graham-cracker malt character. Low to moderate spicy hop flavor. Prominent but clean hop bitterness provides a balanced finish.

3C Czech Amber Lager

- **Mouthfeel:** Medium-full to medium body. Soft and round, often with a gentle creaminess. Moderate to low carbonation.
- **History:** A Vienna-style lager which has continued to be brewed in the Czech Republic. A resurgence of small breweries opening in the Czech Republic has increased the number of examples of this style.
- **Characteristic Ingredients:** Pilsner and caramel malts, but Vienna and Munich malts may also be used. Low mineral content water, Saaz type hops, Czech lager yeast.

3C Czech Amber Lager

- **Commercial Examples:** Bernard Jantarový ležák, Pivovar Vysoký Chlumeč Démon, Primátor polotmavý 13°, Strakonický Dudák Klostermann polotmavý ležák 13°



3D Czech Dark Lager

- **Overall Impression:** A rich, dark, malty Czech lager with a roast character that can vary from almost absent to quite prominent. Malty with an interesting and complex flavor profile, with variable levels of hopping providing a range of possible interpretations.
- **Aroma:** Medium to medium-high rich, deep, sometimes sweet maltiness, with optional qualities such as bread crusts, toast, nuts, cola, dark fruit, or caramel. Roasted malt characters such as chocolate or sweetened coffee can vary from moderate to none but should not overwhelm the base malt character. Low, spicy hop aroma is optional. Low diacetyl and low fruity esters (plums or berries) may be present.
- **Appearance:** Dark copper to almost black color, often with a red or garnet tint. Clear to bright clarity. Large, off-white to tan, persistent head.

3D Czech Dark Lager

- **Flavor:** Medium to medium-high deep, complex maltiness dominates, typically with malty-rich Maillard products and a light to moderate residual malt sweetness. Malt flavors such as caramel, toast, nuts, licorice, dried dark fruit, chocolate and coffee may also be present, with very low to moderate roast character. Hop flavor can be moderately-low to none. Hop bitterness may be moderate to medium-low but should be perceptible
- **Mouthfeel:** Medium to medium-full body, considerable mouthfeel without being heavy or cloying. Moderately creamy in texture
- **Characteristic Ingredients:** Pilsner and dark caramel malts with the addition of debittered roasted malts are most common, but additions of Vienna or Munich malt are also appropriate. Low mineral content water, Saaz type hops, Czech lager yeast. Any fruity esters are typically from malt, not yeast.

3D Czech Dark Lager

- **Vital Statistics:**
 - OG: 1.044 – 1.060
 - IBUs: 18 – 34 FG: 1.013 – 1.017
 - SRM: 14 – 35 ABV: 4.4 – 5.8%
- **Commercial Examples:** Bohemian Brewery Cherny Bock 4%, Budweiser Budvar B:Dark tmavý ležák, Devils Backbone Morana, Kout na Šumavě Koutský tmavý speciál 14°, Notch Černé Pivo, Pivovar Březnice Herold, U Fleků Flekovský tmavý 13° ležák



Brewing Czech Beer Styles

- Ingredients
 - Use indigenous ingredients whenever possible, American malt, hop and yeast varieties create fine beer, but lack the nuances for most international styles.
 - Some ingredients, such as Moravian Malted Barley, are not available in the US. Substitutes such as Weyermann Bohemian Pilsner Malt or a mix of import pilsner malt and pale malt work very well.

Brewing Czech Style Beers

- Malted Barley
 - Most critical ingredient in lager style beers.
 - Pale malt is typically 80 to 100% of the recipe, the remainder is made of Munich, Vienna and crystal malts.
 - Dark roasted malts, such as chocolate and black patent, are typically not used. Carafa is OK in small doses in some dark styles
 - Weyermann Bohemian Floor-malted Pils is classic and delicious

Brewing Czech Beer Styles

- Hops
 - Although most noble hop varieties will work, Saaz is king!
 - Saaz imparts mild spicy and/or earthy character, can also turn floral or herbal.
 - Alpha acids are typically 3.0 to 4.5%
 - For centuries the death penalty was mandated for attempting to smuggle Saaz rhizomes of the country.
 - American or Czech? Bob uses American even if less traditional—fresher is better.

Brewing Czech Beer Styles

- Water

- Very soft water with ~35 ppm dissolved solids.

- Vital Statistics (ppm)

- Carbonates - 15

- Calcium - 7

- Sulfates - 5

- Magnesium - 2

- Sodium - 2

- Chloride - 2



How to achieve soft water?

Move to Fort Collins CO, Athens GA, Seattle WA, or Prague. Soft water, good beer, and live music.

or

Boil water to remove HCO_3^-

Acidify with lactic or phosphoric acid to pH 6
(but these step will not remove SO_4^- or cations)

So

Cut brewing liquor with reverse osmosis water from grocery store. Bob uses 60/40 RO to boiled and acidified tap water for all Czech styles.

Brewing Czech Beer Styles

- Yeast
 - Flavor profile is the key factor. Must produce clean lager character with low ester production.
 - Flocculation and attenuation are also key factors.
 - Some sulfur and diacetyl production is acceptable in these lager styles.
 - Wyeast 2000, 2001, 2007 and 2278
 - White Labs 800 and 802
 - Dry yeast strains

Mashing, decoct or not??

Decoction is NOT necessary for most malt.

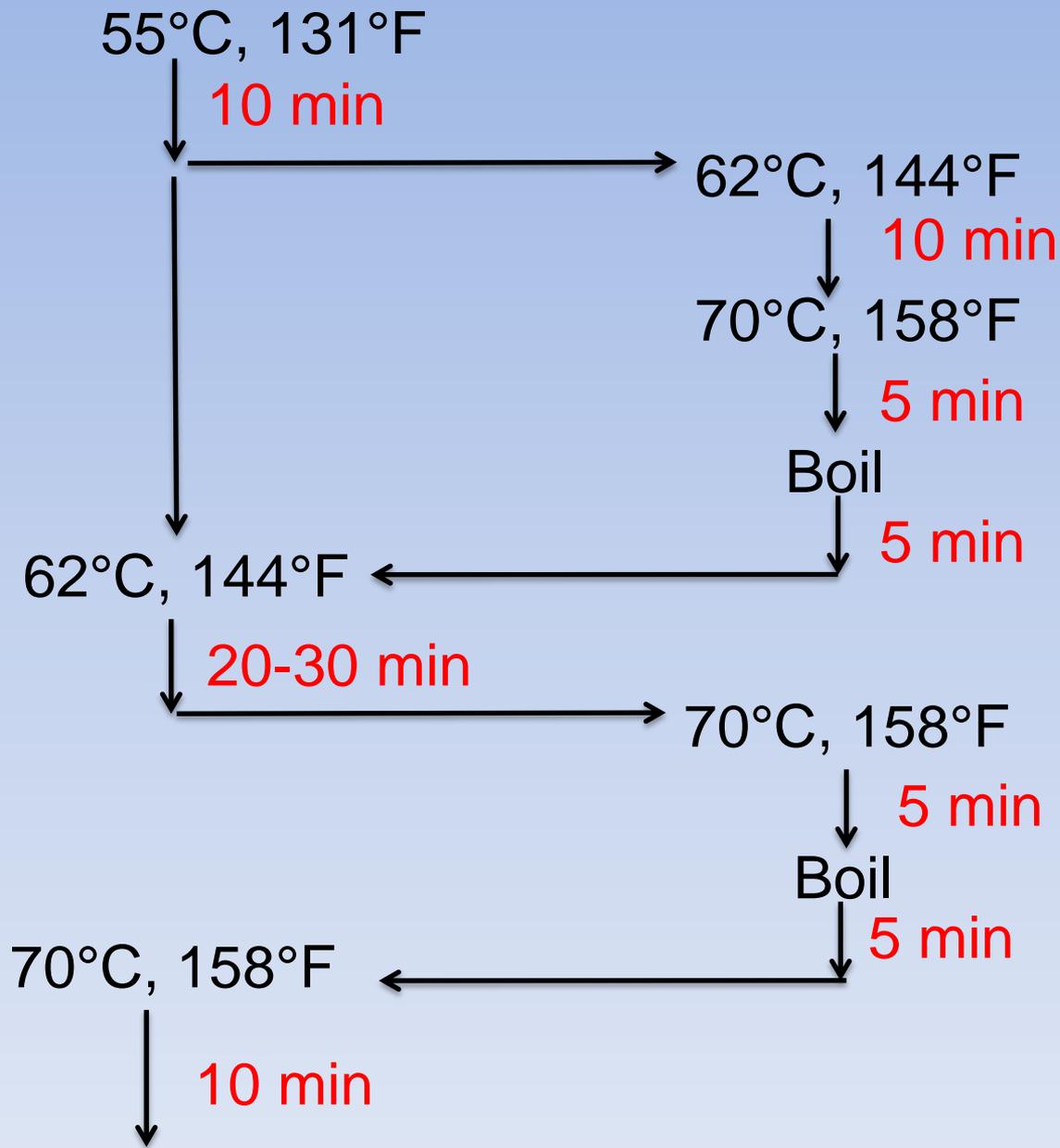
Many can be single infusion at a starch rest temp (say 67 °C, 153°F)

Weyermann suggests that step mash is at least needed with their floor malted Bohemian Pils malt.

Bob mashes in a cooler, so to step mash he decocts

Use a thin mash! 1.5 quarts/lb of malt.

A decoction schedule



Fermentation

Standard Lager fermentation techniques:

Big starters (>2L). Then repitch and make a few batches.

Start ferment at 48°F

Diacetyl rest at end of ferment 63°F to finish

Long, cold lagering (5-10 weeks)



Diacetyl

A flaw in U.S. beers, NOT in Czech lagers

Half of the beers we tasted in Czech Republic contained with low to medium diacetyl.

Judging should allow for diacetyl—too much is bad, but some is just right in these styles.

Czech lager strains are diacetyl prone, we suggest a diacetyl rest to tone down its production.

Use a German strain if you are diacetyl phobic

Brewing the Beers

Both lagers brewed on the SABCO pilot system at Altitude Brewing, Laramie, WY



Jared Long, co brewer
casting out IPA



Sample beer 1. Czech Amber lager

11.5 gal.

20 lbs Weyermann Vienna malt

1 lb Weyermann Melanoidin malt

3 lb Weyermann CaraRed

3.4 oz Perle alpha 7.6, boil

2 oz American Saaz 10 min

4 oz American Saaz whirlpool.

Wyeast 2001 “Urquell Lager”

Single infusion mash 65°C

OG 1.058

Ferment 11°C 2 weeks with 65° diacetyl rest at 10 days

Sample beer 1. Czech Amber lager

Tasting notes

Aroma: bready, toasty malt aroma. Slight diacetyl. Med-low spicy, floral, slight orange hops (all Saaz of course)

Flavor: toasty, bread, slight caramel. Very low diacetyl gives a butterscotch taste (Werther's candy). Med bitterness, beer finishes dry.

This example is more along the Vienna / Oktoberfest style of Czech Amber relative to styles that are richer caramel. Some have a cookie-like character of caramel and sweetness

Sample beer 2. Czech Dark lager

11.25 gal.

13 lbs Weyermann floor malted Pils malt

5 lb Weyermann Munich II

3 lb Weyermann CaraMunich II

0.8 lb Weyermann Carafa II

2.7 oz Perle alpha 7.6, boil

1.5 oz American Saaz 10 min

1.0 oz American Saaz whirlpool.



Wyeast 2001 “Urquell Lager”

Triple decoction, rests at 55°C, 63°C, and 68°C

OG 1.058

Ferment 11°C 2 weeks with 18°C diacetyl rest at 10 days

Sample beer 2. Czech Dark lager

Recipe based on that posted by Horst Dornbusch based on U Fleku

Tasting notes:

Aroma: Cola, dark fruit, bready, slight chocolate, low spicy hop.

Flavor, bready, cola, slight roast, medium sweetness, bitterness struggles to balance. Low spicy hop aroma. On high OG side for style.

1.058 OG, What happens when decocting on a good brewing system!

Recap on styles

Czech light lager: A lighter-bodied, lower-intensity, refreshing, everyday version of Czech Premium Pale Lager.

Czech Premium Pale Lager: More color, malt richness, and body than a German Pils, with a fuller finish and a cleaner, softer impression.

Diacetyl OK.

Czech Amber lager: The style can be similar to a Vienna lager but with Saaz type hop character, or that approaching an English bitter but significantly richer with more of a deep caramel character. Versions can have considerable hop character, malt complexity, or residual sweetness.



Czech Dark Lager: The beer is the Czech equivalent of a dark lager ranging in character from Munich Dunkel to Schwarzbier, but typically with greater malt richness and hop character (aroma, flavor, and/or bitterness).



Want to learn the styles? Visit the Czech Republic!

Outstanding art and architecture



Funky public art



...and outstanding beer and bars

