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BALTIC PORTER

Baltic Porter

by Jamil Zainasheff

I wasn't very impressed with the first few commercial examples of Baltic porter I tasted. They were oxidized and a bit too sweet from long travels and time spent sitting on the store shelf. Then a friend living in Finland brought me every beer he could find with the word "porter" on the label. It was an eye opening experience and convinced me that Baltic porter not only was its own style, but a wonderful one as well.

In most examples, Baltic porter is a malty-rich, slightly roasty beer with a fair amount of alcohol. Its color ranges from dark reddish copper to opaque dark brown. Even though the beer often has an initial sweetness, it finishes drier due to the roast grains and bittering hops.

Some brewers wrongly assume that Baltic porter is just a bigger robust porter. Yes, Baltic porter is bigger, richer, sweeter and more alcoholic than robust porter, but robust porter is usually hoppier and roastier than Baltic porter. They really are two very different beer styles. In Baltic porter, the fruity esters range from low to medium-high. It can have a variety of esters, but the ones that fit well with the style are dark, dried fruit flavors such as raisin, prune, fig and currants. There is also a lower gravity variant of Baltic porter, sort of like a cross between a brown porter and a classic schwarzbier. These lower alcohol examples generally have little in the way of esters, while the higher alcohol examples often carry lots of dark fruit notes. Malt character might include caramel, toffee, molasses, chocolate, bready or biscuit, and perhaps even subtle hints of coffee or licorice. Imported samples often have some Sherry or Port type notes from age and transportation stress, but don't let that fool you into thinking that oxidation makes the beer better or somehow is part of the style.

While most examples are full-bodied with a touch of creamy texture, the lower gravity versions are somewhat thinner and with less apparent alcohol. In any case, Baltic porter should never be syrupy-thick or cloying and the alcohol character should never be hot or harsh.

There are recipes out there with various base malts, but I prefer to use a healthy portion of light-to-medium color Munich malt (6–10 °L) along with some continental Pilsner malt. This gives the beer a bready, rich background malt character. You can experiment with different proportions and different suppliers until you find the blend that works best for you. I use about twice as much Munich as Pilsner and have used Vienna malt instead of Munich with nice results as well. Extract brewers can use a light-colored, blended Munich malt extract with excellent results. All-grain brewers can use a step or single infusion mash as long as the saccharification rest is low enough so that the resulting beer does not end up too viscous. A temperature range of 149 to 154 °F (65 to 68 °C) works well. Use a lower temperature when using lower attenuating yeasts or high starting gravities. Use a higher temperature when using the higher attenuating yeasts or lower starting gravity beers.

While Baltic porter will have some roasted malt notes, the roast character should be restrained. Shoot for a character somewhere between a robust porter and a classic German-type schwarzbier. You want a dark, rich flavor with no highly burnt or acrid notes. The trick is to use de-bittered black malt for a portion of the grain bill. A little chocolate malt (1 to 2%) plus some de-bittered chocolate malt (2 to 3%) will provide a touch of dark malt character and a deep brown color. While the Beer Judge Certification Program (BJCP) guidelines suggest no more than a dark brown color, judges seem to prefer beers on the darker end, even nudging their way toward black. You should

BALTIC PORTER
by the numbers

OG: . . .1.060–1.090 (14.7–21.6 °P)
FG: . . . . . .1.016–1.024 (4.1-6.1 °P)
SRM: 17–30
IBU: 20–40
ABV: 5.5–9.5%

Zek's Porter

(5 gallons/19 L, all-grain)

OG = 1.089 (21.3 °P)
FG = 1.018 (4.6 °P)
IBU = 38 SRM = 30 ABV = 9.4%

My grandparents fled Russia with one of them later being captured and imprisoned in the gulag after fighting against the Soviets. The colloquial name for a Soviet gulag inmate was "zek." This recipe is for those who died under communism.

Ingredients

11 lbs. (5 kg) Durst Munich malt
6 lbs. (2.75 kg) Durst Pilsner malt
7 oz. (200 g) Great Western crystal malt (or similar) (60 °L)
7 oz. (200 g) Dingemans Special B malt (or similar) (140 °L)
5.3 oz. (150 g) Weyermann Carafa® Special II malt (430 °L)
3.5 oz. (100 g) Briess chocolate malt (or similar) (350 °L)
8.4 AAU Lublin hops (2.4 oz./68 g at 3.5% alpha acids) (60 min.)
2.94 AAU Lublin hops (0.84 oz./ 24 g at 3.5% alpha acids) (15 min.)
White Labs WLP885 Zurich Lager, White Labs WLP830 German Lager, Wyeast 2206 Bavarian Lager or Fermentis Saflager S-23 yeast

Step by Step

Mill the grains and dough-in targeting a mash of around 1.5 quarts of water to 1 pound of grain (a liquor-to-grist ratio of about 3:1 by weight) and a temperature of 150 °F (66 °C). Hold the mash at 150 °F (66 °C) until enzymatic conversion is complete. Infuse the mash with near boiling water while stirring or with a recirculating mash system raise the temperature to mash out at 168 °F (76 °C). Sparge slowly with 170 °F (77 °C) water, collecting wort until the pre-boil kettle volume is around 6.5 gallons (24.4 L) and the gravity is 1.069 (16.8 °P).

The total wort boil time is 90 minutes, which helps reduce the S-Methylmethionine (SMM) present in the lightly kilned Pilsner malt and results in less Dimethyl sulfide (DMS) in the finished beer. Add the bittering hops with 60 minutes remaining in the boil. Add the second hop addition and Irish moss or other finings with 15 minutes left. Chill the wort rapidly to 53 °F (12 °C), let the break material settle, rack to the fermenter, pitch the yeast and aerate thoroughly. The proper pitch rate is 30 grams of properly rehydrated dry yeast, six packages of liquid yeast or two packages of liquid yeast in a 10-liter starter. Ferment at 53 °F (12 °C) until the beer attenuates fully. With healthy yeast, fermentation should be complete within a week, but do not rush it. Rack to a keg and force carbonate or rack to a bottling bucket, add priming sugar, and bottle. Target a carbonation level of 2 to 2.5 volumes.

Zek's Porter

(5 gallons/19 L, extract with grains)

OG = 1.089 (21.4°P)
FG = 1.018 (4.6 °P)
IBU = 38 SRM = 30 ABV = 9.4%

Ingredients

7.5 lbs. (3.4 kg) Weyermann Munich liquid malt extract
4.4 lbs. (2 kg) Pilsner liquid malt extract
7 oz. (200 g) Great Western crystal malt (or similar) (60 °L)
7 oz. (200 g) Dingemans Special B malt (or similar) (140 °L)
5.3 oz. (150 g) Weyermann Carafa® Special II malt (430 °L)
3.5 oz. (100 g) Briess chocolate malt (or similar) (350 °L)
8.4 AAU Lublin hops (2.4 oz./68 g at 3.5% alpha acids) (60 min.)
2.94 AAU Lublin hops (0.84 oz./ 24 g at 3.5% alpha acids) (15 min.)
White Labs WLP885 Zurich Lager, White Labs WLP830 German Lager, Wyeast 2206 Bavarian Lager or Fermentis Saflager S-23 yeast

Step by Step

Most Munich malt extract is sold as a blend of Munich and Pilsner or two-row malts. I specify 100% Munich liquid malt extract (LME) and Pilsner LME in my recipes so you will know which blends might work best for your brew. If you use a blend, replace both the Munich and Pilsner extracts with 11.9 lb. (5.4 kg) of the blend. If you cannot get fresh liquid malt extract, it is better to use an appropriate amount of dried malt extract (DME) instead.

Mill or coarsely crack the specialty malt and place loosely in a grain bag. Avoid packing the grains too tightly in the bag, using more bags if needed. Steep the bag in about 1 gallon (~4 liters) of water at roughly 170 °F (77 °C) for about 30 minutes. Lift the grain bag out of the steeping liquid and rinse with warm water. Allow the bags to drip into the kettle for 15 minutes while you add the malt extract. Do not squeeze the bags. Add enough water to the steeping liquor and malt extract to make a pre-boil volume of 5.9 gallons (22.3 liters) and a gravity of 1.076 (18.4 °P). Stir thoroughly to help dissolve the extract and bring to a boil.

The total wort boil time is 60 minutes. Add the bittering hops with 60 minutes remaining in the boil. Add the second hop addition and Irish moss or other finings with 15 minutes left. Chill the wort rapidly to 53 °F (12 °C), let the break material settle, rack to the fermenter, pitch the yeast and aerate thoroughly. The proper pitch rate is 30 grams of properly rehydrated dry yeast, six packages of liquid yeast or two packages of liquid yeast in a 10-liter starter. Ferment at 53 °F (12 °C) until the beer attenuates fully. With healthy yeast, fermentation should be complete within a week.

Follow the remaining packaging and carbonation instructions in the all-grain version of this recipe.

avoid using highly kilned grains except in very small percentages, as too much will push the beer toward a robust porter or stout character. If you wan to differentiate your Baltic porter from others, try experimenting with different chocolate-type malts from different suppliers before adding a lot of higher color malts.

Another trick in developing the necessary rich malt character without too much roastiness is to add a little crystal malt. The sweetness of crystal malt adds to the perception of richness in the beer. For caramel flavors, I always use dark crystal (80 to 150 °L) as it adds those dark, raisin-plum notes that go so well in this style. I also like to include some mid-color crystal (40 to 60 °L), which adds some caramel flavors and some residual sweetness to help balance the bitterness of the roast grains and hops. Watch the total amount of crystal malt in your recipe. If the total amount exceeds 6% of the grist, it can result in an overly sweet and heavy beer. Remember that the goal is a little sweetness up front with a general malt balance and a dry finish. If the beer does not seem dry enough, it is going to be a poor example of the style. If you have already limited your specialty grains and still have trouble reaching a proper level of attenuation, replace a small portion of the base malt with simple sugar to help the beer finish a bit drier.

If you are looking for more complexity or increased head retention, you can add other malts as well. Wheat malt, Victory®, biscuit and more are common additions in many recipes, but restraint is important so that the beer does not become saturated with non-fermentable dextrins and cloying flavors. Keep the total of all specialty grain additions to less than 10%.

The hop flavor and aroma is restrained in this style. Late hop additions are acceptable, but they should not show up in the aroma and should not result in more than a moderate level of spicy or floral hop flavor. Typical hop additions for this style are Lublin or Saaz types. Any spicy or floral hop is acceptable as long as you keep the overall level of hop character within the limits. You can bitter with a wide variety of hops, whether it is spicy and floral or clean and neutral. Magnum is a nice choice if you want to use a higher alpha hop for bittering.

> “Any spicy or floral hop is acceptable as long as you keep the overall level of hop character within the limits.”

Baltic porter should have a medium-low to medium bitterness, and the residual sweetness should result in a balanced beer. The bitterness to starting gravity ratio (IBU divided by OG) can range anywhere from 0.25 to 0.5 or more, but I like to target approximately 0.4. I use less bittering in smaller beers and more bittering in bigger beers. Keep in mind that beers designed for long-term aging should target the higher end of the scale, as a good amount of the bitterness can drop out of the beer over time.

While Baltic porter should have some dark, fruity esters, it is similar to bockbier, where much of that character comes from the malt and alcohols, not from using an estery yeast strain. Try for a clean, cooler fermentation, focused on proper attenuation of the higher than average starting gravity. The most important aspect is avoiding hot, unpleasant alcohols or an overly sweet finish. You do not want the drinker recoiling from harsh alcohol. Instead, you want them to drink the beer and then feel a gentle warming as the beer settles in their stomach.

You can use a clean ale yeast at cooler temperatures, such as White Labs WLP001 (California Ale), Wyeast 1056 (American Ale) or Fermentis US-05. These yeasts tend to attenuate well even in big beers and produce low ester levels at a range of temperatures. However, my preference is to use lager yeast, which tends to attenuate even better than these ale yeasts. White Labs WLP885 Zurich Lager, White Labs WLP830 German Lager, or Wyeast 2206 Bavarian Lager all work well in this style. If you are fermenting with lager yeast, use a cool fermentation temperature of 50 to 55 °F (10 to 13 °C). If you are using ale yeast, try fermenting around 65 to 70 °F (18 to 21 °C) depending on the yeast strain and recipe. Try to pick a temperature and stick with it. Controlling temperature is important to getting a proper level of attenuation and avoiding off-flavors, especially if you are making a bigger beer. Letting the beer go through large temperature swings can result in the yeast flocculating early or producing solventy and/or overly estery beers. However, raising the temperature a few degrees near the last third of fermentation will help the yeast clean up some of the intermediate compounds that were produced during fermentation and it will also encourage the yeast to complete attenuation.

Whatever yeast you use, remember that your fermentation conditions affect what flavors and aromas the yeast produce. Pitching rate, oxygen level, nutrients and temperature are like dials on your control panel of fermentation flavor. Starting with a healthy pitch of yeast, aerating or oxygenating and controlling temperatures are key to getting a well attenuated beer that allows the malt flavors to shine through. Tweak the parameters until you get it right.

If you are brewing a higher alcohol version, the beer will mellow and develop a bit of complexity over time. If you are making a smaller version, then it should be ready to drink when carbonated. For this style, I like to brew bigger versions and age it for three or more months. Time affects the balance and intensity of flavors, mellowing some of the harsher aspects and exposing some of the more delicate aromas and flavors. With time, it is also possible to develop vinous or Port-like qualities, which add to the complexity.