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ROGGENBIER



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ROGGENBIER

Rye is a hearty grain, and adds a unique grainy and spicy character to beer, as it does to foods.

**ROGGENBIER
BY THE NUMBERS**

OG:	1.046–1.056
FG:	1.010–1.014
SRM:	14–19
IBU:	10–20
ABV:	4.5–6.0%



Photo by Charles A. Parker/Images Plus

Roggenbier was once one of the most popular specialty beer styles in homebrew competitions. Before it was added to the 2004 Beer Judge Certification Program (BJCP) Style Guidelines, it dominated the Specialty Beer category. It was like the black IPA of its time; you often saw it on the Best of Show table. When it was made part of the German Wheat and Rye category, I started seeing it less often. In 2015, the BJCP moved it to the Historical Beer category recognizing the fact that commercial examples had disappeared and it was infrequently brewed.

Rye is a hearty grain, and adds a unique grainy and spicy character to beer, as it does to foods. It's also a hardy grain, growing in difficult conditions and being used by many impoverished people. So, it's like the grain from the tough side of town, where you have to be a fighter to survive. I can respect a grain like that. Plus it makes a damn fine whiskey, but I digress.

Adding rye to beer does not make it a rogggenbier, despite the name literally meaning “rye beer” in German. The BJCP recognizes this by making rogggenbier one of the 27A Historical Beer styles, while there is style 31A Alternative Grain Beer for any other beer containing rye, except rye IPA, which is one of the 21B Specialty IPA styles. Roggenbier is best thought of as a dunkelweizen (dunkles weissbier) using rye instead of wheat.

HISTORY

The use of rye to make beer likely has a long history, including in Bavaria before the Reinheitsgebot (Beer Purity Law) of 1516 outlawed the use of malted grains other than barley in beer. This reserved wheat and rye for use in breads, while allowing a royal exception to brewing wheat beers. However, rye beers did not continue in this manner. So, don't assume there is any historical tie between modern rye

beers and those that predate the Reinheitsgebot.

Michael Jackson in *Beer Companion* (1997) has three full pages on rye beers but mostly discusses Finnish sahti. He showcases Schierlinger Roggenbier as the classic example. He doesn't mention the style in his earlier books, but that isn't surprising as Schierlinger first launched the beer in 1988. He later features it in the *Great Beer Guide*, and *The Pocket Guide to Beer*; it must have made a memorable impression on him.

Jackson said Schierlinger told him that they produced a hefeweizen but wanted to add a dark beer to their portfolio. Instead of a dunkelweizen, they chose to make it more distinctive by using a dark grain (rye). The brewery could find no historical recipes, so created their own instead. But what about the Reinheitsgebot? Well, it's not your daddy's law anymore. Let's take a slight detour to review what happened.

When Germany unified as a country in 1871, Bavaria demanded that the Reinheitsgebot be adopted as the law of the land. It survived both World Wars, and later was part of West German law. However, in 1987 the European Union ruled it was anti-competitive, so rules were relaxed for imports. German Reunification in 1990 introduced East German beers, some of which used sugar. Germany adopted the Provisional Beer Law (*Vorläufiges Biergesetz*) in 1993 to replace the Reinheitsgebot.

The *Biergesetz* mentions yeast (along with barley malt, water, and hops), and allows other forms of hops (like extracts), as well as stabilizers and fining agents, if filtered out of the final beer. Bottom-fermenting beers are more restricted, closely following the Reinheitsgebot, but top-fermenting beers can use other malted cereal grains (but not corn or rice). Unmalted adjuncts are forbidden. Pure sugars can be used for coloring and flavoring.

ROGGENBIER

(5 gallons/19 L, all-grain)
OG = 1.050 FG = 1.012
IBU = 18 SRM = 17 ABV = 5%



INGREDIENTS

7 lbs. (3.2 kg) German rye malt
2.5 lbs. (1.13 kg) Vienna malt
2.5 lbs. (1.13 kg) caramel wheat malt
(50 °L)
2 oz. (57 g) Carafa® Special II malt
1 lb. (454 g) rice hulls
4 AAU Perle hops (60 min.)
(0.5 oz./14 g at 8% alpha acids)
4 AAU Perle hops (5 min.)
(0.5 oz./14 g at 8% alpha acids)
Wyeast 3068 (Weihenstephan Wei-
zen), White Labs WLP300 (Hefe-
weizen Ale), or SafAle WB-06 yeast
7/8 cup corn sugar (if priming)

STEP BY STEP

This recipe uses reverse osmosis (RO) water. Add 1 tsp. of calcium chloride to the mash. This recipe uses a double decoction mash. Use enough water to have a moderately thick mash, 1.5 qts./lb. (3.1 L/kg). Stir the decoctions frequently to avoid scorching the grain.

Mash in the rye, Vienna, and wheat malts at 95 °F (35 °C); hold the mash at this temperature for 10 minutes. Pull the first thick decoction (about 1/3 of the mash), bring to a boil (resting for 10 minutes at 122 °F/50 °C and 10 minutes at 158 °F/70 °C; boil for 10 minutes); leave the main mash at 95 °F (35 °C) during this process. Remix the mashes to hit 122 °F (50 °C). Pull the second thick decoction (again, about 1/3 of the mash), heat to 147 °F (64 °C) for 20 minutes, boil for 10 minutes, leaving the main mash at 122 °F (50 °C) during this process. Remix the mashes to hit 158 °F (70 °C). Add the rice hulls, mixing fully, then rest for 15 minutes.

Add the Carafa® malt. Begin recirculating slowly and raise temperature to 168 °F (76 °C) and recirculate for 15 minutes. Sparge very slowly and collect 6.5 gallons (24.5 L) of

wort. Cutting the mash bed in a tight crosshatch pattern will encourage runoff. Boil the wort for 90 minutes, adding hops at the times indicated in the recipe.

Chill the wort to 59 °F (15 °C), pitch the yeast, and ferment until complete, allowing the temperature to rise to no more than 64 °F (18 °C) during fermentation. Rack the beer, prime and bottle condition, or keg and force carbonate.

ROGGENBIER

(5 gallons/19 L, extract with grains)
OG = 1.050 FG = 1.012
IBU = 18 SRM = 17 ABV = 5%



INGREDIENTS

6.6 lbs. (3 kg) rye liquid malt extract
2 oz. (57 g) Carafa® Special II malt
4 AAU Perle hops (60 min.)
(0.5 oz./14 g at 8% alpha acids)
4 AAU Perle hops (5 min.)
(0.5 oz./14 g at 8% alpha acids)
Wyeast 3068 (Weihenstephan Wei-
zen), White Labs WLP300 (Hefe-
weizen Ale), or SafAle WB-06 yeast
7/8 cup corn sugar (if priming)

STEP BY STEP

This recipe is not the same as the all-grain recipe; the available rye extracts I have found tend to have between 20–25% rye, which is a half to a third as much as needed for a roggensbier. But it will be easier to use, and have some rye flavor. The rye extracts all seem to have some level of rye, crystal, and base malt so that can be used as a substitute for the grains except the coloring malt.

Add the Carafa® malt in a mesh bag and steep in 6.5 gallons (24.5 L) of water in the brew kettle as it heats to 158 °F (70 °C). Remove and rinse grains gently. Turn off the heat and add the malt extract and stir thoroughly to dissolve completely. Turn the heat back on and bring to a boil. Boil the wort for 60 minutes, adding hops at the times indicated.

Chill the wort to 59 °F (15 °C), pitch the yeast, and ferment until complete, allowing the temperature to rise to no more than 64 °F (18 °C) during fermentation. Rack the beer, prime and bottle condition, or keg and force carbonate.

Many breweries voluntarily follow the Reinheitsgebot as a marketing point.

The history of roggenbier as a modern style is therefore only traceable to 1988, despite fanciful stories of Middle Age brewing. It remains a minor style in Germany (Wolfgang Kunze, author of *Technology Brewing & Malting*, comments that rye beers have only local significance), and it seems that way currently among breweries outside of Germany and in the homebrewing community.

SENSORY PROFILE

To understand roggenbier, first you have to know how to recognize the flavor and aroma of rye. First, let's be clear. Rye doesn't taste like caraway. So, if you like rye bread, be sure you are separating the flavor of the rye from any caraway seeds present. This is sometimes made more difficult because rye is described as "spicy" – but that spice isn't caraway.

Various sources describe rye differently. It's been characterized as earthy, spicy (not like cinnamon or clove, more like pepper), slightly sour, dry, a bit astringent, sharp, peppery, grainy, spicebush, black pepper, sharp nose, dry/spicy, and floral. Jackson says rye is the most assertive of cereal grains, and has a fruity, slightly bitter, spicy, oily, sometimes almost pepperminty note. Rye has more acidity than barley, which might give some acidity but people shouldn't think that sourness in rye bread is from the rye – it's more likely from the sourdough-like starter. Rye malts are usually darker than barley malts and tend to produce beer with a definite bread- or bread crust-like taste. Roggenbier is a riff on a dunkelweizen so it shares many of the same characteristics, especially the yeast. The banana and clove yeast aroma and flavor are present, but the richer, grainier, and spicier rye is noticeable. Cloudy yeast, a tall and persistent head, and spritzy carbonation are classic. The color is often a reddish-brown color, not really brown or darker. The bitterness is restrained to get out of the way of the yeast and malt.

Rye can have a gummy character, so the body tends to be more full than other wheat beers. The rye can add

a bit of bitterness and dryness on its own, so that tends to counteract the body a touch. The balance should remain malty not bitter, however. Freshness matters with all beers made with weizen yeast. Sometimes I think people who describe the beer as having acidity have gotten old samples. The beer should be enjoyed fresh and young, just like bread.

BREWING INGREDIENTS AND METHODS

To make a roggenbier you must use rye malt. Not flaked rye, not raw rye – malted rye. Rye is a huskless grain, like wheat, which makes it difficult to work with. But according to Kunze it is very high in pentosan (a polysaccharide of five-carbon sugars). This causes it to have a viscosity about two or three times more than barley, as it holds more water – think dietary fiber drinks. So, gummy malt plus no husks means you absolutely need lautering aids. Rice hulls to the rescue.

I've already warned you about the use of caraway seeds or flavoring. Don't do it. Don't feel the urge to overstate any spicy or slightly tart qualities by artificially boosting them. Allow the ingredients to speak for themselves. Rye never would appear in a lager, so make this as a top-fermented beer. Don't add spices. Jackson's description of Schierlinger said they used 60 percent rye malt, pale and crystal malt in equal parts for the remainder, and a little bit of a darker dehusked malt for color but not flavor. A double decoction mash is used. He said the beer was 20–23 SRM, 1.048 starting gravity (SG), 5% ABV, implying a final gravity (FG) of 1.010. He mentions two additions of Perle hops, but no IBU levels. Wheat beer yeast is used, and the beer is primed with unfermented wort (*speise*).

Later descriptions of the Thurn und Taxis version talked about 1.055 SG, 5.4% ABV, implied FG 1.014. Paulaner version is identified as 1.050, 5.3% ABV, implied FG 1.010. Randy Mosher in *Radical Brewing* says that you can create a decent version by taking an existing dunkelweizen recipe, swapping in rye malt for half the wheat malt, and increasing the crystal malt.

There is some additional interesting

information for process. The mashing process developed by Schierlinger was patented, in order to properly degrade the gummy qualities of the malt, while enhancing the rye bread-like aroma and flavor. The patent suggests a grist of 50% rye malt, 40% barley malt, and 10% wheat malt for best flavor and aroma results. Darker-colored rye malts produce more aroma and flavor.

The patent says the beer can be made with a double or triple decoction mashing process with the first decoction pulled at 122 °F (50 °C) and the main mash remaining at this temperature. The decoction is heated to 147 °F (64 °C) then 162 °F (72 °C) then boiled. The mashes are remixed to hit 147 °F (64 °C) then a second decoction is drawn and brought to a boil. The mashes are remixed to hit 162 °F (72 °C). This is a standard double decoction method advocated by brewing scientist Ludwig Narziss.

The patent describes a finding that wort viscosity can be reduced by using a double decoction method with the following parameters: Mash in between 86–104 °F (30–40 °C); hold the mash at this temperature; pull the first decoction, boil; remix to hit 122–131 °F (50–55 °C); pull the second decoction, heat to 140–149 °F (60–65 °C) for 20–40 minutes, boil; remix to hit 158–176 °F (70–80 °C). The long rests at low mash-in temperatures (optimally 95 °F/35 °C) and between 122–131 °F (50–55 °C) help reduce viscosity without degrading foam. It also says the first decoction should be rested at 122 °F (50 °C) and 158 °F (70 °C) for 10 minutes each. Skipping rests around 140 °F (60 °C) is preferred. What I glean from the patent is that rests at 95/122/158 °F (35/50/70 °C) are desirable. So if you're step mashing, aim to rest at those temperatures. I know from brewing wheat beers that decoction mashing improves the mouthfeel, so it isn't surprising it is part of this process.

There are many ways to make a decent dunkelweizen, if you are going to start by modifying an existing recipe. Shoot for 50–60% rye malt instead of wheat. For the remainder, a mix of pale malts (Pils, Vienna, Munich), dark Munich, wheat, crystal-type malts (barley, wheat, or rye), and debittered dark

malts can be used. I've made good versions with wheat malt and dark Munich only, and I've also used lighter versions with wheat malt, Pils malt, caramel wheat, and Carafa®-type malts. Choices are pretty good for malt types. Weyermann, for instance, has rye malt (3.3 °L), CaraRye®, chocolate rye (250 °L), chocolate wheat (400 °L), caramel wheat, CaraWheat® (50 °L), dark wheat (17 °L), and pale wheat (2.2 °L). Briess also makes rye malts, including a liquid malt extract with a blend of rye, crystal, and pale malts.

For the remainder of the ingredients, treat it like a dunkelweizen. German hops, in low amounts. Relatively neutral water with a little calcium chloride. German weizen yeast, fermented at cool temperatures. Fermentation by-products are said to interfere with the rye aroma, so cooler (59–72 °F/15–22 °C) temperatures are recommended. Serve it fresh and young.

HOMEBREW EXAMPLE

First, I'll use a mix of rye malt, caramel wheat malt, and barley malt in the grist; I'd normally use Vienna or Munich in a dunkelweizen, so I'll pick Vienna here for its toasty notes. A touch of debittered dark malt will adjust the color, but the mashing process will also increase the color. I'm using nearly 60% rye malt so I'll also be using rice hulls for lautering.

I'm balancing the beer to be somewhat like the original Schierlinger, a 5% ABV beer. I'll shoot for 18 IBUs since there will be some malty sweetness to balance. I'll go with Perle hops; I had been thinking Spalt, but it's similar. Other German or Czech noble hops would work too; this isn't a hoppy beer and you don't want them to clash with the yeast.

A cool fermentation with my favorite weizen strain Wyeast 3068 should give a nice yeast character. Alternatives are White Labs WLP300 or SafAle WB-06. I like to start these fermentations at 59 °F (15 °C) and let the temperature rise during fermentation but not get too hot.

I'm using the patented mash process as explained in the article. If this is too much for you, you can try a single infusion at 149 °F (65 °C) and expect

a long, slow lautering. A step mash at the lower temperature rests as explained in the article is better, but I think a decoction will help break down the gummy elements of the mash. If you use a simpler mash program, consider a shallower mash and cut the bed to encourage runoff. Go slow, be patient, and definitely use rice hulls (possibly more than I specify if you get a stuck sparge). 