

Brew the best of YOUR OWN

FLANDERS RED



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Flanders Red

by Jamil Zainasheff

Flanders Red by the numbers

OG:1.048–1.057 (11.9 – 14.0 °P)
FG:1.002–1.012 (0.5 – 3.1 °P)
SRM:10–16
IBU:10–25
ABV:4.6–6.5%



Don't tell me you hate sour beers. If you are a regular reader of this column, you know what I am going to say next: You don't like *poorly made* sour beers. I run into lots of people that say they do not like sour beers. When I do, I hand them a well-made, delicately balanced sour beer, with lots of complexity, and wine-like notes. A beer with notes of cherry, caramel, some vanilla, chocolate, an oaky finish, and yes, it even has barnyard notes. What do they say then? "Hey, this isn't like the sours I tried before. I like this."

The same thing goes for IPAs, stouts, brown ales, fruit beers, and every other style that someone declares, "I hate those." Okay, I am sure some people do not like certain flavors; I get it. But more often than not, the reason someone hates a beer style is they have just been fed bad examples. I think that happens way too often with sour beers. So many contaminated beers get entered in competition as "Belgian" or "Lambic" or some other poor excuse to cover the brewer's tracks. Even when the souring is intentional, there are lots of bad examples. Think of it this way: if the base purpose of brewing a pale ale is to have created alcohol, then just because it has alcohol does not mean it is a great pale ale. The same goes for sour beers. Just because a beer is sour, that does not make it a great sour beer.

A great sour beer may not be for every palate, but they are far from nasty. When well made, they are beautifully balanced and supremely drinkable. In a beer style like Flanders red, the sour and the funky are balanced with the malt character and residual sweetness, making an intriguing and enjoyable combination.

Flanders red is often a deep red to reddish-brown color. It is a complex beer with obvious fruity notes reminiscent of cherry, currants, plums,

figs, and blackberries. From the oak aging, it often has a touch of oaky vanilla and some tannic wood notes. The barnyard-like notes from *Brettanomyces* fermentation adds complexity. One mistake brewers make on this style is fermenting with a phenolic yeast, causing a high level of spicy phenols. At most, any phenolic character should be a restrained background note. The malt character is bready, with a touch of caramel, and has some residual sweetness to balance the tart acidic character, which ranges from just balancing to intense. Bad examples will often have too much of both sour and sweet, becoming cloying. Great examples will have a balance where the combination of sweet and sour never overwhelm the palate. A good example of the style is well-attenuated with no noticeable hop bitterness or hop character. While some commercial examples exhibit a wide range of vinegar and butter (acetic acid and diacetyl), both flavors are only acceptable in very small amounts.

A good base for Flanders red consists of a large portion of Vienna or Munich malts. You can pair this up with high quality Pilsner malt or you can use all Vienna or Munich. The Vienna and Munich malts give more of a rich bready character, while the Pilsner malt is lighter and grainier.

I consider mid-color caramel malts (30-70 °L) such as CaraVienne® and caramel Munich a requirement for this style. They increase color and add residual sweetness, which helps balance the sourness. You can also use other dark caramel malts, such as caramel Munich 120 °L, to add a raisin-like sweetness to the beer. In general, these sweeter specialty malts should total 5 to 10% of the total grist.

You can use other grains such as wheat, biscuit, aromatic, and others for additional complexity. It can be a way to help differentiate your beer from other entries in competition. I

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Flanders Red (5 gallons/19 L, all-grain)

OG = 1.057 FG = 1.008
IBU = 16 SRM = 15 ABV = 6.5%

Ingredients

5.3 lbs. (2.4 kg) Vienna malt (4 °L)
5.3 lbs. (2.4 kg) continental Pilsner malt (2 °L)
8.5 oz. (0.24 kg) Aromatic® malt (20 °L)
8.5 oz. (0.24 kg) caramel Munich (60 °L)
8.5 oz. (0.24 kg) caramel Munich (120 °L)
3.5 AAU Kent Goldings hops (60 min.) (0.7 oz./20 g at 5% alpha acid)
Irish moss (15 min.)
1 oz. (28 g) medium toast French oak cubes (added in secondary)
Wyeast 3763 (Roeselare Blend) or White Labs WLP655 (Belgian Sour Mix I) yeast

Step by Step

I currently use Best Malz Pilsen and Vienna, but feel free to substitute any high quality malt of the same type and color from a different supplier. The Aromatic® malt is from Briess and the two types of caramel Munich are from Franco-Belges. My hops are in pellet form and come from Hop Union, Willamette Valley, or Hopsteiner depending on the variety.

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 154 °F (68 °C). Hold the mash at 154 °F (68 °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 (25 L) and the gravity is 1.044.

The total wort boil time is 90 minutes, which helps reduce the S-Methyl Methionine (SMM) present in the lightly kilned Pilsner malt and results in less Dimethyl Sulfide (DMS) in the finished beer. Add the hops with 60 minutes remaining in the boil. Add Irish moss or other kettle finings with 15 minutes left in the boil if you please. Chill the wort to 68 °F (20 °C) and aerate thoroughly. For this beer, I like a pitch rate of two packages of the liquid yeast blends. I'm not sure

what that pitch rate is, given the mixed nature of these cultures, but I like the results.

Ferment around 68 °F (20 °C) until the yeast drops to the bottom and forms a layer. With healthy yeast, this should be complete in two weeks or less, but there is no need to rush it. Rack the beer to a smaller secondary container, add the oak cubes, and close with a very slightly permeable closure, such as a carboy cap. Place in a spot protected from light and check every couple of months to see how your baby is coming along. It can easily take a year or more to fully develop. Be patient. When the beer has developed the character you desire, you can rack to a keg and force carbonate or you can add priming sugar and a fresh dose of yeast to carbonate in the bottle. Be careful, if you bottle too early, there could still be significant sugars present for the *Brettanomyces* to continue to consume. Once the beers are carbonated, store in the refrigerator to prevent bottle bombs. Target a carbonation level of 2 to 2.5 volumes.

Flanders Red (5 gallons/19 L, extract with grains)

OG = 1.057 FG = 1.008
IBU = 16 SRM = 17 ABV = 6.5%

Ingredients

7.2 lbs. (3.25 kg) Munich liquid malt
8.5 oz. (0.24 kg) Aromatic® malt (20 °L)
8.5 oz. (0.24 kg) caramel Munich (60 °L)
8.5 oz. (0.24 kg) caramel Munich (120 °L)
3.5 AAU Kent Goldings hops (60 min.) (0.7 oz./20 g at 5% alpha acid)
Irish moss (15 min.)
1 oz. (28 g) medium toast French oak cubes (added in secondary)
Wyeast 3763 (Roeselare Blend) or White Labs WLP655 (Belgian Sour Mix I) yeast

Step by Step

There are many Munich extract blends out there. It is always better to choose the freshest extract available. If you cannot get fresh liquid malt extract, see if you can find a dry Munich extract instead. The Aromatic® malt is from Briess and the two types of caramel Munich are from Franco-Belges. My hops are in pellet form and come from

Hop Union, Willamette Valley, or Hopsteiner depending on the variety.

Mill or coarsely crack the specialty malt and place loosely in a grain bag. Steep the bag in about 1 gallon (~4 L) 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 bag to drip into the kettle. Do not squeeze the bag. Add the malt extract and enough water to make a pre-boil volume of 5.9 gallons (22.3 liters) and a gravity of 1.048. Stir thoroughly to help dissolve the extract and bring to a boil.

Once the wort is boiling, add the hops. The total wort boil time is 1 hour after adding the hops. Add Irish moss or other kettle finings with 15 minutes left in the boil if you please. Chill the wort to 68 °F (20 °C) and aerate thoroughly. Follow the fermentation and packaging instructions for the all-grain version.

recommend keeping those additional grains to no more than 10% of the total grist. What you want is for the specialty malts to accentuate the malty Pilsner/Vienna/Munich base, not outshine it.

Extract brewers should use Munich malt extract as the base. Most Munich malt extract is a blend of Munich and Pilsner (or other pale malts) in different percentages. The Munich malt in the blend adds a nice breadly malt character. All-grain brewers should use a single infusion mash, in the range of 154-158 °F (68-70 °C). If you are brewing a bigger beer, use the lower end of the range. If making a smaller beer, choose the upper end of the range.

Hop flavor and hop aroma are non-existent in Flanders red. Even hop bitterness takes a back seat to the rest of the beer character. You want just enough bittering to provide a slight balance to any residual malt sweetness. Hop iso-alpha acid can also affect the ability of bacteria to replicate. The more hop bitterness in your beer, the more difficult it is for the bacteria to sour the beer. The drier and more sour the finished beer, the less hop bittering required. As far as hop selection, low alpha hops are a good choice. Avoid high alpha or highly pungent American-style hops. I prefer Kent Goldings, but many other hops work well. Just select hops that are more on the flowery or fruity side and low alpha acid. The bitterness to starting gravity ratio (IBU divided by the decimal portion of the specific gravity) generally ranges from 0.2 to 0.4. If this is the first time you are brewing this style, aim for the middle at 0.3. All hop additions should be early in the boil.

Fermentation is where you succeed or fail at Flanders red. I know many people have reported success repitching dregs from their favorite bottles of this and that beer. I have done this as well, and the results can be surprisingly good or surprisingly bad. If you are going to attempt this, try growing up the culture first in a liter of starter wort and see what that tastes like before committing to a full-

sized batch of wort.

After some experimentation and fiddling around with blending my own *Brettanomyces* and bacteria strains, I learned that both Wyeast and White Labs have outstanding blends that make excellent Flanders red. As a bonus, they are relatively easy to work with and produce consistent results if you provide a consistent environment. My absolute favorite for this style is Wyeast 3763 (Roeselare Blend). This is a perfect blend of yeast and bacteria intended to produce the distinct flavors of the classic Flanders red and brown beers. The results are spectacular and can produce exceptionally accurate reproductions of the best commercial Flanders red ales out there. If you prefer White Labs, their WLP655 (Belgian Sour Mix I) produces great results as well.

The two most important parameters in fermenting your Flanders red are oxygen and temperature. Too much oxygen is bad and so is too much heat. Warmer temperatures speed up the process of souring, but can also lead to harsh off-flavors. The temperature where you store your secondary carboy should never exceed 68 °F (20 °C). Ideally, you would keep it in the 65-68 °F (18-20 °C) range for the entire time.

Traditionally, brewers such as Rodenbach have put their beer in large oak foeders (see photo on page 25), which both evens out temperature swings (because of their large volume of liquid) and allow very low levels of oxygen to slowly reach the beer over time. The organisms present take up this micro oxygen and affect the development of flavors important to the style. You want to oxygenate your wort before you first pitch your culture, but after that, keep the amount of oxygen that reaches the beer to a minimum (not zero). A very tiny, slow imperceptible amount. I like to use the soft rubber carboy caps (usually orange or yellow). They do not exclude oxygen very well and if you keep the surface area of the beer small, I have found they let in just about the perfect amount of oxygen. If there is a large surface area of beer

present, the beer might take up too much oxygen, resulting in a poor flavor profile full of vinegar and acetone.

The most straightforward way to work with these blends is to oxygenate your wort like any other beer and then add Wyeast 3763 (Roeselare Blend). Ferment it like usual at a temperature around 65-68 °F (18-20 °C). At the end of this initial fermentation, there should be a yeast cake on the bottom of your fermenter. You need to rack the beer off the yeast cake and into a smaller vessel to minimize the headspace. When I do this, I start the process in a 6.5-gallon (25 L) carboy with 5.5 gallons (21 L) of beer and then I transfer to a 5-gallon (19-L) carboy for the second, longer fermentation. I use the smaller carboy so that the liquid portion fills up into the narrow neck of the carboy. This minimizes the amount of oxygen taken up by the beer (and organisms present) during six months to a year or more of time. I like to add some medium toast French oak cubes when I rack to the smaller carboy as a great way to mimic the flavor of the oak and the micro oxygen of the large foeders.

Now, keep in mind, this process will take time. You will probably see a little pellicle form on the surface of the beer. That is generally a good sign of healthy *Brettanomyces* and the slow ingress of oxygen. If you do not see a pellicle form, do not worry. You can take samples with a wine thief or even an eyedropper to measure the specific gravity and taste the progress of the souring, but do not overdo it. A sample after the first three or four months and thereafter is good. You do not want to keep disturbing the pellicle and you do not want to take so much out that the level of the liquid moves down into the widest part of the carboy. I put my carboy into a temperature stable, dark spot and forget about it for months at a time. Small temperature shifts of a degree or two over the course of a day are not a big deal and the gradual change by a few degrees with the changing of seasons is not a problem. However, large daily swings can negatively affect the

results, so try to find the most stable spot in your home. Any part of a building that gets direct sun tends to have a larger temperature swing, so try to pick an interior or basement space. I am sure there are some of you that have heard of breweries making very sour beers in far less time by increasing the temperature and oxygen levels. I would urge you to be patient. Quickly soured beers that contain *Brettanomyces* are often harsh and unpleasant to drink. There is a reason why people covet the best of the complex soured beers. It takes a long time and an artistry to brew them. Be an artist, be patient, and craft a great beer.

Some people like very sour beers and some like the more balanced approach. Count me in on the balanced side when it comes to Flanders red. The best examples have a wonderful balance of sour and sweet. The sourness in the beer helps make up for the lack of hop bitterness, cutting the soft malt sweetness. Traditional Flanders breweries blend young and old beer, seeking to develop a balance. (Unfortunately, some use artificial sweetener to balance their beers. Ugh.) You can do the same at home, brewing a batch every year and blending various vintages to the perfect balance and character. If you are not up for that challenge, it is possible to get a similar, although not as certain, result using other methods.

One method is to brew a bigger beer, where the initial fermentation creates a bit more alcohol and a bit more residual sweetness, which affects the ability of some organisms to work efficiently. You can even start with a clean ale yeast and then pitch your mixed culture once that fermentation has finished.

A second method is to arrest the process of souring once the beer has reached the preferred level of sourness. This method is effective, but I don't always like it because the beer's character may not fully develop by the time the souring has reached the level you like. When the beer seems ready to your taste, move it to refrigeration. If you keep it below 40 °F (4 °C), the process slows down tre-

mendously and the beer should remain the same for some time. 

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