

Bavarian Hefeweizen



Andy Gray



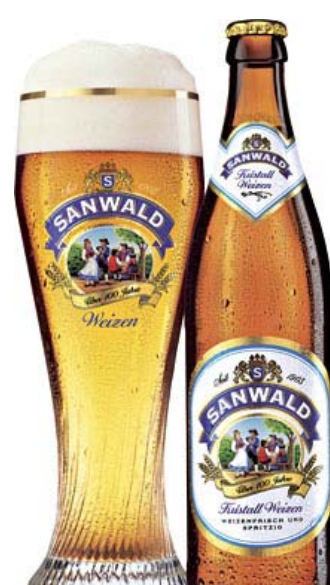
Styles

BJCP

- Hefeweizen
- Dunkel H.w.
- Weizenbock

BA

- (Helles)H.w.
- Bernsteinfarbenes (Amber) H.w.
- Dunkles H.w.
- Kristallweizen
- Weizenbock



Common Attributes

- **Appearance:** cloudy*
- **Flavor:**
 - Clove (4-Vinyl Guaiacol) & related phenolics
 - Fruity Esters: bannanna (Isoamyl acetate), tropical fruits...
 - Rich maltiness
- **Head:** massive, fluffy
- **Body:** light to medium**
- **Carbonation:** High (3-3.8 vol)

* except Kristall

** except Weizenbock

BJCP

	Hefeweizen	Dunkel H.w.	Weizenbock
OG	1.044 – 1.052	1.044 – 1.056	1.064 - 1.090
FG	1.010 – 1.014	1.010-1.014	1.015-1.022
SRM	2 - 8	14 -23	12 – 25
IBUs	8 - 15	10 -18	15 – 30

BA

	Hefeweizen	Amber H.w.	Dunkel H.w.	Weizenbock
OG	1.047 – 1.056	1.048 – 1.056	1.048 – 1.056	1.066 - 1.080
FG	1.008 – 1.016	1.008 – 1.016	1.008-1.016	1.016-1.028
SRM	3 - 9	10 – 19	18 – 26	4.5 – 30
IBU	10 - 15	10 – 15	10 -15	15 – 25

Malt

- **Wheat Malt:** *50 – 70 %*
 - Red or white, winter or spring
- **Continental Barley Malt:** *50 – 20 %*
 - Pilsner, Vienna, Munich
- **Specialty Malt:** *0 – 20 %*
 - Caramel (Cristal Malts) from Carapils to Special B
 - Toasted : Melanoidin, Aromatic
 - Roasted Malts from light Chocolate to Carafa Special

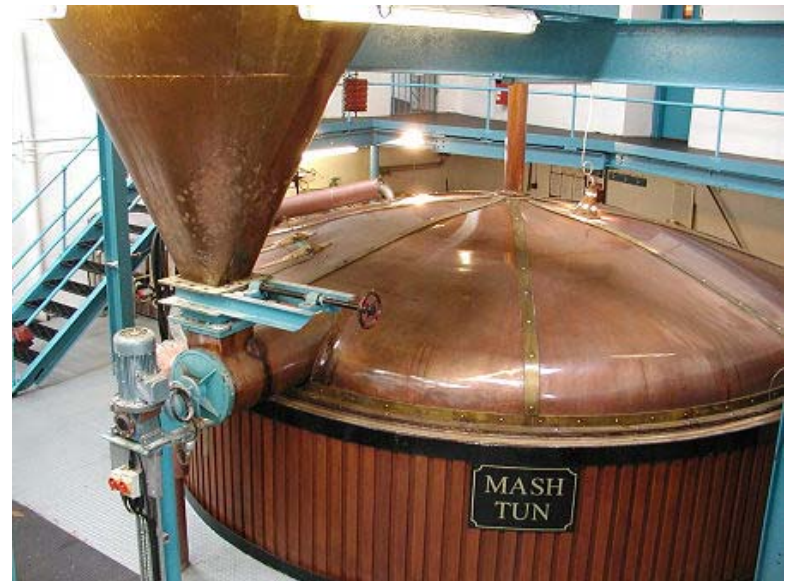
Why Wheat?

- Higher Protein than Barley
 - Cloudiness
 - Mouthfeel
 - Head
- Ferulic Acid
 - 4-Vinyl Guaicol precursor → “clove” flavor
 - Higher concentration than barley
 - But more difficult to mobilize
- Flavor



M*A*S*H

- Traditionally Decocted
- Most homebrewers & many commercial breweries do not decoct
 - Modify malt bill: increase melanoidins and darken color
- Special Considerations
 1. Ferulic Acid
 2. Glucose



Electric Koolaid Acid Rest

Increase ferulic acid production in your mash to get that mouth tingling clove dose...

- 104 – 109 °F pH 5.8
- 113 °F pH 5.7



Mash Schedule Components

- 95 – 104 °F Beta Glucan Rest, Glucose Rest
- 104 – 113 °F Acid Rest*
- 113 – 131 °F Protein rest*
- 131 – 150 °F Beta Saccharification Rest
- 154 – 162 °F Alpha Sacc. Rest
- 165 – 170 °F Mash out

*note overlap of acid rest/protein rest

Example 1: “Simple” Infusion

- Dough in at Acid Rest ~ 113 °F
 - Thick (0.6 to 0.8 qts water/lb malt)
 - Hold for 5-20 minutes
- Raise to Sac. Rest ~ 150 °F
 - Infusion -> thinner water/grist ratio
 - Hold for 30 min to 1 hr
- Mash out (or not)

Schneider & Sohns



95 °F 10 min

113 °F 10 min → Ferulic Acid Rest

122 °F 10 min

147 °F 5 min

→ 1/3 Dectinction: 152 °F 10 min

 158 °F 20 min

 203 °F 5 min

→ Return to mash to reach 167 °F : Mash out

note: some of wort acidified with L.bacillus to pH 3.0 and
returned to boil.

Schoenram Festweisse

- 104 °F Mash in
- 109 °F 8 min. → Ferulic Acid Rest
- 149 °F 25 min.

→ Decotion: 162 °F 10 min
Boil 10 min



- Return portion to mash until 162 °F , hold for 8 min
- Return remainder of decoction to reach 171 °F

Max. Glucose Production Mash

- 95 °F 10 min
- Remove 40 % of mash
 - 147 °F 30 min (Beta Sac. Rest)
- Return to main mash
- 104 °F 20 min (Glucose Rest)
- 113 °F 10 min
- 160 °F 15-30 min (Alpha Sac. Rest)
- 168 °F Mash Out

Extract Brewing

- Great products available
 - 60/40 wheat/pils liquid malt extract
 - 100% wheat malt extract
- Many wheat malt extracts were produced using a ferulic acid rest (i.e. Briess)
- Many award winning homebrew Hefeweizens have been extract brews!

The Boil

- 60 – 90 minutes
 - If using Pils malt, err on the longer side
- Hops
 - Not a big player in these beers
 - 60 min. addition only
 - Favor noble varieties (Tettnanger, Hallertauer, etc.)

Yeast

White Labs		Wyeast	
WLP300	Hefeweizen Ale	3068	Weihenstephan Weizen
WLP351	Bavarian Weizen	3638	Bavarian Wheat
WLP380	Hefeweizen IV Ale	3333	German Wheat

- Underpitching

- increase ester production
- increases risk of solvent like off flavors (ethyl acetate) & underattenuation

Fermentation

- Open
 - Traditional & still used by many of the big boys
- Fermentor Geometry
 - Shallow → more esters, more phenolics
- Temperature Regime
 - 30 °C rule
 - or
 - Pitch low (59 – 64 °F) and free rise to 70-73 °F *

*Higher temp = more esters, but maybe not the ones you want & increases risk of fusils

The Package

- Bottle Conditioning preferred
- Carbonate High (3.0 – 3.8 vol CO₂)
 - Use heavier bottles for upper end
 - Well mixed beer & priming sugar is essential to avoid bottle bombs
- Peaks early → Drink Fresh!

References

Eder, Michael. **Brewing Wheat Beer with Intensive Banana Aroma**. *Zymurgy*, May/June 2010.

Hieronymous, Stan. ***Brewing with Wheat***. Brewer's Publications. Boulder, CO. 2010

Palmer, John. **How to Brew, 1st ed.**

<http://www.howtobrew.com/intro.html>

Zainasheff, Jamil:

<http://www.howtobrew.com/intro.html>