

Winterbier

- Gravity **14.3 BLG**
- ABV **5.9 %**
- IBU **20**
- SRM **10.9**
- Style **Oktoberfest/Märzen**

Batch size

- Expected quantity of finished beer **17 liter(s)**
- Trub loss **15 %**
- Size with trub loss **19.6 liter(s)**
- Boil time **70 min**
- Evaporation rate **6 %/h**
- Boil size **22.8 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **17.5 liter(s)**
- Total mash volume **22.5 liter(s)**

Steps

- Temp **55 C**, Time **5 min**
- Temp **64 C**, Time **60 min**
- Temp **72 C**, Time **20 min**

Mash step by step

- Heat up **17.5 liter(s)** of strike water to **60C**
- Add grains
- Keep mash **5 min** at **55C**
- Keep mash **60 min** at **64C**
- Keep mash **20 min** at **72C**
- Sparge using **10.3 liter(s)** of **76C** water or to achieve **22.8 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|------------------|--------------|--------|-----|
| Grain | Pilsner | 4.6 kg (92%) | 80.5 % | 4 |
| Grain | Cara aroma (red) | 0.1 kg (2%) | 78 % | 50 |
| Grain | Chocolate Best | 0.1 kg (2%) | 75 % | 900 |
| Grain | Carapils Best | 0.1 kg (2%) | 75 % | 5 |
| Grain | Carahell Best | 0.1 kg (2%) | 75 % | 15 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|---------------------|--------|--------|------------|
| Boil | Tettnang | 10 g | 60 min | 5 % |
| Boil | Hallertau Tradition | 10 g | 60 min | 5.7 % |
| Boil | Tettnang | 10 g | 15 min | 5 % |
| Boil | Hallertau Tradition | 10 g | 15 min | 5.7 % |
| Aroma (end of boil) | Tettnang | 10 g | 5 min | 5 % |
| Aroma (end of boil) | Hallertau Tradition | 10 g | 5 min | 5.7 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|------|------|------|--------|------------|
|------|------|------|--------|------------|

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|---------------------------------|-------|--------|--------|-------------|
| Wyeast - 2206 Bavarian Lager | Lager | Liquid | 300 ml | Wyeast Labs |
|---------------------------------|-------|--------|--------|-------------|