

stout żytni

- Gravity **15.4 BLG**
- ABV **6.5 %**
- IBU **45**
- SRM **46**
- Style **American Stout**

Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **27.8 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **2.5 liter(s) / kg**
- Mash size **18.4 liter(s)**
- Total mash volume **25.7 liter(s)**

Steps

- Temp **67 C**, Time **40 min**
- Temp **72 C**, Time **20 min**
- Temp **76 C**, Time **1 min**

Mash step by step

- Heat up **18.4 liter(s)** of strike water to **76.4C**
- Add grains
- Keep mash **40 min** at **67C**
- Keep mash **20 min** at **72C**
- Keep mash **1 min** at **76C**
- Sparge using **16.8 liter(s)** of **76C** water or to achieve **27.8 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|---------------------------------------|----------------|-------|------|
| Grain | Colorado pale base | 3 kg (40.8%) | 80 % | 5 |
| Grain | Żytni | 2 kg (27.2%) | 85 % | 8 |
| Grain | Wędzony bukiem Viking Malt | 1 kg (13.6%) | 82 % | 10 |
| Grain | Czekoladowy żytni | 0.2 kg (2.7%) | 60 % | 600 |
| Grain | Słód barwiący obłuszczone Viking Malt | 0.6 kg (8.2%) | 10 % | 1034 |
| Grain | Karmelowy Pszeniczny Strzegom | 0.2 kg (2.7%) | 79 % | 130 |
| Grain | Caraaroma | 0.05 kg (0.7%) | 78 % | 400 |
| Grain | Strzegom Czekoladowy ciemny | 0.3 kg (4.1%) | 68 % | 1200 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|------------|--------|----------|------------|
| Boil | Nugget | 30 g | 60 min | 15.3 % |
| Aroma (end of boil) | Cascade PL | 25 g | 10 min | 5.2 % |
| Dry Hop | Cascade PL | 10 g | 3 day(s) | 5.2 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-------------|------|-------|--------|------------|
| Safale S-04 | Ale | Slant | 500 ml | Safale |