

saj

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **32**
- SRM **31.7**
- Style **Dry Stout**

Batch size

- Expected quantity of finished beer **10 liter(s)**
- Trub loss **5 %**
- Size with trub loss **10.5 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **12.7 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **2 liter(s) / kg**
- Mash size **5 liter(s)**
- Total mash volume **7.5 liter(s)**

Steps

- Temp **66 C**, Time **50 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **5 liter(s)** of strike water to **77.5C**
- Add grains
- Keep mash **50 min** at **66C**
- Keep mash **30 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **10.2 liter(s)** of **76C** water or to achieve **12.7 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|-----------------------------|--------------|-------|------|
| Grain | Viking Pale Ale malt | 1.5 kg (60%) | 80 % | 5 |
| Grain | Monachijski | 0.3 kg (12%) | 80 % | 16 |
| Grain | Strzegom Pszeniczny | 0.3 kg (12%) | 81 % | 6 |
| Grain | Strzegom Karmel 300 | 0.1 kg (4%) | 70 % | 299 |
| Grain | Château Caffé | 0.1 kg (4%) | 70 % | 500 |
| Grain | Jęczmień palony | 0.1 kg (4%) | 55 % | 985 |
| Grain | Strzegom Czekoladowy ciemny | 0.1 kg (4%) | 68 % | 1200 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|------------|--------|--------|------------|
| Boil | Willamette | 15 g | 10 min | 7.6 % |
| Aroma (end of boil) | Cascade PL | 20 g | 60 min | 5.2 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|------|------|------|--------|------------|
| 04 | Ale | Dry | 10 g | ds |