

Czarna wdowa

- Gravity **16.6 BLG**
- ABV **7 %**
- IBU **31**
- SRM **37.6**
- Style **Robust Porter**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21.2 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.5 liter(s)**

Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **21.9 liter(s)**
- Total mash volume **29.2 liter(s)**

Steps

- Temp **67 C**, Time **60 min**

Mash step by step

- Heat up **21.9 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **60 min** at **67C**
- Sparge using **10.9 liter(s)** of **76C** water or to achieve **25.5 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|---------------------------------|-----------------|-------|------|
| Grain | Pilzneński | 5.3 kg (72.6%) | 81 % | 4 |
| Grain | Monachijski | 0.75 kg (10.3%) | 80 % | 16 |
| Grain | Strzegom Karmel 150 | 0.5 kg (6.8%) | 75 % | 150 |
| Grain | Chocolate Malt (UK) | 0.5 kg (6.8%) | 73 % | 887 |
| Grain | Weyermann - Dehusked Carafa III | 0.25 kg (3.4%) | 70 % | 1024 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|--------------------|--------|--------|------------|
| Boil | East Kent Goldings | 50 g | 60 min | 5.1 % |
| Boil | Fuggles | 50 g | 10 min | 4.5 % |
| Boil | Citra | 50 g | 0 min | 12 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|--------------|------|------|--------|------------|
| Safale US-05 | Ale | Dry | 11 g | Fermentis |