

STOUT HARDCOROWY

- Gravity **15.9 BLG**
- ABV ---
- IBU **65**
- SRM **55**
- Style **American Stout**

Batch size

- Expected quantity of finished beer **25 liter(s)**
- Trub loss **5 %**
- Size with trub loss **26.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **31.7 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **22.5 liter(s)**
- Total mash volume **30 liter(s)**

Steps

- Temp **68 C**, Time **70 min**
- Temp **72 C**, Time **10 min**
- Temp **76 C**, Time **5 min**

Mash step by step

- Heat up **22.5 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **70 min** at **68C**
- Keep mash **10 min** at **72C**
- Keep mash **5 min** at **76C**
- Sparge using **16.7 liter(s)** of **76C** water or to achieve **31.7 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|-----------------------------|----------------|--------|------|
| Grain | Pale Ale Maris Otter | 3.6 kg (48%) | 80 % | 5 |
| Grain | Strzegom Monachijski typ I | 1.4 kg (18.7%) | 79 % | 16 |
| Grain | słód kawowy Belgia | 0.5 kg (6.7%) | 75.5 % | 500 |
| Grain | Słód Midnight Wheat Briess | 0.4 kg (5.3%) | 73 % | 1100 |
| Grain | palony Black (Belgia) | 0.4 kg (5.3%) | 73.5 % | 1350 |
| Grain | żytni czekoladowy Weyermann | 0.3 kg (4%) | 73 % | 700 |
| Grain | Pszeniczny | 0.3 kg (4%) | 85 % | 4 |
| Grain | Żytni | 0.2 kg (2.7%) | 85 % | 8 |
| Grain | Strzegom Karmel 600 | 0.2 kg (2.7%) | 68 % | 601 |
| Grain | Płatki owsiane | 0.2 kg (2.7%) | 85 % | 3 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|------------------------|--------|--------|------------|
| Boil | Columbus/Tomahawk/Zeus | 26 g | 60 min | 15.5 % |
| Boil | Citra | 10 g | 15 min | 12 % |

| | | | | |
|-----------|---------|------|--------|--------|
| Boil | Cascade | 10 g | 15 min | 6 % |
| Boil | Mosaic | 10 g | 15 min | 10 % |
| Boil | Simcoe | 10 g | 15 min | 13.2 % |
| Boil | Citra | 20 g | 5 min | 12 % |
| Boil | Cascade | 20 g | 5 min | 6 % |
| Boil | Mosaic | 20 g | 5 min | 10 % |
| Boil | Simcoe | 20 g | 5 min | 13.2 % |
| Whirlpool | Citra | 20 g | 80 min | 12 % |
| Whirlpool | Cascade | 20 g | 80 min | 6 % |
| Whirlpool | Mosaic | 20 g | 80 min | 10 % |
| Whirlpool | Simcoe | 20 g | 80 min | 13.2 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-----------------------------------|------|------|--------|-----------------|
| Mangrove Jack's M44 US West Coast | Ale | Dry | 11 g | Mangrove Jack's |

Extras

| Type | Name | Amount | Use for | Time |
|-------------|-------|--------|---------|--------|
| Water Agent | kreda | 5 g | Mash | 20 min |
| Fining | mech | 5 g | Boil | 15 min |