

MS21

- Gravity **16.8 BLG**
- ABV **7.1 %**
- IBU **38**
- SRM **38.8**
- Style **Sweet Stout**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **20.1 liter(s)**
- Total mash volume **26.8 liter(s)**

Steps

- Temp **68 C**, Time **60 min**
- Temp **76 C**, Time **10 min**

Mash step by step

- Heat up **20.1 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **60 min** at **68C**
- Keep mash **10 min** at **76C**
- Sparge using **11.9 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|--------------------------|----------------|--------|------|
| Grain | Viking Pale Ale malt | 4 kg (57.6%) | 80 % | 5 |
| Grain | Słód pszeniczny Bestmalz | 1 kg (14.4%) | 82 % | 15 |
| Grain | chocolate castlemalting | 0.5 kg (7.2%) | 70 % | 1000 |
| Grain | Płatki owsiane | 0.5 kg (7.2%) | 60 % | 3 |
| Sugar | Milk Sugar (Lactose) | 0.25 kg (3.6%) | 76.1 % | 0 |
| Grain | Strzegom Karmel 30 | 0.5 kg (7.2%) | 75 % | 50 |
| Grain | Extra black | 0.2 kg (2.9%) | 65 % | 1400 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|--------|--------|--------|------------|
| Boil | Magnum | 50 g | 20 min | 13.5 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|--------------------------------|------|------|--------|-----------------|
| Mangrove Jack's M15 Empire Ale | Ale | Dry | 11.5 g | Mangrove Jack's |