

# 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         |