

Bezalkoholowskie

- Gravity **2.1 BLG**
- ABV ---
- IBU **46**
- SRM **10.2**
- Style **American Pale Ale**

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 **3.5 liter(s) / kg**
- Mash size **2.8 liter(s)**
- Total mash volume **3.6 liter(s)**

Steps

- Temp **68 C**, Time **30 min**

Mash step by step

- Heat up **2.8 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **30 min** at **68C**
- Sparge using **23.5 liter(s)** of **76C** water or to achieve **25.5 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|--------------------------------|-----------------|-------|-----|
| Grain | Monachijski | 0.13 kg (16.5%) | 80 % | 16 |
| Grain | Karmelowy Jasny 30EBC | 0.19 kg (24.1%) | 75 % | 30 |
| Grain | Caramel/Crystal Malt - 120L | 0.06 kg (7.6%) | 72 % | 236 |
| Grain | Amber Malt | 0.03 kg (3.8%) | 75 % | 43 |
| Grain | Fawcett - Dark Crystal | 0.13 kg (16.5%) | 71 % | 300 |
| Grain | Czekoladowy | 0.06 kg (7.6%) | 60 % | 788 |
| Grain | Pszeniczny | 0.06 kg (7.6%) | 85 % | 4 |
| Grain | Żytni | 0.13 kg (16.5%) | 85 % | 8 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|------------|--------|--------|------------|
| Boil | Amarillo | 6.3 g | 45 min | 9.5 % |
| Boil | Simcoe | 5 g | 45 min | 13.2 % |
| Boil | Centennial | 6.3 g | 45 min | 10.5 % |
| Boil | Amarillo | 6.3 g | 15 min | 9.5 % |
| Boil | Simcoe | 2.5 g | 15 min | 13.2 % |
| Boil | Centennial | 6.3 g | 15 min | 10.5 % |

| | | | | |
|---------------------|------------------------|--------|----------|--------|
| Aroma (end of boil) | Amarillo | 5 g | 1 min | 9.5 % |
| Aroma (end of boil) | Simcoe | 5 g | 1 min | 13.2 % |
| Aroma (end of boil) | Cascade | 12.5 g | 1 min | 6 % |
| Aroma (end of boil) | Ahtanum | 12.5 g | 1 min | 5 % |
| Dry Hop | Centennial | 50 g | 4 day(s) | 10.5 % |
| Dry Hop | Cascade | 50 g | 4 day(s) | 6 % |
| Dry Hop | Ahtanum | 25 g | 4 day(s) | 5 % |
| Dry Hop | Simcoe | 25 g | 4 day(s) | 13.2 % |
| Dry Hop | Columbus/Tomahawk/Zeus | 37.5 g | 4 day(s) | 15.5 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|--------------|------|------|--------|------------|
| Safbrew S-33 | Ale | Dry | 11.5 g | Safbrew |