

Drwal#3

- Gravity **15.4 BLG**
- ABV **6.5 %**
- IBU **54**
- SRM **36**
- Style **American Stout**

Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **29.5 liter(s)**

Mash information

- Mash efficiency **90 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **18.2 liter(s)**
- Total mash volume **24.3 liter(s)**

Steps

- Temp **63 C**, Time **50 min**
- Temp **72 C**, Time **30 min**
- Temp **76 C**, Time **10 min**

Mash step by step

- Heat up **18.2 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **50 min** at **63C**
- Keep mash **30 min** at **72C**
- Keep mash **10 min** at **76C**
- Sparge using **17.4 liter(s)** of **76C** water or to achieve **29.5 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|--|----------------|--------|------|
| Grain | Weyermann - Pale Ale Malt | 1.7 kg (28%) | 85 % | 7 |
| Grain | Viking Pilsner malt | 1.7 kg (28%) | 82 % | 4 |
| Grain | Viking Munich Malt | 1.2 kg (19.8%) | 78 % | 18 |
| Grain | Weyermann - Carafa special typ II | 0.42 kg (6.9%) | 68.8 % | 1150 |
| Grain | Weyermann Specjal W | 0.3 kg (4.9%) | 68 % | 300 |
| Grain | Słód pszeniczny czekoladowy Weyermann® | 0.25 kg (4.1%) | 65 % | 1000 |
| Grain | Płatki owsiane | 0.5 kg (8.2%) | 60 % | 3 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|------------------------|--------|--------|------------|
| Boil | Columbus/Tomahawk/Zeus | 30 g | 40 min | 12.6 % |
| Boil | Mosaic | 20 g | 30 min | 10 % |
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| Aroma (end of boil) | Sabro | 30 g | 1 min | 15.8 % |

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|---------------------|--------|------|----------|--------|
| Aroma (end of boil) | Mosaic | 20 g | 1 min | 10 % |
| Dry Hop | Sabro | 40 g | 3 day(s) | 15.8 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|---------------------|------|-------|--------|------------|
| Lallemand - Windsor | Ale | Slant | 50 ml | --- |

Extras

| Type | Name | Amount | Use for | Time |
|-------------|-----------------|--------|---------|--------|
| Water Agent | Gips piwowarski | 1.7 g | Mash | 90 min |
| Water Agent | Kwas mlekowy | 3 g | Mash | 90 min |
| Fining | Mech Irlandzki | 4 g | Boil | 10 min |