

## Drwal#3

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- 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 %
Boil	Mosaic	20 g	20 min	10 %
Aroma (end of boil)	Sabro	30 g	1 min	15.8 %

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