Kozel czarny

- Gravity **11.2 BLG**
- ABV **4.5 %**
- IBU **25**
- SRM **17.8**
- Style **Traditional Bock**

Batch size

- Expected quantity of finished beer **11 liter(s)**
- Trub loss **5 %**
- Size with trub loss **11.6 liter(s)**
- Boil time **90 min**
- Evaporation rate **8 %/h**
- Boil size **13.9 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **7.2 liter(s)**
- Total mash volume **9.6 liter(s)**

Steps

- Temp **63 C**, Time **15 min**
- Temp **73 C**, Time **60 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **7.2 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **15 min** at **63C**
- Keep mash **60 min** at **73C**
- Keep mash **10 min** at **78C**
- Sparge using **9.1 liter(s)** of **76C** water or to achieve **13.9 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	1.5 kg *(62.5%)*	81 %	4
Grain	Strzegom Monachijski typ II	0.5 kg *(20.8%)*	79 %	22
Grain	Słód Caramunich Typ II Weyermann	0.3 kg *(12.5%)*	73 %	120
Grain	Weyermann - Carafa II	0.1 kg *(4.2%)*	70 %	900

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Lublin (Lubelski)	20 g	60 min	4 %
Boil	Tradition	10 g	20 min	6 %

Yeasts

Name	Type	Form	Amount	Laboratory
Gozdawa - W35 German Lager	Lager	Dry	10 g	Gozdawa

Recipe has been printed via **BREWNESS.com** - a complex online solution for homebrewers to track brewing process easily.