

### 3D. Czech Dark Lager ( tmavé výčepní )

- Gravity **11.2 BLG**
- ABV **4.5 %**
- IBU **24**
- SRM **19.5**
- Style **Dark American Lager**

#### Batch size

- Expected quantity of finished beer **17 liter(s)**
- Trub loss **10 %**
- Size with trub loss **18.7 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **22.4 liter(s)**

#### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **4.25 liter(s) / kg**
- Mash size **17 liter(s)**
- Total mash volume **21 liter(s)**

#### Steps

- Temp **66.5 C**, Time **60 min**

#### Mash step by step

- Heat up **17 liter(s)** of strike water to **72C**
- Add grains
- Keep mash **60 min** at **66.5C**
- Sparge using **9.4 liter(s)** of **76C** water or to achieve **22.4 liter(s)** of wort

#### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	3 kg (75%)	80 %	4
Grain	Strzegom Monachijski typ I	0.5 kg (12.5%)	79 %	16
Grain	Strzegom Karmel 150	0.3 kg (7.5%)	75 %	150
Grain	Weyermann - Carafa III special	0.2 kg (5%)	70 %	1024

#### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	15 g	60 min	12.1 %

#### Yeasts

Name	Type	Form	Amount	Laboratory
novalager	Ale	Slant	100 ml	---

#### Extras

Type	Name	Amount	Use for	Time
Water Agent	CaCO3	3 g	Boil	60 min
Water Agent	CaCl2	1 g	Boil	60 min