

Panda Porter 2.0

an All Grain **Baltic Porter** by **Matias**

Fermentables

Amount	Fermentable	Use
4.0 kg	Maris Otter Pale (UK)	Mash
1.0 kg	Brown Malt (UK)	Mash
0.4 kg	CaraAmber (DE)	Mash
0.4 kg	Rolled Oats	Boil
0.2 kg	Carafa Special I (DE)	Mash

Hops

Amount	Hop	Time
40.0 g	East Kent Goldings	60 min

Yeasts

Name	Lab/Product
Lallemand Danstar Windsor	Danstar

Extras

Amount	Name	Time
8.0 g	Liquorice root (powdered)	15.0 min
8.0 g	Brewer's liquorice	15.0 min
4.0 g	Gypsum (Calcium Sulfate)	90.0 min
4.0 g	Baking Soda (NaHCO ₃)	90.0 min
1.0 ml	Protafloc	15.0 min

Stats

Batch & Boil






Batch Size	Boil Time
19.0 L	60 min

Properties

OG	FG	IBU
1.072	1.023	33
ABV	Color	Balance
6.3%	26 SRM	Balanced

Notes

Water adjustments based on the Helsinki water profile: <http://www.brewersfriend.com/mash-chemistry-and-brewing-water-calculator/>

Overall Water Report: ?						
Ca ⁺²	Mg ⁺²	Na ⁺	Cl ⁻	SO ₄ ⁻²	Alkalinity	Residual Alkalinity
mg/l	mg/l	mg/l	mg/l	mg/l	ppm as CaCO ₃	ppm as CaCO ₃
56.6	1.0	60.7	0.0	122.6	154.1	113.2
					Range Check	
<i>normal</i>	<i>normal</i>	<i>normal</i>	<i>normal</i>	<i>normal</i>		
SO ₄ ²⁻ /Cl ⁻ ratio: 9+ Too Bitter						
Total lactic acid as equivalent acidulated malt in grist: 0.0 %						

You'll probably want to powder the brewer's liquorice in a pestle and mortar prior to adding it in order to get it to dissolve nicely.