

Single Malt Bitter - 4.3%

Best Bitter

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Type: All Grain

IBU : 32 (Tinseth)
 BU/GU : 0.81
 Colour : 11 EBC
 Carbonation : 2.4 CO2-vol

Pre-Boil Gravity : 1.026
 Original Gravity : 1.039
 Total Gravity : 1.039
 Final Gravity : 1.006

Fermentables (876 g)

670 g - Pale Malt, Maris Otter 5.9 EBC (76.5%)
 ^ Brouwstore (NL)
 122 g - Flameout - Demerara Sugar 3.9 EBC (13...
 56 g - Crystal Malt 59 EBC (6.4%)
 28 g - Amber Malt 43.5 EBC (3.2%)
 8 g - Bottling - Sugar, Table (Sucrose) 2 EBC
 ^ Albert Heijn (NL)

Hops (11.3 g)

30 min - 7.9 g - Chinook - 8% (27 IBU)
 20 min - 3.4 g - Fuggle (Whole) - 5% (5 IBU)
 ^ Worchester Hop Shop (UK)

Miscellaneous

Mash - 0.55 g - Baking Soda (NaHCO3)
 ^ Lot # 41190621/3
 ^ Brouwstore (NL) 003.106.2
 Mash - 1 g - Calcium Chloride (CaCl2) 33 % 33%
 ^ Lot # 115038
 ^ Brouwstore (NL) 055.035.0
 Mash - 0.54 g - Canning Salt (NaCl)
 ^ Albert Heijn (NL)
 Mash - 1.02 g - Epsom Salt (MgSO4)
 ^ Lot # /2119000091
 ^ Brouwstore (NL) 055.027.7
 Mash - 1.99 g - Gypsum (CaSO4)
 ^ The Malt Miller (UK) CHE-03-004
 Mash - 0.1 ml - Lactic Acid 80% 80%
 ^ Lot # 20200213
 ^ Brouwstore (NL) 003.002.3

Yeast

0.3 pkg - Mangrove Jack's Liberty Bell Ale M36
 ^ The Malt Miller (UK) YEA-02-015

01 Brouwpunt 5L (30min) (rev 4)

Batch Size : 5.6 L
 Boil Size : 6.86 L
 Post-Boil Vol : 5.96 L

Mash Water : 2.26 L
 Sparge Water : 5.44 L
 Boil Time : 30 min
 Total Water : 7.7 L



11 EBC

Brewhouse Efficiency: 71.8%
 Mash Efficiency: 73.3%

Mash Profile

01 One Step Mash (60 min)
 74.4 °C - Strike Temp
 68 °C - 60 min - Temperature

Fermentation Profile

01 Ale + DR + Conditioning
 20 °C - 10 days - Primary
 22 °C - 4 days - Diacetyl rest
 20 °C - 14 days - Carbonation
 20 °C - 28 days - Conditioning

Water Profile

02 NL Spa Reine Flat Mineral Water (www.ah.nl...
 Ca 81 Mg 15 Na 50 Cl 75 SO 200

SO/Cl ratio: 2.7

Mash pH: 5.4
 Sparge pH: 6

Measurements

Mash pH:

Boil Volume:

Pre-Boil Gravity:

Post-Boil Kettle Volume:

Original Gravity:

Fermenter Top-Up:

Fermenter Volume:

Final Gravity:

Bottling Volume:

Recipe Notes

Target: ABV = 4.67 %, IBU = 33, EBC = 27, OG = 1.040, FG = 1.004.

Making Amber malt from base malt.
 Equipment
 An oven.

Single Malt Bitter

Recipe Notes

A roasting tin lined with kitchen foil.
Some way of measuring time.

Method

- heat oven to 180°C/fan.
- scatter 150-200g Maris Otter on kitchen foil in a roasting tin (the 200g Maris Otter ended at 186g after the roast).
- put into oven for 30 mins [for amber malt].
- stir every 10 minutes so the grain heats through evenly.
- leave the grain to cool then store in a paper bag for a few weeks to let the flavours settle down.

Making Crystal malt from base malt.

Method

SOAK THE GRAIN

Put 500g of Maris Otter in a bowl

Add enough de-chlorinated water to just cover the grain (I added 500ml at 6am)

The grain should be left to soak for 3 to 12 hours.

CONVERT THE GRAIN 'mashing in'

Preheat your oven to the lowest setting it will go.

Ovens that go as low as 80°C are ideal, but it will work fine if you are at 90°C and leave the door slightly cracked open.

Heap the wet grains on a foil lined baking pan so that they're about 2 inches deep.

Don't spread them too thin, since the moisture in the center gives the enzymes a place to work.

If you have a food thermometer, the goal is to keep the center of the grain pile between 63°C and 74°C.

This step is equivalent to making a mash.

At this step the starches inside the kernels turn into sugars.

Moisture and temperature are important.

The grain should stay at this temperature for 1 to 2 hours.

The longer end of that scale will allow the grain to get just slightly sweeter.

DRY THE MALT

After the malt has been converted, it needs to be heated and dried.

Turn the oven to 120°C, spread the malt around the pan so it's less than 1 inch thick and set the timer to 2 hours.

Stir the malt around a few times to prevent kernels from scorching and to ensure they dry evenly.

This stage dries the malt to prepare it for roasting.

ROAST THE MALT

Once the grain is dry, turn the oven up to 180°C.

This temperature will caramelize the sugars that were produced during conversion.

Ten minutes at this temperature will produce a nice light crystal malt that can be substituted for C-10 or C-20,

30 minutes makes an amber colored grain close to C60,

60 minutes will make a dark brown crystal that's at least C-100.

While the grain is roasting, check on it from time to time and stir in the kernels on the side of the pan that may be getting a more charred than the ones in the middle.

Once the roasting is done, remove the malt from the heat and let it cool.

Store in a paper bag or a cardboard box in a cool, dry place for 2 to 6 weeks.