

## 06 SMaSH Citra - 6.2%

### American Pale Ale

Brewer: The Thirsty Otter

Type: All Grain

IBU : 40 (Tinseth)  
 BU/GU : 0.73  
 Colour : 10 EBC  
 Carbonation : 2.5 CO2-vol

Pre-Boil Gravity : 1.041  
 Original Gravity : 1.053  
 Total Gravity : 1.056  
 Final Gravity : 1.009

### Fermentables (1.3 kg)

1.3 kg - Maris Otter Pale Ale Malt 5.9 EBC (1...  
 ^ Lot # 67-200827-161058-155815-1/1  
 ^ The Malt Miller (UK) MAL-00-036  
 34 g - Bottling - Sugar, Table (Sucrose) 2 EBC  
 ^ Albert Heijn (NL)

### Hops (23 g)

30 min - 3 g - Citra - 13.8% (16 IBU)  
 ^ Worchester Hop Shop (UK)  
 10 min - 5 g - Citra - 13.8% (15 IBU)  
 ^ Worchester Hop Shop (UK)

### Hop Stand

20 min hopstand @ 80 °C  
 20 min - 10 g - Citra - 13.8% (9 IBU)

### Dry Hops

7 days - 5 g - Citra - 13.8%

### Miscellaneous

Mash - 0.46 g - Epsom Salt (MgSO4)  
 ^ Lot # /2119000091  
 ^ Brouwstore (NL) 055.027.7  
 Mash - 2.39 g - Gypsum (CaSO4)  
 ^ Brouwmaatje (NL)  
 Mash - 0.8 ml - Lactic Acid 80% 80%  
 ^ Lot # 20200213  
 ^ Brouwstore (NL) 003.002.3  
 Mash - 2 items - pH paper strips 5.2 - 6.8  
 ^ Lot # 20200422/1  
 ^ Brouwstore (NL) 013.075.7  
 Sparge - 0.95 ml - Lactic Acid 80% 80%  
 ^ Lot # 20200213  
 ^ Brouwstore (NL) 003.002.3  
 60 min - Boil - 0.16 g - Lipohop K  
 ^ Lot # LPK110  
 ^ The Malt Miller (UK) CH-03-013  
 10 min - Boil - 1.01 g - Irish Moss  
 ^ Lot # 4348  
 ^ Brouwstore (NL) 125.249.1  
 10 min - Boil - 0.08 g - Lallemand Servomyces  
 ^ Lot # 154001112904ABV  
 ^ Brouwstore (NL) 050.620.4  
 10 min - Boil - 1 items - Wort Chiller  
 ^ Brouwstore (NL) 057.020.20  
 Bottling - 4 items - 33 cl Steinie bottle (26...  
 ^ Brouwstore (NL) 017.476.3  
 Bottling - 8 items - 33 cl Steinie bottle (sw...  
 ^ Brouwstore (NL) 017.500.0

### 01 Brouwpunt 5L (60min) (rev 4)

Batch Size : 5.6 L  
 Boil Size : 7.76 L  
 Post-Boil Vol : 5.96 L

Mash Water : 3.9 L  
 Sparge Water : 5.23 L  
 Boil Time : 60 min  
 Total Water : 9.13 L



10 EBC

Brewhouse Efficiency: 71.8%  
 Mash Efficiency: 73.3%

### Mash Profile

01 One Step Mash (60 min)  
 68.7 °C - Strike Temp  
 63 °C - 60 min - Temperature

### Fermentation Profile

Ale  
 20 °C - 11 days - Primary  
 23 °C - 4 days - Diacetyl rest  
 20 °C - 45 days - Conditioning

### Water Profile

NL Hoofddorp Rein Tap Water (2020-Q3 WQR) (St...  
 Ca 100 Mg 15 Na 68 Cl 92 SO 212

SO/Cl ratio: 2.3  
 Mash pH: 5.4  
 Sparge pH: 6

### Measurements

Mash pH: 5.5  
 Boil Volume: 8.5  
 Pre-Boil Gravity: 1.038  
 Post-Boil Kettle Volume: 5.65  
 Original Gravity: 1.060  
 Fermenter Top-Up:  
 Fermenter Volume: 5.6  
 Final Gravity: 1.006  
 Bottling Volume: 4

# Batch #7 - 6 Mar 2021

## Recipe Notes

Malt is ordered with standard crush @ The Malt Miller (<https://www.themaltmiller.co.uk/>).

## Batch Notes

06-03-2021 09:31 Start brewing.  
06-03-2021 09:31 Took 4 L mash water boiled the day before.  
06-03-2021 09:31 Added 2.36 grams Gypsum.  
06-03-2021 09:31 Added 0.46 grams Epson salt.  
06-03-2021 09:31 Added 0.8 mL Lactic Acid.  
06-03-2021 09:40 Mash water pH = 5.2.  
06-03-2021 09:42 Mash in @ 68 C.  
06-03-2021 09:44 Lump hunting.  
06-03-2021 09:55 Mash temperature = 65 .. 68 C for first 15 minutes.  
06-03-2021 10:02 Mash pH = 5.5.  
06-03-2021 10:02 Mash temp 59 .. 62 C.  
06-03-2021 10:42 4.9 L sparge water @ 75 C.  
06-03-2021 10:42 Added 0.95 mL Lactic acid to sparge water.  
06-03-2021 11:25 SG = 1.027 @ 51.5 C --> SG = 1.038 @ 20 C.  
06-03-2021 11:41 Boil over.  
06-03-2021 11:42 Added 0.16 grams Lipohop K.  
06-03-2021 12:11 Added 3 grams Citra.  
06-03-2021 12:30 Added 5 grams Citra.  
06-03-2021 12:30 Added 1 gram Irish Moss.  
06-03-2021 12:31 Added 0.15 grams Servomices yeast nutrient.  
06-03-2021 12:32 Added 1 worth chiller.  
06-03-2021 12:40 Flame out.  
06-03-2021 13:00 Hopstand start @ 80 C, added 10 grams Citra, whirlpool-style stir.  
06-03-2021 13:20 Hopstand end @ 69.5 C.  
06-03-2021 13:50 SG = 1.060 @ 19.8 C.  
06-03-2021 14:54 Pitched 5 grams US-05 yeast @ 18.5 C.

### Day 0 in fermentation

06-03-2021 14:54 18.5 C, dp = 0 mm H2O, SG = 1.060.  
06-03-2021 18:42 20.0 C, dp = 0 mm H2O, no bubbles.  
06-03-2021 20:43 19.2 C, dp = 50 mm H2O, no bubbles.  
06-03-2021 23:17 19.8 C, dp = 50 mm H2O, no bubbles.

### Day 1 in fermentation

07-03-2021 08:44 19.8 C, dp = 50 mm H2O, some bubbles.  
07-03-2021 13:32 19.2 C, dp = 50 mm H2O, many bubbles.  
07-03-2021 16:31 19.0 C, dp = 50 mm H2O, many bubbles.  
07-03-2021 17:55 20.1 C, dp = 50 mm H2O, many bubbles.  
07-03-2021 19:51 19.1 C, dp = 50 mm H2O, many bubbles.

### Day 2 in fermentation

08-03-2021 08:37 19.0 C, dp = 50 mm H2O, many bubbles.  
08-03-2021 10:53 19.2 C, dp = 50 mm H2O, many bubbles.  
08-03-2021 13:26 19.8 C, dp = 50 mm H2O, many bubbles.  
08-03-2021 16:25 20.1 C, dp = 50 mm H2O, many bubbles.  
08-03-2021 19:55 19.7 C, dp = 50 mm H2O, many bubbles.  
08-03-2021 23:28 19.4 C, dp = 50 mm H2O, many bubbles.

### Day 3 in fermentation

09-03-2021 08:32 19.8 C, dp = 50 mm H2O, many bubbles.  
09-03-2021 10:51 19.7 C, dp = 50 mm H2O, many bubbles.  
09-03-2021 12:52 19.5 C, dp = 50 mm H2O, many bubbles.  
09-03-2021 16:20 19.7 C, dp = 50 mm H2O, many bubbles.  
09-03-2021 21:26 19.0 C, dp = 50 mm H2O, many bubbles.

### Day 4 in fermentation

10-03-2021 08:59 19.3 C, dp = 50 mm H2O, many bubbles.  
10-03-2021 11:49 19.0 C, dp = 50 mm H2O, many bubbles.  
10-03-2021 14:54 19.3 C, dp = 50 mm H2O, many bubbles.  
10-03-2021 18:15 19.5 C, dp = 50 mm H2O, many bubbles.  
10-03-2021 20:13 19.7 C, dp = 50 mm H2O, many bubbles.

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## Batch Notes

10-03-2021 20:46 20.0 C, dp = 50 mm H2O, many bubbles.

### Day 5 in fermentation

11-03-2021 08:38 19.8 C, dp = 50 mm H2O, few bubbles.  
 11-03-2021 10:17 19.5 C, dp = 45 mm H2O, no bubbles.  
 11-03-2021 13:36 20.0 C, dp = 45 mm H2O, no bubbles.  
 11-03-2021 17:11 19.4 C, dp = 45 mm H2O, no bubbles.  
 11-03-2021 19:35 19.5 C, dp = 45 mm H2O, no bubbles.

### Day 6 in fermentation

12-03-2021 00:12 19.3 C, dp = 45 mm H2O, no bubbles.  
 12-03-2021 08:20 19.5 C, dp = 35 mm H2O, no bubbles.  
 12-03-2021 12:56 19.3 C, dp = 10 mm H2O, no bubbles.  
 12-03-2021 17:05 19.1 C, dp = 10 mm H2O, no bubbles.  
 12-03-2021 20:43 19.6 C, dp = 15 mm H2O, no bubbles.  
 12-03-2021 23:36 20.0 C, dp = 50 mm H2O, no bubbles.

### Day 7 in fermentation

13-03-2021 08:57 19.9 C, dp = 13 mm H2O, no bubbles.  
 13-03-2021 12:24 20.0 C, dp = 35 mm H2O, no bubbles.  
 13-03-2021 16:43 20.1 C, dp = 30 mm H2O, no bubbles.  
 13-03-2021 20:21 19.5 C, dp = 50 mm H2O, no bubbles.  
 13-03-2021 23:56 19.0 C, dp = 45 mm H2O, no bubbles.

### Day 8 in fermentation

14-03-2021 08:42 19.0 C, dp = 8 mm H2O, no bubbles.  
 14-03-2021 12:21 19.0 C, dp = 2 mm H2O, no bubbles.  
 14-03-2021 12:37 18.4 C, dp = 15 mm H2O, added 5 grams Citra hops, no bubbles.  
 14-03-2021 13:24 18.9 C, dp = 45 mm H2O, no bubbles.  
 14-03-2021 14:32 19.7 C, dp = 45 mm H2O, no bubbles.  
 14-03-2021 15:18 20.0 C, dp = 45 mm H2O, no bubbles.  
 14-03-2021 17:52 19.0 C, dp = 12 mm H2O, no bubbles.  
 14-03-2021 21:03 19.5 C, dp = 2 mm H2O, no bubbles.  
 14-03-2021 23:58 19.9 C, dp = 12 mm H2O, no bubbles.

### Day 9 in fermentation

15-03-2021 09:08 19.9 C, dp = 45 mm H2O, no bubbles.  
 15-03-2021 13:15 19.7 C, dp = 20 mm H2O, no bubbles.  
 15-03-2021 16:59 19.4 C, dp = 40 mm H2O, no bubbles.  
 15-03-2021 20:37 19.0 C, dp = 2 mm H2O, no bubbles.  
 15-03-2021 23:58 19.0 C, dp = 7 mm H2O, no bubbles.

### Day 10 in fermentation

16-03-2021 07:44 19.1 C, dp = 0 mm H2O, no bubbles.  
 16-03-2021 12:56 19.4 C, dp = 11 mm H2O, no bubbles.  
 16-03-2021 17:34 19.5 C, dp = 8 mm H2O, no bubbles.  
 16-03-2021 20:39 19.0 C, dp = 1 mm H2O, no bubbles.  
 16-03-2021 23:53 19.6 C, dp = 4 mm H2O, no bubbles.

### Day 11 in fermentation

17-03-2021 08:39 19.2 C, dp = 3 mm H2O, no bubbles.  
 17-03-2021 12:42 19.1 C, dp = 1 mm H2O, no bubbles.  
 17-03-2021 15:06 20.0 C, dp = 3 mm H2O, no bubbles.  
 17-03-2021 15:06 SV = 23.0 C  
 17-03-2021 16:20 20.6 C.  
 17-03-2021 17:56 21.7 C, dp = 40 mm H2O, no bubbles.  
 17-03-2021 19:36 22.7 C, dp = 33 mm H2O, no bubbles.  
 17-03-2021 21:42 22.5 C, dp = 10 mm H2O, no bubbles.  
 17-03-2021 23:51 22.5 C, dp = 12 mm H2O, no bubbles.

### Day 12 in fermentation

18-03-2021 07:32 22.1 C, dp = 12 mm H2O, no bubbles.  
 18-03-2021 11:46 22.8 C, dp = 15 mm H2O, no bubbles.  
 18-03-2021 17:55 22.0 C, dp = 4 mm H2O, no bubbles.  
 18-03-2021 23:41 22.0 C, dp = 5 mm H2O, no bubbles.

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## Batch Notes

### Day 13 in fermentation

19-03-2021 08:10 22.5 C, dp = 15 mm H2O, no bubbles.  
19-03-2021 12:30 23.0 C, dp = 4 mm H2O, no bubbles.  
19-03-2021 13:52 22.2 C, dp = 0 mm H2O, no bubbles.  
19-03-2021 15:22 22.5 C, dp = 20 mm H2O, no bubbles.  
19-03-2021 17:52 22.4 C, dp = 0 mm H2O, no bubbles.  
19-03-2021 20:05 22.7 C, dp = 5 mm H2O, no bubbles.  
19-03-2021 23:54 22.3 C, dp = 6 mm H2O, no bubbles.

### Day 14 in fermentation

20-03-2021 10:34 22.9 C, dp = 9 mm H2O, no bubbles.  
20-03-2021 12:39 22.0 C, dp = 0 mm H2O, no bubbles.  
20-03-2021 15:51 22.8 C, dp = 1 mm H2O, no bubbles.  
20-03-2021 19:18 22.8 C, dp = 4 mm H2O, no bubbles.  
20-03-2021 23:29 22.7 C, dp = 40 mm H2O, no bubbles.

### Day 15 in fermentation

21-03-2021 10:08 22.8 C, dp = 1 mm H2O, no bubbles.  
21-03-2021 12:00 22.1 C, dp = 2 mm H2O, no bubbles.  
21-03-2021 13:52 22.9 C, dp = 30 mm H2O, no bubbles.  
21-03-2021 14:00 33.72 grams sugar in 300 mL water brought to the boil.  
21-03-2021 15:05 22.7 C, dp = 2 mm H2O, no bubbles.

### Bottling day

21-03-2021 15:05 moved bucket to kitchen.  
21-03-2021 15:51 FG = 1.006  
21-03-2021 15:10 filled 12 Steinie bottles (33 cl, 8x swing-top, 4x cap)

### Day 0 in conditioning

21-03-2021 18:00 20.1 C.  
21-03-2021 21:33 19.0 C.

### Day 1 in conditioning

22-03-2021 07:49 20.0 C.  
22-03-2021 11:03 19.3 C.  
22-03-2021 15:01 19.7 C.  
22-03-2021 19:40 19.3 C.  
22-03-2021 23:37 19.4 C.

### Day 2 in conditioning

23-03-2021 08:37 19.9 C.  
23-03-2021 12:06 19.0 C.  
23-03-2021 16:01 19.9 C.  
23-03-2021 22:33 18.9 C.

### Day 3 in conditioning

24-03-2021 08:11 19.2 C.  
24-03-2021 12:18 19.2 C.  
24-03-2021 16:18 20.0 C.  
24-03-2021 20:44 19.5 C.

### Day 4 in conditioning

25-03-2021 08:44 19.6 C.  
25-03-2021 11:07 19.0 C.  
25-03-2021 18:18 20.0 C.  
25-03-2021 22:07 19.9 C.

### Day 5 in conditioning

26-03-2021 08:23 20.0 C.  
26-03-2021 12:56 19.7 C.  
26-03-2021 16:08 19.0 C.  
26-03-2021 22:36 19.6 C.

### Day 6 in conditioning

27-03-2021 09:20 19.0 C.  
27-03-2021 13:02 19.7 C.

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## Batch Notes

27-03-2021 16:00 20.0 C.  
27-03-2021 23:22 19.7 C.

### Day 7 in conditioning

28-03-2021 10:10 19.6 C.  
28-03-2021 12:59 19.3 C.  
28-03-2021 18:02 19.0 C.  
28-03-2021 23:02 20.0 C.

### Day 8 in conditioning

29-03-2021 09:03 19.4 C.  
29-03-2021 13:23 19.7 C.  
29-03-2021 15:24 20.2 C.  
29-03-2021 17:58 19.2 C.  
29-03-2021 21:03 20.2 C.

### Day 9 in conditioning

30-03-2021 08:52 19.2 C.  
30-03-2021 12:19 19.2 C.  
30-03-2021 17:33 19.1 C.  
30-03-2021 22:39 19.7 C.

### Day 10 in conditioning

31-03-2021 08:31 19.6 C.  
31-03-2021 12:38 19.0 C.  
31-03-2021 14:53 19.3 C.  
31-03-2021 17:09 19.2 C.  
31-03-2021 21:38 19.9 C.

### Day 11 in conditioning

01-04-2021 08:09 19.1 C.  
01-04-2021 16:35 19.2 C.  
01-04-2021 22:34 19.4 C.

### Day 12 in conditioning

02-04-2021 08:29 19.5 C.  
02-04-2021 13:35 20.1 C.  
02-04-2021 18:52 19.5 C.  
02-04-2021 22:42 19.1 C.

### Day 13 in conditioning

03-04-2021 10:22 19.0 C.  
03-04-2021 13:48 20.0 C.  
03-04-2021 14:00 moved bottles from brew fridge to cellar.  
03-04-2021 16:10 16.1 C.  
03-04-2021 20:48 16.7 C.

### Day 14 in conditioning

04-04-2021 09:58 16.7 C.  
04-04-2021 16:42 16.7 C.  
04-04-2021 21:57 16.5 C.

### Day 15 in conditioning

05-04-2021 08:43 16.9 C.  
05-04-2021 16:06 16.7 C.  
05-04-2021 23:13 16.5 C.

### Day 16 in conditioning

06-04-2021 07:40 16.7 C.

## Extra Measured Values

Strike Temperature 68

Strike Water pH 5.2

## Batch #7 - 6 Mar 2021

| Batch Log           |                                     |
|---------------------|-------------------------------------|
| 6 March 2021        | Brew Date                           |
| 6 March 2021        | Fermentation Start                  |
| 6 March 2021 09:31  | Status: Brewing                     |
| 6 March 2021 14:54  | Status: Fermenting                  |
| 14 March 2021 12:37 | Added 5 grams Citra for dry hopping |
| 21 March 2021       | Bottling Date                       |
| 21 March 2021 16:10 | Filled 12 Steinie bottles (33 cl)   |