

04 SMaSH Fuggle - 4.3%

British Golden Ale

Brewer: The Thirsty Otter

Type: All Grain

IBU : 27 (Tinseth)
 Colour : 5 EBC
 Carbonation : 2.4 CO2-vol

Pre-Boil Gravity : 1.031
 Post-Boil Gravity : 1.041
 Original Gravity : 1.043
 Final Gravity : 1.010

Fermentables (1 kg)

1 kg - Extra Pale Maris Otter 3.1 EBC (100%)
 ^ Lot # 67-200827-161058-155815-1/1
 ^ The Malt Miller (UK) MAL-00-040
 30 g - Bottling - Sugar, Table (Sucrose) 2 EBC
 ^ Albert Heijn (NL)

Hops (23 g)

30 min - 7 g - Fuggle (Whole) - 5% (14 IBU)
 ^ Worcester Hop Shop (UK)
 15 min - 8 g - Fuggle (Whole) - 5% (11 IBU)
 ^ Worcester Hop Shop (UK)

Hop Stand

15 min hopstand @ 80 °C
 15 min - 8 g - Fuggle (Whole) - 5% (2 IBU)

Miscellaneous

Mash - 0.2 ml - Calcium Chloride (CaCl2) 33 %...
 ^ Lot # 115038
 ^ Brouwstore (NL) 055.035.0
 Mash - 0.56 g - Epsom Salt (MgSO4)
 ^ Lot # /2119000091
 ^ Brouwstore (NL) 055.027.7
 Mash - 1.2 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
 60 min - Boil - 0.19 g - Lipohop K
 ^ Lot # LPK110
 ^ The Malt Miller (UK) CH-03-013
 10 min - Boil - 1 g - Irish Moss
 ^ Lot # 4348
 ^ Brouwstore (NL) 125.249.1
 10 min - Boil - 0.05 g - Lallemand Servomyces
 ^ Lot # 154001112904ABV
 ^ Brouwstore (NL) 050.620.4
 10 min - Boil - 1 items - Wort Chiller
 ^ Brouwstore (NL) 057.020.20
 Bottling - 12 items - 33 cl Steinie bottle (s...
 ^ Brouwstore (NL) 017.500.0

Yeast

0.5 pkg - Neales Brewing Supplies Classic Eng...
 ^ Lot # 03012001180611V
 ^ The Malt Miller (UK) YEA-02-021

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 L
 Sparge Water : 5.84 L

Boil Time : 60 min
 Total Water : 8.84 L

Brewhouse Efficiency: 71.8%
 Mash Efficiency: 73.3%



5 EBC

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
 20 °C - 45 days - Conditioning

Water Profile

NL Hoofddorp Rein Tap Water (2020-Q1 WQR) (St...
 Ca 43 Mg 15 Na 67 Cl 75 SO 68

SO/Cl ratio: 0.9
 Mash pH: 5.43

Measurements

Mash pH: 5.5
 Boil Volume: 7.35
 Pre-Boil Gravity: 1.031
 Post-Boil Gravity: 1.039
 Post-Boil Kettle Volume: 6
 Original Gravity: 1.041
 Fermenter Top-Up: 0.3
 Fermenter Volume: 5.6
 Final Gravity: 1.007
 Bottling Volume: 4

Batch #4 - 24 Oct 2020

Recipe Notes

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

Batch Notes

23-10-2020

Prepared 4 L pre-boiled water.

Brew day

24-10-2020 11:30 added:

3L pre-boiled mash water.

1.2 mL Lactic acid.

0.3 mL Calciumchloride.

0.56 g Epsom salt.

Measure strike water pH = < 5.2 @ 25 C.

24-10-2020 12:00 mash in @ 68.9 C.

lump hunting and stirring.

24-10-2020 12:15 Mash pH = 5.5 @ 60 C.

24-10-2020 13:17 first wort SG = 1.063 @ 42.5 C --> 1.070 @ 20 C.

Sparged with 3.6 L @ 65 C.

SG = 1.030 @ 44.5 C --> 1.038 @ 20 C.

Collected of wort: 5.6 L.

Added 1.3 L @ 40 C for a 2nd sparge.

SG = 1.025 @ 44.3 C --> 1.033 @ 20 C.

Collected wort: 6.9 L.

Added another 0.45 L water for a pre-boil gravity of 1.031.

Collected wort: 7.35 L pre-boil volume.

Added hops for hopstand @ 82 C.

End of hopstand @ 75.0 C.

Post-boil SG = 1.039 @ 27.8 C --> OG = 1.041 @ 20 C.

24-10-2020 17:07 @ 22.7 C.

Fermentation

Day 0 in fermentation

24-10-2020 18:24 @ 21.7 C pitched 5 grams yeast.

24-10-2020 20:15 @ 21.7 C, dp = 0.01 mm H2O.

24-10-2020 21:58 @ 21.7 C., dp = 0.01 mm H2O.

24-10-2020 23:26 @ 20.4 C, dp = 30 mm H2O, fermentation has started, few bubbles.

Day 1 in fermentation

25-10-2020 00:51 @ 20.0 C, dp = 50 mm H2O, few bubbles.

25-10-2020 07:03 @ 20.9 C, dp = 50 mm H2O, many bubbles.

25-10-2020 12:07 @ 20.0 C, dp = 50 mm H2O, many bubbles.

25-10-2020 15:10 @ 20.4 C, dp = 50 mm H2O, many bubbles.

25-10-2020 19:11 @ 20.6 C, dp = 50 mm H2O, many bubbles.

25-10-2020 21:30 @ 21.0 C, dp = 50 mm H2O, many bubbles.

Day 2 in fermentation

26-10-2020 04:30 @ 19.1 C, dp = 40 mm H2O, no bubbles.

26-10-2020 07:46 @ 19.1 C, dp = 25 mm H2O, no bubbles.

26-10-2020 10:18 @ 19.7 C, dp = 20 mm H2O, no bubbles.

26-10-2020 15:43 @ 19.6 C, dp = 12 mm H2O, no bubbles.

26-10-2020 20:54 @ 18.1 C, dp = 10 mm H2O, no bubbles.

26-10-2020 23:45 @ 18.1 C, dp = 5 mm H2O, no bubbles.

Day 3 in fermentation

27-10-2020 07:25 @ 18.2 C, dp = 2 mm H2O, no bubbles.

27-10-2020 12:19 @ 18.9 C, dp = 2 mm H2O, no bubbles.

27-10-2020 15:42 @ 18.9 C, dp = 3 mm H2O, no bubbles.

27-10-2020 20:30 @ 18.4 C, dp = 2 mm H2O, no bubbles.

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Batch Notes

Day 4 in fermentation

28-10-2020 00:16 @ 18.5 C, dp = 2 mm H2O, no bubbles.
28-10-2020 08:08 @ 18.0 C, dp = 1 mm H2O, no bubbles.
28-10-2020 13:43 @ 18.9 C, dp = 1 mm H2O, no bubbles.
28-10-2020 18:52 @ 18.7 C, dp = 1 mm H2O, no bubbles.
28-10-2020 23:55 @ 18.9 C, dp = 0.5 mm H2O, no bubbles.

Day 5 in fermentation

29-10-2020 08:24 @ 18.9 C, dp = 0.5 mm H2O, no bubbles.
29-10-2020 12:44 @ 18.4 C, dp = 0.5 mm H2O, no bubbles.
29-10-2020 20:05 @ 18.3 C, dp = 0.1 mm H2O, no bubbles.
29-10-2020 23:43 @ 18.2 C, dp = 1 mm H2O, no bubbles.

Day 6 in fermentation

30-10-2020 08:29 @ 18.2 C, dp = 0.1 mm H2O, no bubbles.
30-10-2020 14:08 @ 18.4 C, dp = 0.1 mm H2O, no bubbles.
30-10-2020 18:36 @ 18.5 C, dp = 0.1 mm H2O, no bubbles.
30-10-2020 23:41 @ 18.7 C, dp = 0.1 mm H2O, no bubbles.

Day 7 in fermentation

31-10-2020 08:32 @ 18.8 C, dp = 0.1 mm H2O, no bubbles.
31-10-2020 14:21 @ 18.0 C, dp = 0.1 mm H2O, no bubbles.
31-10-2020 19:25 @ 18.0 C, dp = 0.1 mm H2O, no bubbles.
31-10-2020 23:43 @ 18.3 C, dp = 0.1 mm H2O, no bubbles.

Day 8 in fermentation

01-11-2020 09:01 @ 18.7 C, dp = 0.1 mm H2O, no bubbles.
01-11-2020 13:22 @ 18.5 C, dp = 0.1 mm H2O, no bubbles.
01-11-2020 18:41 @ 18.0 C, dp = 0.1 mm H2O, no bubbles.
01-11-2020 23:28 @ 18.4 C, dp = 0.1 mm H2O, no bubbles.

Day 9 in fermentation

02-11-2020 08:09 @ 18.0 C, dp = 0.1 mm H2O, no bubbles.
02-11-2020 13:24 @ 18.2 C, dp = 0.1 mm H2O, no bubbles.
02-11-2020 18:07 @ 18.5 C, dp = 0.1 mm H2O, no bubbles.

Day 10 in fermentation

03-11-2020 00:29 @ 18.1 C, dp = 0.1 mm H2O, no bubbles.
03-11-2020 07:46 @ 18.6 C, dp = 0.1 mm H2O, no bubbles.
03-11-2020 13:16 @ 18.4 C, dp = 0.1 mm H2O, no bubbles.
03-11-2020 19:30 @ 18.2 C, dp = 0.1 mm H2O, no bubbles.
03-11-2020 23:30 @ 18.7 C, dp = 0.1 mm H2O, no bubbles.

Day 11 in fermentation

04-11-2020 08:11 @ 18.4 C, dp = 0.1 mm H2O, no bubbles.
04-11-2020 13:26 @ 18.7 C, dp = 0.1 mm H2O, no bubbles.
04-11-2020 17:30 @ 18.1 C, dp = 0.1 mm H2O, no bubbles.
04-11-2020 19:30 @ 18.0 C, dp = 0.1 mm H2O, no bubbles.

Bottling Day

04-11-2020 20:00 added 30 gram sugar @ 300 ml water.
04-11-2020 20:02 Final Gravity = 1.007 @ 21.5 C --> 1.007 @ 20 C.
04-11-2020 20:10 very pale yellow colour.
04-11-2020 20:15 filled 12 Steinie bottles (33 cl swing-top). Yield was 4 Litres, a litre less than expected due to sediment I did not want in the bottles.
04-11-2020 23:47 @ 18.8 C.

Day 1 in conditioning

05-11-2020 09:44 @ 18.3 C.
05-11-2020 12:00 @ 18.3 C.
05-11-2020 17:36 @ 18.7 C.
05-11-2020 23:30 @ 18.8 C.

Day 2 in conditioning

06-11-2020 08:35 @ 18.3 C.
06-11-2020 13:05 @ 18.2 C.

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Batch Notes

06-11-2020 20:41 @ 18.2 C.

Day 3 in conditioning

07-11-2020 00:43 @ 18.1 C.

07-11-2020 09:54 @ 18.0 C.

07-11-2020 13:24 @ 18.7 C.

07-11-2020 17:43 @ 18.4 C.

Day 4 in conditioning

08-11-2020 01:12 @ 18.2 C.

08-11-2020 10:39 @ 18.2 C.

08-11-2020 18:58 @ 18.5 C.

08-11-2020 23:40 @ 18.1 C.

Day 5 in conditioning

09-11-2020 08:25 @ 18.2 C.

09-11-2020 12:57 @ 18.4 C.

09-11-2020 17:35 @ 18.8 C.

09-11-2020 22:46 @ 18.1 C.

Day 6 in conditioning

10-11-2020 07:19 @ 18.2 C.

10-11-2020 11:55 @ 18.1 C.

10-11-2020 18:15 @ 18.7 C.

10-11-2020 23:43 @ 18.0 C.

Day 7 in conditioning

11-11-2020 08:05 @ 18.0 C.

11-11-2020 17:10 @ 18.8 C.

11-11-2020 22:14 @ 18.7 C.

Day 8 in conditioning

12-11-2020 00:17 @ 18.7 C.

12-11-2020 08:21 @ 18.2 C.

12-11-2020 12:54 @ 18.9 C.

12-11-2020 18:10 @ 18.7 C.

12-11-2020 23:36 @ 18.2 C.

Day 9 in conditioning

13-11-2020 08:09 @ 18.6 C.

13-11-2020 12:49 @ 18.1 C.

13-11-2020 19:47 @ 18.9 C.

13-11-2020 23:28 @ 18.0 C.

Day 10 in conditioning

14-11-2020 09:16 @ 18.7 C.

14-11-2020 13:28 @ 18.3 C.

14-11-2020 20:14 @ 18.7 C.

14-11-2020 23:52 @ 18.9 C.

Day 11 in conditioning

15-11-2020 08:24 @ 18.9 C.

15-11-2020 13:20 @ 18.3 C.

15-11-2020 17:34 @ 18.0 C.

15-11-2020 22:00 @ 18.1 C.

15-11-2020 23:53 @ 18.0 C.

Day 12 in conditioning

16-11-2020 08:23 @ 18.0 C.

16-11-2020 13:01 @ 18.4 C.

16-11-2020 17:41 @ 18.5 C.

16-11-2020 23:44 @ 18.9 C.

Day 13 in conditioning

17-11-2020 08:30 @ 18.7 C.

17-11-2020 12:55 @ 18.7 C.

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Batch Notes

17-11-2020 18:51 @ 18.7 C.
17-11-2020 23:21 @ 18.8 C.

Day 14 in conditioning

18-11-2020 08:41 @ 18.0 C.
18-11-2020 13:03 @ 18.8 C.
18-11-2020 20:36 @ 18.2 C.

Day 15 in conditioning

19-11-2020 00:06 @ 18.1 C.
19-11-2020 08:37 @ 18.1 C.
19-11-2020 13:50 @ 18.5 C.
19-11-2020 23:20 @ 18.9 C.

Day 16 in conditioning

20-11-2020 07:54 @ 18.1 C.
20-11-2020 14:09 @ 17.7 C.
20-11-2020 19:26 @ 17.5 C.
20-11-2020 23:17 @ 17.4 C.

Day 17 in conditioning

21-11-2020 08:51 @ 17.0 C.
21-11-2020 12:19 @ 17.9 C.
21-11-2020 15:37 @ 17.8 C.

Day 18 in conditioning

22-11-2020 00:19 @ 18.8 C.
22-11-2020 01:02 @ 18.2 C.
22-11-2020 09:26 @ 19.1 C.
22-11-2020 12:36 @ 18.4 C.
22-11-2020 15:50 @ 18.7 C.
22-11-2020 19:36 @ 18.7 C.
22-11-2020 23:58 @ 18.2 C.

Day 19 in conditioning

23-11-2020 07:25 @ 18.5 C.
23-11-2020 11:56 @ 18.6 C.
23-11-2020 17:08 @ 18.7 C.
23-11-2020 23:39 @ 18.5 C.

Day 20 in conditioning

24-11-2020 07:00 @ 18.7 C.
24-11-2020 11:59 @ 18.7 C.
24-11-2020 18:02 @ 18.5 C.
24-11-2020 23:28 @ 18.7 C.

Day 21 in cinditioning

25-11-2020 08:12 @ 18.7 C.
25-11-2020 12:45 @ 20.4 C. (newly charged battery).
25-11-2020 18:07 @ 18.4 C.
25-11-2020 23:39 @ 18.0 C.

Day 22 in conditioning

26-11-2020 08:43 @ 18.0 C.
26-11-2020 18:16 @ 18.5 C.
26-11-2020 23:59 @ 18.5 C.

Day 23 in conditioning

27-11-2020 08:13 @ 18.5 C.
27-11-2020 12:37 @ 18.7 C.
27-11-2020 20:23 @ 18.5 C.
27-11-2020 23:50 @ 18.5 C.

Day 24 in conditioning

28-11-2020 09:18 @ 18.5 C.
28-11-2020 12:37 @ 18.2 C.

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Batch Notes

28-11-2020 16:27 @ 18.0 C.
28-11-2020 20:34 @ 18.2 C.
28-11-2020 23:57 @ 18.0 C.

Day 25 in conditioning

29-11-2020 09:37 @ 17.5 C.
29-11-2020 13:01 @ 18.5 C.
29-11-2020 18:03 @ 18.5 C.
29-11-2020 23:58 @ 18.0 C.

Day 26 in conditioning

30-11-2020 08:45 @ 17.3 C.
30-11-2020 13:04 @ 17.1 C.
30-11-2020 19:04 @ 17.5 C.
30-11-2020 22:45 @ 17.2 C.

Day 27 in conditioning

01-12-2020 08:25 @ 17.7 C.
01-12-2020 10:46 @ 18.0 C.
01-12-2020 13:47 @ 18.5 C.
01-12-2020 17:08 @ 18.2 C.
01-12-2020 22:49 @ 18.8 C.

Day 28 in conditioning

02-12-2020 08:47 @ 18.1 C.
02-12-2020 13:00 @ 18.0 C.
02-12-2020 18:14 @ 18.0 C.
02-12-2020 23:10 @ 18.5 C.

Day 29 in conditioning

03-12-2020 08:56 @ 17.2 C.
03-12-2020 13:32 @ 18.0 C.
03-12-2020 18:32 @ 17.2 C.
03-12-2020 23:54 @ 18.0 C.

Day 30 in conditioning

04-12-2020 08:29 @ 17.2 C.
04-12-2020 12:37 @ 17.6 C.
04-12-2020 18:22 @ 17.1 C.
04-12-2020 22:40 @ 17.3 C.

Day 31 in conditioning

05-12-2020 10:48 @ 17.3 C.
05-12-2020 13:31 @ 17.7 C.
05-12-2020 15:15 @ 17.8 C.
05-12-2020 17:12 @ 17.9 C.
05-12-2020 22:53 @ 17.7 C.

Day 32 in conditioning

06-12-2020 09:12 @ 16.0 C.
06-12-2020 15:46 @ 16.7 C.
06-12-2020 20:18 @ 17.9 C.
06-12-2020 23:11 @ 17.2 C.

Day 33 in conditioning

07-12-2020 08:25 @ 17.4 C.
07-12-2020 12:51 @ 17.1 C.
07-12-2020 17:21 @ 17.4 C.
07-12-2020 22:20 @ 17.5 C.

Day 34 in conditioning

08-12-2020 07:50 @ 17.0 C.
08-12-2020 13:10 @ 17.8 C.
08-12-2020 18:46 @ 17.7 C.
08-12-2020 23:34 @ 17.6 C.

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Batch Notes

Day 35 in conditioning

09-12-2020 08:21 @ 17.2 C.
09-12-2020 13:18 @ 17.8 C.
09-12-2020 19:54 @ 17.1 C.
09-12-2020 23:18 @ 17.2 C.

Day 36 in conditioning

10-12-2020 07:56 @ 17.0 C.
10-12-2020 11:36 @ 17.0 C.
10-12-2020 18:53 @ 17.2 C.
10-12-2020 23:07 @ 17.2 C.

Day 37 in conditioning

11-12-2020 08:07 @ 16.3 C.
11-12-2020 12:52 @ 17.7 C.
11-12-2020 19:21 @ 17.7 C.
11-12-2020 22:25 @ 17.9 C.

Day 38 in conditioning

12-12-2020 09:34 @ 16.5 C.
12-12-2020 15:06 @ 17.5 C.
12-12-2020 23:35 @ 17.4 C.

Day 39 in conditioning

13-12-2020 08:22 @ 17.2 C.
13-12-2020 14:03 @ 17.3 C.
13-12-2020 20:27 @ 17.6 C.

Dag 40 in conditioning

14-12-2020 08:22 @ 17.7 C.
14-12-2020 12:53 @ 17.2 C.
14-12-2020 21:09 @ 17.5 C.
14-12-2020 23:18 @ 17.5 C.

Day 41 in conditioning

15-12-2020 08:30 @ 17.9 C.
15-12-2020 12:56 @ 17.9 C.
15-12-2020 20:10 @ 17.9 C.

Day 42 in conditioning

16-12-2020 00:09 @ 18.5 C.
16-12-2020 08:30 @ 17.4 C.
16-12-2020 12:51 @ 17.8 C.
16-12-2020 20:12 @ 17.1 C.

Day 43 in conditioning

17-12-2020 00:06 @ 17.7 C.
17-12-2020 08:29 @ 17.7 C.
17-12-2020 12:47 @ 17.2 C.
17-12-2020 19:52 @ 17.1 C.
17-12-2020 23:27 @ 17.2 C.

Day 44 in conditioning

18-12-2020 09:16 @ 17.0 C.
18-12-2020 15:19 @ 17.6 C.
18-12-2020 22:07 @ 17.7 C.

Day 45 in conditioning

19-12-2020 11:11 @ 17.3 C.
19-12-2020 18:59 @ 17.9 C.
19-12-2020 23:57 @ 17.2 C.

Extra Measured Values

pH

Batch #4 - 24 Oct 2020

Extra Measured Values

Strike temperature	68.9
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Strike Water pH	5.2
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Batch Log

24 October 2020	Brew Date
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24 October 2020	Fermentation Start
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24 October 2020 12:00	Status: Brewing
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24 October 2020 18:27	Status: Fermenting
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4 November 2020	Bottling Date
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4 November 2020 20:15	Filled 12 Steinie bottles (33 cl).
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19 December 2020 23:58	Status: Completed
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Taste

3.0 / 5.0