Norwich Amateur Brewers Base Malt Exbeeriment

Background

Early in 2020, Keith (one of our number) hacked a 10lt tea urn, added a grain basket and wired in a grainfather connect controller. His aim was to have a piece of kit that could be used to quickly and simply make 5l of wort – to prototype beers, or to create beers for comparisons.

Keith is an award winning brewer, with several national medals to his name, and well respected locally, regionally and nationally.

Aim

To produce 5 otherwise identical SMASH beers, using different base malts. (not just to compare the malts, but to compare beers made with the malts)

Norwich Amateur Brewers members to qualitatively assess the differences the beers

Method

Water treatment was 2:1 chloride forward using HCl with small (and equal) amount of gypsum in the mash to help manage the pH.

1kg of each grain was mashed in 6l of water at 66C for one hour. Room temperature mash pH was measured for each base malt. No mash out.The grainbasket was pulled and the grain rinse sparged with 2.5l of water at 75C

Pre boil gravity was measured. The resulting 7.5L of pre-boil wort was boiled for one hour with 60 minute and 10 minute additions of 8%AA home-grown cascade to an IBU of 42. 0.3g protofloc at 10 minutes

The wort was chilled temp to 22C and put in a suitably sized fermenter, and the 4g CML 'pia' yeast added to each. This yeast was chosen for its neutrality.

The 5 different worts were fermented at the same temperature (18C) in an inkbird controlled brew fridge for two weeks. Crash cooled for a couple of days, no finings. Primed individual bottles with sugar solutions 1.5 volumes

12 x 330 ml bottles of each beer resulted

Results

All members of NAB were contacted, and were selected to take part on a first come first served basis. 9 people met on the evening of 10/8/20 in an online space. All 5 beers were poured into (where possible) identical glasses and were tasted and compared.

Beer 1: Crisp Maris Otter (EBC 5.5) OG 1041 FG 1007 Mash pH 5.46

Beer 2: Crisp Maris Otter Extra Pale (EBC 3) OG 1040 FG 1007 Mash pH 5.5

Beer 3: Muntons Propino (EBC 3-5) OG1041 FG 1008 Mash pH 5.47

Beer 4: Muntons Super Pale (EBC 2) OG 1037 FG 1006 Mash pH 5.65

Beer 5: Muntons Maris Otter OG (EBC 6) 1038 FG 1010 Mash pH 5.2

As can be seen from the photograph, there is a significant difference in the colours of the beers. This might be expected from the EBC ratings of each base malt.

It is an interesting result that EBC differences of 0.5-1 are clearly detectable in the finished beers.

The colours of the beers, followed exactly the EBC ratings (as indeed did the mash pH). Additionally, the body and maltiness of the beers also followed the EBC ratings of the base malts used:

Beers 1 and 5 (Crisp and Muntons Maris Otter) showed body, depth and complexity – offering the palate a blend of malt and lemon hops.

Beers 2 and 3 (Crisp MO Extra Pale and Propino) offered much less in terms of malt backbone, and the lemon citrus of the cascade was much more to the fore – in the case of the Crisp MO EP perhaps to an unbalanced degree.

Beer 4 (Muntons Super Pale) was the lightest in flavour and body allowing the hops most fully to take the stage..

All the beers were clear, but Beer 3 (Propino) was notably bright.

Preferences:

The majority of the voters found Munton's Super Pale the least characterful beer in this taste test.

All of the tasters preferred the beers made with Maris Otter, with Crisp Maris Otter edging the win in the vote.

In a useful discussion, some of the brewers felt that Muntons Super Pale would be their choice for a Brut IPA. Further, Crisp MO Extra Pale and Propino would also find a use for strongly hop-forward beers.

There was no doubt that for anything 'English' or in need of a malt backbone, from this selection Maris Otter should be the base malt of choice.

Final thoughts

We'd recommend this kind of fun to any brew club out there. We plan to do more of this sort of thing. Big thanks to Keith.

TL/DR: Use Crisp Maris Otter.


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