



Crop Review 2020

CELEBRATING 100 YEARS



Crop Report by the Stowmarket Grain Team

Nov 2020

Malting barley intake at both sites continues to be challenging due to quality issues presenting themselves daily - nitrogen, germination, awns, bugs and fusarium seem to be the main cause of the rejections to date. With higher than average rejection rates Farmers and Merchants continue to be reluctant sellers until they are sure that they have covered current commitments. Some bulks that were thought to be malting barley specification have had problems such as germination and have ended up going to a feed home. It is not yet clear how much malting barley has been downgraded to feed barley, but what we do know is that in a normal year the pass rate for malting barley is approximately 75% compared to this year at 30 – 35%.

With the South of England struggling particularly with higher than average nitrogen and Yorkshire facing germination issues, 2020 has been a very difficult harvest to secure the supply of the right quality barley for our customers.

In order to supply enough distilling grade barley, we had to acquire Scottish Provenance barley. While this prevented supply problems, it inevitably added extra cost, particularly in comparison to if we sourced local barley.

The full picture of barley quality is still yet to be known due to the smaller harvest intake this year and tonnage still to come into store at both sites.

Industries around the world face unprecedented uncertainty at the moment, from the COVID-19 pandemic, to Brexit, and while these and other events do not directly impact the crop, they do have an influence on the farmers' decision making. Sadly, with the outbreak of a mutated form of Covid-19 in the Mink in Denmark we don't seem to be any closer to slowing down the spread of this virus especially now with it jumping between species.

It is becoming apparent that due to these events, farmers are starting to consider alternative crop options, such as beans and pulses. In the UK, we must be mindful that if we have a hard Brexit and tariffs are put on barley



exports then barley isn't such an attractive crop to grow if there aren't so many options. Therefore, as an industry it is important that we provide some security to farmers in terms of pricing structures and opportunities going forward.

“...in a normal year the pass rate for malting barley is approximately 75% compared to this year at 30-35%”

Stowmarket Malt Quality

To enable a seamless switch to the new crop in your brewhouse, we have run some preliminary analysis to give you a clear view of the 2020 crop behaviour in the maltings.



AVERAGE CROP BASED QUALITY PREDICTION

Crop	Predicted Extract ¹	Total Nitrogen	Predicted Spirit Yield	Amylograph ²
Planet	308 Litre Degrees per KG	1.72%	-	63.0 – 63.8°C
Craft	312 Litre Degrees per KG	1.61%	-	62.4 – 63.9°C
Laureate	312 Litre Degrees per KG	1.61%	412 Litres of alcohol per tonne	63.8°C

STOWMARKET MICRO MALTINGS RESULTS

Based on the intake quality analysis we have determined an estimate of the new crops' yields and optimal processing temperatures. Samples of the 2020 crop were also micro malted to further assess its behaviour through a maltings and to determine the impact of the high nitrogen levels on the malts' yield.

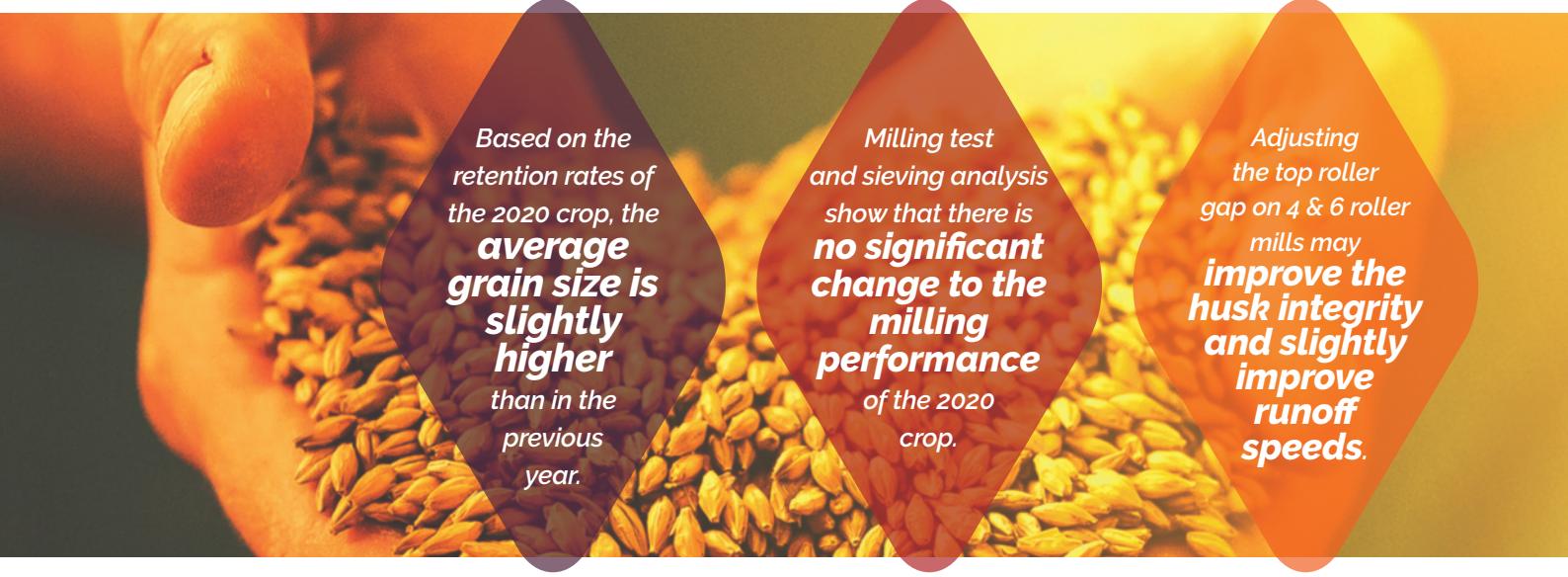
Parameter	Unit	Craft	Laureate	Planet
Moisture	%	3.1	3.0	3.1
IOB Extract 0.7mm Grind, Dry	LDK	307	314	308
Total Nitrogen, Dry	%	1.72	1.47	1.49
IOB total Soluble Nitrogen	%	0.68	0.56	0.65
Soluble Nitrogen Ratio		39.6	37.9	43.6
IOB visual colour 450g	EBC	7.1	4.1	5.3
IOB Visual Colour 515ml	EBC	5.9	3.4	4.4
Friability	%	93.8	94.8	90.7
Homogeneity	%	99.9	98.6	98.2
Steeliness	%	0.1	1.3	1.5
IOB Beta Glucan 450g	mg/L	50	71	71
IOB FAN 1.040	mg/L	187	150	170
DP IOB	°IOB	76	72	80
DU ASBC	DU	56	51	58
Predicted Spirit Yield	LAT	/	412	/
Fermentability	%	/	86	/

¹ using the Bishops equation to predict a barley's potential when malted, accurate to +/- 3LDK

² the temperature at which the starches within a barley malt have gelatinised and become fully accessible to enzymes.

BREWING INFORMATION

Milling Profiles...



Based on the retention rates of the 2020 crop, the **average grain size is slightly higher** than in the previous year.

Milling test and sieving analysis show that there is **no significant change to the milling performance** of the 2020 crop.

Adjusting the top roller gap on 4 & 6 roller mills may **improve the husk integrity and slightly improve runoff speeds.**

Mashing performance...

Like for like against 2019, the 2020 **Craft** and **Planet** malts performed well.

There was no significant difference in the mashing performance.

At a yield of 80%, the 2020 **Craft** performed slightly under average, whereas the 2020 **Planet** performed well with a yield of **85%**

When run through the brewery, the **malt mashed and gelatinised nicely and formed a good filter bed**. Conversion was good and the runoff was smooth and after a standard recirculation **the wort ran clear** for the duration of the separation process.

The maximum fermentability of the wort was:
87% for Planet and
90% for Craft

There was no significant change between the 2019 and 2020 crops' behaviour during runoff; both had **good flowrates and separation** timings showed no significant differences.

Both **Planet & Craft** had **good extract outputs** yielding **80-85%** brewhouse yield on our trial plant.
Extract output
Planet: 85%
Craft: 80%

Conclusion

Based on this crop review, we at Muntons are confident that while the year and harvest have been challenging, the 2020 crop malt will achieve our internal specification for high quality brewing malt.

The main challenges we face as an industry are the increased nitrogen levels that the 2020 crop is showing, this will lead to the malts having a corresponding high nitrogen level.

Due to the crops' good retention rates, large grainsize and good milling performance, we do not expect it to have a lower extract specification than the previous crop. While the specification will stay ≥ 310 LDK, we do not expect the crop to perform much above this level. However, where the 2019 crop averaged dry extracts of 315LDK for Planet and 310LDK for Craft, we expect the 2020 crop to average at the lower end of the specification.

Using the supplied amylographs to optimise mashing temperatures to the crop, we expect the 2020 crop malt to perform well in the brewing process.

"At Muntons we are confident that the 2020 crop malt will achieve our specification for high quality brewing malt..."

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