

CRQMB



Centre de Référence pour la Qualité des Malts et de la Bière

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Services disponibles:

Consultance en brasserie
Analyses des matières premières de la bière (malt, houblon, eau, levure)
Analyse de produits fermentés (bières, cidres, vins,...)
Propagation de levures

PRICE LIST OF BARLEY ANALYSIS (2020) All prices are in Euro

MOISTURE

> Moisture (%) 19,8

CHEMICAL ANALYSIS

> Total proteins (%) 44,5

> Beta glucans (colorimetric method) (mg/100g) 173,6

> Cation (Pb, Cd, As, Hg, Zn or Fe) *by cation 44,6

> Fatty substances 36,8

> Ashes 36,8

GERMINATION

> Germinal capacity (TTZ coloration) 29,7

> Germinal energy (Aubry method) 24,9

KERNELS

> Weight

- 1000 Kernel weight (g) 29,7

- Hectolitre weight (g/hl) 37,9

- Vitreous seeds at 100% 6,1

- Modified seeds at 100% 6,1

> Length of acrospire (%)	
- between 0 - 1/4	}
- between 1/4 - 1/2	
- between 1/2 - 3/4	
- between 3/4 - 1	
- >1	
	49,6
> Hussards (%)	33,3
> Ungerminative Kernels	6,1
> Unmodified seeds	29,9
> Sieving test	
- x > 2,8 (%)	}
- 2,8 > x > 2,5 (%)	
- 2,5 > x > 2,2 (%)	
- Waste (%)	
- x > 2,5 (%)	
- x < 2,5 (%)	
	29,9
> Naked seeds (%)	}
> Broken seeds (%)	
> Entire seeds (%)	
> Impurities (%)	
- Total impurities	
- Foreign seeds	}
- Foreign material	
- Insects	
- Dust	

MYCOTOXINS

> Mycotoxins and contaminaton indicators (%)	
- Aflatoxines B1 (ELISA)	616,8
- Zearalenone (ELISA)	616,8
- Gushing (methode Carlsberg)	74,2

- DON (ELISA)	616,8
- Ergosterol	251,5
- Ochratoxine (HPLC-UV)	166,7
MISCELLANEOUS	
> Cations on malt without treatment	
- Pb, Cd, As, Hg, Cu, Zn or Fe (per element)	46,2
> Cations on wort without treatment	
- Pb, Cd, As, Hg, Cu, Zn or Fe (per element)	46,2
> Liquids on wort (FAME)	
- Fatty acid spectrum (Detailed list in annex)	331,9
- Total lipids (mg/L)	331,9
> Anions composition (mg/L)	
- Cl, SO4, PO4, NO3, SiO2 (per element)	109,8
> Fatty substances	36,8
> Ashes	36,8
> Ferulic and coumaric acids	316,3
> Phenolic acids	316,3

PRICE LIST OF MALT (including special malts and adjunct) AND WORT ANALYSIS

MOISTURE

> Moisture (%) 20,6

EXTRACT

> Fine grind

- Extract fine (EBC mashing) (%) 79,2

- Extract fine (Dry basis) (%) 79,2

- Hot water extract 79,2

> Extract, fine and coarse grind (EBC mashing) (%) 44,6

> Difference fine and coarse grind 44,6

> Description

- Color of wort (visual method) (°EBC) 17,8

- Color of wort (photometric method) (SRM) 17,8

- Color of boiled wort (visual method) (°EBC) 42,1

- Color of boiled wort (photometric method) (SRM) 42,1

- Odor of mash 5,9

- Clarity of wort 5,9

- Turbidity of wort (°EBC) 22,4

- pH of wort 18

> Fermentability test

- Limit attenuation (%) 49,6

> Fermentable sugars on wort (g/100mL) 129,7

(Fructose, glucose, saccharose, maltose, maltotriose, DP4
(g/100mL))

SACCHARIFICATION

> Saccharification rate (min) 4,9

> Diastasic power (EBC method) 79,3

> Alpha Amylase (Enzymatic method) 44,6

FILTRATION

> Filtration speed (min)	
- EBC method	6,1
- 100 - 200 mL fine grind	6,1
- 100 - 200 mL coarse grind	6,1
> Wort viscosity (cP)	34,6
> Beta glucans (colorimetric method)	173,6
> Filtration Tepral	197,8

PROTEIN CONTENT

> Total protein (dry basis) (%)	47,3
> Soluble protein (%)	44,6
> Kolbach index	89,2

*Gratis if total and soluble protein are request

> Hartong at 45°C	44,6
> Free amino nitrogen (Ninhydrin method) (mg/L)	74
> PDMS (HPLC method) (µg/g)	182,9
> Amino acid on wort (mg/L)	396,3

(Aspartic acid, threonine, serine, glutamic acid, proline, glycine, alanine, valine, methionine, isoleucine, leucine, tyrosine, phenylalanine, gamma amino butyric acid, histidine, tryptophane, lysine, arginine, ornithine, ethanolamine (mg/L))

MALT MODIFICATION

> Friability (%)	
- Friability index (%)	22,4
- Homogeneity index	22,4
- Entire seeds	6,1
> Modification (Calcofluor method) (%)	
- Modification index	42,1
- Homogeneity index	11,9

PRICE LIST ON YEAST ANALYSIS (2020)
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MICROBIOLOGICAL CHARACTERISTICS

> Yeast analysis

- Counting (/mL)	25,7
- Dead cells (%)	20,7
- Budding cells (%)	20,7
- Yeast morphology	20,7
- Inspection for contamination research	20,7
- Microscopic observation and rapid identification	31,6

> Bacteria analysis

- Lactic	}	
- Acetic		
- Acetobacter		
- Gluconobacter		
- Enterobacteria		
- Other Gram -		
		41,3

> Contamination counting (/mL)

- Total aerobic	}	
- Total anaerobic		
- Aerobic decoloration		
- Anaerobic decoloration		
- Wild yeast		
- Mould		
- Lactic aerobic		
- Other aerobic Gram + and Gram -		
- Lactic anaerobic		
- Other anaerobic Gram + and Gram -		
		180,3

STRAIN CHARACTERISTICS

> Fermentable sugars assimilation		
- Fructose, glucose, saccharose, maltose, maltotriose	310,4	
> Flocculation characteristics	515,3	
> Characteristic of the aromatic profile on standard wort		
- Fusel alcohols (mg/L)	}	1045,9
→ propanol, isobutanol, (iso)amylic alcohols, betaphenylethano		
- Esters (mg/L)		
→ ethyl acetate, isoamyl acetate, ethyl caproate, ethyl caprylate, betaphenylethanol acetate		
> Conservation		
- Collection on an agar-agar slope and cryoconservation	524,7	

STORAGE AND PROPAGATION

> Tube (wort-agar) stored in collection	
- One tube	149,8
- Two tubes	198
- Three	247,7
- Four	285,1
> Propagation	
- Set price for 3L to 20L	
→ Propagation 3 L	198,4
→ Propagation 6 L	218,4
→ Other quantities	On request
- Base price for 200 L	1030,3
- Base price for 400 L	1783,3

PRICE LIST FOR HOP ANALYSIS (2020)

MOISTURE

> Moisture (%)	20,7
> Moisture green hop (%)	29,2

BITTER SUBSTANCES

> EBC method 7.4 (lead conductance value)	92,7
> EBC method 7.5 (lead conductance value, hop resin fractions, Granzling modification of Wöllmer method)	309,1
> EBC method 7.6 (lead conductance value, hop resin fractions, Granzling modification of Wöllmer method, only for hop extract)	92,7
> EBC method 7.7 (HPLC method, α and β acids)	247,2
> EBC method 7.8 (HPLC method, iso α , α and β acids)	247,2
> Tetra hydro iso α acids by HPLC	433
> Hexa hydro iso α acids by HPLC	433

MISCELLANEOUS

> Powder sieving	19
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LIPIDS

> Hop cones, powders and pellets	
- Total lipids (ppm) (FAME)	515,3
- Essential oils (ppm)	1034,2
> Hop extracts	
- Total lipids (ppm) (FAME)	515,3
- Essential oils (ppm)	1034,2

AROMA PROFILE

> Likends-Nickerson extraction (GC-MS and GC-O analysis)	1370,8
> Thiols aroma's (specific extraction, pHMB, GC-MS and GC-PFPD analysis)	822,5
> Thiols aroma's (specific extraction, pHMB, GC-PFPD and GC-O analysis)	1370,8
> Oil hop EBC 7.10	107,5

PRICE LIST FOR BEER ANALYSIS (OR WATER AND OTHER LIQUIDS) (2020)

PHYSICO-CHEMICAL CHARACTERISTICS

> Density - alcohol (Anton Paar, alcoolyser beer ME, DMA4500M)		
- Original extract by weight (°Plato)	}	65,4
- Original extract by volume (g/100mL)		
- Apparent extract (°Plato)		
- Real extract (°Plato)		
- Alcohol - distillation method (for beer) (g/100mL and mL/100mL)		
> Specific gravity 20/20°C pycnometer		30,2
> Attenuation (%)		
- Apparent attenuation	}	89,2
- Real attenuation		
- Limit attenuation		
> Fermentable sugars (g/100mL)		128,8
(Fructose, glucose, saccharose, maltose, maltotriose, DP4 (g/100mL))		
> Aspect		
- Color (visual method) (°EBC)		18,6
- Color (spectrophotometric method) (°EBC)		18,6
- Brightness at 20°C (°EBC)		23,1
- Turbidity (°EBC)		23,1
> CO2		
- Manometric method (g/L)		44,9
- Titrimetric method (g/L)		44,9
- Pressure in can		44,9
> pH - acidity		
- pH		18,6
- Total acidity (mL NaOH 0,1N/100mL)		36
- Volatile acidity (mL NaOH 0,1N/100mL) (g acetic acid/100g)		53,6

- Volatile acidity (enzymatic method) (g acetic acid/100g)	53,6
> Viscosity (cP)	35,8
> Protein content	
- Total nitrogen (mg/L)	46,3
- Nitrogen which can coagulate (mg/L)	90
- Free amino nitrogen (mg/L)	74,8
> Amino acids (mg/L)	412,1
(Aspartic acid, threonine, serine, glutamic acid, proline, glycine, alanine, valine, methionine, isoleucine, leucine, tyrosine, phenylalanine, gamma amino butyric acid, histidine, tryptophane, lysine, arginine, ornithine, ethanolamine (mg/L))	
AGING CHARACTERISTICS	
> Headspace Air (mL/L and mL/bottles)	40,2
> Indicator time test (ITT)	41,3
> Phenolic compounds	
- Total polyphenols - EBC (mg/L)	123,7
- Flavanoïds - EBC (mg/L)	123,7
- Anthocyanogens - Rigby (mg/L)	136,5
> Colloidal stability	41,3
> Carbonyl compounds	77,2
- Total aldehydes (RSV) (colorimetric method TBA)	
> Sulfites	
- Pararosaniline - colorimetric method	
→ SO2 free (mg/L)	182,5
→ SO2 total (mg/L)	182,5
- Enzymatic method	
→ Ascorbic acid (mg/L) and/or deshydroascorbic acid	92,8
> Trans-2-nonenal free or total	822,4

> Nonenal potential	822,4
> Reducing power (AAPH method)	205,6
> Olfactometric analysis og aged beers (GCO-AEDA)	1370,7
> Polyphenols (HPLC-MS)	1370,7
> Beta-damascenone	822,4
> Dimethyltrisulfure	822,4
> Organic acids (HPLC method)	205,6

ORGANOLEPTIC CHARACTERISTICS

> Bitterness	
- Bitterness (°EBU)	51,6
- Isohumulones - De Clerck method (mg/L)	82,4
- Isohumulones - HPLC method (mg/L)	247,3
> Fusel alcohol's (mg/L) and esters (Headspace method)	309,1
(Propanol, isobutanol, (iso)amylic alcohol's (mg/L))	
> Fusel alcohol's, esters and fatty acids C6-C10 (mg/L)	324,7
(Hexanol method) (Betaphenylethanol (mg/L))	
> DMS - GC (µg/L)	185,5
> DMSO	309,1
> Vicinal diketons (µg/L)	
- Diacetyl + pentanedione (free) - GC	257,5
- Diacetyl + pentanedione (precursor) - GC	278,1
- Total diketons - colorimetric method	74,8
> Acetaldehyde (enzymatic method) (ppm)	87,7
> Organic acids - enzymatic method (mg/L)	
- Acetic acid	82,4
- Lactic acid	162,3
- Pyruvic acid	77,2
- Malic acid	82,4
- Citric acid	67,5

> Carbonyl compounds in alcohol-free (dynamic headspace method) (Isobutanal, 3-methyl-butanal, 2-methyl-butanal, valeraldehyde, caproaldehyde, heptanal)	489,4
> Tasting set price	137,1
> Pyrazines	822,4
> 4-Vinyl guaiacol	412,2
> Terpens	341,9
> Sulfur aromas and terpenols (identity cards, SAFE method, GC-MS and GC-PFPD analysis)	685,5
> > Thiol aromas (specific extraction, pHMB, GC-MS and GC-PFPD analysis)	1370,7
> Thiol aromas (specific extraction, pHMB, GC-PFPD and GC-O analysis)	828,8
> Trichloroanisol	548,4
> GC-olfactometric (AEDA)	1370,7

FOAM CHARACTERISCTIC

> Head retention (Rudin method) (sec)	41,3
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MICROBIOLOGICAL CHARACTERISTICS

> Yeast analysis	
- Yeast counting (/mL)	25,7
- Dead cells (%)	20,7
- Microscopic inspection for contamination research	20,7
> Bacteria analysis	
- Lactic	} 41,3
- Acetic	
- Acetobacter	
- Gluconobacter	
- Enterobacteria	
- Other Gram-	

> Microscopic observation and rapid identification	104
> Contamination counting (/mL)	
- Total aerobic	180,3
- Total anaerobic	
- Aerobic decoloration	
- Anaerobic decoloration	
- Wild yeast	
- Mould	
- Lactic aerobic	
- Other aerobic Gram + and Gram -	
- Lactic anaerobic	
- Other anaerobic Gram + and Gram -	

CATION COMPOSITION

> Cations: Argon plasma torch (mg/L)	
(Ca, Mg, Na, K, Zn, Cu, Al, Mn, Ni, Fe, As, Pb, Cd, Hg, Cr or P2O5 (*by cation))	*44,5

ANION COMPOSITION

> Chlorides	109,6
> Sulfates	
> Phosphates	
> Nitrates	
> Silicates	

MISCELLANEOUS

> Caloric values (Kcal/100mL or Kcal/bottle)	113,5
> Starch (Megaenzyme Kit)	287,3
> α-Amylase	262
> Ashes (Calcination : Energetic value) (KJ/100mL)	36,8