

MALT ANALYSIS

Batch: P163-18-81-02

Raw material: 2-Row Barley Copeland

BADLANDS PILSNER MALT

Parameter	Value	Unit
Moisture content	4.3	%
Friability	85.5	%
Extract on fine grind d.m.	79.6	%
Extract on coarse grind d.m.	78.9	%
Difference in fine and coarse extract	.7	%
Colour Spectrophotometerical	1.47	ASBC ColSp
Total Protein content	11.91	%
Soluble protein dm	4.40	%
Kolbach Index (100*ps/pt)	36.9	%
Diastatic Power on Malt ASBC	156	ASBC DP
Alpha Amylase	59.6	DU
Viscosity Absolute/Dynamic	1.46	cP
Viscosity Relative/Kinematic	1.41	cSt
Soluble betaglucans mg/l	81	mg/l
Free Amino Nitrogen	161.0	mg/l
DON content	0.1	ppm
Final attenuation limit on wort	85.4	%
Saccharification time	5	min

BARLEY HISTORY

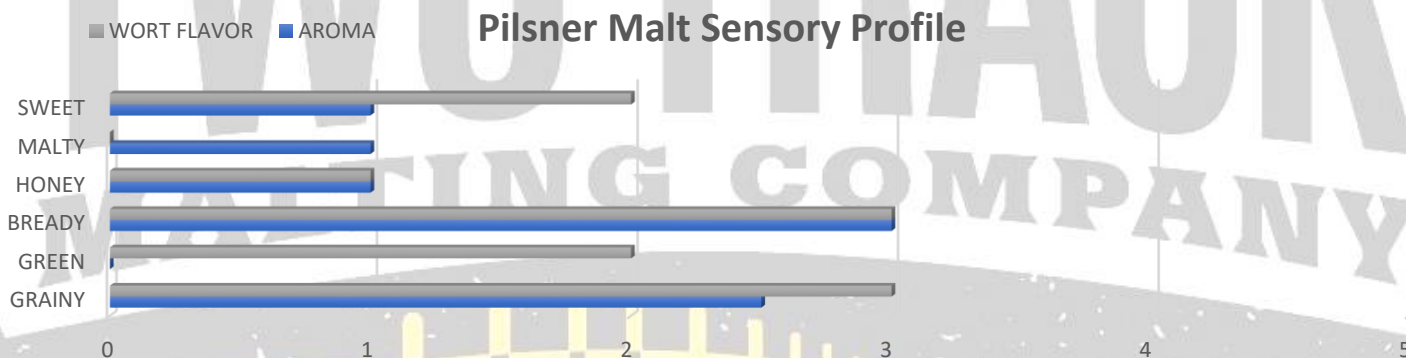
This malt was made from Copeland Barley which was planted on April 24, 2016 and harvested on August 2, 2016 by Levi Boehm. Levi Boehm is a 3rd generation farmer located in McClusky, ND. Their farm is very family oriented with Levi farming with his father and his wife helping every season. The Boehm's take great pride in growing barley and have usually grown 2,000-2,500 acres each year. This batch of Copeland 2-Row barley was grown on the Ternes South 200 field which was converted from CRP in 2014.

(See satellite photo below).



Growing Highlights

Latitude: 47°26'45.4."N / Longitude: 100°32'03.8"W



Hot Steep Method

Items Needed to perform the Hot Steep Method:

24-ounce Thermos
Funnel
Cone Coffee Filter
Coffee Grinder
Scale capable of weighing 50.0 g (± 0.1 g)
Glass Beaker, tall, 600 mL volume
Thermometer, standard, 0-200°C
Quart sized large or small mouth canning jars
Heating apparatus, capable of heating water to 65°C

Steps to perform the Hot Steep Method:

1. Grind 50.0g of malt in coffee grinder (grind of 10-15 sec)
2. Add 400ml of 65°C (149°F) water to Thermos
3. Add grist to water, cap thermos and shake for 20 sec
4. Let rest for 15min
5. When timer is up, swirl for a few seconds then pour everything into filter in funnel over large jar
6. Collect 100ml of wort and add it back into filter
7. Collect and Taste

Check Your Malt Grind

Take 100g of milled grist and Place in #14 Sieve stacked over #30,#60 over pan, Slide 18" on smooth surface for 3 min and Tap sharply on surface ever minute Record Grist retained above in each sieve *Chart to the below gives Percentage of what should be retained in each sieve for each grind*

100g Sample	#14 Sieve	#30 Sieve	#60 Sieve	Pan
Coarse Grind	78g	14g	4g	4g
Medium Grind	53g	28g	11g	8g
Fine Grind	25g	25g	31g	20g

Calculating PPG and OG

PPG (SG of 1 lb of fermentable in 1 gal of water)

$$PPG=46.214*(DBCG/100-MC\%/100-0.002)$$

Original Gravity Calculation

$$OG=1+(EF\%/100)*(PPG*MW/BV)$$

MW = pounds of malt used
BV = Batch volume in gallons
EF% = Mashing efficiency
OG = Original Gravity
PPG = Pounds Per Gallon
MC = Moisture Content
DBCG = Course Grind Extract

For any questions or to place another order please contact us directly at the following:

Chris Fries – Chief Maltster - 509.954.5449 chris@twostrackmalting.com
Jared Stober – CEO – 701.595.3388 jared@twostrackmalting.com