

Recipe :

Deth's Tar (Imperial Oatmeal Stout)

(5 gallons (Finished Beer) / 19 L - All Grain Double Mash + Munich LME (Liquid Malt Extract))

Specs :

O.G. = 31 P or 1.134

T.G. = 10 P or 1.040

ABV% = 12.71 % Pre-Barrel or oak alternative aging.

13.5 - 14.5 % Post Bourbon / Whiskey soaked oak alternative aging.

IBUs = 30

Color = 80 SRM

Ingredients :

Malt :

Mash #1 :

15 lbs. (6.8 kg.) Rahr Pale Malt (3.5 Lov)

1.5 lb. (.68 kg.) Thomas Fawcett's Roasted Barley (550 Lov)

1.3 lb. (.59 kg.) Flaked or Rolled Oats (1 Lov)

14 oz. (397 g) Thomas Fawcett's or Rahr Oat Malt (2 Lov)

9 oz. (255 g) Thomas Fawcett's Chocolate Malt (420 Lov)

8 oz. (227 g) Thomas Fawcett's Dark Crystal II Malt (120 Lov)

Mash #2 :

15 lbs. (6.8 kg.) Rahr Pale Malt (3.5 Lov)

1.5 lb. (.68 kg.) Thomas Fawcett's Roasted Barley (550 Lov)

1.3 lb. (.59 kg.) Flaked or Rolled Oats (1 Lov)

14 oz. (397 g) Thomas Fawcett's or Rahr Oat Malt (2 Lov)

9 oz. (255 g) Thomas Fawcett's Chocolate Malt (420 Lov)

Tip : Rice Hulls are your friend here. I would utilize 1-1.5 lbs.

We will be conducting 2 separate mashes and running off half the desired Kettle Full volume for each mash. The Munich LME is to help bump up the gravity in the Brewkettle to 31 P which is a big O.G!

Water Treatment (For Mashing) :

Lake Michigan Water. For Reference (See Chicago Water Profile)

Carbon Filtration

Calcium Carbonate : Mash#1 (.28 oz. / 8 g) & Mash#2 (.28 oz. / 8 g)

Calcium Chloride : Mash#1 (.05 oz. / 1.4 g) & Mash#2 (.05 oz. / 1.4 g)

Note : We have omitted using Gypsum in this mash. With all the dark malts and their power to acidify the mash we need Calcium Carbonate to help bring up the pH into the optimum range for enzymatic activity and starch conversion. Also, we don't want Gypsum accentuating the bitterness from the brewhouse hop additions. We use Calcium Chloride to aid in mouthfeel and soften the hop bitterness.

Tip : If you have the opportunity to grind your own dark grains it is extremely beneficial to relax you mill setting so you don't pulverize them into dust. Grinding these grains too finely can cause problems with your wort runoff from the Lauter-Tun which will reduce your efficiency of sugar extraction from the grainbed.

Hops :

Magnum Hop Pellets (90 min.)[½ way through Boil](.5 oz. / 14 g at 15.1 % Alpha Acid)

Centennial Hop Pellets (Whirlpool)(.6 oz. / 16 g at 13.1 % Alpha Acid)

Tip : We are going to be boiling for 180 min or 3 full hours to concentrate the Deth's Tar wort. However, we only want to boil our bittering hop addition for 90 min.

Dry Hop :

We will not be dry hopping this beer!

Yeast :

Wyeast 1968 - London ESB Ale

Tip : 1968 is a workhorse Ale strain that is reasonably alcohol tolerant and settles out well when fermentation is complete.

Finings :

Gusmer Kick (Carrageenan) or Whirlfloc G [Kettle Finings] : .16 oz. / 4.5 g
Nalco or Biofine Clear (Silica based fining agent in liquid form) : 1 fluid oz. (30 ml.)

Anti Foam :

Fermcap S

Used in the Brew Kettle to avoid Boil Overs! (.21 fluid oz. / 6.2 ml.)
Used in the fermentation vessel to prevent foaming. (.17 fluid oz. / 5 ml.)

Tip : Since you will not be making your 1st hop addition until 90 min into the boil it will be crucial to make your Fermcap addition at boil start to prevent messy and dangerous boil overs!

Note : Reducing foaming all throughout the process in the brewhouse to package will help the foam stability of your finished product!

Mashing #1 :

Pre-Heat Mash / Lauter Tun prior to mashing in.

We will perform a Single Infusion mash at a ratio of (3.5:1) so for every 3.5 lbs (1.6 kg) of malt we need 1 gallon (3.785 L) of Hot Water (Liquor).

Add 5.7 gall (21.6 L) of Hot Liquor at 161 F (72 C) to the Mash / Lauter Tun and stir in the Calcium Chloride & Calcium Carbonate.

Immediately mash in all grains [Except Roasted Barley & Chocolate Malt] targeting a temperature of 151 F (66 C).

Rest at 151 F (66 C) for 40 min.

At 40 Min into the Mash Rest stir in Roasted Barley and Chocolate malt gently keeping them as close to the top of the mash as possible. You may have to add additional hot liquor to hydrate

dark grains properly. This grist / water ratio will yield a thicker mash and higher first wort gravity.

Note : When you begin mashing this brew in, begin with the pale malt and rice hulls. Save the flaked oats for sprinkling on top of the mash to keep them as high and as far from your false bottom as possible. The husk from the oat malt will also help provide structure in your grain bed during lautering to help prevent it from compacting. You have to get a bit savage when you brew a big beer like this but you also have to make calculated steps to prevent major issues with your lautering process. We are adding dark grains at the end of the mash to make sure we aren't extracting any harsh tannic flavors from them and so they don't drop the pH down too far and create starch conversion issues.

Lautering Procedure #1 :

Vorlauf or recirculate wort for 10 min to clarify before going to brew kettle.

Take a sample to confirm starch conversion is complete.

Collect first runnings in the Brewkettle (Take a 1st Wort Gravity and pH).

When the grain bed is beginning to become exposed start sparging 170 F (77 C) with Hot Liquor.

Begin heating wort in the kettle to avoid a long delay coming up to boil.

While sparging try to maintain a constant ¼ inch of clear hot water above your grain bed.

Fill your kettle to 5 gallons (19 L) of wort cutting your sparge at about 4 gallons (in Kettle) (15 L) to allow sparge water to pull through the grain bed.

Collect a Last Wort Gravity and pH.

Tip : Simmer the wort in the Brewkettle the whole time you are mashing and vorlaufing Mash#2.

Mashing #2 :

Clean out and hot rinse your Mash / Lauter tun to prepare for Mash #2 :

Pre-Heat Mash / Lauter Tun prior to mashing in.

We will perform a Single Infusion mash at a ratio of (3.5:1) so for every 3.5 lbs (1.6 kg) of malt we need 1 gallon (3.785 L) of Hot Water (Liquor).

Add 5.7 gall (21.6 L) of Hot Liquor at 161 F (72 C) to the Mash / Lauter Tun and stir in the Calcium Chloride & Calcium Carbonate.

Immediately mash in all grains [Except Roasted Barley & Chocolate Malt] targeting a temperature of 151 F (66 C).

Rest at 151 F (66 C) for 40 min.

At 40 Min into the Mash Rest stir in Roasted Barley and Chocolate malt gently keeping them as close to the top of the mash as possible. You may have to add additional hot liquor to hydrate dark grains properly.

Note : When you begin mashing this brew in, begin with the pale malt and rice hulls. Save the flaked oats for sprinkling on top of the mash to keep them as high and as far from your false bottom as possible. You have to get a bit savage when you brew a big beer like this but you also have to make calculated steps to prevent major issues with your lautering process. We are adding dark grains at the end of the mash to make sure we aren't extracting any harsh tannic flavors from them and so they don't drop the pH down too far and create starch conversion issues.

Lautering Procedure #2 :

Vorlauf or recirculate wort for 10 min to clarify wort before going to brew kettle.

Take a sample to confirm starch conversion is complete.

Collect first runnings in the Brewkettle (Take a 1st Wort Gravity and pH).

When the grain bed is beginning to become exposed start sparging 170 F (77 C) with Hot Liquor.

Begin heating wort in the kettle to avoid a long delay coming up to boil.

While sparging try to maintain a constant ¼ inch of clear hot water above your grain bed.

Fill your kettle with an additional 5 gallons (19 L) of wort cutting your sparge at about 4 gallons (in Kettle) (15 L) to allow sparge water to pull through the grain bed.

Collect a Last Wort Gravity and pH.

Note : Once you run an additional 5 gallons of wort from Mash#2 to the Brewkettle you should have about 9-10 gallons (34-39 L) of wort in your brewkettle! We are starting with a larger quantity to offset the volume lost from a 3 hour boil!

Kettle Program : 180 min boil!

Tip : Have Munich LME on hand and check your wort gravity throughout the boil. If you need a boost add before the last 30 min of the boil.

At Kettle Full Volume Add : Fermcap S (Anti-foam) .21 fluid oz. (6.2 ml)

When you have a good rolling boil collect a Kettle Full Gravity and pH.

Add Magnum Hop Pellets (90 min)[½ way through Boil](.5 oz. / 14 g at 17% Alpha Acid)

At 15 min from Boil End Add : 3 oz. Gusmer Yeast Nutrient Tabs or Yeastx Yeast Nutrient.

At 10 min from Boil End add Kettle Finings (Kick Carrageenan) Granulated : (.16 oz. / 4.5 g)

Note : At this point it is good to take another wort sample to see where you are with your gravity in case you might need to boost it with some liquid malt extract (LME) or dextrose. If you are running high you can make a hot liquor addition to bring your gravity down and bring your wort volume up.

Tip : Your yeast is going to be extremely stressed in this high sugar concentration wort so providing it with some good nutrients before going into battle is very crucial to prevent stalled fermentations!

Tip : During your 180 min boil this is a great time to make sure that your fermentation vessel is cleaned and sanitized. Pitch your slurry of 1968 - London ESB Ale as close to your transfer of wort to the fermentation tank as possible. At Revolution for brewing Deth's Tar we target a pitch rate of 3 mill cells / milliliter / Degree Plato (Triple the pitch rate for a 16 P / 1.065 O.G. Anti-Hero to ensure a strong fermentation! It is imperative to have a healthy active yeast pitch going into fermentation and a yeast propagation before brewing this beer can be extremely beneficial! Also, this is where you want to add your 2nd addition of Fermcap S of (.17 fluid oz. / 5 ml) in right before cooling wort into the fermenter.

Whirlpool Program :

At Boil End :

Add Centennial Hop Pellets (Whirlpool)(.6 oz. / 1 g at 13.1% Alpha Acid)

Use a spoon or paddle to get your wort spinning and break up all of your hop pellets.

Once you are done stirring your wort, start a 20 minute timer.

During this 20 min rest while you are allowing your trub pile to form, heat sanitize your wort line from your Brewkettle / Whirlpool through your heat exchanger & aeration unit all the way to the fermentation tank if possible.

Take a sample of wort from your Brewkettle / Whirlpool (This is your O.G.) and record starting gravity and pH.

Wort Transfer :

After your 20 min rest begin cool-in of wort through your heat exchanger to the fermentation tank targeting 66 F (19 C).

If you have an oxygen tank and regulator we target our oxygen flow rate at 15 L / min during the entire transfer of wort to the fermentation tank.

Transfer as much clean wort away from your trub pile as possible to maximize the volume you are sending to the fermentation tank.

Set the Fermentation tank to 68 F (20 C) if you have the capability to regulate temperature.

Set up a blowoff hose that is submerged in water with a splash of iodine to allow CO₂ to vent during primary fermentation.

Note : This is going to be a vigorous fermentation! However, the low hopping rate and FermcapS additions will help reduce mess and preserve as much volume **IN** the fermentation tank as possible.

Tip : You will need to get as much oxygen in solution as possible to give your yeast a leg up in this high sugar concentration wort to conduct a strong and complete fermentation.

Fermentation :

Day 1-2 : Monitor fermentation temperature and gravity over the first 2 days trying to maintain as close to 68 F (20 C) as possible.

Day 3 : After 48 hrs of fermentation raise tank temp up to 72 F (22.2 C).

Day 4-5 : Check gravity. At this point in your fermentation you will want to either dump yeast that has settle to the bottom of your fermentation tank or rack into another clean, sanitized, CO₂ purged carboy.

Note : It is important to remove yeast as soon as it settles in the primary fermenter to prevent autolysis and the negative aromas and flavors that come with it.

Day 5 : : Monitor fermentation temperature and gravity and tank pressure. Dump all thick yeast out of your tank.

Day 6-8 : Monitor temperature, confirm that you have a stable T.G. (Terminal Gravity) and check for VDK to confirm no diacetyl is detected. (Heat Test will most likely apply for at home testing). Dump thick yeast that has settled to the bottom of your fermenter or rack to another carboy. Set temperature to 32 F (0 C) to further drop yeast.

Day 10 : Dump solid yeast. When you are at 32 F or as close to it as possible, add **1 fluid oz. (30 ml.)** of Nalco (finings) and gently CO2 rouse your tank from the bottom (optimally if you have a conical tank) to ensure good mixing. After fining your beer it should take a few days to see a major improvement in clarity.

Note : Once you have separated and clarified your beer as much as possible it is time to begin preparing your oak alternatives to age your beer on to simulate time in a bourbon barrel. I would suggest either American oak chips, spirals or cubes. If you would like to replicate the heavy char that a bourbon barrel contains inside you can take a torch and char your Oak alternatives and once they cool you can soak them in a container of your favorite Bourbon or American Whiskey.

Day 12 : Dump thick yeast and transfer your clear beer into a cleaned, sanitized and CO2 purged tank containing the oak alternatives that you have charred and soaked with Bourbon or Whiskey and gently transfer the beer on them. At this point I would suggest aging the beer on your charred, spirit soaked oak alternative options for up to a year at 50-60 F (10 C-15.6 C).

1 Year Later :

Transfer your clear beer off of your oak alternatives to a cornelius keg that has been cleaned, sanitized and CO2 purged and set the temperature at or as close to 32 F (0 C) as possible. Keep constant CO2 pressure on the headspace of the corny (8-10 psi) to gently force carbonate up to 2.4 - 2.5 volumes of CO2 for serving via draft or bottling!

Tips For Success :

This Can't Be Overstated! The health, viability and size of your yeast pitch is extremely important for the quality of your finished beer! If you can start a yeast propagation with your Wyeast 1968 - London ESB yeast strain so it is actively fermenting when you pour it into your fermentation vessel that is ideal.

Oxygenation of wort prior to fermentation is super crucial in high gravity fermentations!

Maximize dissolved oxygen in your wort for a strong, complete fermentation!

Stay on top of yeast dumps / racks from primary and secondary tanks. This is a high gravity fermentation and high ABV% beer so the yeast will be extremely unhappy!

If you char your oak alternatives please make sure they are completely cool and not on fire when you pour Bourbon or Whiskey on them!!!

Make sure that your beer is as clean and clear as possible before aging it on Oak. You will be unhappy with the results if you age yeasty beer on oak for a year.

Keeping CO2 pressure in the headspace of your beer when fermentation is complete will help preserve aromatics.

The key to finding success with a Barrel / Wood Aged Imperial Stout is harmony between ABV%, IBUs, Terminal Gravity (Residual Sweetness), Aging Time, Roasted malt / grain astringency and your charred American Oak. If done properly it can be a balanced symphony of aromatics and flavors! Gently carbonating your beer to prevent foaming will also aid in your foam stability and let those beautiful aromatics and flavors you have worked so hard to achieve shine.

Cheers and Happy Brewing!!

Jim Cibak