Brewtan B

Brewtan B (formerly called Tanal B) is a 100% natural, high molecular weight tannic acid extracted from renewable plant materials specifically for the brewing industry. Incorporating Brewtan B into your process will improve the shelf life and enhance the flavor and colloidal stability of your beer.

The gallotannins in Brewtan B react with wort proteins through adsorption and precipitation - the Brewtan B/protein complex is left in the spent grains when Brewtan B is added to the mash, or removed in the whirlpool when it is added to the boiler.

It is highly effective at coagulating and flocculating proline and –thiol –containing proteins, but does not interact with foam-positive proteins. This in turn inhibits downstream lipid and protein oxidation, improving flavor stability and shelf life.

Dosage rate:

In the mash: 8 grams per barrel of mash liquor (8 g/1.17 hL). In the boiler: 5 grams per barrel of wort (5 g/1.17 hL).

Usage:

Dissolve powder in warm water; add solution to mash, boil, or both.

In the mash:

Add solution to mash water prior to dough-in. In the boiler: Add solution 0-5 minutes prior to end of boil.

Stability:

1 year, stored in airtight container in cool environment

Packaging:

available in 1 lb (0.45 kg), 3 lb (1.36 kg), 10 lb (4.53 kg), 25 lb (11.33 kg), and 50 lb (22.67 kg) units

Malt Conditioning

Malt conditioning is a simple process which consists of adding a very small amount of water to your grain bill prior to milling. The addition of water to your un-crushed malt results in more resilient grain husks. The husks take on a more “leathery” feeling. They are less dry and brittle, which means that they will remain much more intact during the milling process.

Why would a brewer care to leave their grain husks more intact during the milling process?

- Pulverized husks can lead to tanning astringency in beer
- Intact husks will create a more free flowing grain bed (fewer stuck sparges)
- You can crush finer to increase conversion efficiency without shredding husks

Items you will need:

- Atomizer bottle (for misting the malt)
- Scale, preferably digital (to accurately measure the water you are about to add)
- Large spoon or paddle (to thoroughly mix the malt)
- Malt
- Grain mill

The amount of water that you are about to add to your malt is VERY important. If you do not add enough water, the husks will not absorb enough and will remain brittle. If you add too much water, you will potentially moisten the kernel, thus affecting your crush and perhaps causing gumming of your mill rollers. No worries, this technique is EASY.

You will want to add 2% of the weight of the malt bill, in water, to the grain. For example, if you have a 10 pound grain bill, which is 160 ounces, multiply this by .02 (2%) and your result will be 3.2 ounces. This is the WEIGHT of water that you will want to add to your grain bill for conditioning. By doing so, you will thoroughly wet the grain husks, but you will not create a sticky mess in your rollers.

Malt Conditioning Cont'd

Malt conditioning is easy. A few simple steps and you will be on your way:

1) Weigh the atomizer bottle of water

2) Mist the surface of the grain, and stir

3) Weigh the atomizer bottle again

4) Mist the surface of the grain and stir

5) Repeat until you have added the calculated weight of water to your grain

6) When complete, allow 10 minutes for the husks to absorb this water

As you add water to the grain, it will become more difficult to stir. You may find it easier to add the water to half the malt, or a third of the malt, at a time. When milling, there is no need to change your mill setting, unless you are also wishing to do so. This process will NOT affect the crush of the grain itself, only the condition of the husk material after milling.

If by chance you notice grain sticking to your rollers after milling, you can simply run a handful of dry malt through the rollers to clean them. Also, this could be a sign that too much water may have been added to the malt. You can adjust the water proportions accordingly for your process. Feel free to experiment with 2%, 1.5%, etc,. I have had excellent results, though, using the 2% rule.

Please note that just because this process will allow you to mill your grain finer without shredding the husks, it is not advisable to crush too fine. There will come a point where you will produce too much flour and no amount of husk material will protect you from a stuck sparge.

Yeast Deoxygenation Method

The yeast deoxygenation method is a very viable way to mitigate DO in brewing water. Thanks to our good friend Bilsch he came up with this method and here is an excerpt from him:

“Someone said to me, in the context of pitching in oxygenated wort, yeast are the best oxygen scavengers we know. Shortly thereafter, while reading up on calibration of DO meters, I came upon the mention of zero water and the ways to make same. This got me thinking maybe we can harness the wee beasties for more than just turning wort into beer. Possibly they can help us before the mash by cleaning up dissolved O2 in our brewing water and save the time and energy needed for boiling and cooling the strike water. For lack of a better term, let’s call this process yeast oxygen scavenging. To that end, I did several small tests using cheap and available baking yeast for this purpose. It also seemed reasonable to assume that the yeast might need some fuel, beyond their reserved glycogen, to do their job more effectively. Initial tests employed dextrose and subsequent ones DME.

YOS test 1:

450ml RO water @27c in 500 ml Erlenmeyer flask with stopper

0.02g $MgSO_4$

0.05g CaCl

0.25g Dextrose

0.2g bread yeast, dry

Initial DO reading- about 6.5 mg/l

1 hour – 0.33mg/l

2 hours – 0.27mg/l

3 hours – 0.31mg/l

5 hours – 0.36 mg/l

17 hours – 0.47 mg/l ”

We find for us, the dextrose/bread yeast is the best bang for your buck and it is very easy to scale off of this test by using the dextrose and a dry bread yeast at a rate of twice your batch volume in grams (i.e. 5 * 2 = 10 grams each of dry bread yeast and dextrose).

Spunding

Spunding is a process often used by lager brewers to naturally carbonate their beer. A device called a spunding valve is attached to our tanks late in fermentation, when most of the sugars in the wort have been processed by our yeast. The spunding valve carefully controls the release of CO2 keeping the tank, keeping the tank pressurized and producing a desired effervescence and mouthfeel.

The advantages to spunding are considerable. Naturally carbonated beers often have brighter flavors and a more consistent mouthfeel.

A Spunding Valve:

Carbonation Chart For Setting Spunding Valve Pressure:

Fast

		Pressure (PSIG)														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Temperature (F)	30	1.82	1.92	2.03	2.14	2.23	2.36	2.48	2.60	2.70	2.82	2.93	3.02	3.02	3.02	3.02
	31	1.78	1.88	2.00	2.10	2.20	2.31	2.42	2.54	2.65	2.76	2.86	2.96	2.96	2.96	2.96
	32	1.75	1.85	1.95	2.05	2.15	2.27	2.38	2.48	2.59	2.70	2.80	2.90	3.00	3.11	3.21
	33	1.81	1.81	1.91	2.01	2.10	2.23	2.33	2.43	2.53	2.63	2.74	2.84	2.96	3.06	3.15
	34	1.78	1.78	1.86	1.97	2.06	2.18	2.28	2.38	2.48	2.58	2.69	2.79	2.90	3.00	3.09
	35	1.83	1.83	1.83	1.93	2.02	2.14	2.24	2.34	2.43	2.52	2.63	2.73	2.83	2.93	3.02
	36	1.79	1.79	1.79	1.88	1.98	2.09	2.19	2.29	2.38	2.47	2.57	2.67	2.77	2.86	2.96
	37	1.84	1.84	1.84	1.84	1.94	2.04	2.14	2.24	2.33	2.42	2.52	2.62	2.71	2.80	2.90
	38	1.80	1.80	1.80	1.80	1.90	2.00	2.10	2.20	2.29	2.38	2.48	2.57	2.66	2.75	2.85
	39	1.86	1.86	1.86	1.86	1.86	1.96	2.06	2.15	2.25	2.34	2.43	2.52	2.61	2.70	2.80
	40	1.83	1.83	1.83	1.83	1.83	1.92	2.01	2.10	2.20	2.30	2.39	2.47	2.56	2.65	2.75
	41	1.79	1.79	1.79	1.79	1.79	1.88	1.97	2.06	2.16	2.25	2.34	2.43	2.52	2.60	2.70
	42	1.75	1.75	1.75	1.75	1.75	1.85	1.94	2.02	2.12	2.21	2.30	2.39	2.48	2.56	2.65
	43	1.72	1.72	1.72	1.72	1.72	1.81	1.90	1.99	2.08	2.17	2.26	2.34	2.43	2.52	2.61
	44	1.69	1.69	1.69	1.69	1.69	1.78	1.87	1.95	2.04	2.13	2.22	2.30	2.39	2.47	2.56

Fast Ferment

The idea of the Fast Ferment Test is to completely ferment all fermentable sugars in a sample of wort. The attenuation that can then be determined is the limit of attenuation of that wort and it only depends on the wort composition that has been established by the brewing process (mainly mashing) [Narziss, 2005]. When properly done, the final attenuation of the test is not affected by the yeast strain, yeast health, pitching rate, temperature and other fermentation parameters.

To perform the test you need a sample of wort and yeast. The amount of wort should be enough to perform a hydrometer reading later (6 to 8 oz (120 to 200 ml)). The amount of yeast should result in a pitching rate for that sample that is well above the pitching you would use in a beer (5-10x). Here is a quick and easy way to prepare the test when propagating yeast in a flask or large bottle (growler):

- decant the spent starter beer
- add fresh wort to resuspend the yeast
- pitch most of the yeast/wort mixture and leave a little in the flask or bottle
- add some more fresh wort to ensure there will be well enough for taking a hydrometer sample later.

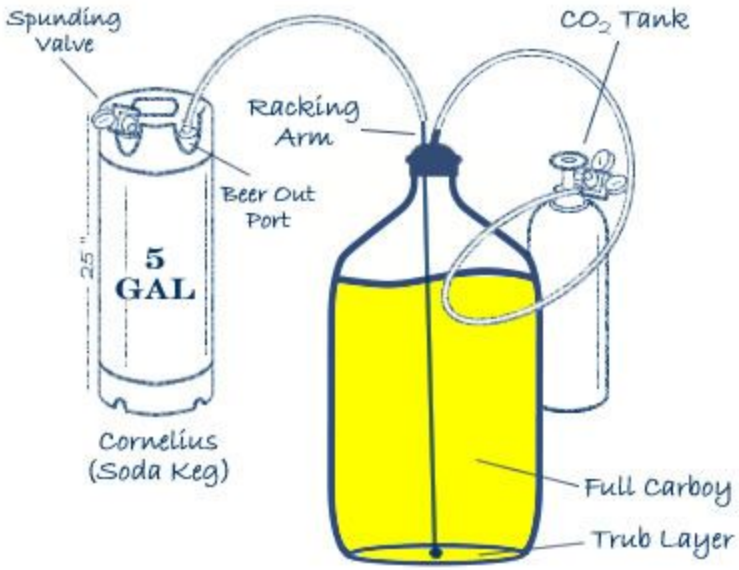
If you can't spare any yeast from the yeast that is pitched you can also use dry bread yeast instead. Bread yeast seems to behave like ale yeasts when it comes to types of sugars that are fermented. When using bread yeast the FF is 0.2 – 0.3 Plato higher than a lager yeast. ½ tsp dry bread yeast to 240 ml (8 oz) of wort is plenty.

Cap the bottle or flask with tin foil or airlock. Place the test at a warm place (20C / 70F and above, warmer for ale yeasts) and shake it occasionally to keep the yeast in suspension or place it on a stir plate. It should take 1 or 2 days for the fermentation to be over and I tend to give it another 2 days until I see that the sample lies completely flat and no CO_2 escapes when I shake it.

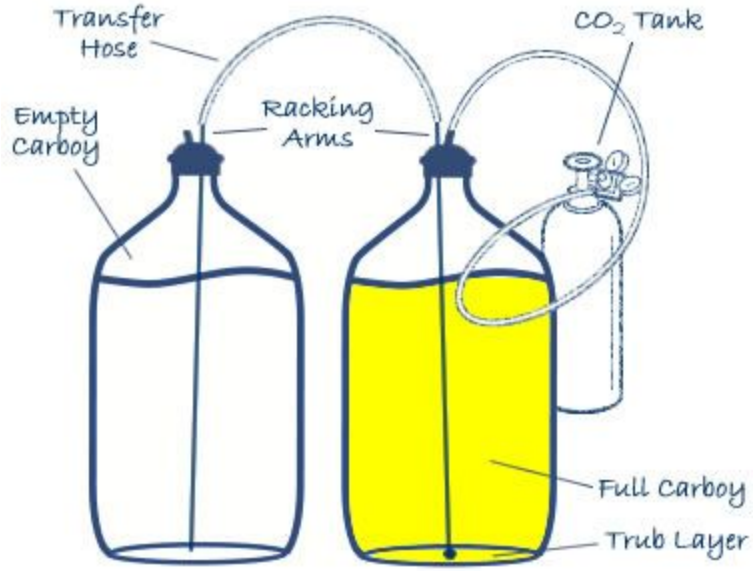
Now you can measure the extract (gravity) of the sample beer. This will give you the lower limit of the final extract (final gravity) that you can expect from this wort.

Closed Transfer Diagrams

Closed carboy to keg transfer using CO2 pressure.



Closed carboy transfer using CO2 pressure



Links

http://www.germanbrewing.net/docs/Brewing-Bavarian-Helles.pdf

https://www.morebeer.com/articles/oxidation_in_beer

http://www.lowoxygenbrewing.com/

https://accidentalis.com/low-oxygen-brewing-exploring-lodo-method/

http://braukaiser.com/wiki/index.php/Fast_Ferment_Test