PRIMETIME BREWERS
Grand Rapids Michigan

The Rubber Chicken

January 1993
Rubber Chicken
Vo. 2 N0. 1

Published Monthly or there abouts for ;the PrimeTime Brewclub of Greater Grand Rapids.

OFFICERS:
PRESIDENT
KEITHSCHUTTER
VICE PRESIDENT
BRUCE BRANT
SECRETARY/TRESURER
RICK FLYNN

Phone #'s maybe next month!? This is a new look for the Rubber Chicken and we hope you like it. We will be trying to get this thing out as soon as possible so those of you from "aways away" can have time to plan, but please be patient, we are starting from scratch. I plan to add some more graphics and photos(If any one takes pictures that is) to up coming issues. I would like to ~~steal~~ style as much as can from American Brewer, Buffalo Bill's mag from San Francisco, if you haven't seen this mag it is a real graphic treat, with pleanty of good articles too! Please volunteer your articles, reviews, and graphics, or risk being assigned something like: How to Duplicate Milwaukees Best Lite.

Mike Cartwright

PRESIDENT'S LETTER

Well folks, here we are in another new year. As so many of us do, I have made a resolution to change myself for the better. My resolution is to become a better brewer of malted beverages. (As opposed to just beer.) I hope that all of you have made similar commitments.

To that effect, our club is going to be changing this year. Some of us may find it to be too technical; that the fun is being taken out of it all. I hope that this is not the case.

I also hope that our increased emphasis on adherence to style and judging specifications will not scare anybody away or discourage them from submitting samples for judging. We will neither laugh at nor ostracize people if their entry Ndoesn't conform to specifics. Our hope is to learn while relaxing and having a homebrew. And having fun. Some of us have more to learn than others, so skim the foam off of what interests you and leave the rest.

A good way to see your own personal questions or interests answered is to get involved with the Steering Commitee. If you wish to see a certain subject addressed, raise the subject at a monthly meeting and if it gets approval it will be sent to the Steering Commitee for resolution.

PRIMETIME BREWERS MEETING NOTES: DECEMBER 17, 1992

PRESIDENTIAL NEWS - FORMER PTB'S PRESIDENT JIM RATHBUN MAKES FAREWELL SPEECH AND PASSES THE "RUBBER CHICKEN" TO THE NEW PRESIDENT KEITH SCHUTTER, FOLLOWED BY A GROUP "CHEERS",CLANK, CLANK, CLANK.... FAREWELL JIM, GOOD JOB!

STEERING COMMITTEE - ANNOUNCED THAT THEY WILL ORGANIZE PUB CRAWLS, AMONG OTHER THINGS. (JOIN THE STEERING COMMITTEE FOR A ONE OR TWO TASK STINT, YOU CAN BE HEARD, WE'LL LISTEN). CONTACT THE MAN AT THE WHEEL JIM RATHBUN (361-1403).

Meeting Locations - In 1993 Prime Time Brewers meeting locations will follow a traveling format. Meetings will be held at a different location each month. The next meeting on Thursday, January 21st will be at Rick Flynn's house; 6866 Northland Drive NE, Rockford. (See map for details). Bring yourself, some Homebrewed Brown Ale, and $2.00 for food.

Monthly meetings will be held on the 3rd Thursday of every month, meeting locations will be published for 3 months in advance.

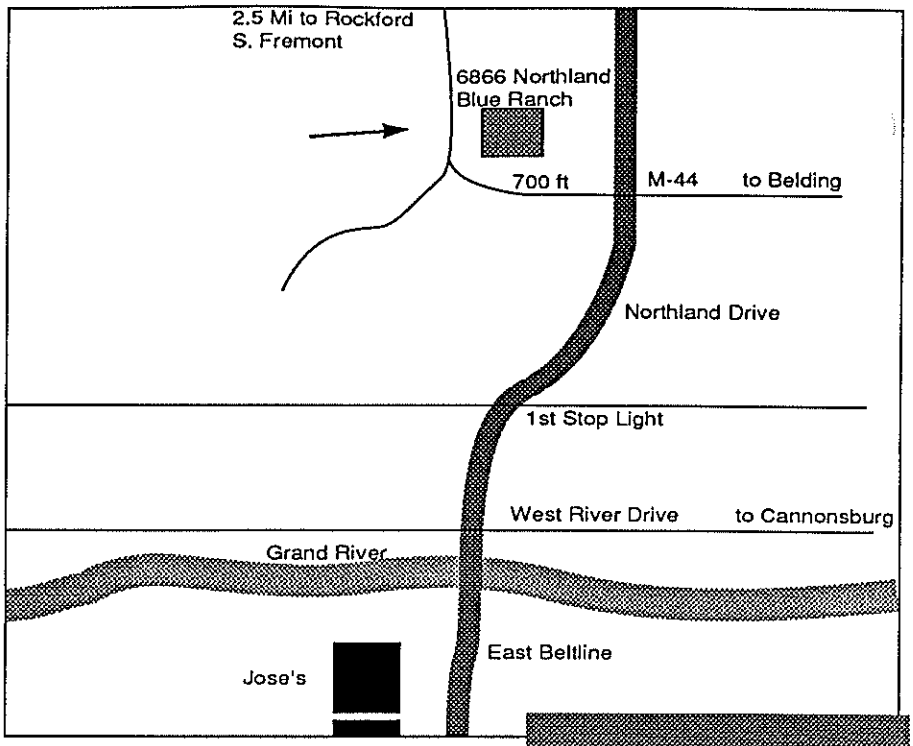
Membership Info - Remember its time to renew your Prime Time Brewers membership for 1993. Annual dues are $15.00 which include: membership in our PTB's mailing list, "The Rubber Chicken" (PTB's monthly newsletter), club organized events, summer picnic bash, and.... a year long bond to more "Beer Geeks" like yourself (just kidding.... don't take offense!), not to mention some of the areas finest quality Homebrewed beer, brewing tips, recipe hints, good munchies, a reason to get out of the house once a month.... need I continue???

Newsworthy - A new section will be added to "The Rubber Chicken": Brewing Gadgets - Any one can submit a short review on any particular brewing gadget that they have used. List a general overview of the gadget, the pros and cons... possibly the price and where you can purchase this gadget. One or two gadget reviews will be added per newsletter depending on length.

Meeting Memo's - When you bring a homebrewed beer in for judging please include the following: 1. (4) 12oz. or 2 qts. of homebrew. 2. The batch recipe to turn in with the homebrew. (It will be in the next newsletter if you win)!

See you on January 21st at my place. Cheers!!!

Rick Flynn - PTB's Secretary/Treasurer



GADGET REVIEW THE BREWCAP CLOSED FERMENTATION SYSTEM. RICK FLYNN

Product overview:

The BrewCap is a special plastic closed fermentation cap for a standard 5 gallon carboy. The principle is that you do the primary and secondary fermentation in an inverted carboy fitted with the BrewCap, (you will need a stand to accommodate this setup). The instructions recommend a couple different stands utilizing milk crates or five gallon buckets. I fabricated a stand outof some 2 X 4's and a piece of plywood with a hole cut in the center for the carboy neck. The BrewCap is a two hole cap that is snapped to the carboy filled with your wort. One hole is for the blow-off tube and the other is for the yeast collection hose. The BrewCap is then secured to the carboy with a big quick release Ty-rap.

Now you turn the carboy upside down. The yeast collection hose has a valve at the end that dangles by the floor, the open end of the yeast collection hose is at the entry into the mouth of the carboy. The blow off system is a long stiff tube that rises inside the carboy above the beer level. The other end of the blow off tube is open to release the carbon dioxide produced by fermentation. The blow off tube end needs to be put in a bucket or bowl of water to create an air-lock.

Theory of operation: 1. The BrewCap allows the active primary fermentation to release gasses by creating pressure above the beer level which is forced down the blow off tube and bubbles out to the atmosphere. 2. The spent yeast will collect at the funnel like neck of the inverted carboy.

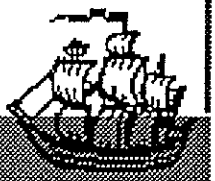
Gravity forces the heavy yeast down the hose so it can be drained off with the valve.

Review: I have used the BrewCap 3 or 4 times by now. The system works rather well.... The interesting thing that you will notice with the BrewCap is the lively primary fermentation. The wort and yeast churns and churns with a rolling like action from bottom to the top of the carboy.

After primary fermentation subdues, start draining off the spent yeast that is collected in the hose twice per day. I usually drain a little yeast off in the morning before work and then again at night. After you drain the yeast give the carboy a quick twist back and forth to break loose the settled yeast and force it down the neck and out the yeast collection hose. After all of the yeast is drained off the beer you can let the beer age for several weeks. You can even add priming solution and bottle with the BrewCap. I have found that bottling is a bit cumbersome with this system. I usually rack my beer off to a clean carboy the night before bottling. The convenience of not having to rack to a secondary carboy is nice, but you will need to tend to the yeast hose about twice per day for a week.

I purchased the BrewCap at the Barrel Shop in Rockford for under $15.00, a tube/hose brush is sold for 5 or 6 bucks and is worth it. The brush can unclog the yeast collection hose and clean both hoses when your finished.

The BrewCap is a very interesting and not very expensive gadget for the intermediate homebrewer. If you have brewed 5 or 6 batches buy a BrewCap, make a stand and spend some time using this system, its new, different and fun.



FEBRUARY 1993
BEER OF THE MONTH - INDIA PALE ALE

To fully understand India Pale Ale, or IPA, we must first take a look at its roots. During the late 1700's the British first developed a pale or light colored malt. Prior to this time all malts were very dark because the technology and control of kilning were not that great. The development of Pale ale also marked the decline of Porter.

During the early 1800's the British had its troops stationed in India. Of course these troops wanted their English Pale ale with them. The British brewers, led by Hodgson, found that their standard Pale ale couldn't make the long journey to India without spoiling. To overcome this they increased the alcohol content and hop rate. The original IPA shipped to India by Hodgson had a starting gravity of around 1.070+, and a hopping rate of about 150 to 200 IBU's. Of course today these figures are a little bitlower.

AHA Description India Pale Ale Pale to deep amber/copper. Medium body. Medium maltiness. Hop bitterness high. Hop flavor and aroma medium to high. Fruity/estery. Alcoholic strength evident. Low diacetyl OK.

O.G.: 1.050-60
%Alc/vol: 5-6
IBU's: 40-60
Color SRM: 8-14

India Pale Ale Recipes

Terry Foster, in the book "Pale Ale" describes Pale ale and IPA as having the following aroma and flavor;

> "Pale ale should have a clean, malty fullness on the front of the palate, with fruity, estery overtones, followed by a long, lingering hop bitterness on the back of the palate. The bitterness should be clean, with no astringency, and there should be no solventlike character in the fruitiness, nor any lingering sweetness to hide the hop flavor."

He goes on to say that the beer may or may not exhibit a lot of hop flavor or aroma. Some brewer's late or dry hop, others don't. He stresses that the key to a good clean IPA is the use of only the freshest hops. There is also a couple of paragraphs on the oak taste in a IPA. Foster recommends that you don't use oak chips, as American oak does not taste the same as English oak.

The fermentables for IPA are mainly Pale malt or light dry malt. There is also a small amount of Crystal malt, usually less than 1/2 pound. The recommended hops are of course English type (i.e. Goldings, Fuggles, Northern), but American Cascade, Eroica, and Williamette are also good. The best yeasts are Whitbread and Whiteshield cultures. Dried ale yeasts will do the job but it's harder to maintain the clean flavor profile with them. One of the keys to a good IPA is the water, it has to be extremely hard.

I normally use Absopure Spring water because I have an analysis of it. To get close to a Burton style water I have to add 3 teaspoons of gypsum and 1/4

teaspoon of non-iodized salt. If you use your own water and know the analysis you should adjust the ions to the following:

Calcium	100-200 ppm
Magnesium	10-30 ppm
Sodium	10-20 ppm
Bicarbonate	50 max ppm
Sulfate	300-500 ppm
Chloride	20-40 ppm

Fermentation temperatures should be kept around 65-70 F. They can go a high as 75 F but you risk forming high levels of diacetyl and excessive esters. Too low of a temperature will stunt the yeast and your attenuation will be poor. I guess an extra fruity beer is better than a future gusher, so work towards the high end of the temperature range if you have to. IPA's should be fairly well attenuated, or finish at a low hydrometer reading. The ending gravity should be about 1.012-14. Well lets get on with the recipes. All of the listed recipes are for 5 gallons.

Extract Recipe

7-8 1/4 lbs Light malt extract syrup
or
6 1/4-7 1/2 lbs Light dry malt
1/4-1/2 lb Crystal malt 40 L
1 1/2-2 1/2 oz Bittering hops, 8% alpha for 60 minutes
1/4-3/4 oz Flavoring hops, 5% alpha for 30 minutes
1/2-1 1/4 oz Finishing hops, 5% alpha for 5 minutes
0-1/2 oz Dry hops, 5% alpha (optional)
1-2 pkgs dried ale yeast or liquid ale culture

Crush grain and add to 1 gallon cold water. Heat to 160 F and steep for 15 minutes. Remove grain and sparge with 1/2 gallon 170 F water. Add malt and proceed as normal.

Partial Mash Recipe

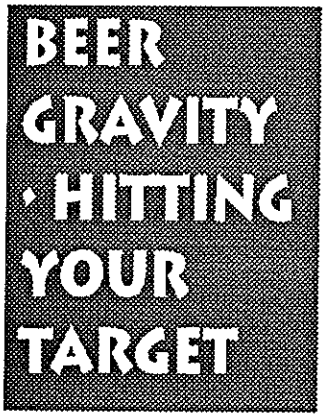
4 lbs Light dry malt
3-5 lbs 2-row Pale malt
1/4-1/2 lb Crystal malt 40 L
1 1/4-2 oz Bittering hops, 8% alpha for 60 minutes
1/4-1/2 oz Flavoring hops, 5% alpha for 30 minutes
1/2-1 oz Finishing hops, 5% alpha for 5 minutes
0-1/2 oz Dry hops, 5% alpha (optional)
1-2 pkgs dried ale yeast or liquid ale culture

Crush grains and mash at 152 F until conversion is reached. Sparge with 170 F water. Add dry malt and top up with water to make 3 gallons of wort then proceed as normal.

All Grain Recipe

8-10 lbs 2-row Pale malt
1/4-1/2 lb Crystal malt 40 L
1-1 3/4 oz Bittering hops, 8% alpha for 60 minutes
1/4-1/2 oz Flavoring hops, 5% alpha for 30 minutes
1/2-1 oz Finishing hops, 5% alpha for 5 minutes
0-1/2 oz Dry hops, 5% alpha (optional)
1-2 pkgs dried ale yeast or liquid ale culture

Crush grains and mash at 150-152 F until conversion is comp' Sparge with 170 F water. Add any minerals tosparge water.



The gravity of your beer is important when trying to make a certain style or when your figuring out how much hops to add. The difference between an English ordinary and a special bitter is only 1.004 specific gravity yet the hop IBU's is from 5 to 10. Therefore we need a method of calculating how much extract or grain to use when we plan the brew.

For the extract brewer this is fairly simple. Liquid malt extract will give you 1.033-1.038 specific gravity per pound per gallon of water. Dry malt extract is 1.038-1.042. If you want to make 5 gallons Robust Porter with dry malt all you have to do is grab your calculator. We're going to use 1.052 as our target gravity and 1.040/lb/gal as an average value for the dry malt. So here's what you do, start by dropping the 1's from your specific gravity so 1.052 is no just .052, ok then;

$$\text{lbs of dry malt} = \frac{.052 \times 5 \text{ gallons}}{.040} = 6.5 \text{ lbs}$$

Pretty simple right? But what about the speciality malts that you need to add to that Porter?

For the most part using a pound or less of speciality malts will add only about .005 specific gravity to a 5 gallon batch. So yes we do need to make some adjustments to our dry malt requirements. Crystal malt will give you about 1.025/lb/gallon of water, while chocolate, black, and roasted barley will about 1.022/lb/gallon. If we want to add 3/4 lbs of crystal and 1/2 lbs of chocolate to our Porter what will they add to our gravity? Again drop the 1's.

$$\text{Crystal S.G. (5 gal)} = \frac{.025 \times .75 \text{ lbs}}{5 \text{ gallons}} = .004$$

$$\text{Chocolate S.G. (5 gal)} = \frac{.022 \times .50 \text{ lbs}}{5 \text{ gallons}} = .002$$

Now we know that the crystal and chocolate malts will contribute a total of 1.006 to our target gravity. So let refigure our dry malt needs.

$$\text{Lbs of dry malt} = \frac{(.052\text{-}.006) \times 5 \text{ gallons}}{.040} = 5.75 \text{ lbs}$$

Well that is pretty much it for figuring out your target gravity. The all-grain brewer can use the same calculations for the pounds of grain required, but with an added twist.

Since the grain brewer is starting from scratch the actual extract values can vary with mashing and sparging techniques.

Most pale and lager malts will give about 1.033- 36/lb/gallon, but home-brewers are more likely to get anywhere from 1.025 to 1.033 extract efficiency. If you keep good notes on your brewing process you can figure out your average extract efficiency by the following:

$$\text{S.G./lb/gal} = \frac{\text{Starting Gravity} \times \text{Batch Size}}{\text{Lbs of Grain Used}}$$

So if your last 5 gallon batch of beer started at 1.050 and you used 9 pounds of grain you got:

$$\text{Extract eff.} = \frac{.050 \text{ S.G.} \times 5 \text{ gallons}}{.028 \text{ or } 1.028/\text{lb/gal}}$$

$$= 9 \text{ lbs of grain}$$

Now you can use this value in future batches to calculate your grain bill. As you improve your mashing and sparging techniques you will have to eventually bump this value up some.

MARCH 1993 - BEER OF THE MONTH CONTINENTAL LAGER

The term "Continental Lager" can cover a wide variety of European lager beers, fromBohemian Pilsner to German Eisbock. For the sake of this article and my two finger typing skills I'm going to limit this to just two recognized lager styles, Munich Hells and Munich Dunkel.

Both of these beer styles, as the name suggests, originated in Munich, Germany. Munich Dunkel was first defined and brewed by Gabriel Sedlmayr around 1830. It was dark brown in color and malty in character. This is about the same time that Germans really understood lagering and yeasts that pro-duced this style of beer. In 1894 the Spaten brewery produced the first Munich Hells or Pale style of lager. It had a very light color and still a malty character.

The AHA describes these two beer styles as the following;

Munich Hells

Pale to golden. Medium body. Medium malty sweetness. Low bitterness. Hop flavor and aroma (nobel-type) ok. No fruitiness. Low diacetyl ok.

O.G.: 1.040-50
%Alc/vol: 4.5-5.5
IBU's: 18-25
Color SRM: 3-5

Munich Dunkel

Copper to dark brown. Medium body. Nutty, toasted, chocolate-like malty sweetness in aroma and flavor. Medium bitter-ness. Hop flavor and aroma (nobel type) ok. No fruitiness or esters. Low diacetyl ok.

O.G.: 1.052-56
%Alc/vol: 4.5-5.5
IBU's: 16-25
Color SRM: 17-23

Brewing and Fermentation

One of the most important things in brewing a goodMunich style lager is in the hopping. Both of these styles exhibit "malty sweetness". If you look back at the IBU's of both styles you will notice

that they are almost the same, even though the Dunkel has a higher O.G. This is because the use of dark grains in the Dunkel will contribute some bitterness on its own. The term "nobel-type" refers to the use of good European hops (i.e. Hallertau, Spalt, Tettnang, and Saaz). I personally use these types for bittering, flavoring, and aroma. Saaz are the best for the aroma. The flavor and aroma of this style is there, but subdued. Don't treat it like a Pale ale, 1/2 ounce for flavor and 1/4 ounce for aroma is all that it takes.

Probably the most important element in a homebrewed Munich lager is the yeast. I cringe at the thought of using dried yeast. A good lager yeast is a must. As far as I know the package's of dried yeast that say "Lager" on them are nothing but ale yeast. If you want to prove it to yourself get a quart bottle of wort together and pitch a full package of dried lager yeast into it. Once fermentation begins put it in your refrigerator at about 40 F. If it stops fermenting it was because it was an ale yeast.

The temperature of the fermentation is also important. A good primary fermentation temperature is around 48 F. Thiswill last about 7 to 14 days. Following this I like to raise the temperature to about 55 F for 1 to 2 days for a diacetyl rest before racking to a secondary fermenter. The secondary fermentation should be at about 34 to 38 F for 2 to 5 weeks. After the beer has cleared and no hydrometer change has been noted the beer can be lagered. This is normally done in a closed vessel under pressure or can also be done in the bottle. If your going to lager in the bottle, prime and bottle as you normally would then refrigerate at 33 to 36 F for 2 to 8 weeks. For those of you with pop tanks, keg the beer as you normally would but don't prime. Keep the beer under 12 psi of CO2 for the time and temperature mentioned above.

I know this sounds like a lot of hassle, and it is. Refrigeration is almost mandatory, but a cool basement will sometimes work. What I described above is the ideal way to make a lager but not the only way. To keep the esters and fruitiness out of a lager it has to be fermented cold. Your choice of yeast will also play an important part. Wyeast #2308 & #2206 are the best choices if you have the means to chill the beer as described. They both will produce beer that will make the maltiness stand out. Wyeast #2112 & #2035 are a good choice if you have to ferment in a cool basement only. The maltiness won't stand out as much, but it will taste close to the style.

Before I get on with some recipe suggestions I should mention the malt. I'll strongly disagree with anybody who says there's no difference between American malts and European malts or even English and Scottish malts. The plain and simple facts are in the cost. If cheap American malt is the same as German malt at almost twice the price why is it even available. The reason is taste. I think that the good malty flavor that is evident in German beer's has a lot to do with the malt used. Therefore I would suggest using extract or grain of German origin. Ireks Arkady makes both liquid malt extract and whole grains, both of which are of excellent quality. If you can't get these most brands will work fine.

Hells Extract Recipe

6-7 lbs Light malt extract syrup or
5 1/2-6 1/2 lbs Light dry malt
0-1/4 lbs Crystal malt (try to get 20 L)
1 1/4-1 3/4 oz Bittering hops, 5% alpha for 45 minutes
0-1/2 oz Flavoring hops, 5% alpha for 20 minutes
0-1/4 oz Finishing hops, 5% alpha for 2 minutes
1-2 pkgs Lager yeast

Add grain to 1 gallon of cold water, bring to 150 F. Remove grain and rinse with 1/2 gallon water. Add malt and proceed with brew as normal. Cool wort as fast as possible and pitch yeast.

Hells Partial Mash Recipe

3lbs Light dry malt
3-4 1/2 lbs Lager or Pilsner malt
0-1/4lbs Crystal malt 20 L
0-1/4lbs Cara-pils malt
1-1 1/2 oz Bittering hops, 5% alpha for 60 minutes
0-1/2 oz Flavoring hops, 5% alpha for 20 minutes
0-1/4 oz Finishing hops, 5% alpha for 2 minutes
1-2 pkgs Lager yeast

Mash all grains at 155 F until conversion is reached. Sparge with 170 F water. Add dry malt and start your boil, you should have a minimum of 3 gallons of liquid in the brewpot.

Hells All Grain Recipe

4 3/4-8 1/2 lbs Lager or Pilsner malt } you want to
0-2 lbs Munich malt } have 7 1/4-
1/4-1/2 lbs Cara-pils malt } 8 3/4 lbs of
0-1/4 lbs Crystal malt 20 L } grain total
3/4-1 1/4 oz Bittering hops, 5% alpha for 45 minutes
0-1/4 oz Flavoring hops, 5% alpha for 20 minutes
0-1/4 oz Finishing hops, 5% alpha for 2 minutes
1-2 pkgs Lager yeast

Mash in all grains at 122 F for a protein rest. Hold for 30 minutes. Raise temperature to 155 F by infusion or direct heat and hold until conversion is complete. Raise temperature by direct heat to 168 F and hold for 10 minutes. Sparge with 170 F water.

Dunkel Extract Recipe

7-7 3/4 lbs Light malt extract syrup or
6 1/2-7 lbs Light dry malt
1/2-3/4lbs Crystal malt 40 L
1/8-1/4 lbs Chocolate malt
1 1/4-1 3/4 oz Bittering hops, 5% alpha for 45 minutes
0-1/2 oz Flavoring hops, 5% alpha for 20 minutes
0-1/4 oz Finishing hops, 5% alpha for 2 minutes
1-2 pkgs Lager yeast

Dunkel Partial Mash Recipe

3 lbs Light dry malt
4-5 lbs Lager or Pilsner Malt
1/2-3/4 lbs Crystal malt 40 L
1/8-1/4 lbs Chocolate malt
1-1 1/2 oz Bittering hops, 5% alpha for 60 minutes
0-1/2 oz Flavoring hops, 5% alpha for 20 minutes
0-1/4 oz Finishing hops, 5% alpha for 2 minutes
1-2 pkgs Lager yeast

Dunkel All Grain Recipe

3-8 1/4lbs Lager or Pilsner malt } you want to
0-4lbs Munich malt } have 8 1/2-
1/2-3/4 lbs Crystal malt 40 L } 9 1/4 lbs of
1/4-1/2 lbs Cara-pils malt } grain total
1/8-1/4 lbs Chocolate malt
3/4-1 1/4oz Bittering hops, 5% alpha for 45 minutes
0-1/2 oz Flavoring hops, 5% alpha for 20 minutes
0-1/4 oz Finishing hops, 5% alpha for 2 minutes
1-2 pkgs Lager yeast

The Dunkel recipes can follow the same instruction as for the Hells recipes. These recipes are only rough guidelines to get you started in the right direction. They are all based on a 5 gallon batch size. You can also find some good ideas in past issues of Zymurgy and The Winner's Circle.

MAY 1993 - BEER OF THE MONTH TRADITIONAL GERMAM BOCK

It is said that Bock beer got it start and name in Einbeck, Germany. This type of beer was brewed in Einbeck as early as the 13th century. According to German history it was served to Martin Luther at the "Diet of Worms", which was some sort of religious/ political gathering. These early Bock beers were most likely strong dark ales since lagering and lager yeast were unknown until the 1800's.

Today we have several styles of Bock beer, all of which are lagers. Of course there is the traditional dark colored Bock and Doppelbock, but there is also a light colored or Hells Bock and an Eisbock. The Eisbock is a high gravity Doppelbock that is frozen and then the ice is removed. This results in an extremely high alcohol content. The famed EKU 28 is one of the strongest examples, with an alcohol content as high as 13.5% by volume. According to German law a Bock beer must have a starting gravity of at least 1.064 whereas a Doppelbock must start at 1.072 or higher.

Since Traditional German Bock and Doppelbock are the best known style's, that is what this article shall cover. The AHA identifies these two style's as the following:

Traditional German Bock
Copper to dark brown. Full body. Malty sweet character predominates in aroma and flavor with some toasted chocolate. Low bitterness. Low hop flavor (noble-type) ok. No hop aroma. No fruitiness or esters. Low to medium diacetyl acceptable.

O.G.: 1.066-74
%Alc/Vol: 6-7.5%
IBU's: 20-30
Color SRM: 20-

Doppelbock

Light to very dark; amber to dark brown. Very full body. Malty sweetness evident in aroma and flavor, can be intense. High alcoholic flavor. Slight fruitiness and esters ok but not very desirable. Low bitterness. Low hop flavor (nobel-type) ok. No hop aroma. Low diacetyl ok.

O.G.: 1.074-80
%Alc/vol: 6.5-8%
IBU's: 17-27
Color SRM: 12-

Brewing and Fermentation

The brewing and fermentation notes on the Munich Hells and Dunkel style's apply to the Bock and Doppelbock style's as well. The hopping and fermentation temperatures are even more critical to the Bock style of beer. If either one is overdone you'll end up with a tutti-fruity Porter like beer instead of a Bock.

Because of the higher starting gravity there is a lot more fermentables for the yeast to work on. At higher temperatures these sugars will convert to ethanol and a variety of fusel or higher alcohols. The ethanol we want, but not the fusel alcohols. These higher alcohols are what produce that fruity, estery quality found in ales but are undesirable in a bock.

Normally hops are added to balance the sweetness of the malt, so the beer is not too sweet yet not too bitter. The Bock beer style is one of the many exceptions to the rule, it should exhibit a good malty sweetness. The bitterness is there however it is somewhat masked by the malt. There is also a little hop flavor but no hop aroma. According to most of the winning recipes that I have seen Tettnang followed by Hallertau are the most popular flavoring hop. There seems to be a wi variety of bittering hops used with Perle, Northern, an Hallertau at the top of the list.

The fermentation schedule is similar to the Munich style's of beer though they last a lot longer. Bock beers are normally brewed late in the year then fermented and lagered into late April. Well let's check out some recipe guidelines. All of the recipes listed are for a 5 gallon batch of Traditional German Bock beer.

(Because of space limitations only the All grain is printed here)

All Grain Mash

0-10 1/2 lbs Pils malt	} you will need
0-10 1/2 lbs Munich malt	} approx 11 1/2
1/2-1 lbs Crystal malt 40-120 L	} lbs of grain
0-1 lbs Cara-pils malt	} total. A 50/50
1/4-1/2 lbs Chocolate malt	} mix of Munich
0-1/8 lbs Black malt	} & Pils is good

1-1 1/2 oz Bittering hops, 5% alpha for 90 minutes.
1/4-1/2 oz Flavoring hops, 3% alpha for 20 minutes
1-2 pkgs Lager yeast

Mash in all crushed grains at 122 F for 30 minutes. Raise temp to 156F and hold until conversion is reached. Mash out at 168 F for 10 minutes. Sparge with 170F water. Proceed with boil and chill as quickly as possible.

PRIMETIME BREWERS
Grand Rapids Michigan